

# V&V Reference Report

## L2 ASCDS Version : 10.4

Observation 17304 - L2 Version 1  
Chandra X-Ray Center

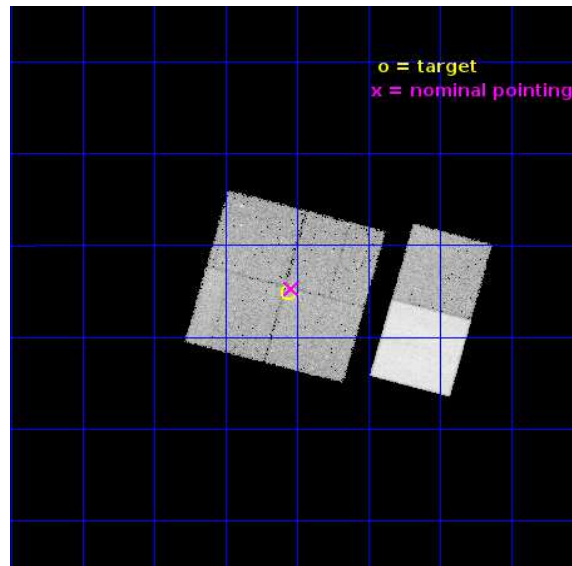
L2 Processing Date : Jul 6 2015

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# 1 Front

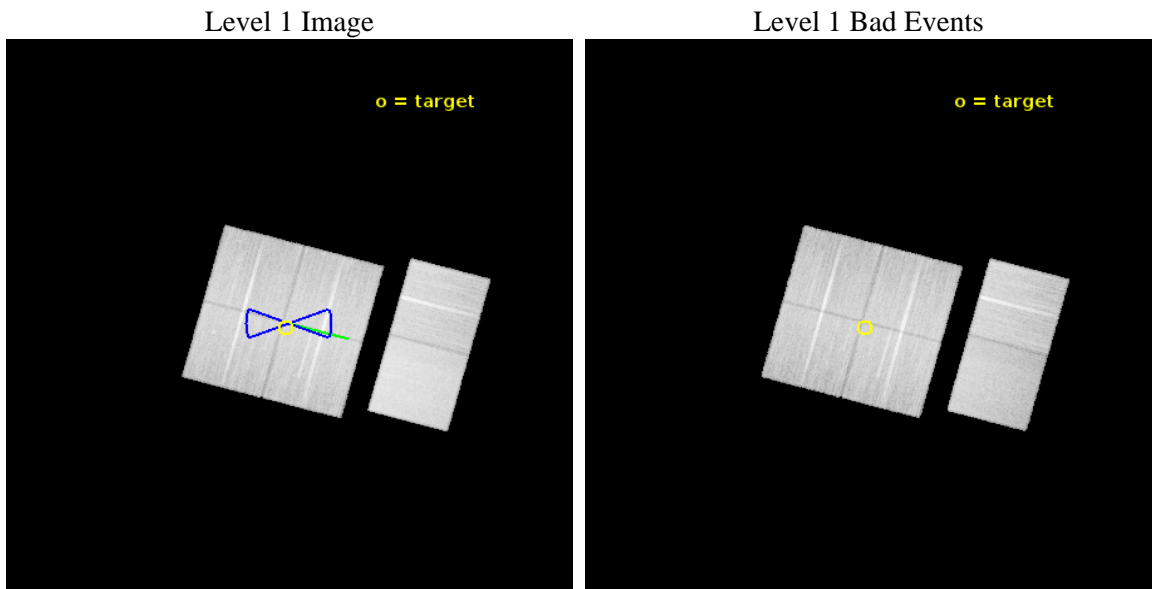
seq_num	901162	Sequence number
obs_id	17304	Observation id
title	Black Hole Fingerprints from Cosmic Dawn to Cosmic Noon	Proposal t
observer	Prof. Guenther Hasinger	Principal investigator
object	UDS	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	34.390479	Observer's specified target RA [deg]
dec_targ	-5.087133	Observer's specified target Dec [deg]
ra_nom	34.384809816545	Nominal RA [deg]
dec_nom	-5.0788389433788	Nominal Dec [deg]
roll_nom	105.20817166505	Nominal Roll [deg]
revision	1	Processing version of data
ontime	45264.000674486	Sum of GTIs [s]
livetime	44690.840643237	Livetime [s]
ontime0	45264.000674486	Sum of GTIs [s]
ontime1	45264.000674486	Sum of GTIs [s]
ontime2	45264.000674486	Sum of GTIs [s]
ontime3	45264.000674486	Sum of GTIs [s]
ontime6	45264.000674486	Sum of GTIs [s]
ontime7	45264.000674486	Sum of GTIs [s]
l2events	242399	Number of level 2 events



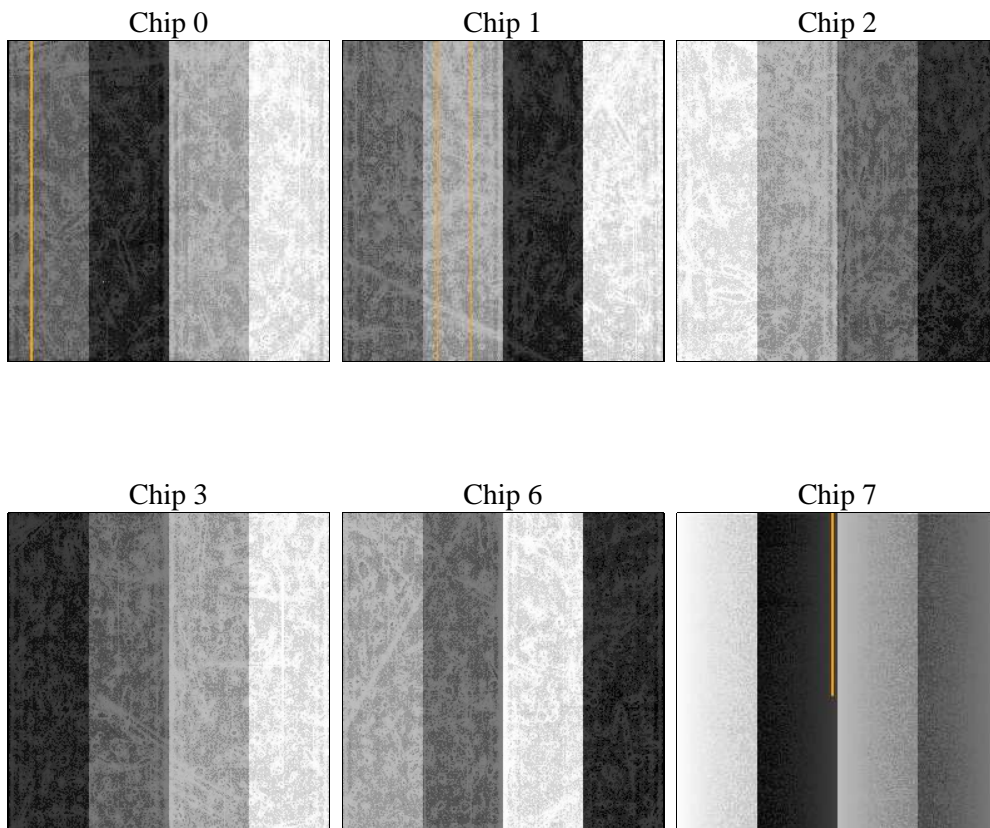
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	45300.000000	[s] Scheduled observation exposure time
ascdsver	10.4	Processing system revision	ontime	45264.000674486	Sum of GTIs [s]
caldbver	4.6.7	&#160	ontime0	45264.000674486	Sum of GTIs [s]
date	2015-07-06T15:06:41	Date and time of file creation	ontime1	45264.000674486	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	45264.000674486	Sum of GTIs [s]
			ontime3	45264.000674486	Sum of GTIs [s]
			ontime6	45264.000674486	Sum of GTIs [s]
			ontime7	45264.000674486	Sum of GTIs [s]
			l1events	1407159	Number of level 1 events

