

# V&V Reference Report

## L2 ASCDS Version : 10.4.2.1

Observation 17428 - L2 Version 2  
Chandra X-Ray Center

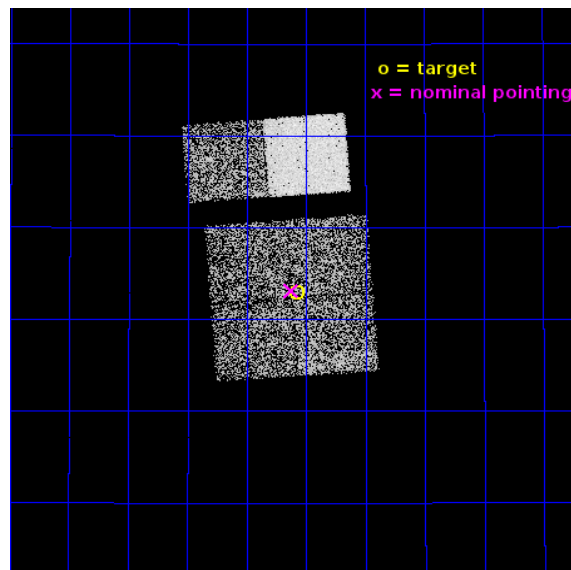
L2 Processing Date : Nov 4 2015

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# 1 Front

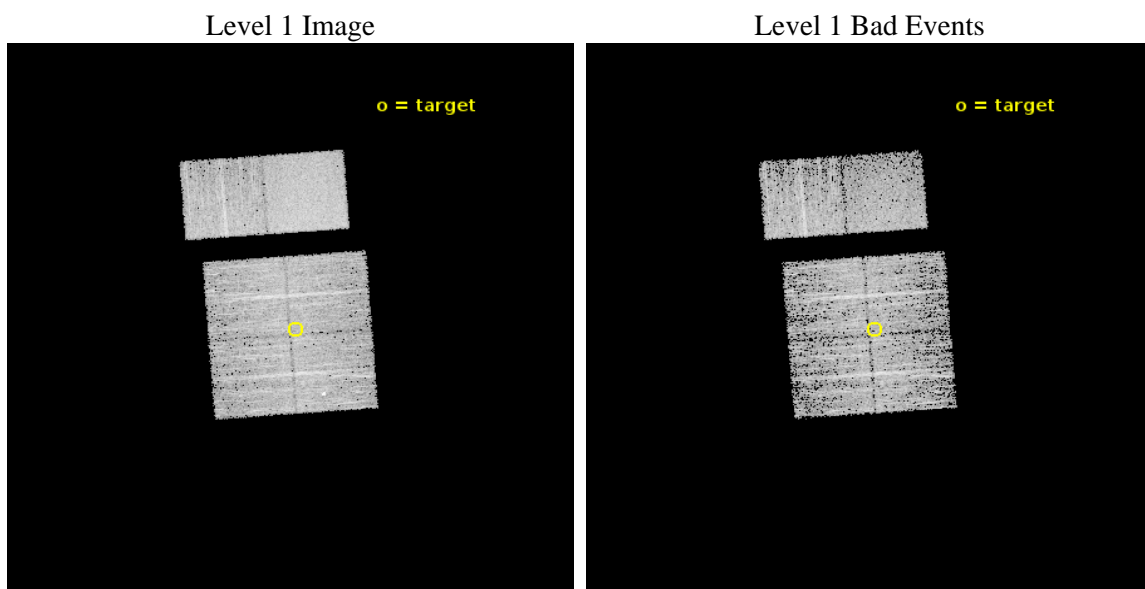
seq_num	901175	Sequence number
obs_id	17428	Observation id
title	A new moderate-depth contiguous layer of the Chandra Bootes field	&#160
observer	Dr. Stephen Murray	Principal investigator
object	Bootes mod depth 2	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	217.519583	Observer's specified target RA [deg]
dec_targ	34.216111	Observer's specified target Dec [deg]
ra_nom	217.53143500687	Nominal RA [deg]
dec_nom	34.218647777432	Nominal Dec [deg]
roll_nom	355.70204934099	Nominal Roll [deg]
revision	2	Processing version of data
ontime	6201.559092164	Sum of GTIs [s]
livetime	6123.0312168085	Livetime [s]
ontime0	6204.8000924587	Sum of GTIs [s]
ontime1	6204.8000924587	Sum of GTIs [s]
ontime2	6204.8000924587	Sum of GTIs [s]
ontime3	6201.559092164	Sum of GTIs [s]
ontime6	6204.8000924587	Sum of GTIs [s]
ontime7	6204.8000924587	Sum of GTIs [s]
l2events	35524	Number of level 2 events



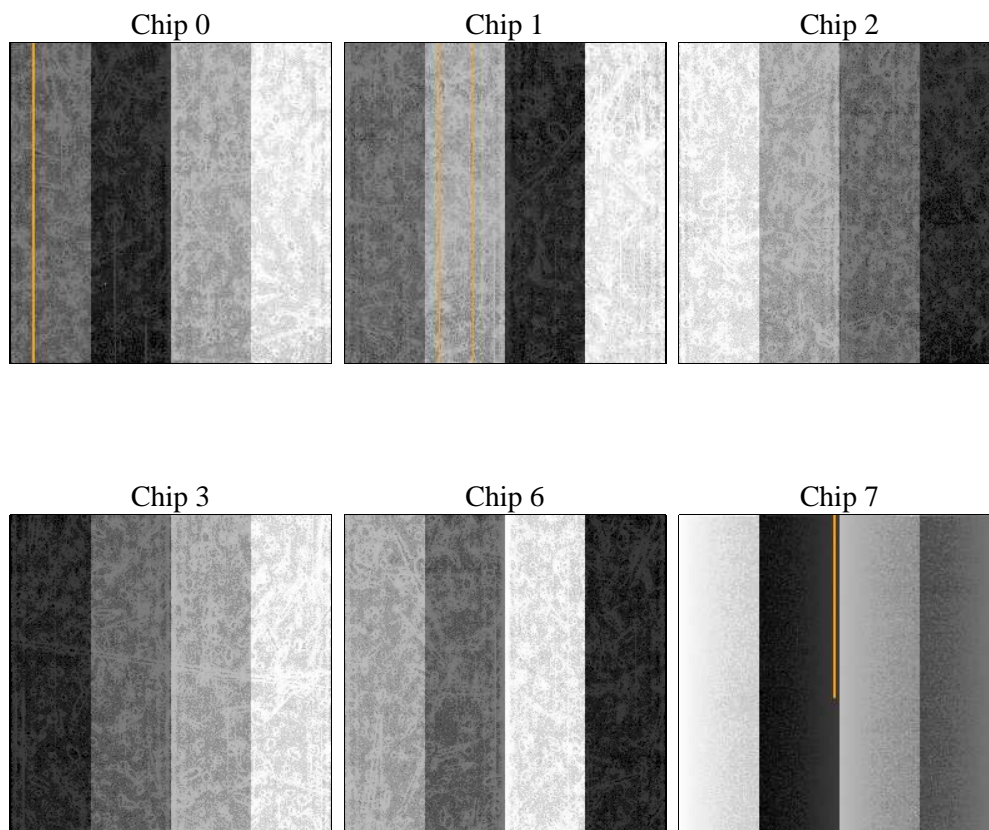
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	6250.000000	[s] Scheduled observation exposure time
ascdsver	10.4.2.1	Processing system revision	ontime	6201.559092164	Sum of GTIs [s]
caldsver	4.6.10a	&#160	ontime0	6204.8000924587	Sum of GTIs [s]
date	2015-11-04T23:52:10	Date and time of file creation	ontime1	6204.8000924587	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	6204.8000924587	Sum of GTIs [s]
			ontime3	6201.559092164	Sum of GTIs [s]
			ontime6	6204.8000924587	Sum of GTIs [s]
			ontime7	6204.8000924587	Sum of GTIs [s]
			l1events	211008	Number of level 1 events

