

# V&V Reference Report

## L2 ASCDS Version : 10

Observation 16373 - L2 Version 2  
Chandra X-Ray Center

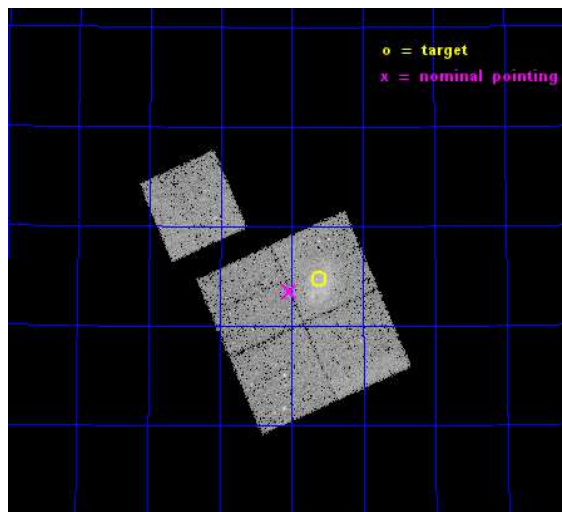
L2 Processing Date : Dec 6 2014

## 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

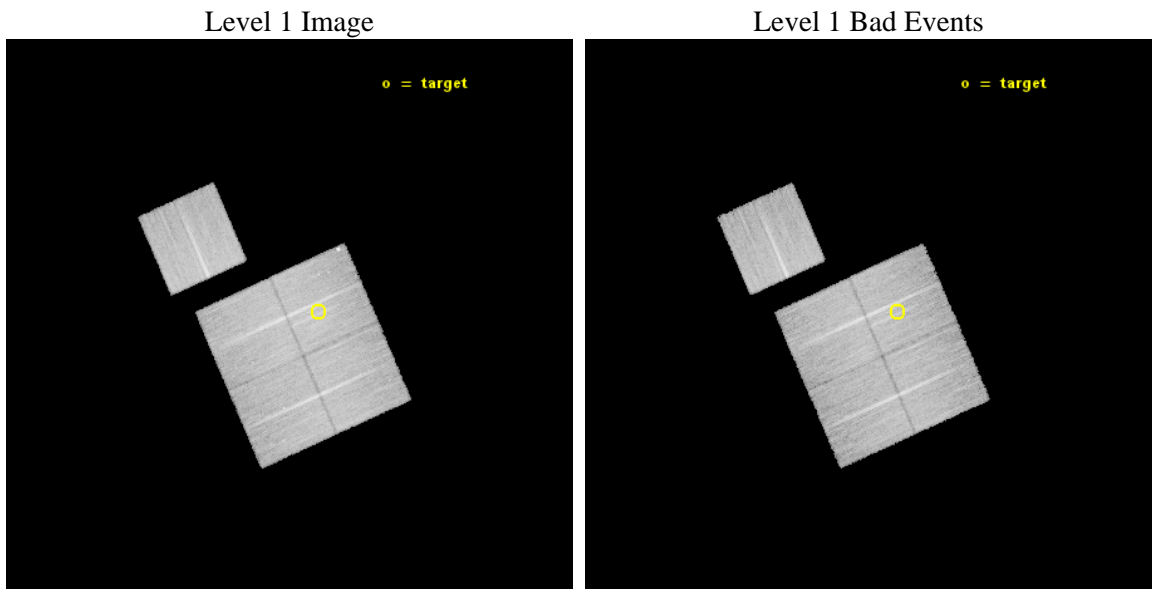
seq_num	801267	Sequence number
obs_id	16373	Observation id
title	A Chandra-Planck Legacy Program for Massive Clusters of Galaxies	P
observer	Dr. Christine Jones	Principal investigator
object	G121.11+57.01	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	194.906667	Observer's specified target RA [deg]
dec_targ	60.078306	Observer's specified target Dec [deg]
ra_nom	195.00817845357	Nominal RA [deg]
dec_nom	60.058380989822	Nominal Dec [deg]
roll_nom	336.12072111588	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30085.500231385	Sum of GTIs [s]
livetime	29692.411022239	Livetime [s]
ontime0	30079.218270719	Sum of GTIs [s]
ontime1	30082.359241068	Sum of GTIs [s]
ontime2	30085.500231385	Sum of GTIs [s]
ontime3	30085.500231385	Sum of GTIs [s]
ontime6	30082.35927099	Sum of GTIs [s]
l2events	78074	Number of level 2 events



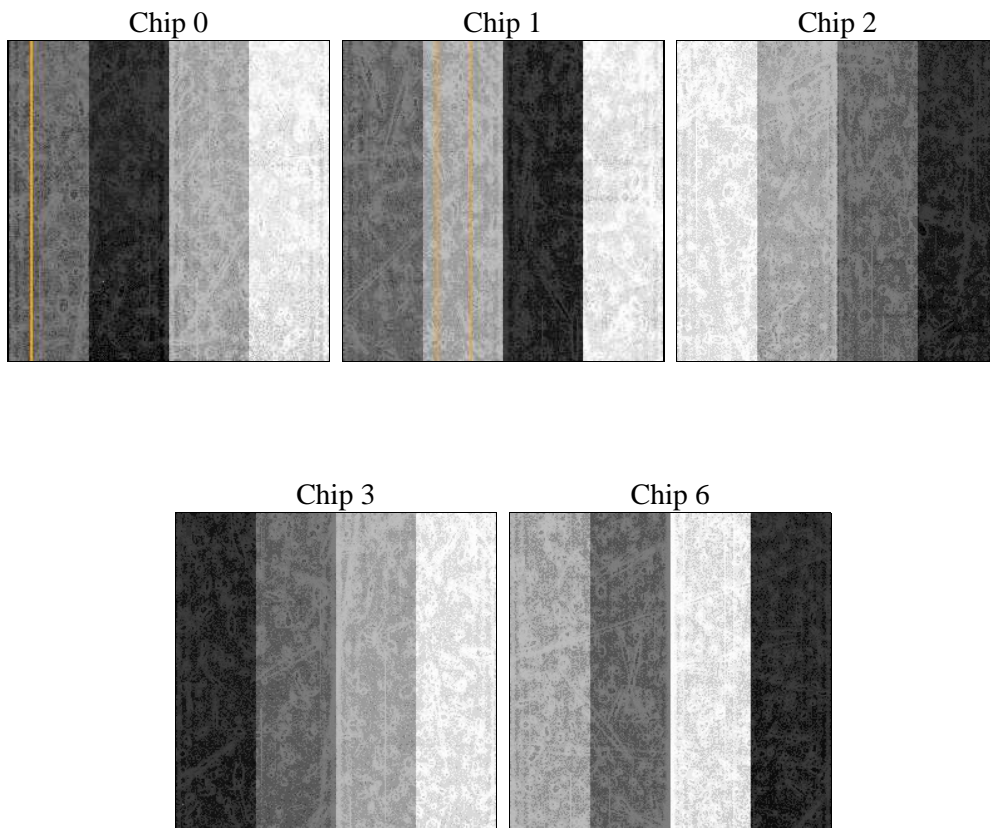
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	30085.500231385	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	30079.218270719	Sum of GTIs [s]
date	2014-12-06T14:15:07	Date and time of file creation	ontime1	30082.359241068	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	30085.500231385	Sum of GTIs [s]
			ontime3	30085.500231385	Sum of GTIs [s]
			ontime6	30082.35927099	Sum of GTIs [s]
			l1events	695883	Number of level 1 events

