

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13504 - L2 Version 2  
Chandra X-Ray Center

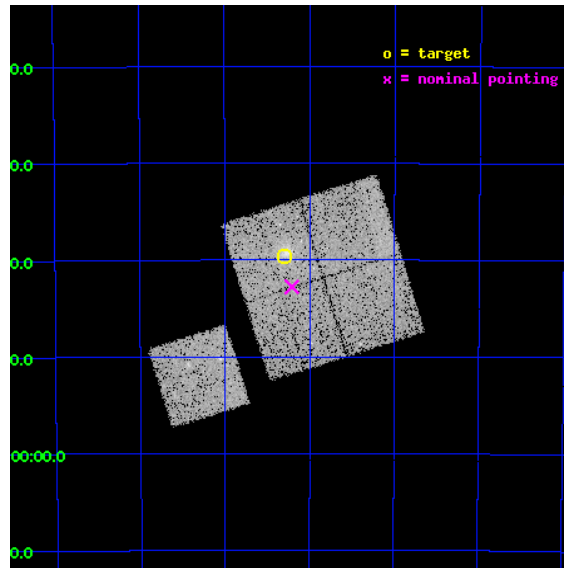
L2 Processing Date : Jan 19 2012

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# 1 Front

seq_num	801145	Sequence number
obs_id	13504	Observation id
title	Cosmology and Cluster Evolution from the 80 Most Massive Clusters in 2000 deg^2 from the South Pole Telescope Survey	Proposal title
observer	Dr Bradford Benson	Principal investigator
object	SPT-CLJ2233-5339	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	338.326	Observer's specified target RA [deg]
dec_targ	-53.6604	Observer's specified target Dec [deg]
ra_nom	338.30222948417	Nominal RA [deg]
dec_nom	-53.713007689606	Nominal Dec [deg]
roll_nom	252.66201240586	Nominal Roll [deg]
revision	2	Processing version of data
ontime	17273.020670533	Sum of GTIs [s]
livetime	17047.33593926	Livetime [s]
ontime0	17276.038510859	Sum of GTIs [s]
ontime1	17276.079550862	Sum of GTIs [s]
ontime2	17276.120561004	Sum of GTIs [s]
ontime3	17273.020670533	Sum of GTIs [s]
ontime6	17275.997470856	Sum of GTIs [s]
l2events	54802	Number of level 2 events

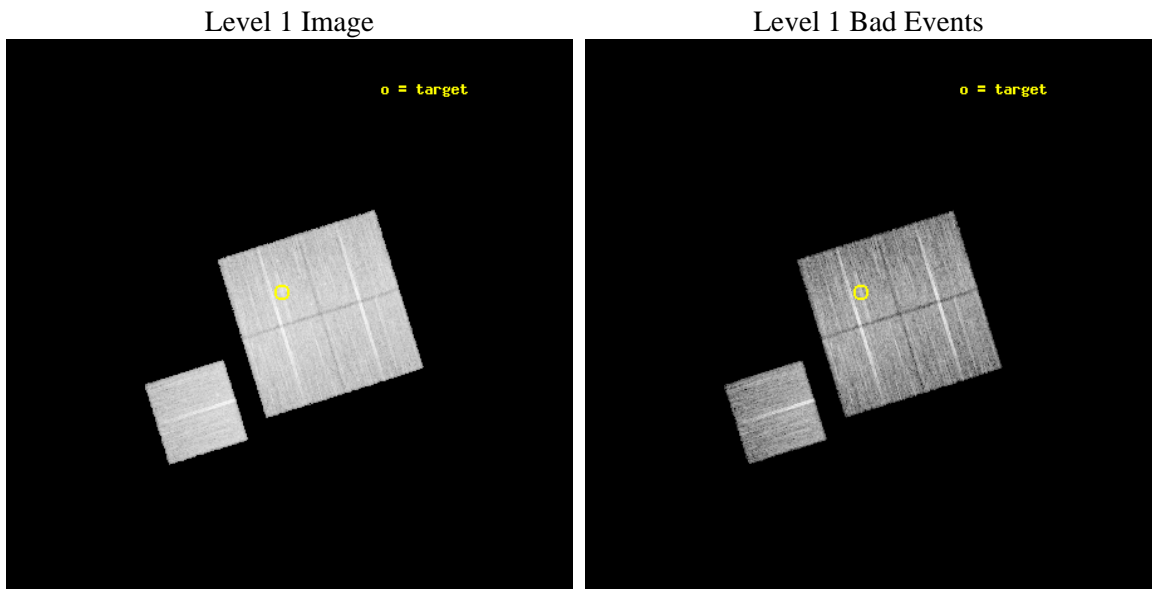




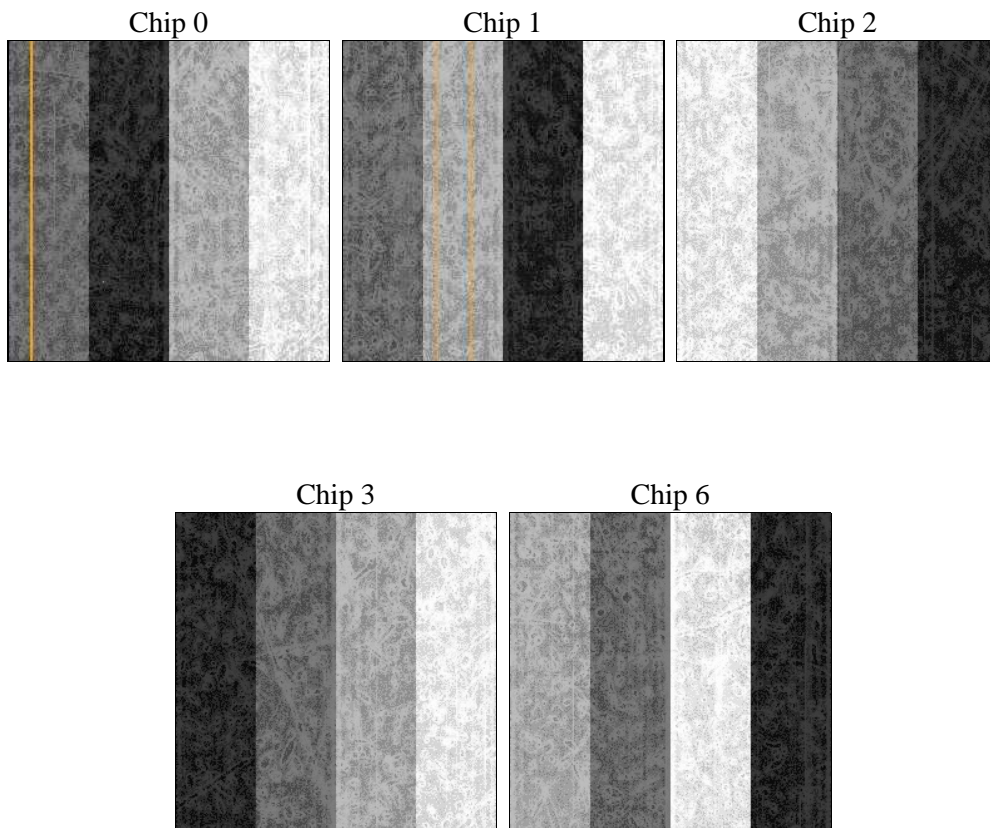
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	17500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	17273.020670533	Sum of GTIs [s]
caldsver	4.4.7	&#160	ontime0	17276.038510859	Sum of GTIs [s]
date	2012-01-19T21:58:59	Date and time of file creation	ontime1	17276.079550862	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	17276.120561004	Sum of GTIs [s]
			ontime3	17273.020670533	Sum of GTIs [s]
			ontime6	17275.997470856	Sum of GTIs [s]
			l1events	527930	Number of level 1 events

