

# V&V Reference Report

## L2 ASCDS Version : 8.5.1

Observation 14676 - L2 Version 2  
Chandra X-Ray Center

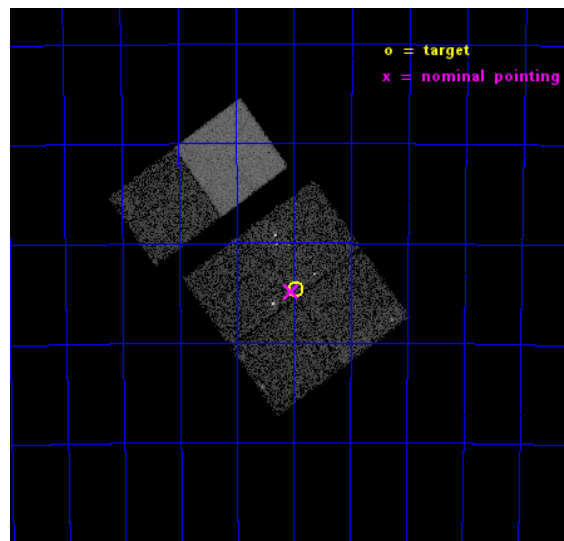
L2 Processing Date : Nov 30 2014

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# 1 Front

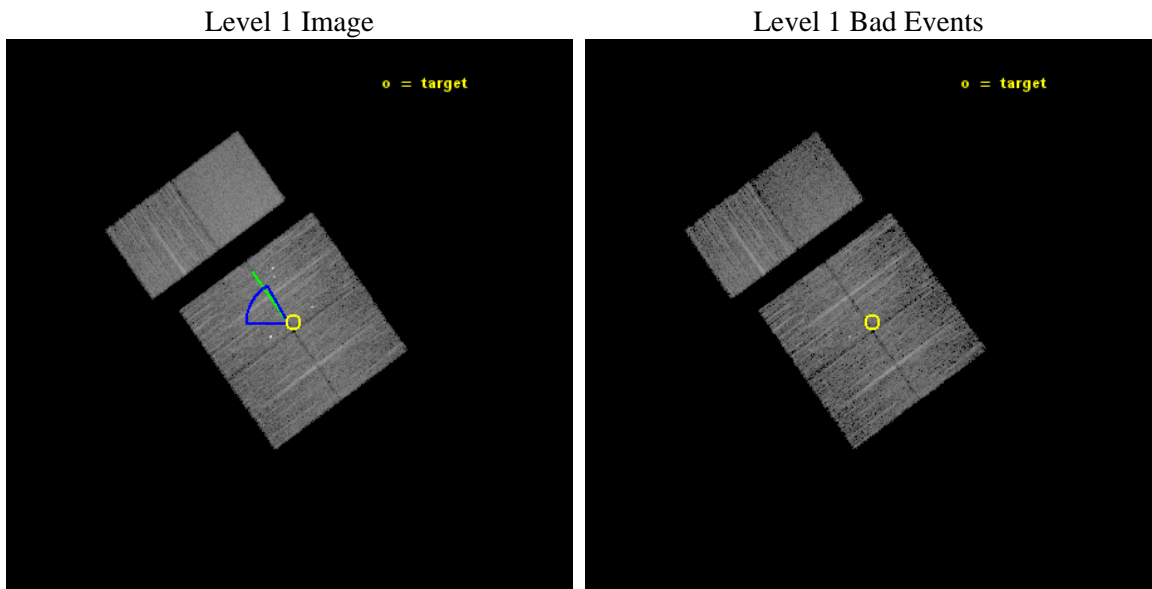
seq_num	401509	Sequence number
obs_id	14676	Observation id
title	Broad-band X-ray study of Ultraluminous X-ray sources with Chandra, XMM-Newton and NuSTAR	Proposal title
observer	Prof. Fiona Harrison	Principal investigator
object	NGC 1313	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	49.490833	Observer's specified target RA [deg]
dec_targ	-66.578639	Observer's specified target Dec [deg]
ra_nom	49.510079042271	Nominal RA [deg]
dec_nom	-66.581225831308	Nominal Dec [deg]
roll_nom	324.22635594739	Nominal Roll [deg]
revision	2	Processing version of data
ontime	9971.199962914	Sum of GTIs [s]
livetime	9844.9386250478	Livetime [s]
ontime0	9971.199962914	Sum of GTIs [s]
ontime1	9971.199962914	Sum of GTIs [s]
ontime2	9971.199962914	Sum of GTIs [s]
ontime3	9971.199962914	Sum of GTIs [s]
ontime6	9971.199962914	Sum of GTIs [s]
ontime7	9971.199962914	Sum of GTIs [s]
l2events	61361	Number of level 2 events



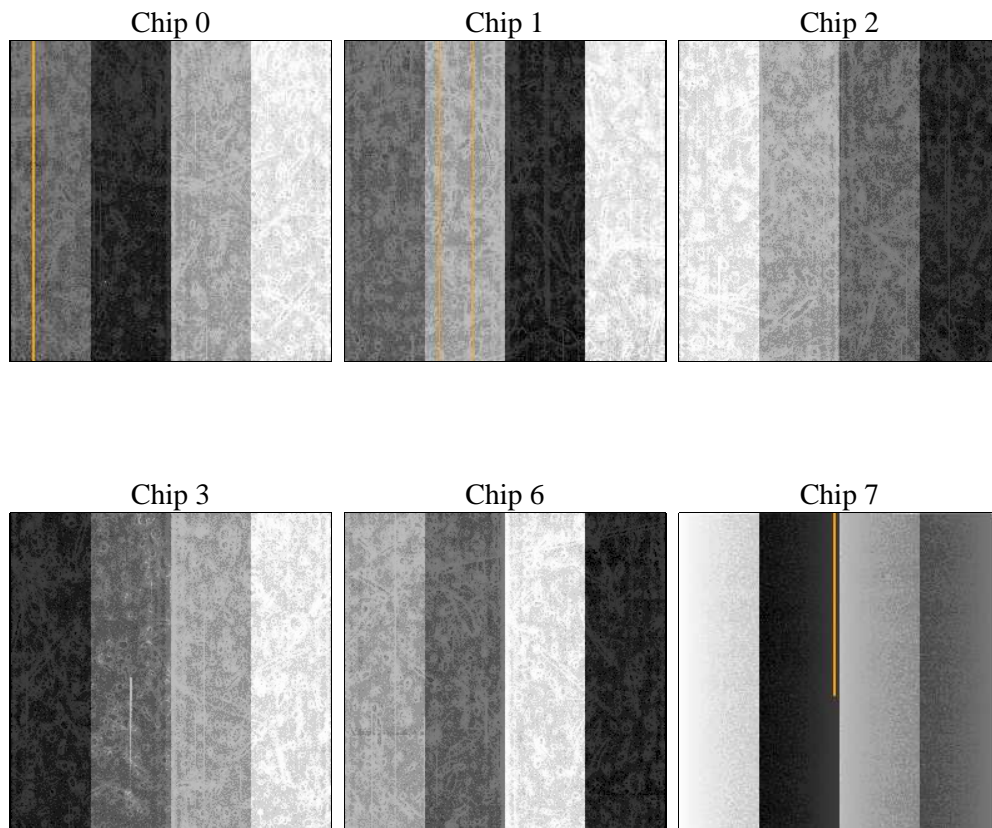
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	9971.199962914	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime0	9971.199962914	Sum of GTIs [s]
date	2014-11-30T07:28:37	Date and time of file creation	ontime1	9971.199962914	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	9971.199962914	Sum of GTIs [s]
			ontime3	9971.199962914	Sum of GTIs [s]
			ontime6	9971.199962914	Sum of GTIs [s]
			ontime7	9971.199962914	Sum of GTIs [s]
			l1events	328708	Number of level 1 events

