

# V&V Reference Report

## L2 ASCDS Version : 10.3.3

Observation 16987 - L2 Version 1  
Chandra X-Ray Center

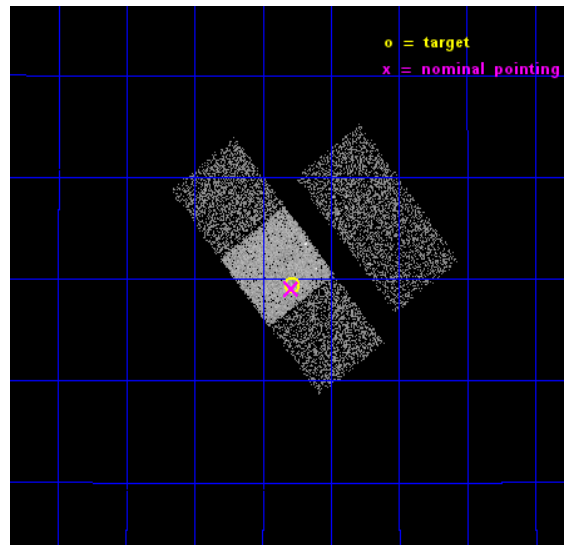
L2 Processing Date : Mar 23 2015

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# 1 Front

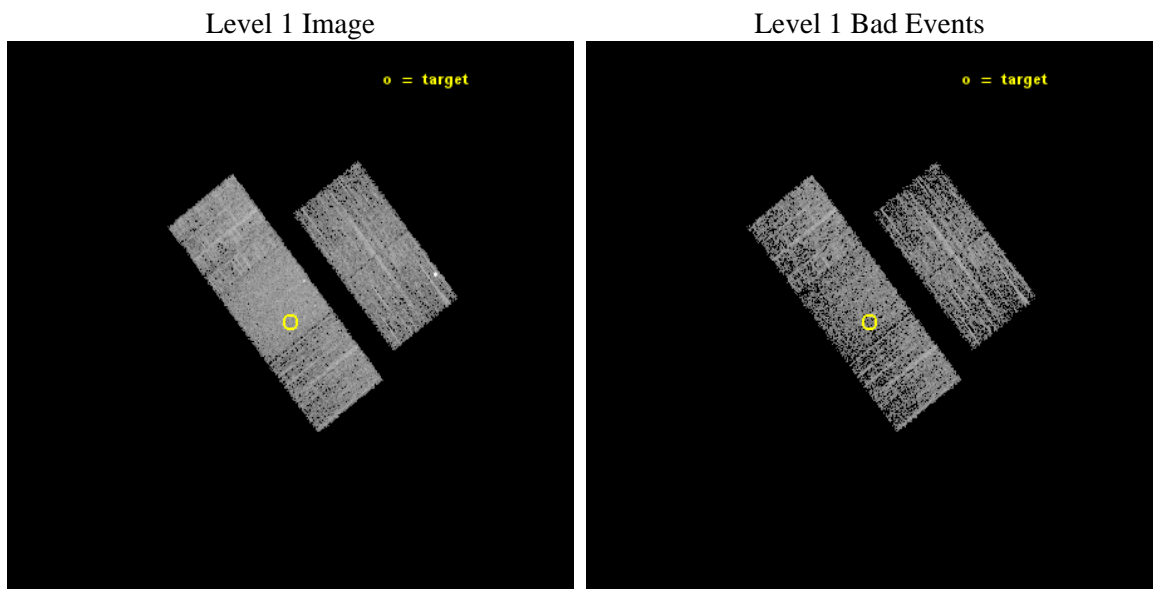
seq_num	601180	Sequence number
obs_id	16987	Observation id
title	Super-massive black holes and nuclear star clusters in late type galaxies	Proposal title
observer	Elena Gallo	Principal investigator
object	NGC3501	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	165.697083	Observer's specified target RA [deg]
dec_targ	17.989528	Observer's specified target Dec [deg]
ra_nom	165.69723346052	Nominal RA [deg]
dec_nom	17.984113481972	Nominal Dec [deg]
roll_nom	232.15648304381	Nominal Roll [deg]
revision	1	Processing version of data
ontime	4862.6502906084	Sum of GTIs [s]
livetime	4799.1161847305	Livetime [s]
ontime2	4862.4861305952	Sum of GTIs [s]
ontime3	4862.5682106018	Sum of GTIs [s]
ontime6	4862.6092506647	Sum of GTIs [s]
ontime7	4862.6502906084	Sum of GTIs [s]
ontime8	4862.5271706581	Sum of GTIs [s]
l2events	21606	Number of level 2 events



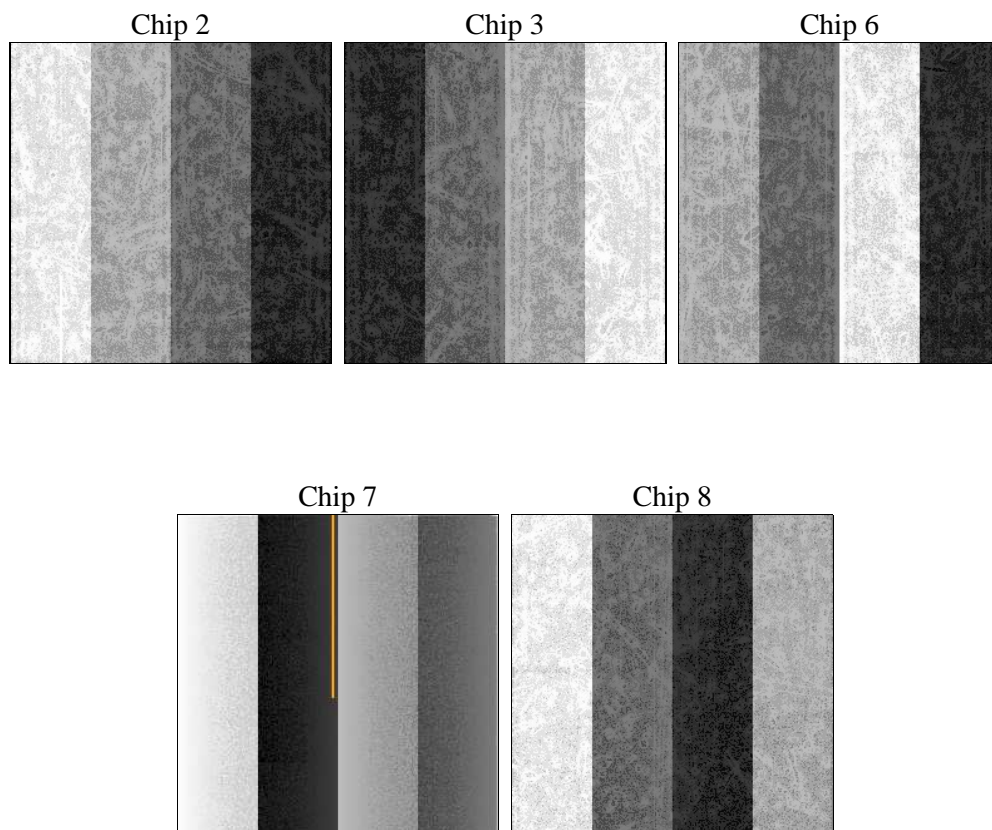
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	4800.000000	[s] Scheduled observation exposure time
ascdsver	10.3.3	Processing system revision	ontime	4862.6502906084	Sum of GTIs [s]
caldsver	4.6.7	&#160	ontime2	4862.4861305952	Sum of GTIs [s]
date	2015-03-23T23:51:23	Date and time of file creation	ontime3	4862.5682106018	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	4862.6092506647	Sum of GTIs [s]
			ontime7	4862.6502906084	Sum of GTIs [s]
			ontime8	4862.5271706581	Sum of GTIs [s]
			l1events	126129	Number of level 1 events