### 2.1.4 Events

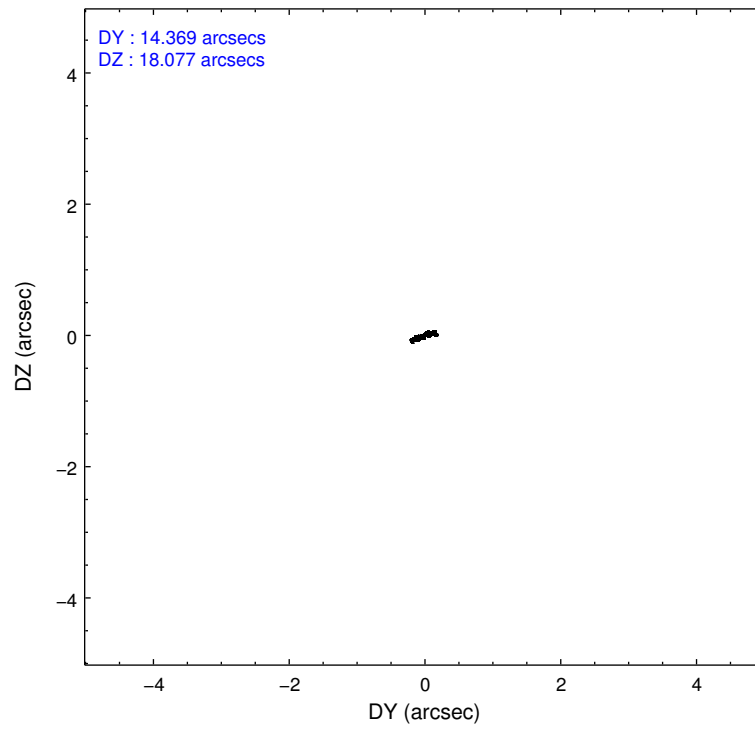
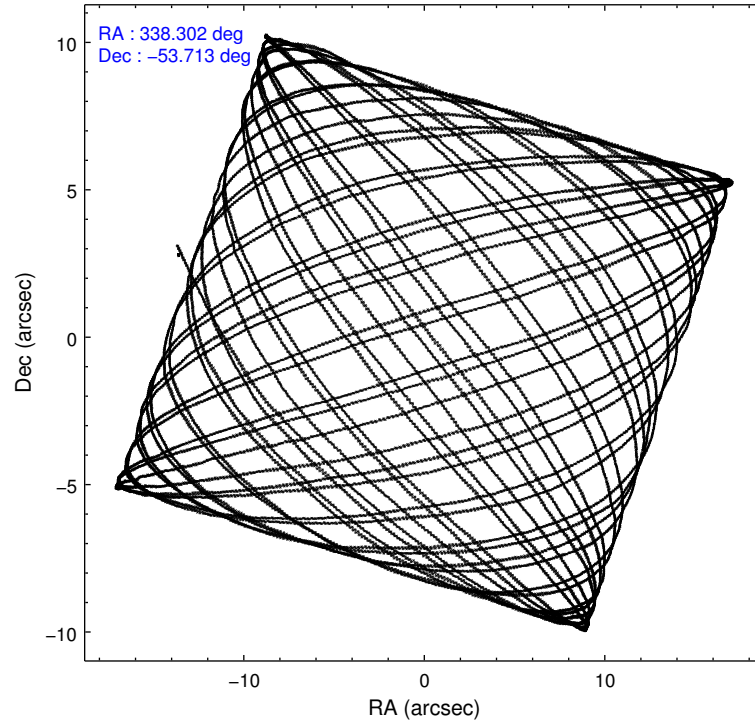
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	98772	102524	109466	108886	108282
rejected events	86504	88558	97542	95236	95303
rejected %	87%	86%	89%	87%	88%