### 2.1.4 Events

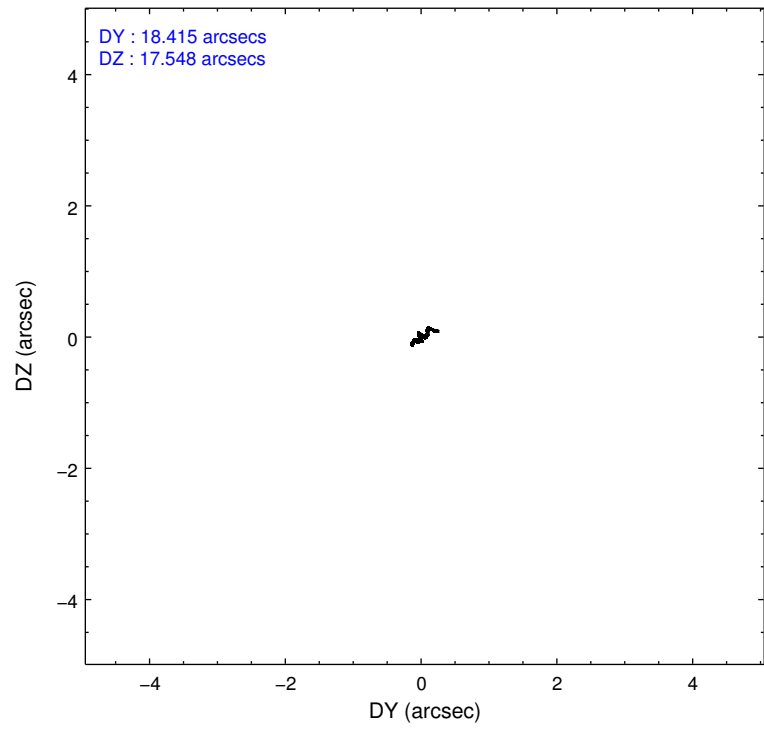
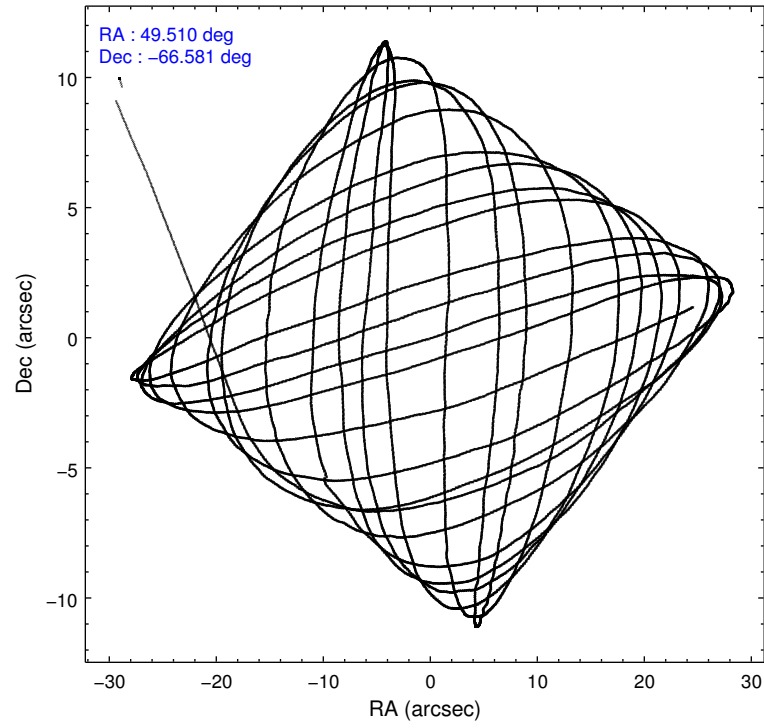
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	45971	47175	55481	55635	54672	69774	grade 0 events	2107	2382	3667	4755	2055	2846
rejected events	39873	40434	47421	46397	48497	38958		4%	5%	6%	8%	3%	4%
rejected %	86%	85%	85%	83%	88%	55%	grade 1 events	23	23	160	83	31	75
								0%	0%	0%	0%	0%	0%
							grade 2 events	1531	1612	1756	1691	1409	6267
								3%	3%	3%	3%	2%	8%
							grade 3 events	644	640	712	754	655	2623
								1%	1%	1%	1%	1%	3%
							grade 4 events	590	668	705	753	602	2672
								1%	1%	1%	1%	1%	3%
							grade 5 events	2451	2429	2230	2654	2677	7351
								5%	5%	4%	4%	4%	10%
							grade 6 events	1229	1442	1220	1291	1456	16412
								2%	3%	2%	2%	2%	23%
							grade 7 events	37396	37979	45031	43654	45787	31528
								81%	80%	81%	78%	83%	45%

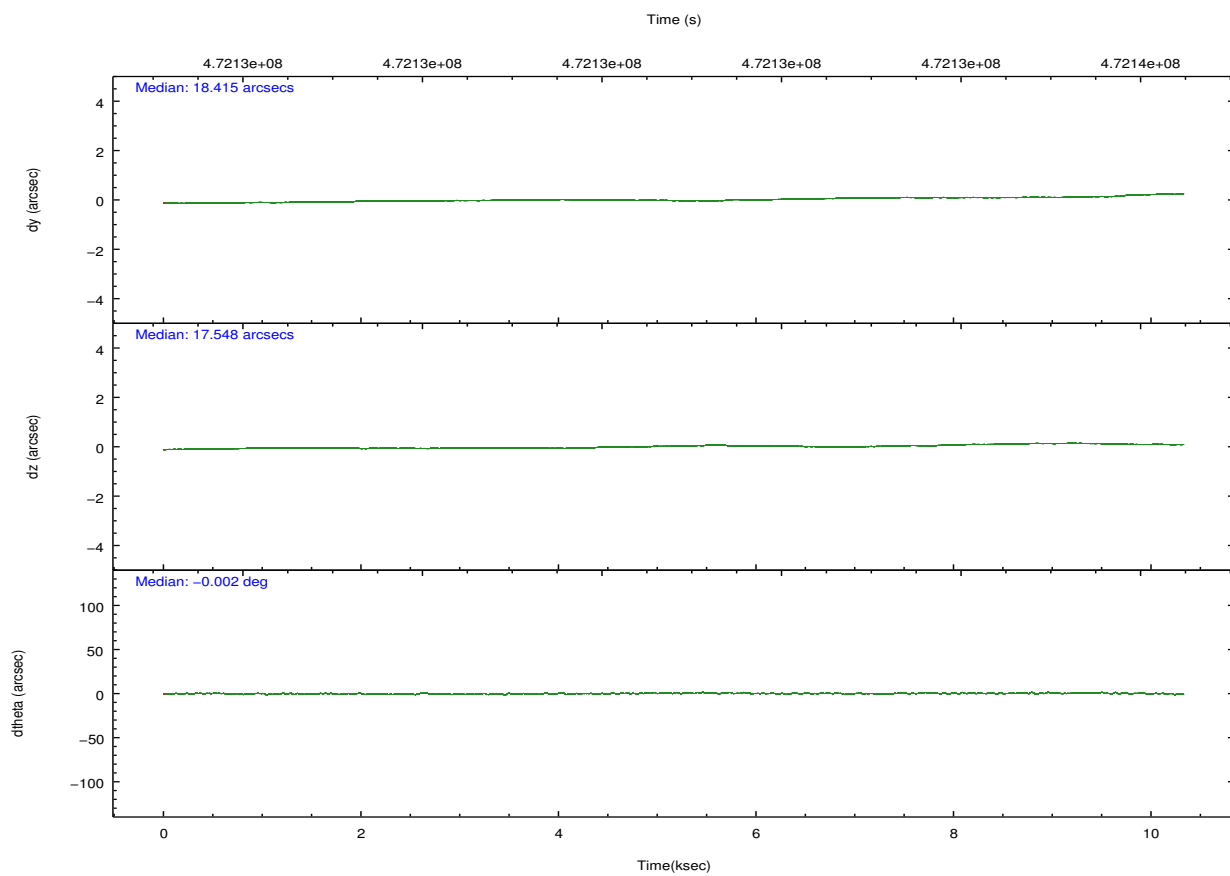
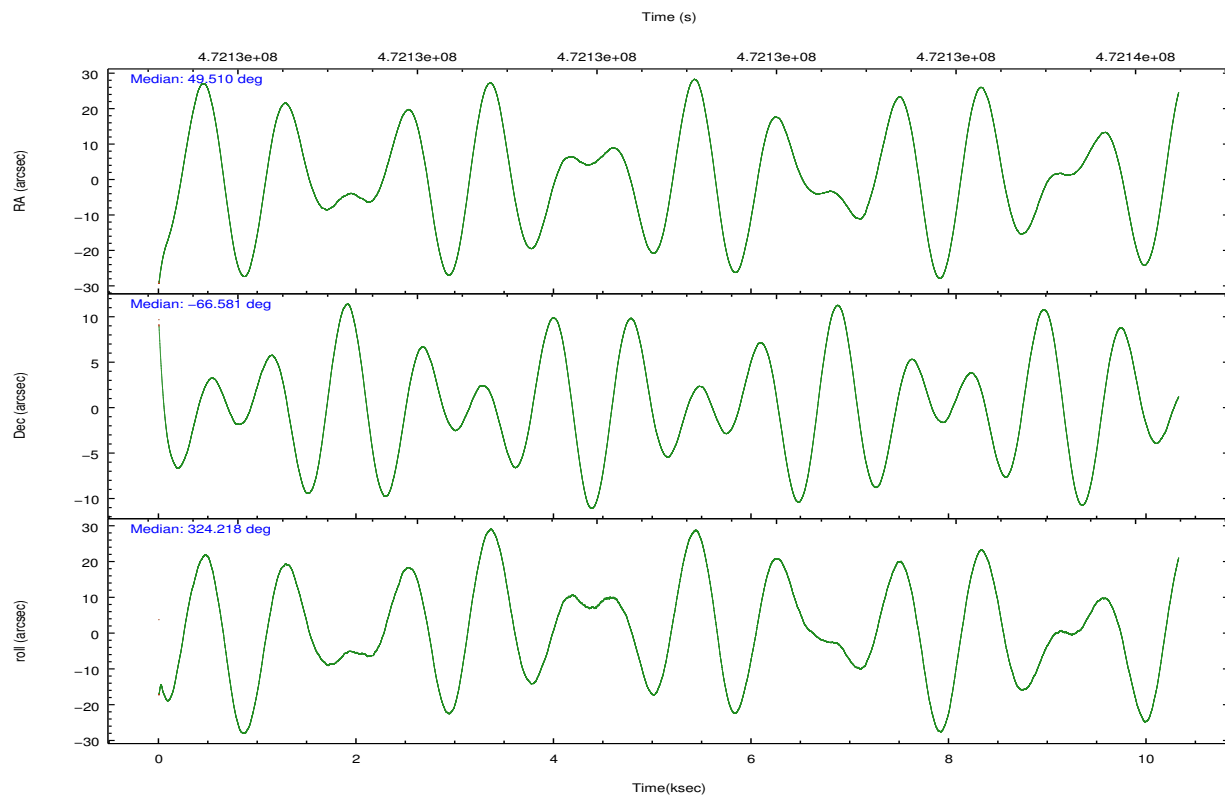