### 2.1.4 Events

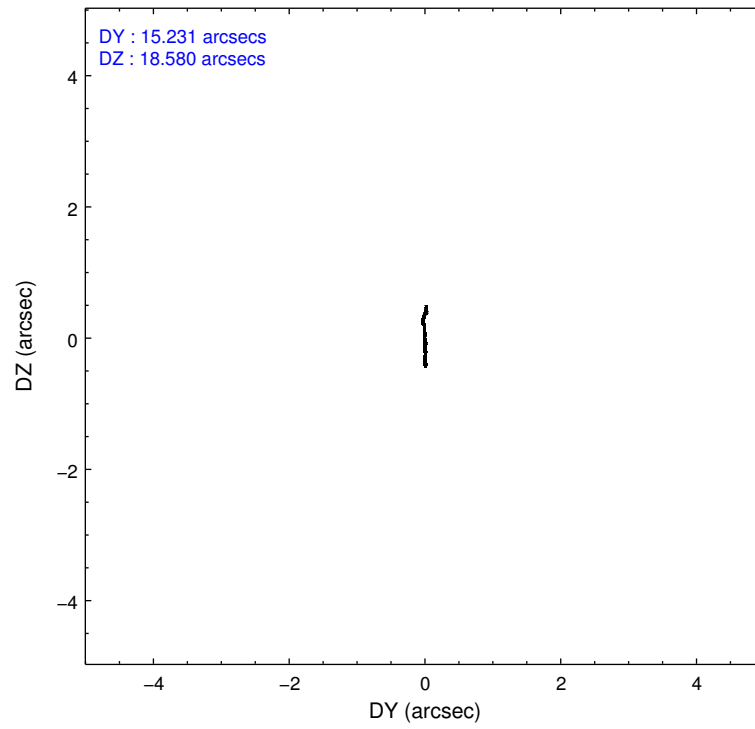
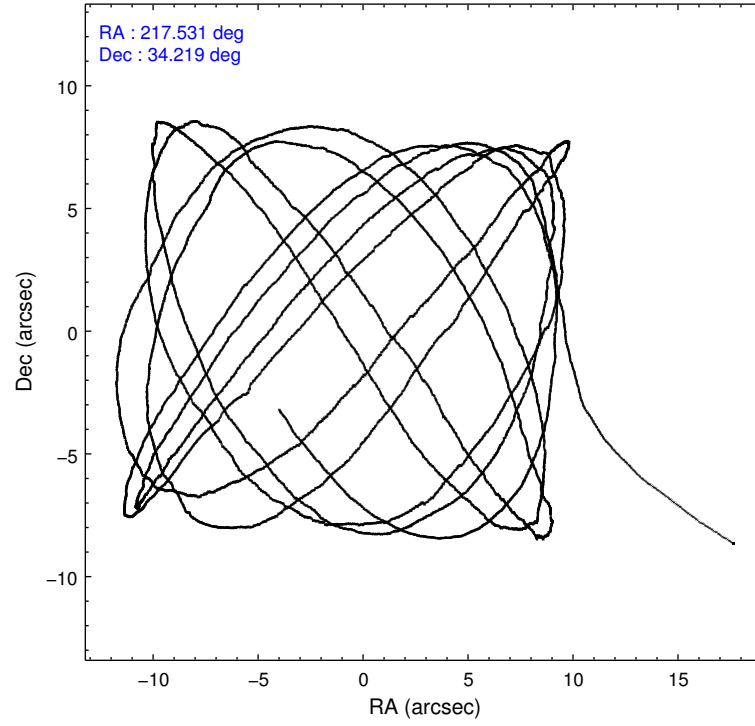
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	30922	33383	34007	31666	35535	45495	grade 0 events	1240	1914	1284	1202	1321	1615
rejected events	27160	28432	30278	28143	31542	25993		4%	5%	3%	3%	3%	3%
rejected %	87%	85%	89%	88%	88%	57%	grade 1 events	15	20	19	15	13	58
								0%	0%	0%	0%	0%	0%
							grade 2 events	962	1171	920	783	919	4170
								3%	3%	2%	2%	2%	9%
							grade 3 events	393	441	384	398	408	1550
								1%	1%	1%	1%	1%	3%
							grade 4 events	401	398	371	377	404	1605
								1%	1%	1%	1%	1%	3%
							grade 5 events	1504	1552	1447	1793	1772	4578
								4%	4%	4%	5%	4%	10%
							grade 6 events	768	1029	773	767	943	10572
								2%	3%	2%	2%	2%	23%
							grade 7 events	25639	26858	28809	26331	29755	21347
								82%	80%	84%	83%	83%	46%