### 2.1.4 Events

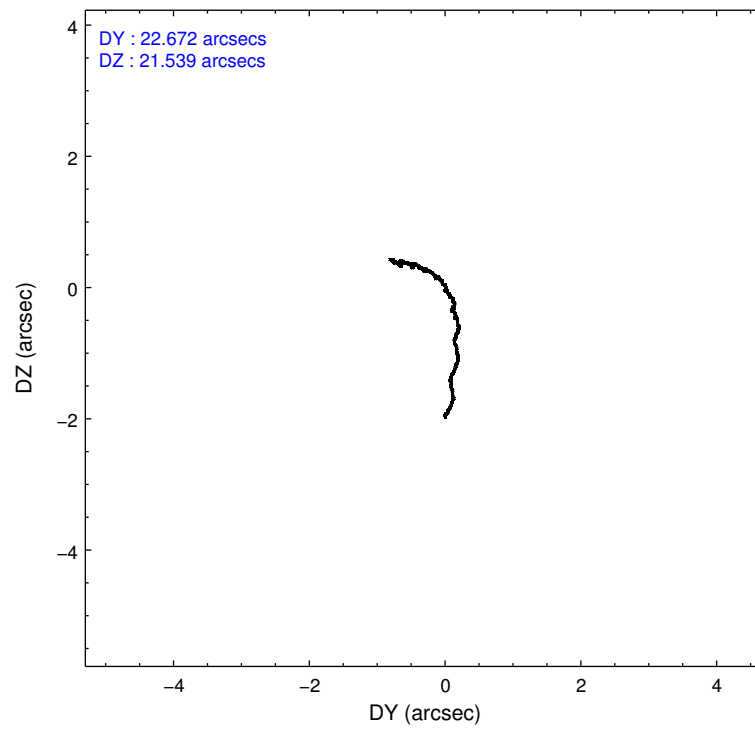
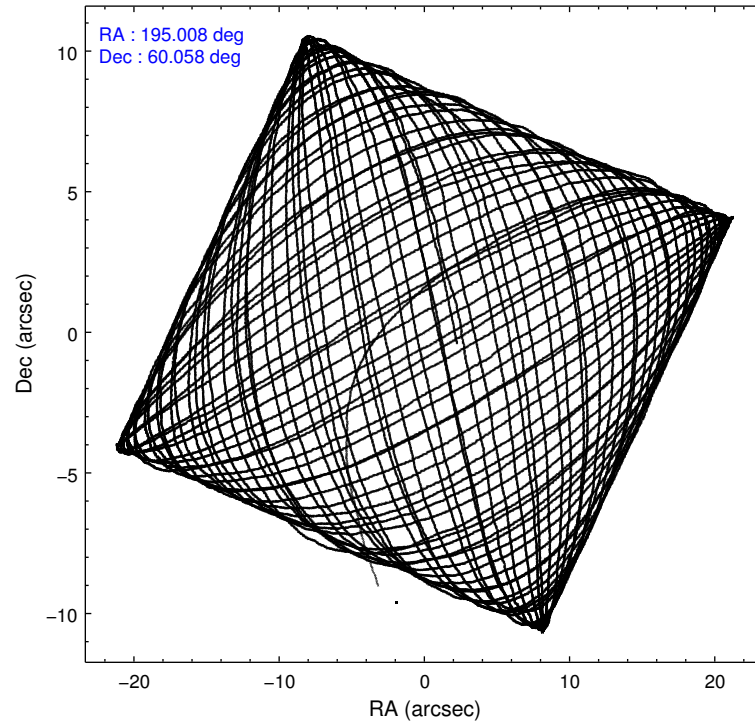
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	130154	134979	143577	143999	143174
rejected events	112626	116007	127144	121511	125951
rejected %	86%	85%	88%	84%	87%

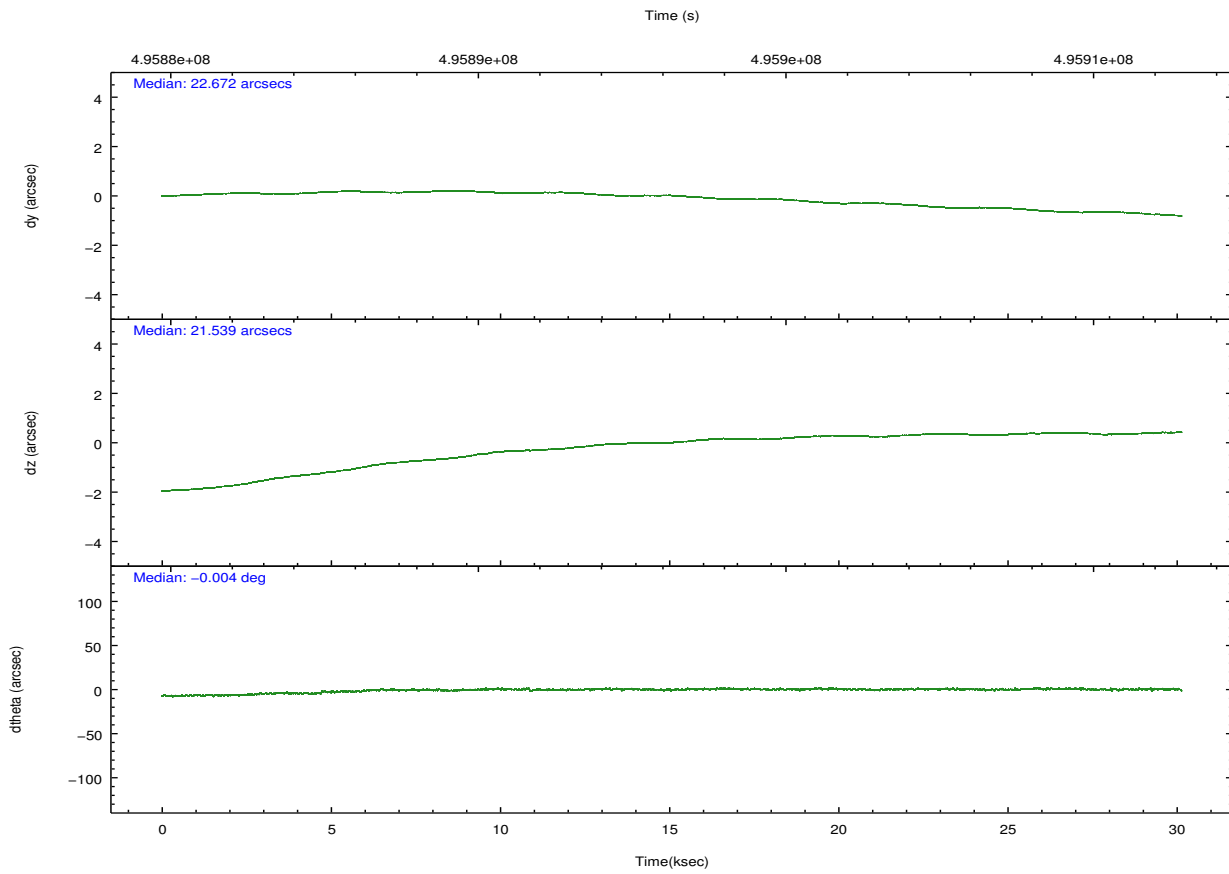
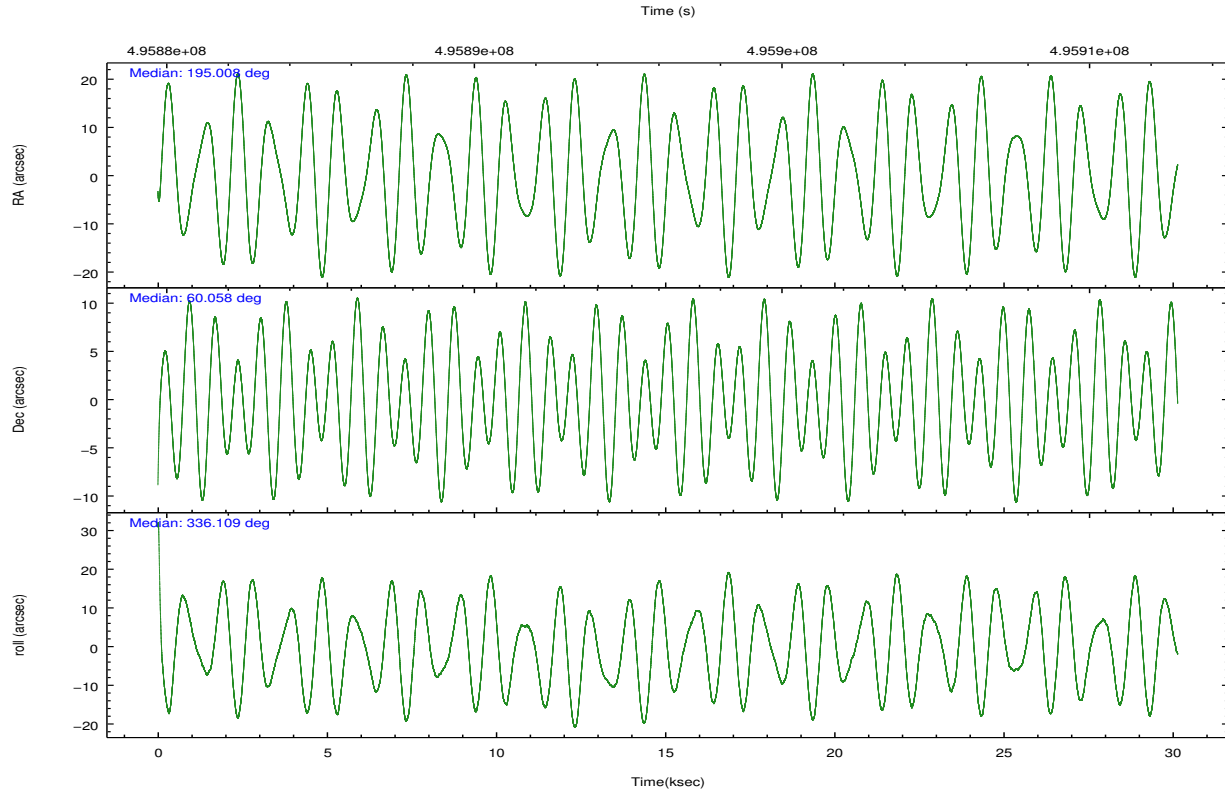
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	6267	6457	5771	11034	5793
	4%	4%	4%	7%	4%
grade 1 events	76	89	83	104	69
	0%	0%	0%	0%	0%
grade 2 events	4255	4707	4065	4107	3786
	3%	3%	2%	2%	2%
grade 3 events	1771	1908	1647	1895	1801
	1%	1%	1%	1%	1%
grade 4 events	1659	1804	1692	1876	1787
	1%	1%	1%	1%	1%
grade 5 events	6894	7360	6438	7815	7517
	5%	5%	4%	5%	5%
grade 6 events	3577	4096	3259	3578	4056
	2%	3%	2%	2%	2%
grade 7 events	105655	108558	120622	113590	118365
	81%	80%	84%	78%	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	194.953425	195.0081784535685	CCD I2 on	Y	Y
[deg] Pointing Dec	60.055316	60.05838098982163	CCD I3 on	Y	Y
[deg] Pointing Roll	335.959464	336.1207211158828	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)	495881348.184000	495880305.01125	CCD S5 on	N	N
Observation start date	2013-09-18T08:48:01	2013-09-18T08:31:45	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	495911348.184000	495912813.91302	On-chip summing requested	N	N
Observation end date	2013-09-18T17:08:01	2013-09-18T17:33:33	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



