

# V&V Reference Report

## L2 ASCDS Version : 10.1.1

Observation 16507 - L2 Version 2  
Chandra X-Ray Center

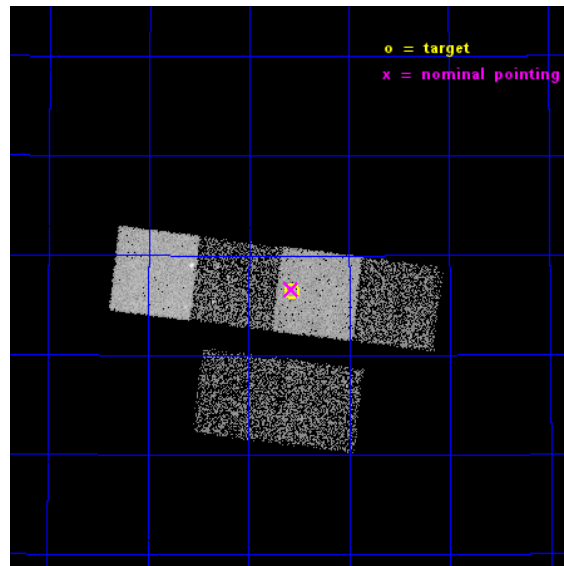
L2 Processing Date : Dec 7 2014

## 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>A</b>	<b>Summary</b>	<b>17</b>
A.1	Status . . . . .	17
A.2	Comments . . . . .	17

# 1 Front

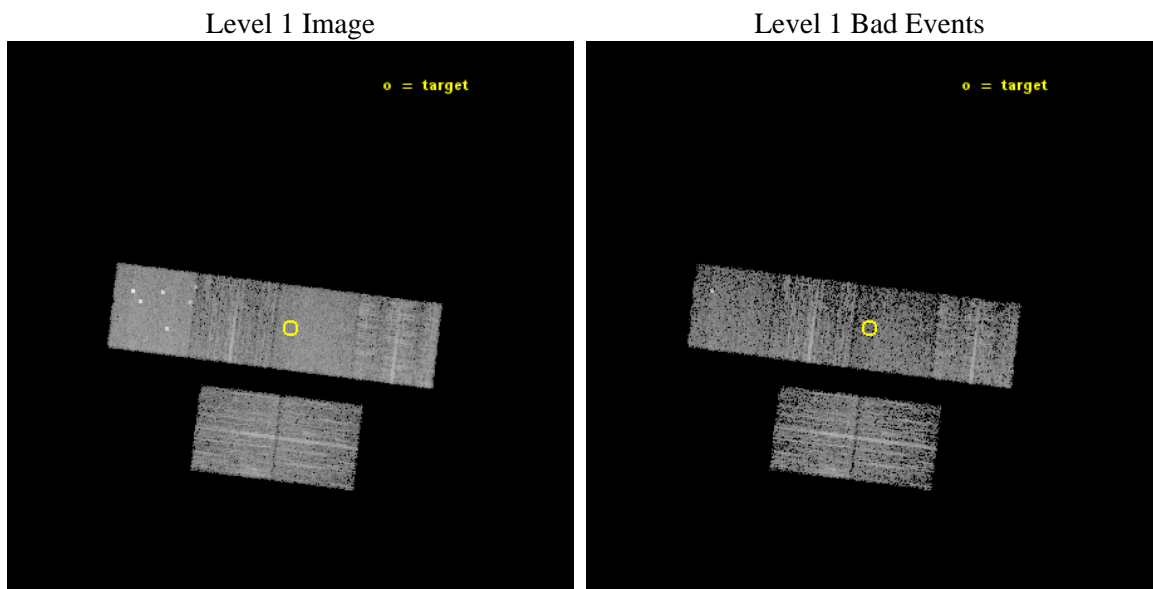
seq_num	501943	Sequence number
obs_id	16507	Observation id
title	Constraining the Energetics of Fermi-LAT GRBs with Chandra	Proposa
observer	Dr Judith Racusin	Principal investigator
object	GRB 130907A	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	215.892	Observer's specified target RA [deg]
dec_targ	45.607417	Observer's specified target Dec [deg]
ra_nom	215.89376225582	Nominal RA [deg]
dec_nom	45.610132509401	Nominal Dec [deg]
roll_nom	6.9554060653526	Nominal Roll [deg]
revision	2	Processing version of data
ontime	6191.6171136498	Sum of GTIs [s]
livetime	6113.2151296126	Livetime [s]
ontime2	6191.6581536531	Sum of GTIs [s]
ontime3	6191.4939936399	Sum of GTIs [s]
ontime5	6191.5760736465	Sum of GTIs [s]
ontime6	6191.5350336432	Sum of GTIs [s]
ontime7	6191.6171136498	Sum of GTIs [s]
ontime8	6191.4529536366	Sum of GTIs [s]
l2events	46961	Number of level 2 events



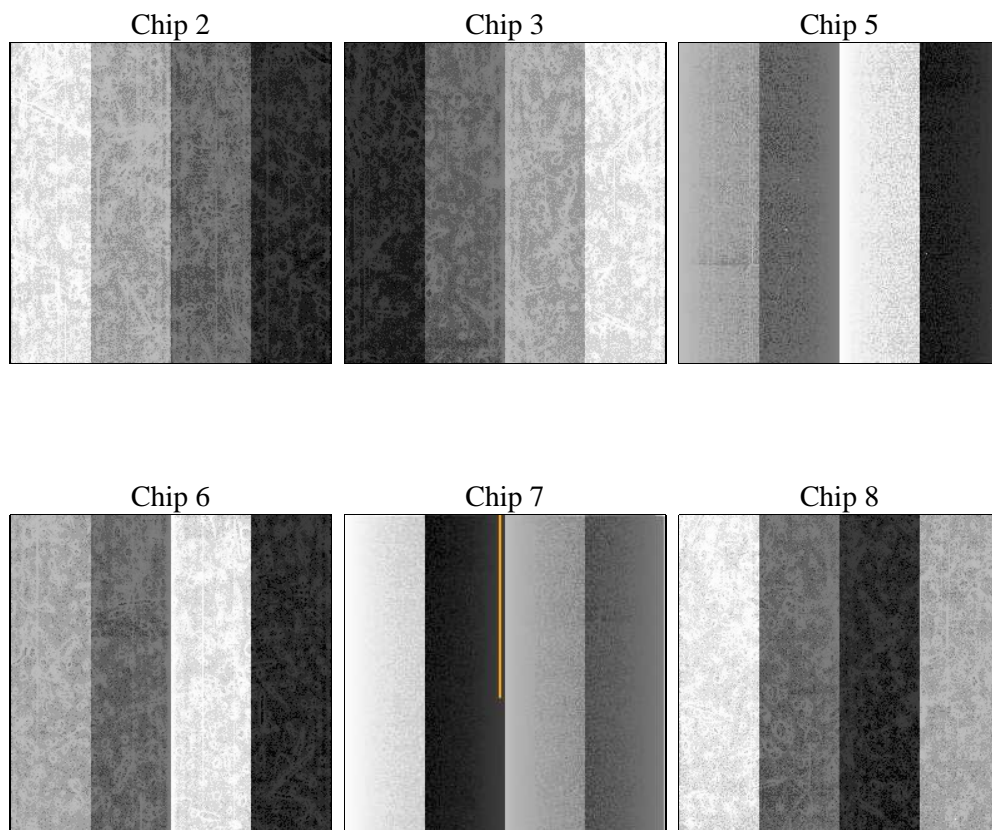
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	6230.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	6191.6171136498	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	6191.6581536531	Sum of GTIs [s]
date	2014-12-07T21:10:21	Date and time of file creation	ontime3	6191.4939936399	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	6191.5760736465	Sum of GTIs [s]
			ontime6	6191.5350336432	Sum of GTIs [s]
			ontime7	6191.6171136498	Sum of GTIs [s]
			ontime8	6191.4529536366	Sum of GTIs [s]
			l1events	204042	Number of level 1 events