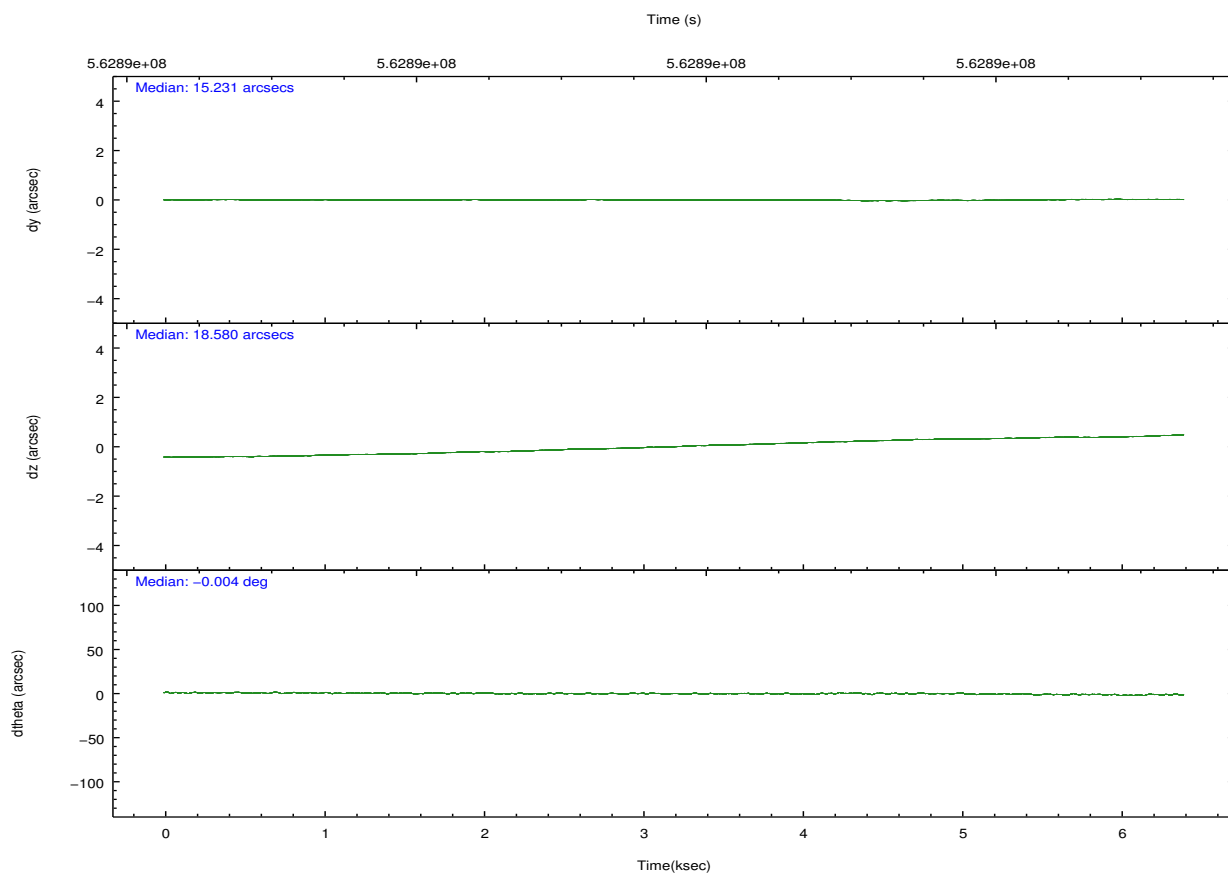
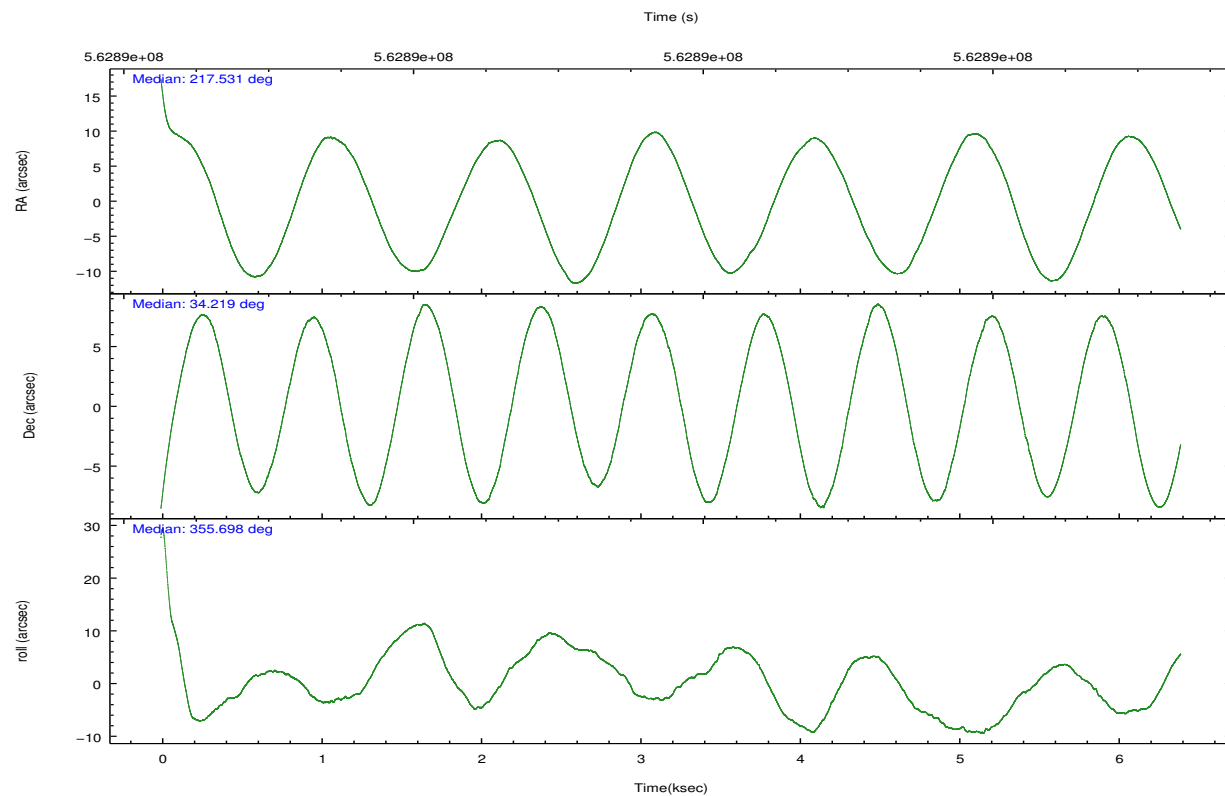


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-012367	ACIS-012367	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	217.501290	217.5314350068679	CCD I2 on	Y	Y
[deg] Pointing Dec	34.206601	34.21864777743225	CCD I3 on	Y	Y
[deg] Pointing Roll	355.510282	355.7020493409852	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	O2	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O1	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	562888712.184000	562887309.08798	CCD S5 on	N	N
Observation start date	2015-11-02T21:57:24	2015-11-02T21:35:09	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	562894962.184000	562895198.0009201	On-chip summing requested	N	N
Observation end date	2015-11-02T23:41:34	2015-11-02T23:46:38	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



