

# V&V Reference Report

## L2 ASCDS Version : 10.4.2.1

Observation 17429 - L2 Version 2  
Chandra X-Ray Center

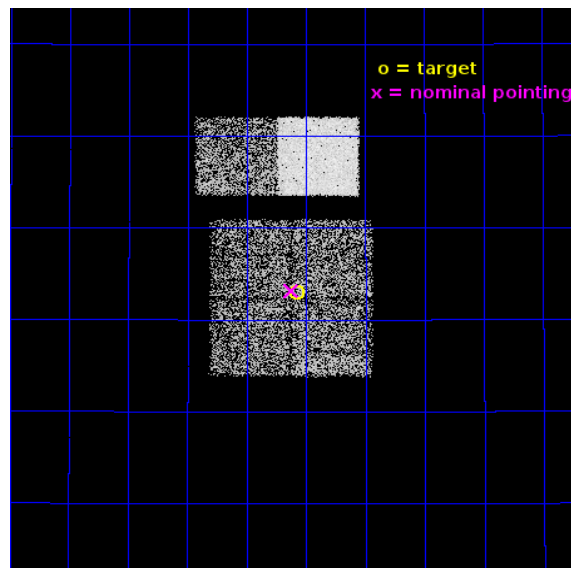
L2 Processing Date : Nov 4 2015

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# 1 Front

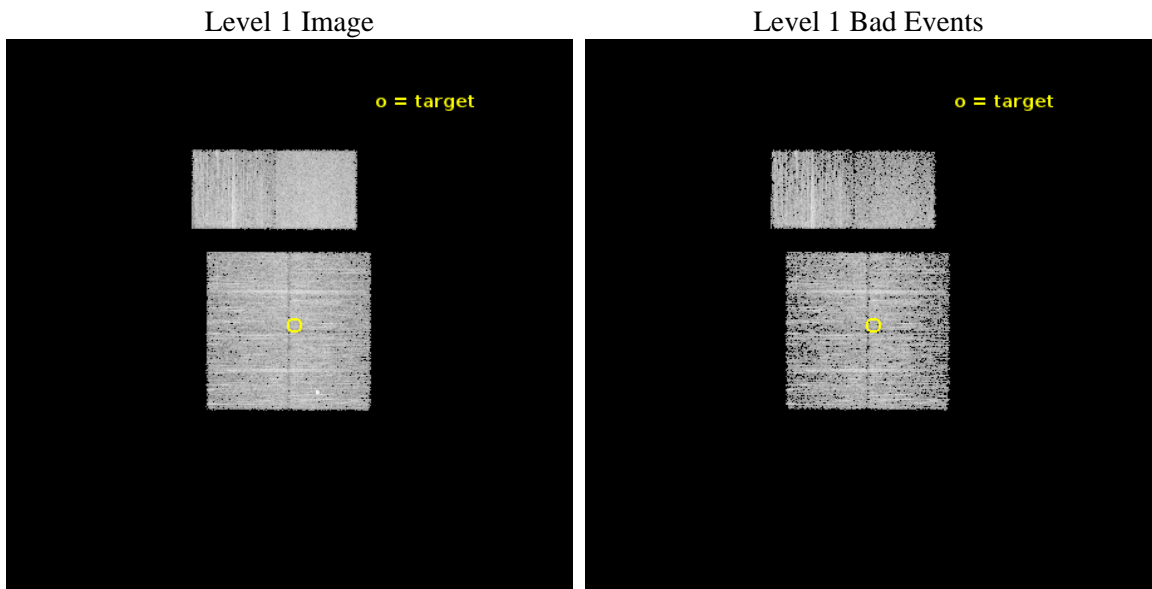
seq_num	901176	Sequence number
obs_id	17429	Observation id
title	A new moderate-depth contiguous layer of the Chandra Bootes field	&#160
observer	Dr. Stephen Murray	Principal investigator
object	Bootes mod depth 2	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	217.519583	Observer's specified target RA [deg]
dec_targ	34.216111	Observer's specified target Dec [deg]
ra_nom	217.53116746799	Nominal RA [deg]
dec_nom	34.219387803224	Nominal Dec [deg]
roll_nom	0.20213487898807	Nominal Roll [deg]
revision	2	Processing version of data
ontime	6003.2000894547	Sum of GTIs [s]
livetime	5927.1839552289	Livetime [s]
ontime0	6003.2000894547	Sum of GTIs [s]
ontime1	6003.2000894547	Sum of GTIs [s]
ontime2	6003.2000894547	Sum of GTIs [s]
ontime3	6003.2000894547	Sum of GTIs [s]
ontime6	6003.2000894547	Sum of GTIs [s]
ontime7	6003.2000894547	Sum of GTIs [s]
l2events	34789	Number of level 2 events



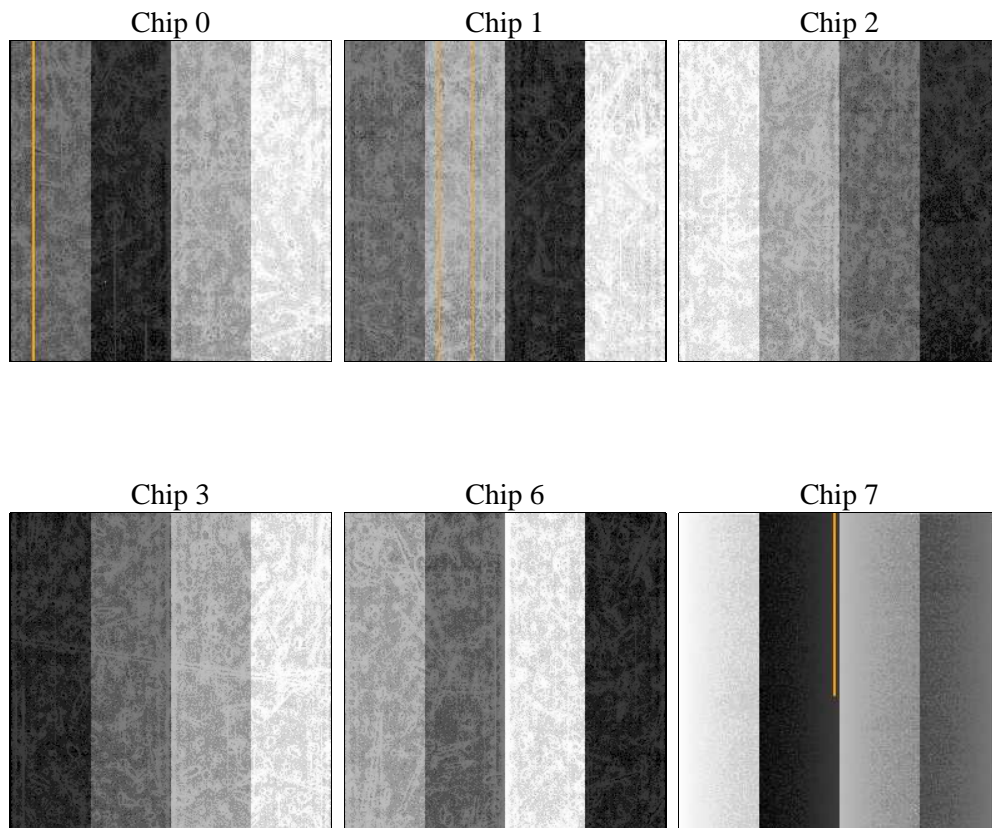
## 2 OBI

### 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	6003.2000894547	Sum of GTIs [s]
caldsver	4.6.10a	&#160	ontime0	6003.2000894547	Sum of GTIs [s]
date	2015-11-04T23:51:01	Date and time of file creation	ontime1	6003.2000894547	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	6003.2000894547	Sum of GTIs [s]
			ontime3	6003.2000894547	Sum of GTIs [s]
			ontime6	6003.2000894547	Sum of GTIs [s]
			ontime7	6003.2000894547	Sum of GTIs [s]
			l1events	208916	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	31259	32607	32466	31304	36958	44322	grade 0 events	1171	1971	1272	1337	1322	1640
rejected events	27597	27823	28807	27700	33000	25279		3%	6%	3%	4%	3%	3%
rejected %	88%	85%	88%	88%	89%	57%	grade 1 events	24	19	25	20	13	58
								0%	0%	0%	0%	0%	0%
							grade 2 events	884	1071	898	777	910	4013
								2%	3%	2%	2%	2%	9%
							grade 3 events	454	395	387	340	413	1493
								1%	1%	1%	1%	1%	3%
							grade 4 events	381	415	385	394	390	1492
								1%	1%	1%	1%	1%	3%
							grade 5 events	1448	1451	1446	1661	1738	4441
								4%	4%	4%	5%	4%	10%
							grade 6 events	774	940	720	762	929	10418
								2%	2%	2%	2%	2%	23%
							grade 7 events	26123	26345	27333	26013	31243	20767
								83%	80%	84%	83%	84%	46%