### 2.1.4 Events

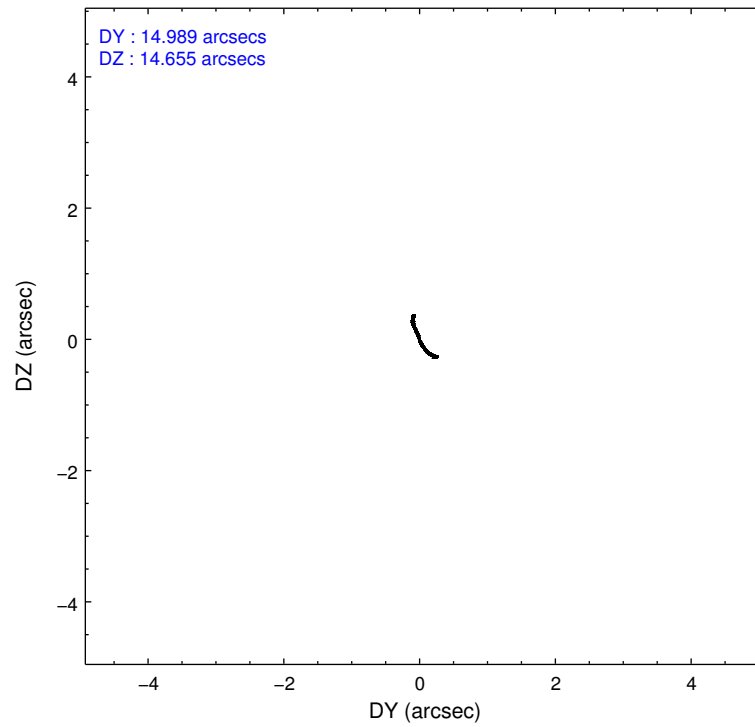
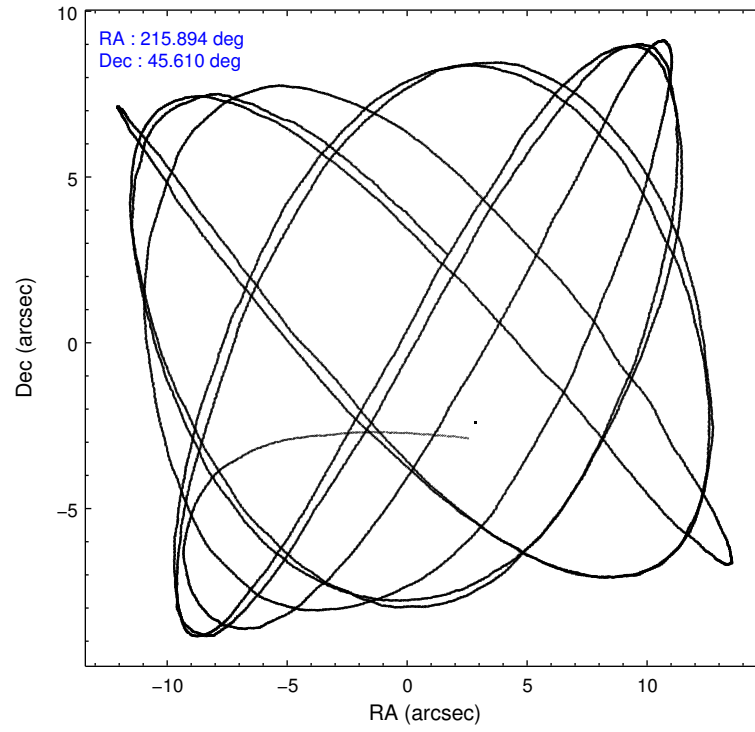
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	30684	27467	47361	27991	33426	37113	grade 0 events	1124	1096	4682	1328	1454	3001
rejected events	27602	24453	21247	24433	17987	26774		3%	3%	9%	4%	4%	8%
rejected %	89%	89%	44%	87%	53%	72%	grade 1 events	13	17	496	11	62	20
								0%	0%	1%	0%	0%	0%
							grade 2 events	768	684	7877	761	3228	2293
								2%	2%	16%	2%	9%	6%
							grade 3 events	286	325	849	337	1283	1136
								0%	1%	1%	1%	3%	3%
							grade 4 events	302	313	897	335	1254	1123
								0%	1%	1%	1%	3%	3%
							grade 5 events	1023	1301	2969	1258	3361	1896
								3%	4%	6%	4%	10%	5%
							grade 6 events	605	597	11831	804	8235	2789
								1%	2%	24%	2%	24%	7%
							grade 7 events	26563	23134	17760	23157	14549	24855
								86%	84%	37%	82%	43%	66%