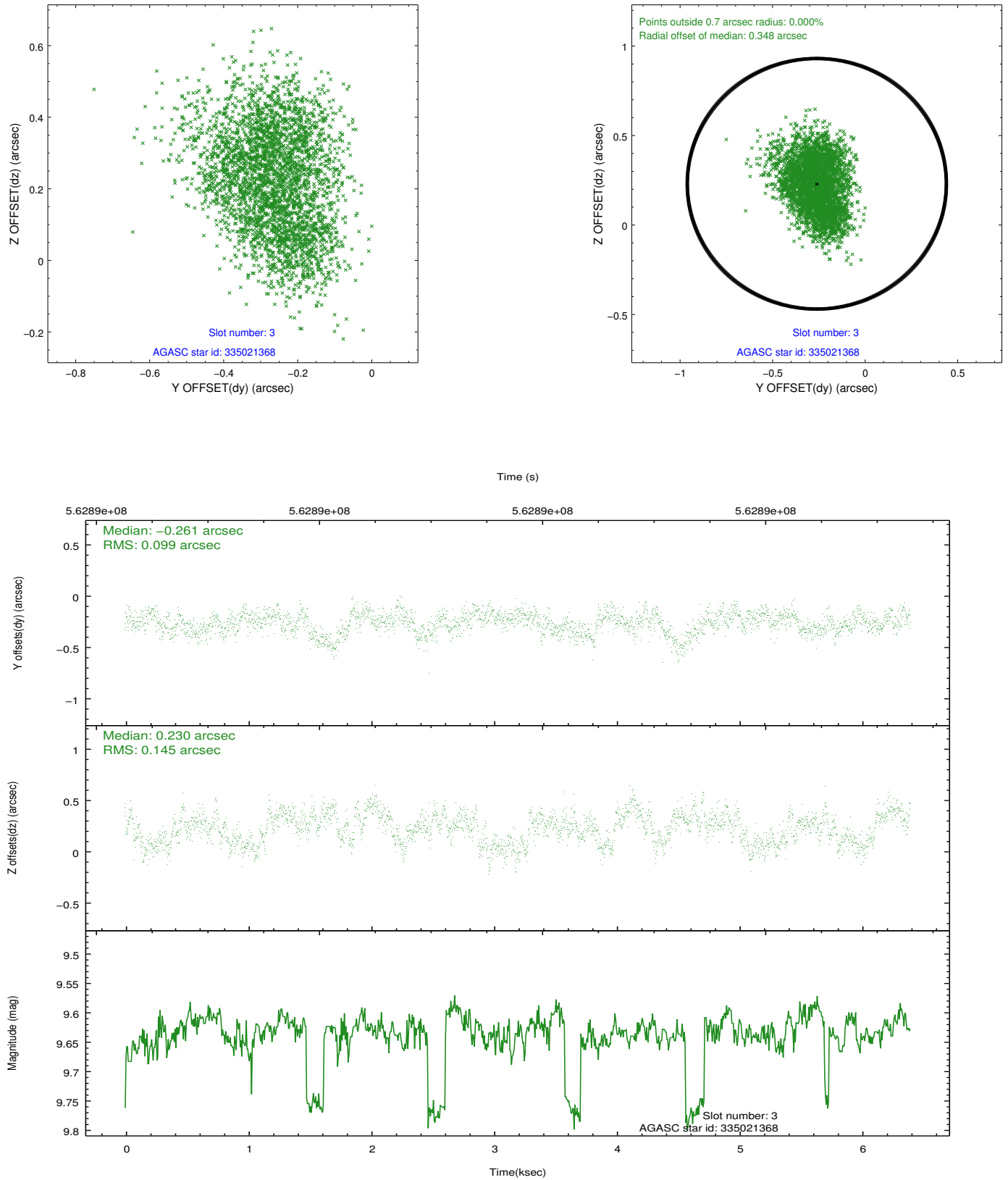


### Slot Statistics

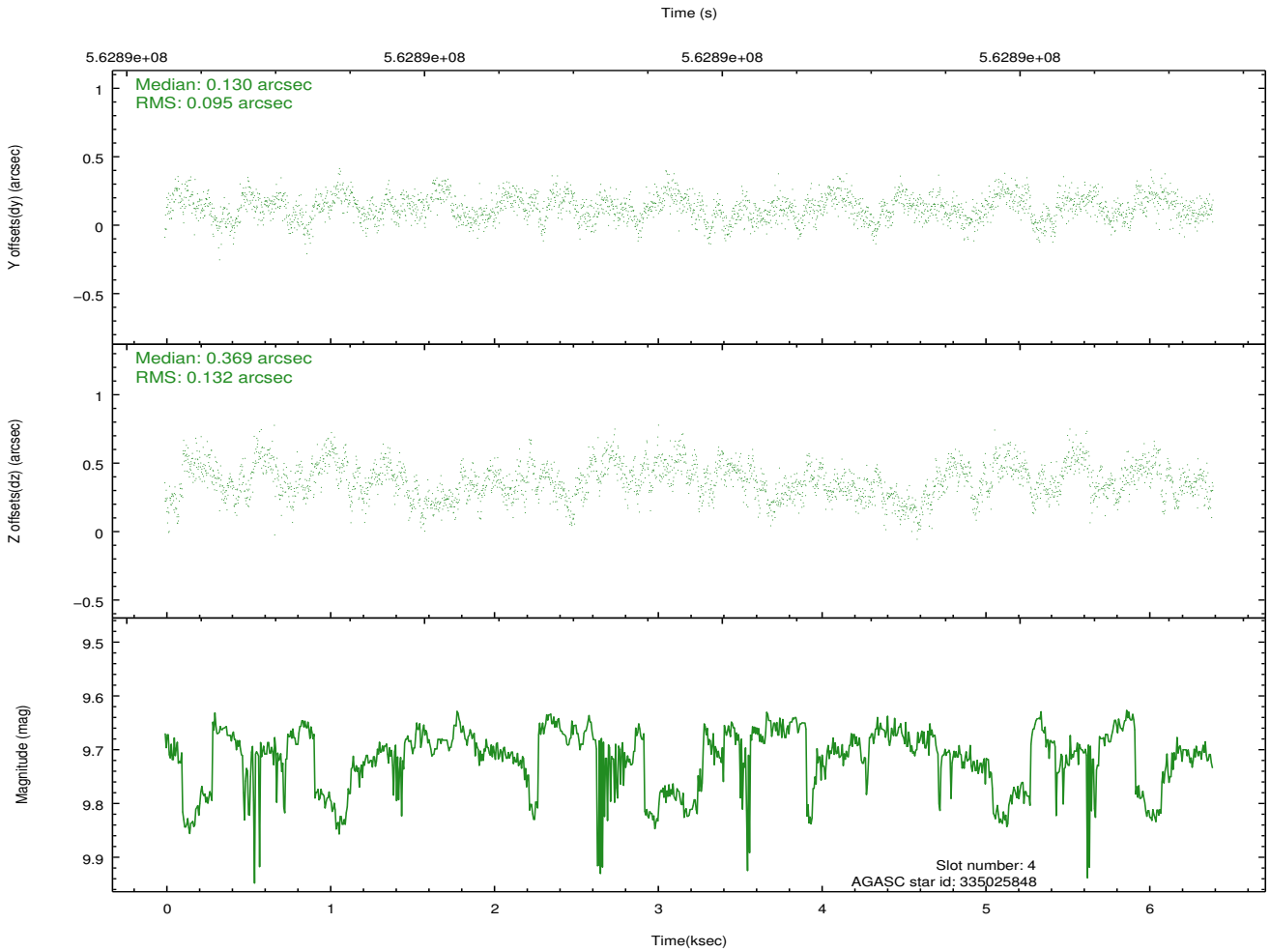
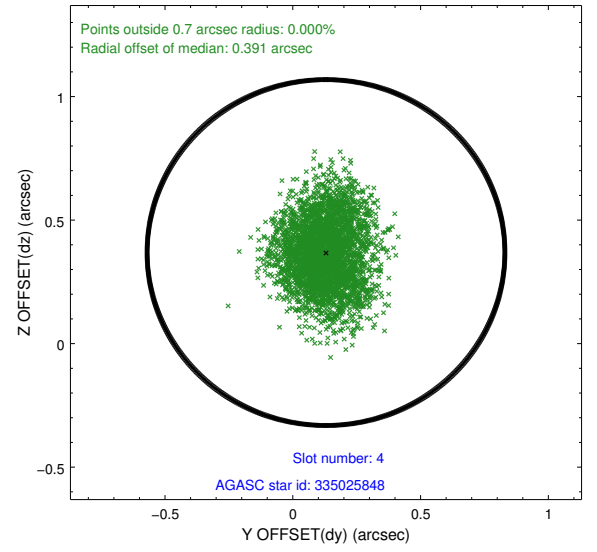
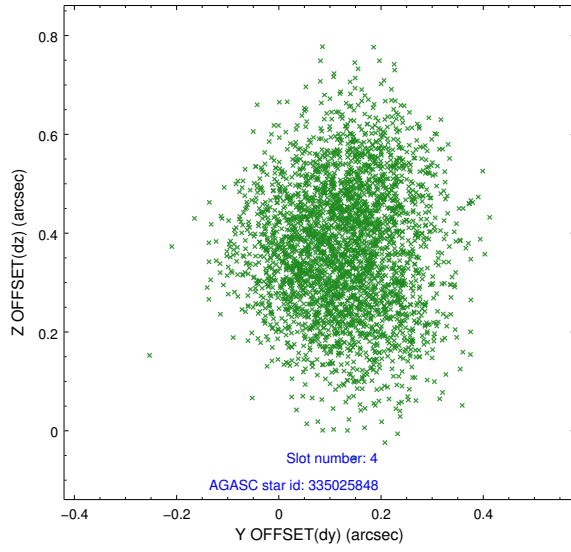
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.24	1561	0.065	0.002	0.009	0.015	0.000000	0.000000	924.32	-842.25
1	FID		ACIS-I-5	7.26	1561	-0.341	0.038	0.008	0.014	0.000000	0.000000	-1823.76	1054.71
2	FID		ACIS-I-6	7.26	1561	0.185	0.031	0.008	0.012	0.000000	0.000000	388.88	1700.33
3	GUIDE	used	335021368	9.63	3117	-0.261	0.230	0.187	0.298	217.529643	33.934817	160.57	-968.09
4	GUIDE	used	335025848	9.70	3115	0.130	0.369	0.175	0.274	217.530531	33.778292	207.97	-1529.80
5	GUIDE	used	335028336	9.47	3119	0.337	-0.195	0.110	0.180	217.189840	34.665629	-1048.82	1576.34
6	GUIDE	used	335028696	9.17	3120	-0.296	-0.008	0.158	0.254	217.260519	33.844112	-616.41	-1355.59
7	GUIDE	used	335030384	8.81	3117	0.100	-0.386	0.108	0.184	216.806407	34.722197	-2196.19	1696.02