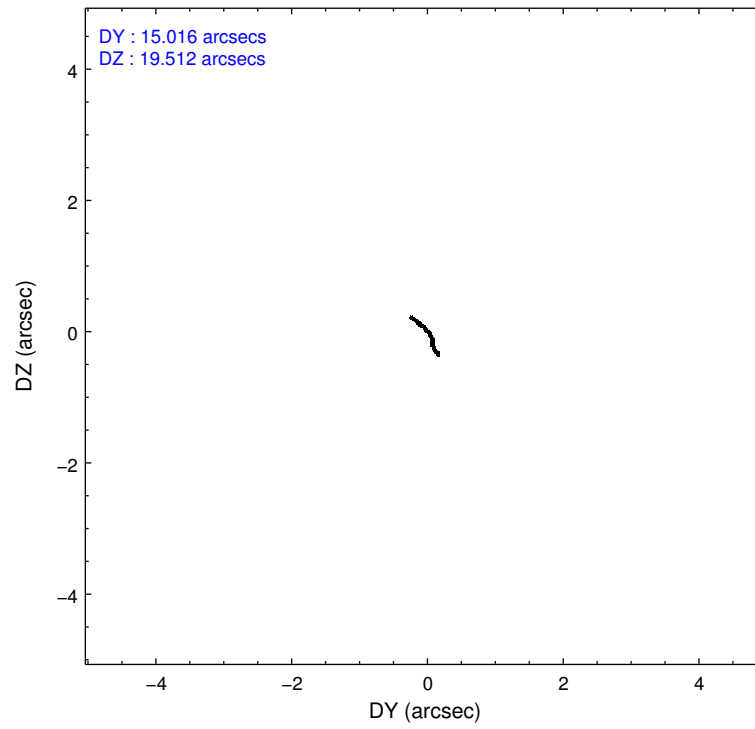
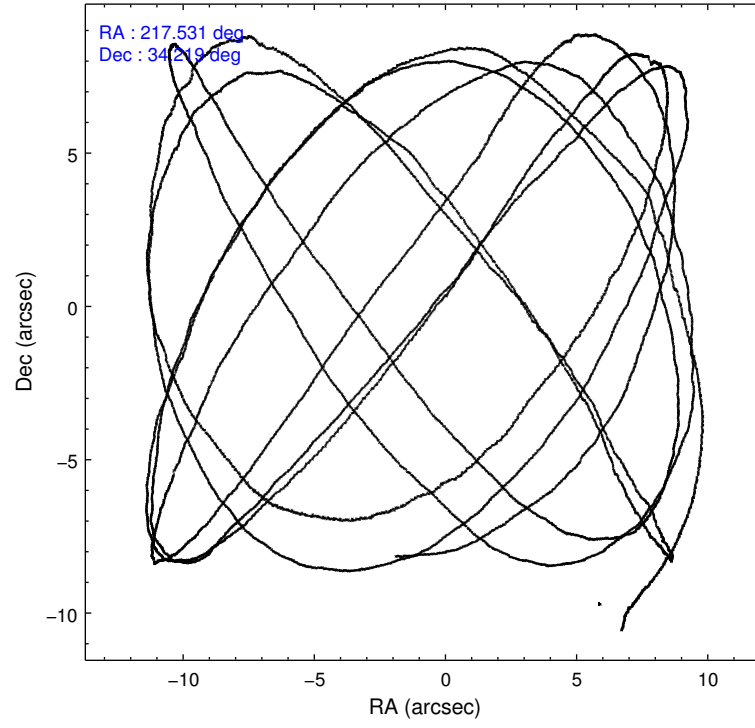