### 2.1.4 Events

	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	22877	20347	21925	30558	30422
rejected events	19039	17903	19321	17597	22600
rejected %	83%	87%	88%	57%	74%

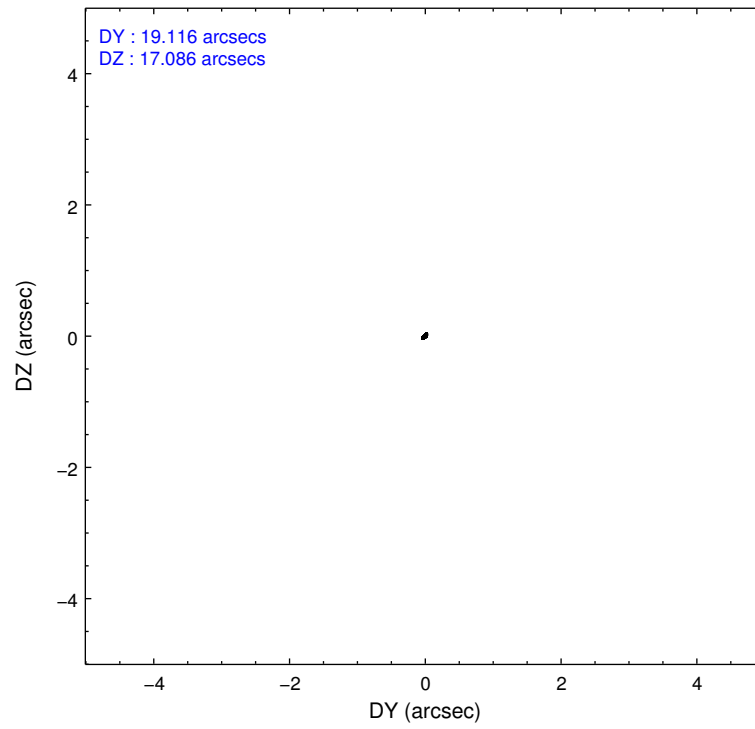
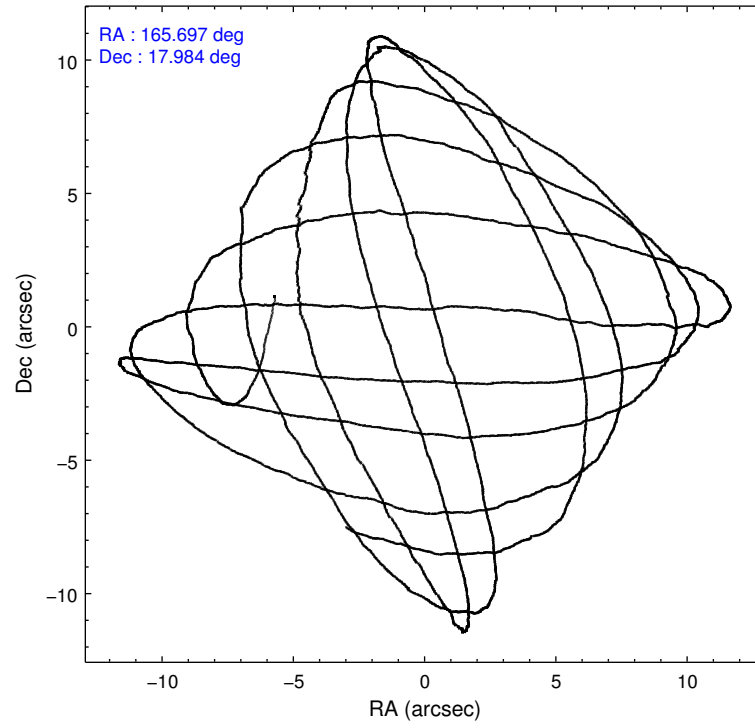
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	2373	886	836	1096	2051
	10%	4%	3%	3%	6%
grade 1 events	16	11	9	33	13
	0%	0%	0%	0%	0%
grade 2 events	501	511	607	2734	1872
	2%	2%	2%	8%	6%
grade 3 events	221	239	255	992	759
	0%	1%	1%	3%	2%
grade 4 events	236	252	244	991	815
	1%	1%	1%	3%	2%
grade 5 events	902	1102	1148	2923	1755
	3%	5%	5%	9%	5%
grade 6 events	511	559	664	7168	2329
	2%	2%	3%	23%	7%
grade 7 events	18117	16787	18162	14621	20828
	79%	82%	82%	47%	68%

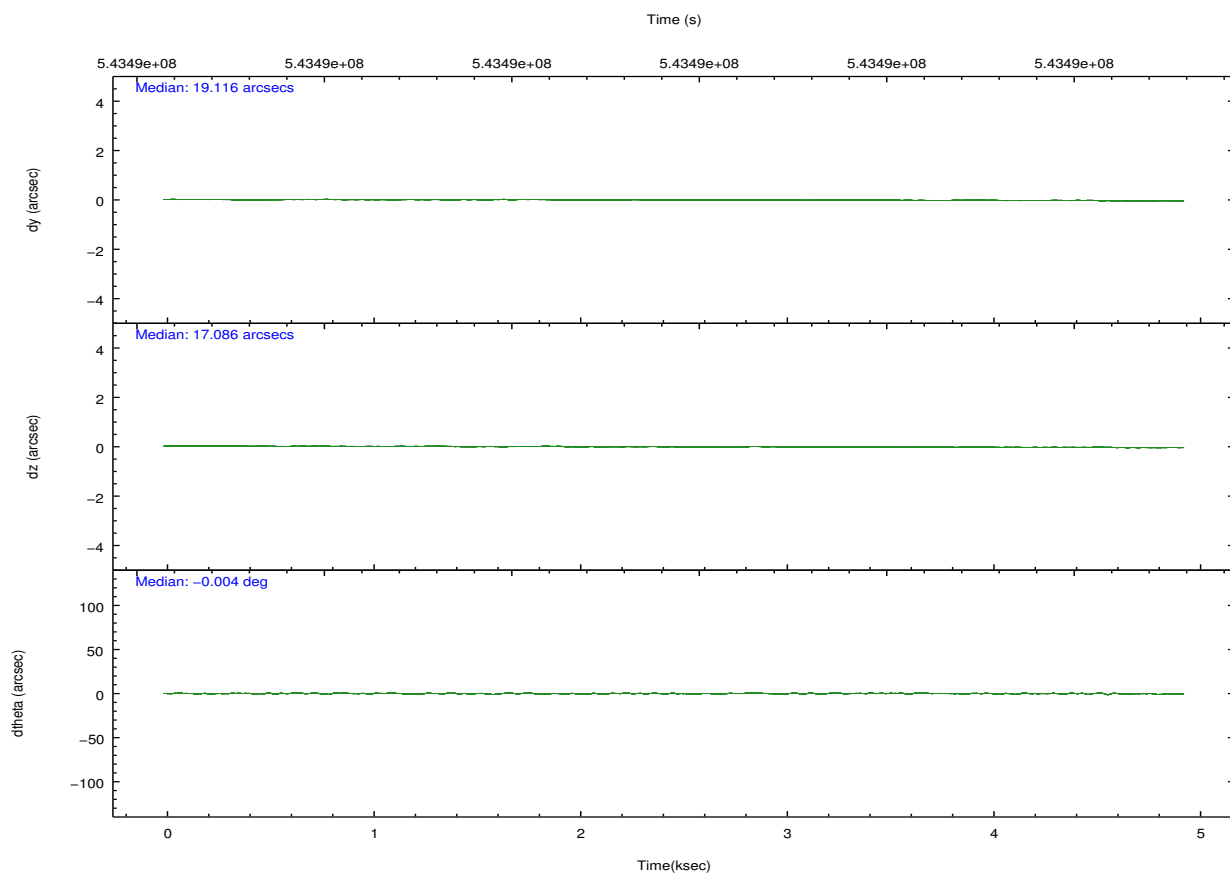
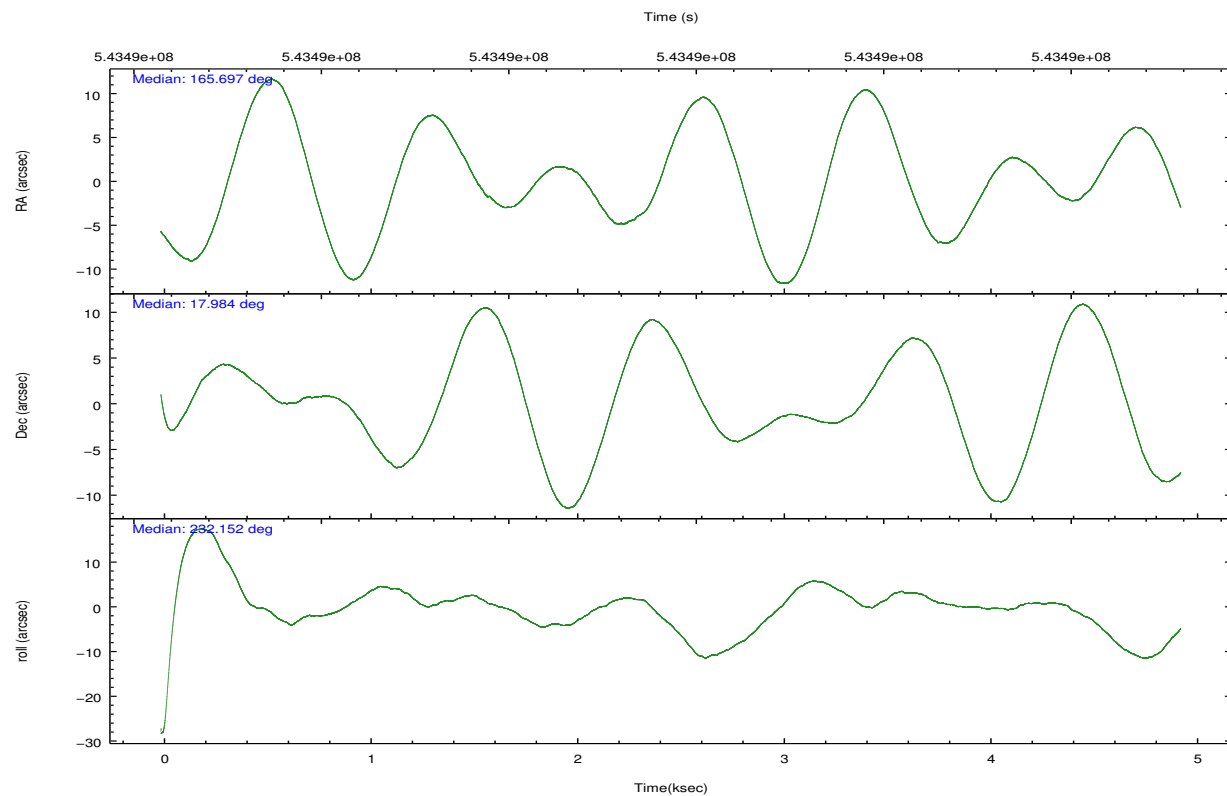


