

# V&V Reference Report

## L2 ASCDS Version : 10.4.1

Observation 17157 - L2 Version 1  
Chandra X-Ray Center

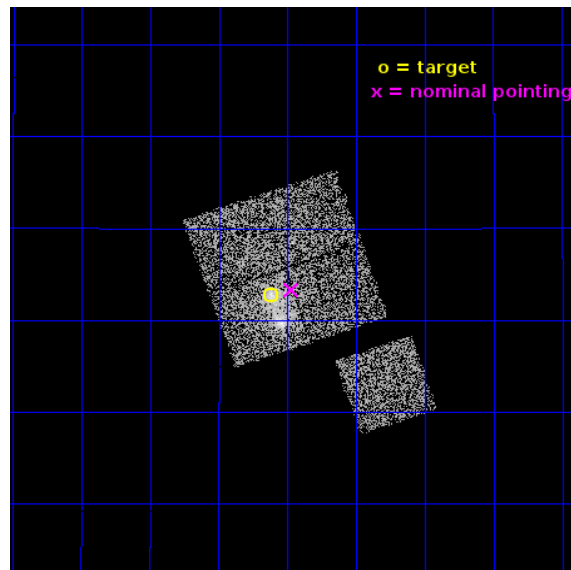
L2 Processing Date : Aug 30 2015

## 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

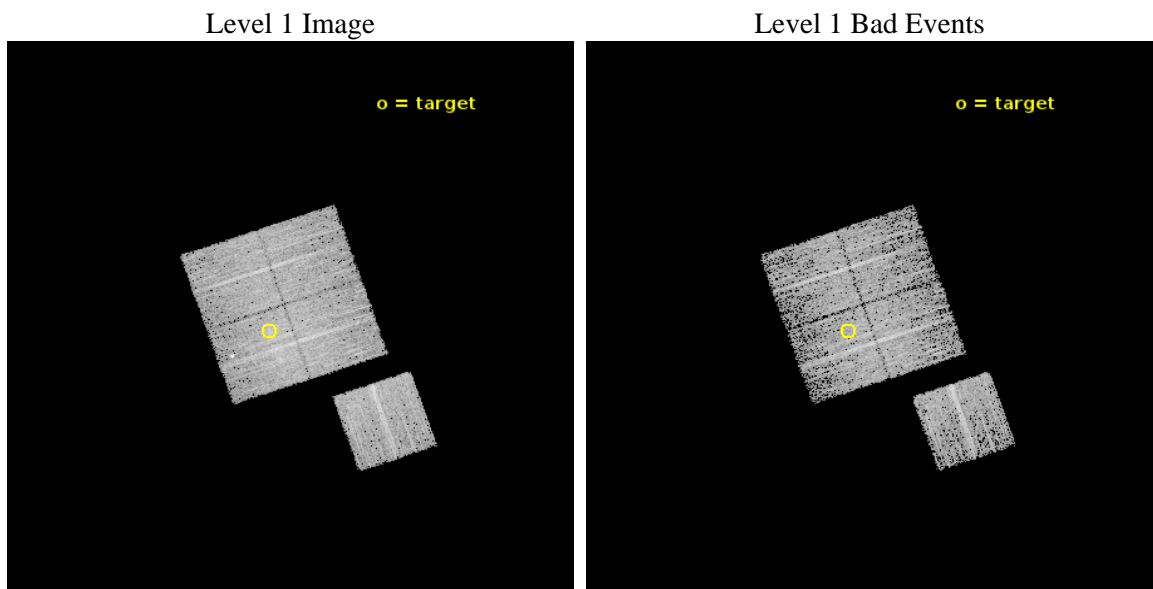
seq_num	801445	Sequence number
obs_id	17157	Observation id
title	Chandra Calibration of the Richness-Mass Relation of Galaxy Clusters: Enabling Cluster Cosmology with the DES	Proposal title
observer	Eduardo Rozo	Principal investigator
object	RM J230707.5+163246.1	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	346.78125	Observer's specified target RA [deg]
dec_targ	16.546139	Observer's specified target Dec [deg]
ra_nom	346.74280115025	Nominal RA [deg]
dec_nom	16.555456828511	Nominal Dec [deg]
roll_nom	161.08773130261	Nominal Roll [deg]
revision	1	Processing version of data
ontime	5877.6000453234	Sum of GTIs [s]
livetime	5800.804873705	Livetime [s]
ontime0	5877.6000453234	Sum of GTIs [s]
ontime1	5877.6000453234	Sum of GTIs [s]
ontime2	5877.6000453234	Sum of GTIs [s]
ontime3	5877.6000453234	Sum of GTIs [s]
ontime6	5877.6000453234	Sum of GTIs [s]
l2events	17854	Number of level 2 events



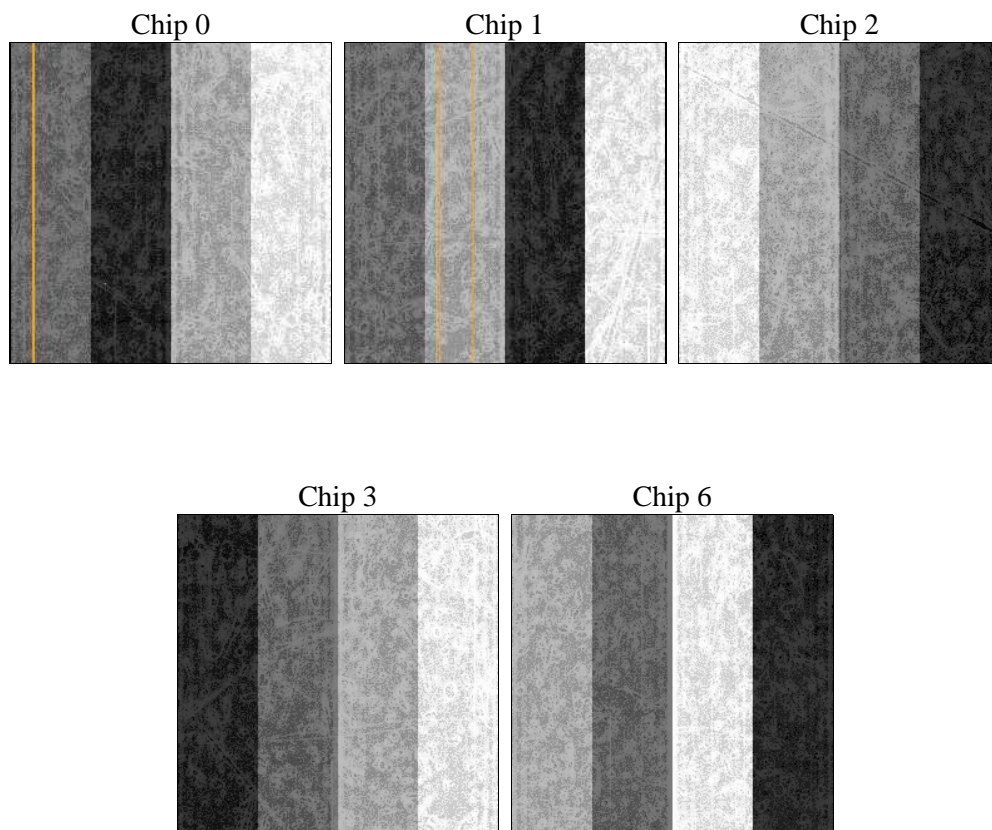
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	5800.000000	[s] Scheduled observation exposure time
ascdsver	10.4.1	Processing system revision	ontime	5877.6000453234	Sum of GTIs [s]
caldsver	4.6.8	&#160	ontime0	5877.6000453234	Sum of GTIs [s]
date	2015-08-30T18:49:16	Date and time of file creation	ontime1	5877.6000453234	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	5877.6000453234	Sum of GTIs [s]
			ontime3	5877.6000453234	Sum of GTIs [s]
			ontime6	5877.6000453234	Sum of GTIs [s]
			l1events	155151	Number of level 1 events