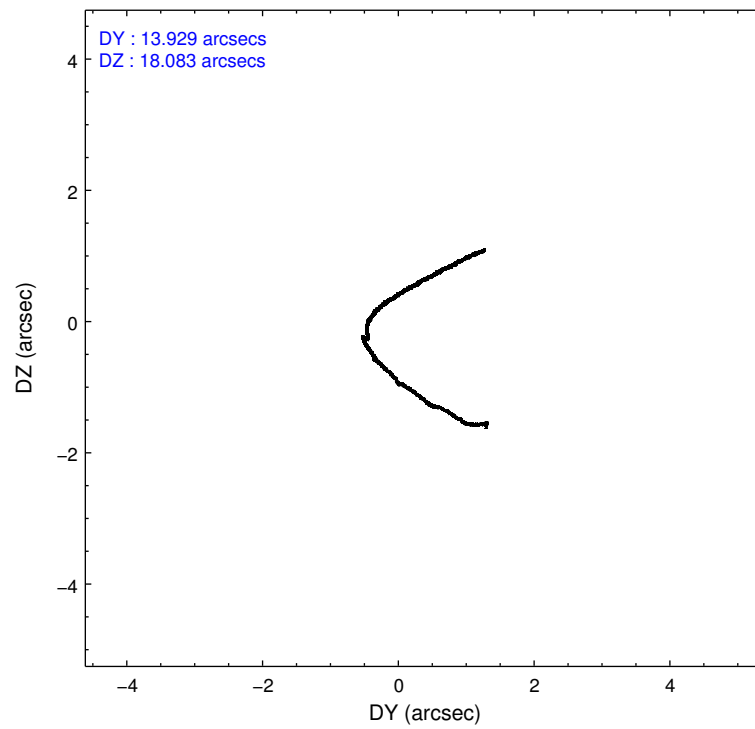
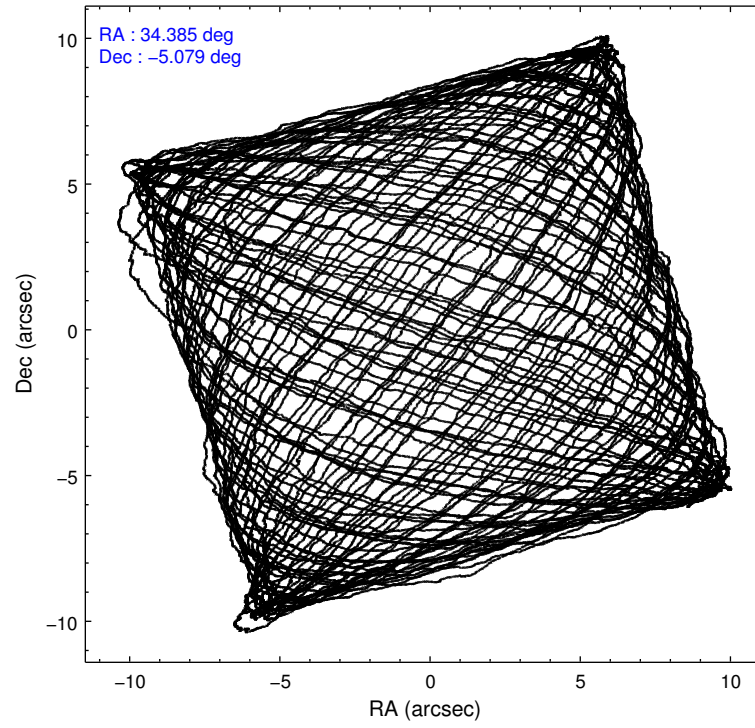
### 2.1.4 Events

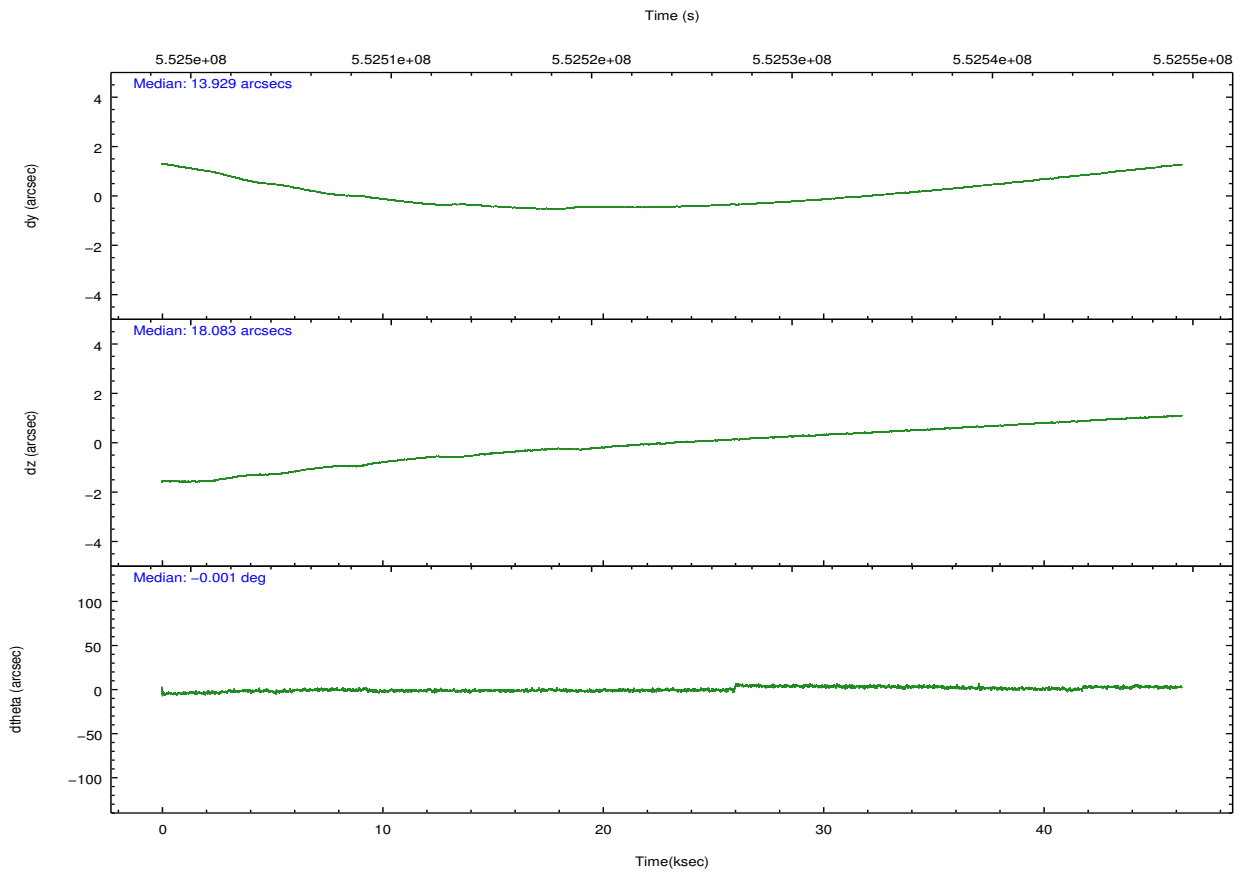
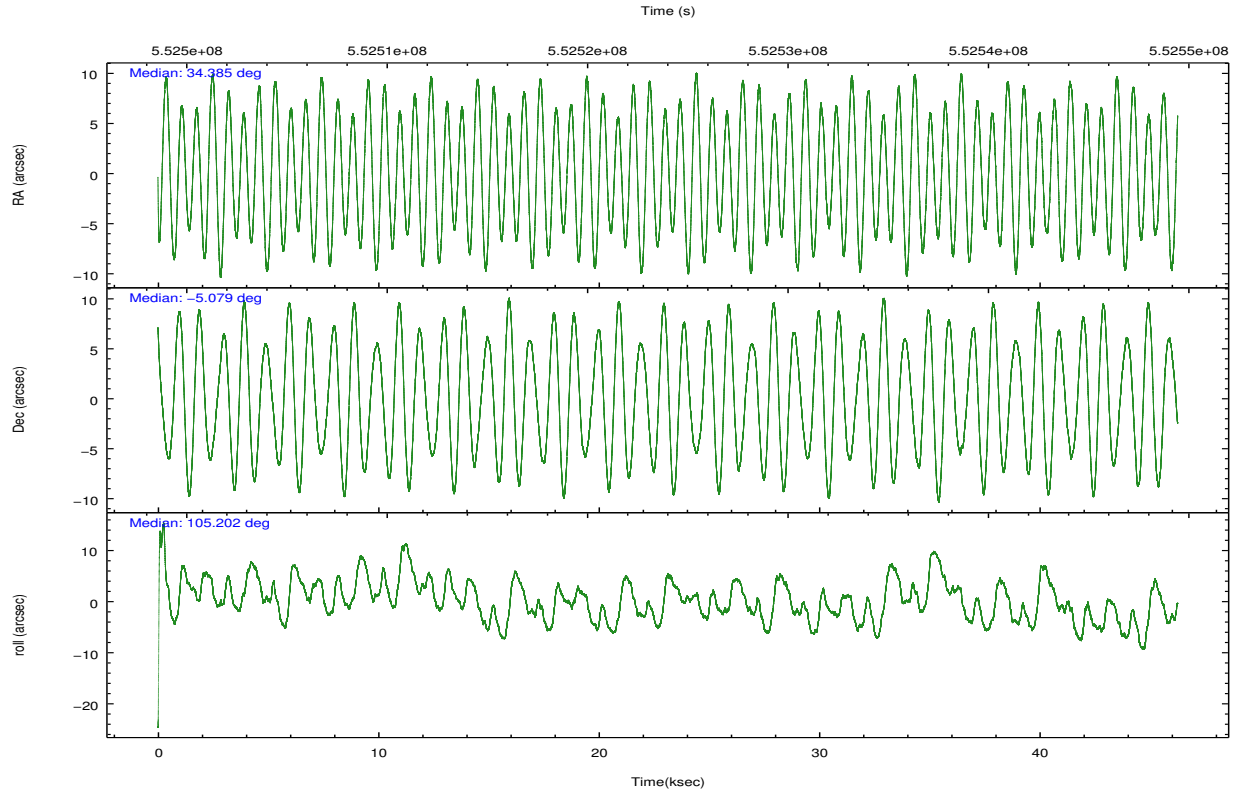
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	202866	209352	225309	224424	238417	306791	grade 0 events	9118	10202	9032	8516	8793	11520
rejected events	176462	180014	199928	199634	211284	173287		4%	4%	4%	3%	3%	3%
rejected %	86%	85%	88%	88%	88%	56%	grade 1 events	109	125	122	155	130	378
								0%	0%	0%	0%	0%	0%
							grade 2 events	6660	7162	6291	5595	6413	27667
								3%	3%	2%	2%	2%	9%
							grade 3 events	2715	2867	2555	2605	2745	11194
								1%	1%	1%	1%	1%	3%
							grade 4 events	2553	2812	2604	2675	2763	11090
								1%	1%	1%	1%	1%	3%
							grade 5 events	10205	11015	9849	11982	12020	31684
								5%	5%	4%	5%	5%	10%
							grade 6 events	5362	6299	4901	5403	6422	72055
								2%	3%	2%	2%	2%	23%
							grade 7 events	166144	168870	189955	187493	199131	141203
								81%	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	FAINT	FAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	34.404547	34.38480981654504	CCD I2 on	Y	Y
[deg] Pointing Dec	-5.098220	-5.078838943378845	CCD I3 on	Y	Y
[deg] Pointing Roll	105.001258	105.2081716650451	CCD S0 on	N	N
[deg] Roll angle	0.000000	0.000000	CCD S1 on	N	N
[deg] Roll tolerance	20.000000	20.000000	CCD S2 on	O1	Y
Roll constraint allows 180D rotation	Y	Y	CCD S3 on	O2	Y
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S4 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S5 on	N	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	Number of optional ACIS chips dropped	0	0
[mm] SIM translation stage offset	0	-0.005018542100998502	On-chip summing requested	N	N
[s] Observation start time (MET)	552501806.184000	552499874.17538	Subarray requested	NONE	NONE
Observation start date	2015-07-05T16:42:18	2015-07-05T16:11:14	Alternating exposures requested	N	N
[s] Observation end time (MET)	552547106.184000	552547783.70307	[s] Primary exposure time	0.000000	3.2
Observation end date	2015-07-06T05:17:18	2015-07-06T05:29:43			
Read mode	TIMED	TIMED			