## 2.4 Star Slots

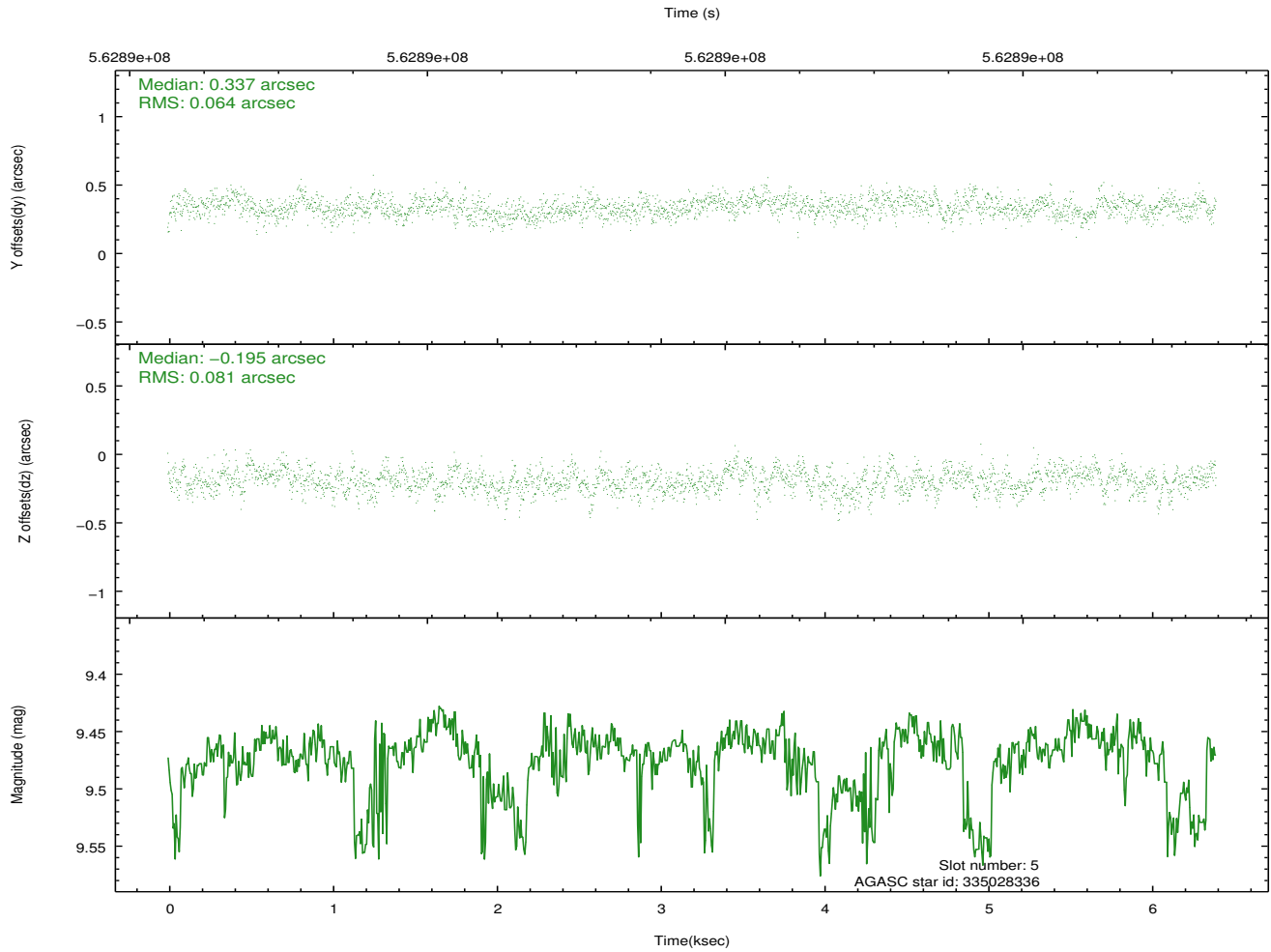
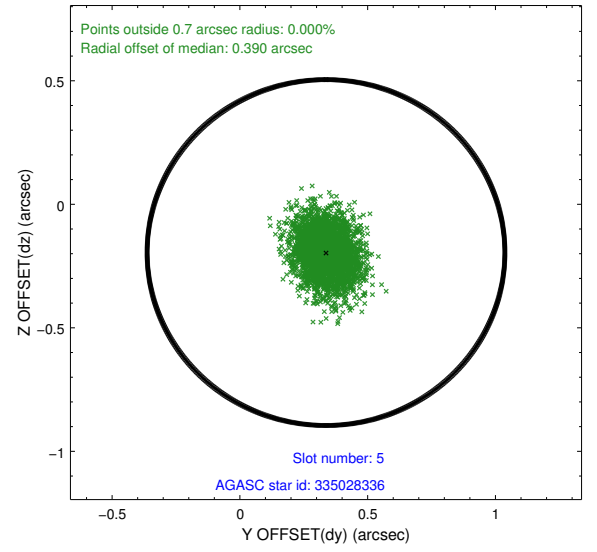
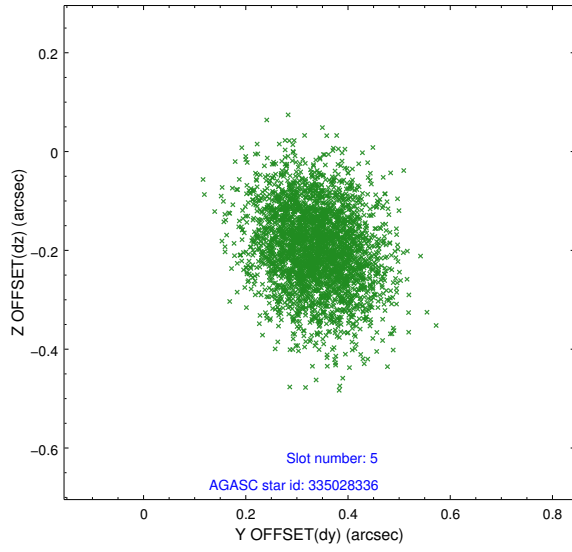
### 2.4.1 Slot 3