## 2.2 Compared Parameters

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	FAINT	FAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	49.441261	49.51007904227069	CCD I2 on	Y	Y
[deg] Pointing Dec	-66.578521	-66.58122583130793	CCD I3 on	Y	Y
[deg] Pointing Roll	323.954505	324.2263559473885	CCD S0 on	N	N
[deg] Roll angle	20.000000	20.000000	CCD S1 on	N	N
[deg] Roll tolerance	20.000000	20.000000	CCD S2 on	O1	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	O2	Y
[s] Window start time (MET)	470707267.184000	470707267.184000	CCD S4 on	N	N
[s] Window stop time (MET)	483753667.184000	483753667.184000	CCD S5 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	Number of optional ACIS chips dropped	0	0
[mm] SIM defocus	0	0.001439871863259334	On-chip summing requested	N	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	Subarray requested	NONE	NONE
[mm] SIM translation stage offset	0	-0.005018542100998502	Alternating exposures requested	N	N
[s] Observation start time (MET)	472125963.184000	472124937.03588	[s] Primary exposure time	0.000000	3.2
Observation start date	2012-12-17T10:04:56	2012-12-17T09:48:57			
[s] Observation end time (MET)	472135963.184000	472136804.48652			
Observation end date	2012-12-17T12:51:36	2012-12-17T13:06:44			