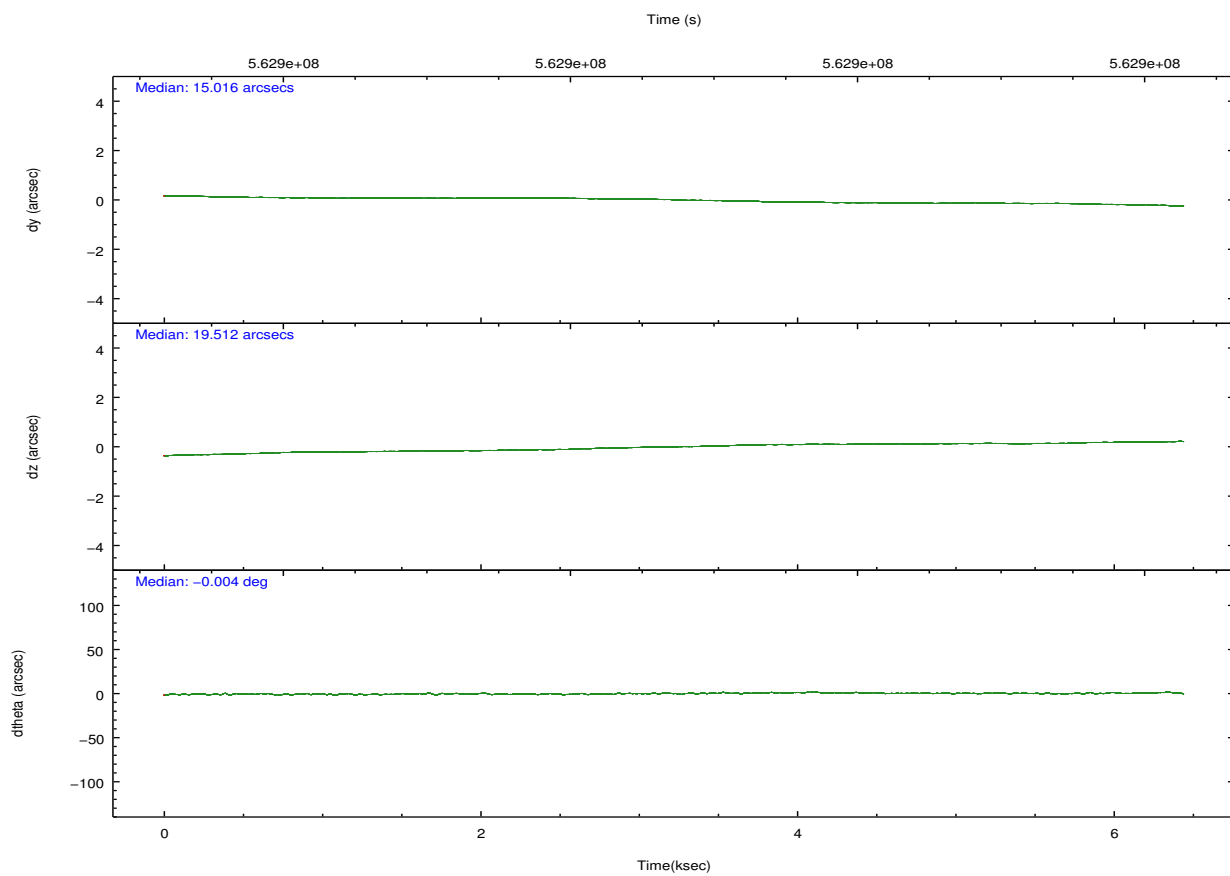
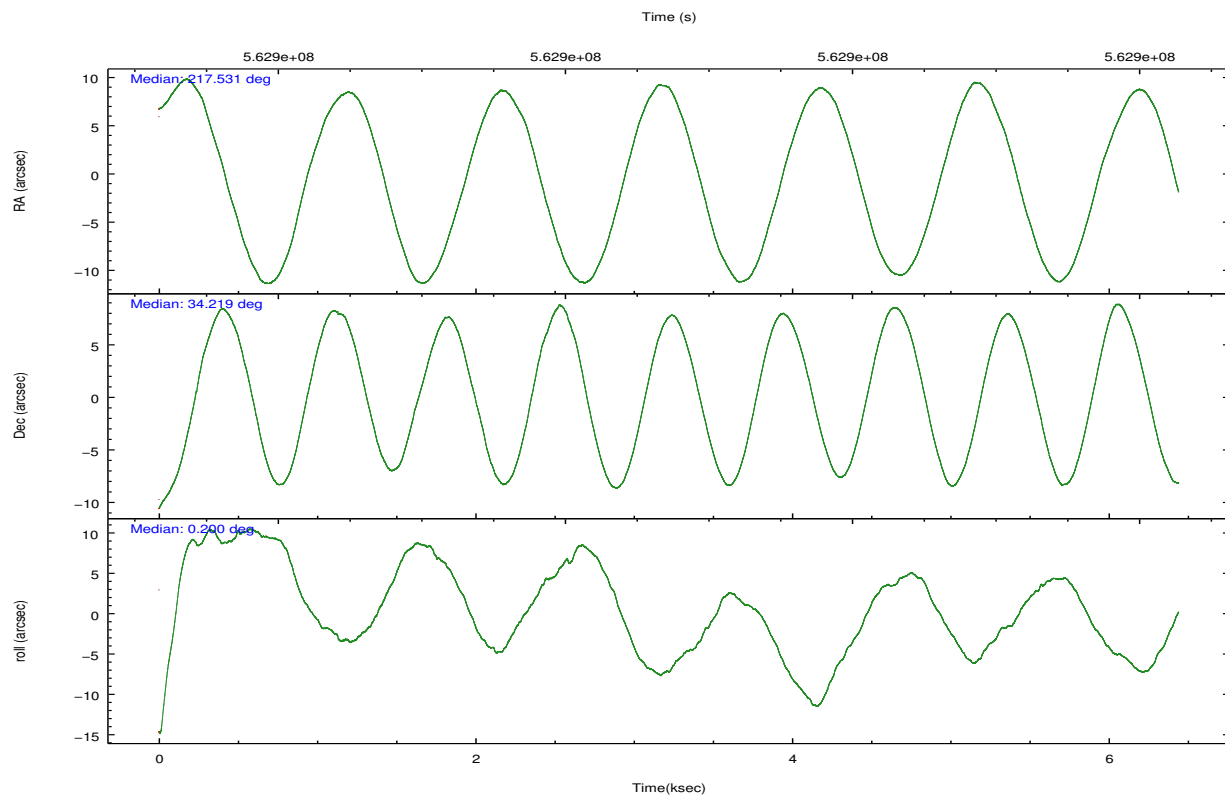
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-012367	ACIS-012367
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	217.502256	217.5311674679866
[deg] Pointing Dec	34.205450	34.21938780322432
[deg] Pointing Roll	0.009742	0.2021348789880682
[mm] SIM focus pos	-0.782348	-0.7809083437167272
[mm] SIM defocus	0	0.001439871863259334
[mm] SIM translation stage pos	-233.592463	-233.5874344608287
[mm] SIM translation stage offset	0	-0.005018542100998502
[s] Observation start time (MET)	562895676.184000	562895198.0009201
Observation start date	2015-11-02T23:53:28	2015-11-02T23:46:38
[s] Observation end time (MET)	562901926.184000	562902060.37631
Observation end date	2015-11-03T01:37:38	2015-11-03T01:41:00
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	Y	Y
CCD I1 on	Y	Y
CCD I2 on	Y	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O2	Y
CCD S3 on	O1	Y
CCD S4 on	N	N
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