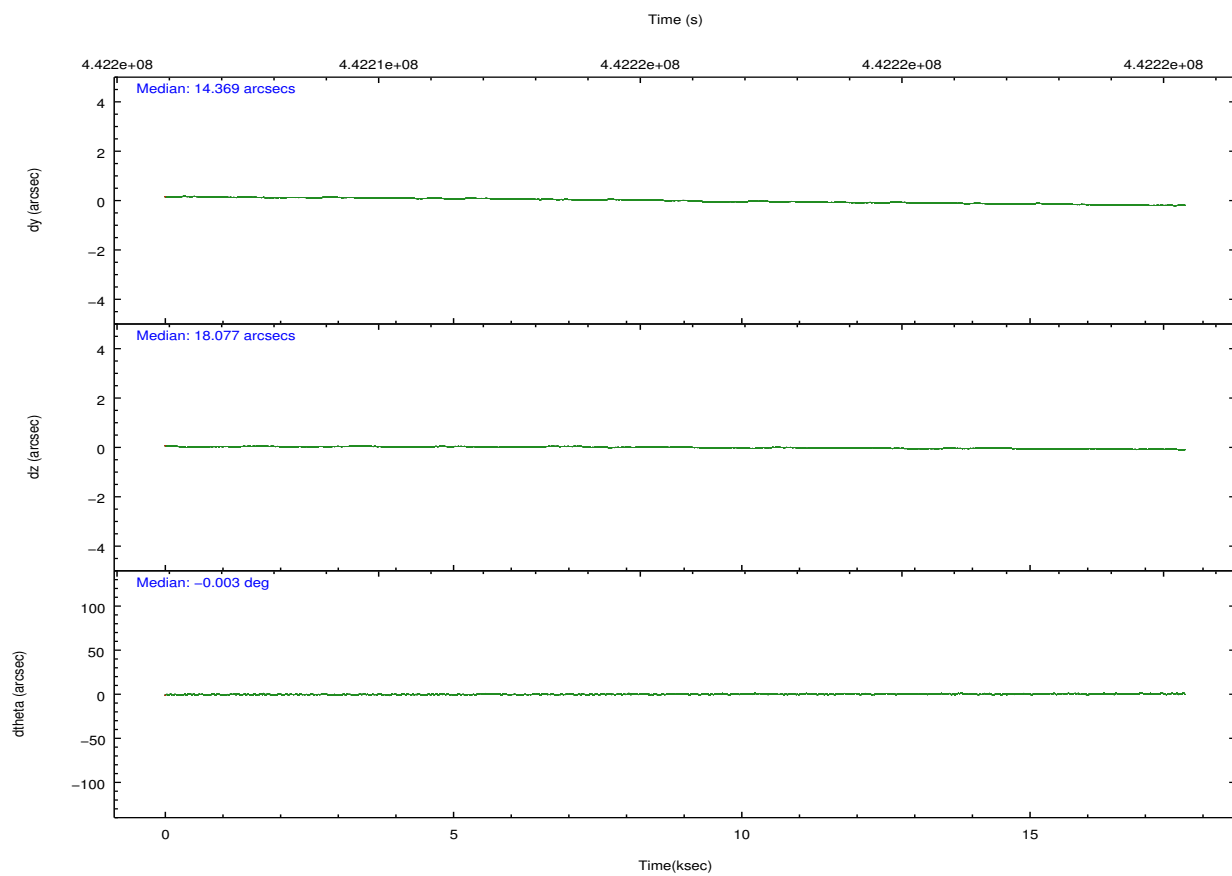
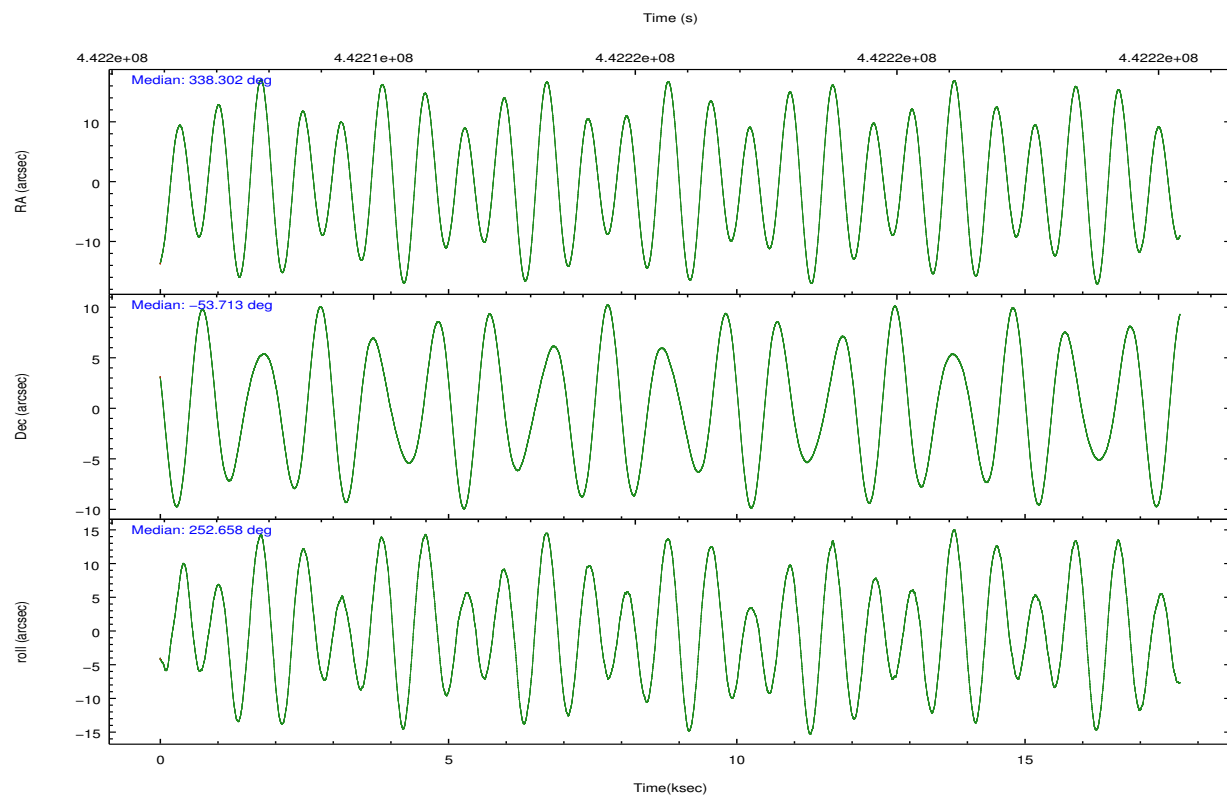
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	4347	4969	4144	5810	4640
	4%	4%	3%	5%	4%
grade 1 events	70	48	61	73	52
	0%	0%	0%	0%	0%
grade 2 events	3085	3418	3071	2839	2849
	3%	3%	2%	2%	2%
grade 3 events	1304	1404	1197	1324	1346
	1%	1%	1%	1%	1%
grade 4 events	1119	1383	1253	1274	1356
	1%	1%	1%	1%	1%
grade 5 events	4541	4968	4300	5293	5073
	4%	4%	3%	4%	4%
grade 6 events	2415	2795	2264	2406	2791
	2%	2%	2%	2%	2%
grade 7 events	81891	83539	93176	89867	90175
	82%	81%	85%	82%	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	338.291877	338.3022294841668	CCD I2 on	Y	Y
[deg] Pointing Dec	-53.686181	-53.71300768960551	CCD I3 on	Y	Y
[deg] Pointing Roll	252.444982	252.6620124058567	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	-225.842463	-225.8433433320239	CCD S3 on	N	N
[mm] SIM translation stage offset	-7.75	-7.749109670905796	CCD S4 on	N	N
[s] Observation start time (MET)	442207003.184000	442206466.69424	CCD S5 on	N	N
Observation start date	2012-01-06T03:15:37	2012-01-06T03:07:46	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	442224503.184000	442225088.38272	On-chip summing requested	N	N
Observation end date	2012-01-06T08:07:17	2012-01-06T08:18:08	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