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	165.700761	165.6972334605193	CCD I2 on	O2	Y
[deg] Pointing Dec	18.011324	17.98411348197234	CCD I3 on	O1	Y
[deg] Pointing Roll	231.998858	232.1564830438063	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	543486519.184000	543485315.39464	CCD S5 on	N	N
Observation start date	2015-03-23T08:27:32	2015-03-23T08:08:35	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	543491319.184000	543492374.57004	On-chip summing requested	N	N
Observation end date	2015-03-23T09:47:32	2015-03-23T10:06:14	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



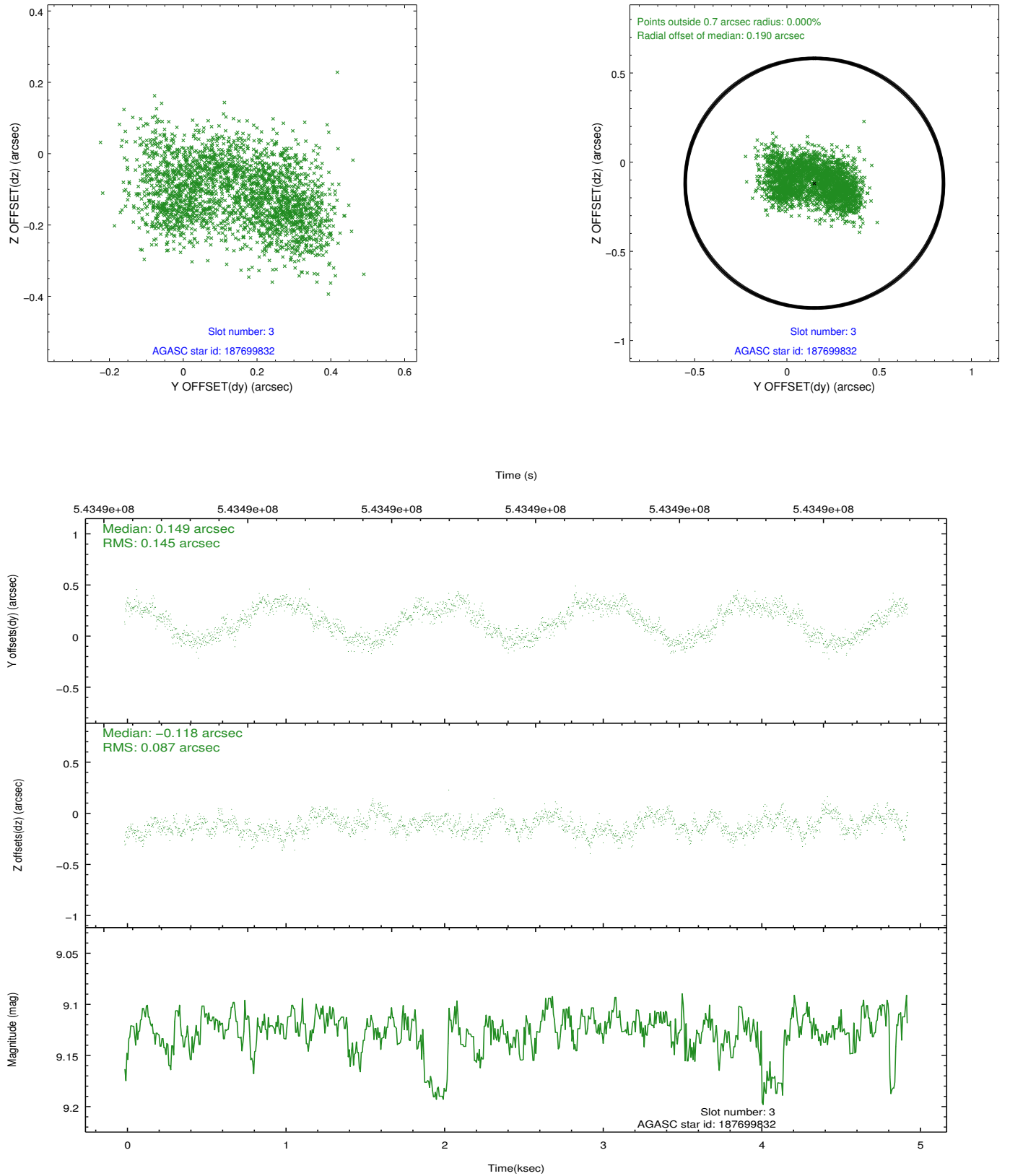


### Slot Statistics

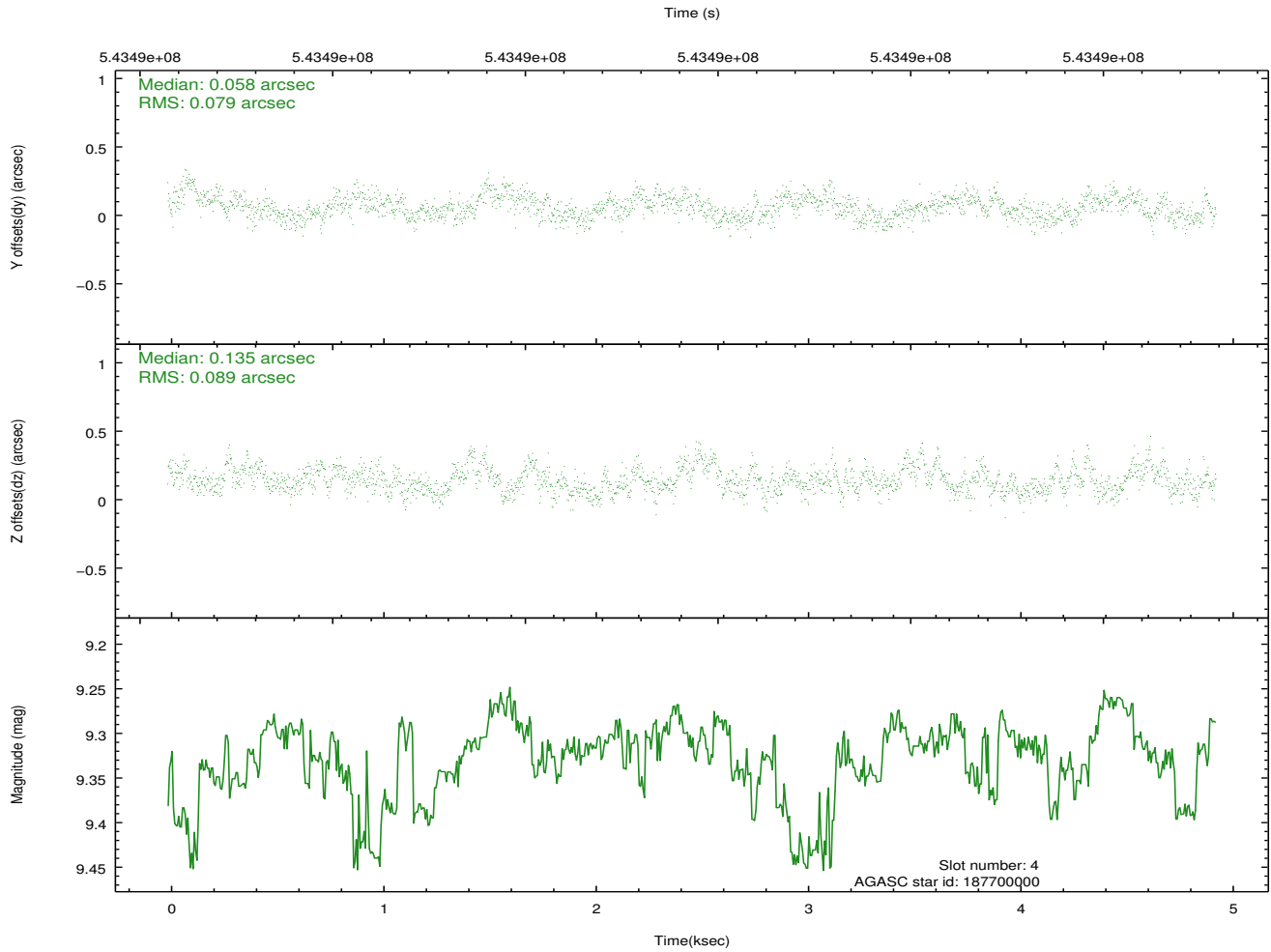
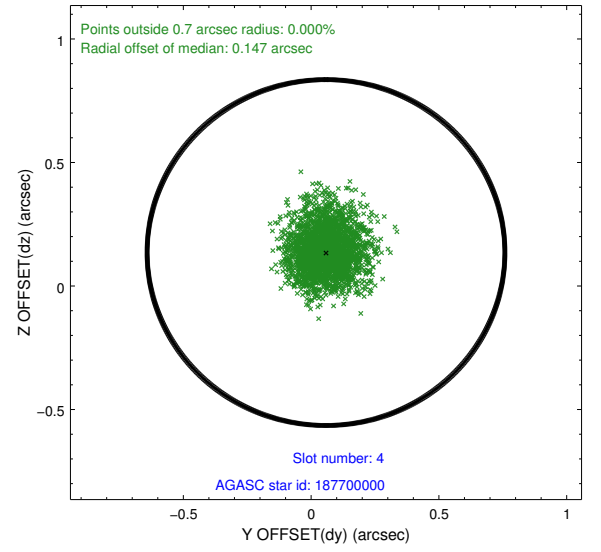
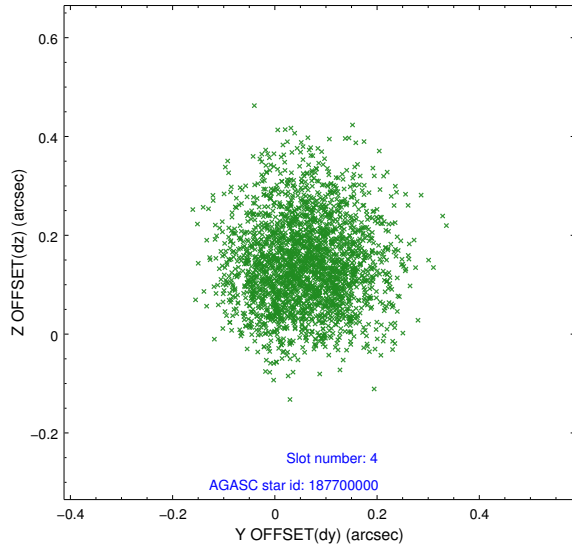
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.13	1204	-0.127	-0.066	0.007	0.012	0.000000	0.000000	-772.34	-1738.53
1	FID		ACIS-S-4	7.22	1204	0.358	0.079	0.006	0.011	0.000000	0.000000	2140.87	168.79
2	FID		ACIS-S-5	7.24	1204	-0.262	-0.005	0.007	0.012	0.000000	0.000000	-1823.72	163.82
3	GUIDE	used	187699832	9.12	2408	0.149	-0.118	0.186	0.271	165.325101	17.709551	1648.93	-346.93
4	GUIDE	used	187700000	9.32	2404	0.058	0.135	0.127	0.204	165.034200	18.153614	998.47	-2114.16
5	GUIDE	used	187828272	9.82	2389	-0.027	-0.007	0.222	0.343	166.085446	17.900090	-495.39	1283.23
6	GUIDE	used	187829096	9.32	2408	0.041	0.098	0.159	0.259	165.700605	18.348448	-955.27	-745.65
7	GUIDE	used	187433640	8.63	2408	-0.210	-0.108	0.097	0.163	165.432030	17.359744	2416.45	716.18