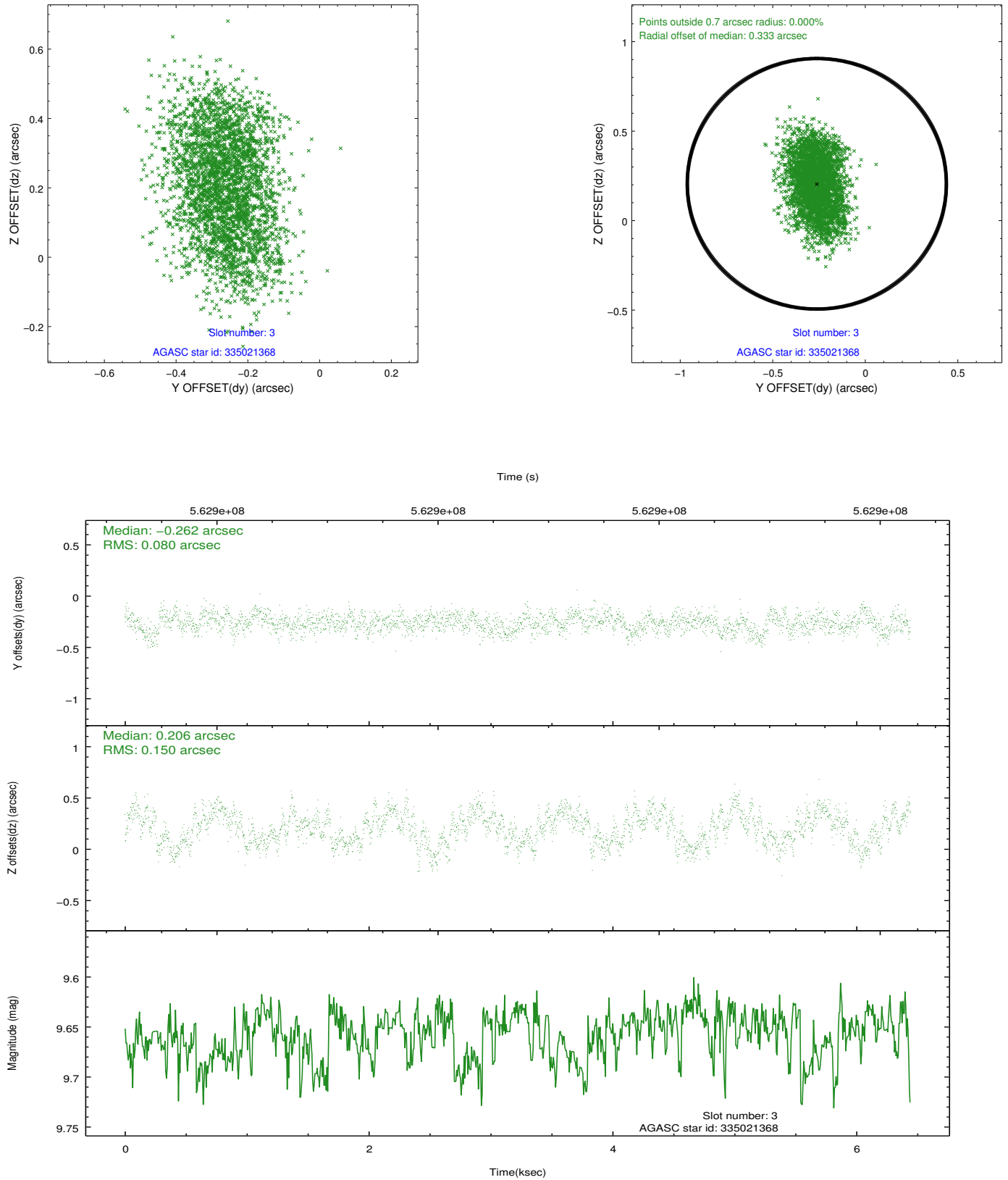


### Slot Statistics

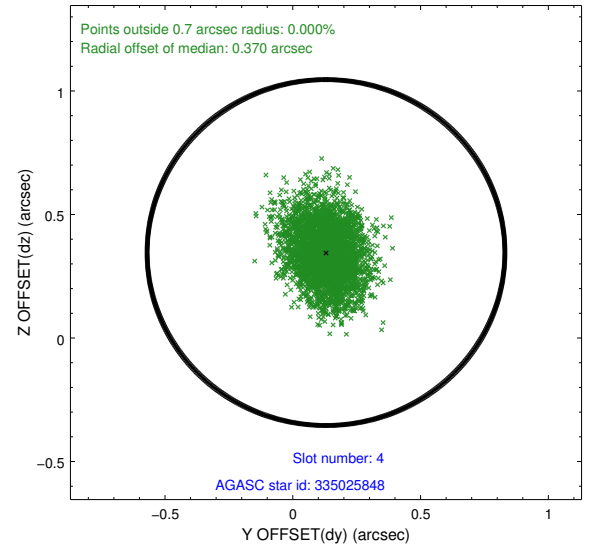
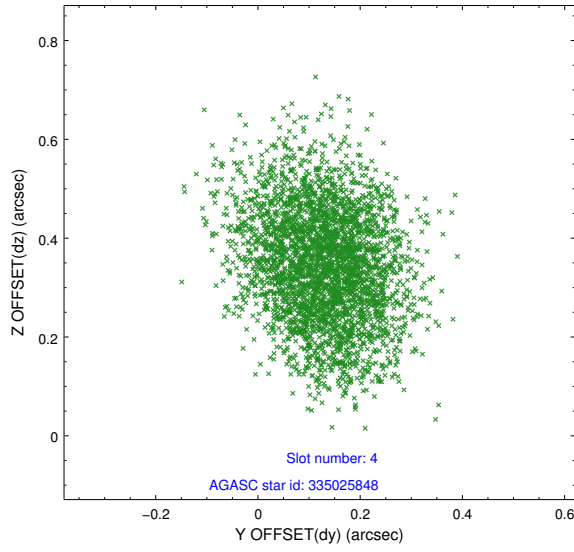
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.25	1572	0.073	-0.030	0.011	0.030	0.000000	0.000000	924.57	-843.19
1	FID		ACIS-I-5	7.25	1572	-0.345	0.039	0.007	0.011	0.000000	0.000000	-1823.53	1053.79
2	FID		ACIS-I-6	7.25	1571	0.182	0.061	0.012	0.023	0.000000	0.000000	389.13	1699.43
3	GUIDE	used	335021368	9.66	3140	-0.262	0.206	0.184	0.289	217.529643	33.934817	81.01	-973.72
4	GUIDE	used	335025848	9.67	3136	0.130	0.346	0.147	0.240	217.530531	33.778292	84.16	-1537.37
5	GUIDE	used	335028336	9.46	3142	0.345	-0.200	0.144	0.229	217.189840	34.665629	-924.87	1657.87
6	GUIDE	used	335028696	9.17	3135	-0.269	0.101	0.121	0.191	217.260519	33.844112	-723.94	-1298.89
7	GUIDE	used	335030384	8.80	3140	0.061	-0.451	0.099	0.173	216.806407	34.722197	-2059.33	1867.18