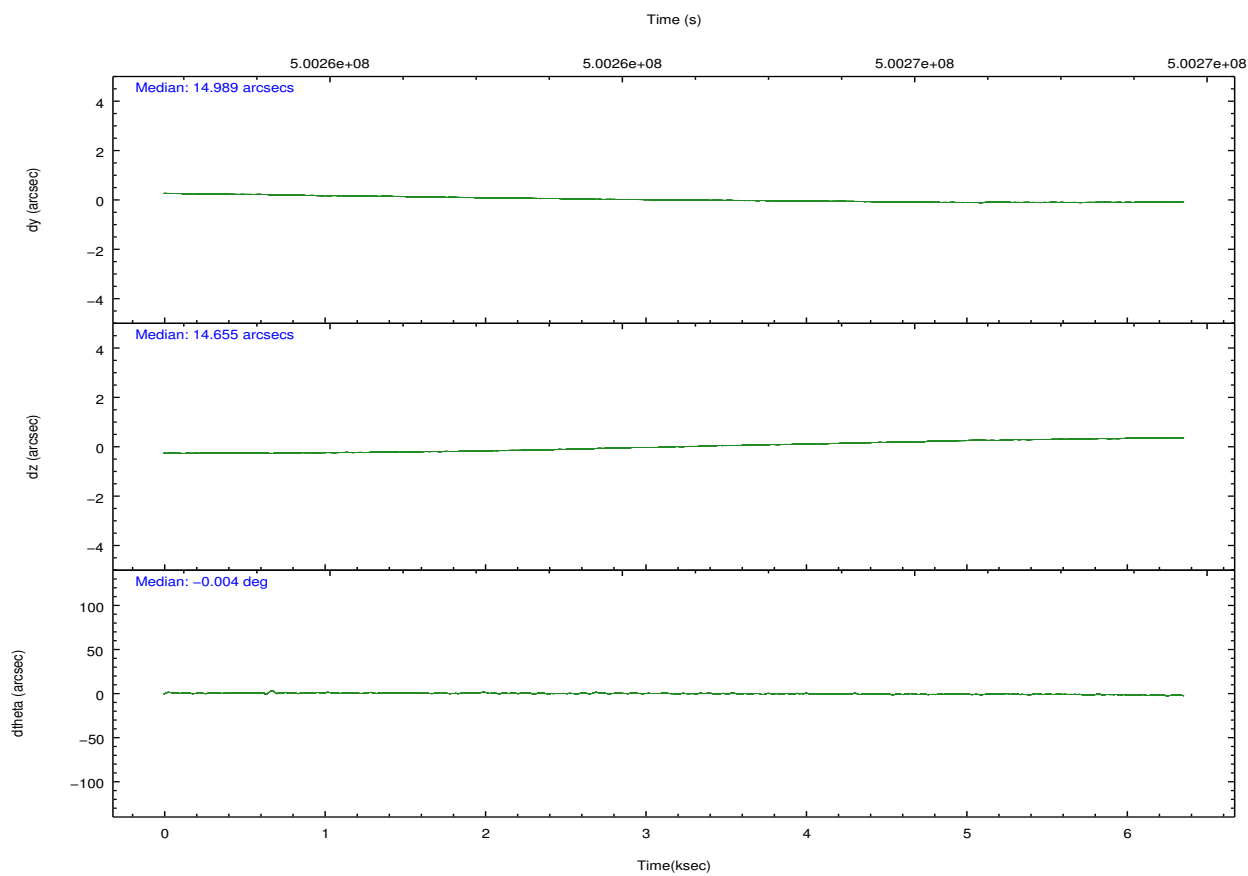
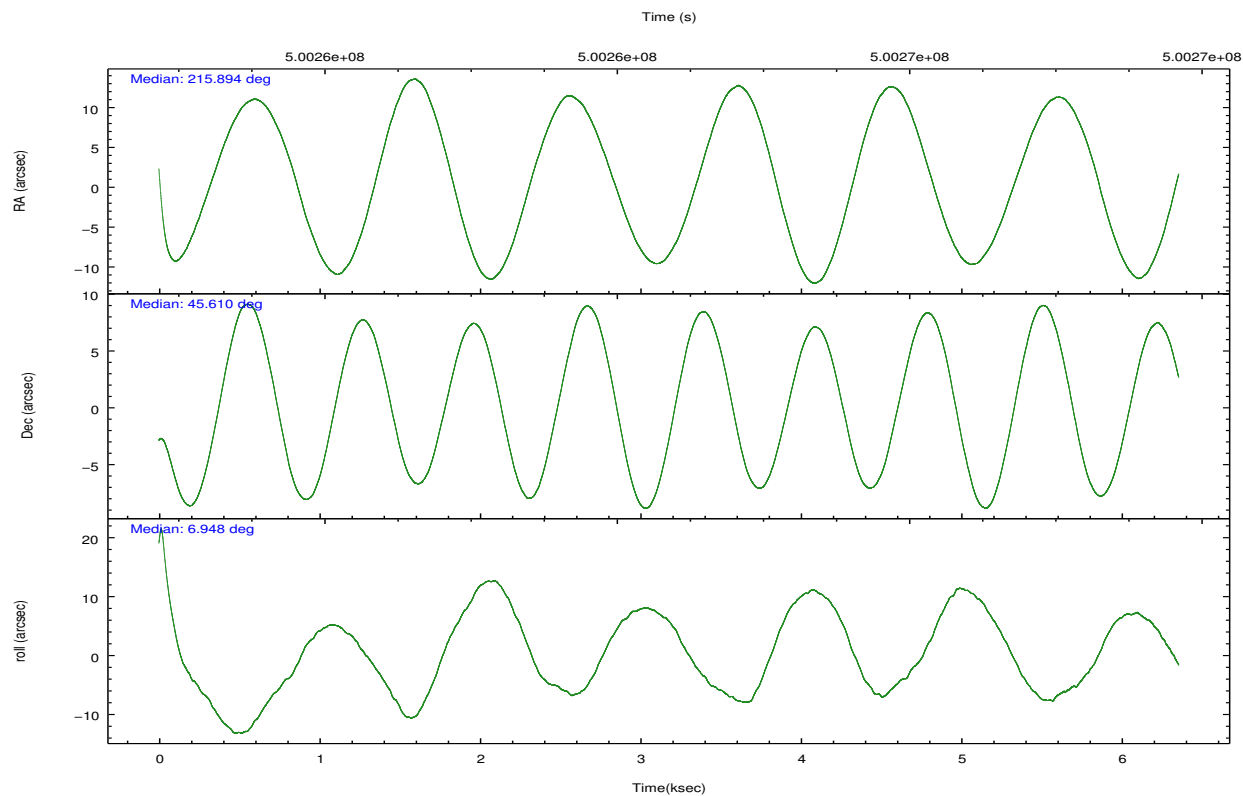


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	215.862973	215.8937622558157	CCD I2 on	O4	Y
[deg] Pointing Dec	45.593411	45.61013250940067	CCD I3 on	O5	Y
[deg] Pointing Roll	6.820736	6.955406065352631	CCD S0 on	N	N
[s] Window start time (MET)	499305667.184000	499305667.184000	CCD S1 on	O1	Y
[s] Window stop time (MET)	501120007.184000	501120007.184000	CCD S2 on	O2	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	O3	Y
[mm] SIM translation stage pos	-190.132523	-190.145094680475	CCD S5 on	N	N
[mm] SIM translation stage offset	0	0.01257209746719923	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	500261305.184000	500260092.83834	On-chip summing requested	N	N
Observation start date	2013-11-08T01:27:18	2013-11-08T01:08:12	Subarray requested	NONE	NONE
[s] Observation end time (MET)	500267535.184000	500268664.40131	Alternating exposures requested	N	N
Observation end date	2013-11-08T03:11:08	2013-11-08T03:31:04	[s] Primary exposure time	0.000000	3.2
Read mode	TIMED	TIMED			

## 2.3 Aspect



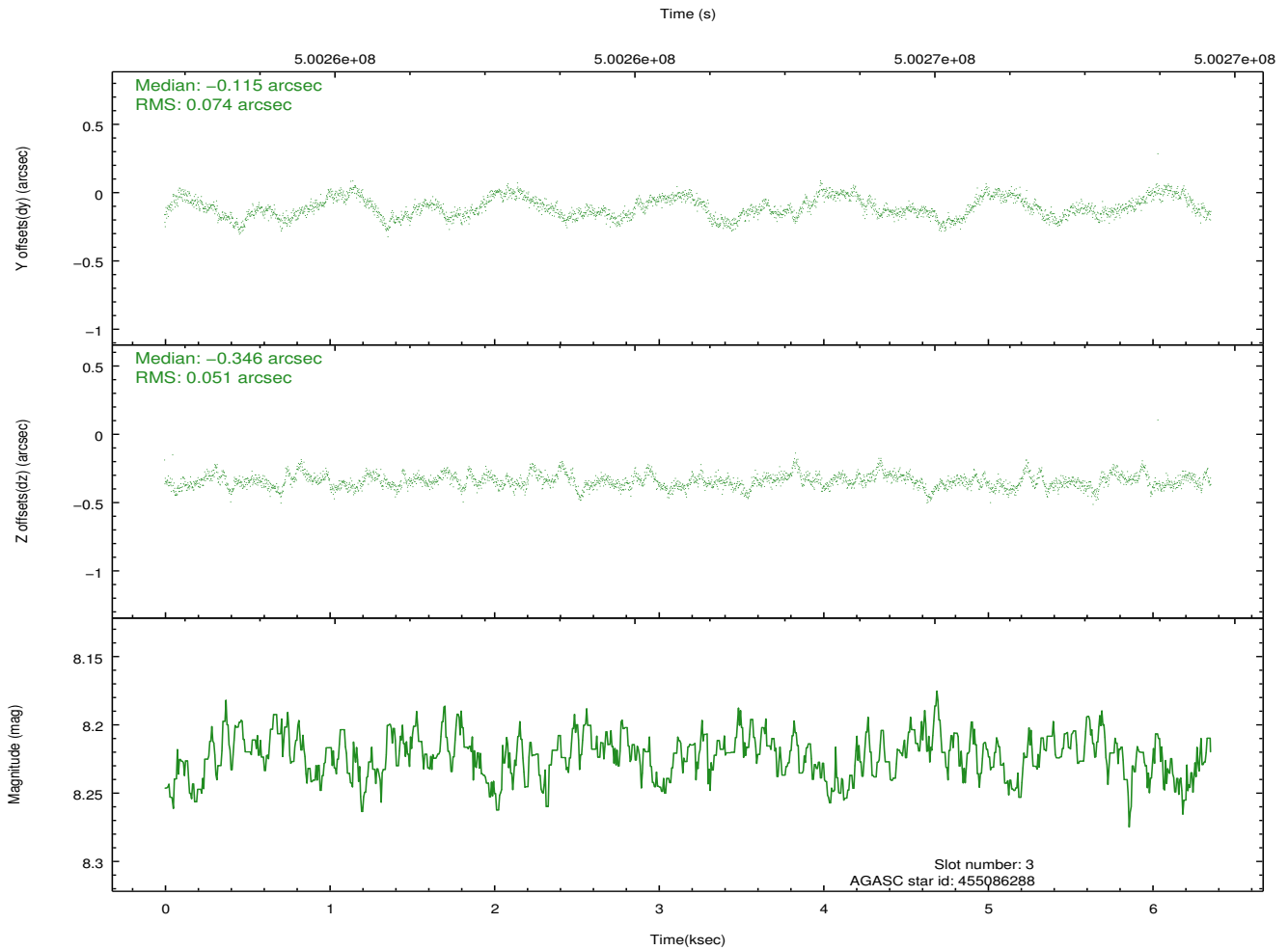
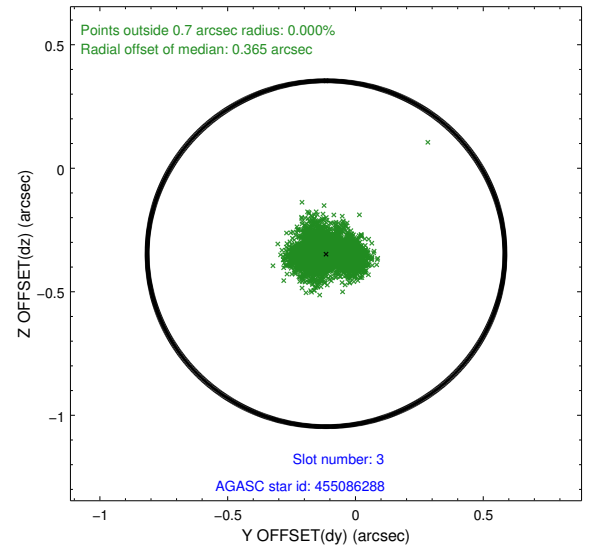
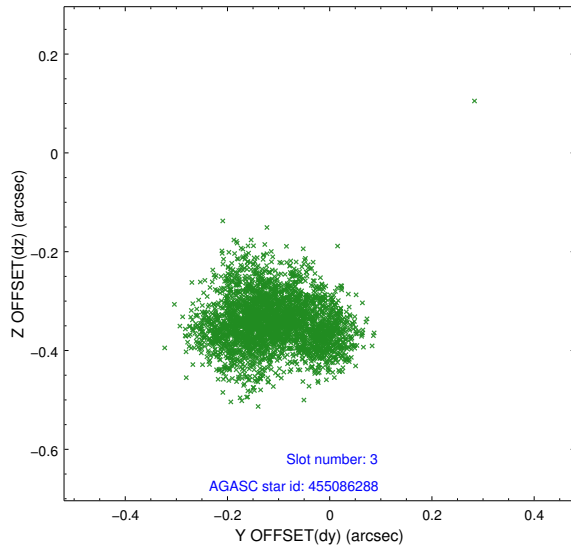


