

# V&V Reference Report

## L2 ASCDS Version : 10

Observation 15139 - L2 Version 2  
Chandra X-Ray Center

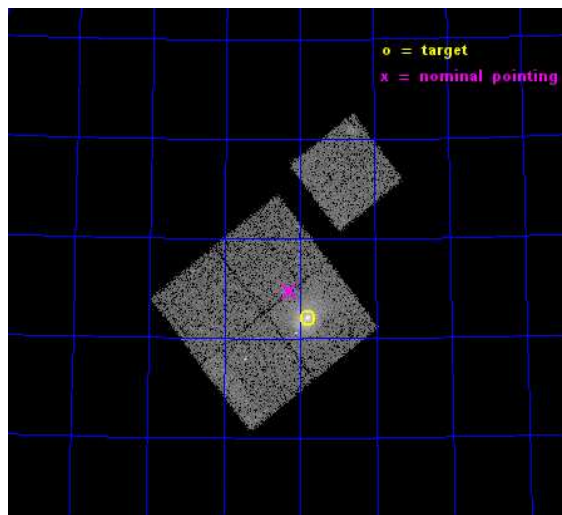
L2 Processing Date : Dec 5 2014

## 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

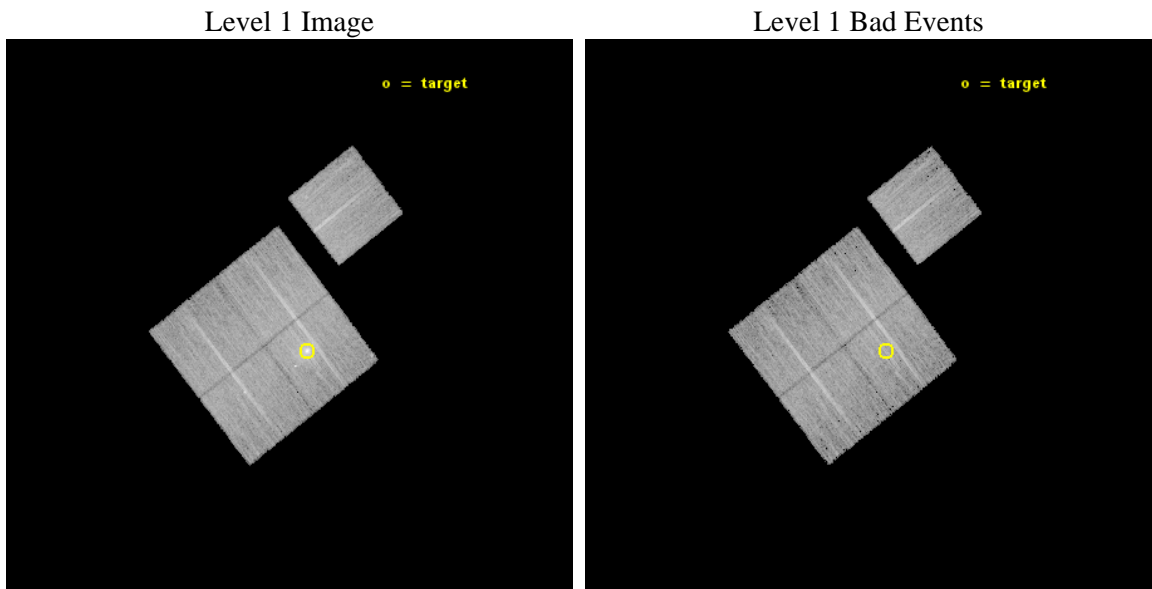
seq_num	801268	Sequence number
obs_id	15139	Observation id
title	A Chandra-Planck Legacy Program for Massive Clusters of Galaxies	P
observer	Dr. Christine Jones	Principal investigator
object	G139.59+24.18	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	95.45025	Observer's specified target RA [deg]
dec_targ	74.70134	Observer's specified target Dec [deg]
ra_nom	95.570676742559	Nominal RA [deg]
dec_nom	74.745577042178	Nominal Dec [deg]
roll_nom	51.943835373498	Nominal Roll [deg]
revision	2	Processing version of data
ontime	18085.359128714	Sum of GTIs [s]
livetime	17849.060597449	Livetime [s]
ontime0	18088.500139117	Sum of GTIs [s]
ontime1	18088.500139117	Sum of GTIs [s]
ontime2	18088.500139117	Sum of GTIs [s]
ontime3	18085.359128714	Sum of GTIs [s]
ontime6	18088.500139117	Sum of GTIs [s]
l2events	55967	Number of level 2 events



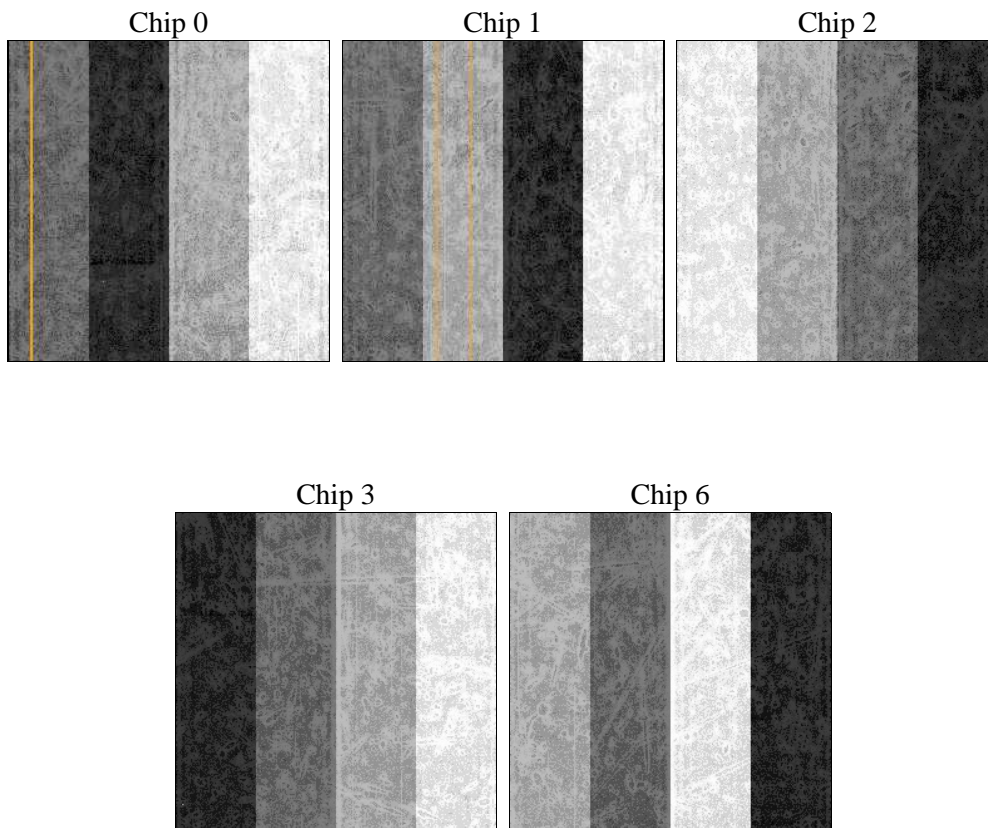
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	18000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	18085.359128714	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	18088.500139117	Sum of GTIs [s]
date	2014-12-06T03:08:44	Date and time of file creation	ontime1	18088.500139117	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	18088.500139117	Sum of GTIs [s]
			ontime3	18085.359128714	Sum of GTIs [s]
			ontime6	18088.500139117	Sum of GTIs [s]
			l1events	431667	Number of level 1 events