## 2.3 Aspect



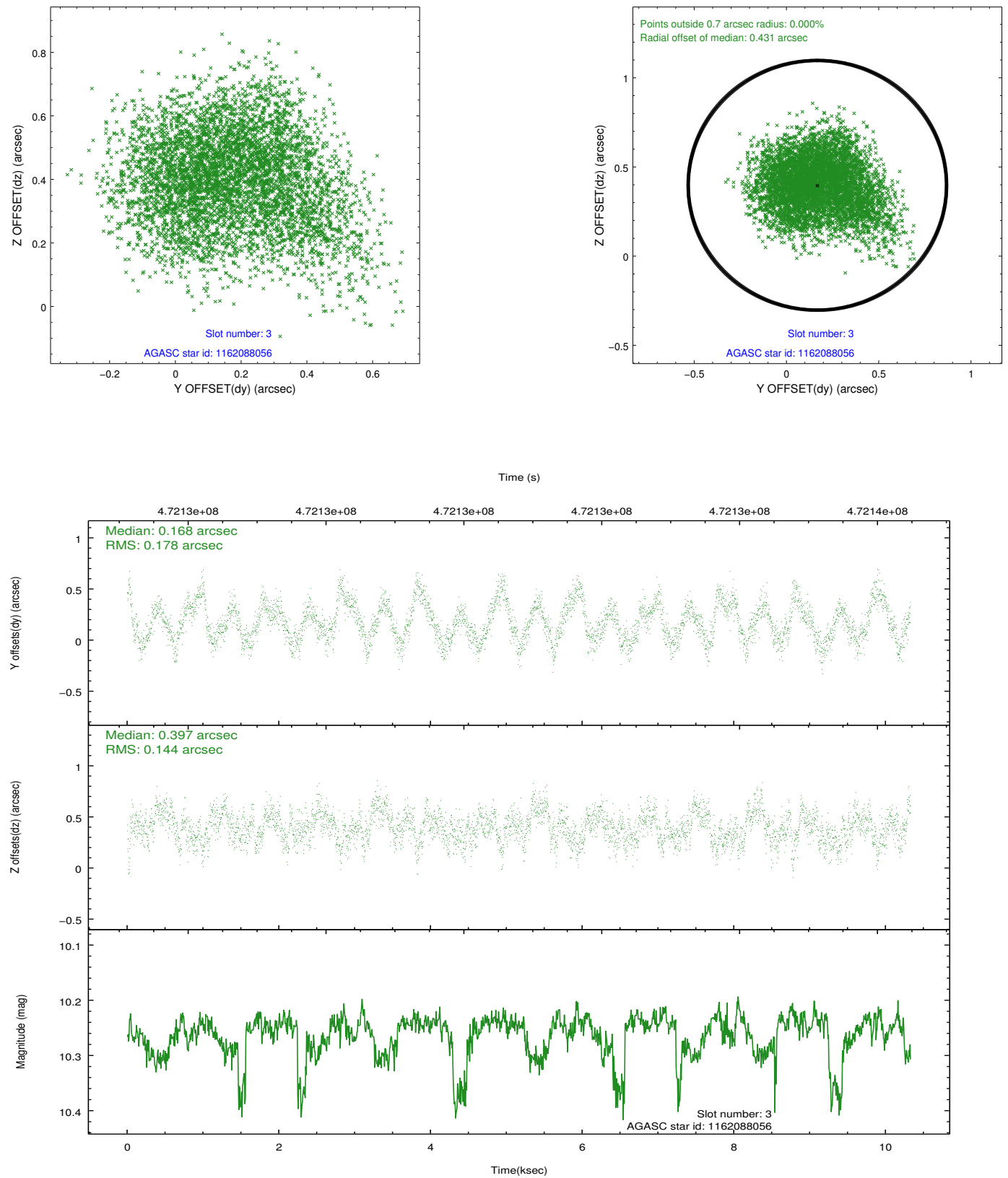


### Slot Statistics

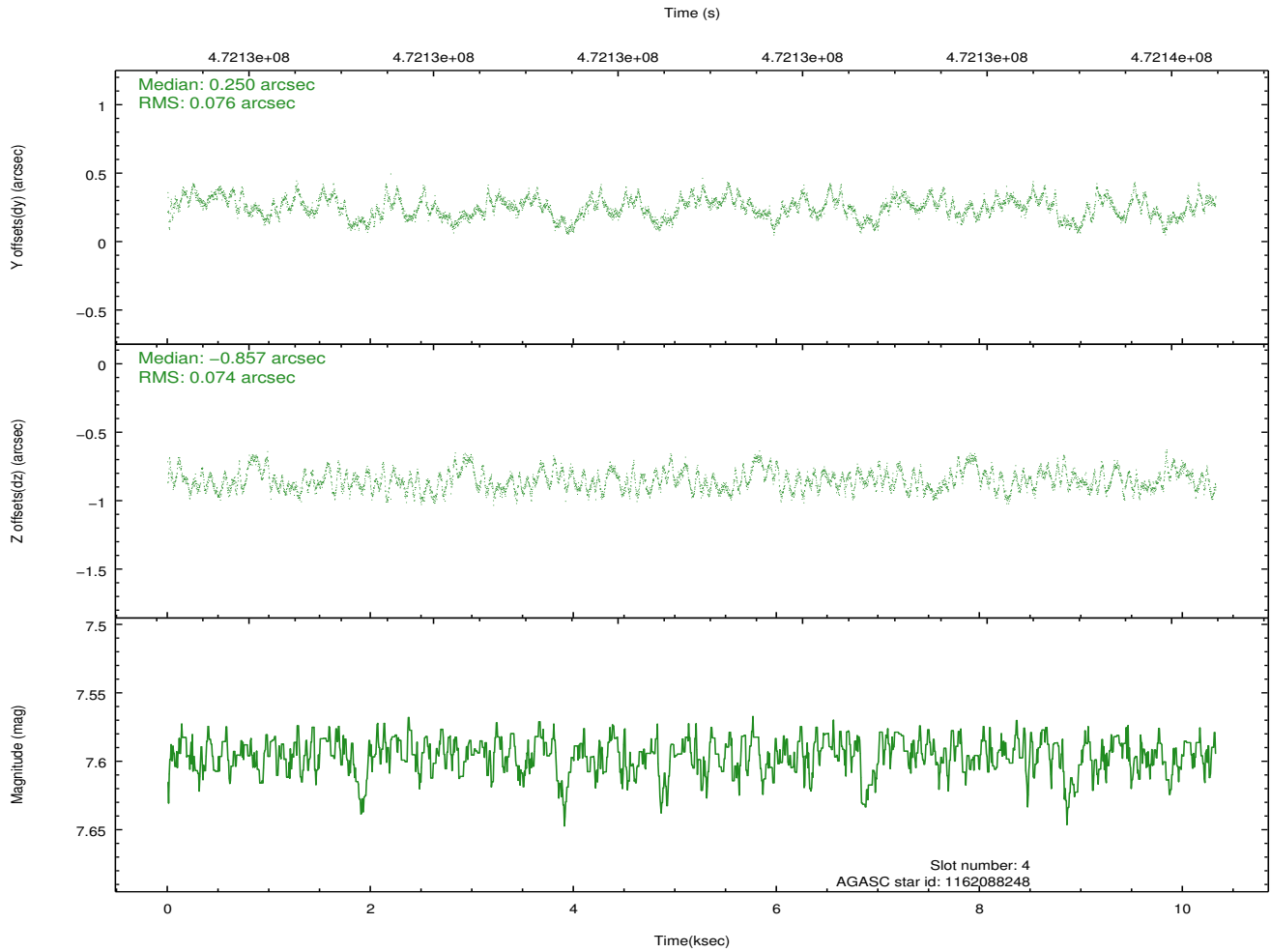
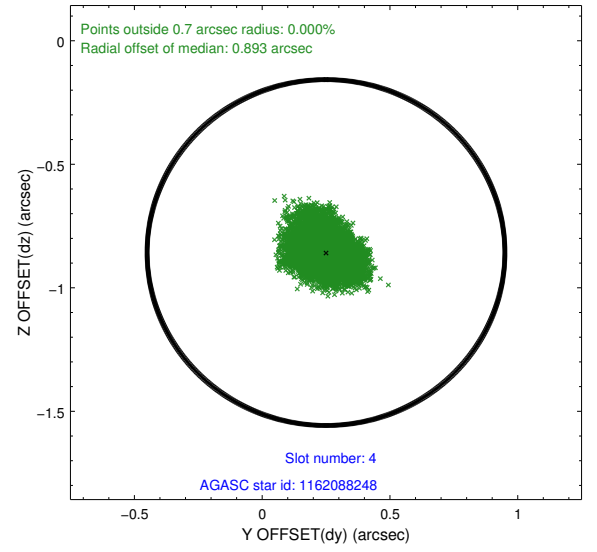
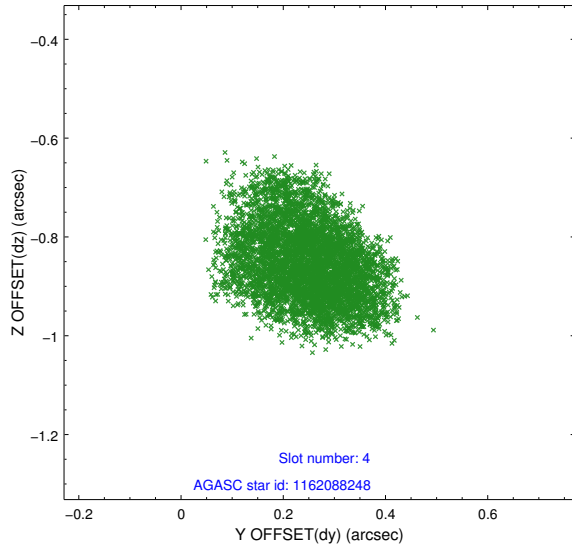
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.00	2519	0.056	0.012	0.007	0.011	0.000000	0.000000	920.99	-841.20
1	FID		ACIS-I-5	6.99	2519	-0.239	0.060	0.007	0.012	0.000000	0.000000	-1827.13	1056.07
2	FID		ACIS-I-6	7.00	2519	0.091	-0.002	0.007	0.011	0.000000	0.000000	386.01	1701.09
3	GUIDE	used	1162088056	10.26	5024	0.168	0.397	0.246	0.383	48.729349	-66.949806	-20.61	-1675.12
4	GUIDE	used	1162088248	7.60	5038	0.250	-0.857	0.117	0.175	49.751966	-65.888113	-1092.04	2276.59
5	GUIDE	used	1162089104	9.58	5032	-0.255	0.299	0.152	0.233	48.422126	-66.410699	-1535.51	-384.24
6	GUIDE	used	1162090824	9.26	5013	0.004	0.193	0.125	0.192	48.677982	-66.885202	-218.30	-1532.34
7	GUIDE	used	1162094224	9.71	4981	-0.157	-0.038	0.164	0.263	49.638584	-66.701903	489.06	-194.13