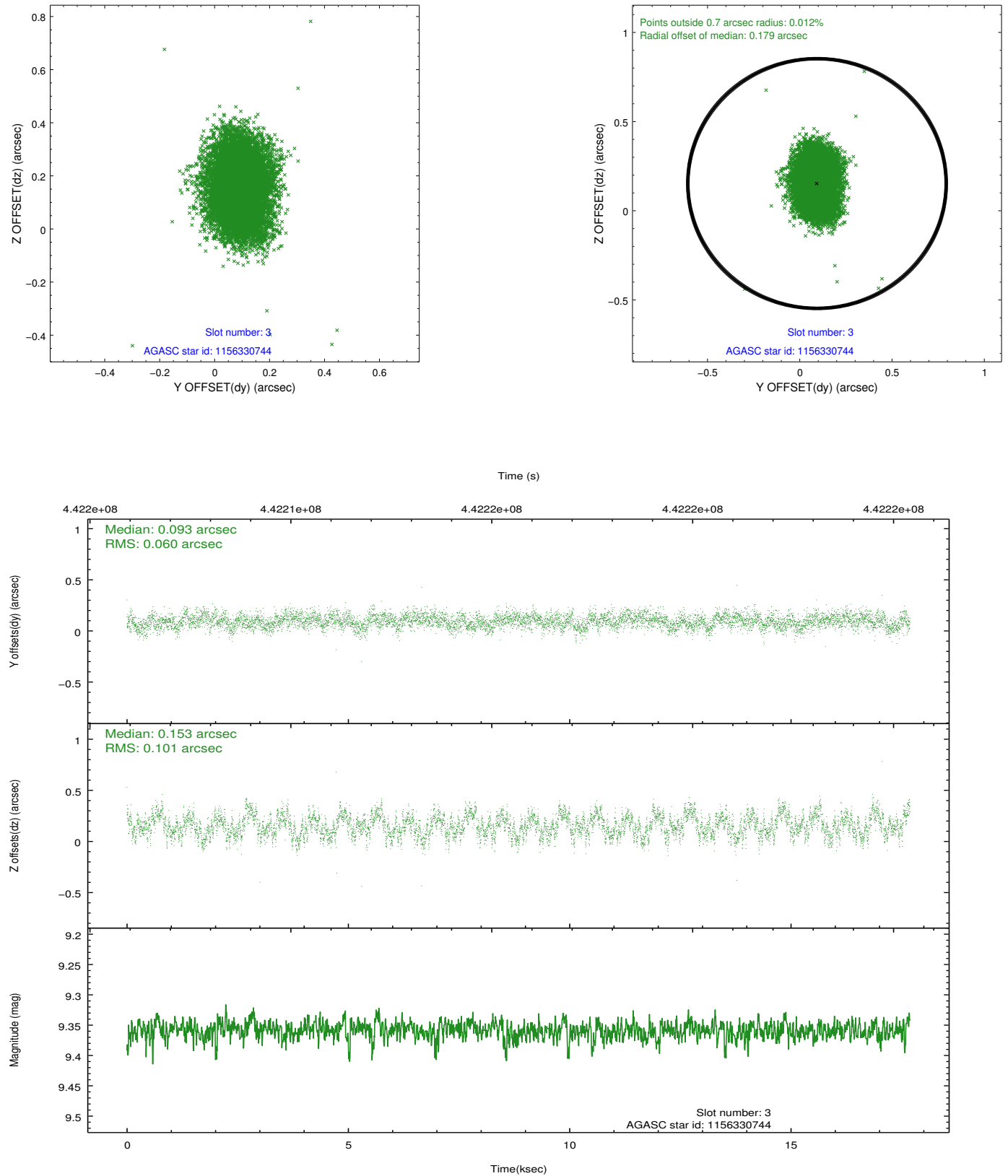


### Slot Statistics

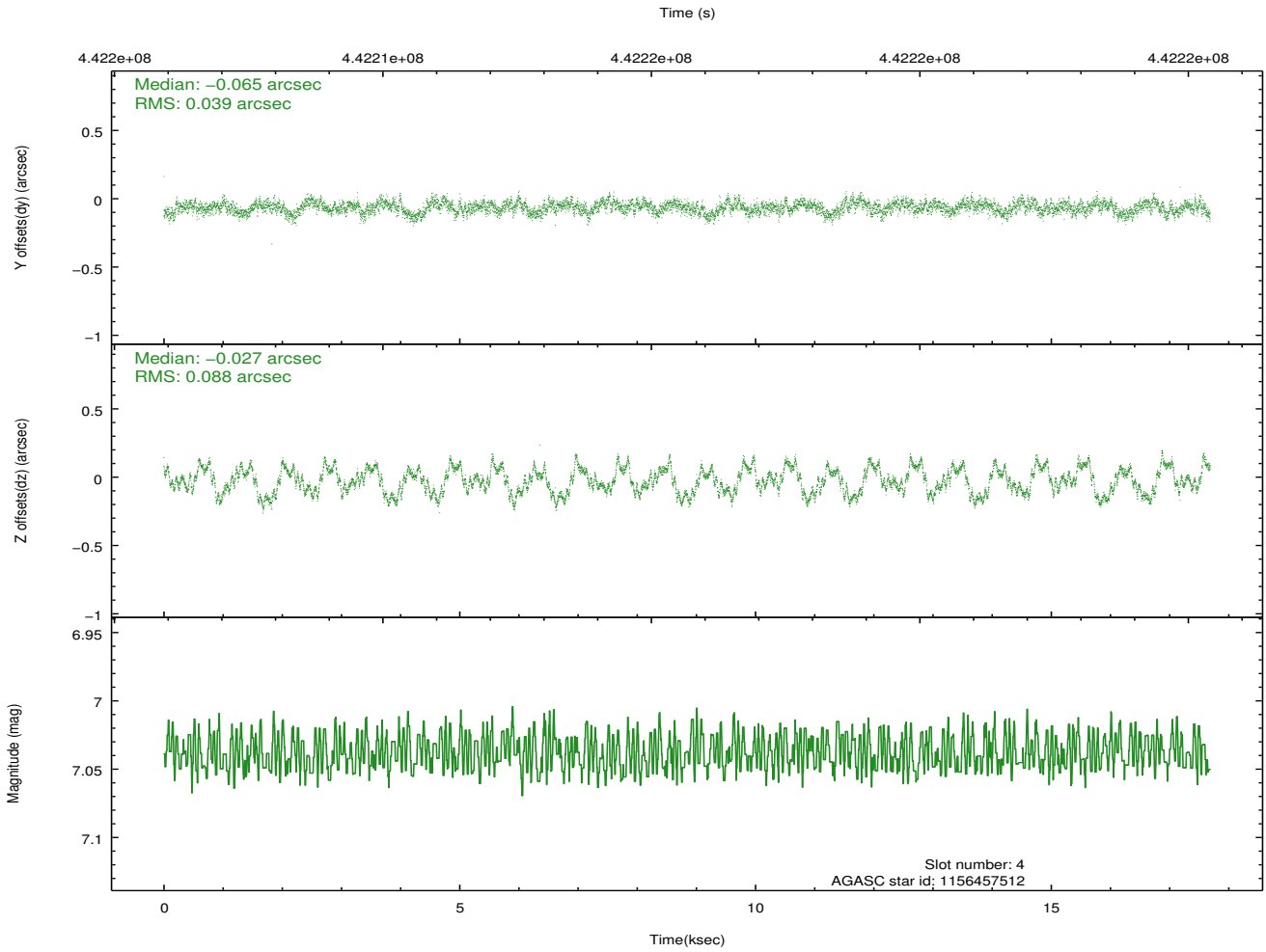
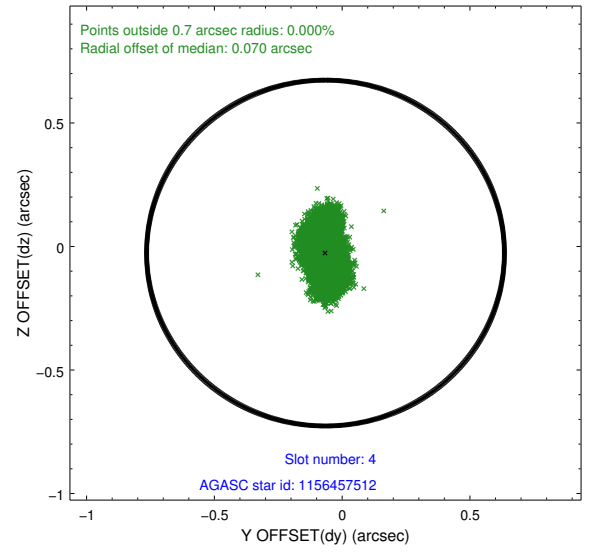
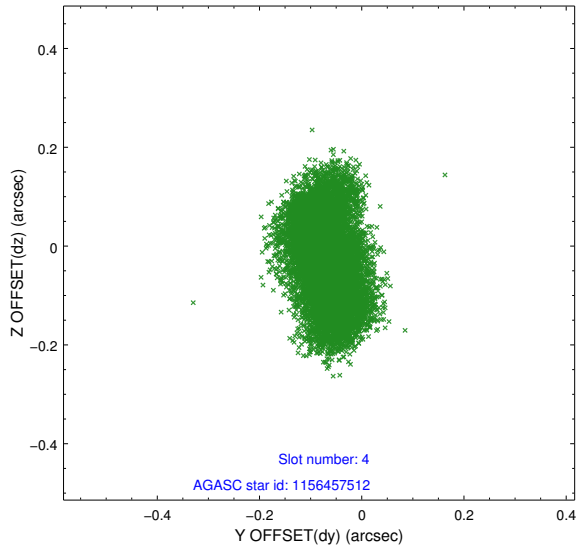
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.02	4314	0.131	-0.065	0.006	0.010	0.000000	0.000000	925.11	-1000.88
1	FID	ACIS-I-5	7.02	4315	-0.309	0.107	0.006	0.012	0.000000	0.000000	-1823.33	896.59
2	FID	ACIS-I-6	7.03	4315	0.087	0.029	0.006	0.010	0.000000	0.000000	390.33	1541.31
3	GUIDE	1156330744	9.36	8619	0.093	0.153	0.125	0.200	337.517296	-53.528139	-33.37	-1748.87
4	GUIDE	1156457512	7.04	8629	-0.065	-0.027	0.108	0.160	337.888628	-53.382508	-778.47	-1154.49
5	GUIDE	1156457904	7.71	8628	-0.146	-0.045	0.102	0.155	338.577769	-54.297927	1919.86	1237.83
6	GUIDE	1156458576	9.94	8617	0.041	0.029	0.164	0.275	339.199253	-53.305842	-1881.90	1451.98
7	GUIDE	1156460464	10.09	8615	0.081	-0.081	0.254	0.429	339.431575	-53.648284	-845.04	2283.53