## 2.3 Aspect





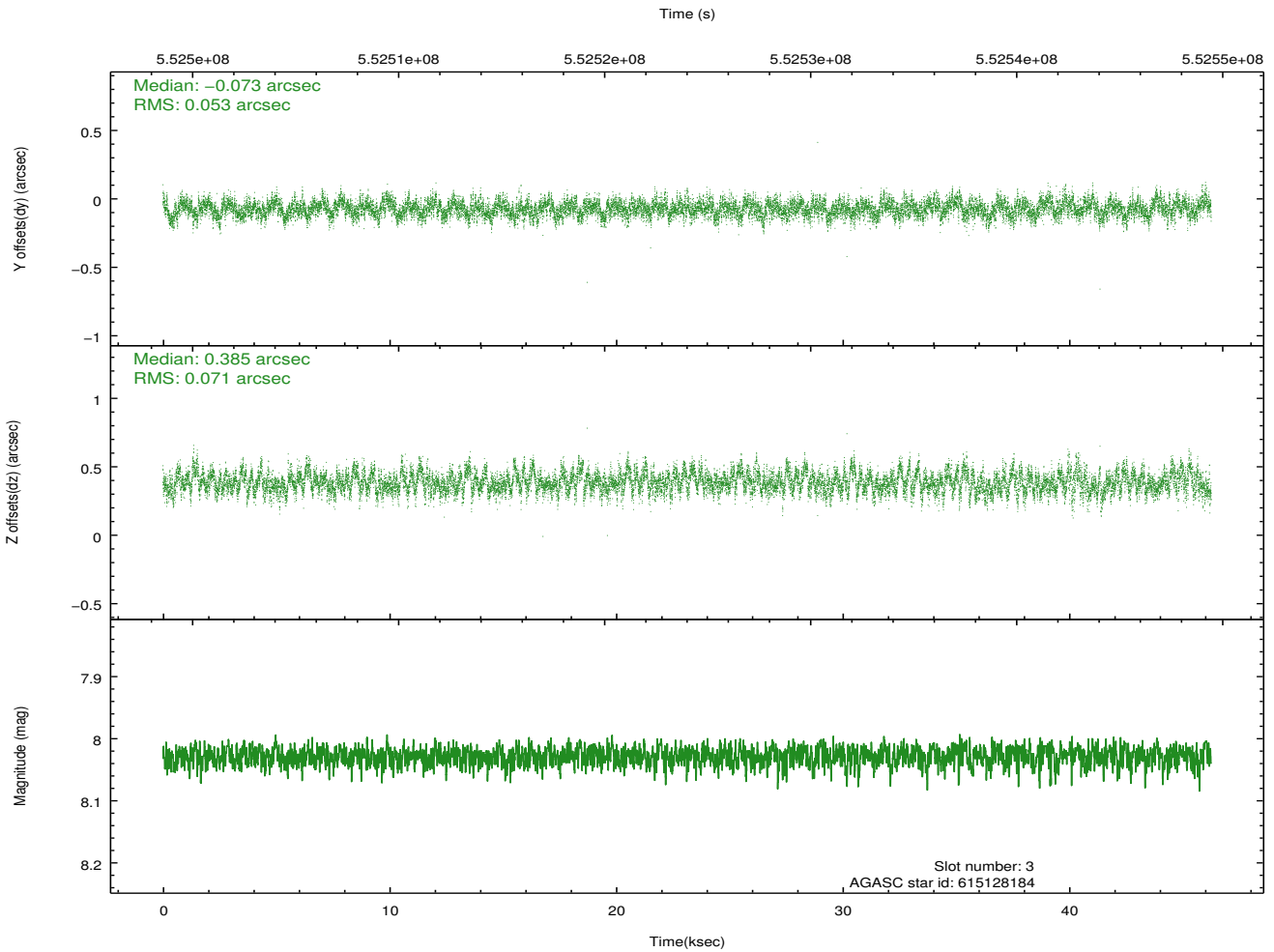
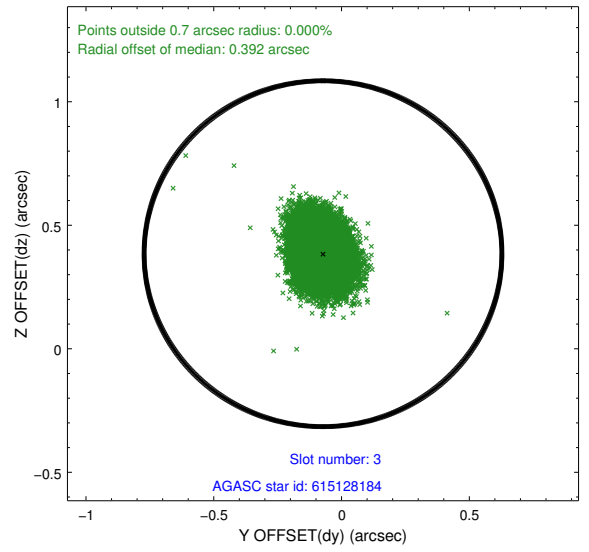
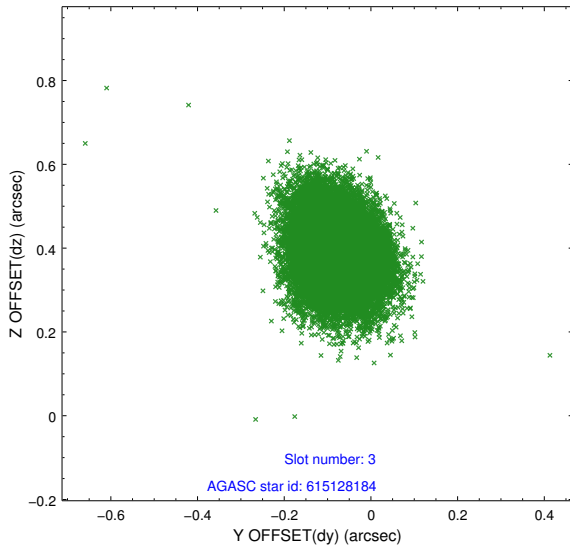
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.12	11285	-0.014	-0.010	0.038	0.055	0.000000	0.000000	925.38	-841.69
1	FID		ACIS-I-2	7.03	11283	-0.249	-0.103	0.021	0.036	0.000000	0.000000	-768.95	-848.18
2	FID		ACIS-I-4	7.05	11283	0.176	0.183	0.039	0.079	0.000000	0.000000	2145.50	1058.27
3	GUIDE	used	615128184	8.03	22565	-0.073	0.385	0.094	0.154	34.627231	-4.869545	588.70	-983.85
4	GUIDE	used	615129496	9.49	22548	-0.151	-0.285	0.151	0.243	34.177462	-4.840209	1106.36	544.22
5	GUIDE	used	615519784	9.64	22549	-0.043	-0.444	0.237	0.384	33.905889	-5.455828	-781.52	2059.34
6	GUIDE	used	615521424	9.94	22542	0.224	0.058	0.228	0.354	34.185589	-5.674448	-1801.07	1294.58
7	GUIDE	used	615520664	9.49	22553	0.044	0.317	0.170	0.264	34.931323	-5.027518	-243.33	-1889.76