### 2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	28587	30097	31934	32971	31562
rejected events	24924	26078	28375	26711	28000
rejected %	87%	86%	88%	81%	88%

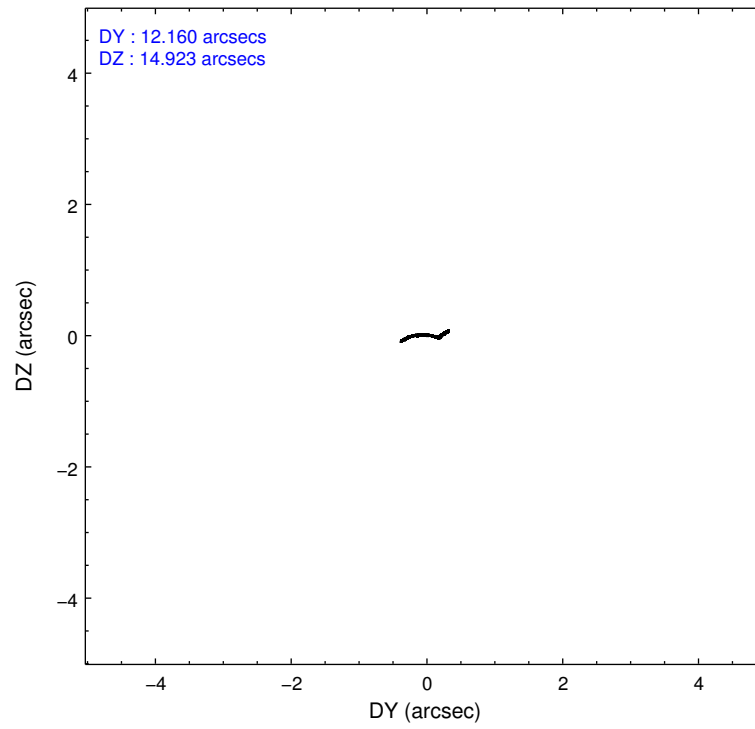
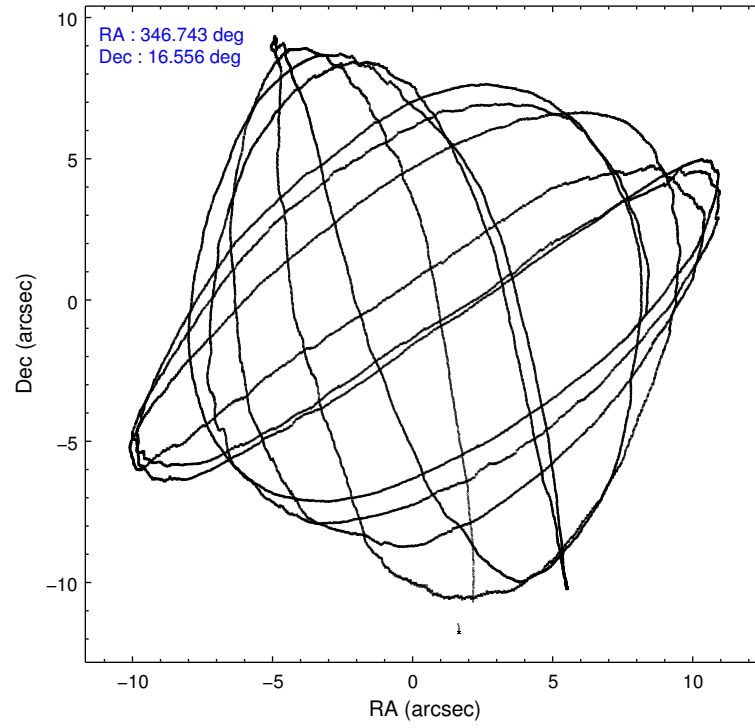
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	1262	1359	1279	3581	1128
	4%	4%	4%	10%	3%
grade 1 events	16	11	14	30	21
	0%	0%	0%	0%	0%
grade 2 events	872	914	850	1019	859
	3%	3%	2%	3%	2%
grade 3 events	363	400	372	451	333
	1%	1%	1%	1%	1%
grade 4 events	372	406	357	437	361
	1%	1%	1%	1%	1%
grade 5 events	1416	1539	1329	1623	1505
	4%	5%	4%	4%	4%
grade 6 events	798	943	702	785	884
	2%	3%	2%	2%	2%
grade 7 events	23488	24525	27031	25045	26471
	82%	81%	84%	75%	83%

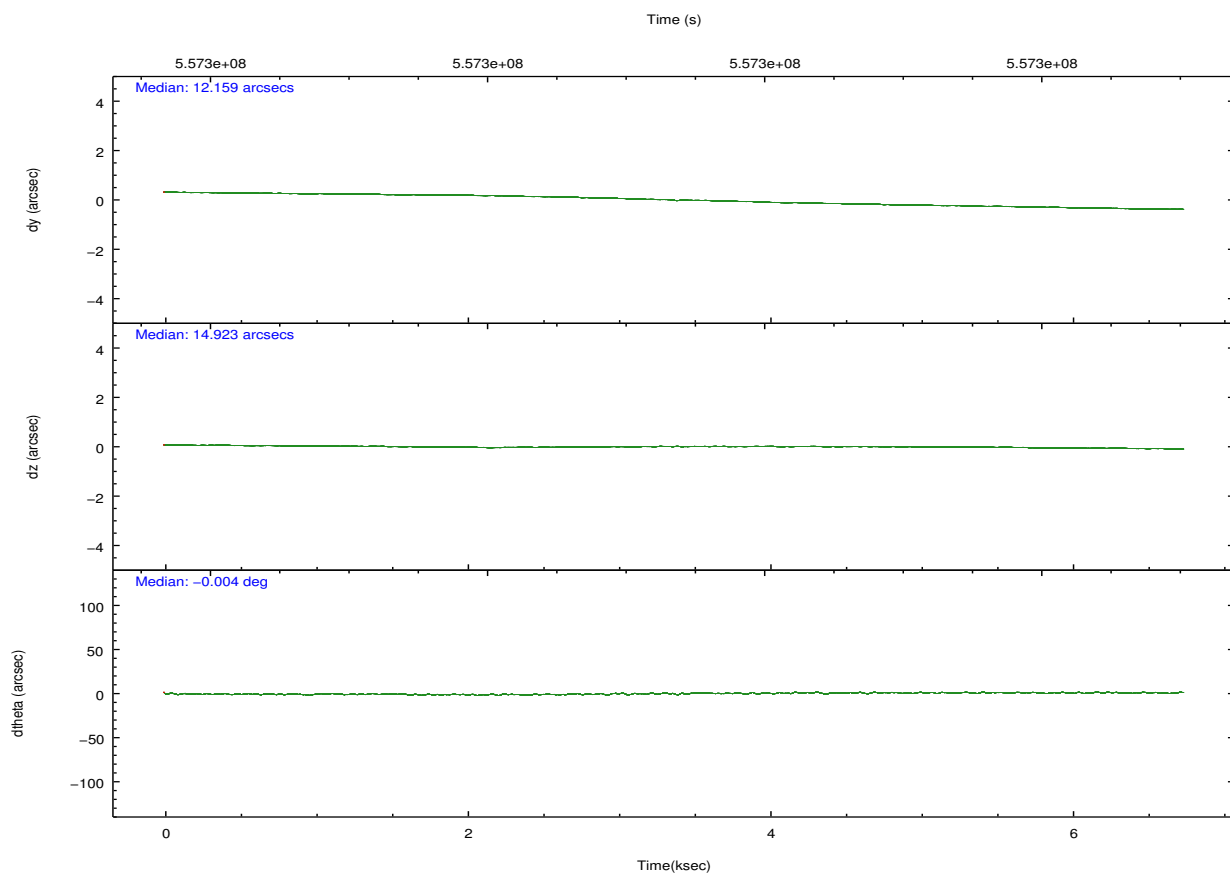
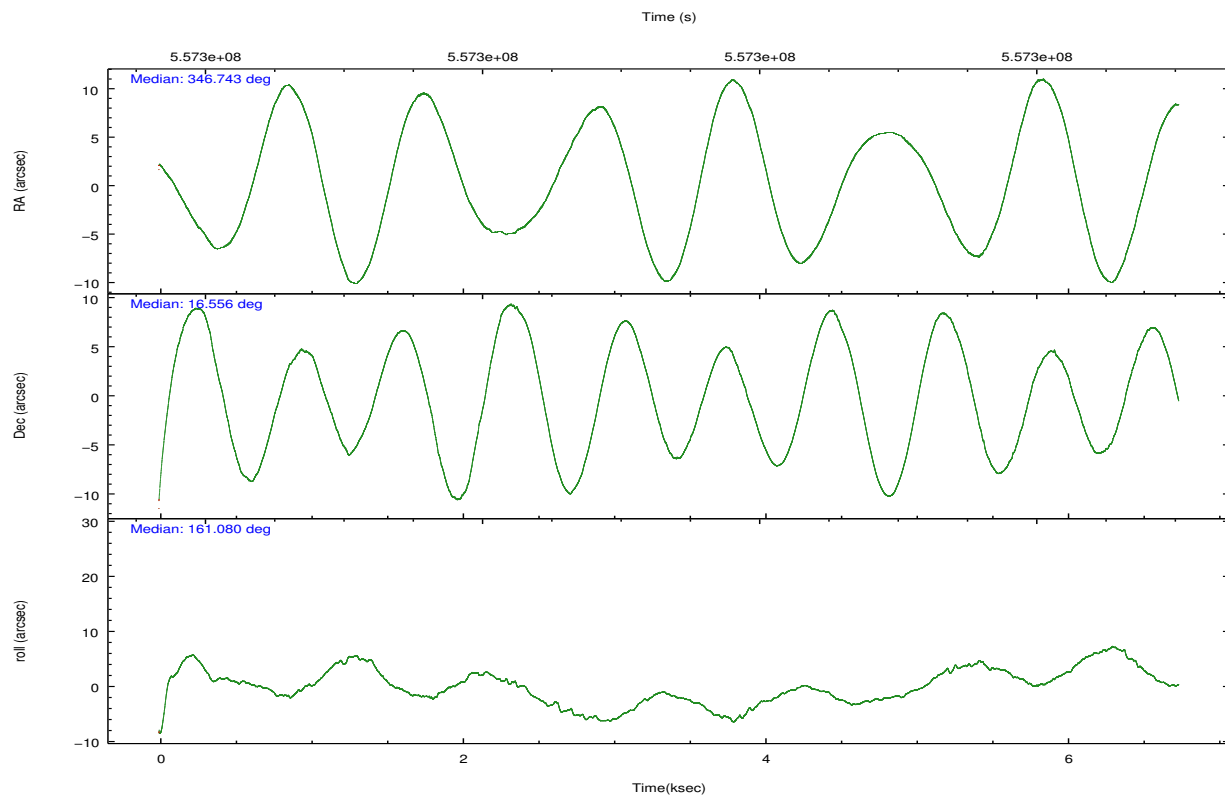