### Slot Statistics

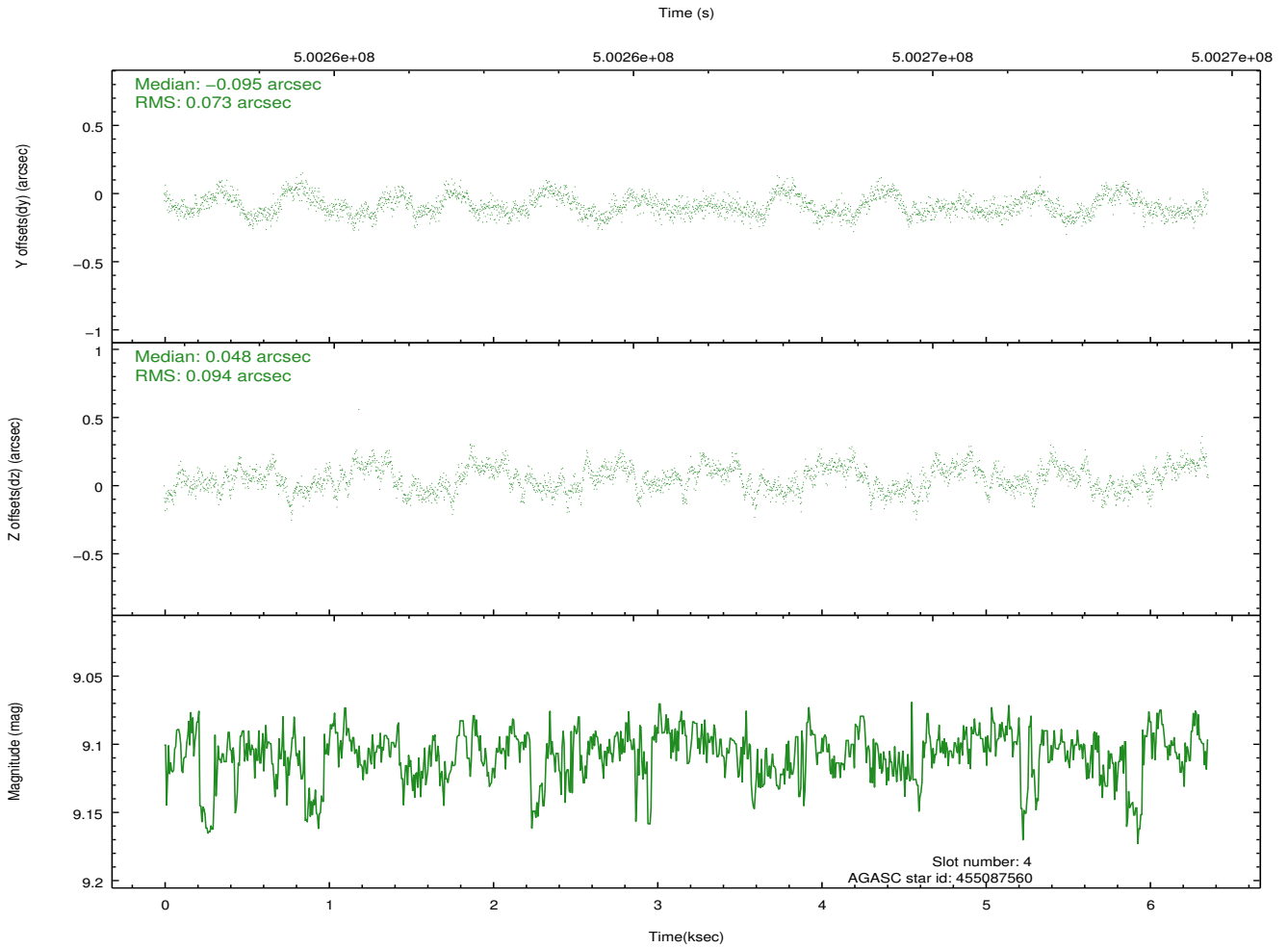
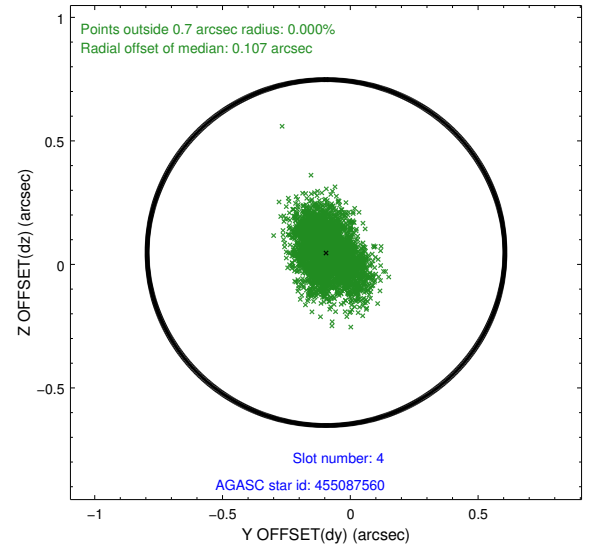
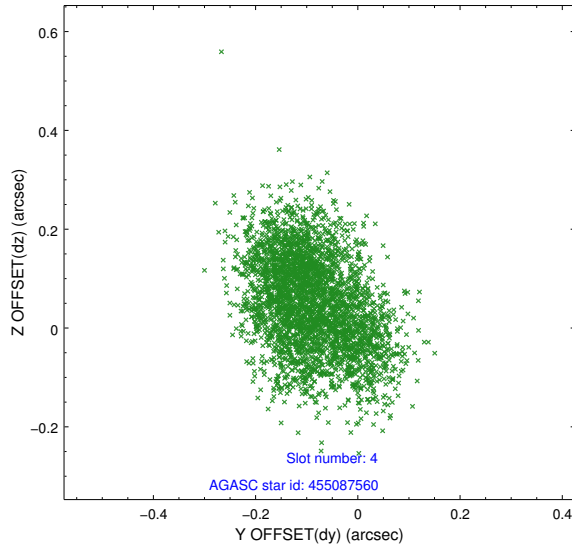
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.07	1551	-0.120	-0.021	0.011	0.018	0.000000	0.000000	-768.11	-1735.95
1	FID		ACIS-S-4	7.16	1551	0.246	0.064	0.006	0.010	0.000000	0.000000	2145.11	171.65
2	FID		ACIS-S-5	7.19	1551	-0.157	-0.034	0.009	0.015	0.000000	0.000000	-1819.80	166.28
3	GUIDE	used	455086288	8.22	3100	-0.115	-0.346	0.101	0.149	215.702797	46.116120	-172.99	1915.72
4	GUIDE	used	455087560	9.11	3097	-0.095	0.048	0.129	0.200	216.163817	45.147976	567.06	-1680.07
5	GUIDE	used	455089920	8.85	3100	0.347	0.213	0.184	0.268	215.305866	45.311512	-1518.92	-835.65
6	GUIDE	used	455091840	9.78	3097	-0.120	0.058	0.188	0.276	216.675913	45.456349	1981.01	-723.18
7	GUIDE	used	455090240	9.10	3099	-0.053	-0.008	0.137	0.223	216.902094	45.073417	2404.49	-2155.74