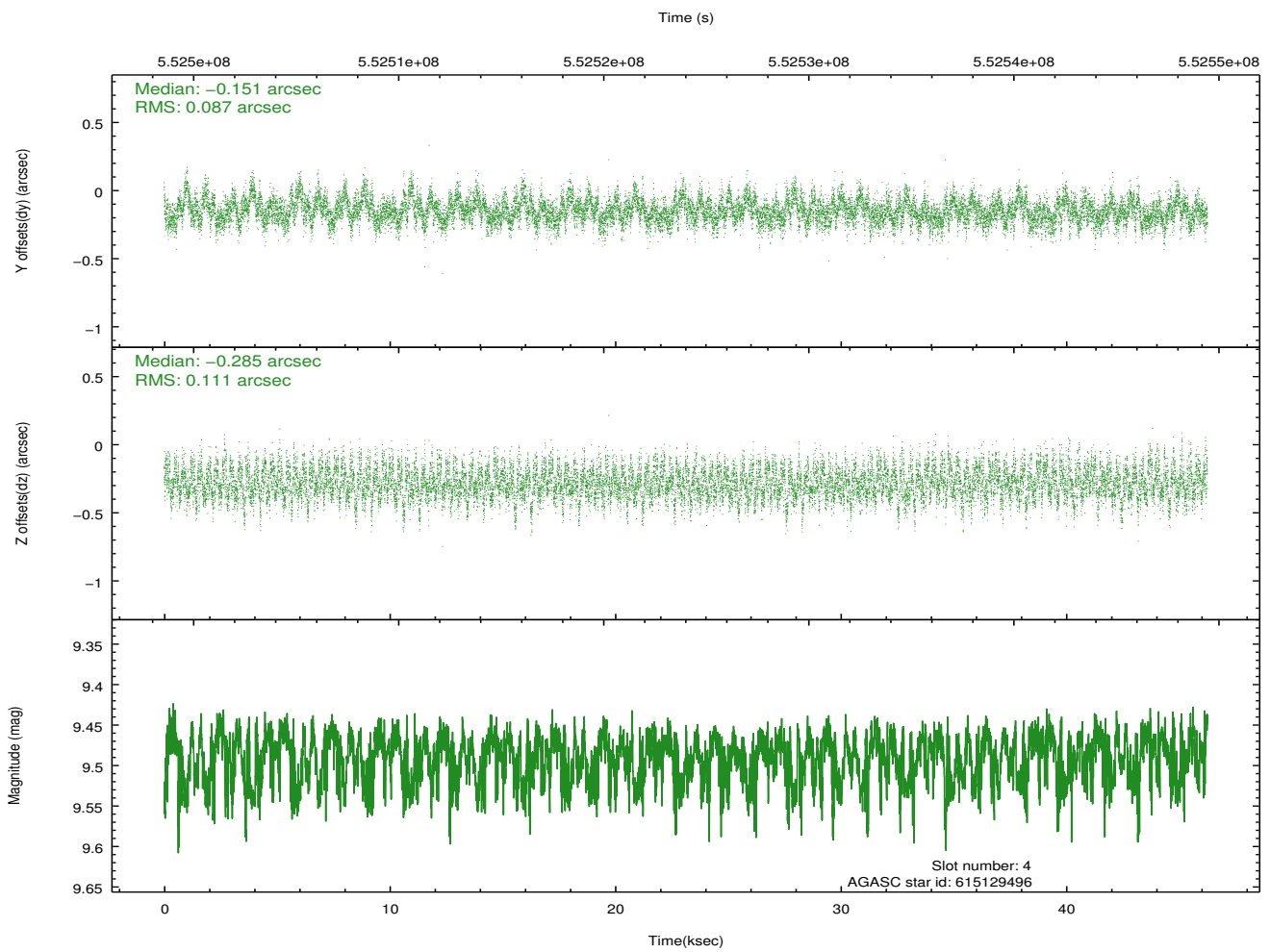
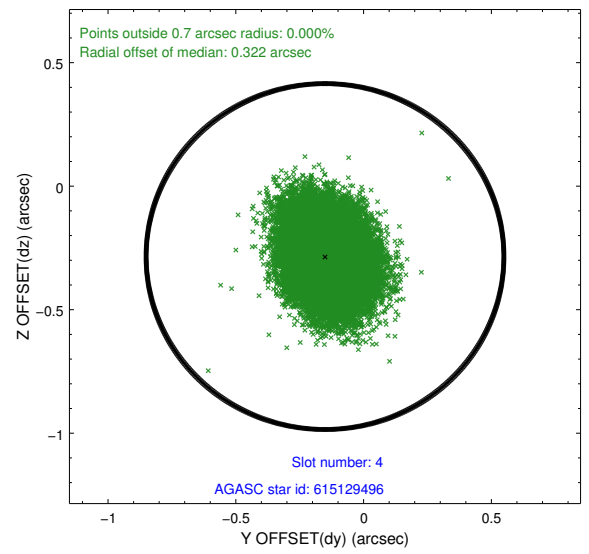
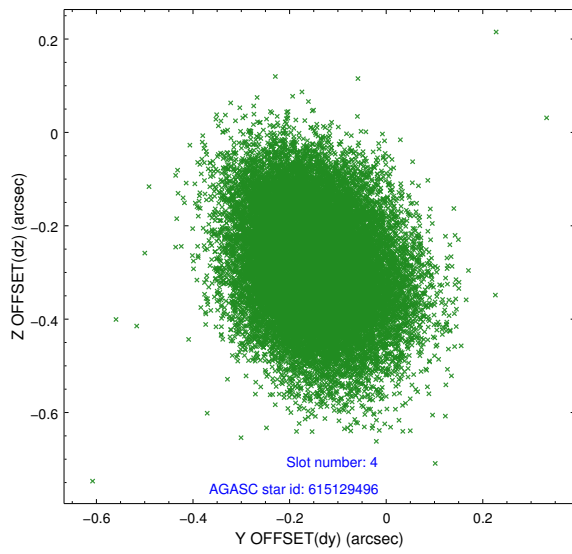
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## 2.4 Star Slots