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01236	ACIS-01236	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	346.771094	346.7428011502465	CCD I2 on	Y	Y
[deg] Pointing Dec	16.560811	16.55545682851137	CCD I3 on	Y	Y
[deg] Pointing Roll	160.870994	161.0877313026097	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-228.472463	-228.4783457680588	CCD S3 on	N	N
[mm] SIM translation stage offset	-5.12	-5.114107234870914	CCD S4 on	N	N
[s] Observation start time (MET)	557298912.184000	557297526.85804	CCD S5 on	N	N
Observation start date	2015-08-30T05:14:04	2015-08-30T04:52:06	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	557304712.184000	557305270.73348	On-chip summing requested	N	N
Observation end date	2015-08-30T06:50:44	2015-08-30T07:01:10	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



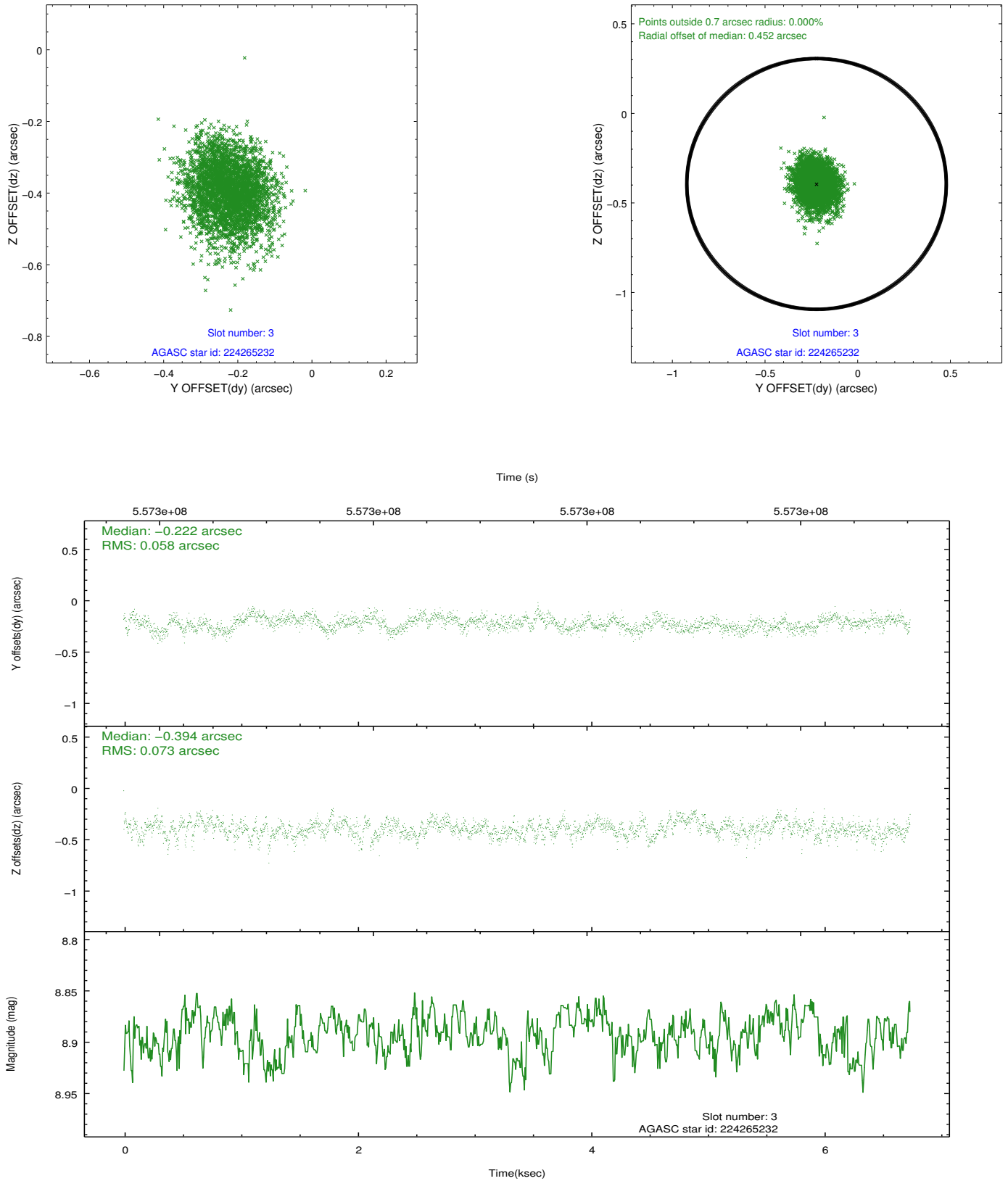


### Slot Statistics

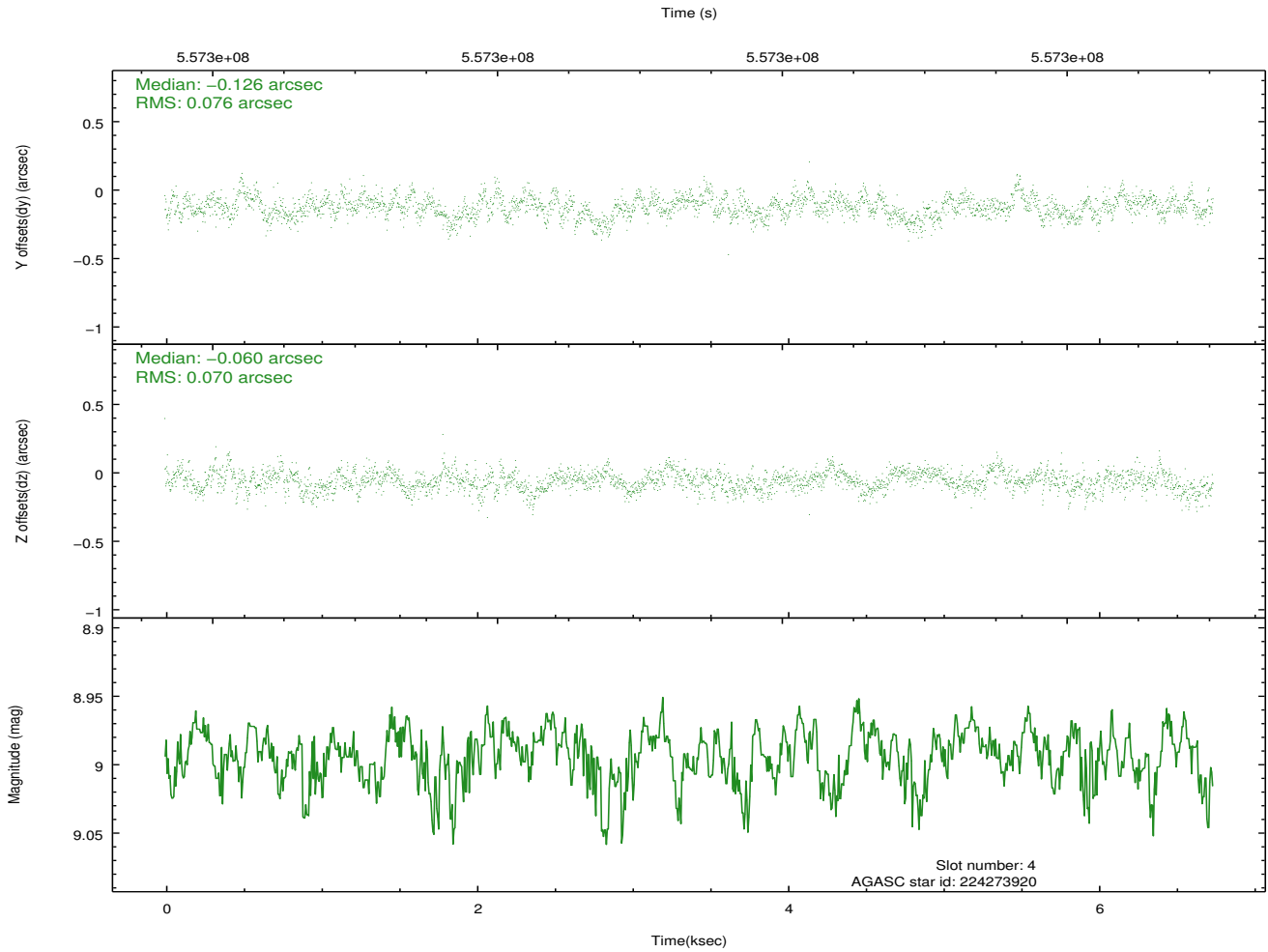
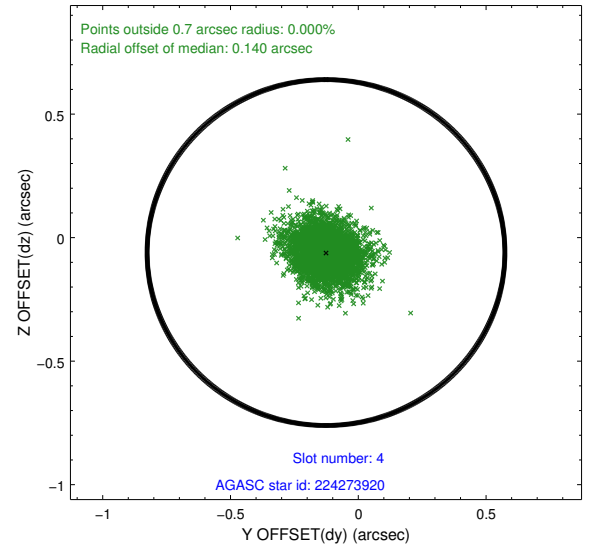
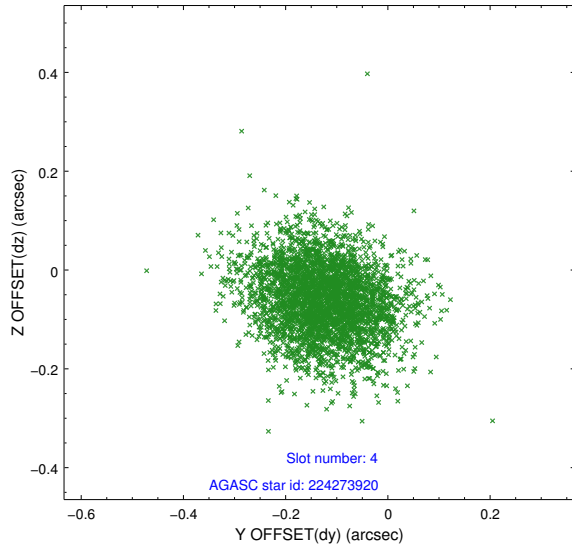
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.26	1645	0.113	-0.122	0.008	0.014	0.000000	0.000000	927.44	-943.56
1	FID		ACIS-I-5	7.24	1645	-0.275	0.083	0.006	0.011	0.000000	0.000000	-1820.64	953.55
2	FID		ACIS-I-6	7.24	1645	0.070	0.110	0.008	0.013	0.000000	0.000000	391.92	1599.13
3	GUIDE	used	224265232	8.89	3289	-0.222	-0.394	0.100	0.160	346.363693	16.198252	901.48	1692.64
4	GUIDE	used	224273920	8.99	3285	-0.126	-0.060	0.109	0.180	346.192360	16.936119	2327.13	-624.47
5	GUIDE	used	224395392	9.03	3288	0.069	-0.048	0.175	0.263	346.779473	16.268926	-369.97	984.88
6	GUIDE	used	224396720	8.62	3288	0.070	0.200	0.120	0.197	347.035345	16.835298	-535.14	-1231.26
7	GUIDE	used	224396800	8.35	3285	0.190	0.311	0.077	0.129	346.973799	16.992376	-149.70	-1696.63