## 2.4 Star Slots

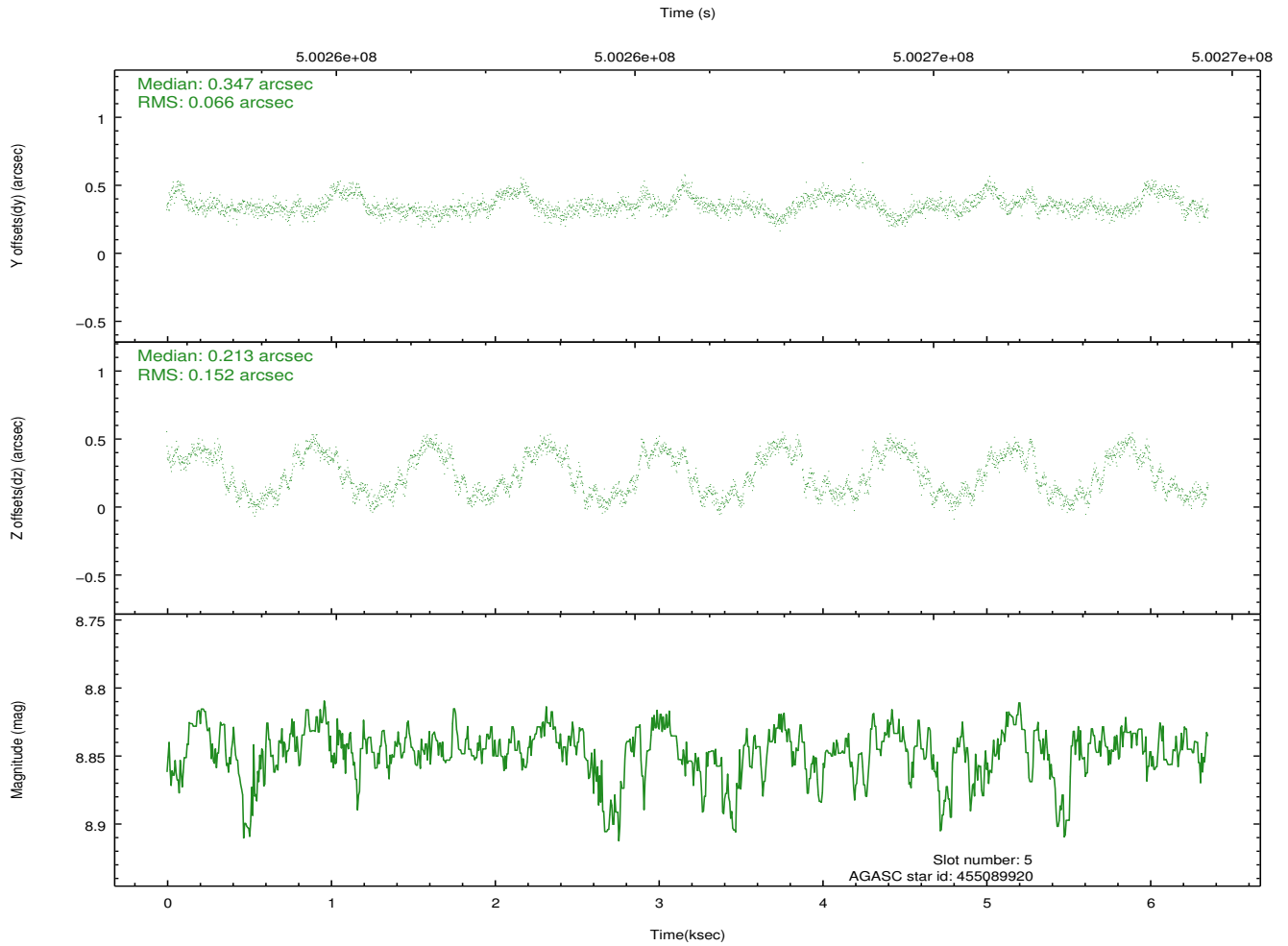
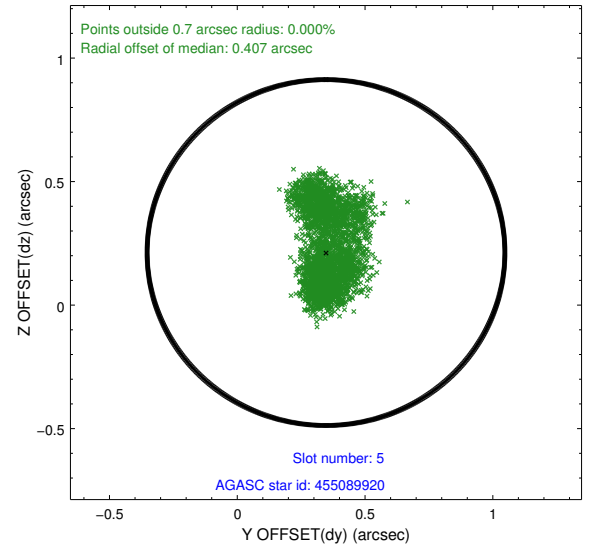
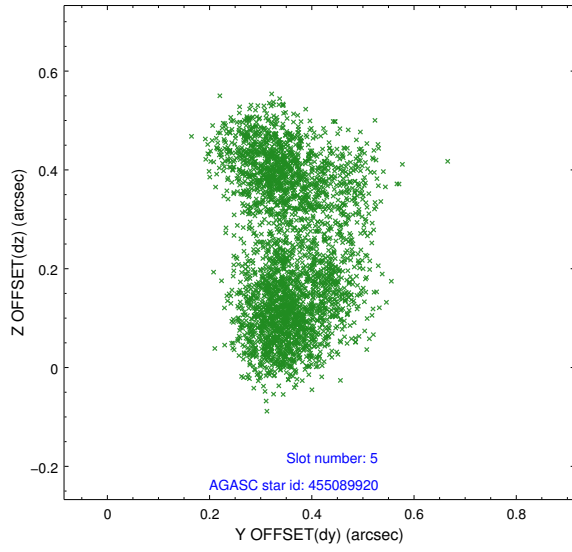
### 2.4.1 Slot 3