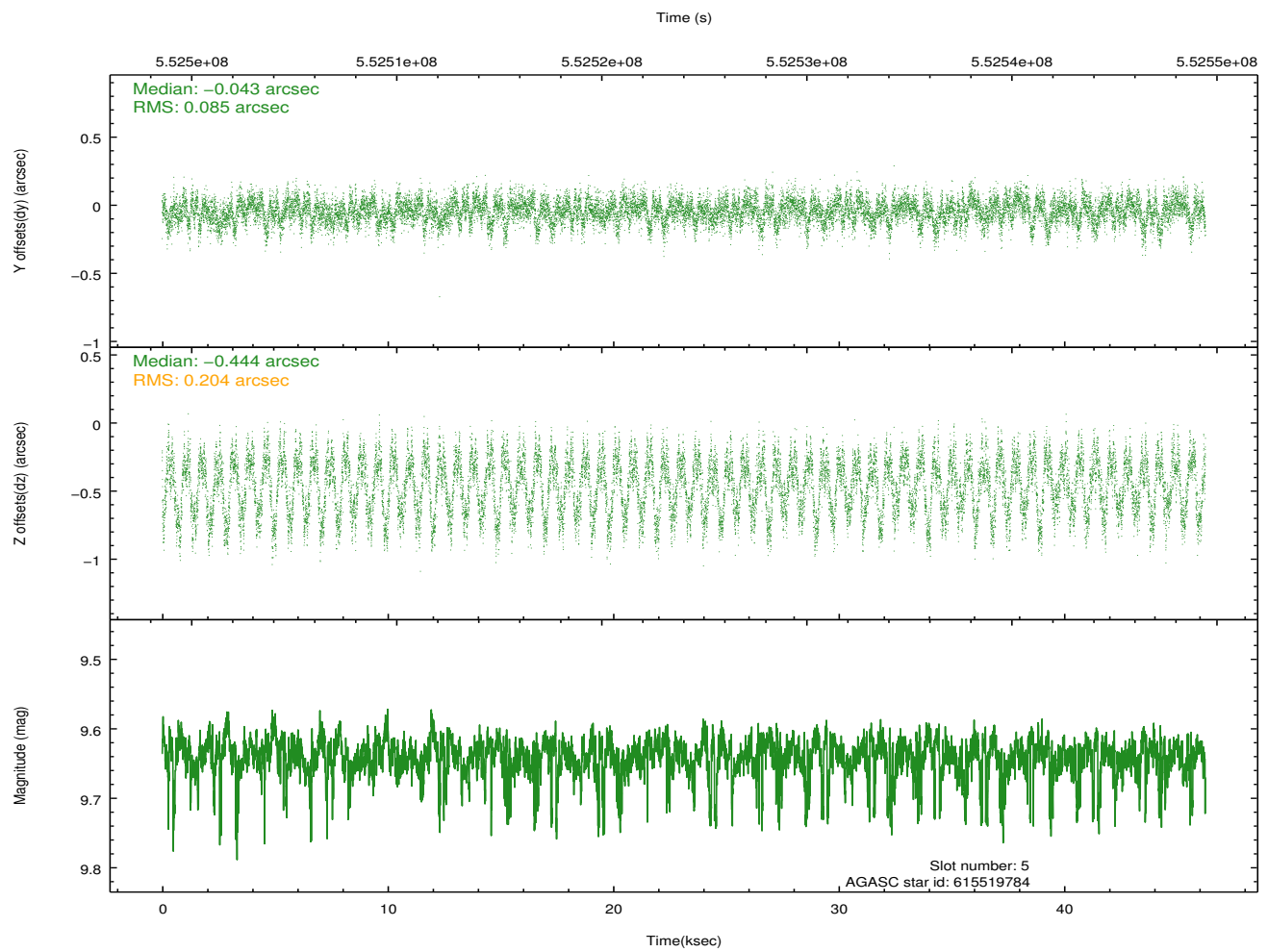
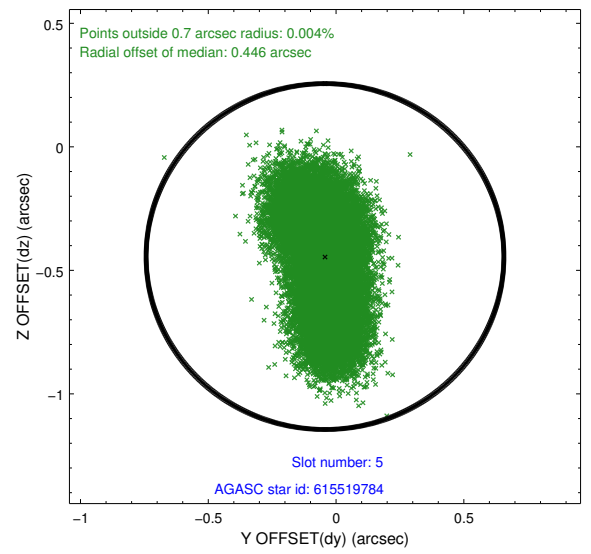
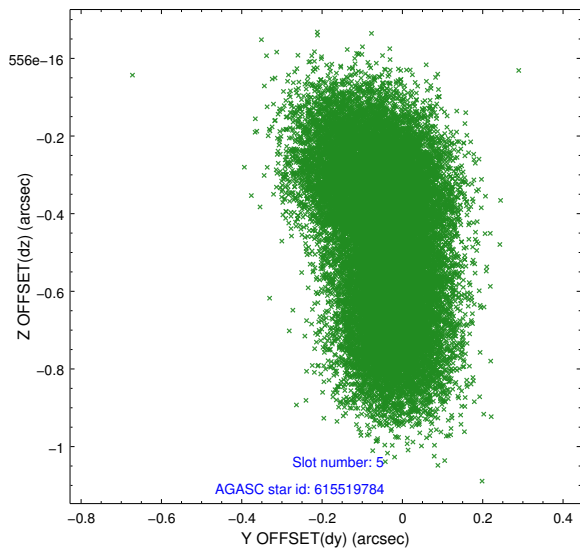
### 2.4.1 Slot 3



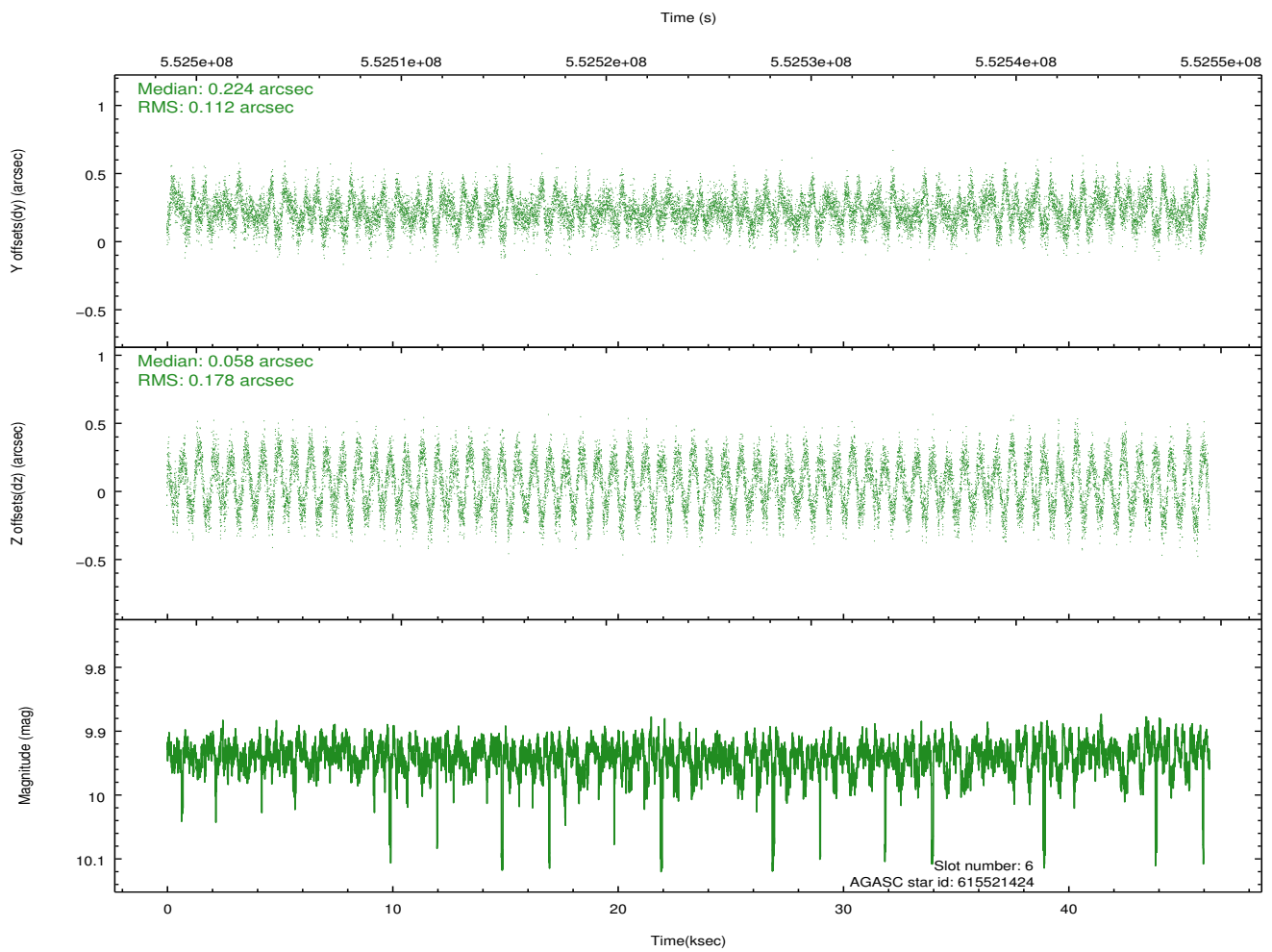
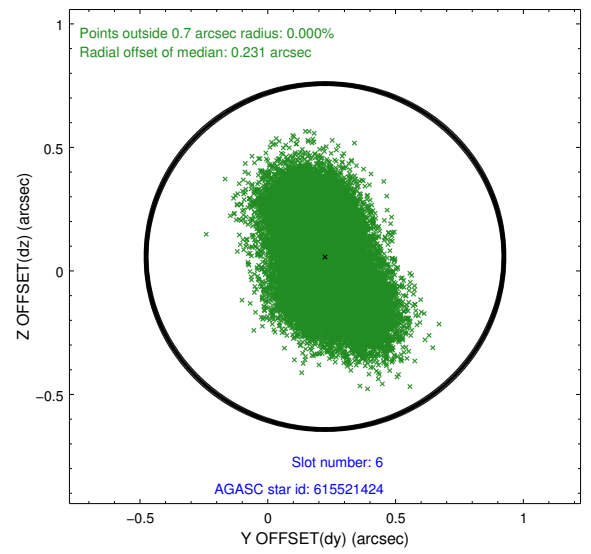
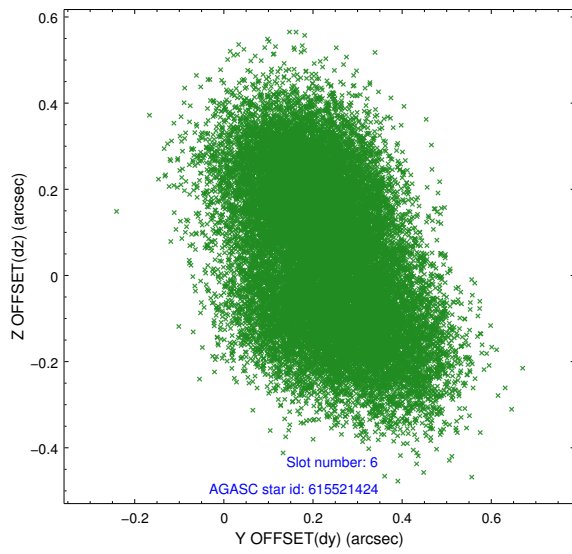
## 2.4.2 Slot 4