## 2.4 Star Slots

### 2.4.1 Slot 3

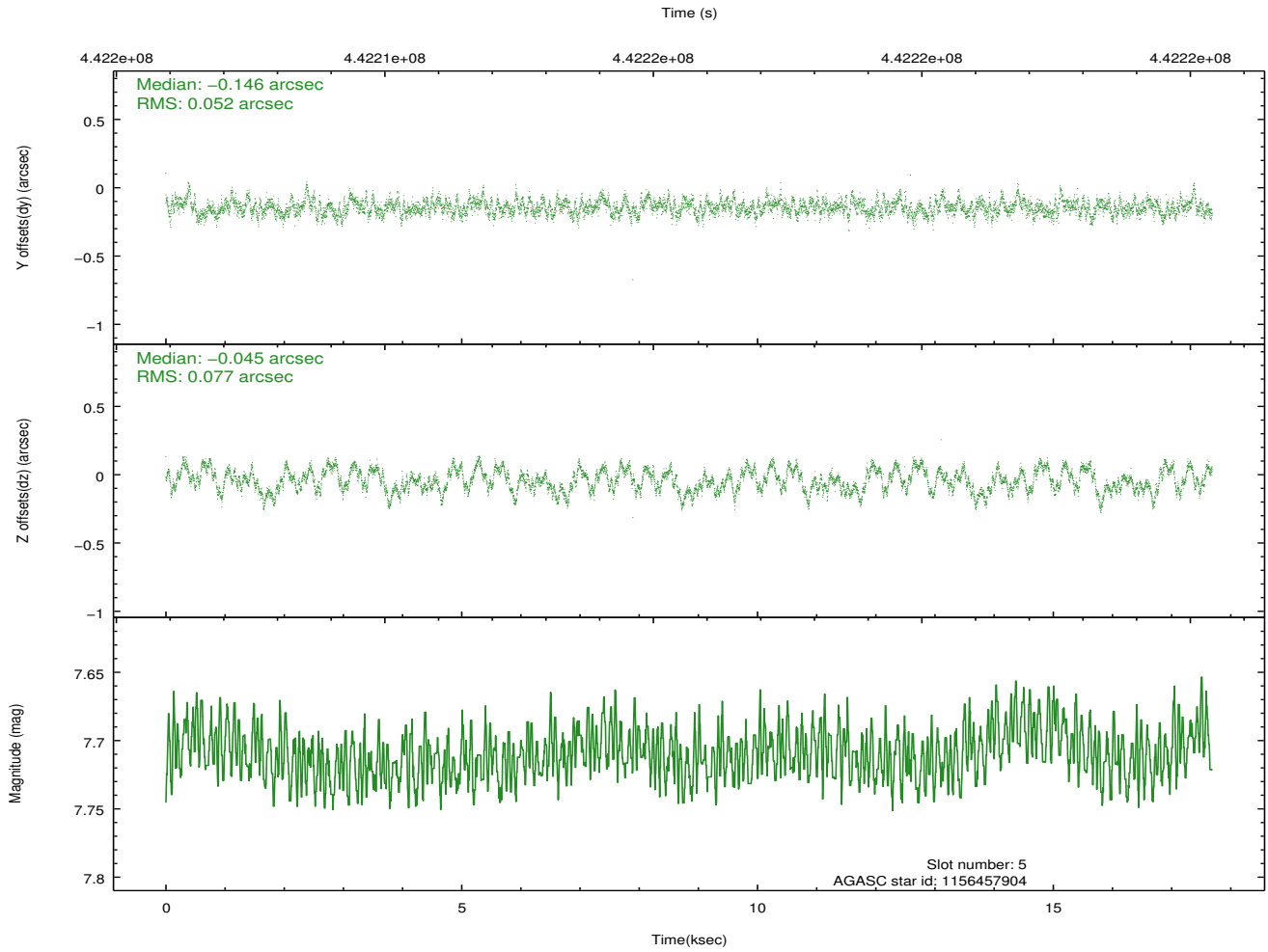
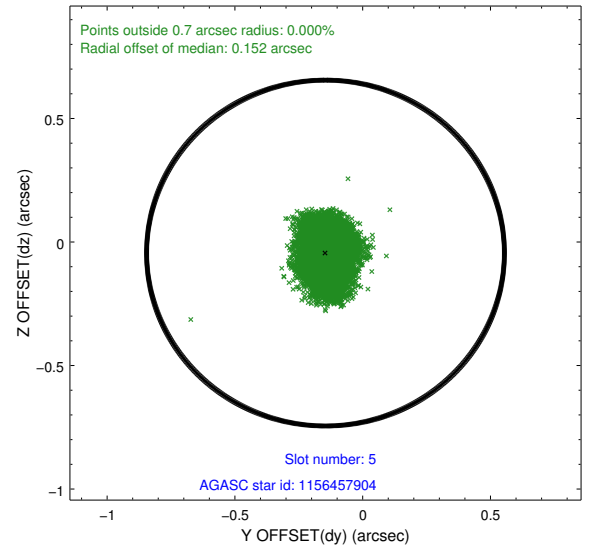
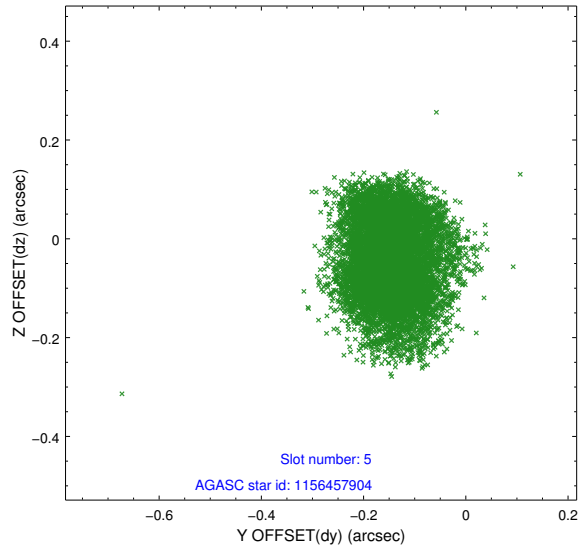