### 2.1.4 Events

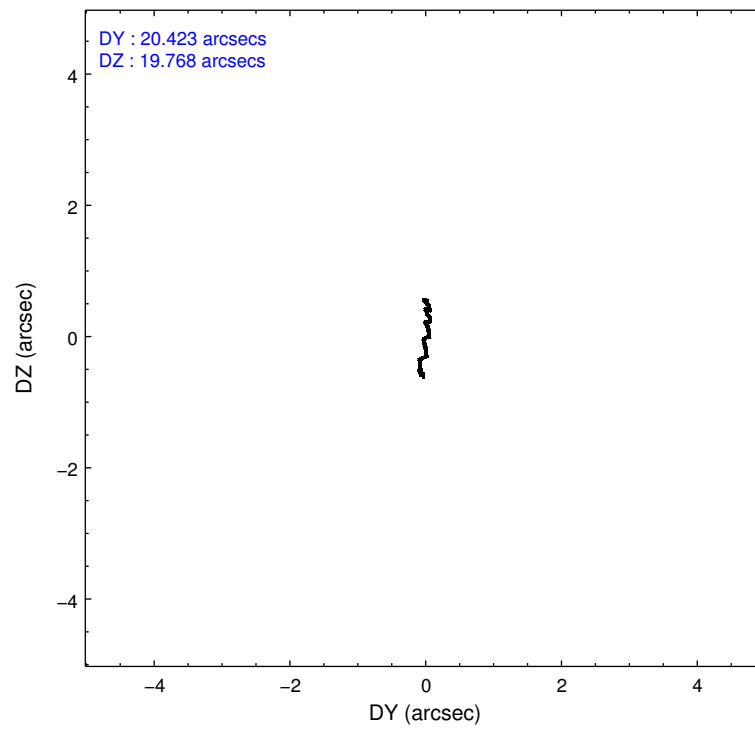
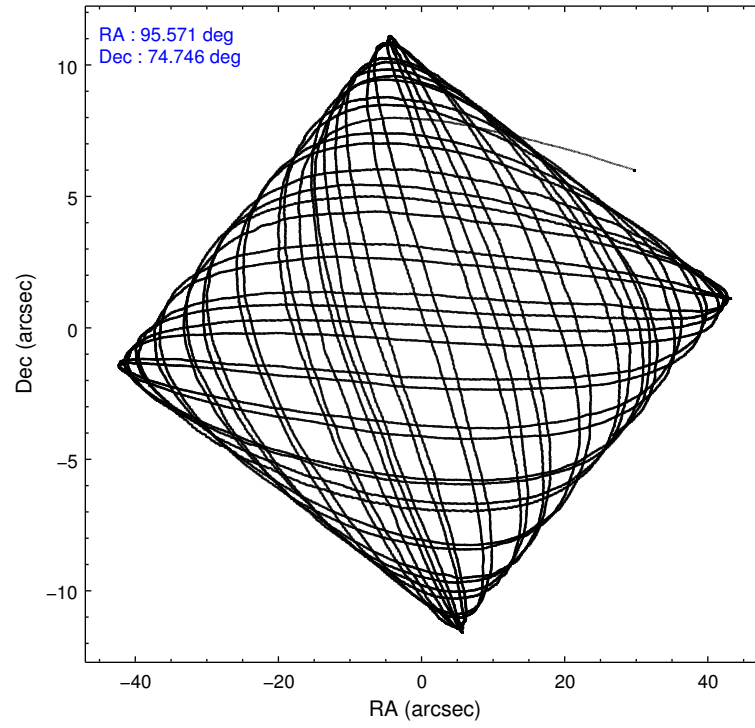
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	78039	82024	88350	96120	87134
rejected events	67683	70063	78155	74470	76515
rejected %	86%	85%	88%	77%	87%

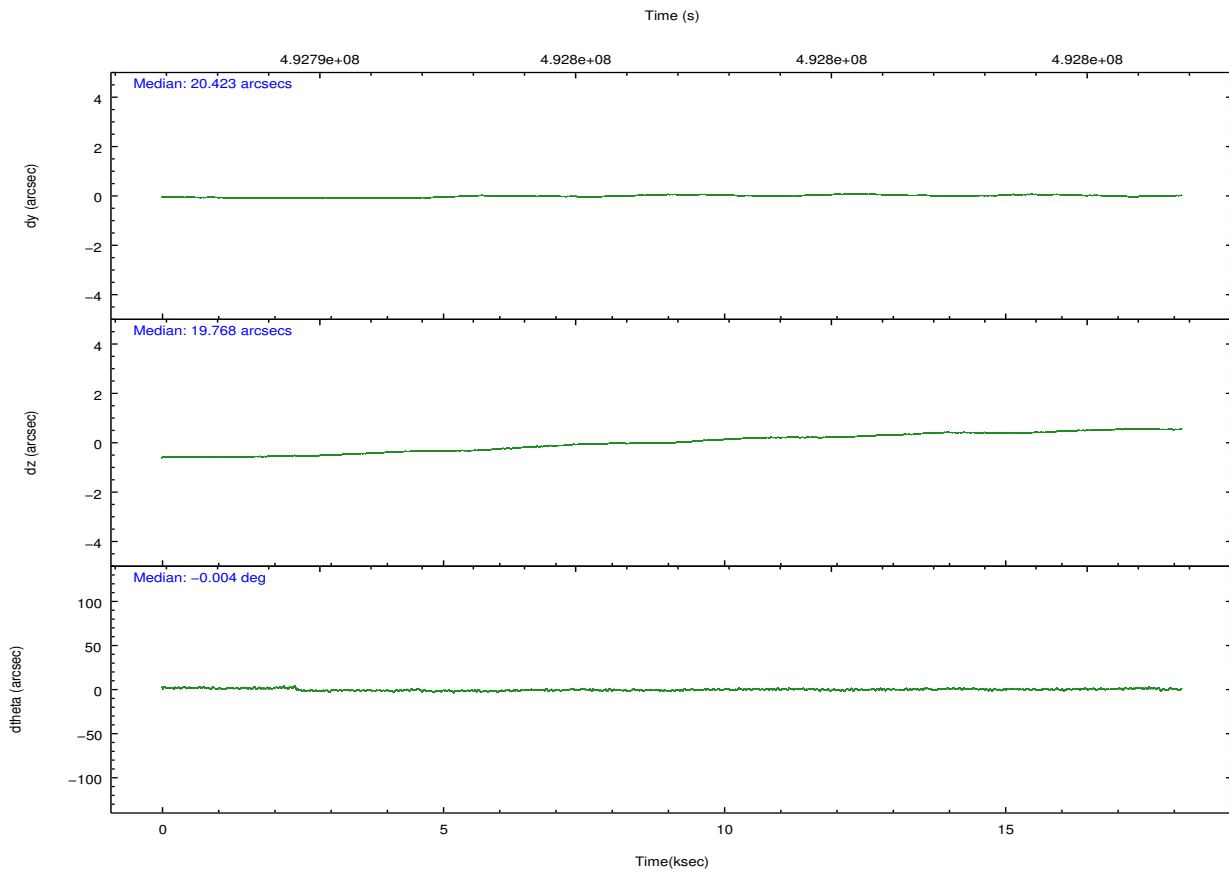
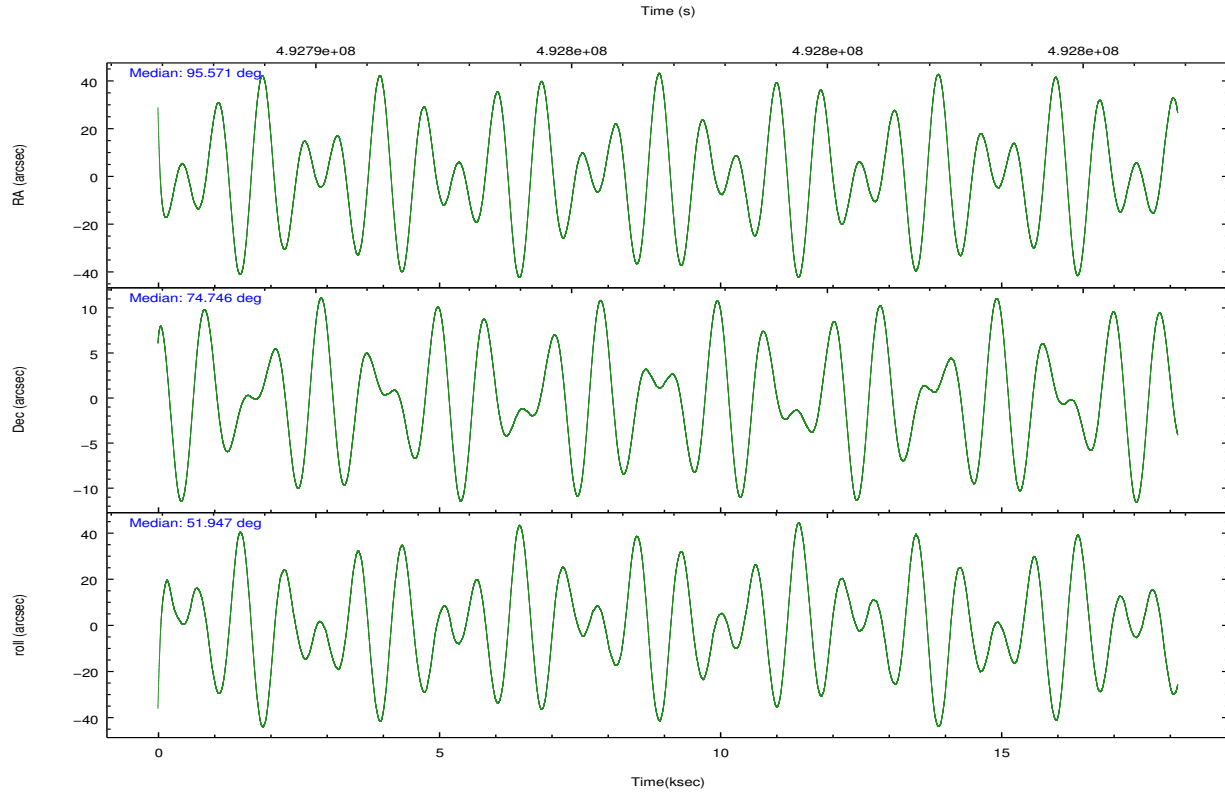
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	3564	4438	3562	13150	3559
	4%	5%	4%	13%	4%
grade 1 events	44	44	33	97	37
	0%	0%	0%	0%	0%
grade 2 events	2675	2840	2509	3396	2491
	3%	3%	2%	3%	2%
grade 3 events	1028	1172	1062	1408	1078
	1%	1%	1%	1%	1%
grade 4 events	999	1134	1017	1336	1041
	1%	1%	1%	1%	1%
grade 5 events	4187	4476	3920	4778	4670
	5%	5%	4%	4%	5%
grade 6 events	2092	2378	2045	2365	2452
	2%	2%	2%	2%	2%
grade 7 events	63450	65542	74202	69590	71806
	81%	79%	83%	72%	82%