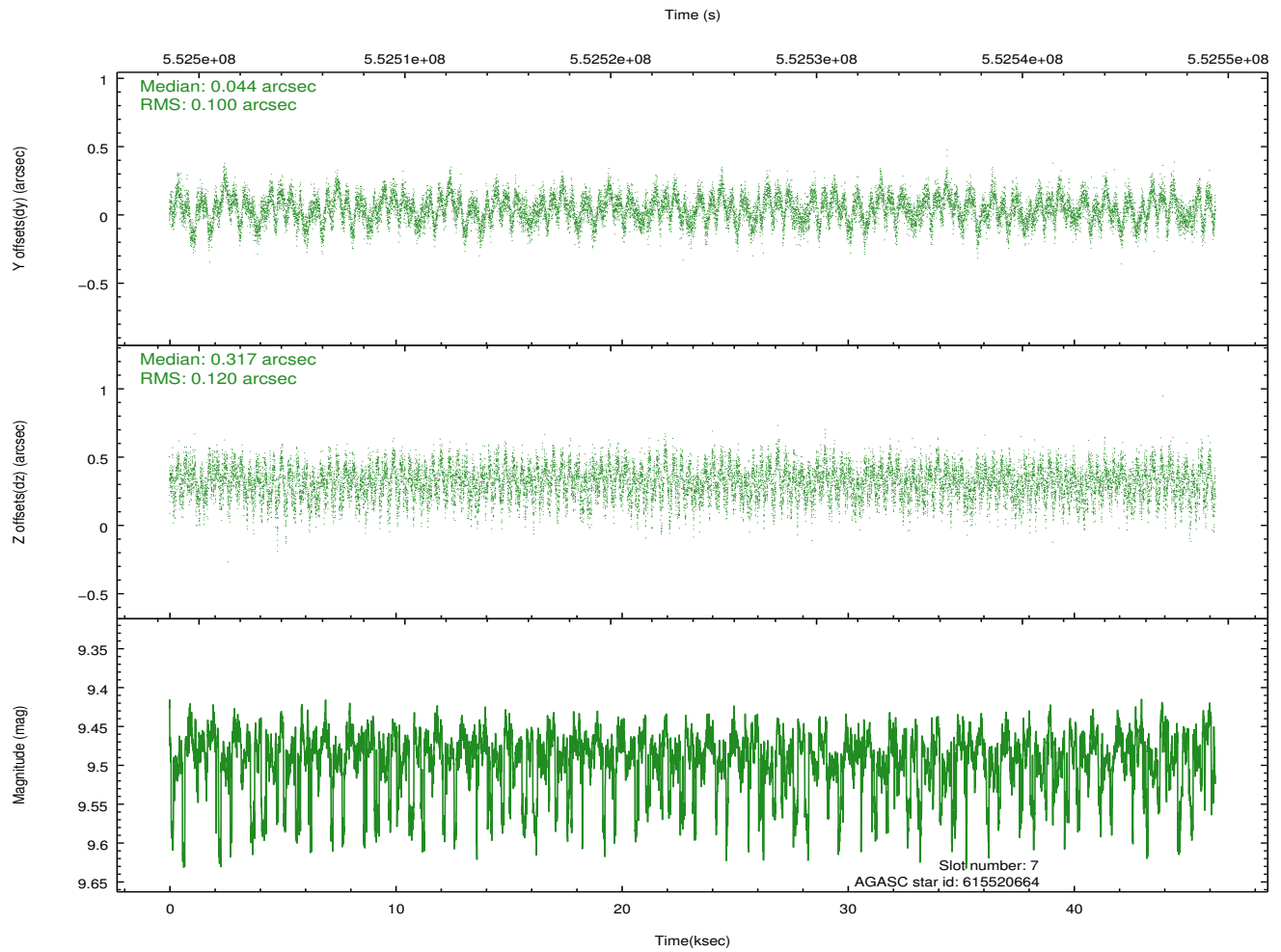
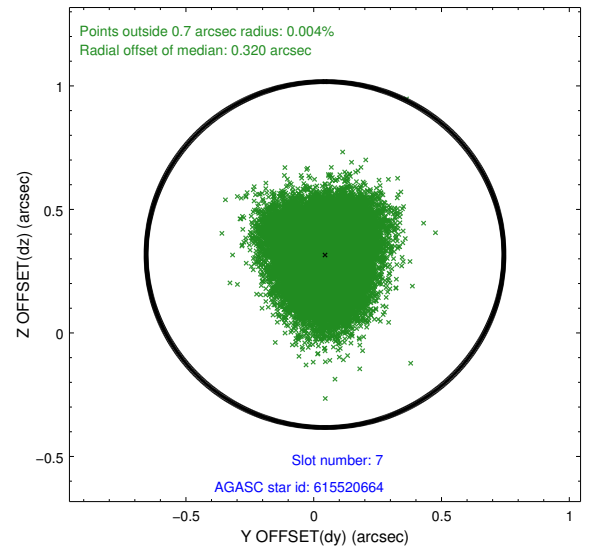
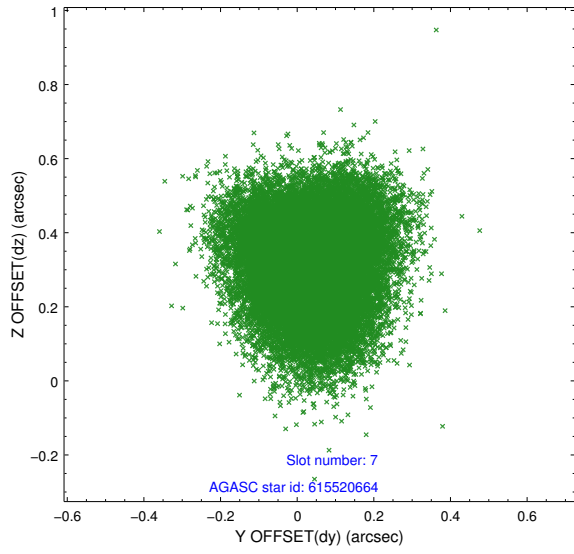
### 2.4.3 Slot 5