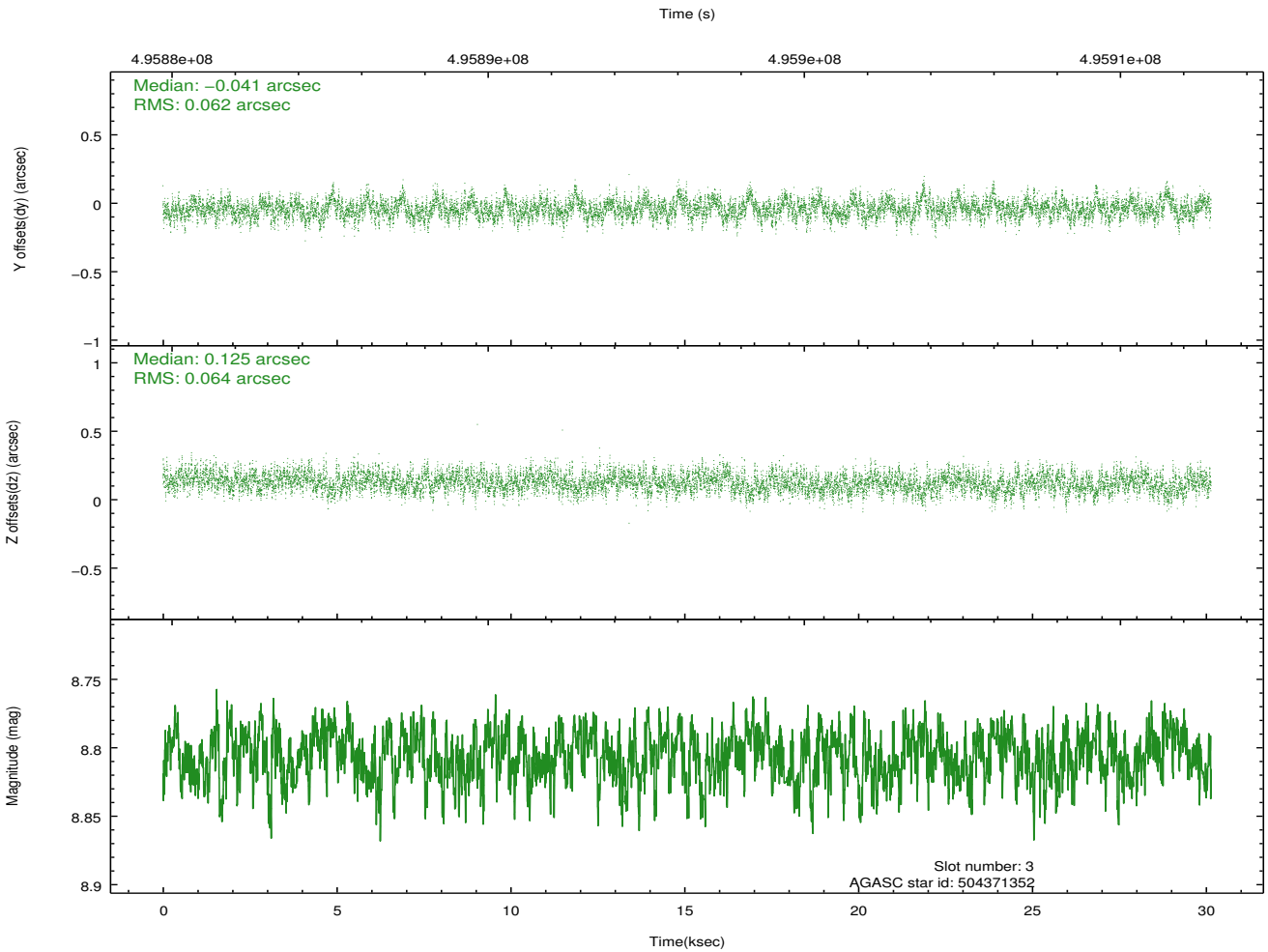
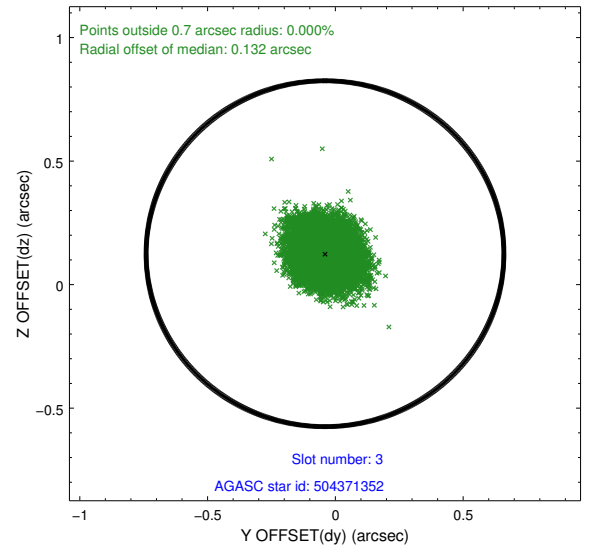
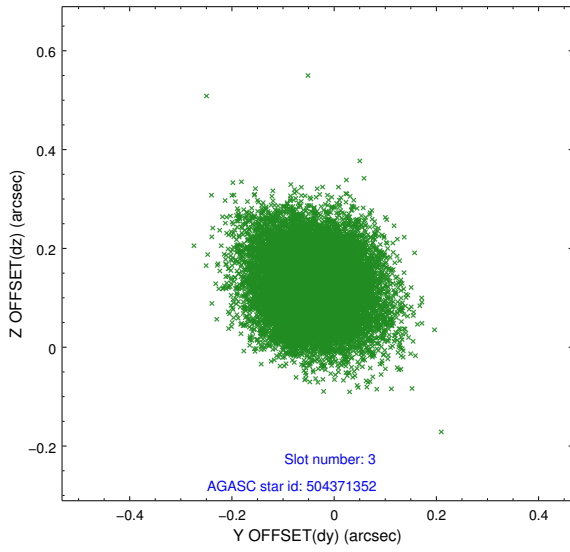