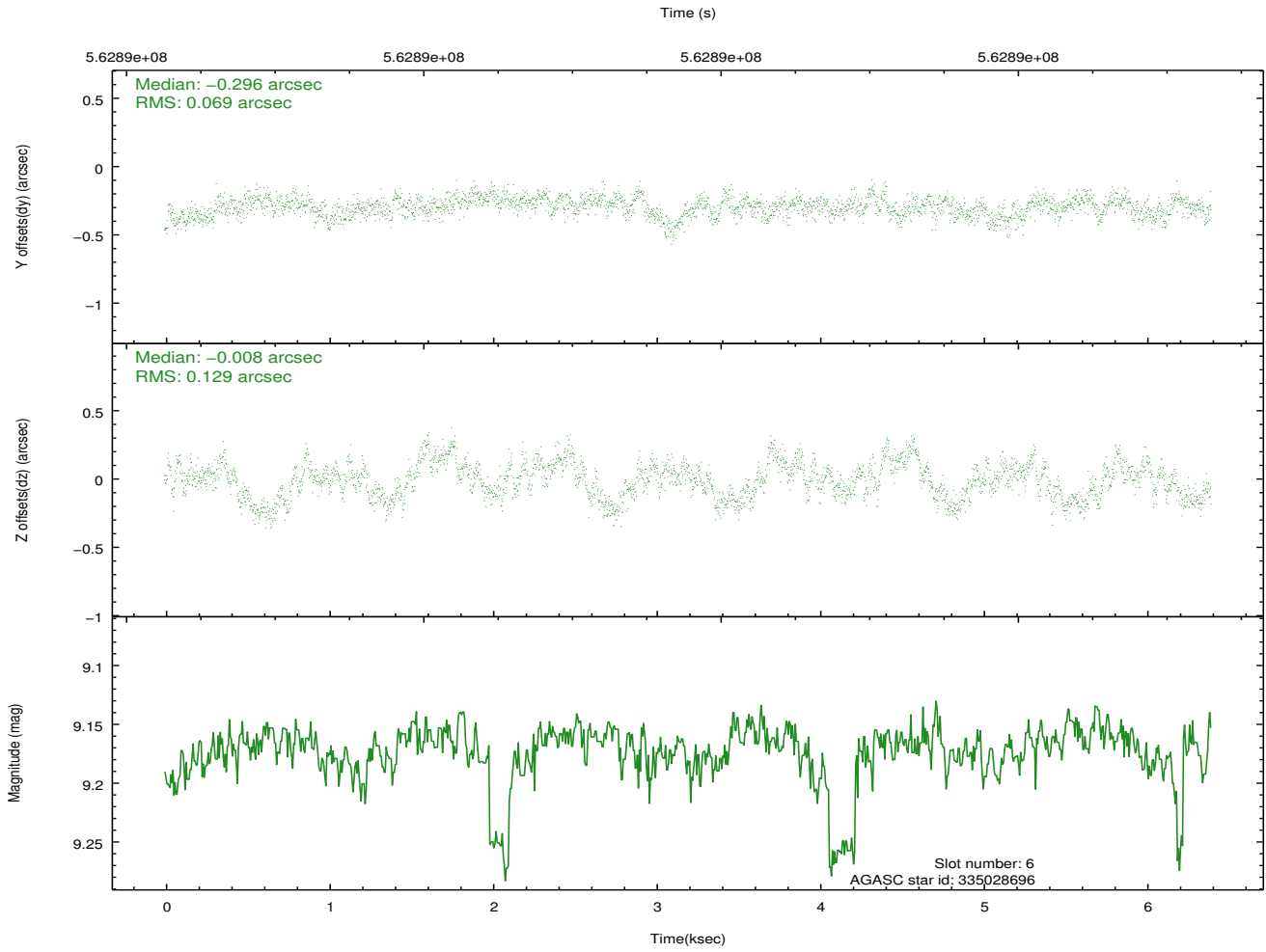
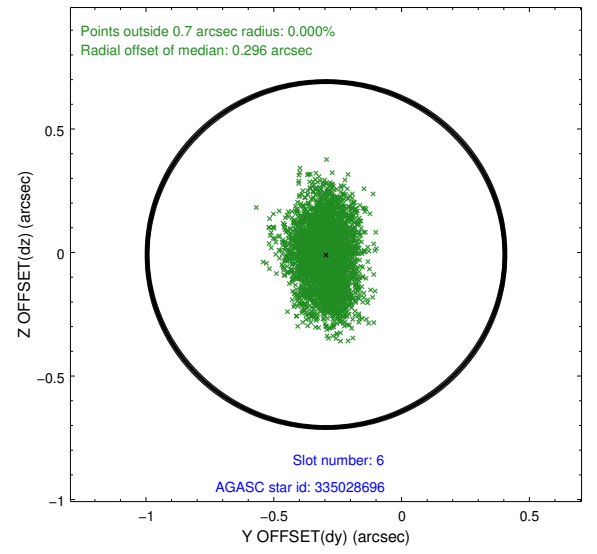
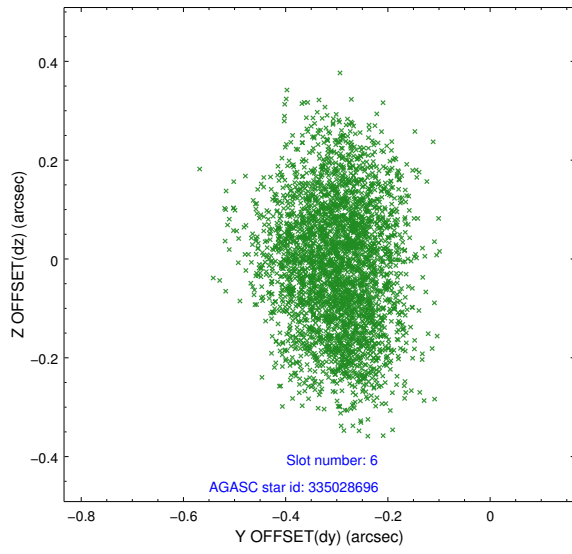
## 2.4.2 Slot 4