## 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	95.556437	95.57067674255933	CCD I2 on	Y	Y
[deg] Pointing Dec	74.718314	74.74557704217767	CCD I3 on	Y	Y
[deg] Pointing Roll	51.748893	51.9438353734982	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)	492787940.184000	492786799.49247	CCD S5 on	N	N
Observation start date	2013-08-13T13:31:13	2013-08-13T13:13:19	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	492805940.184000	492806319.59353	On-chip summing requested	N	N
Observation end date	2013-08-13T18:31:13	2013-08-13T18:38:39	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





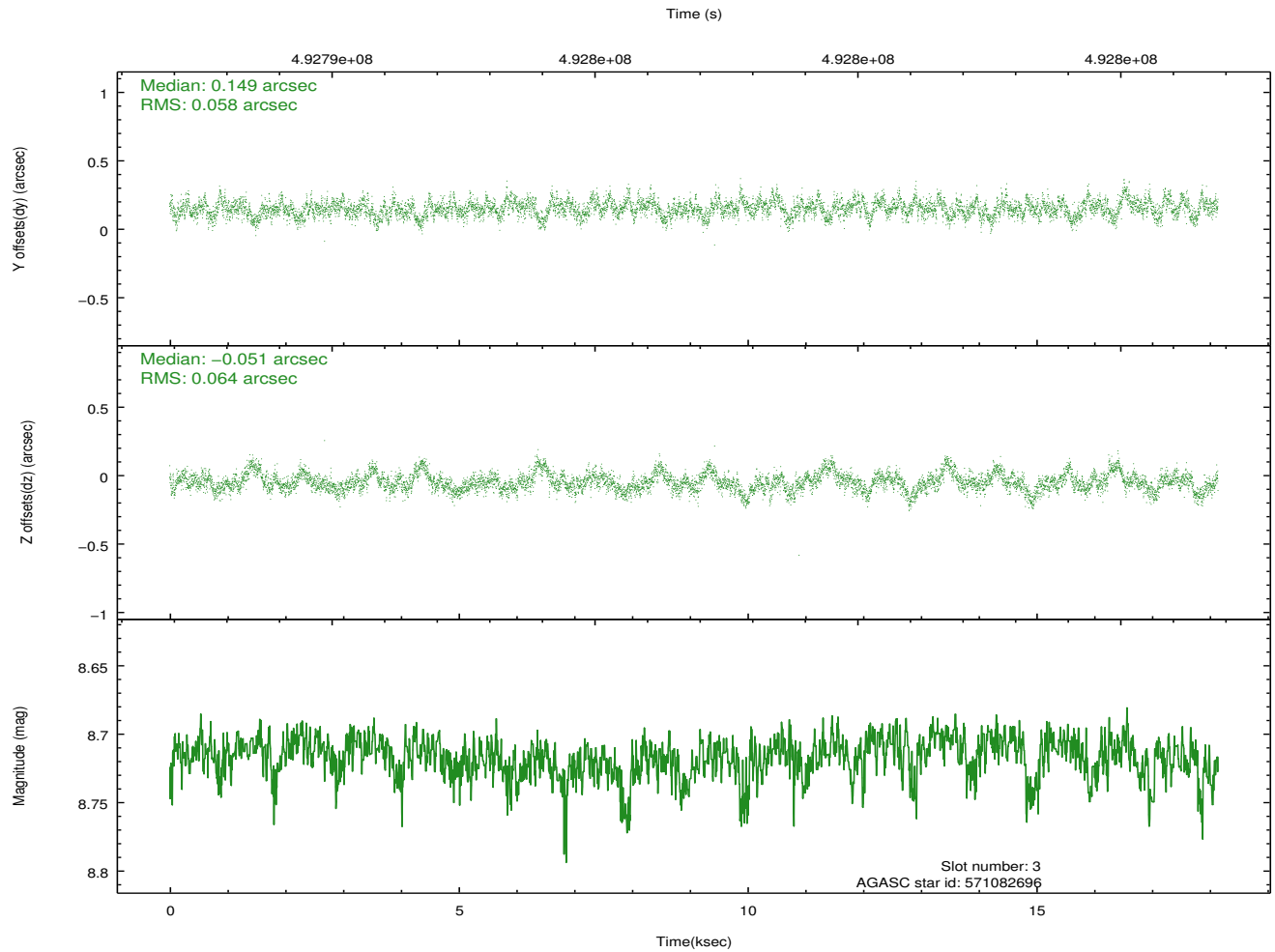
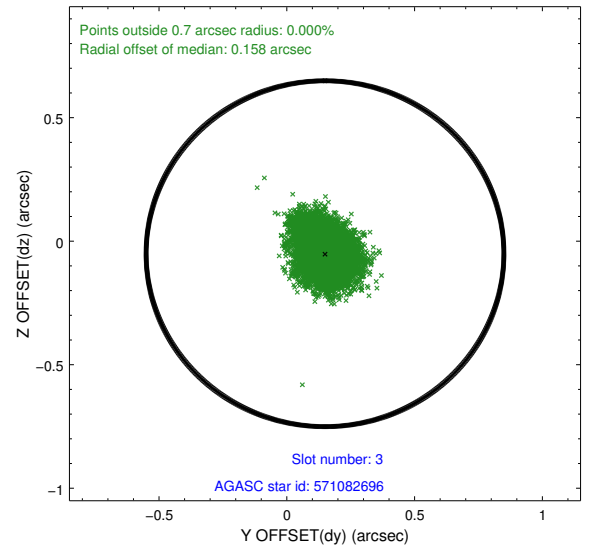
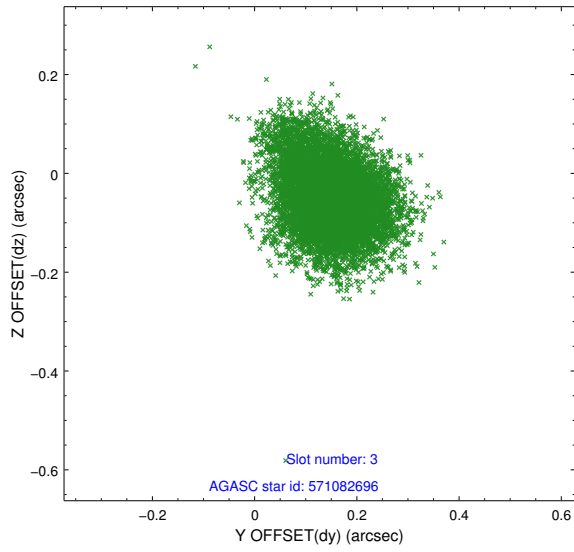
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-2	7.06	4425	-0.145	-0.046	0.009	0.016	0.000000	0.000000	-775.95	-1007.97
1	FID		ACIS-I-4	7.01	4425	0.239	0.094	0.008	0.024	0.000000	0.000000	2138.31	898.21
2	FID		ACIS-I-5	7.09	4425	-0.194	0.021	0.010	0.030	0.000000	0.000000	-1829.18	895.17
3	GUIDE	used	571082696	8.72	8846	0.149	-0.051	0.090	0.154	92.857116	74.527931	-2096.17	1647.34
4	GUIDE	used	571086392	8.00	8849	-0.079	-0.059	0.076	0.120	95.774545	74.846098	488.66	123.41
5	GUIDE	used	571090216	8.94	8843	0.298	-0.032	0.098	0.156	94.050307	74.265168	-2176.24	156.43
6	GUIDE	used	572784808	7.64	8850	-0.189	0.267	0.071	0.114	97.020549	74.743088	941.70	-1022.90
7	GUIDE	used	593112712	9.80	8713	-0.185	-0.131	0.179	0.285	95.261855	75.291954	1455.44	1490.30