### Slot Statistics

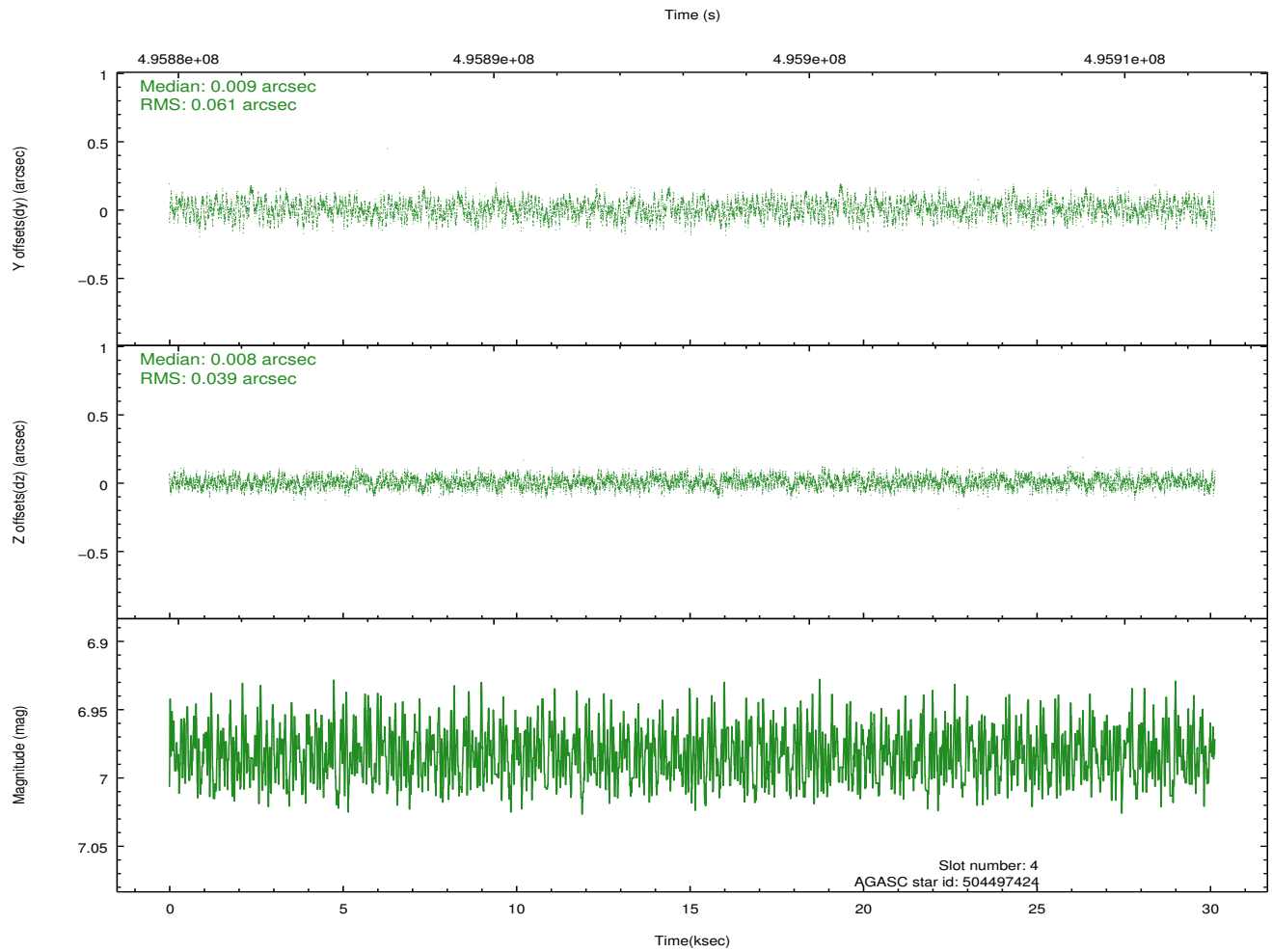
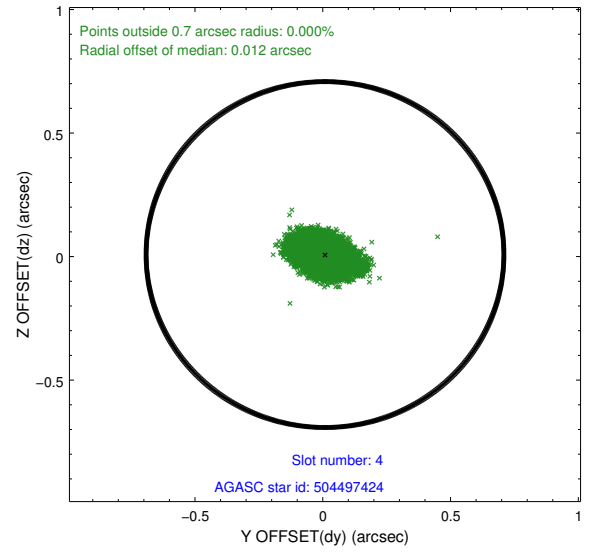
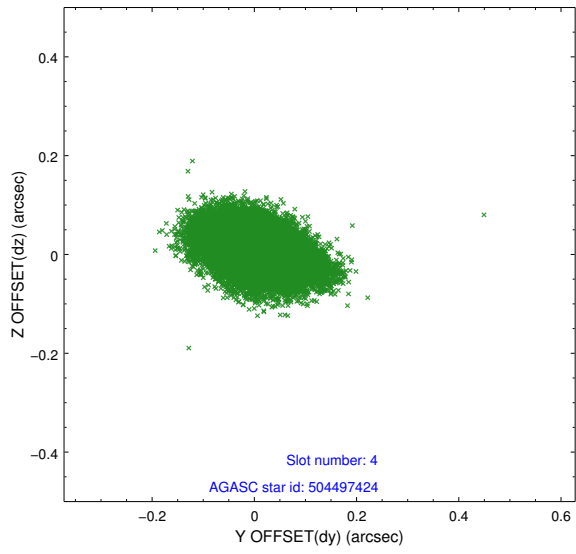
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.07	7351	0.071	-0.132	0.015	0.043	0.000000	0.000000	916.69	-1004.19
1	FID		ACIS-I-4	6.98	7352	0.205	0.081	0.016	0.027	0.000000	0.000000	2136.40	896.78
2	FID		ACIS-I-5	7.06	7352	-0.370	0.122	0.015	0.029	0.000000	0.000000	-1831.72	893.63
3	GUIDE	used	504371352	8.81	14700	-0.041	0.125	0.095	0.154	194.978456	59.407300	993.11	-2111.46
4	GUIDE	used	504497424	6.98	14705	0.009	0.008	0.078	0.125	195.668426	59.716310	1680.05	-579.40
5	GUIDE	used	504503984	8.03	14704	0.021	-0.015	0.088	0.148	195.600422	59.246031	2273.01	-2169.51
6	GUIDE	used	545654864	8.90	14696	0.043	0.050	0.096	0.153	194.690652	60.293493	-777.29	592.72
7	GUIDE	used	545661376	7.91	14698	-0.035	-0.169	0.073	0.117	195.537275	60.436982	385.47	1681.46