## 2.4 Star Slots

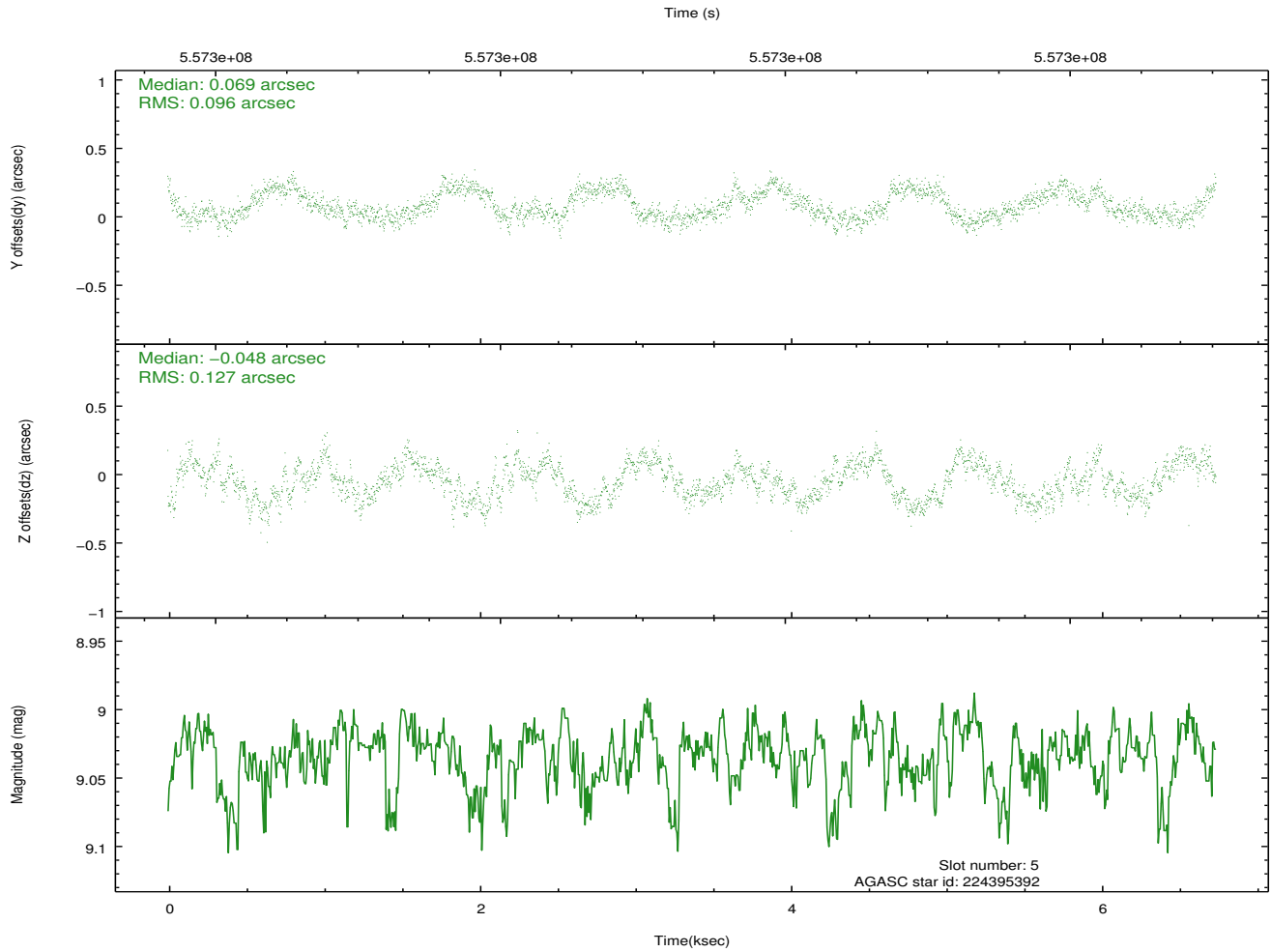
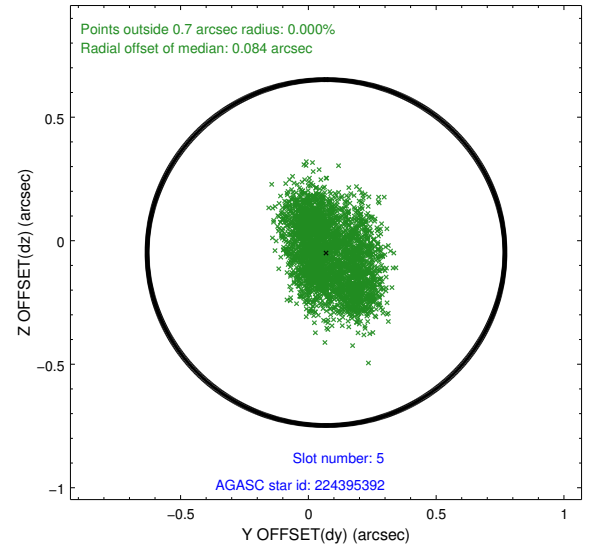
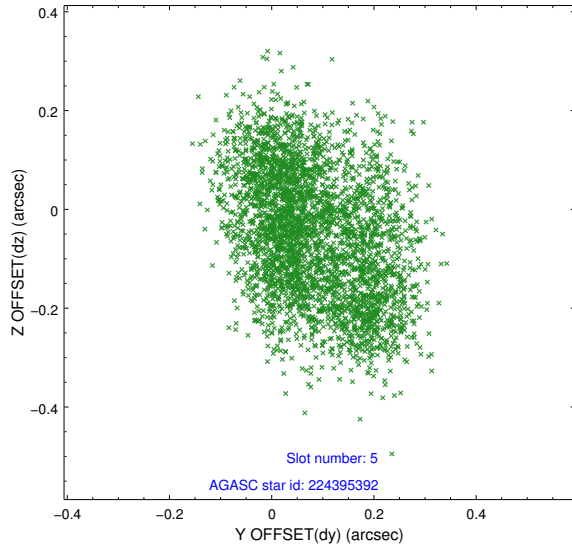
### 2.4.1 Slot 3