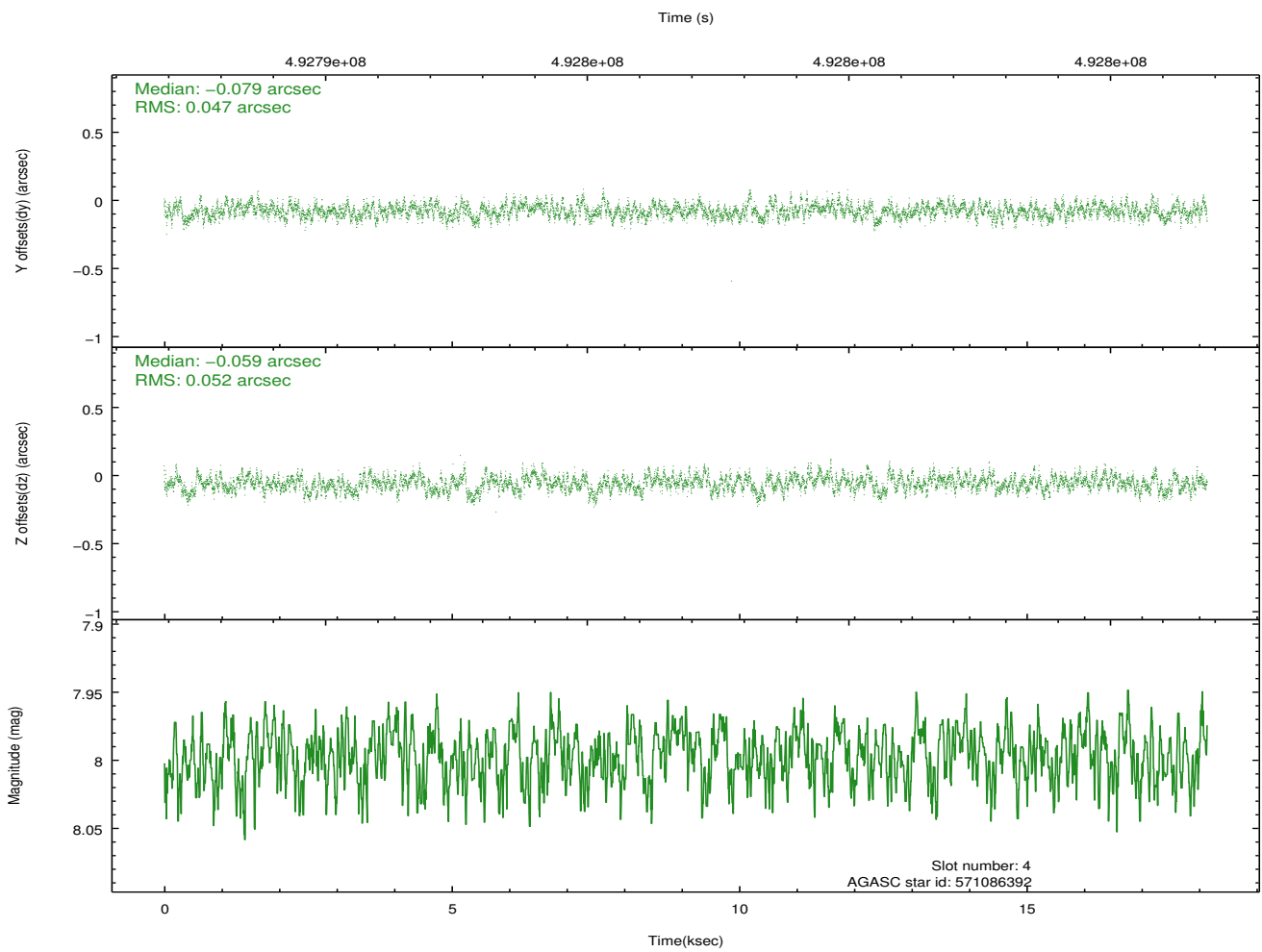
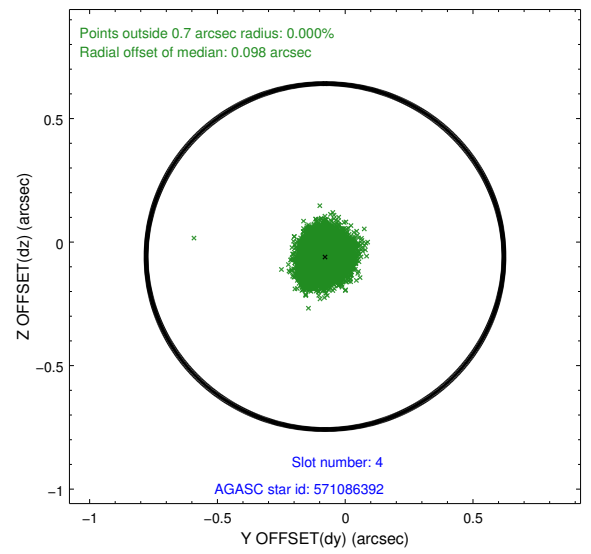
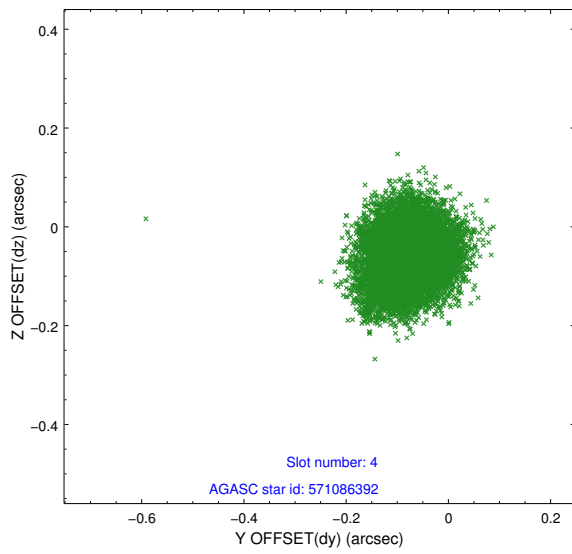
∞