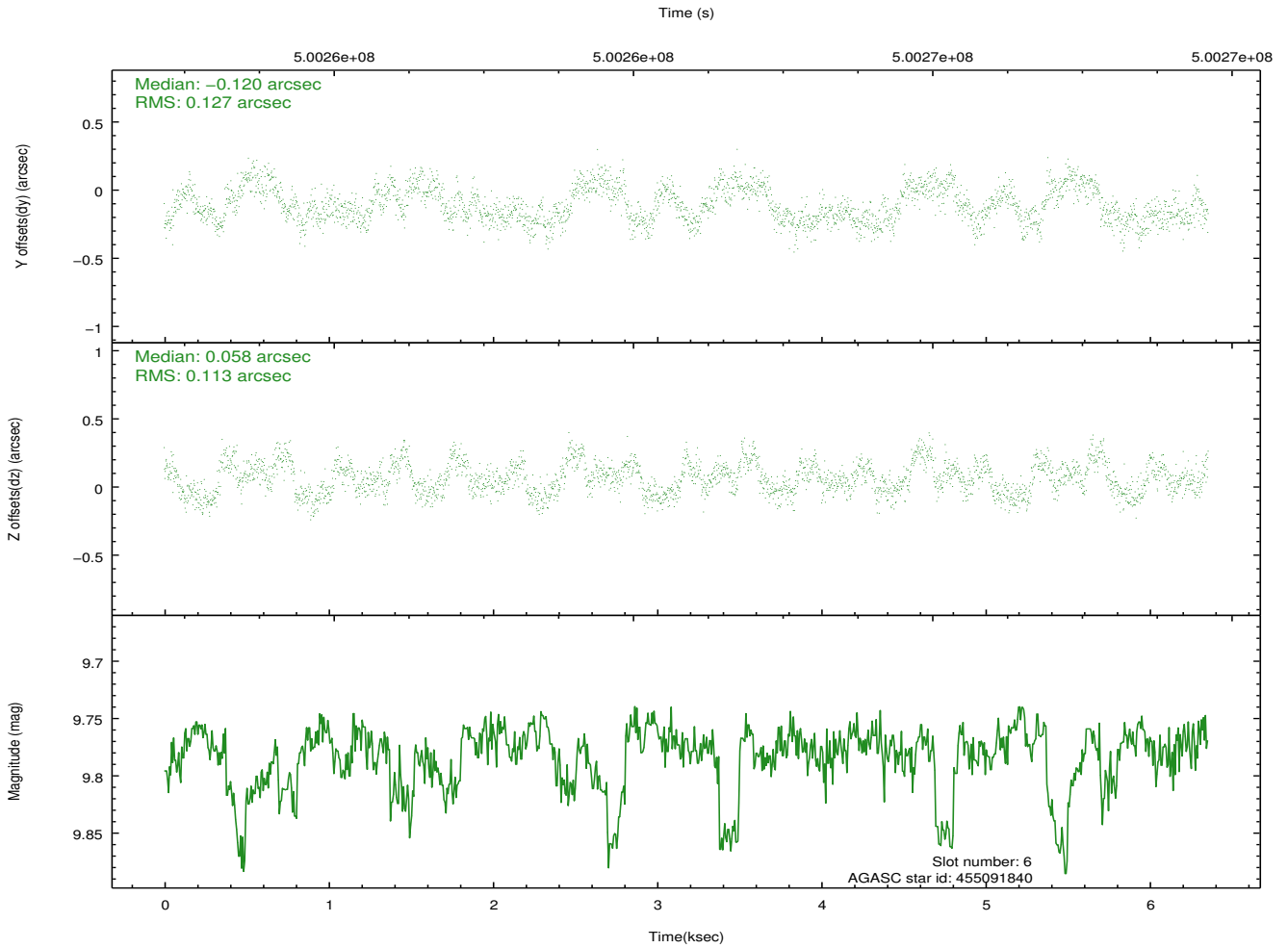
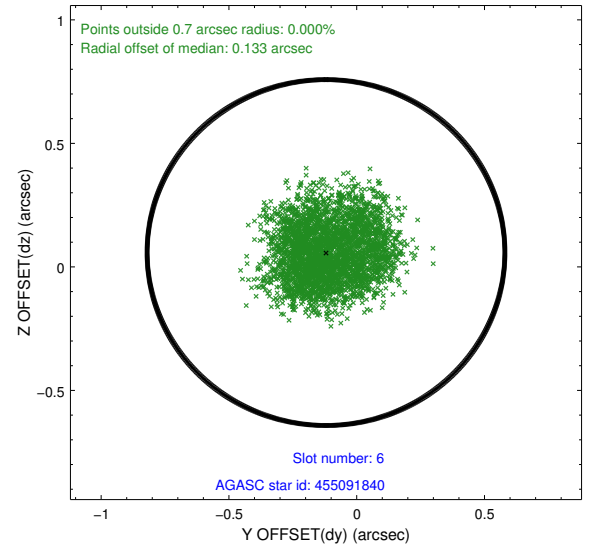
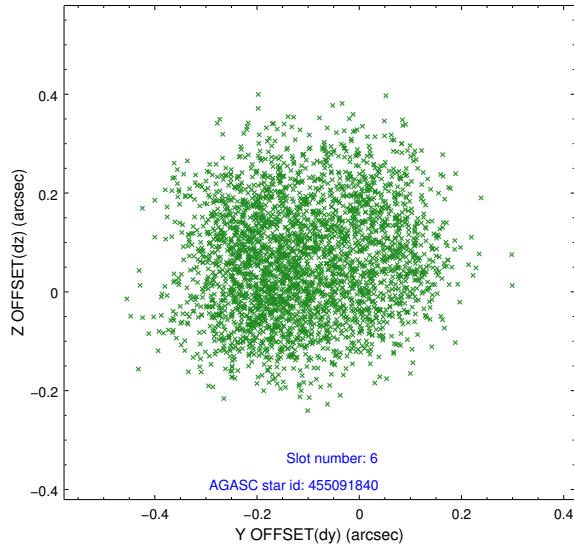
## 2.4.2 Slot 4