## 2.4.2 Slot 4

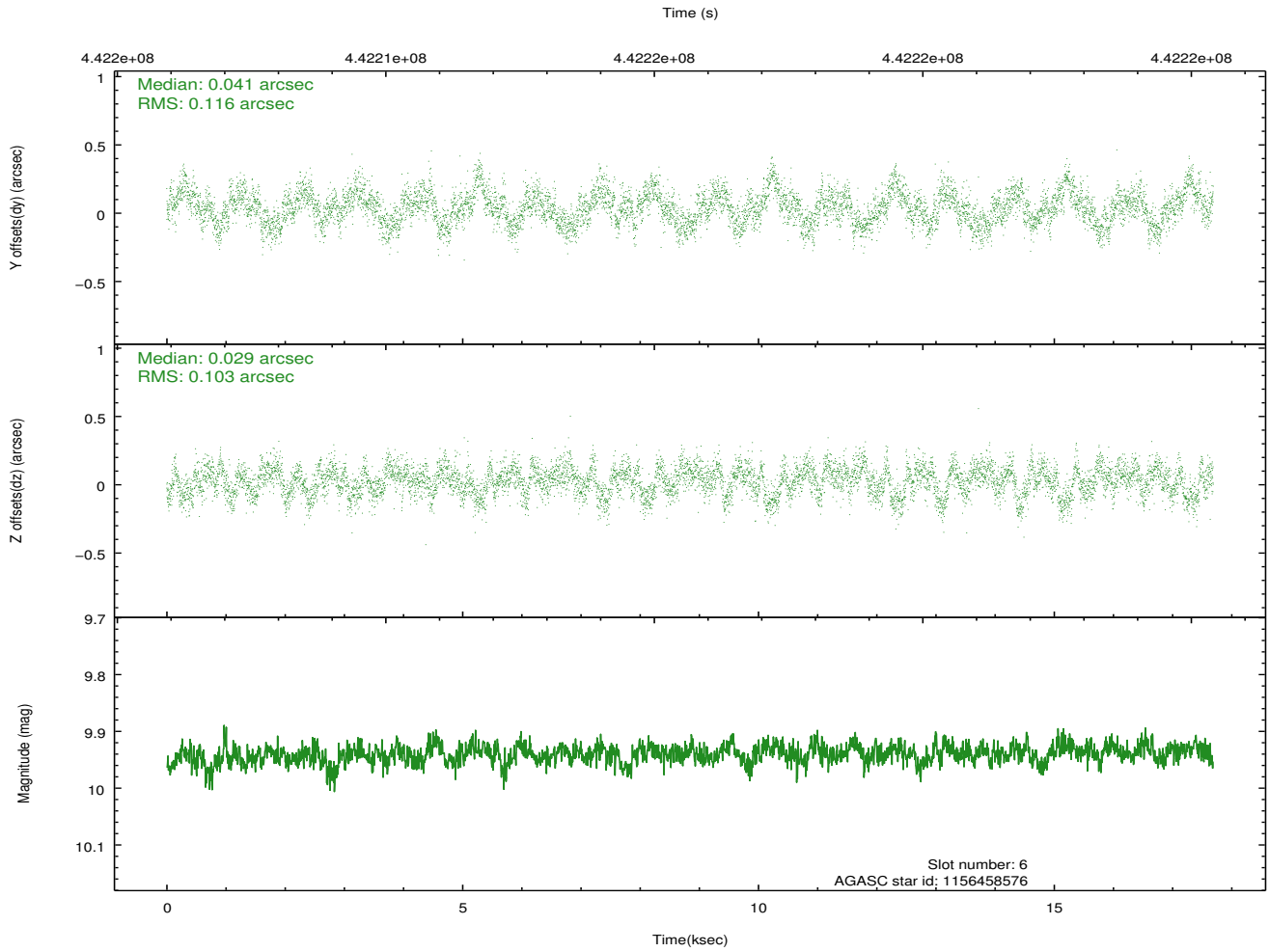
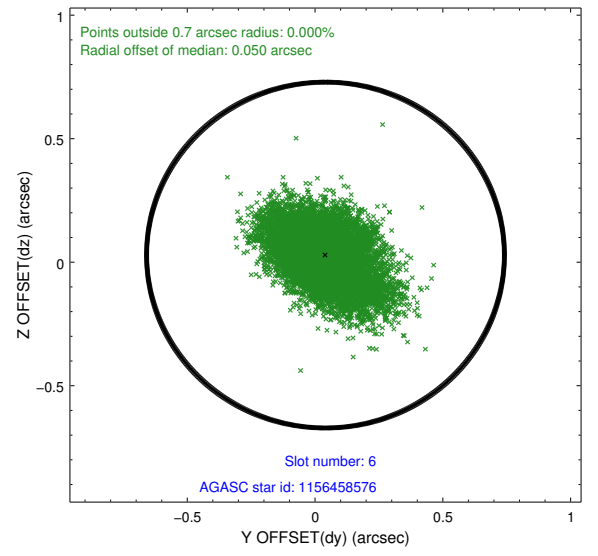
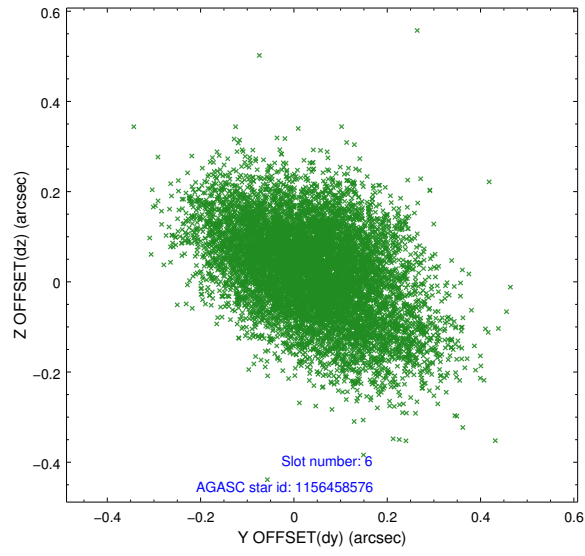