## 2.4 Star Slots

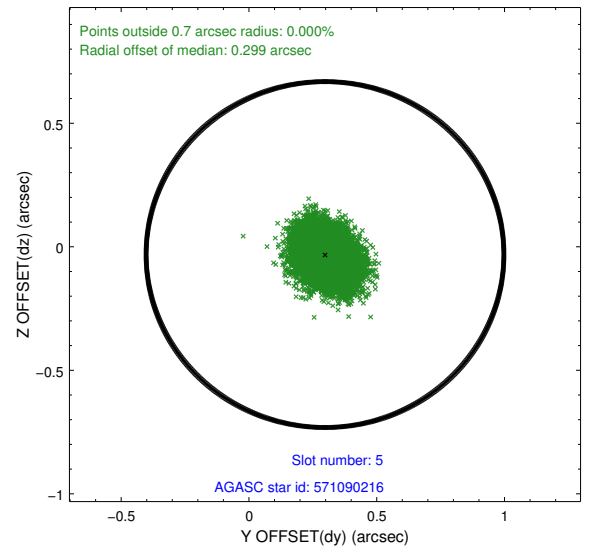
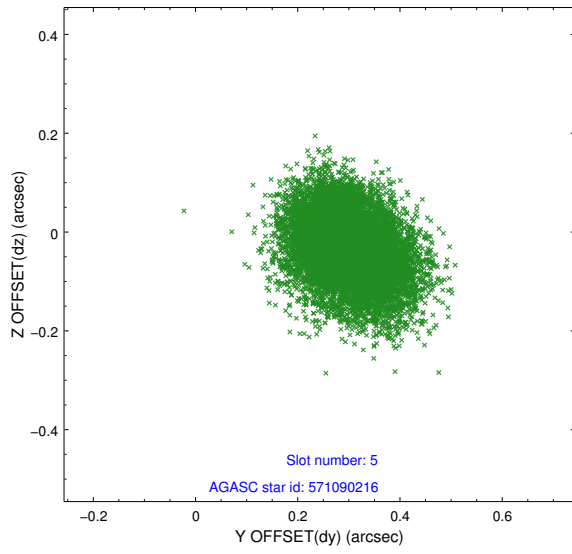
### 2.4.1 Slot 3



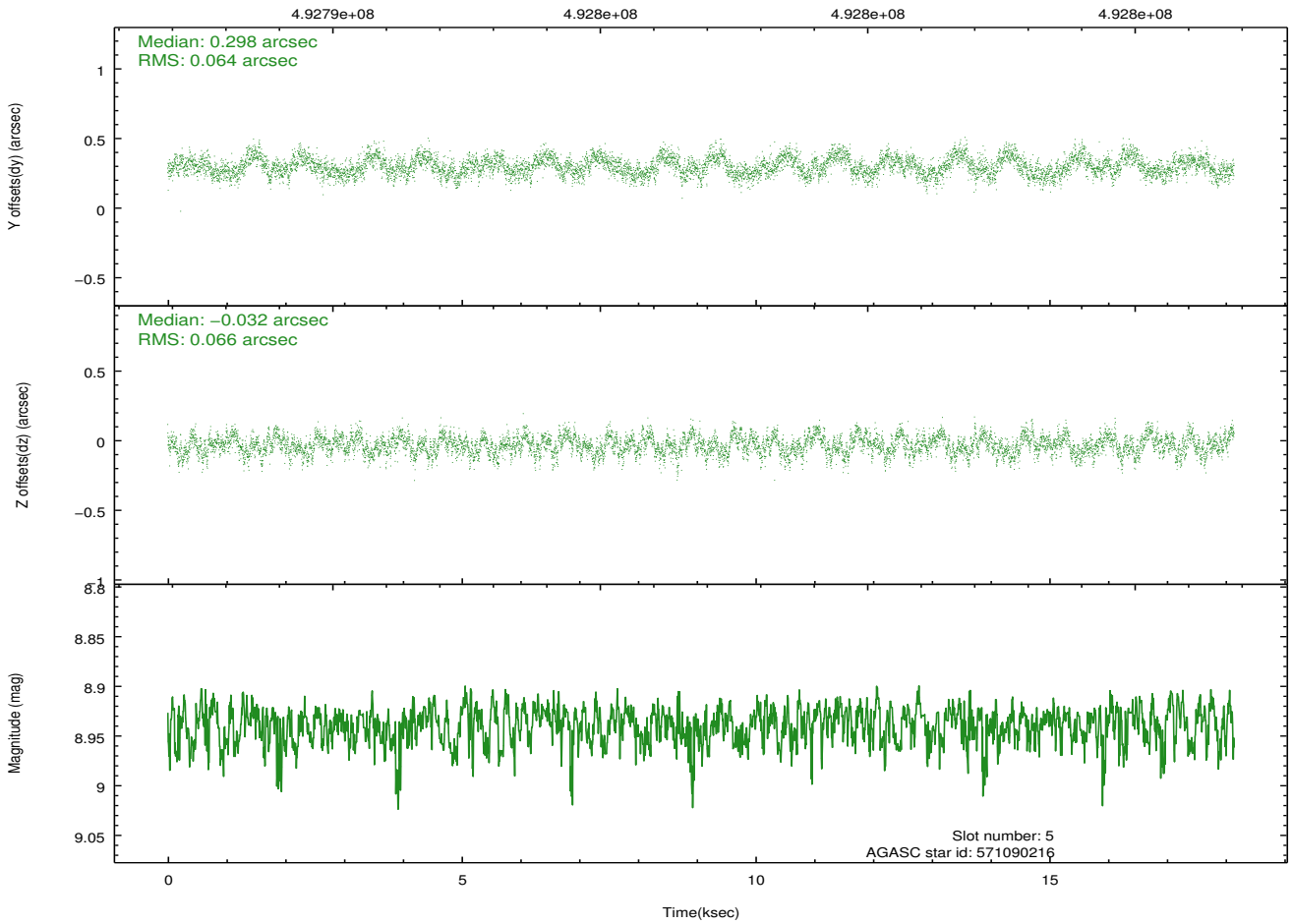
## 2.4.2 Slot 4



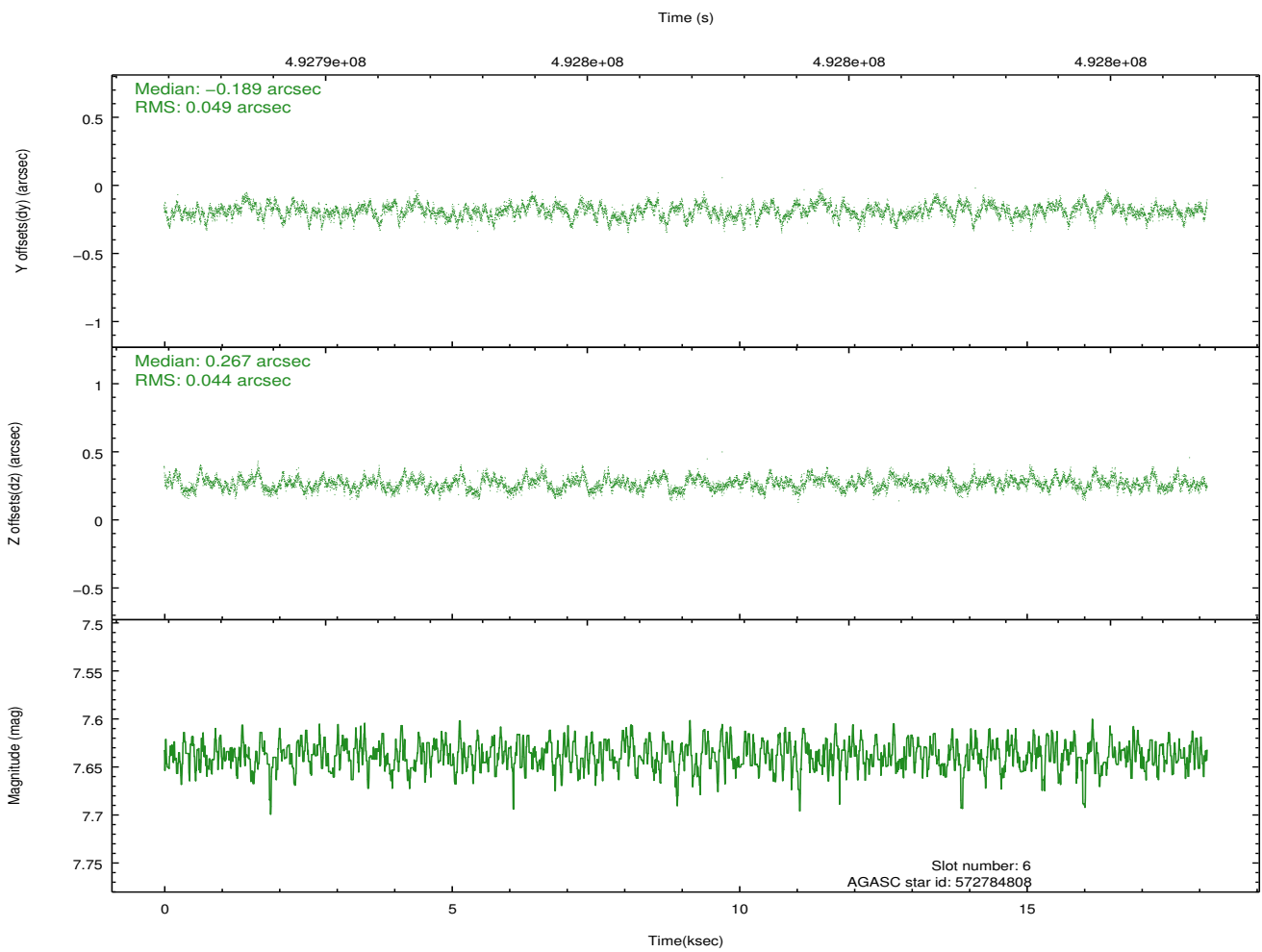
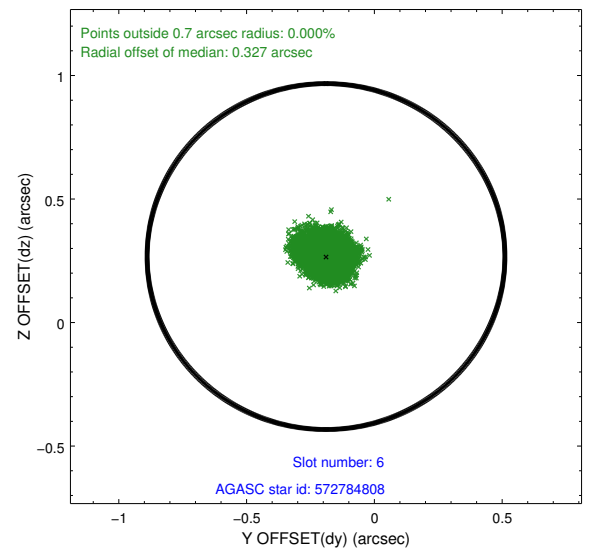
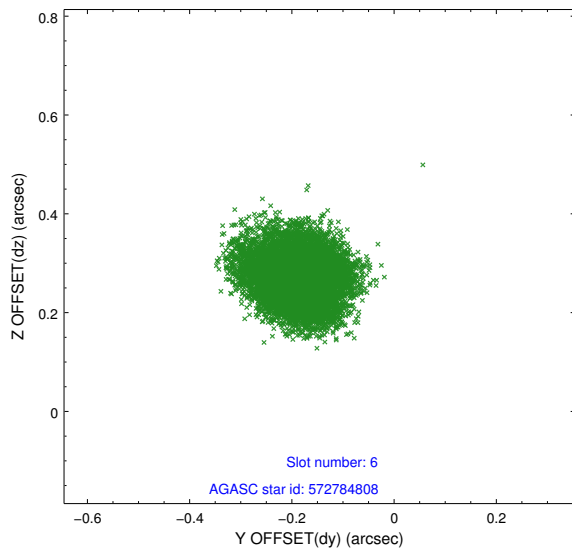
### 2.4.3 Slot 5