### 2.4.3 Slot 5

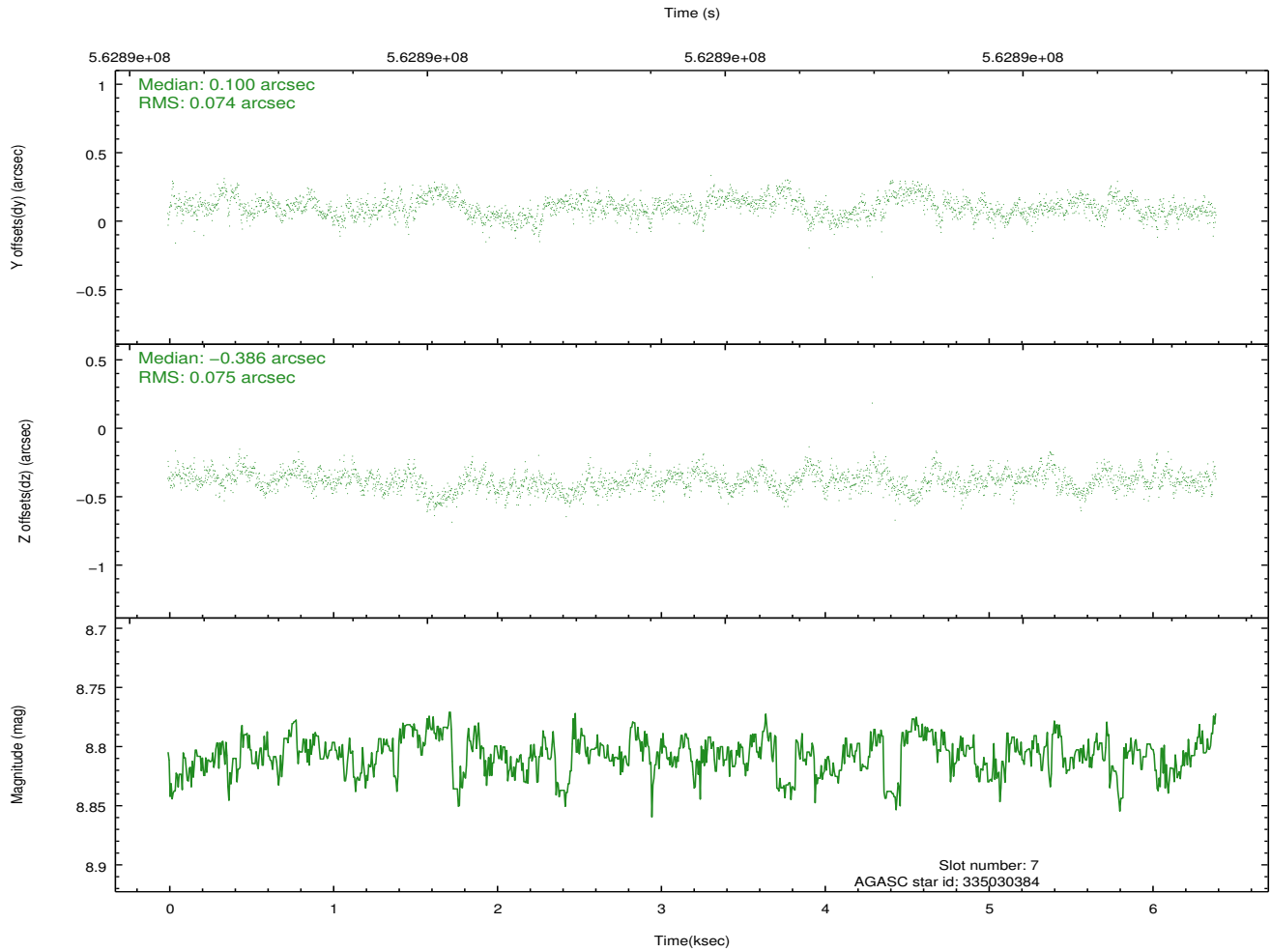
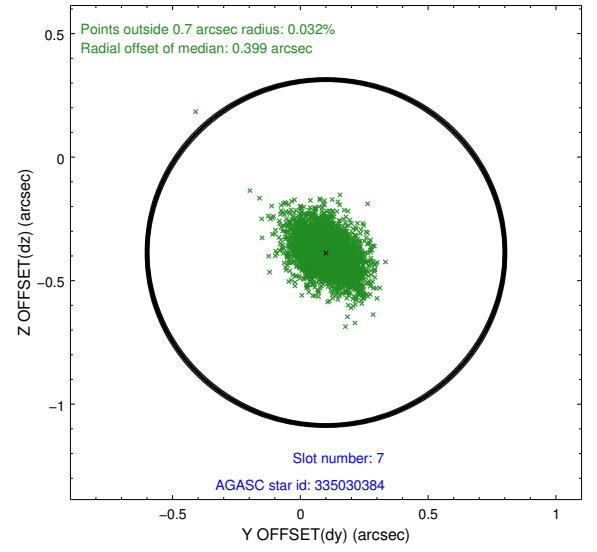
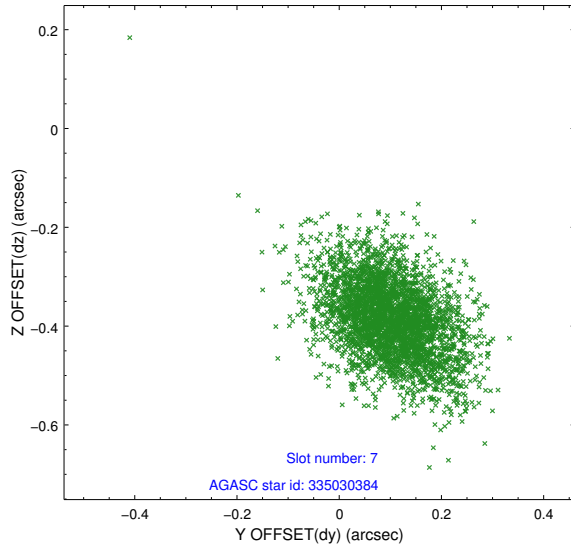