## 2.4 Star Slots

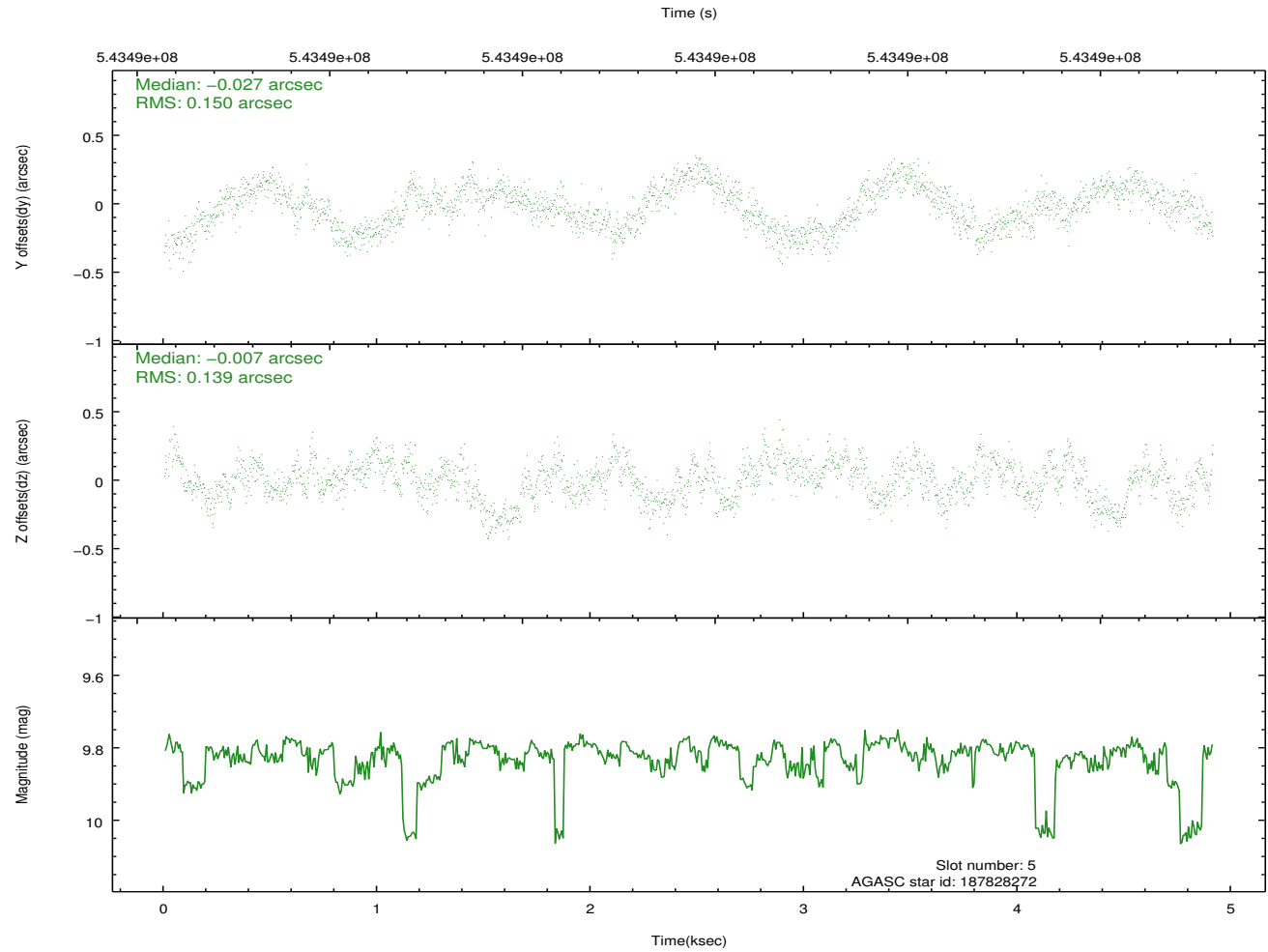
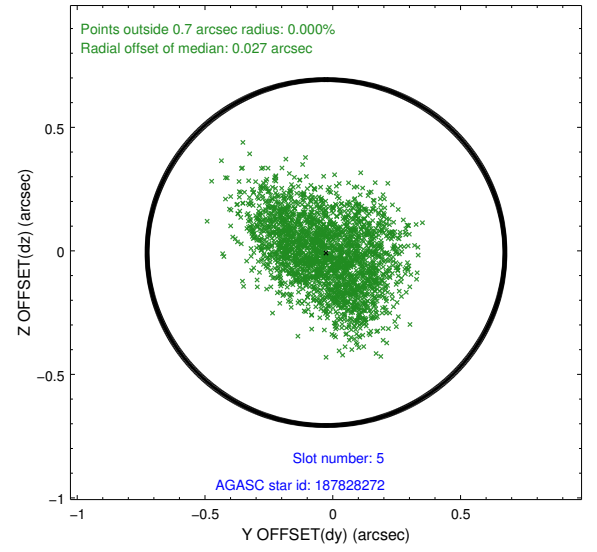
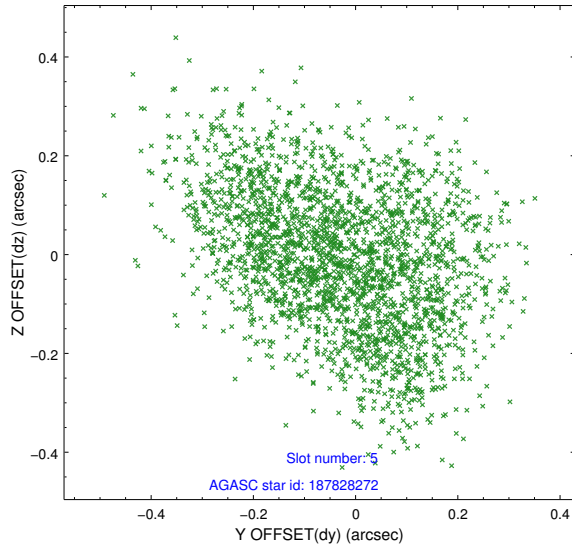
### 2.4.1 Slot 3