## 2.4 Star Slots

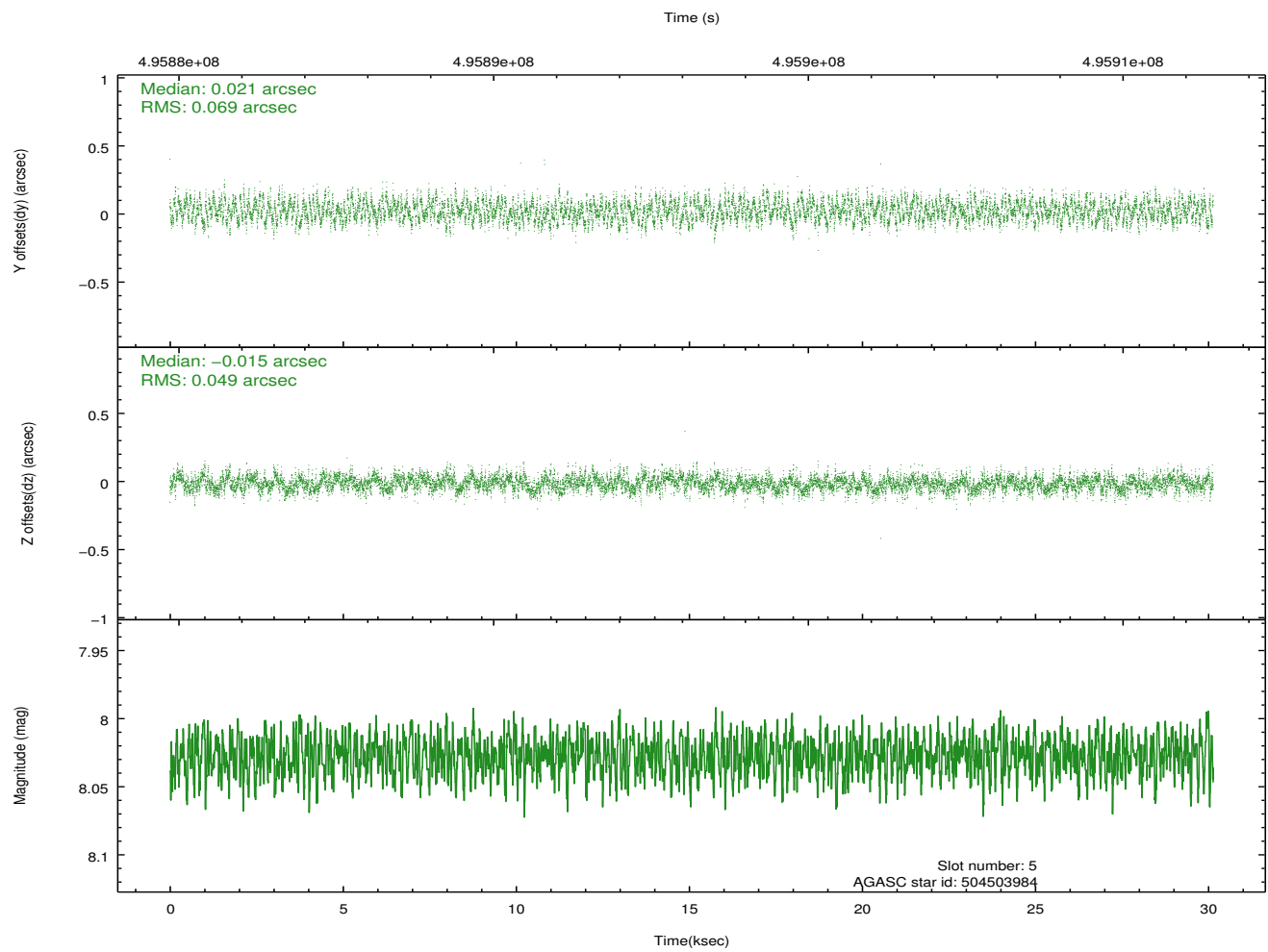
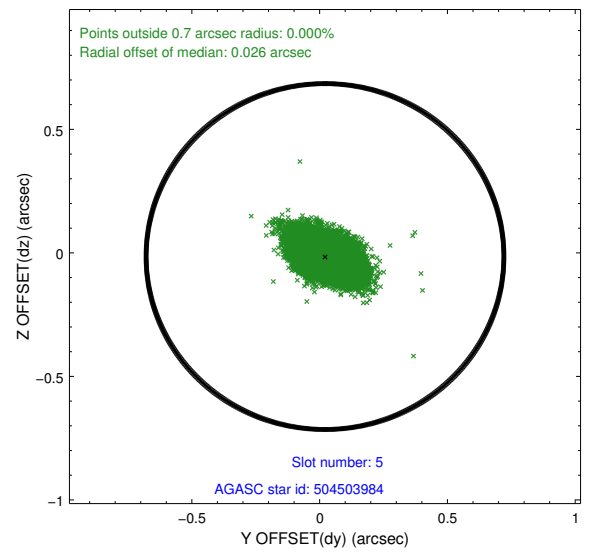
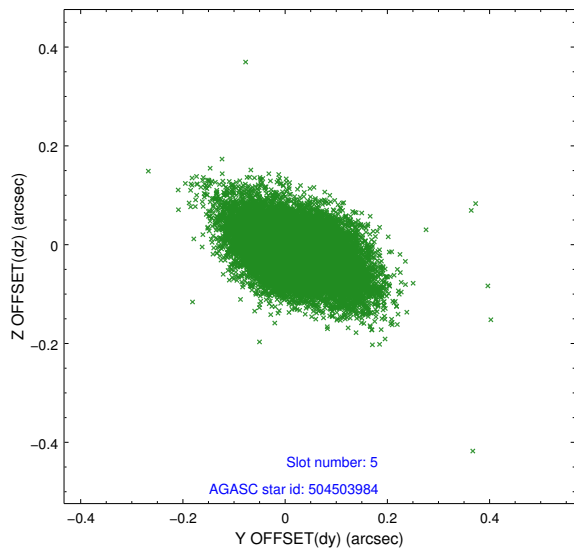
### 2.4.1 Slot 3



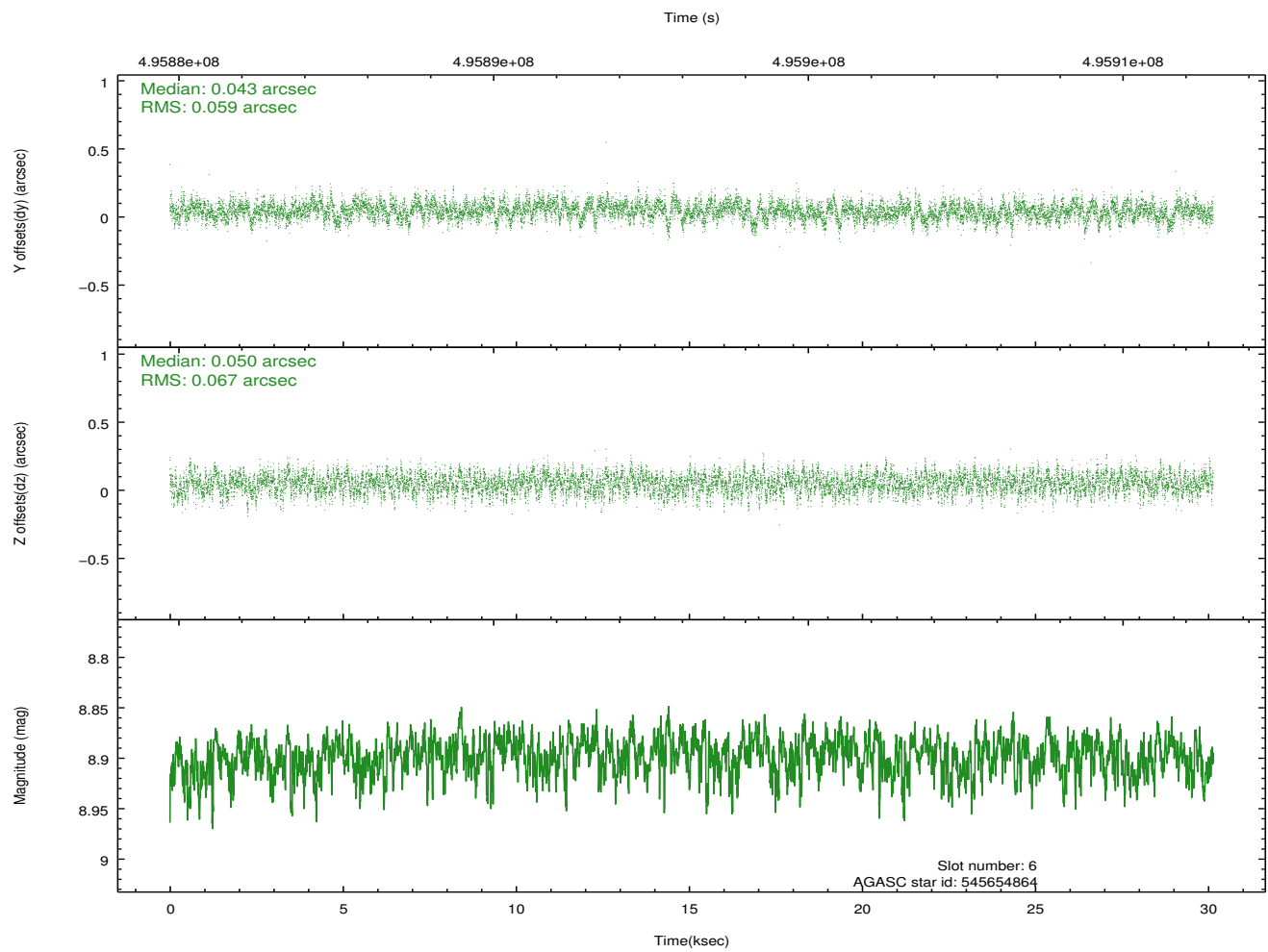
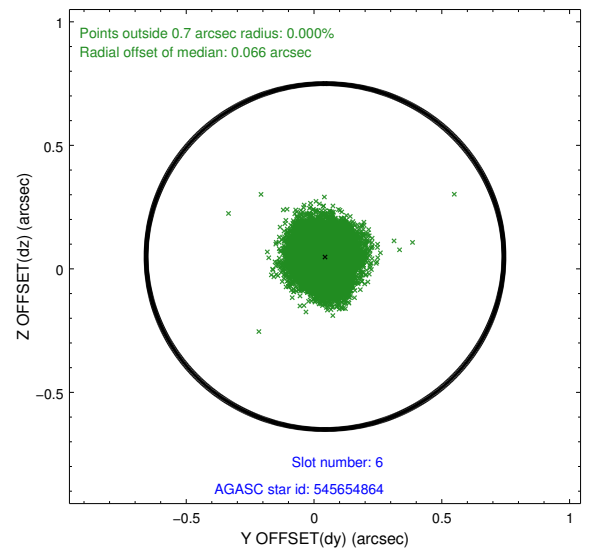
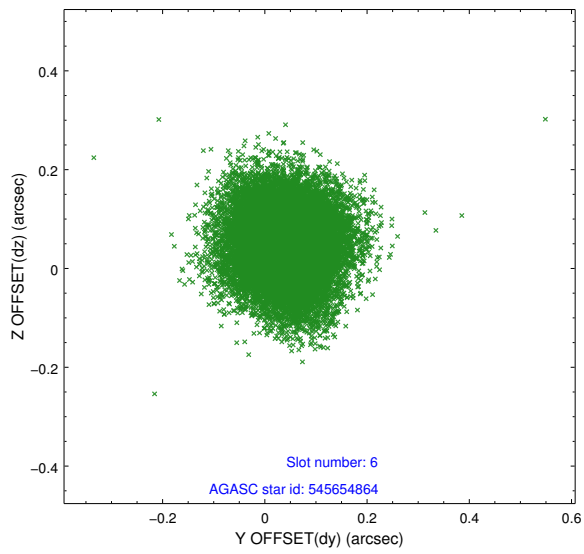
## 2.4.2 Slot 4