### 2.4.3 Slot 5

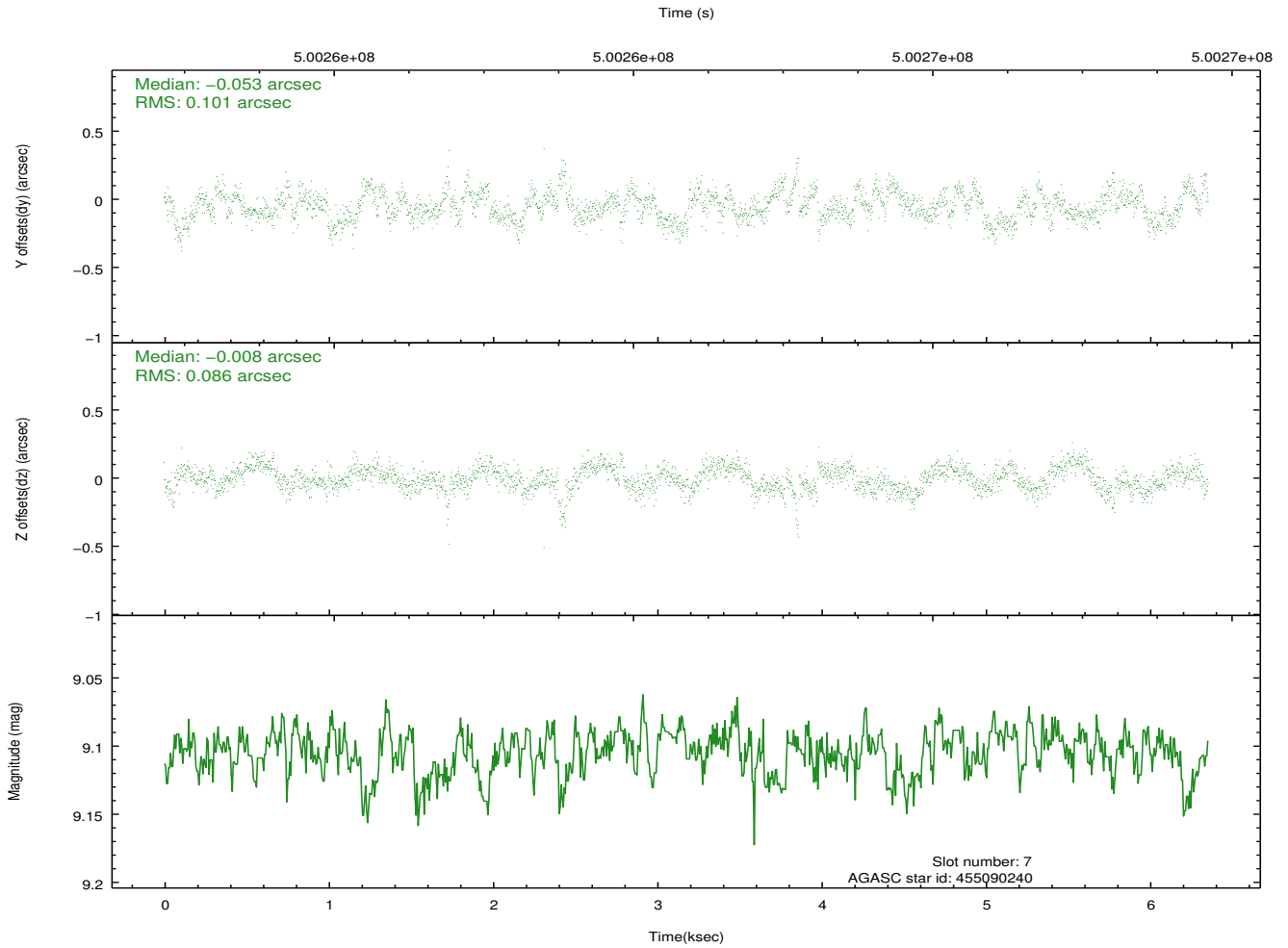
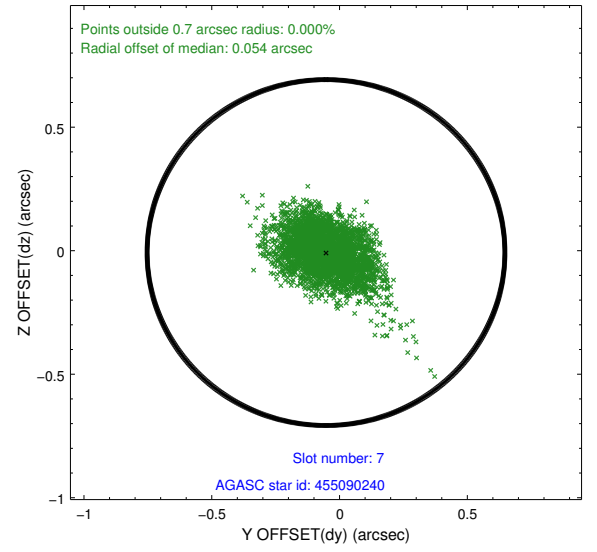
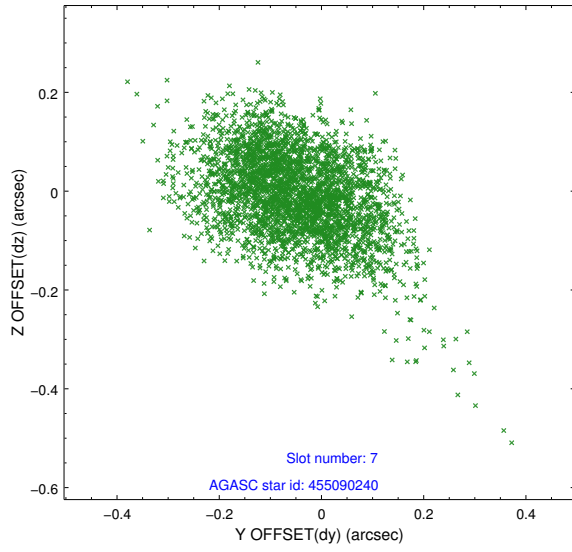


