

# V&V Reference Report

## L2 ASCDS Version : 10.3.1

Observation 16275 - L2 Version 2  
Chandra X-Ray Center

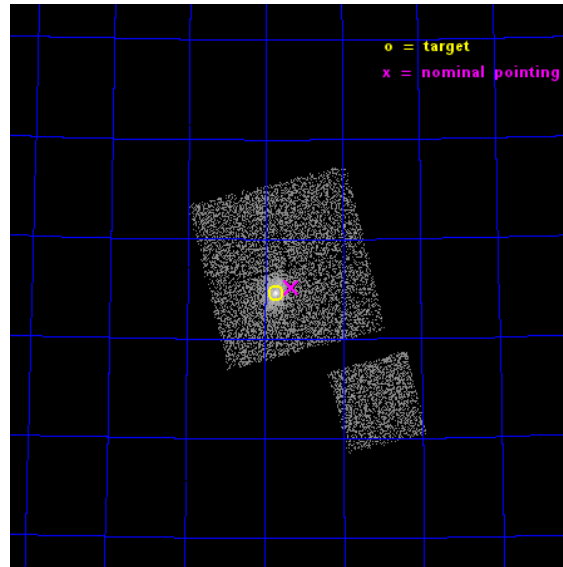
L2 Processing Date : Jan 9 2015

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# 1 Front

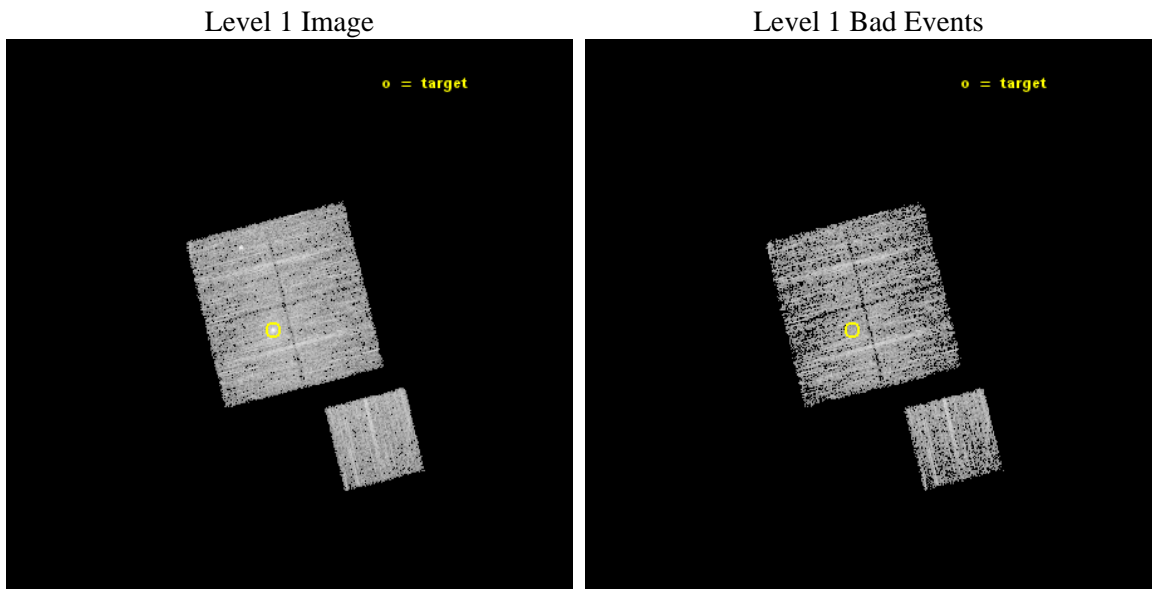
seq_num	703019	Sequence number
obs_id	16275	Observation id
title	Nuclear activity in MS0735.6+7421	Proposal title
observer	Dr. Stephen Murray	Principal investigator
object	MS0735.6+7421	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	115.435	Observer's specified target RA [deg]
dec_targ	74.244167	Observer's specified target Dec [deg]
ra_nom	115.33109177411	Nominal RA [deg]
dec_nom	74.253045619028	Nominal Dec [deg]
roll_nom	165.87952966799	Nominal Roll [deg]
revision	2	Processing version of data
ontime	5080.9000390768	Sum of GTIs [s]
livetime	5014.5143395621	Livetime [s]
ontime0	5080.9000390768	Sum of GTIs [s]
ontime1	5080.9000390768	Sum of GTIs [s]
ontime2	5080.9000390768	Sum of GTIs [s]
ontime3	5080.9000390768	Sum of GTIs [s]
ontime6	5080.9000390768	Sum of GTIs [s]
l2events	14500	Number of level 2 events