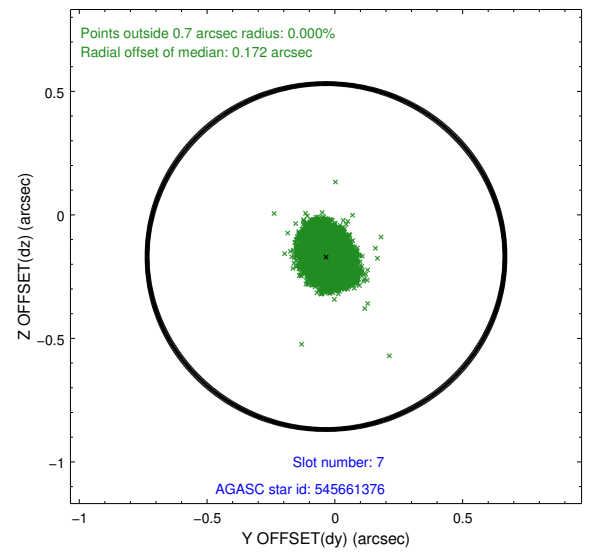
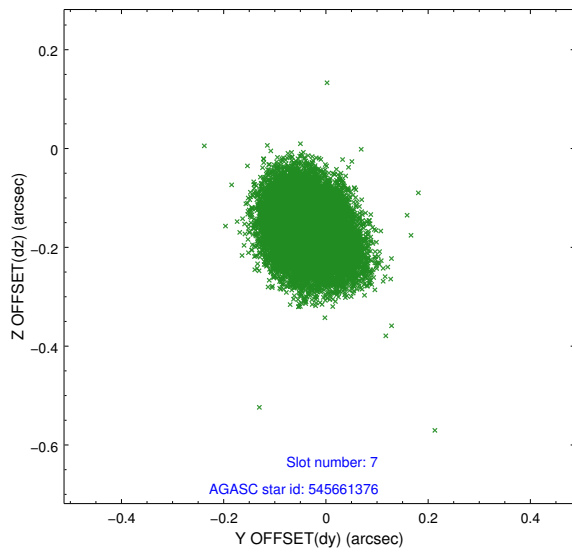
### 2.4.3 Slot 5