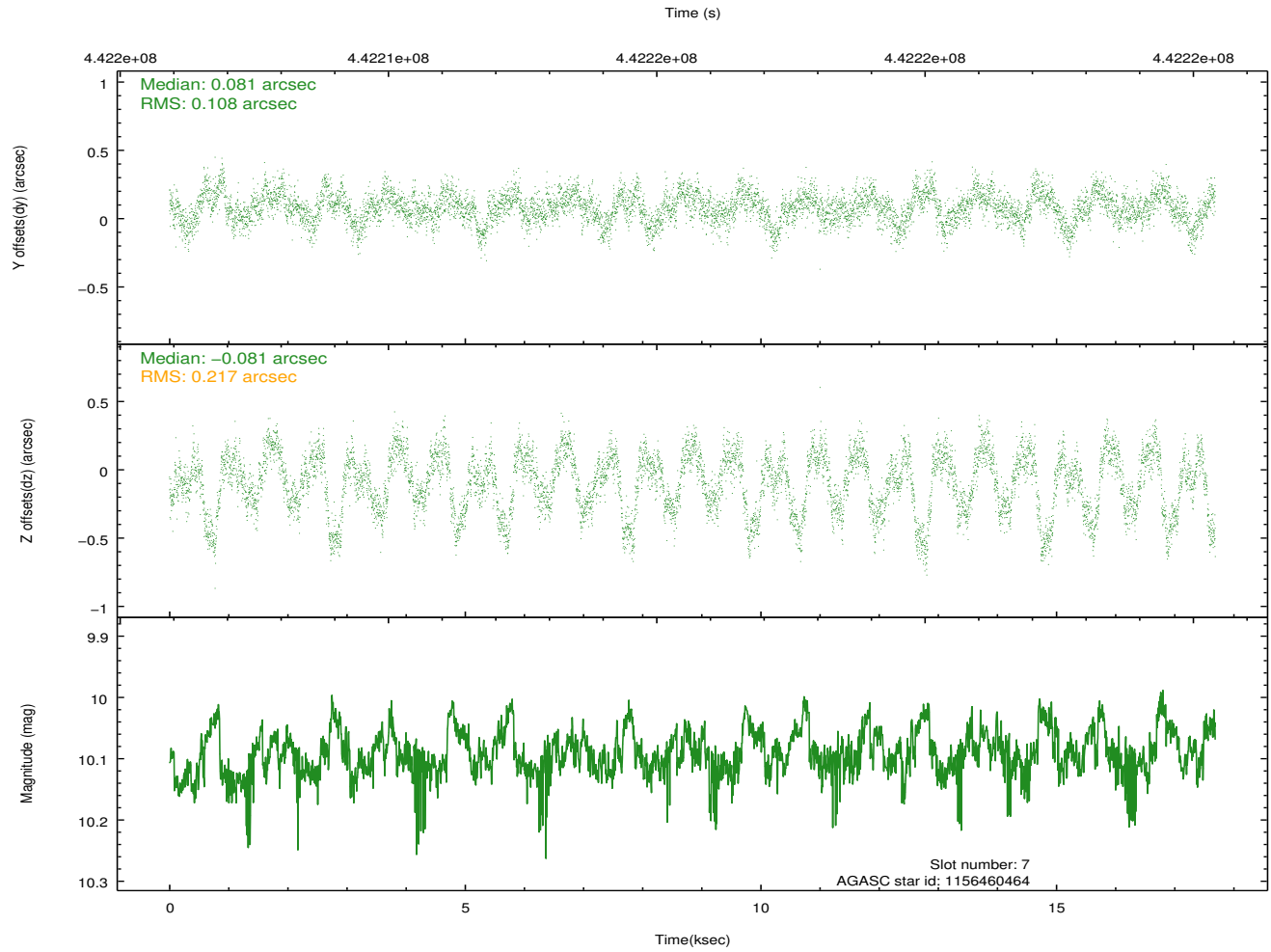
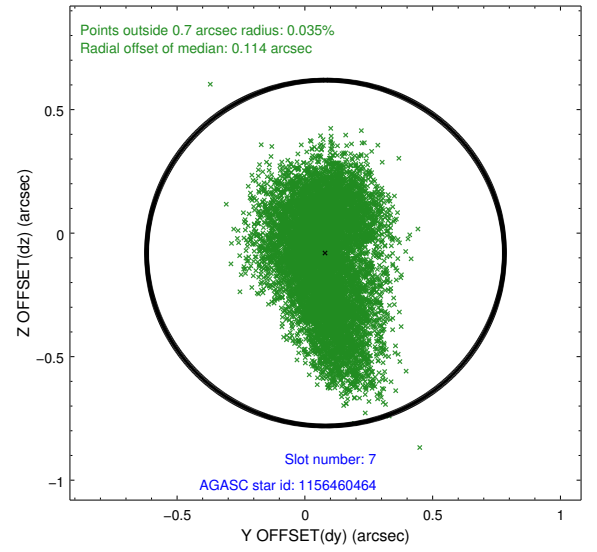
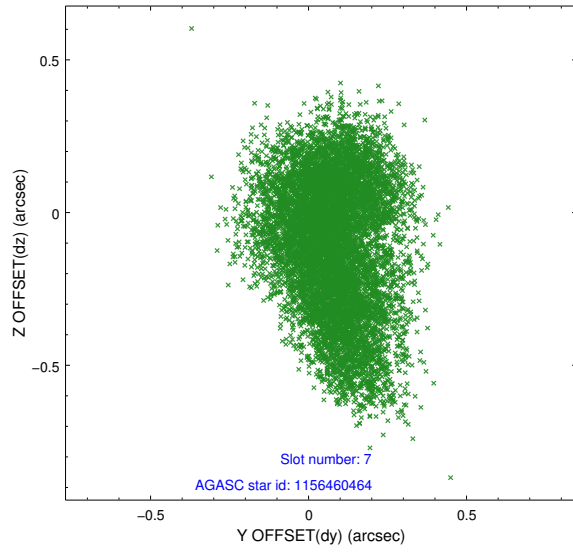
### 2.4.3 Slot 5