## 2.4.4 Slot 6



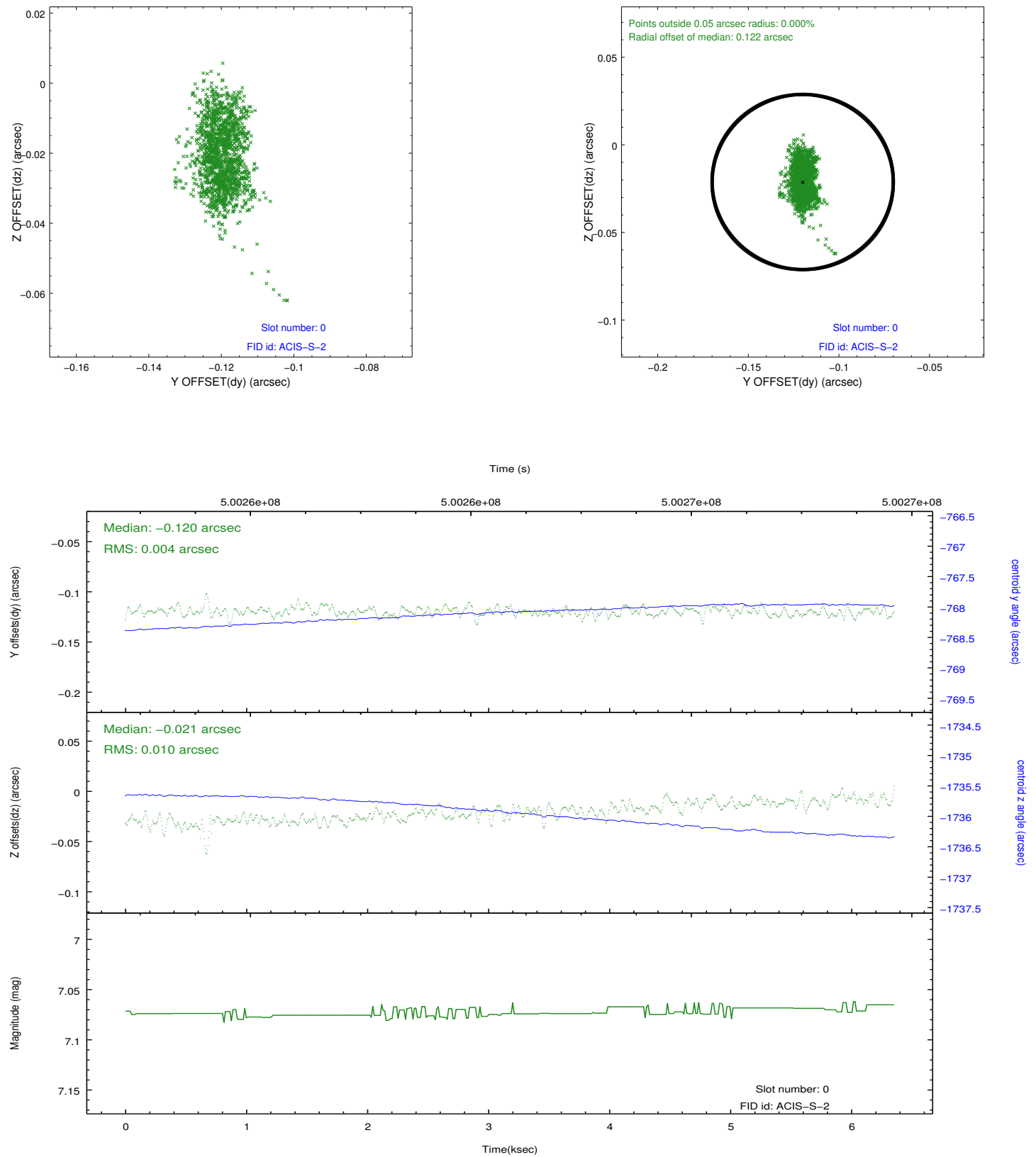


## 2.4.5 Slot 7

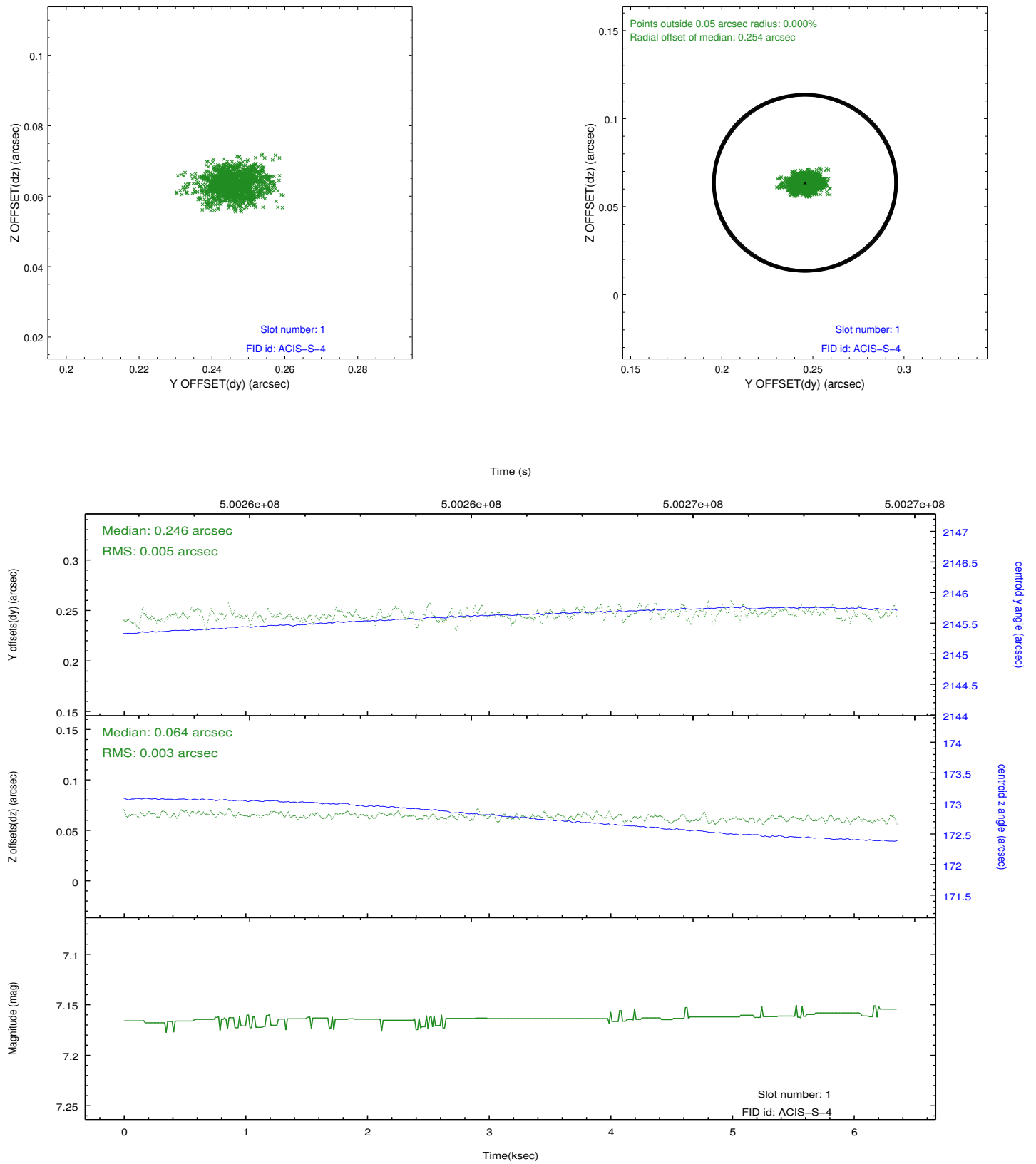


## 2.5 FID Slots

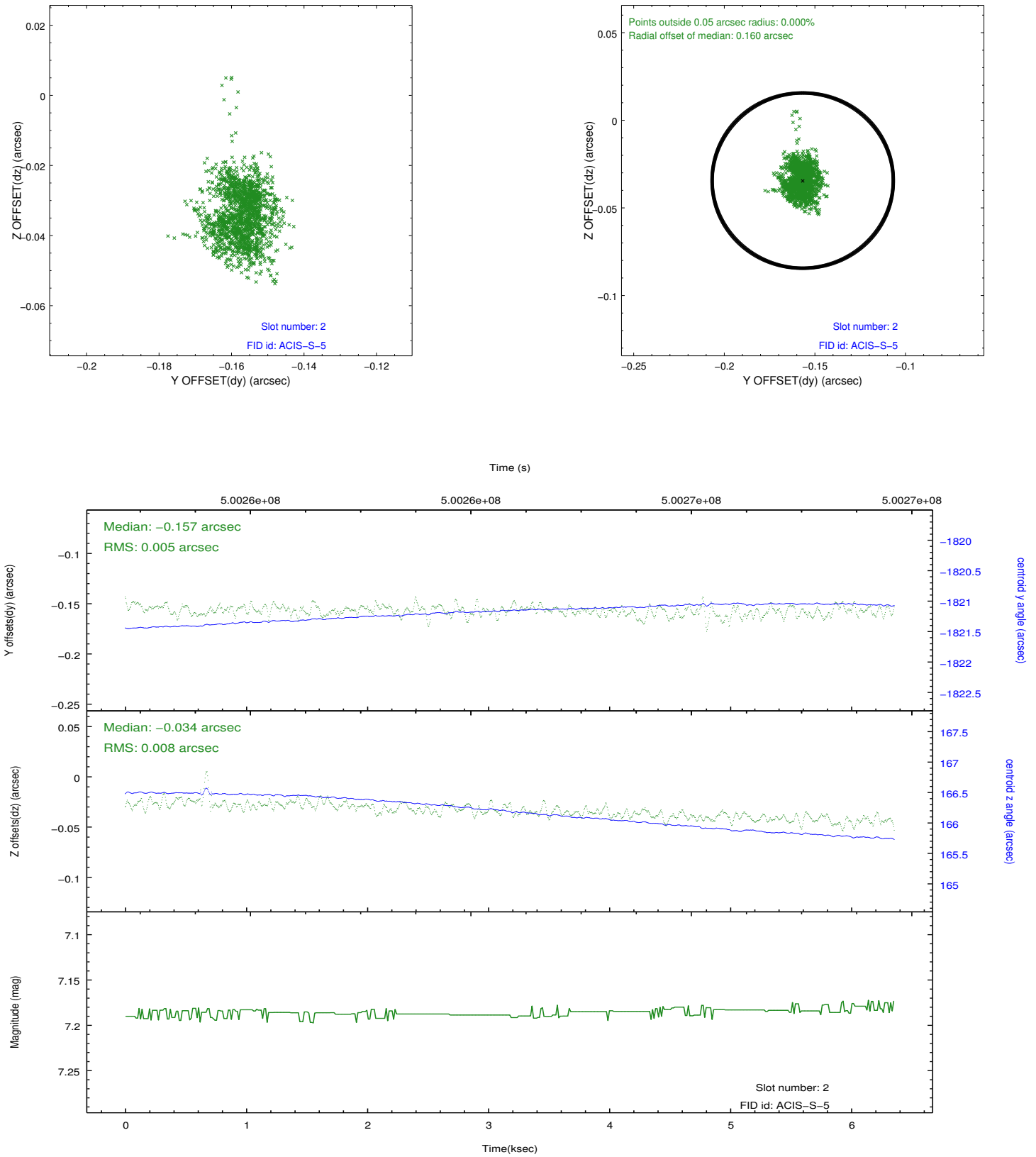
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	6.1916171136498

## A.2 Comments

Window preference met.

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.