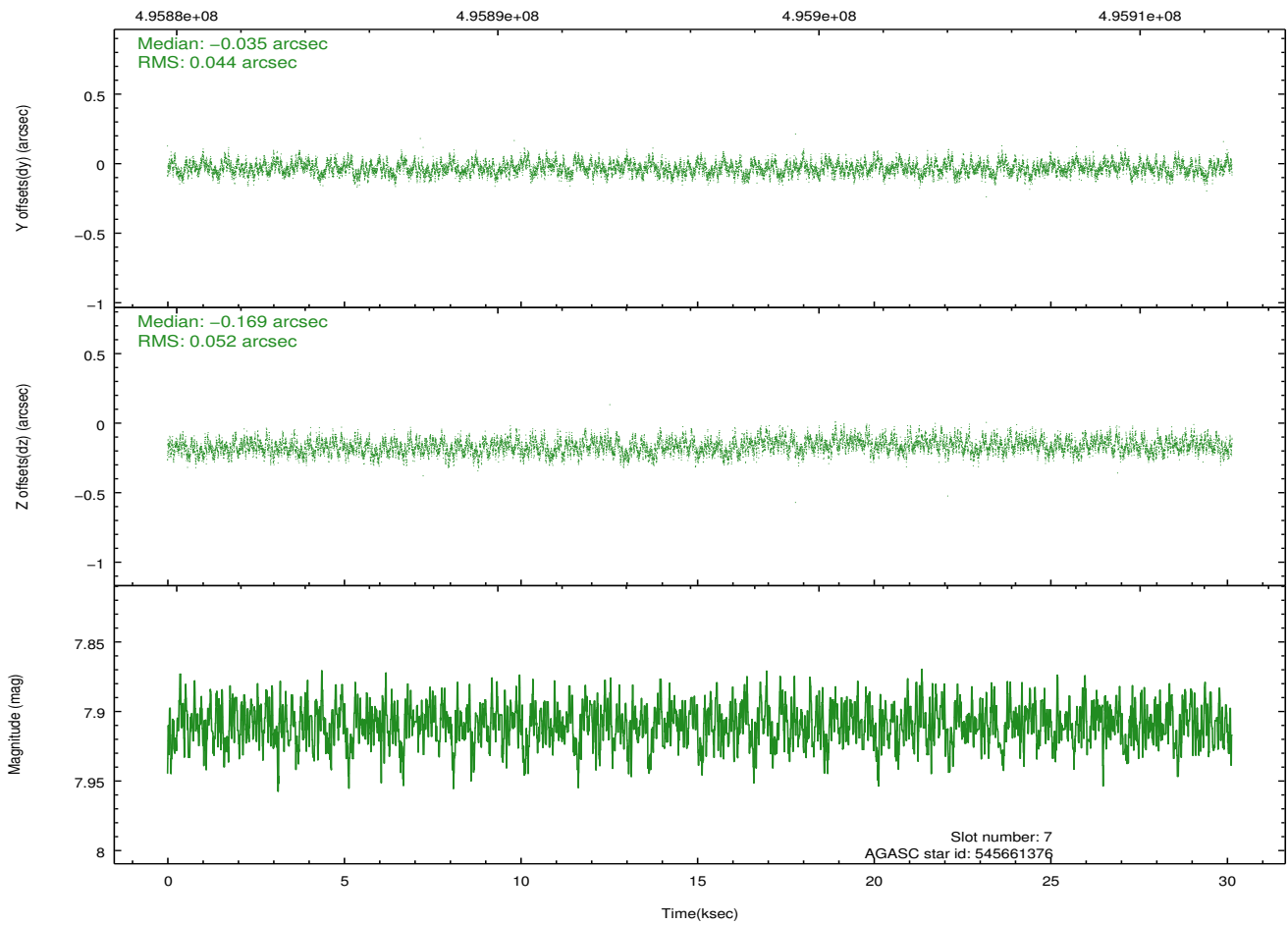
## 2.4.4 Slot 6



## 2.4.5 Slot 7

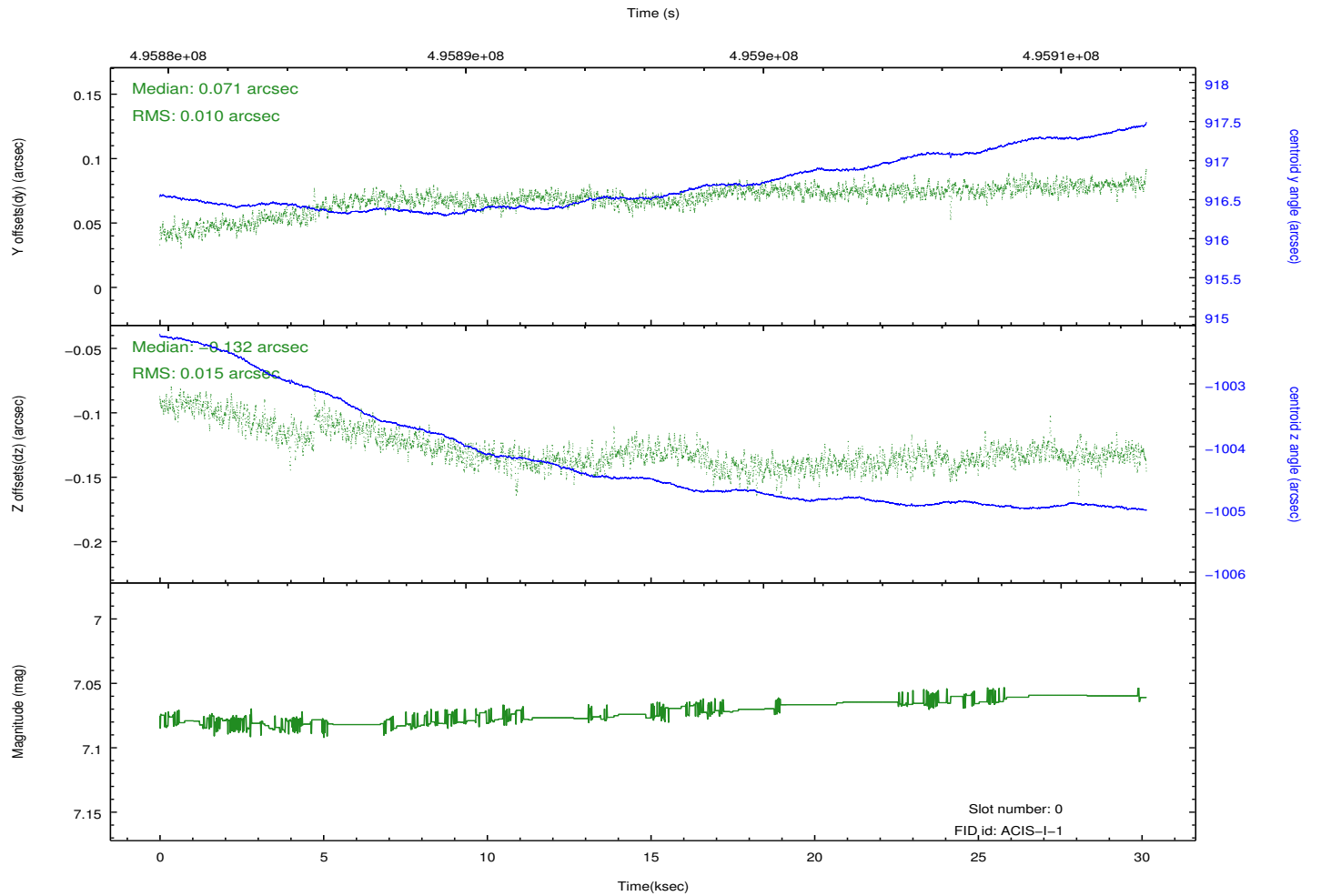
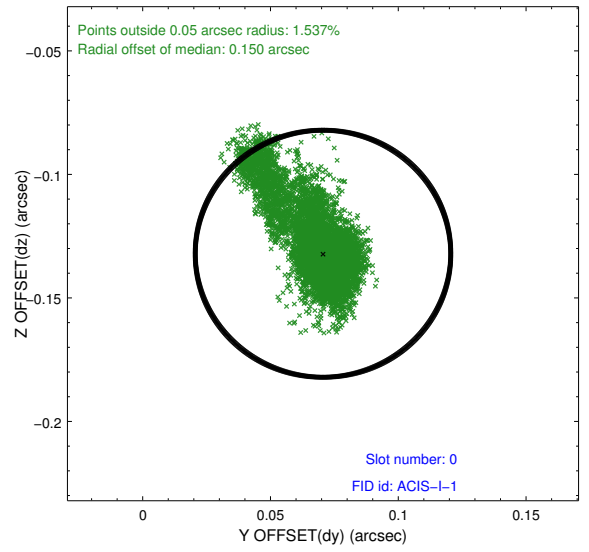
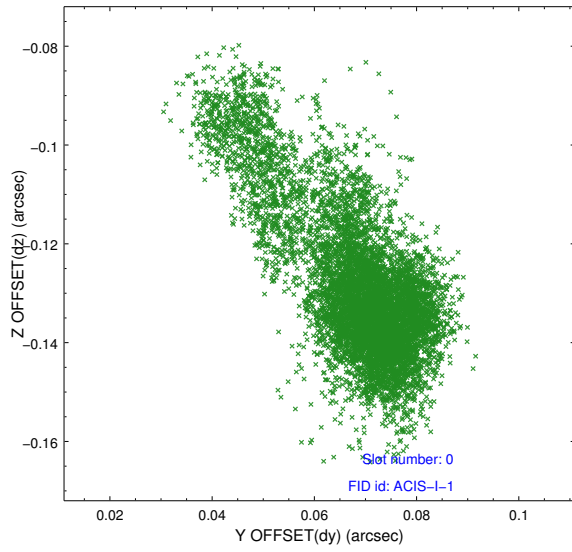


Time (s)

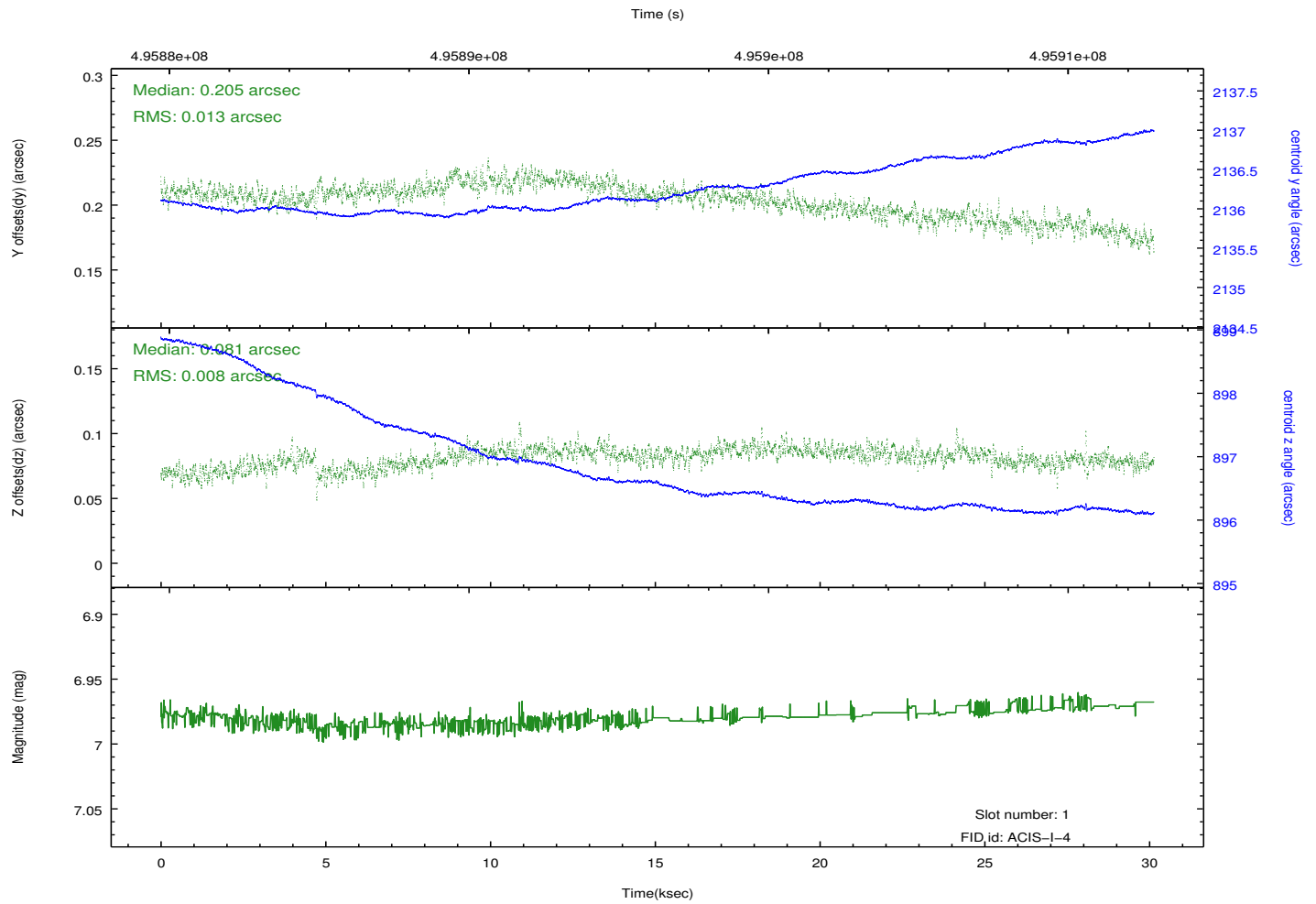
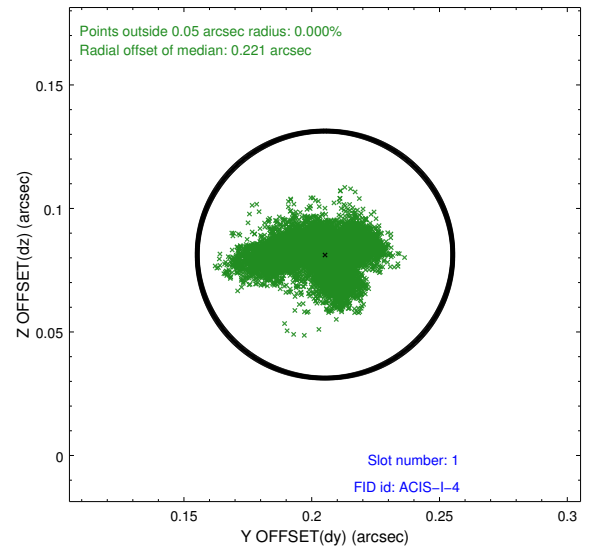
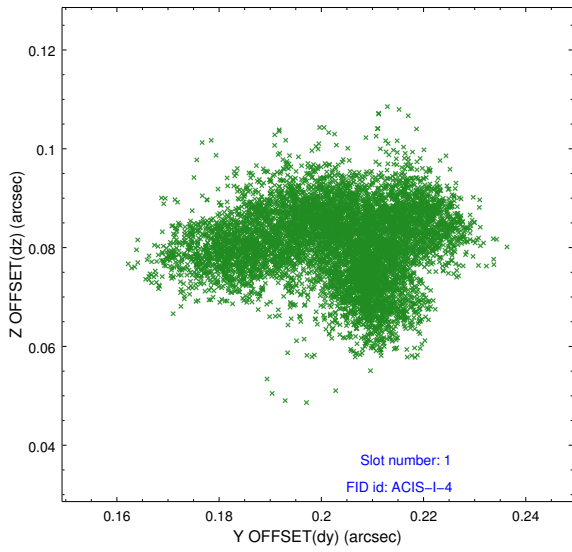