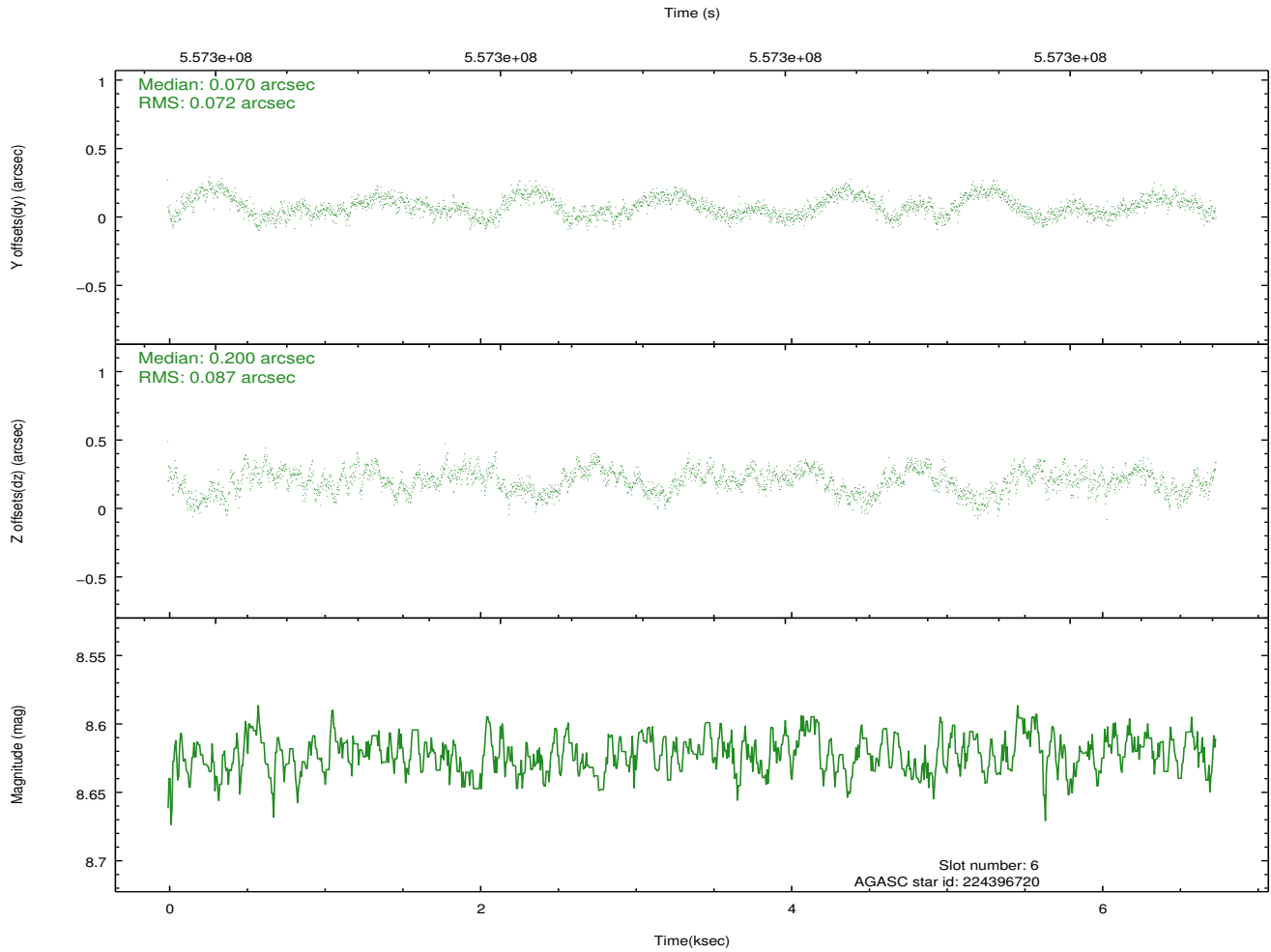
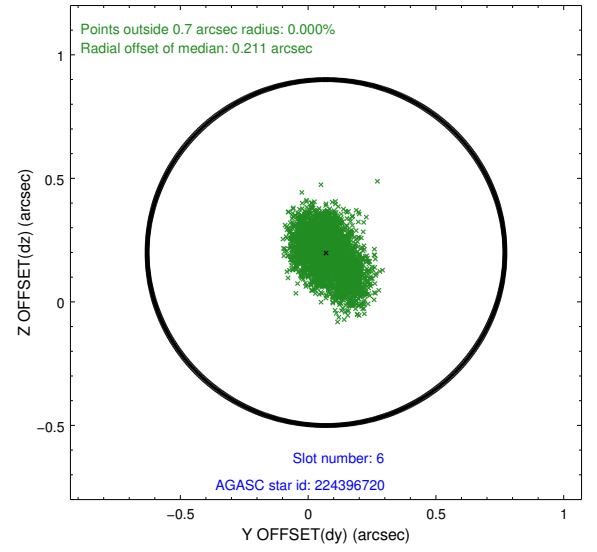
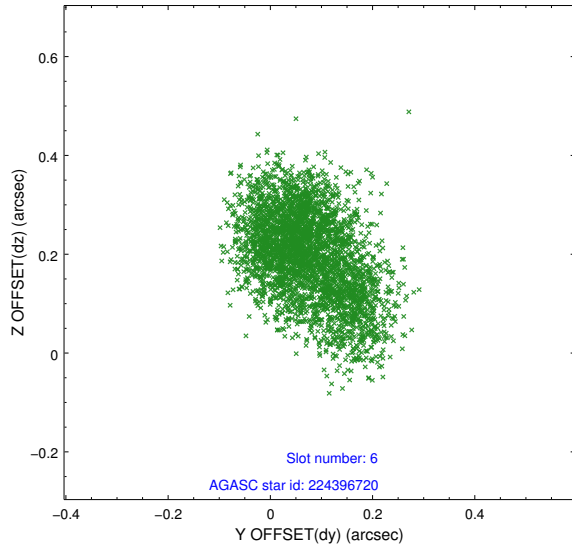