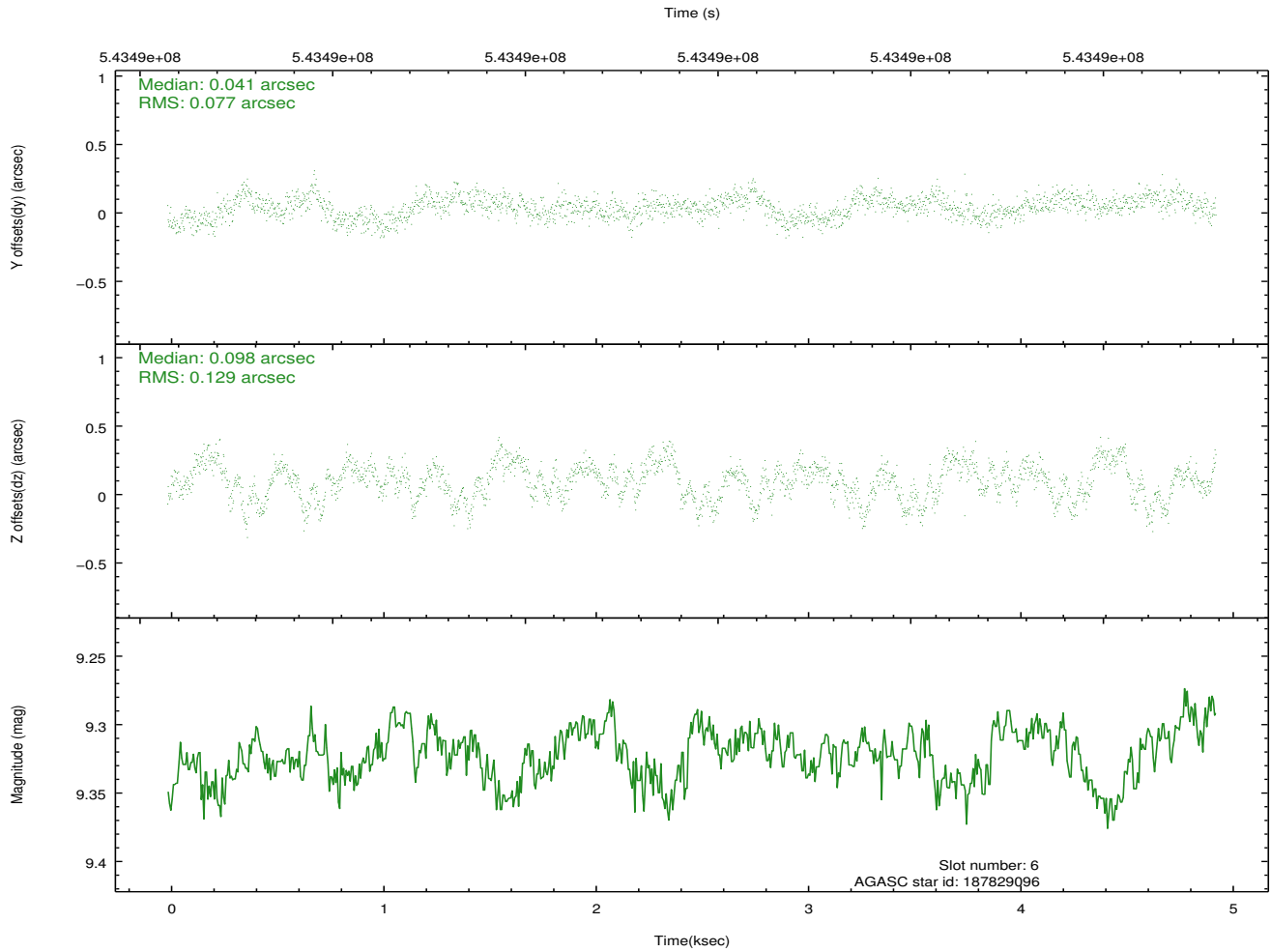
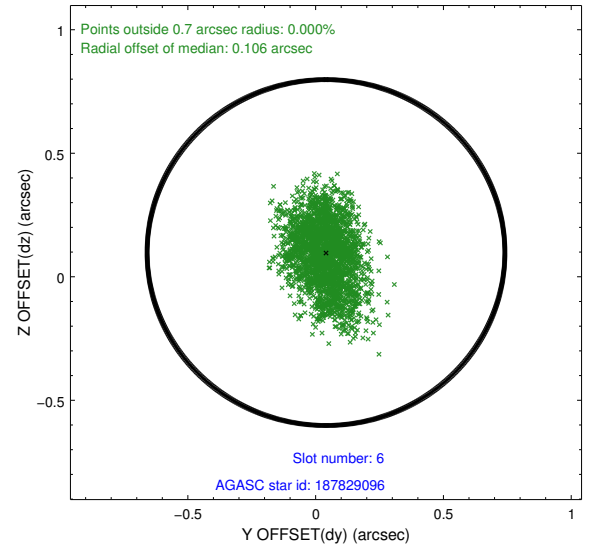
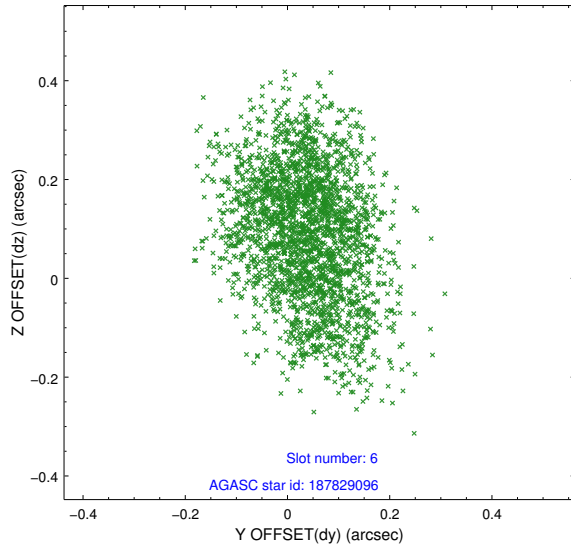