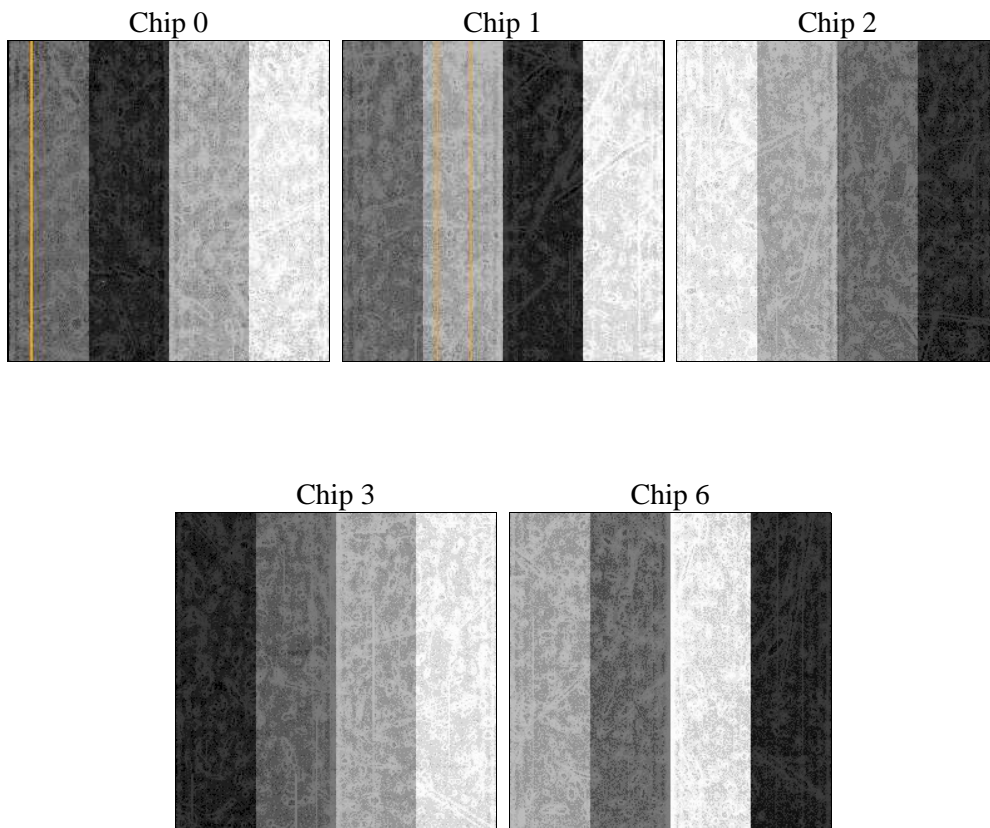
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	5080.9000390768	Sum of GTIs [s]
caldsver	4.6.5	&#160	ontime0	5080.9000390768	Sum of GTIs [s]
date	2015-01-09T20:16:18	Date and time of file creation	ontime1	5080.9000390768	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	5080.9000390768	Sum of GTIs [s]
			ontime3	5080.9000390768	Sum of GTIs [s]
			ontime6	5080.9000390768	Sum of GTIs [s]
			l1events	121248	Number of level 1 events

### 2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	22412	24178	23695	26590	24373
rejected events	19566	20776	21043	21394	21607
rejected %	87%	85%	88%	80%	88%