## 2.4.2 Slot 4



### 2.4.3 Slot 5

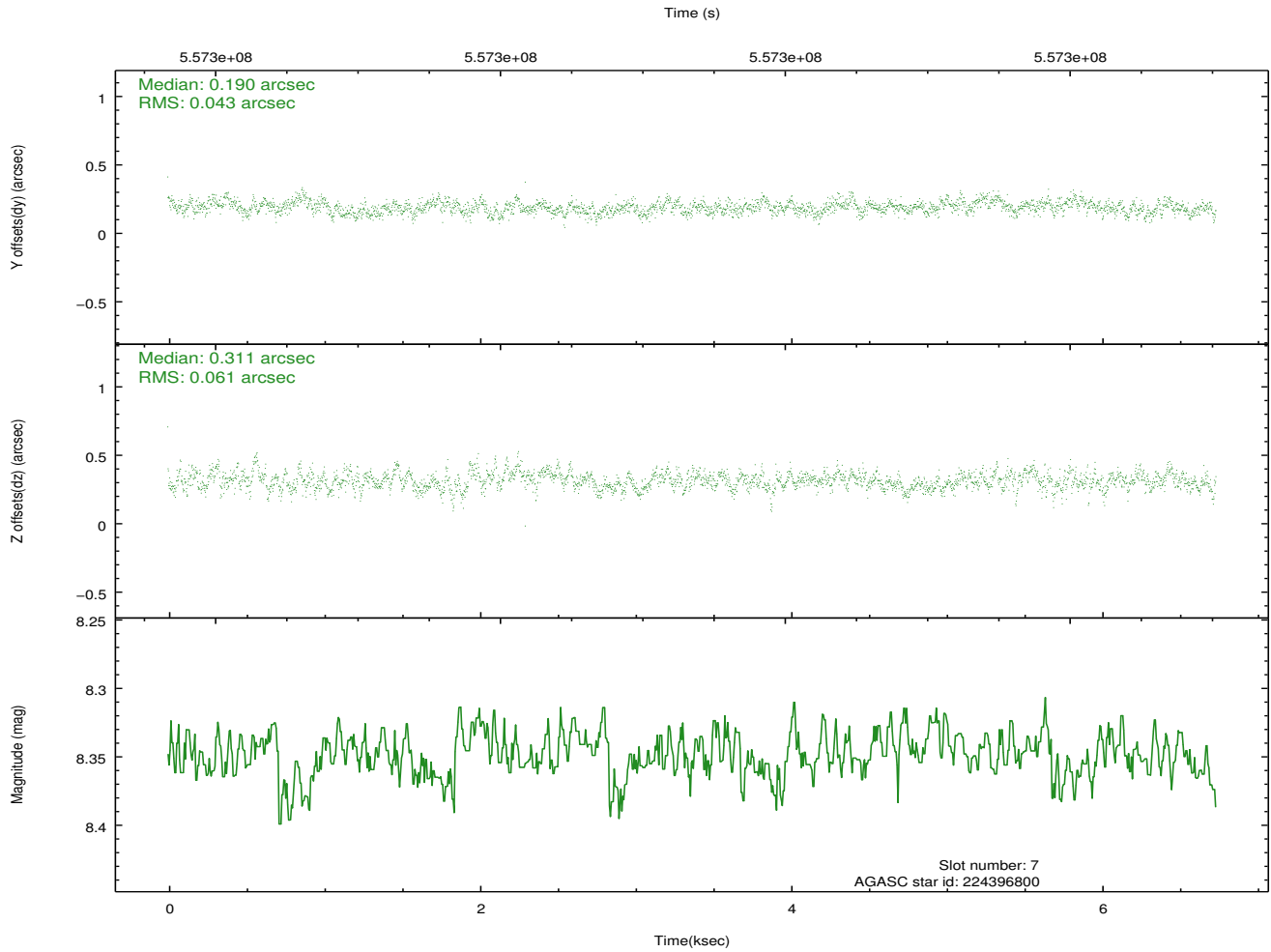
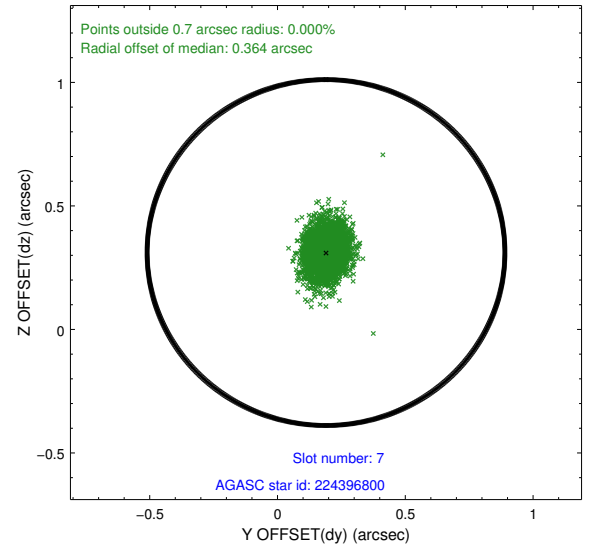
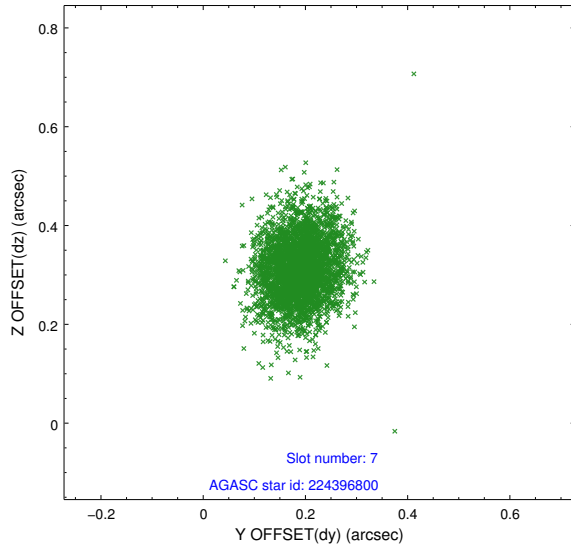