## 2.4.4 Slot 6

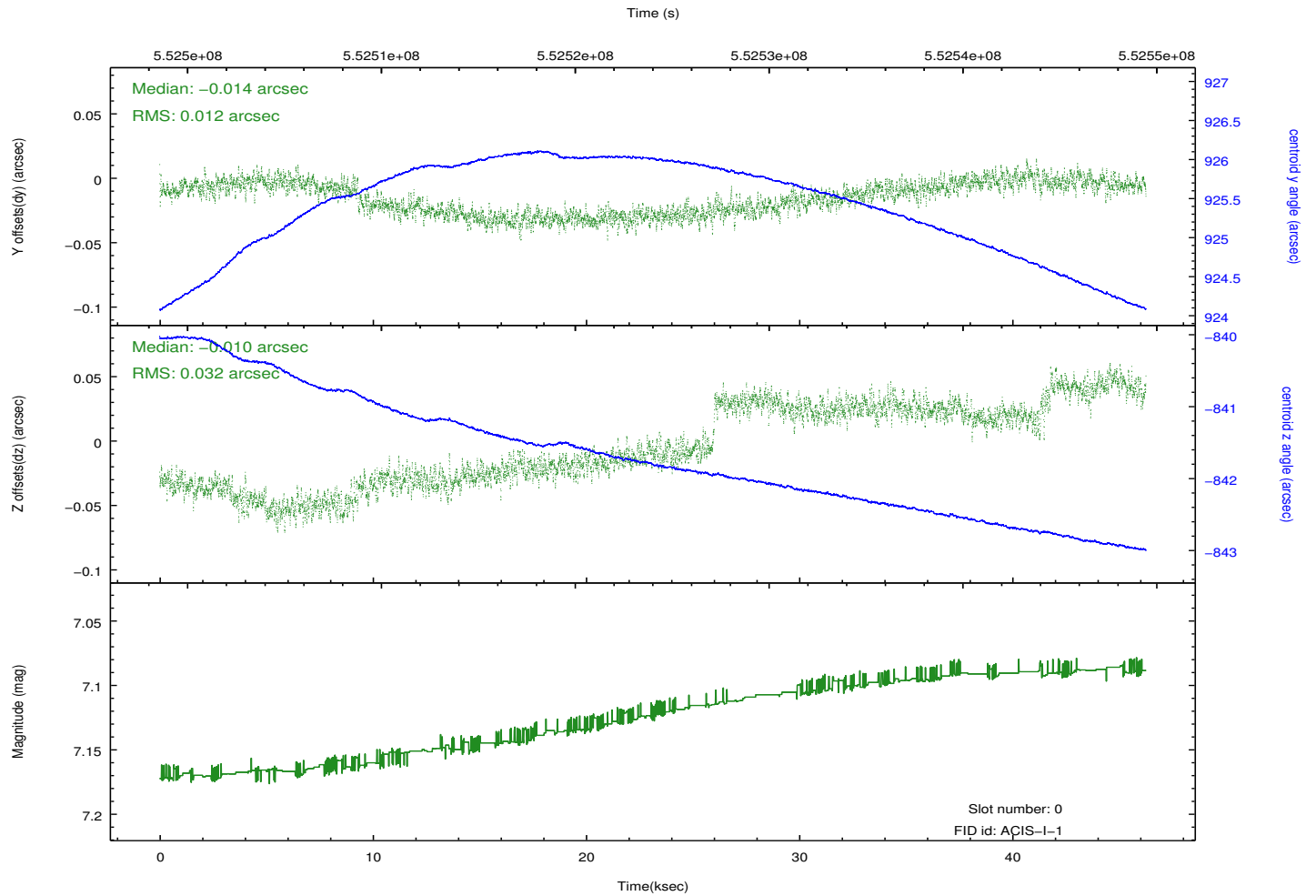
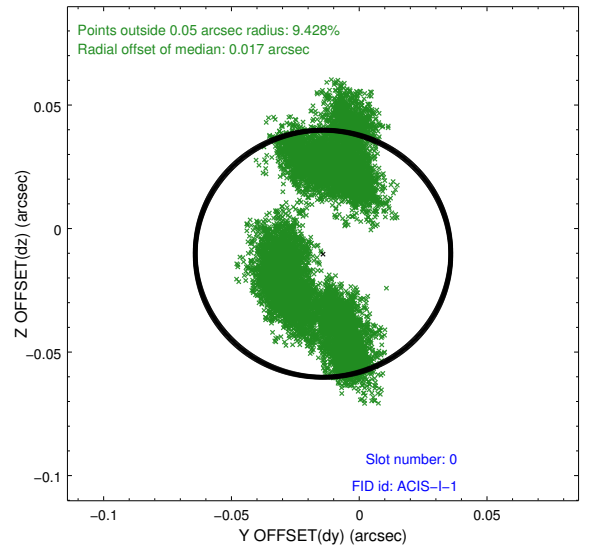
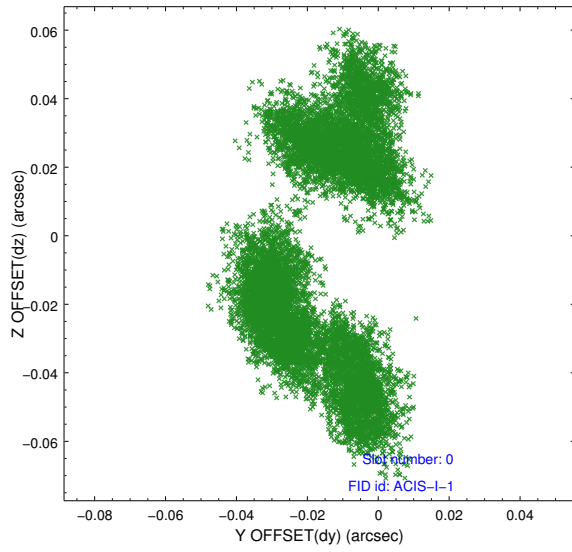


### 2.4.5 Slot 7

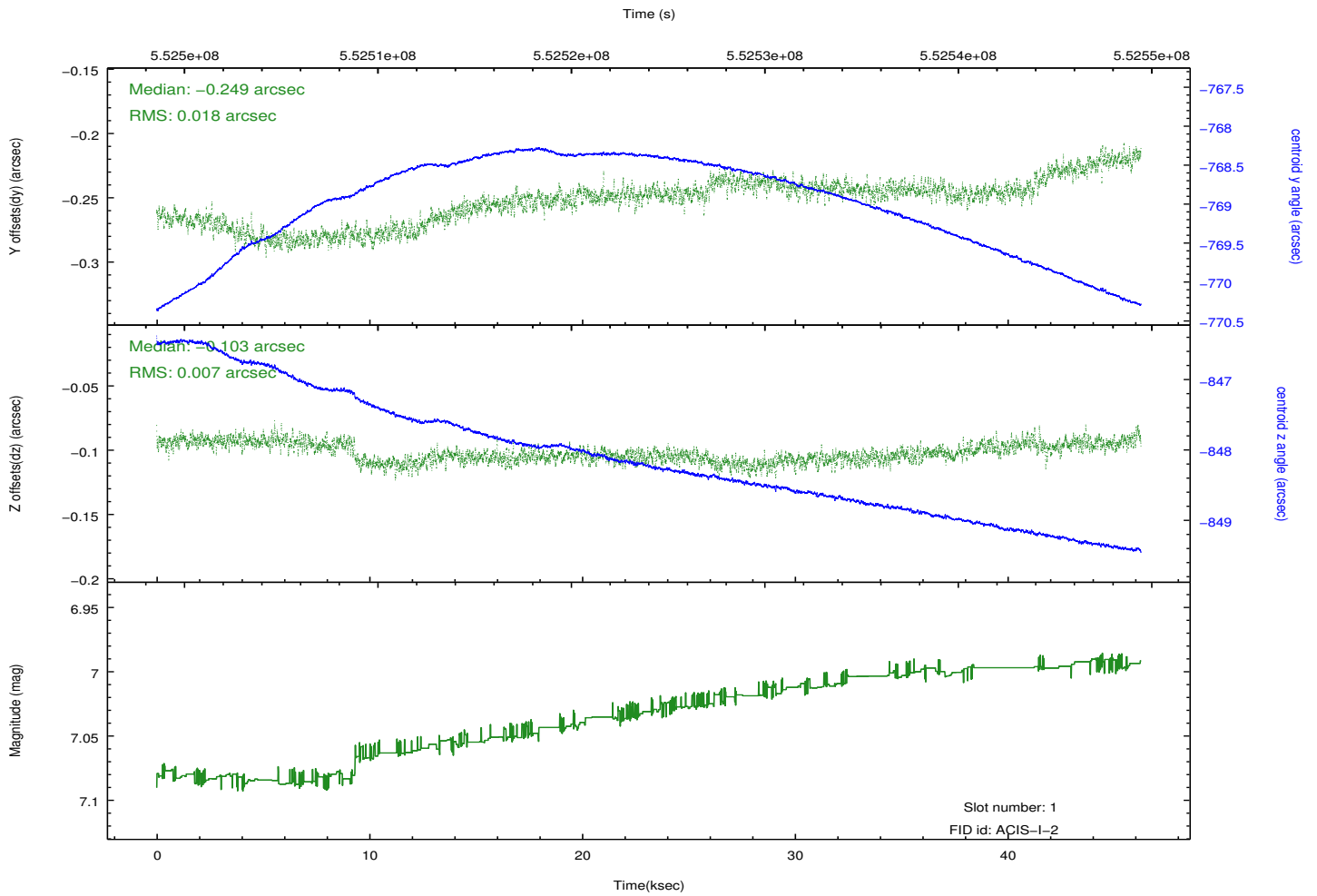
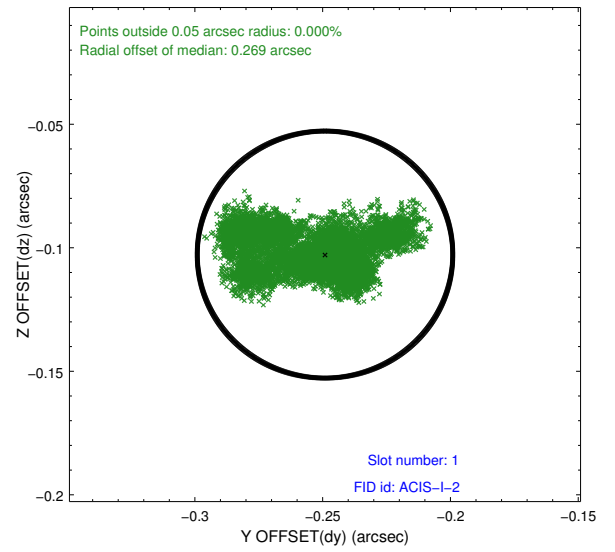
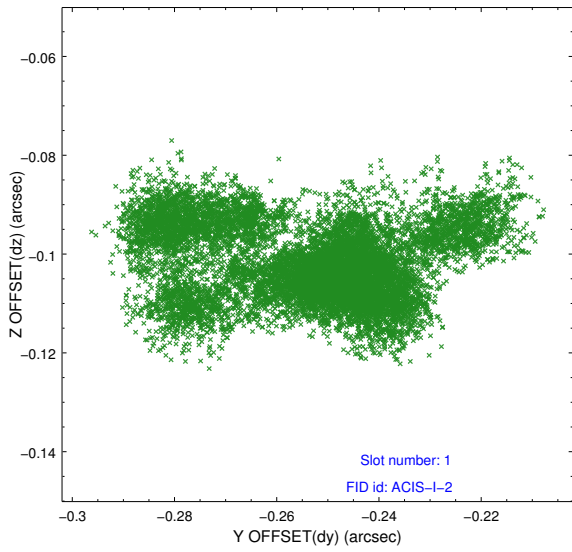