## 2.4 Star Slots

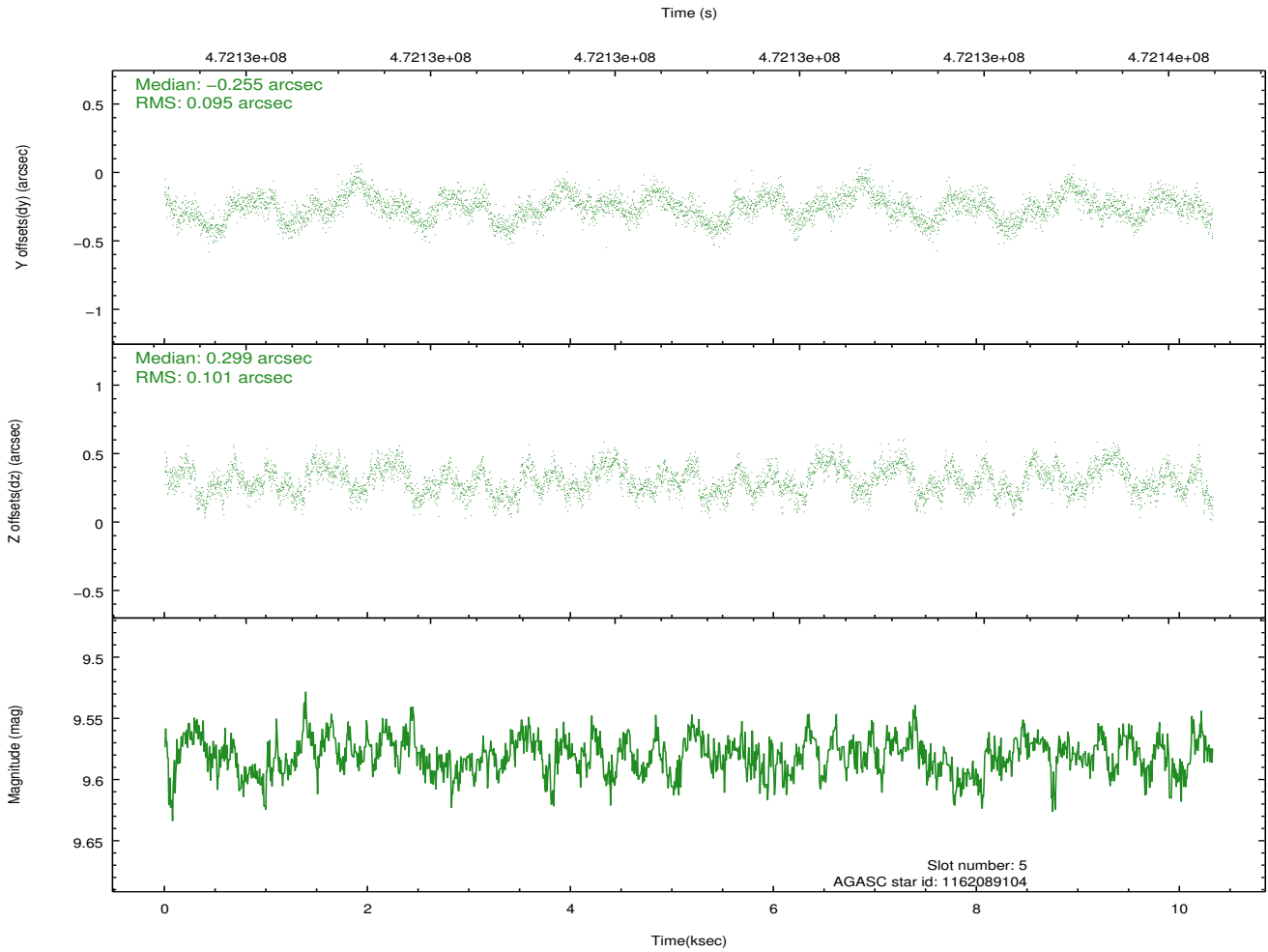
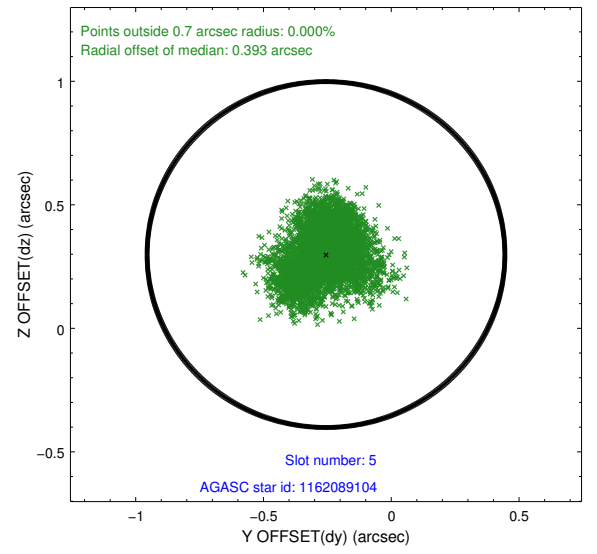
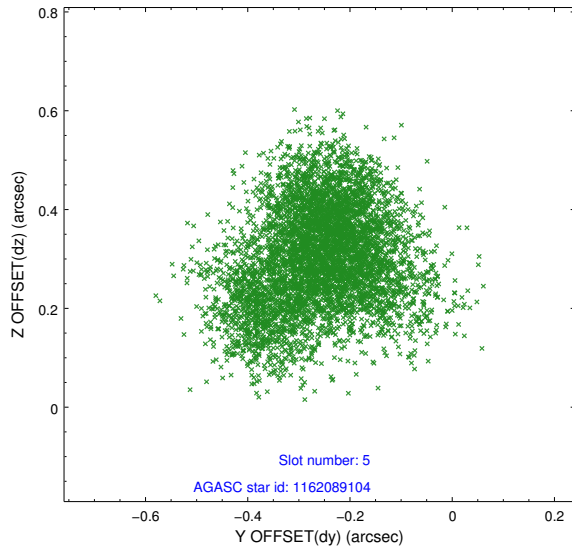
### 2.4.1 Slot 3



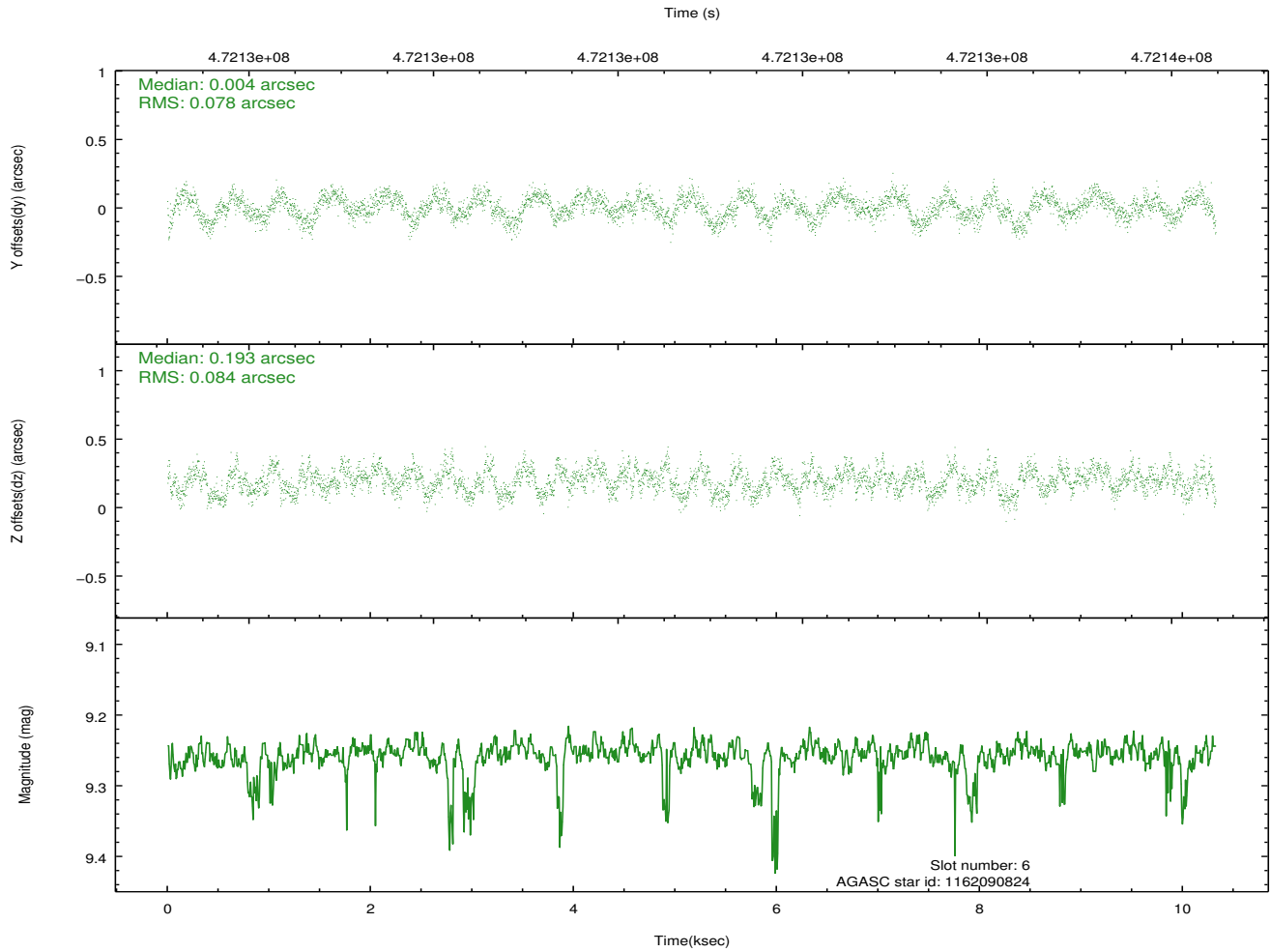
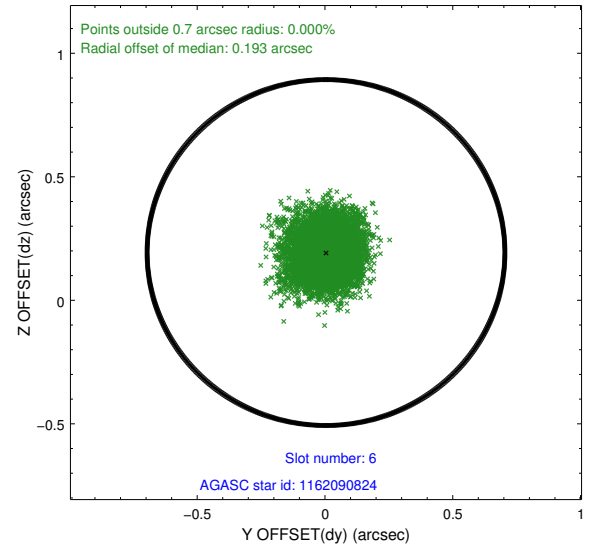
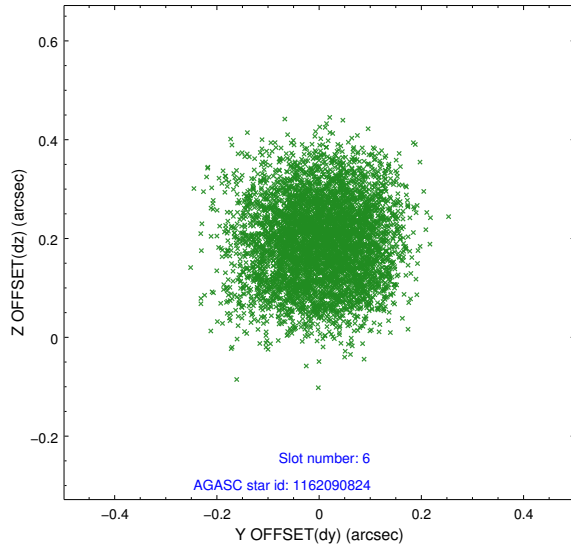
## 2.4.2 Slot 4