## 2.4.4 Slot 6



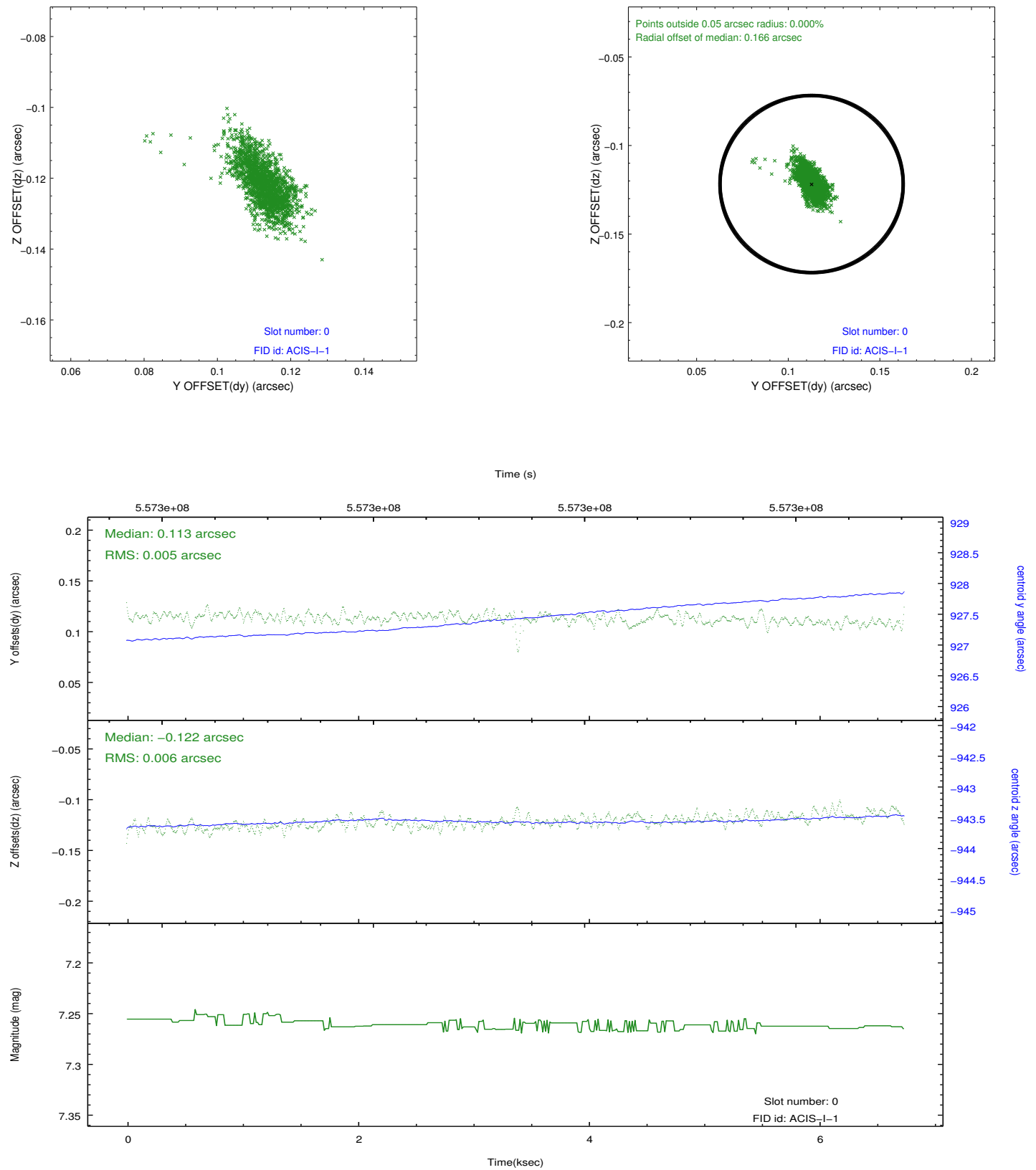


## 2.4.5 Slot 7

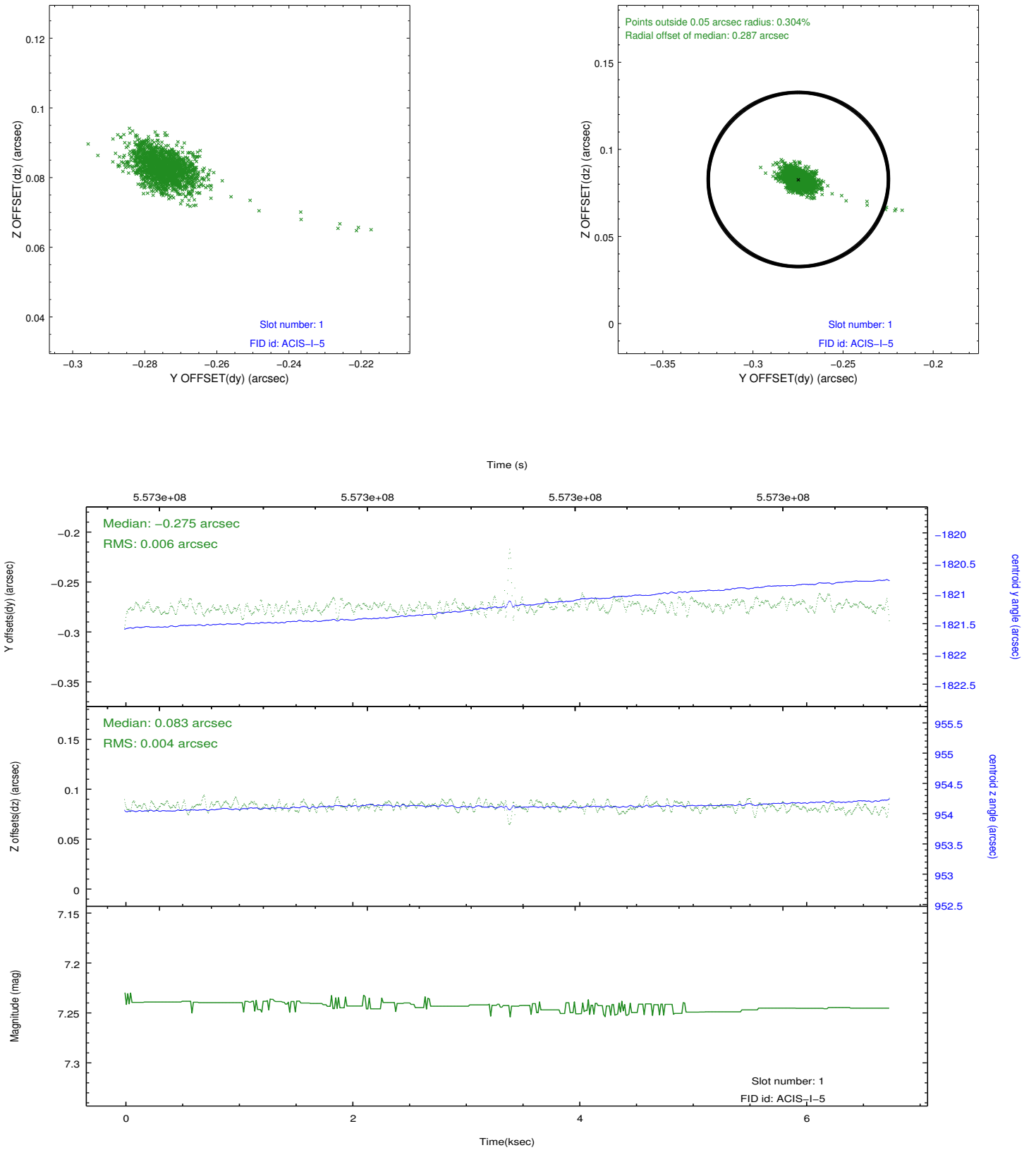


## 2.5 FID Slots

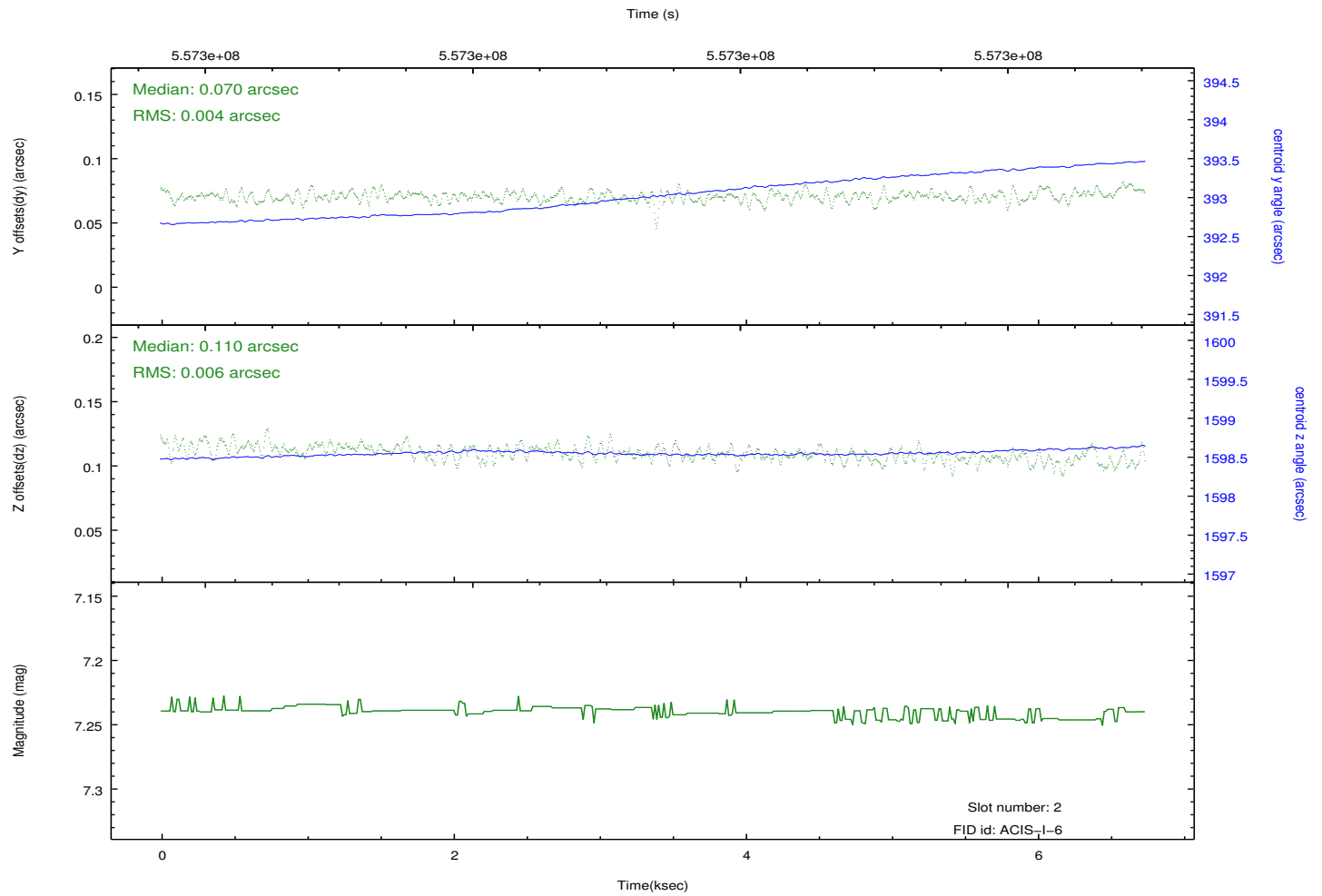
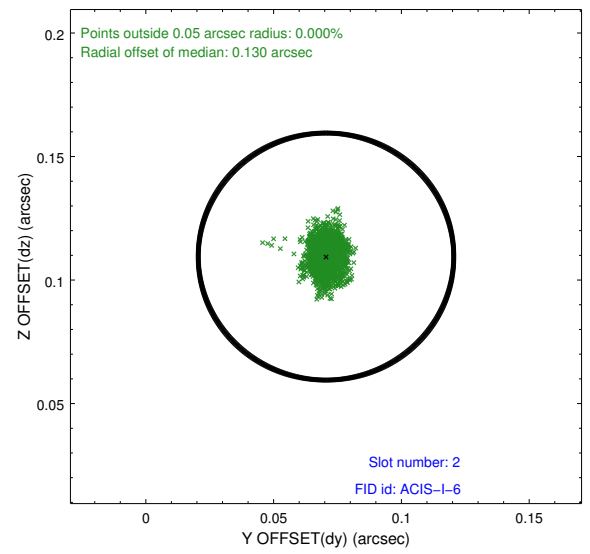
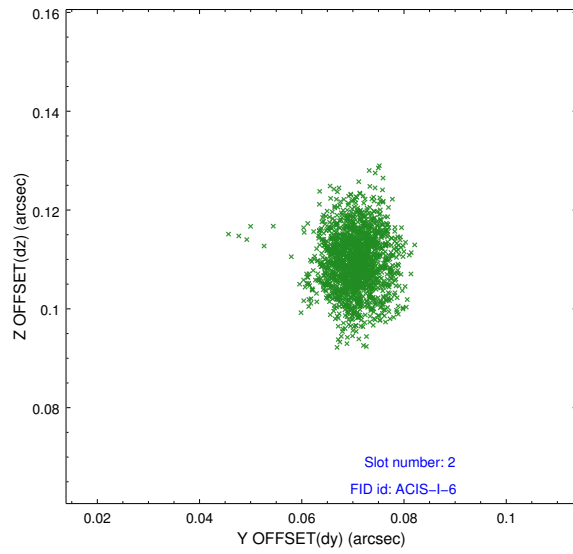
### 2.5.1 Slot 0



## 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)	2015.08.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.8776000453234

### A.2 Comments