## 2.5 FID Slots

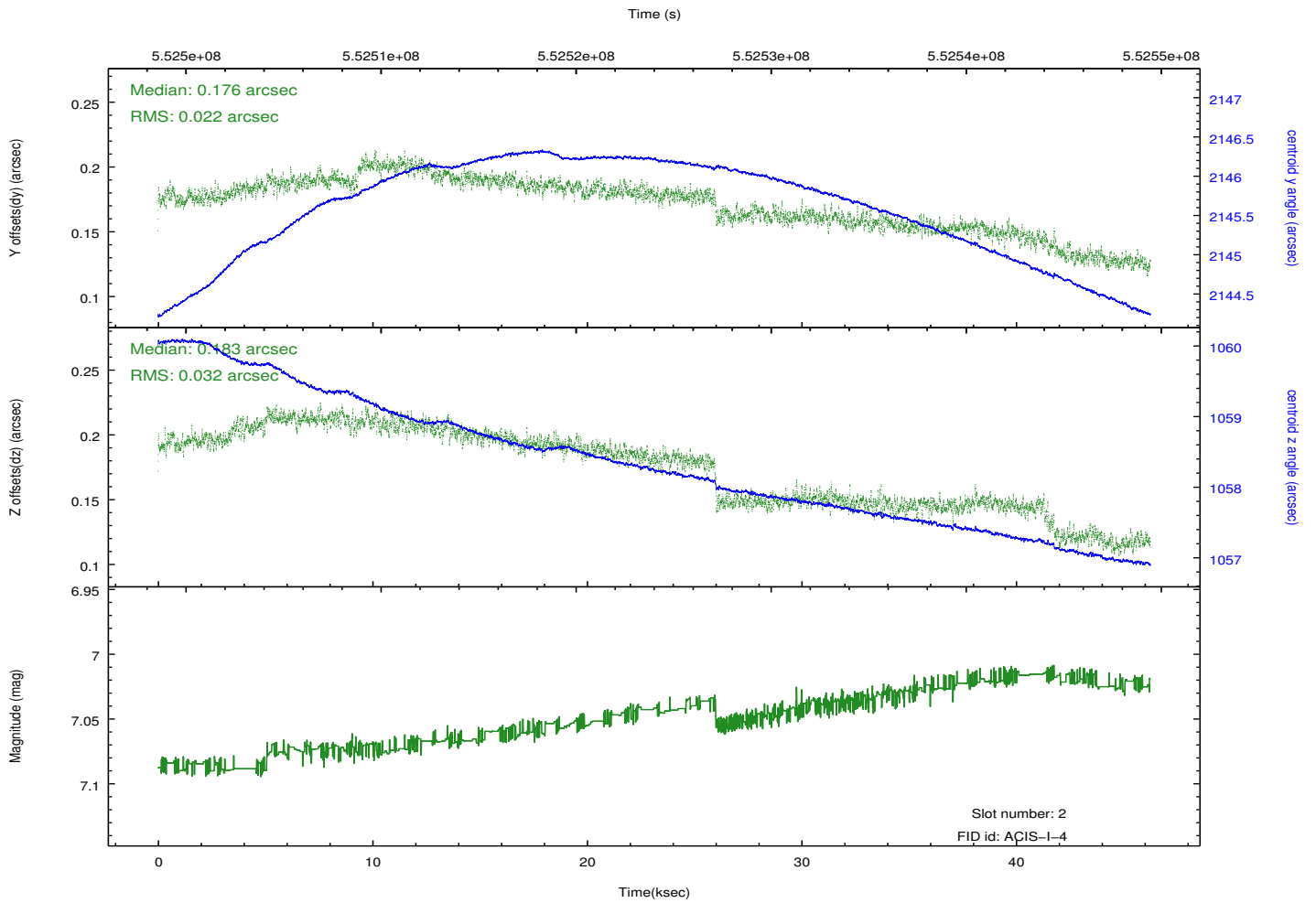
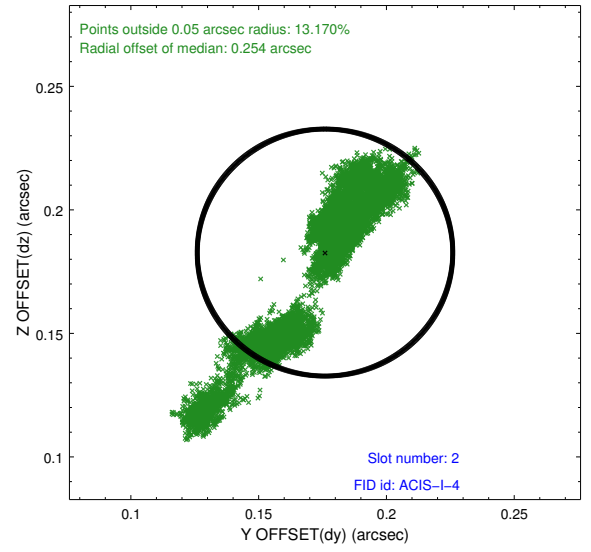
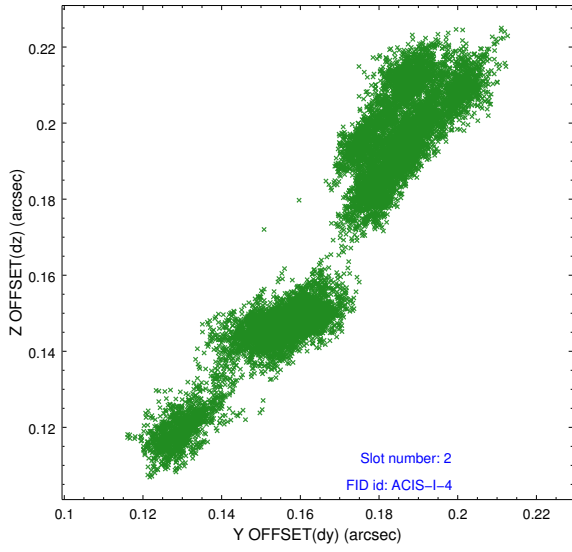
### 2.5.1 Slot 0



## 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)	2015.07.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.264000674486

## A.2 Comments

Roll preference met.