### 2.4.3 Slot 5

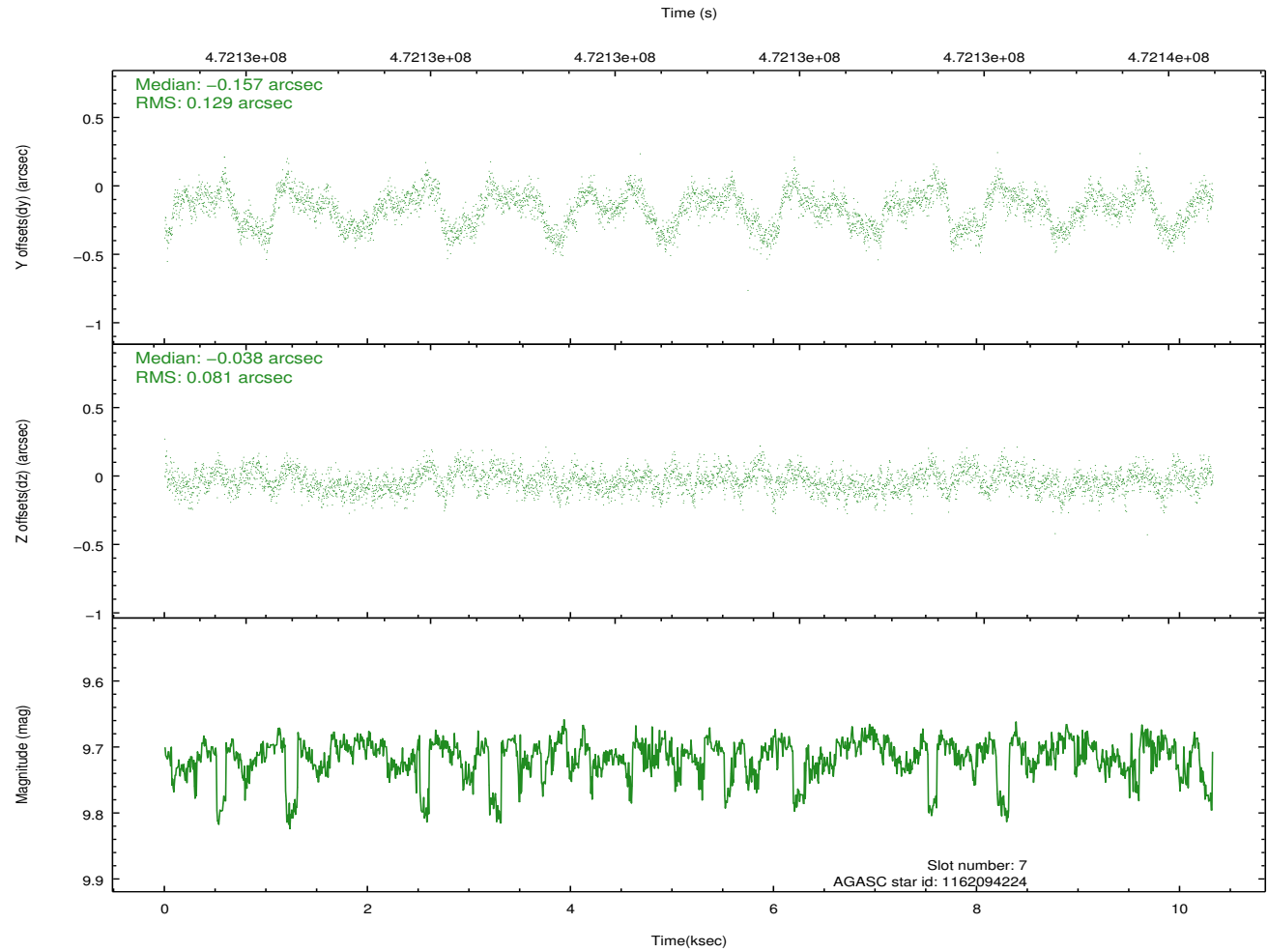
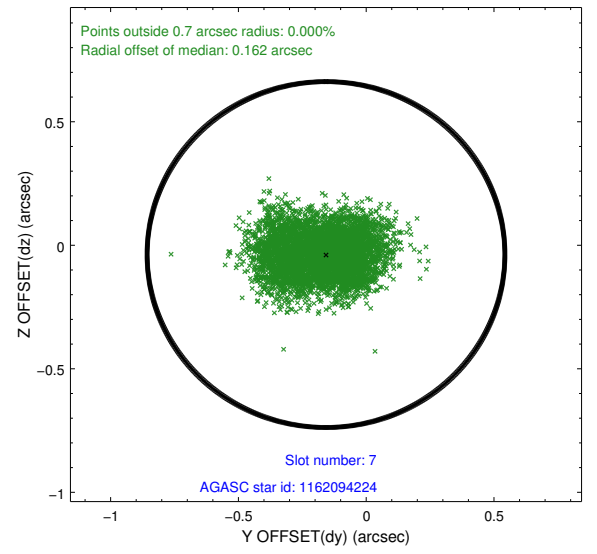
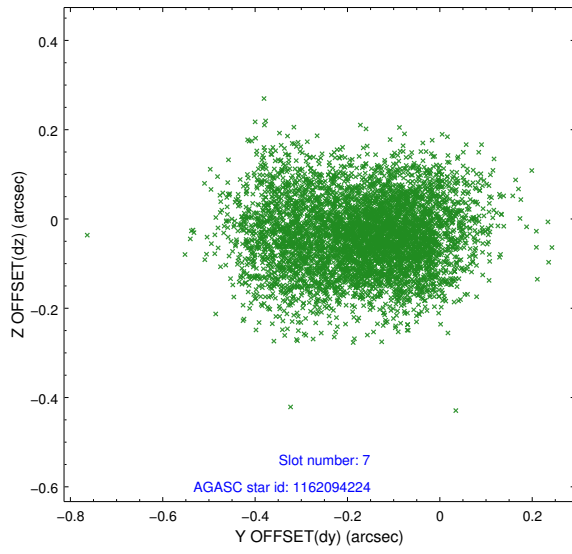