## 2.4 Star Slots

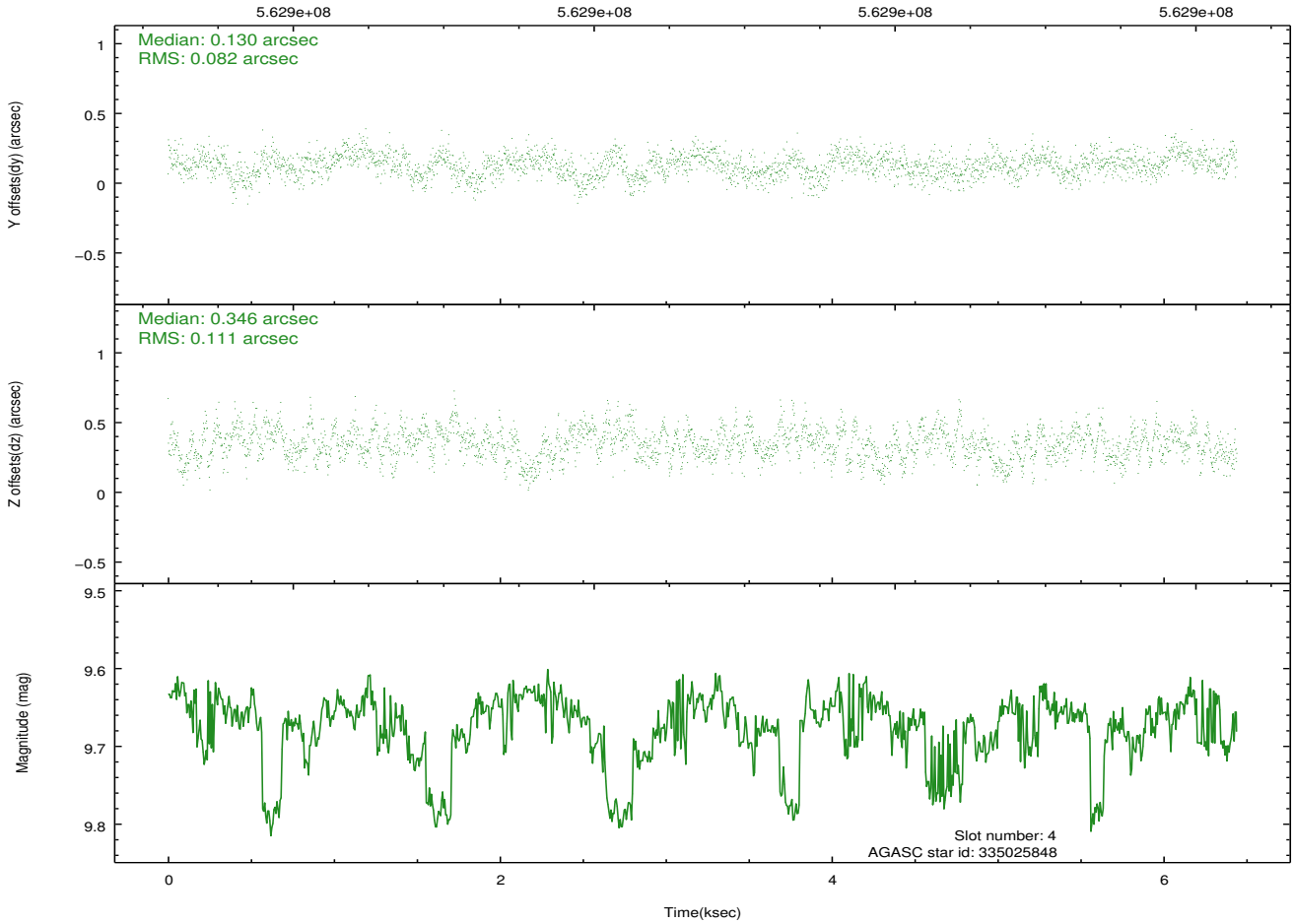
### 2.4.1 Slot 3



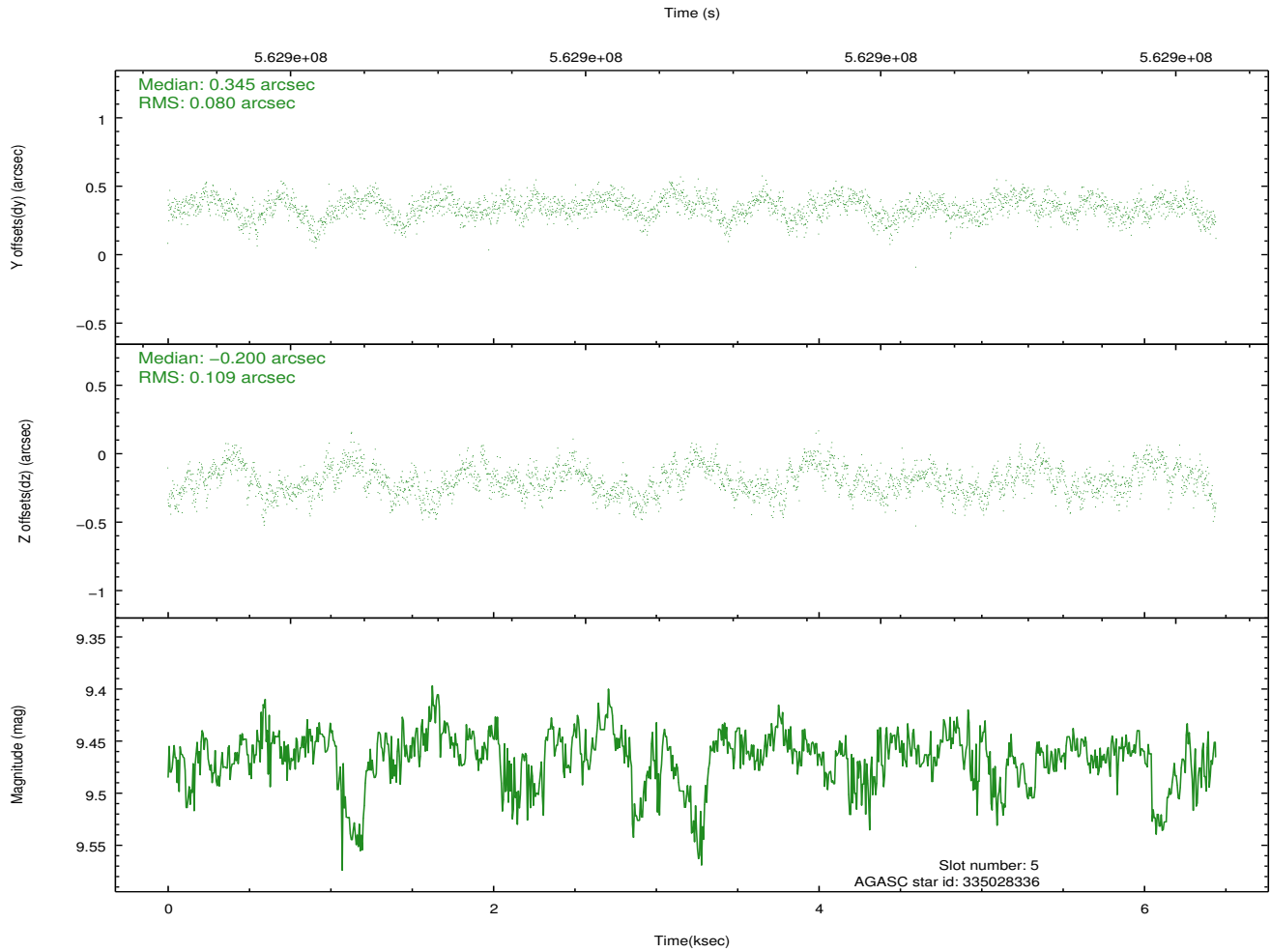
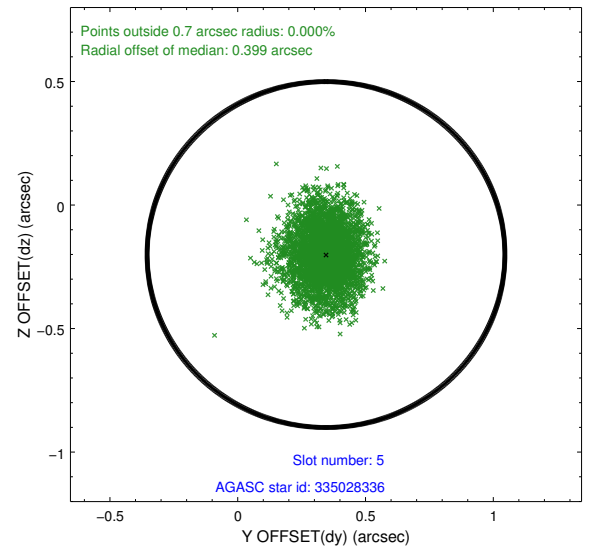
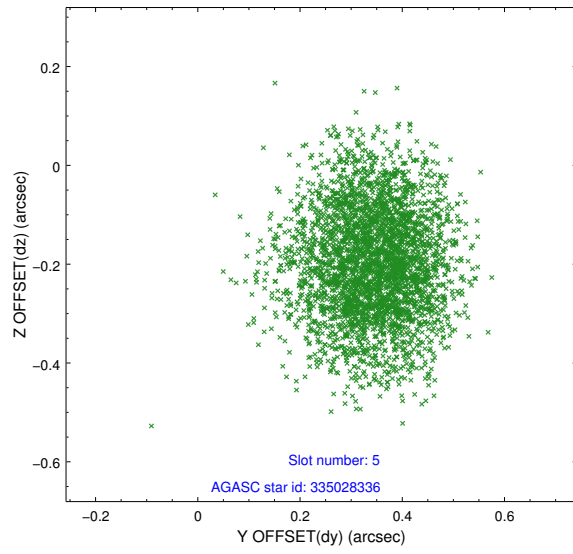
## 2.4.2 Slot 4