## 2.4.2 Slot 4



### 2.4.3 Slot 5

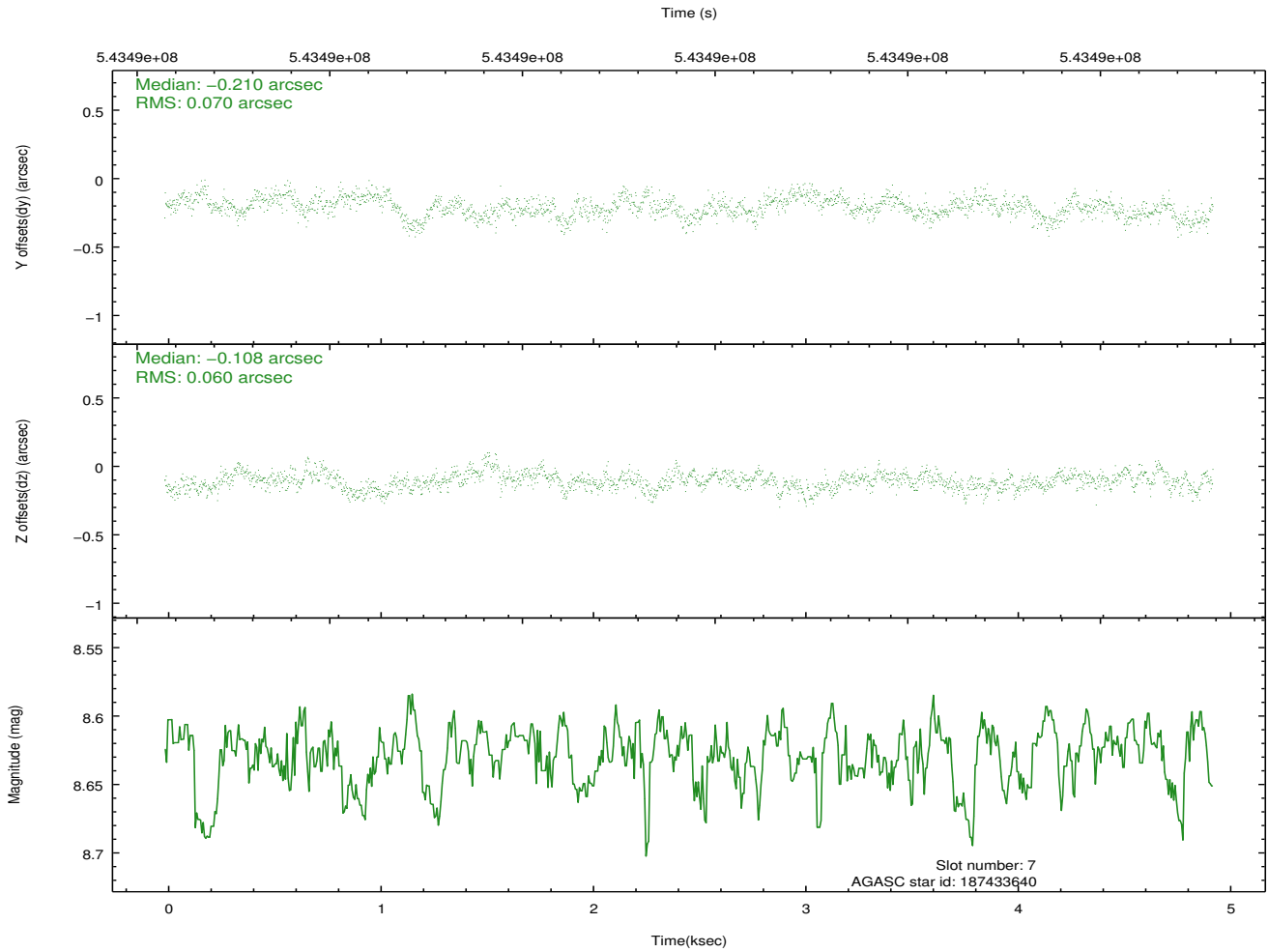
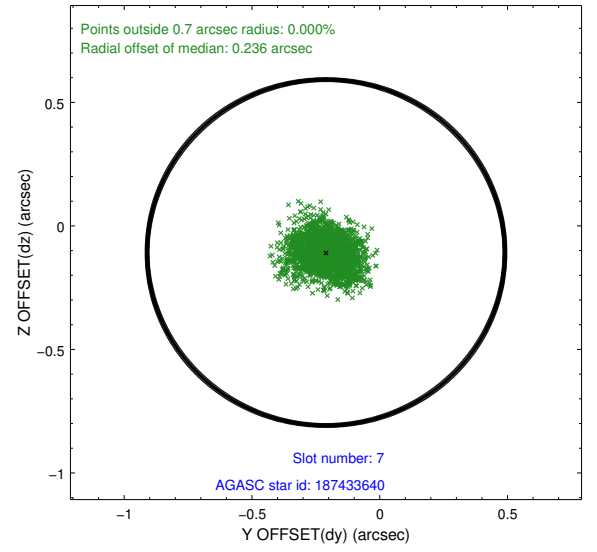
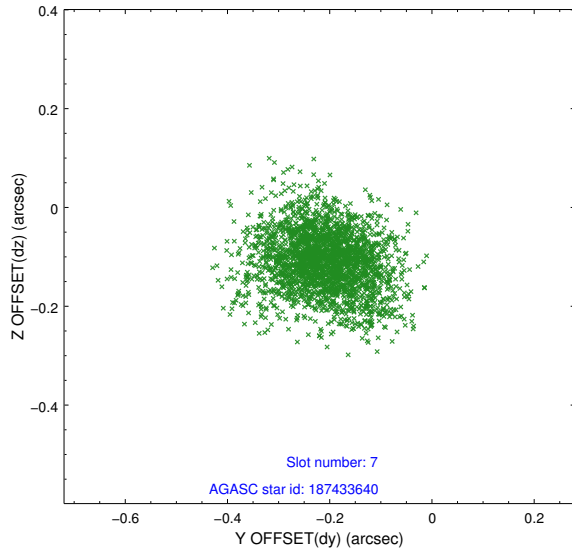