## 2.4.4 Slot 6



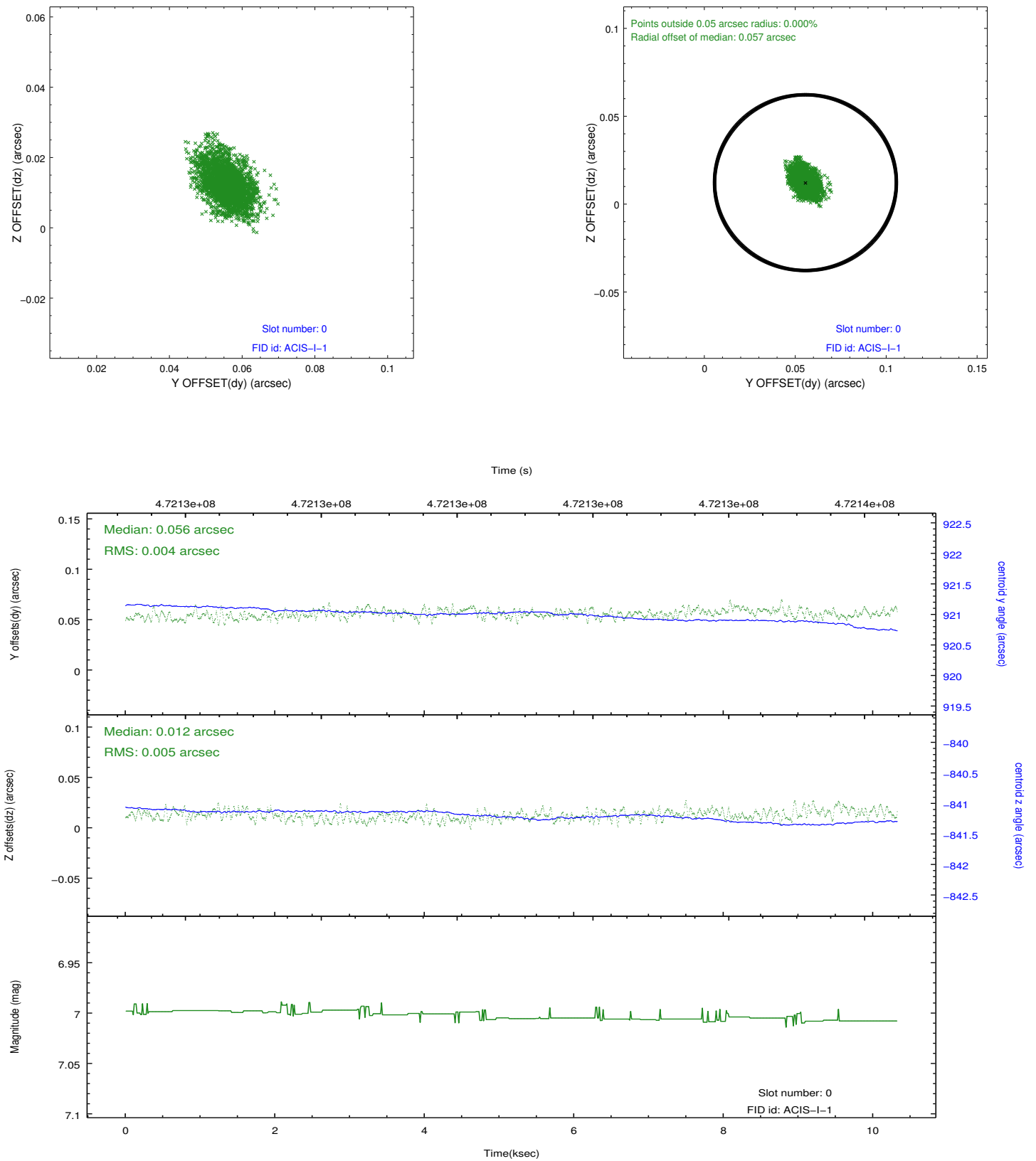


## 2.4.5 Slot 7

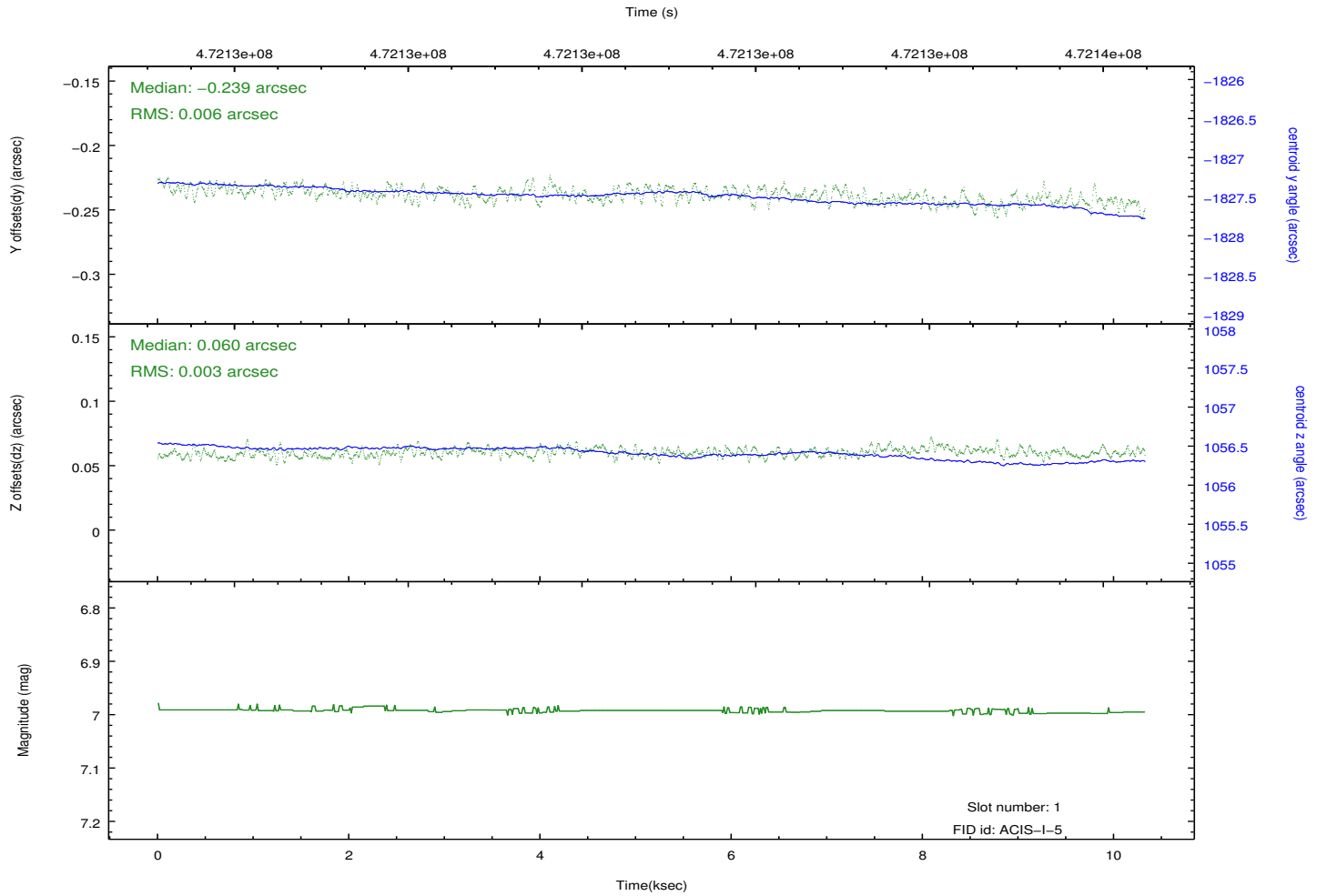
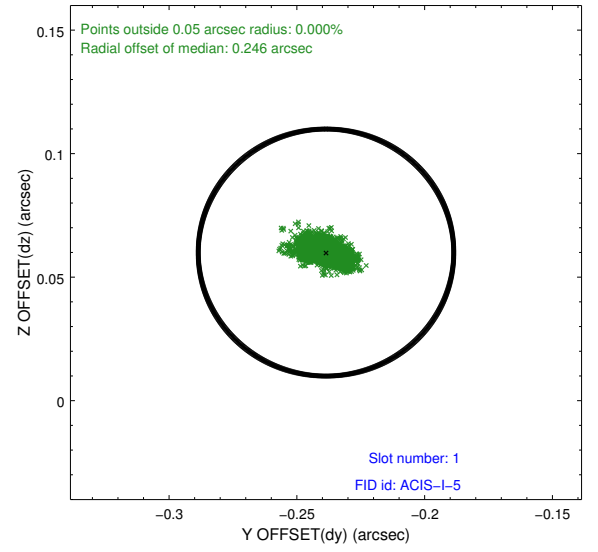
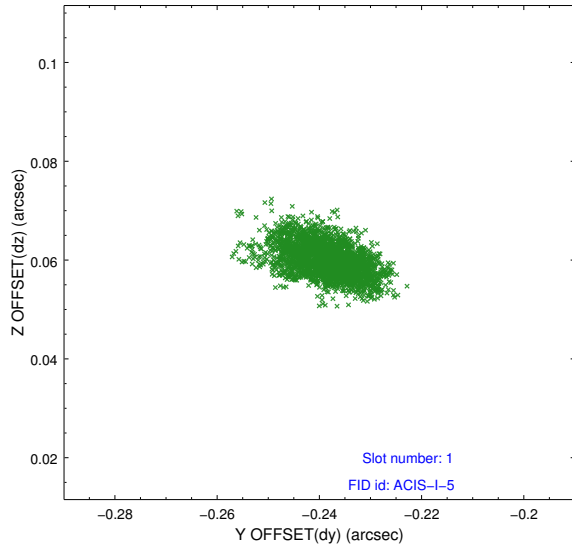