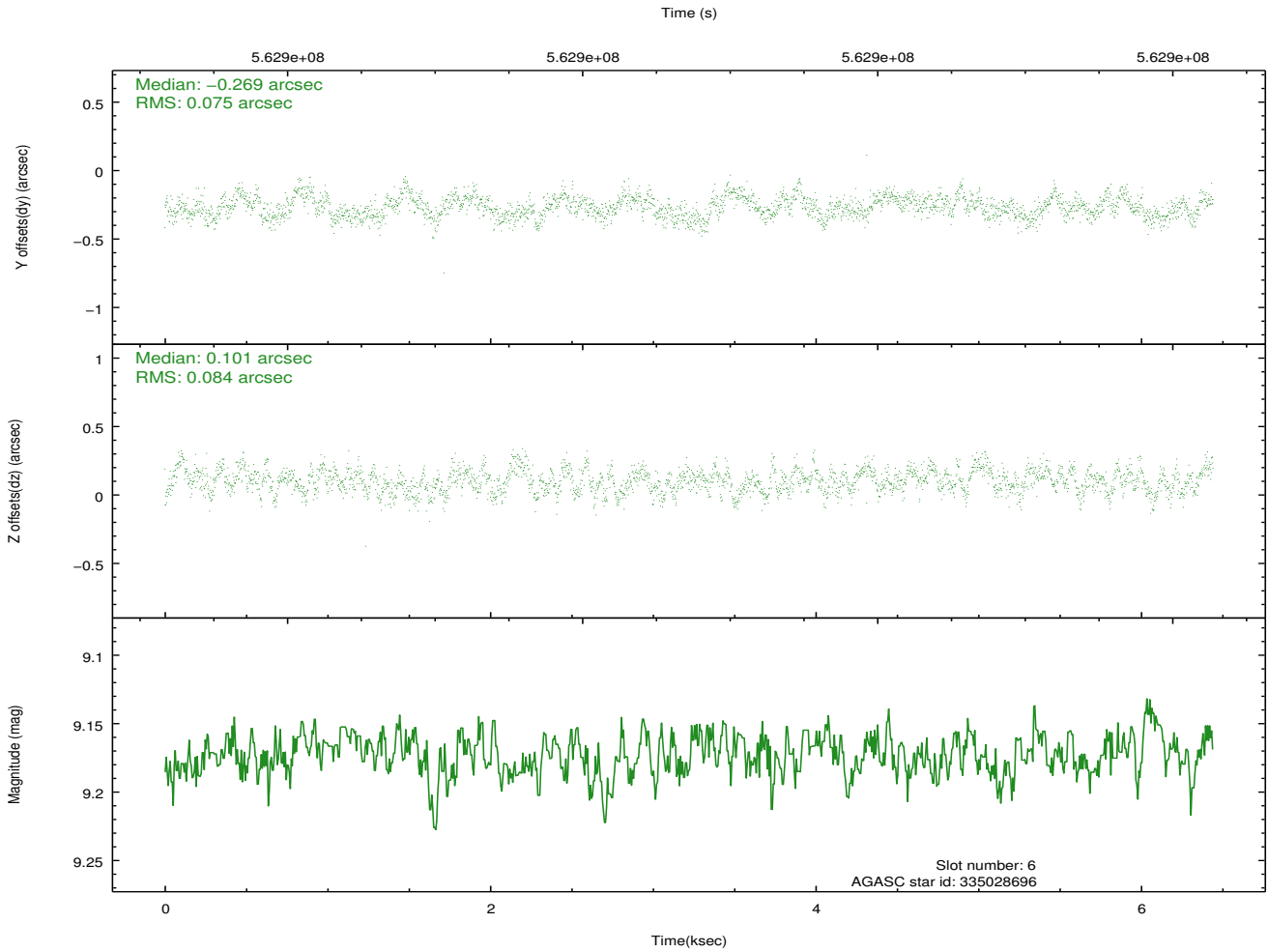
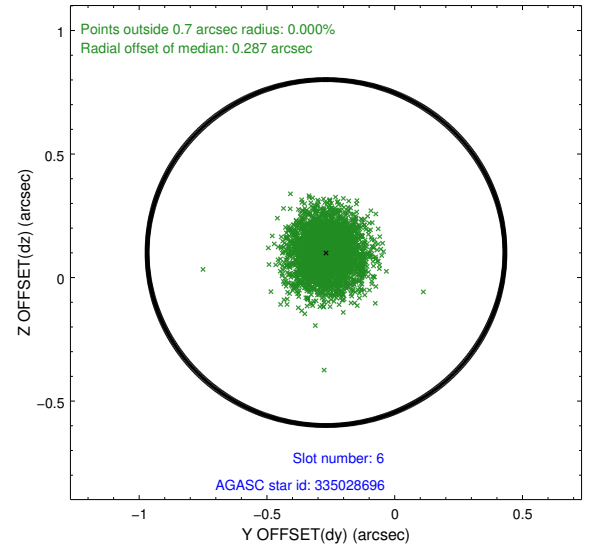
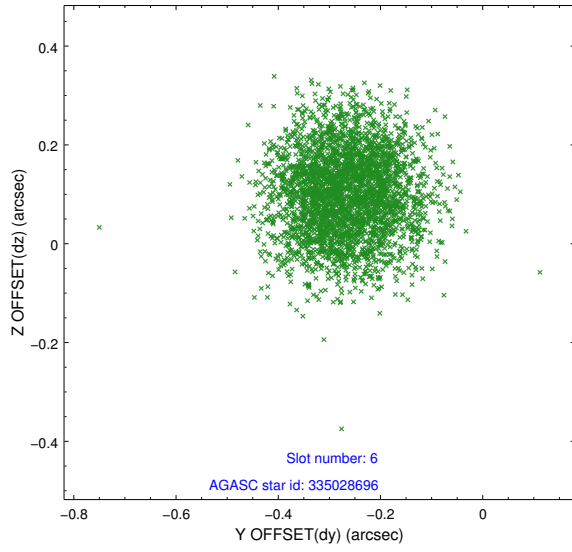
Time (s)



### 2.4.3 Slot 5

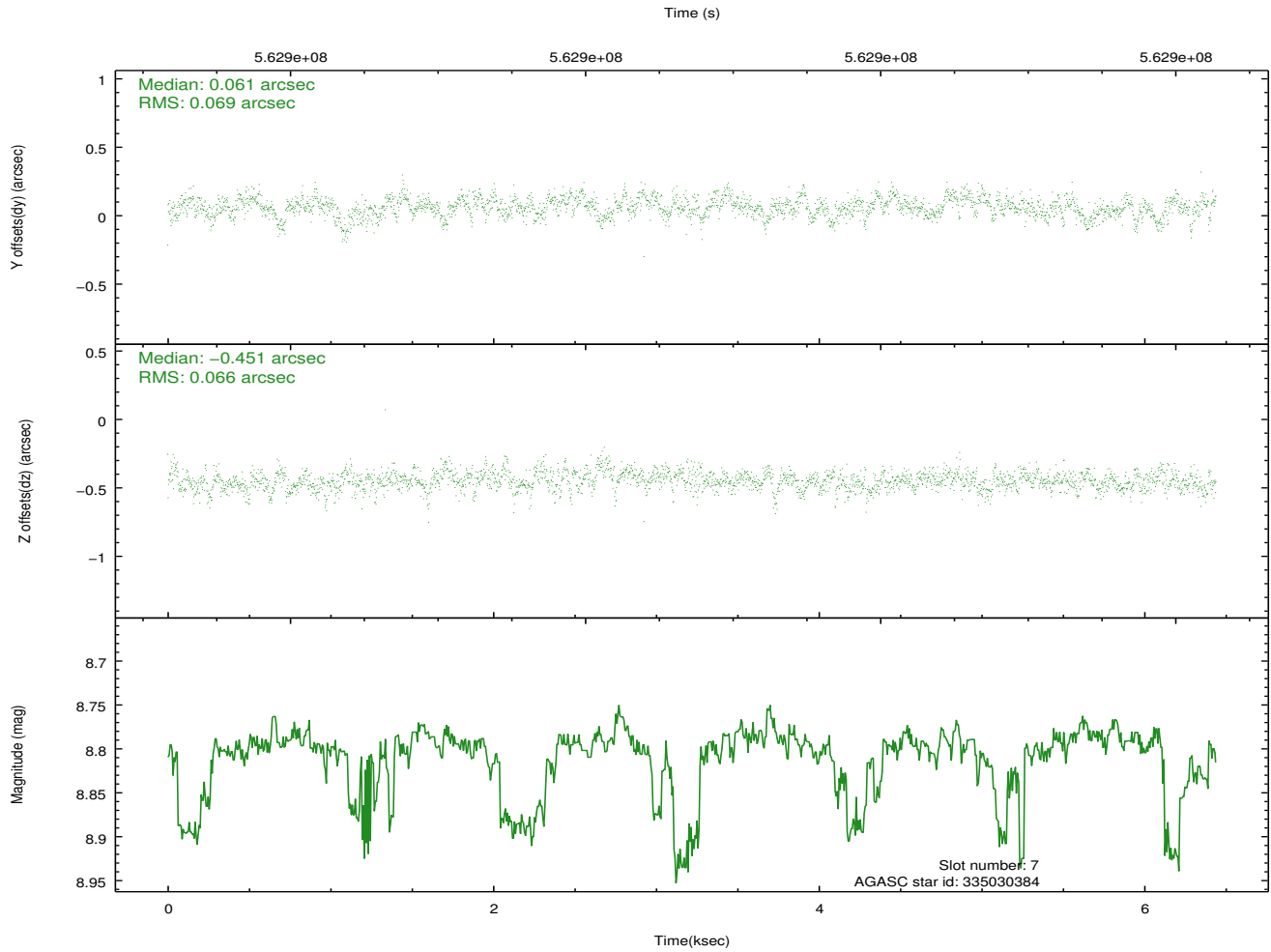
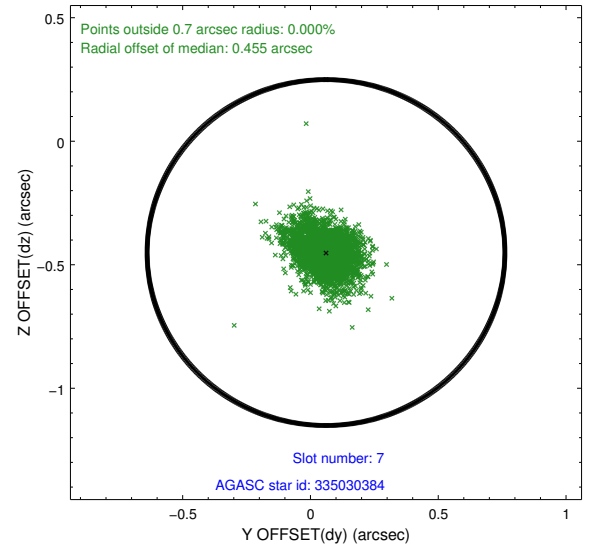
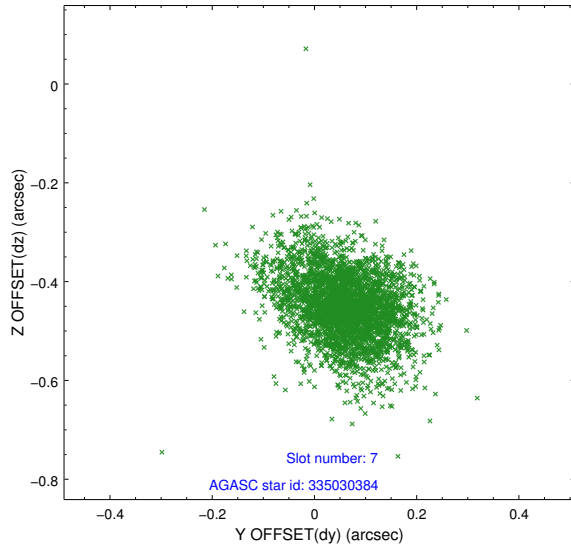