## 2.4.4 Slot 6

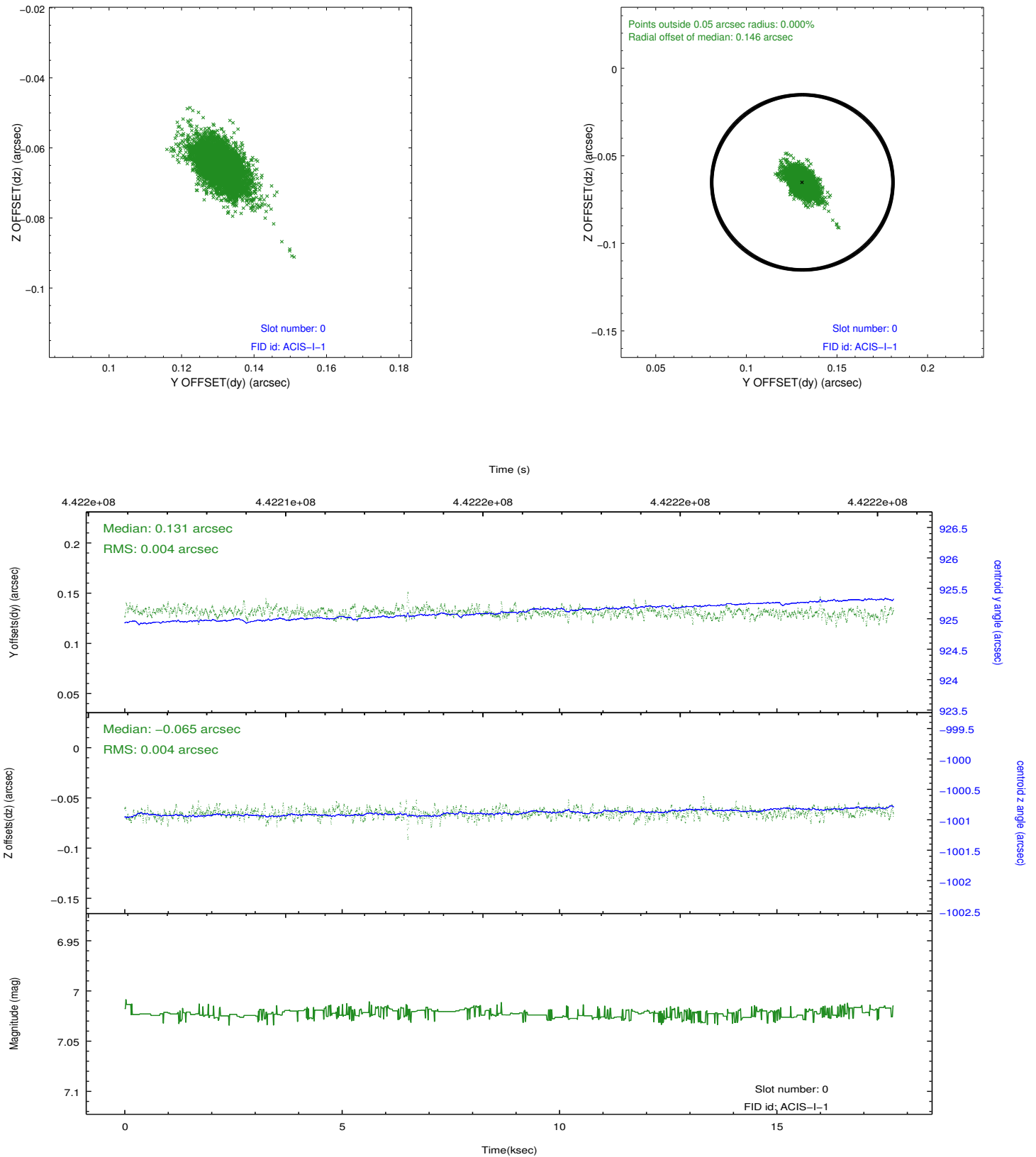


## 2.4.5 Slot 7

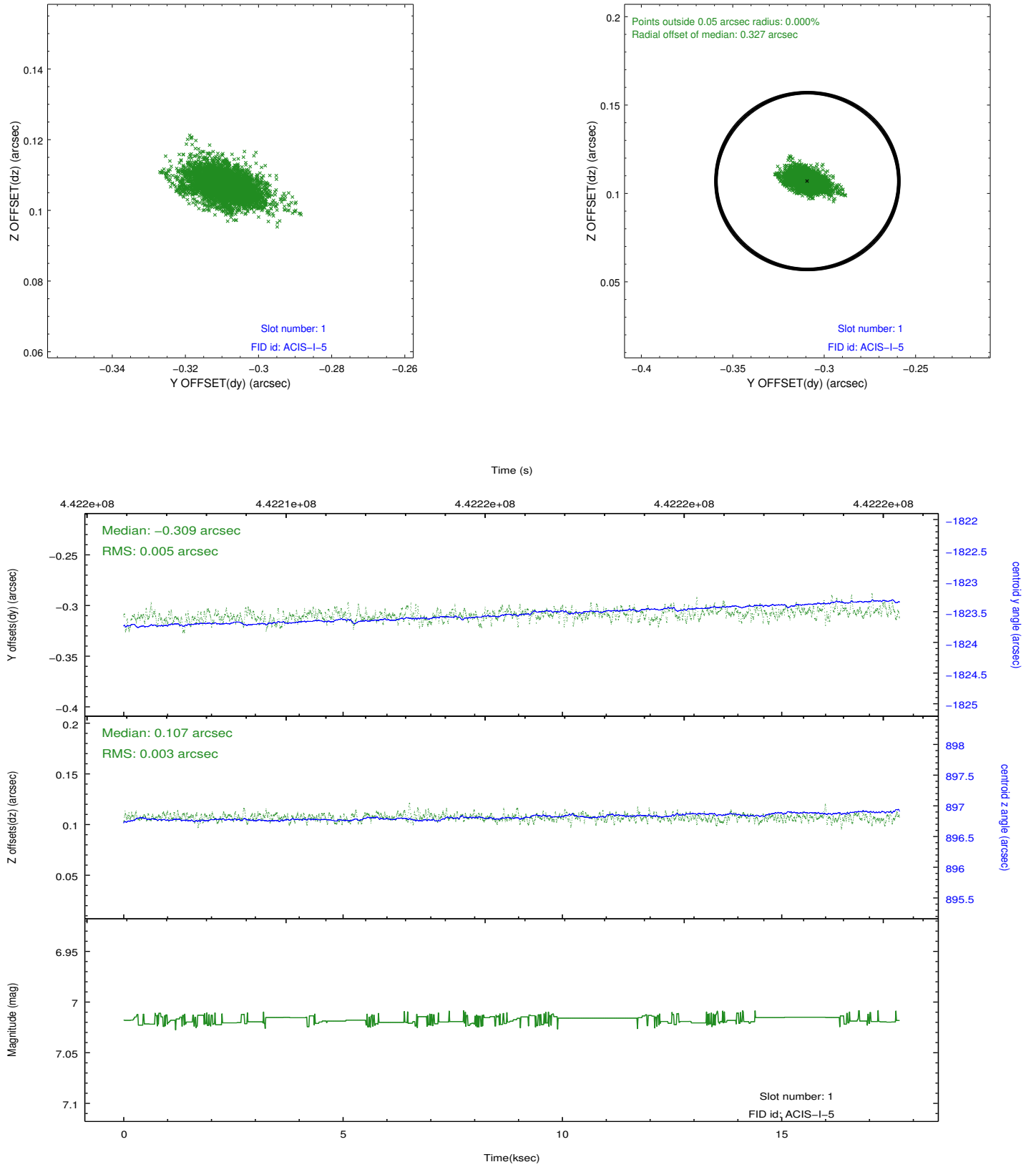


## 2.5 FID Slots

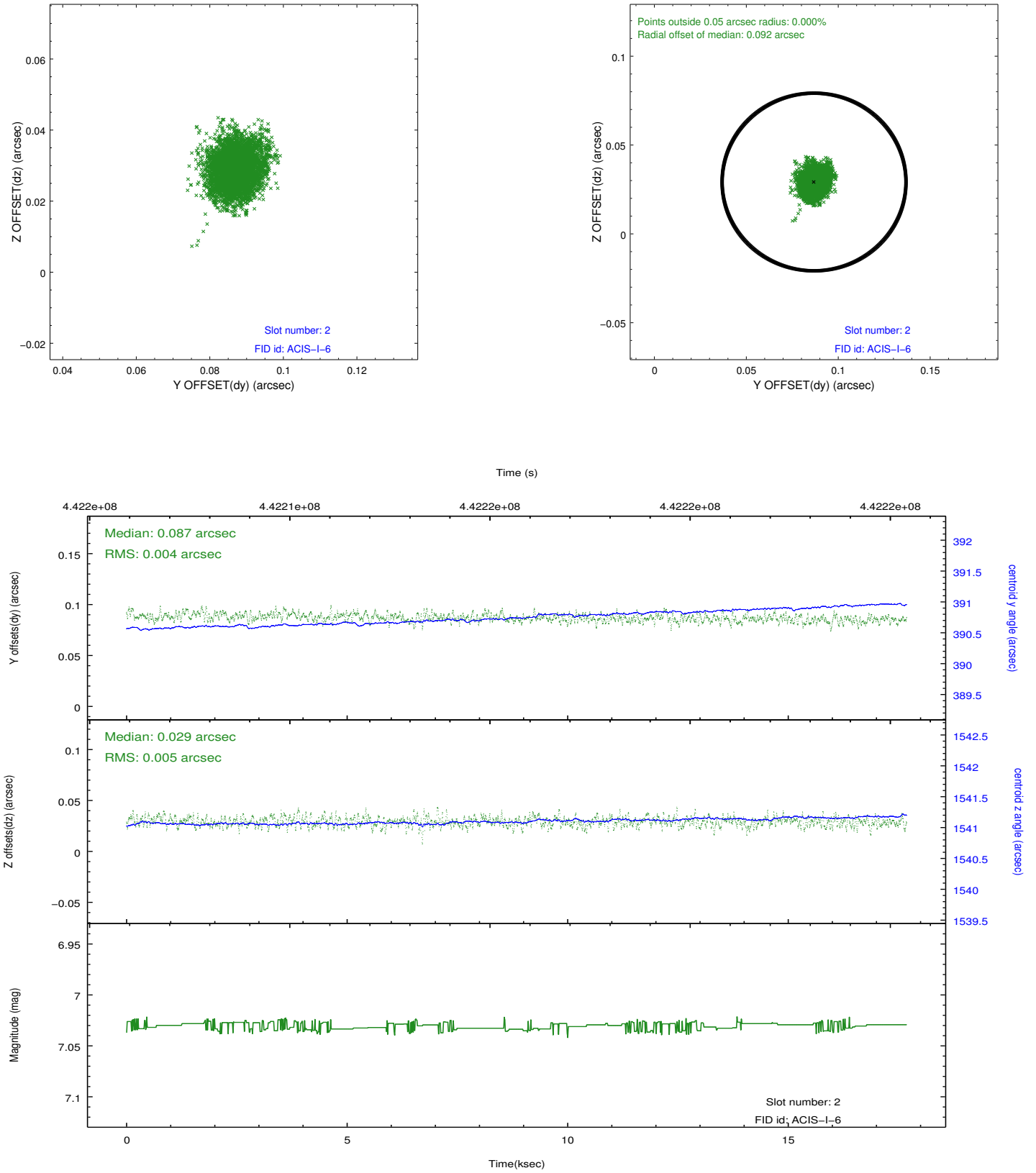
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.01.23
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	17.273020670533

## A.2 Comments

A spatial region of the original bias map for CCD = 0 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 0 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:  
(338.09216, -53.82346), (338.09722, -53.82441), (338.11257, -53.79568), (338.10751, -53.79473)