## 2.5 FID Slots

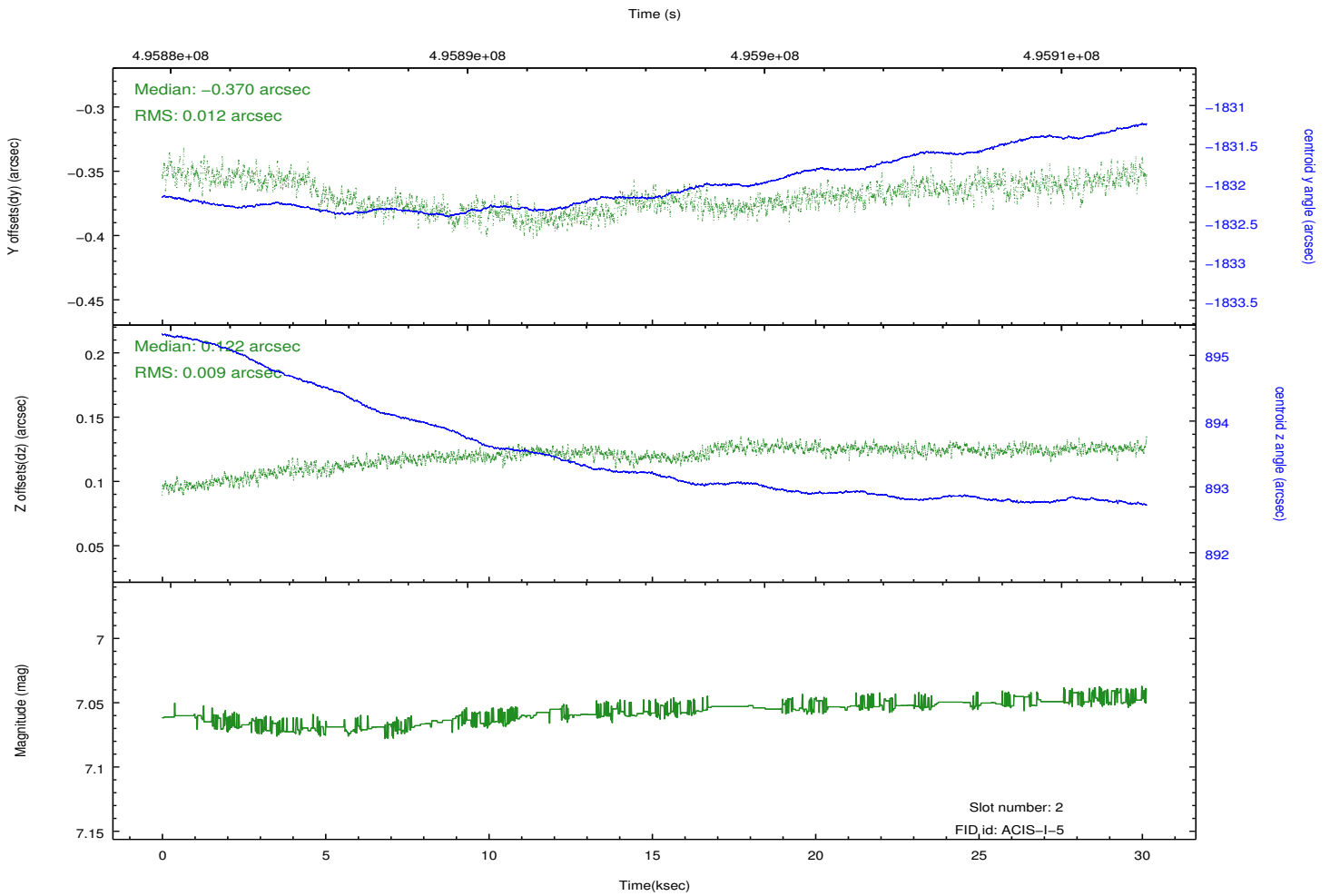
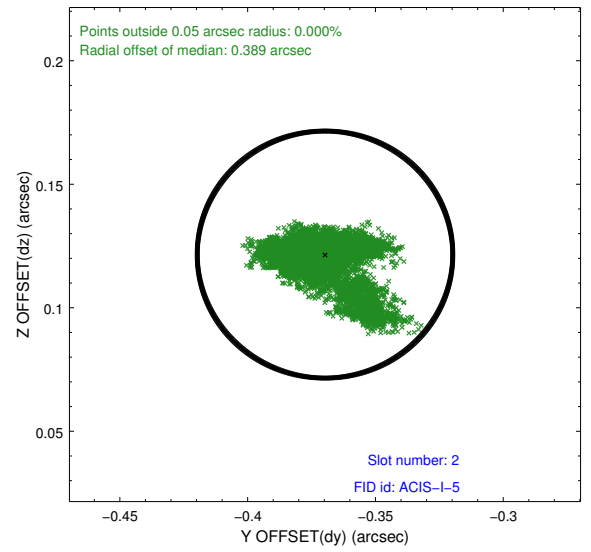
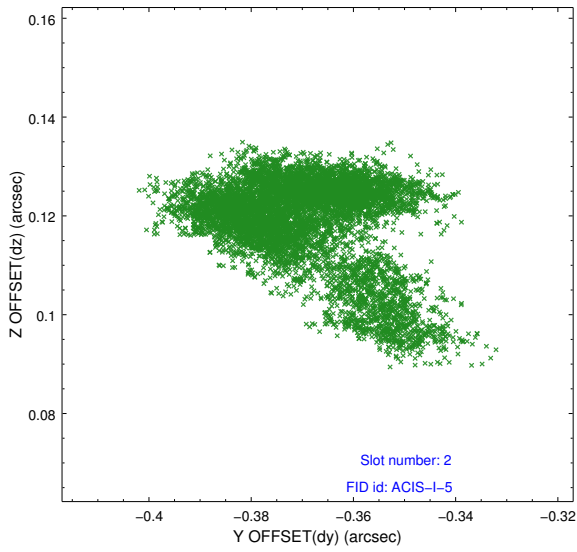
### 2.5.1 Slot 0



## 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)	2014.12.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.085500231385

## 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.