## 2.4.4 Slot 6



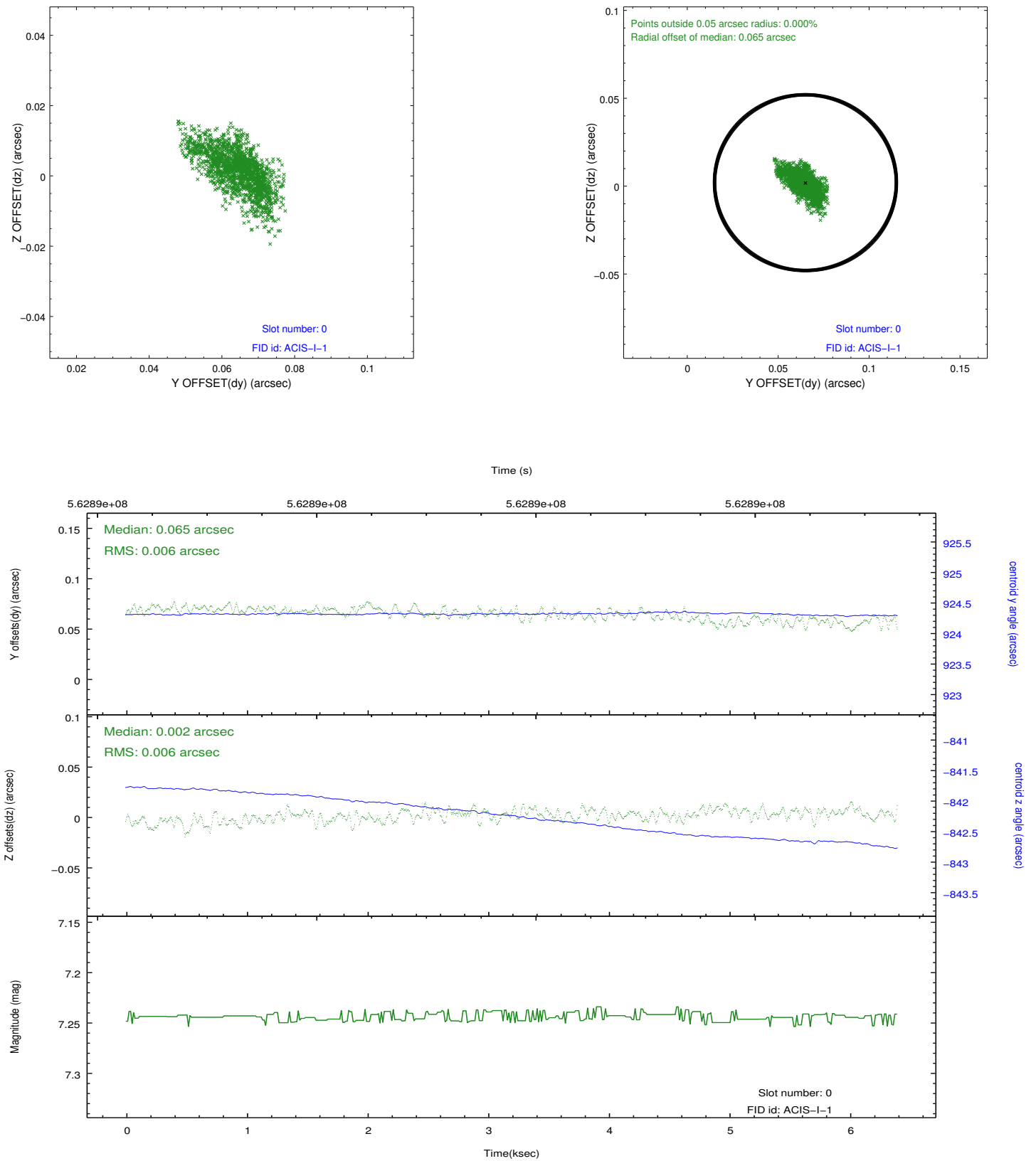


## 2.4.5 Slot 7

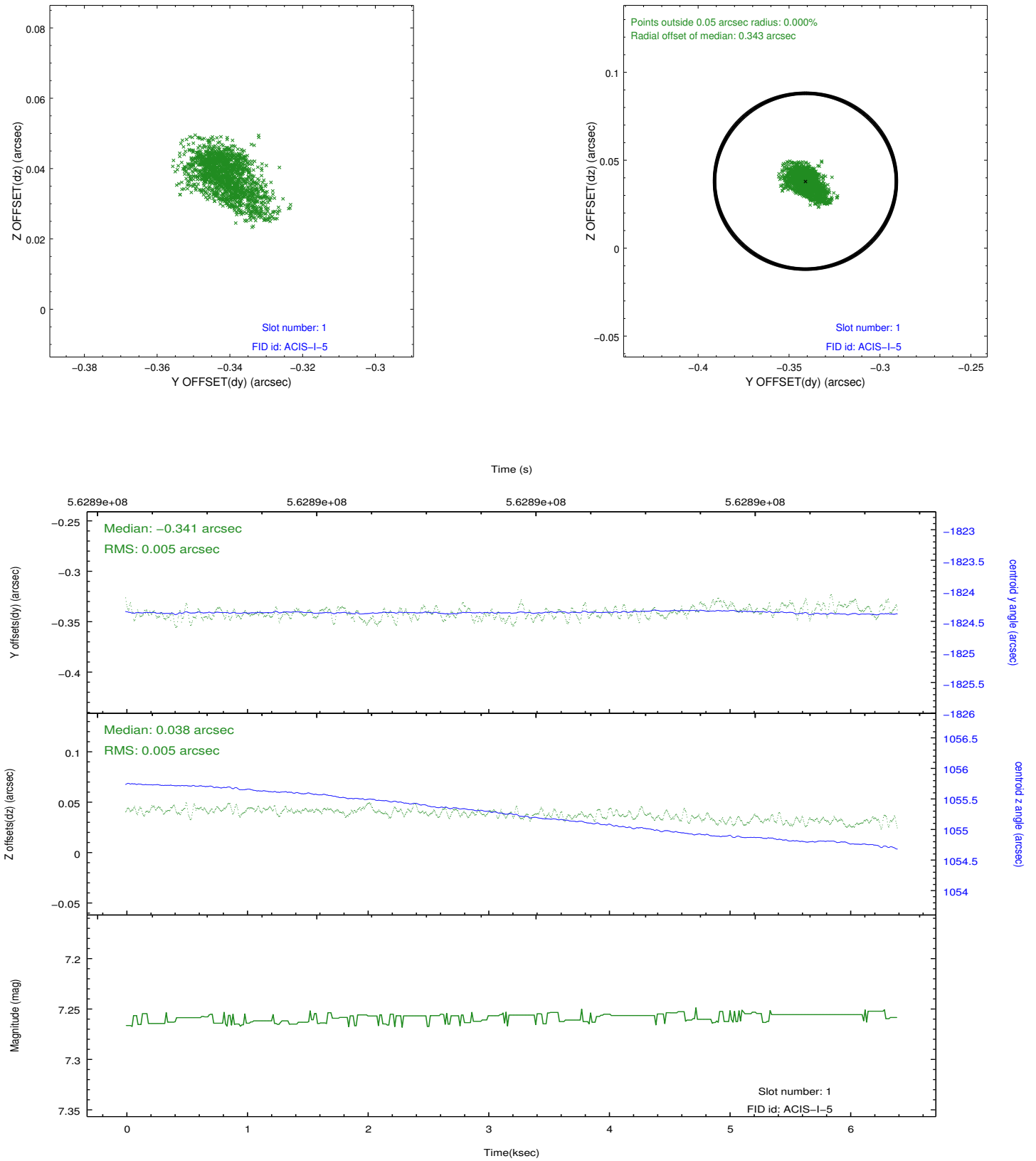


## 2.5 FID Slots

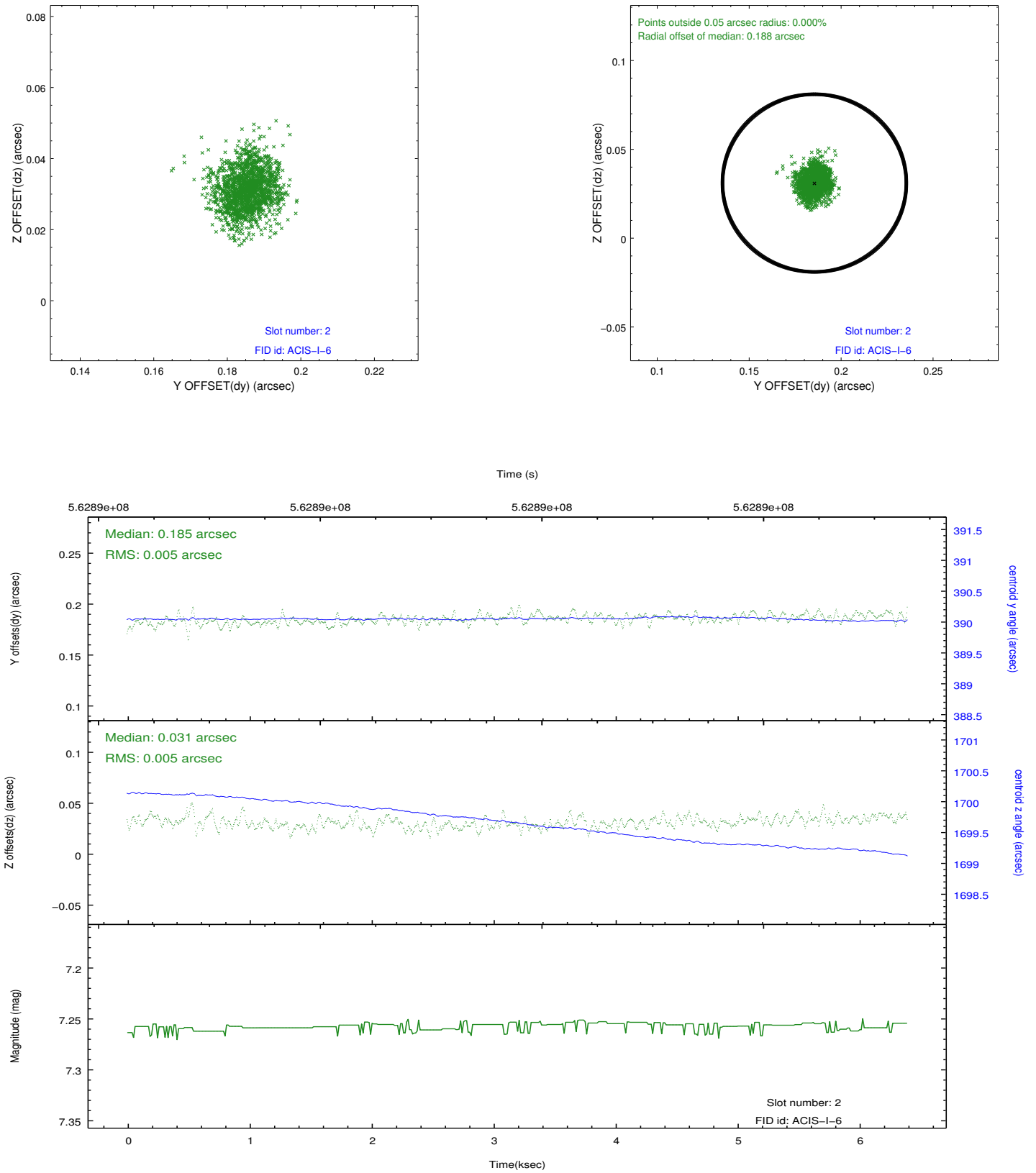
### 2.5.1 Slot 0



## 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)	2015.11.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	6.201559092164

## A.2 Comments

A spatial region of the original bias map for CCD = 1 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 = 1 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: (217.35972, 34.19410), (217.35936, 34.18988), (217.52748, 34.17957), (217.52785, 34.18378).