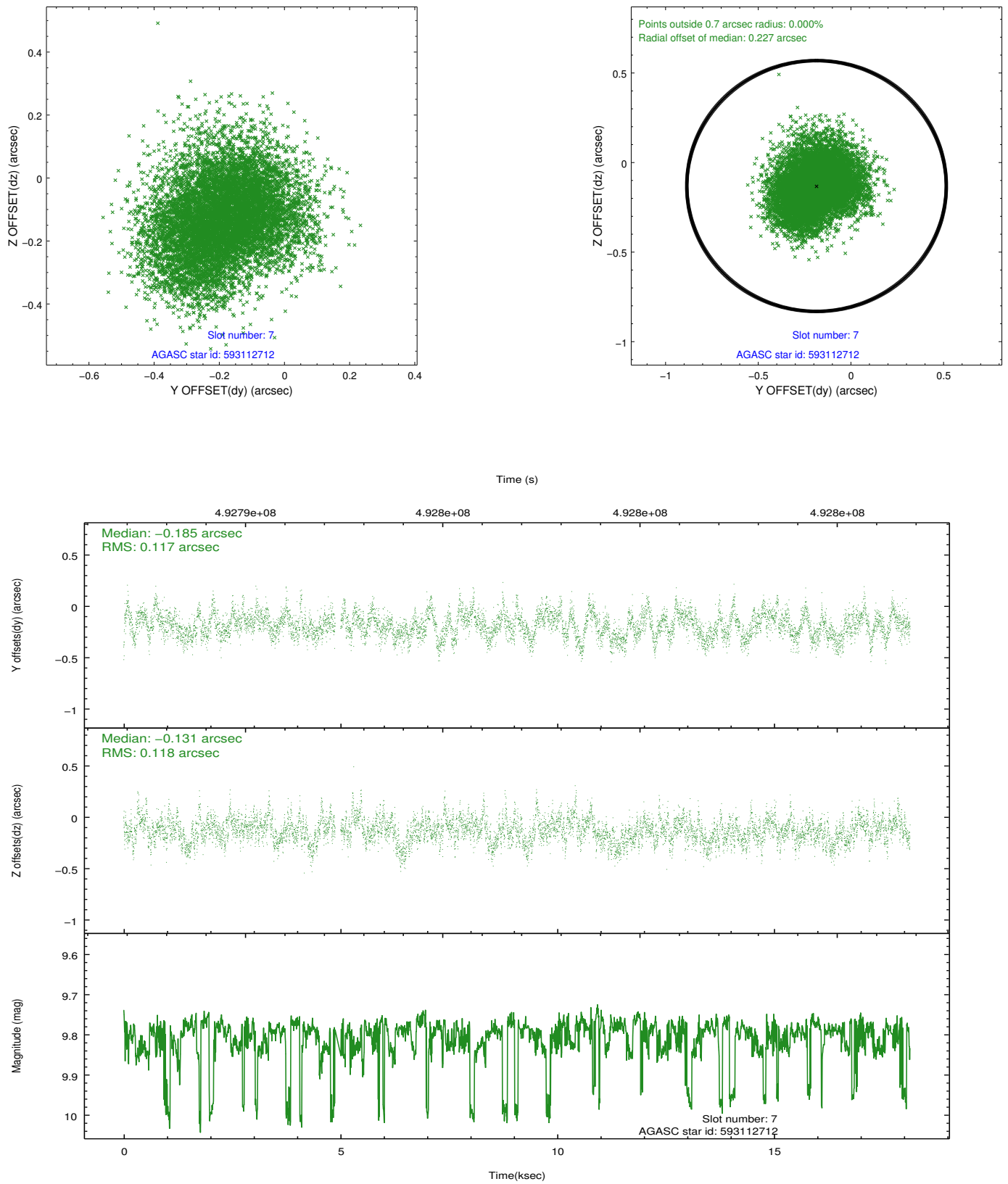
Time (s)