## 2.4.4 Slot 6



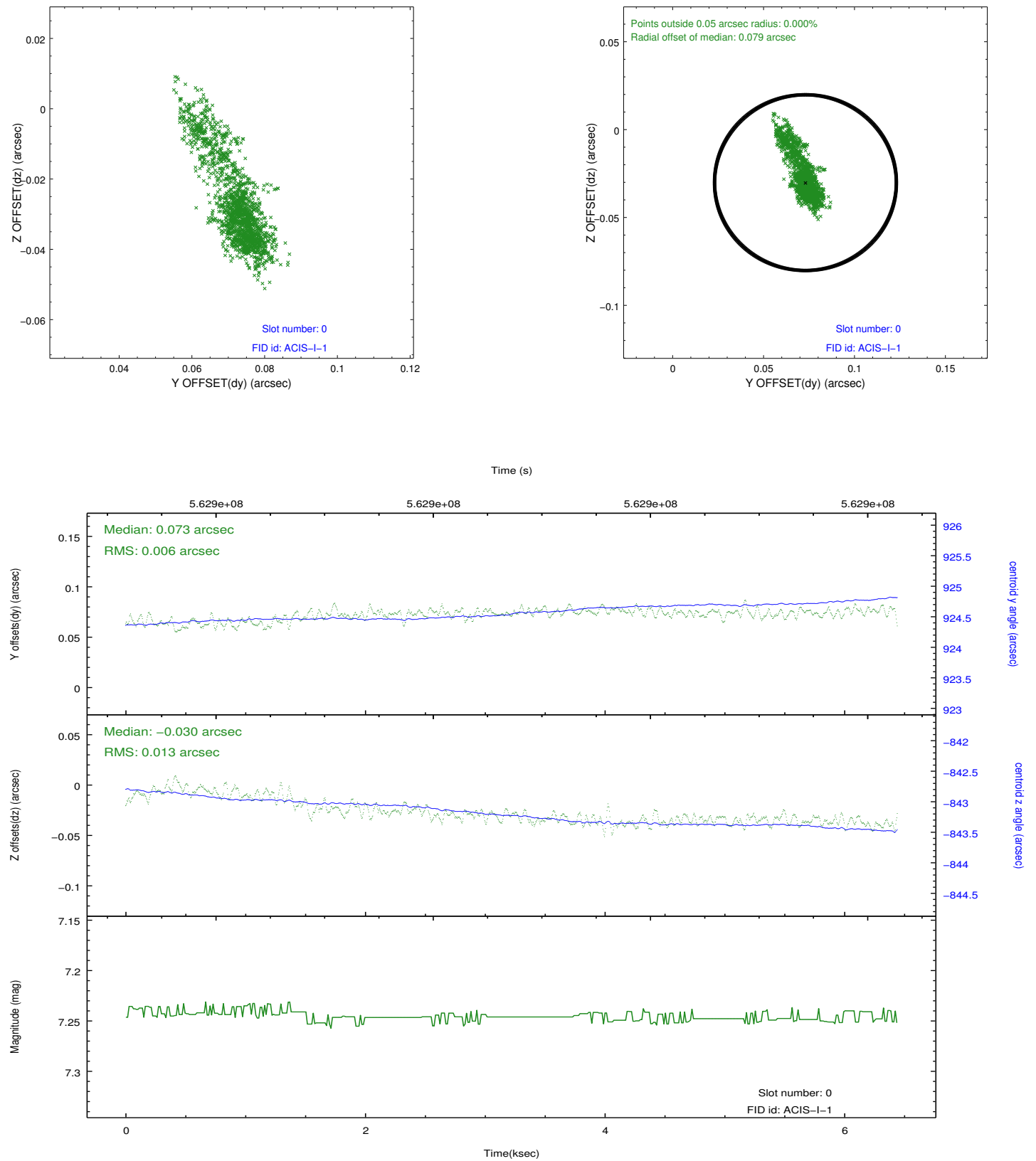


## 2.4.5 Slot 7

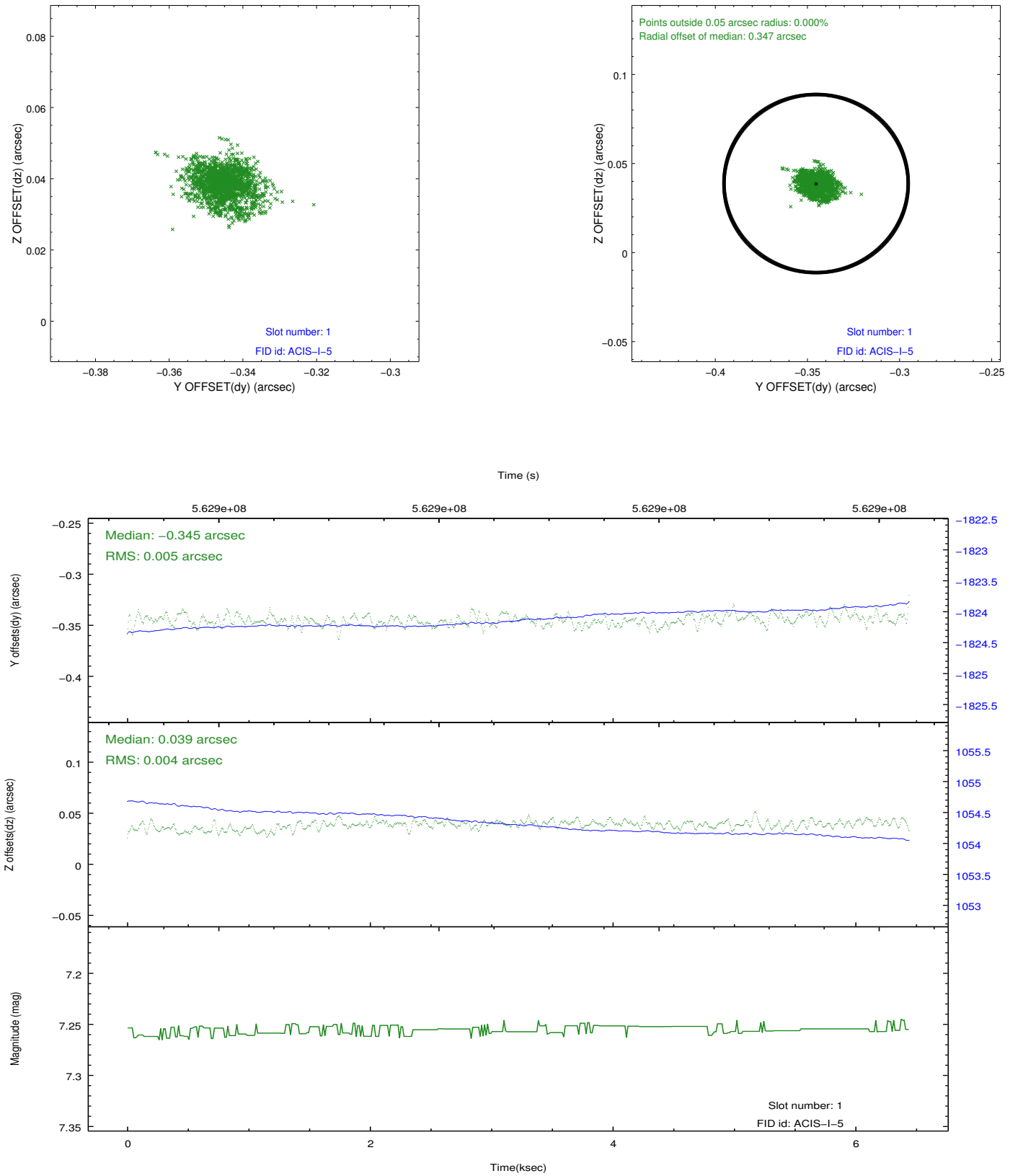


## 2.5 FID Slots

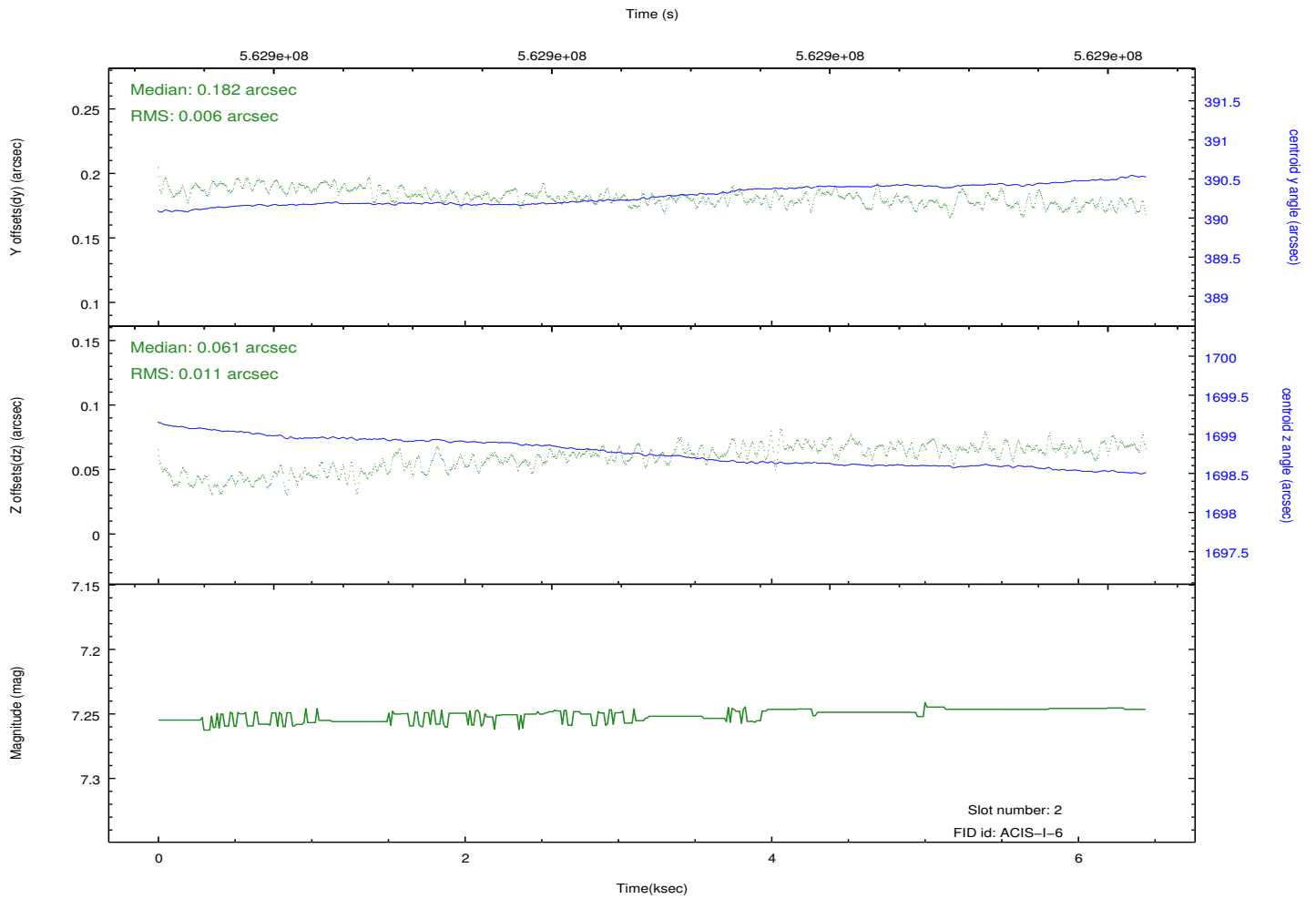
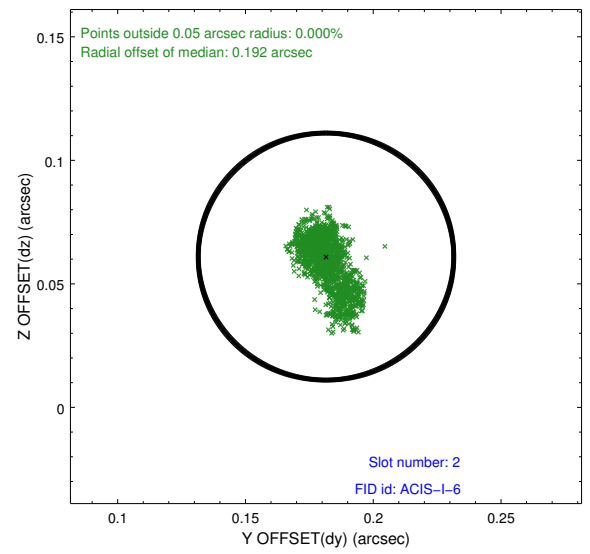
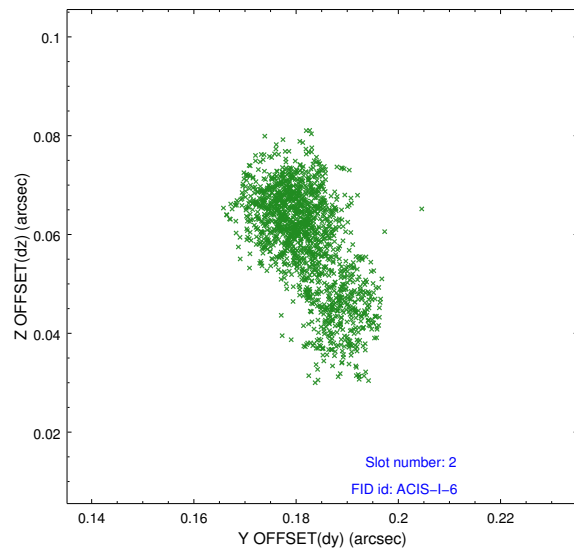
### 2.5.1 Slot 0



## 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	6.0032000894547

## 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: (217.36241, 34.18352), (217.36245, 34.17929), (217.53102, 34.17991), (217.53099, 34.18414).