## 2.4.4 Slot 6



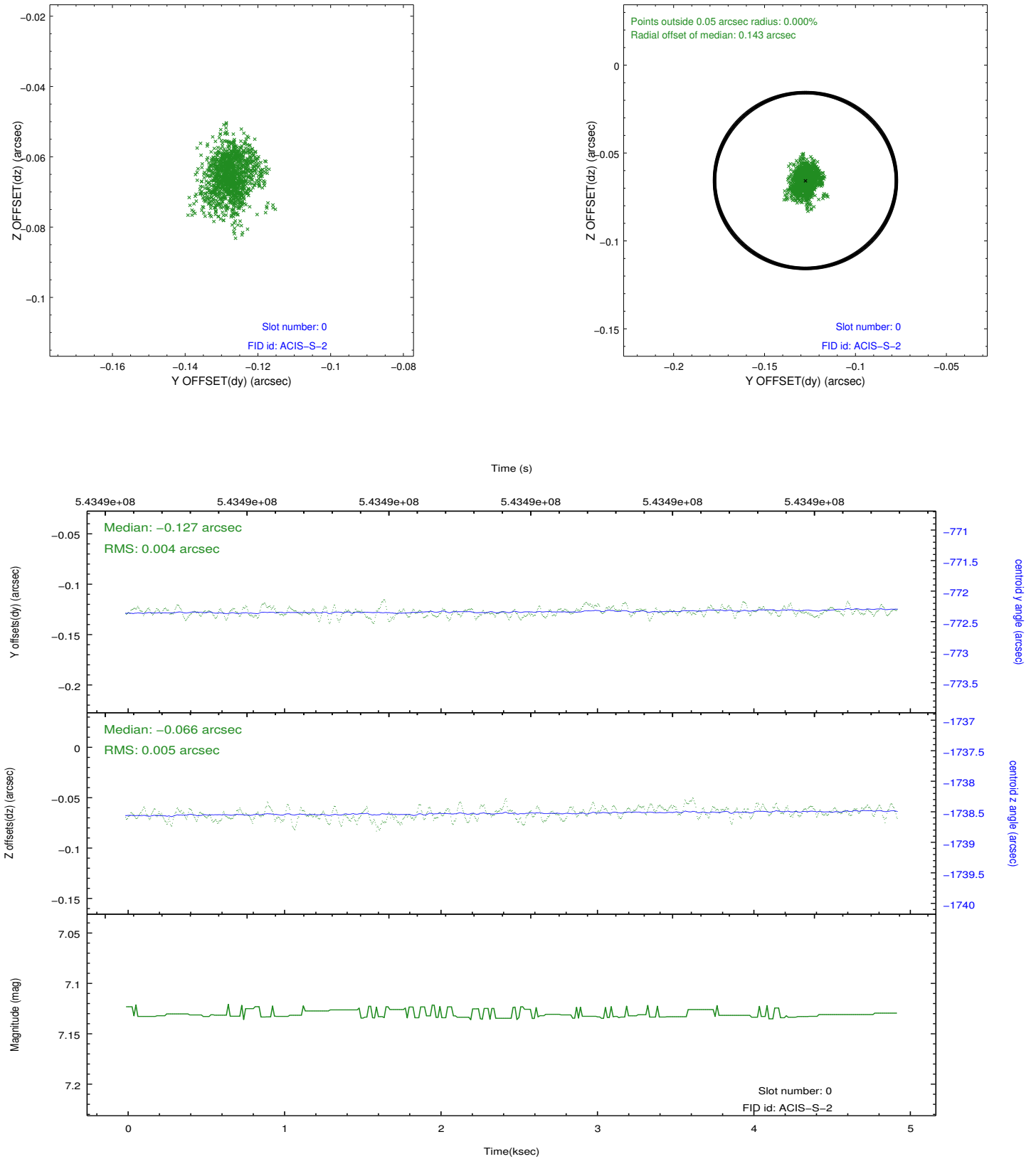


## 2.4.5 Slot 7

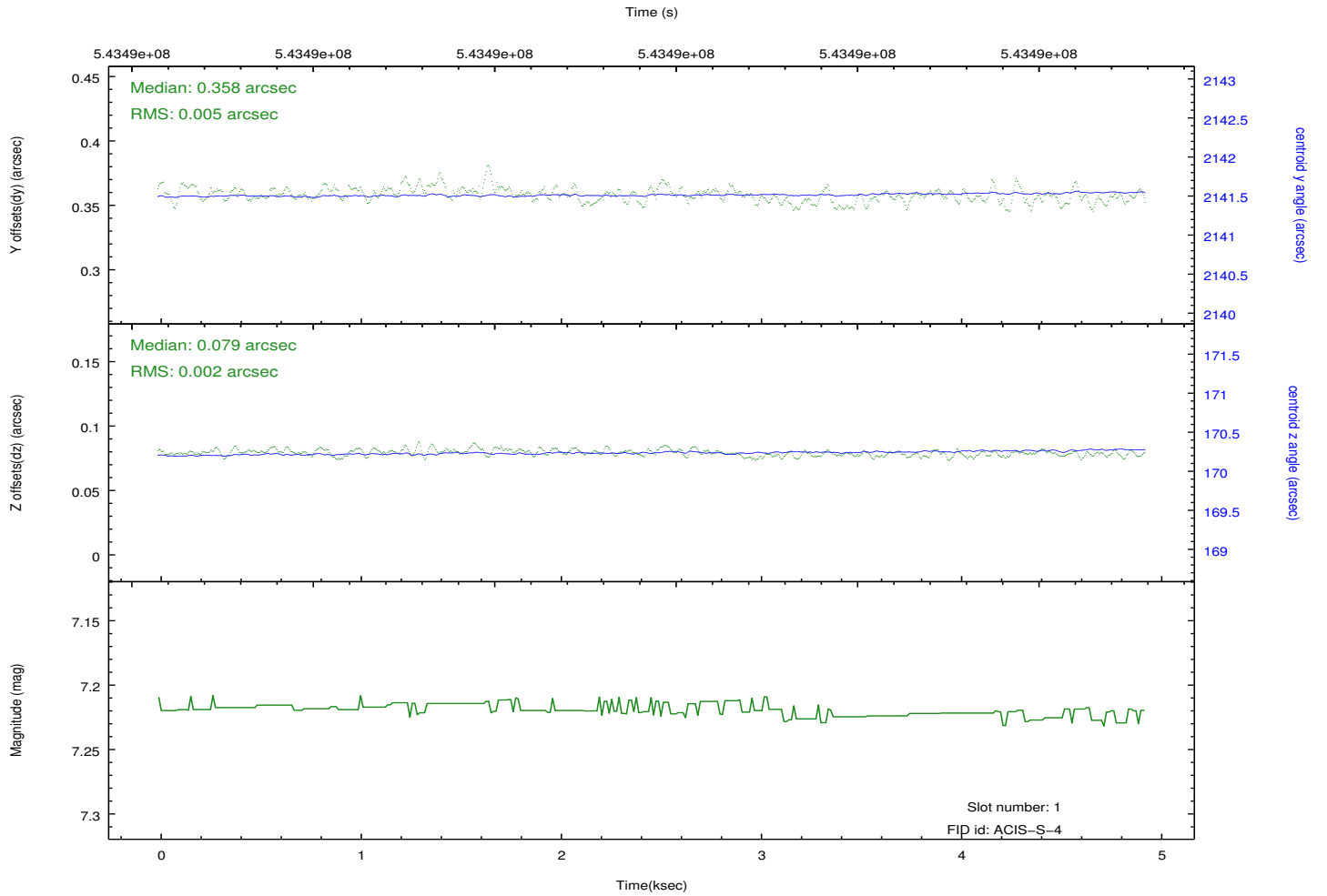
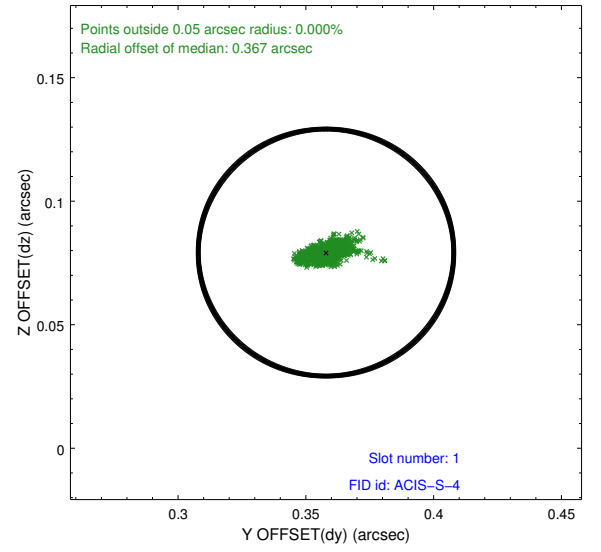
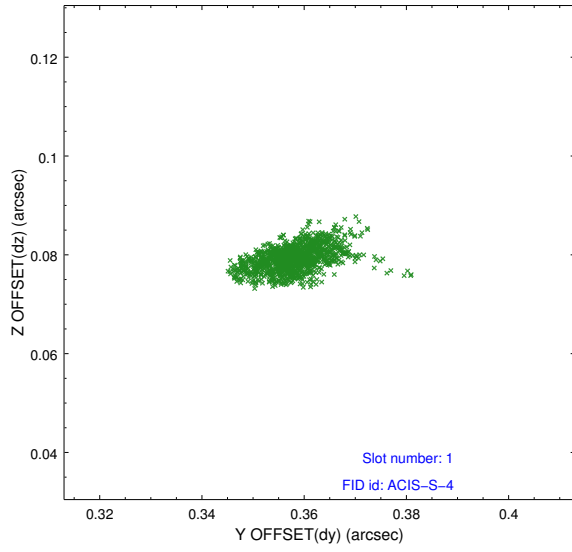