## 2.4.4 Slot 6

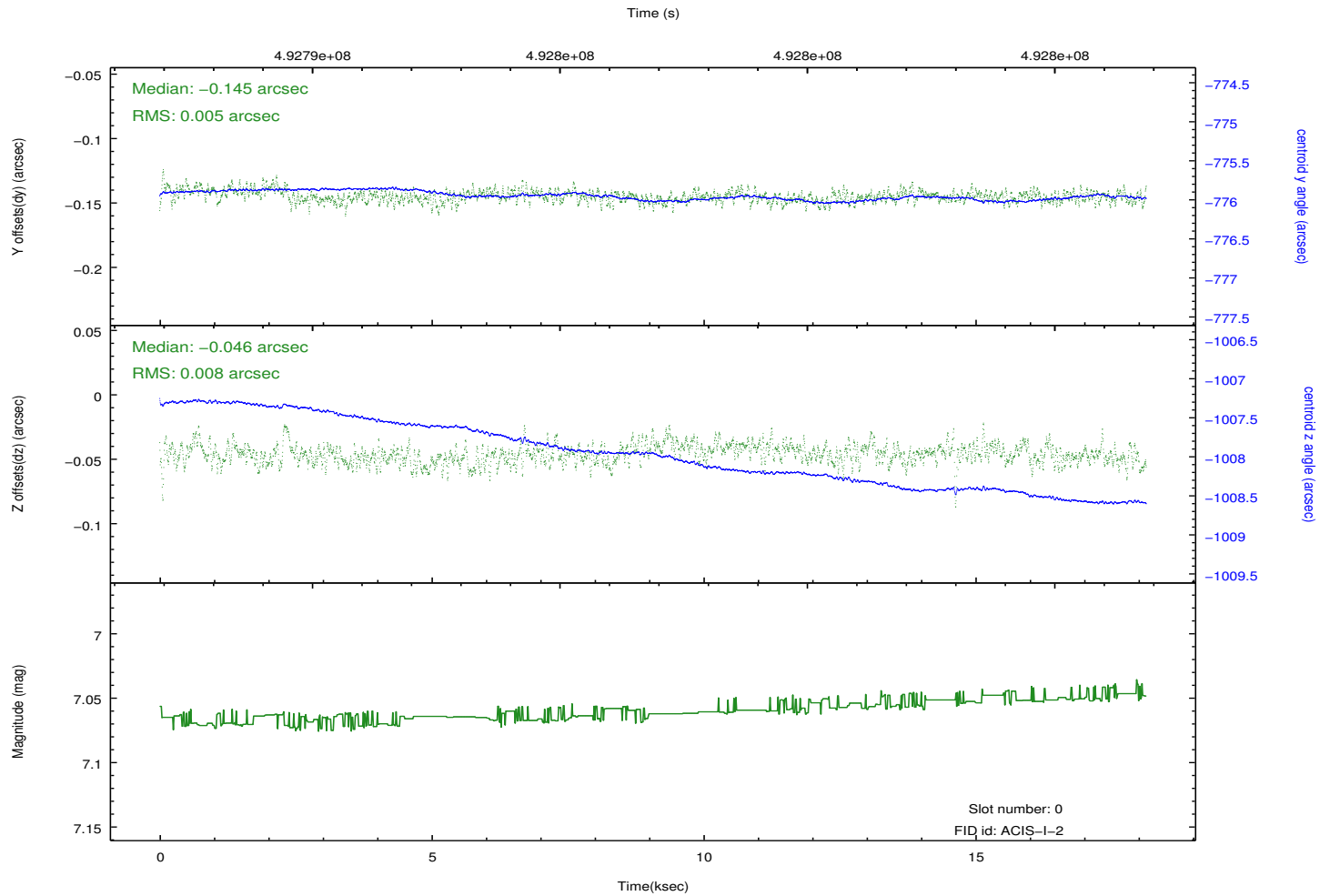
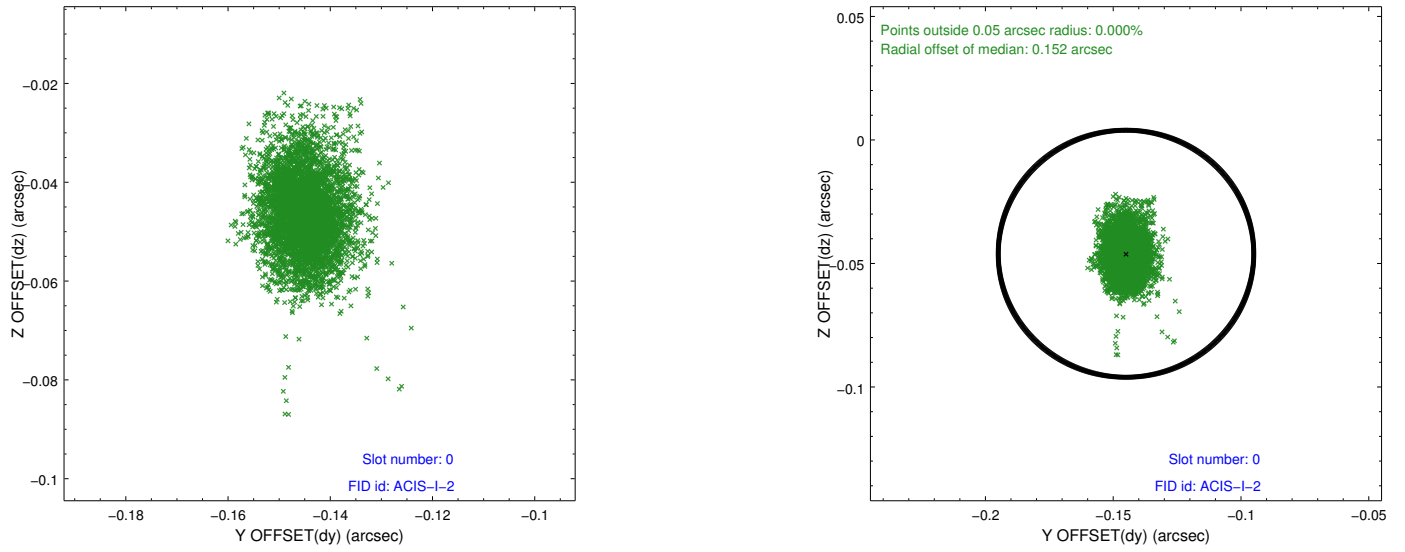


## 2.4.5 Slot 7

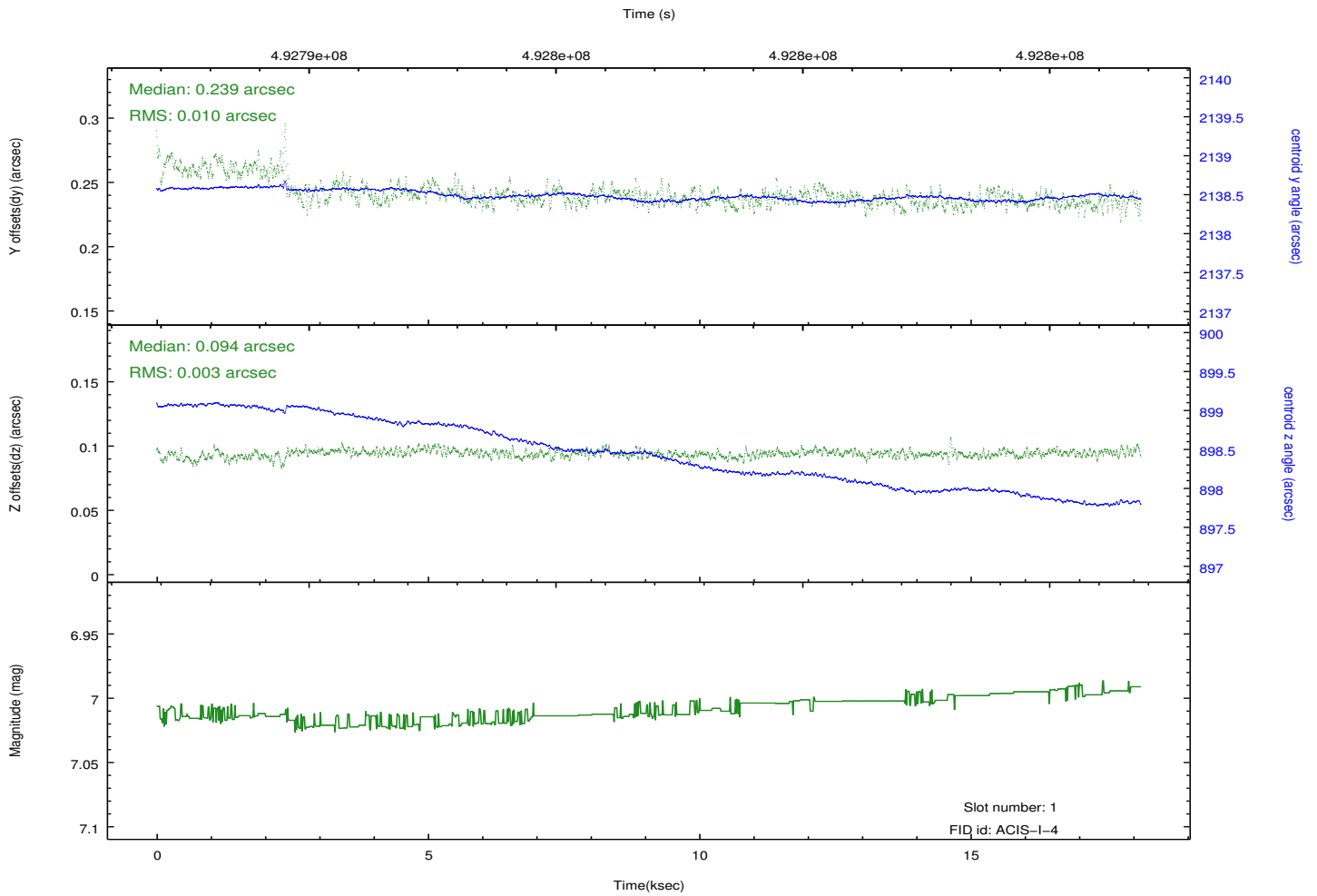
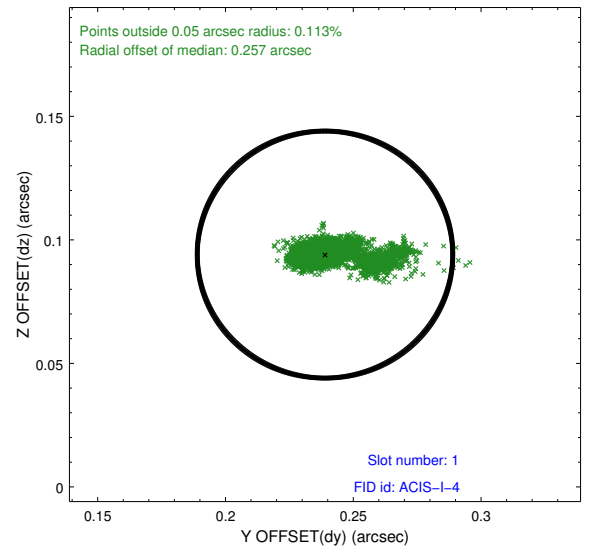
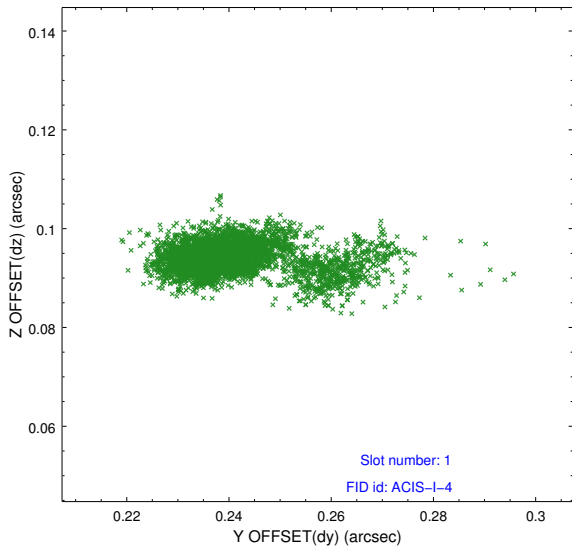