## 2.5 FID Slots

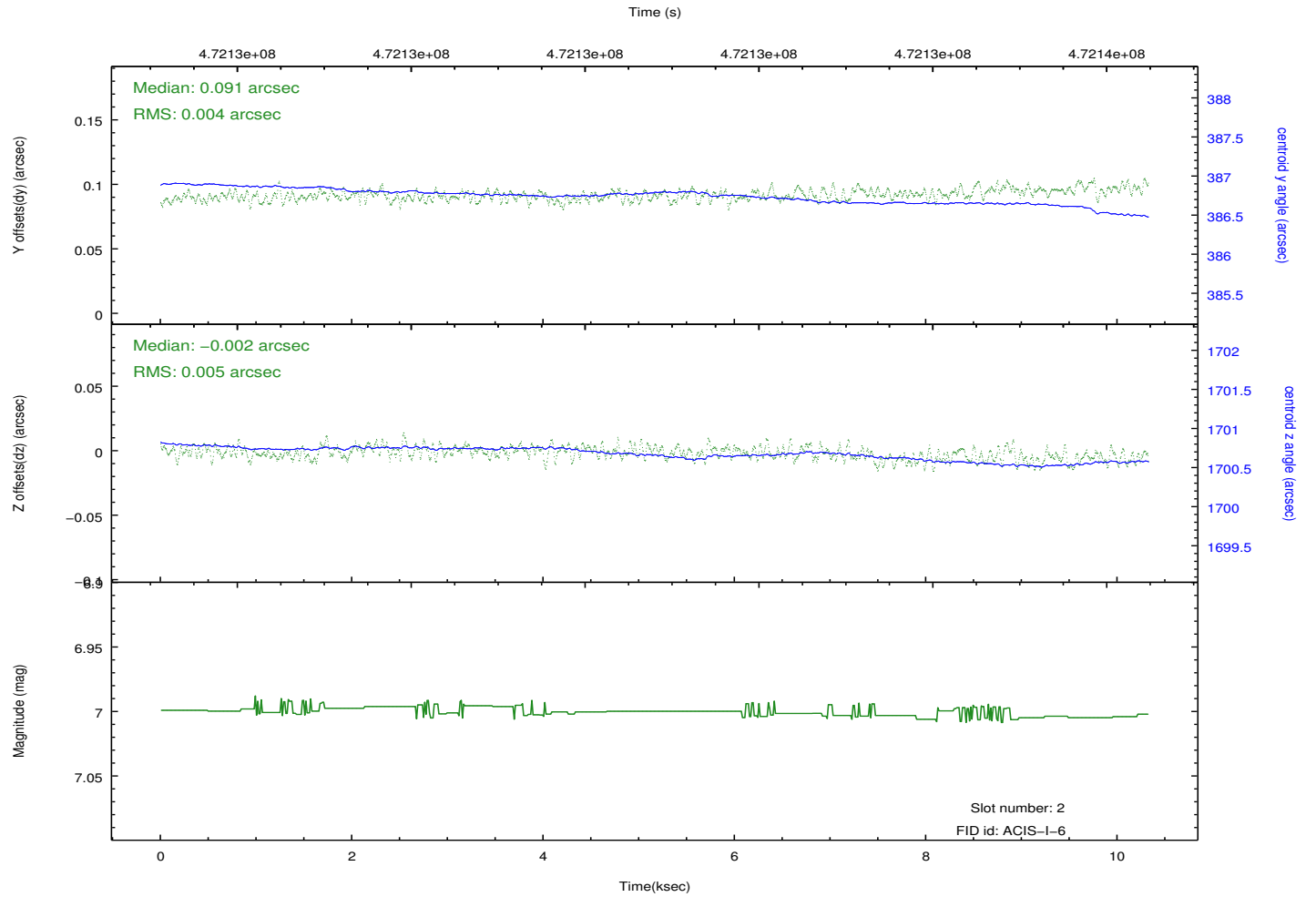
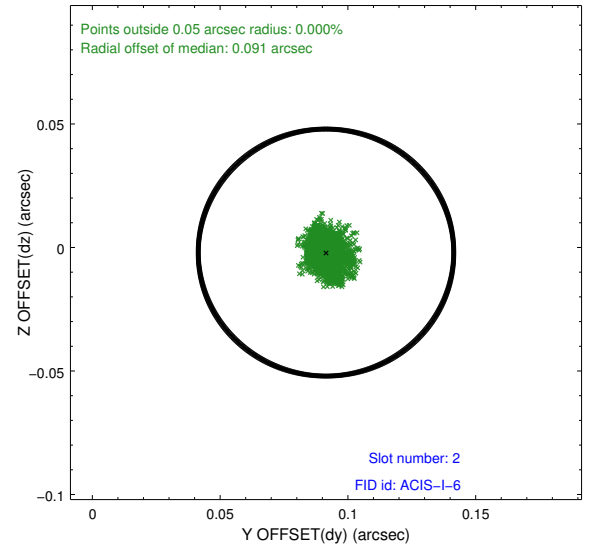
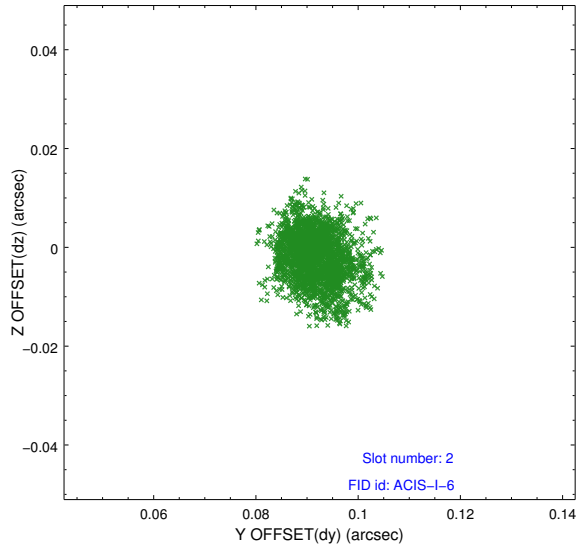
### 2.5.1 Slot 0



## 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)	2014.12.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.971199962914

## A.2 Comments

Window constraint met. Roll constraint met.

=====

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.