## 2.5 FID Slots

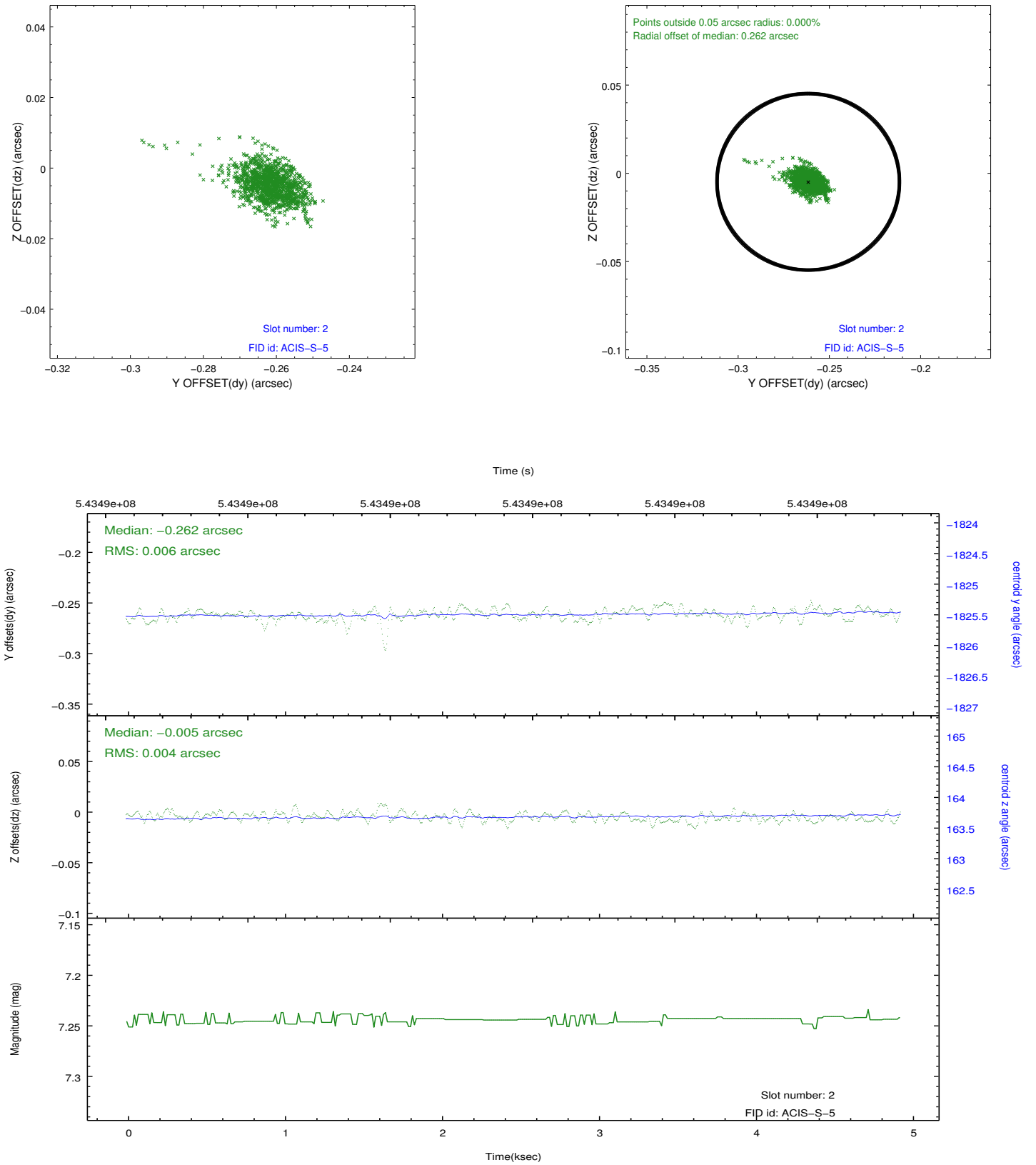
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.03.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.8626502906084

### A.2 Comments