## 2.5 FID Slots

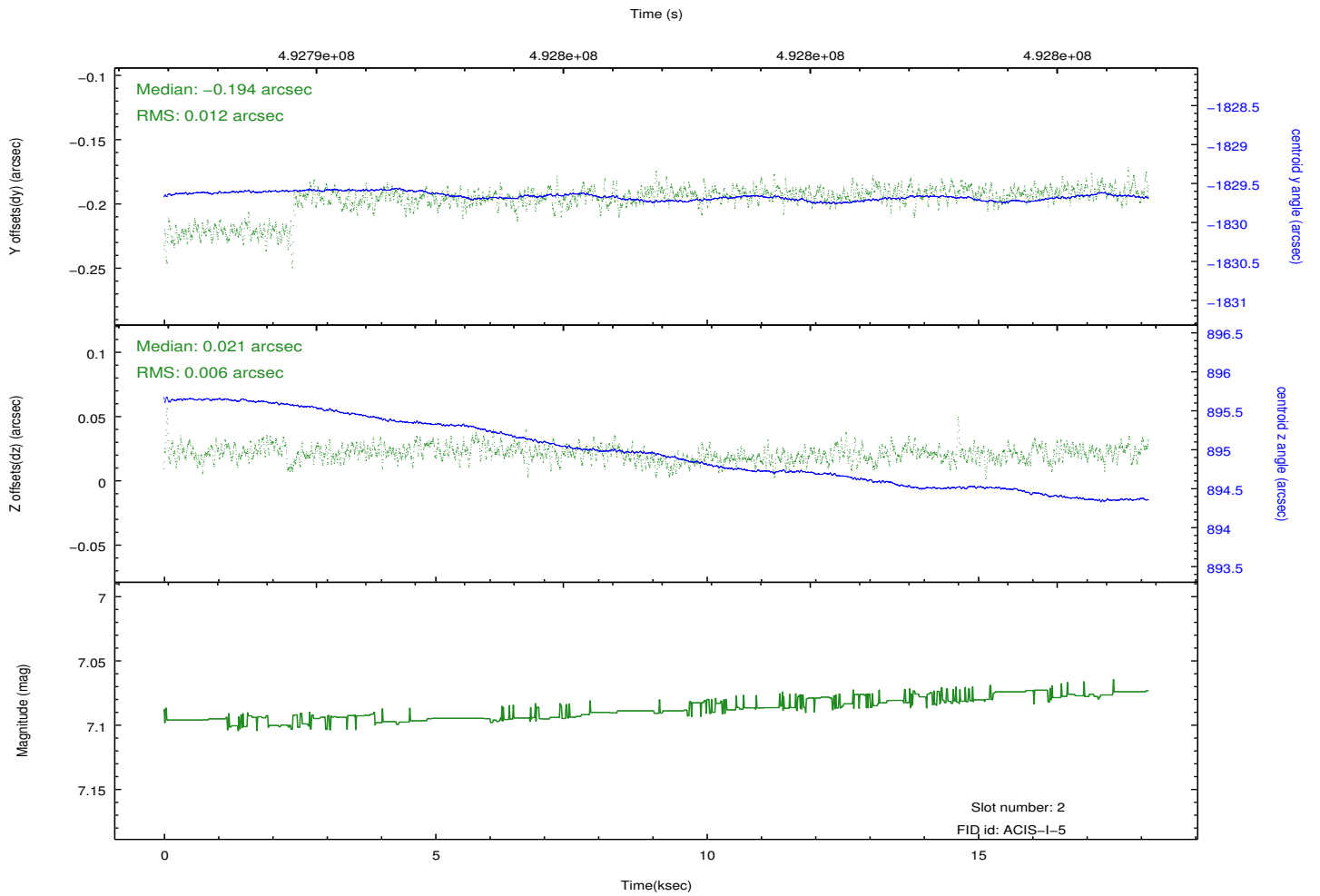
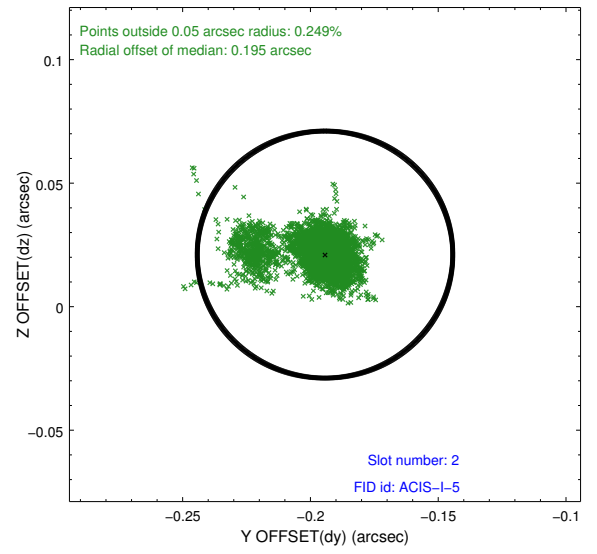
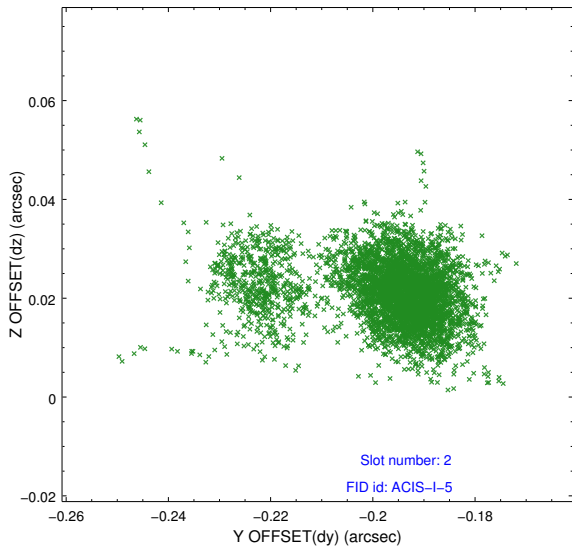
### 2.5.1 Slot 0



## 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)	2014.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.085359128714

## A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.