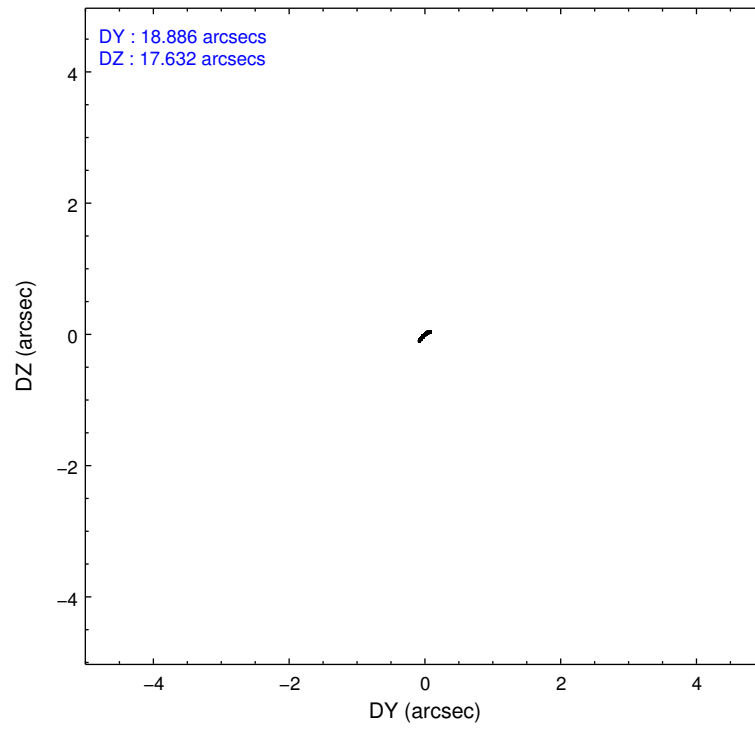
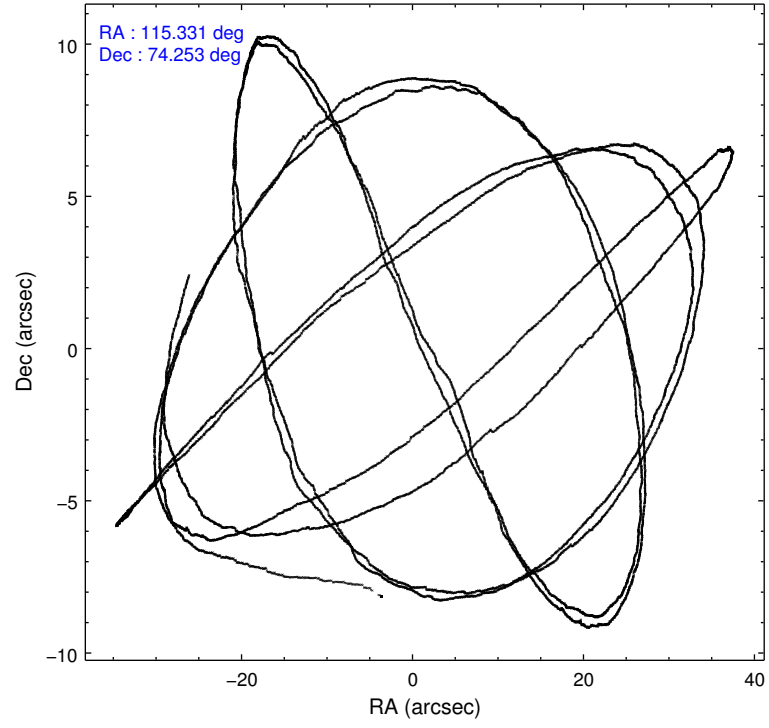
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	969	1411	975	2964	856
	4%	5%	4%	11%	3%
grade 1 events	7	5	17	25	10
	0%	0%	0%	0%	0%
grade 2 events	652	692	588	835	655
	2%	2%	2%	3%	2%
grade 3 events	318	295	284	367	252
	1%	1%	1%	1%	1%
grade 4 events	269	286	288	363	255
	1%	1%	1%	1%	1%
grade 5 events	1096	1080	1104	1244	1087
	4%	4%	4%	4%	4%
grade 6 events	641	719	518	672	748
	2%	2%	2%	2%	3%
grade 7 events	18460	19690	19921	20120	20510
	82%	81%	84%	75%	84%

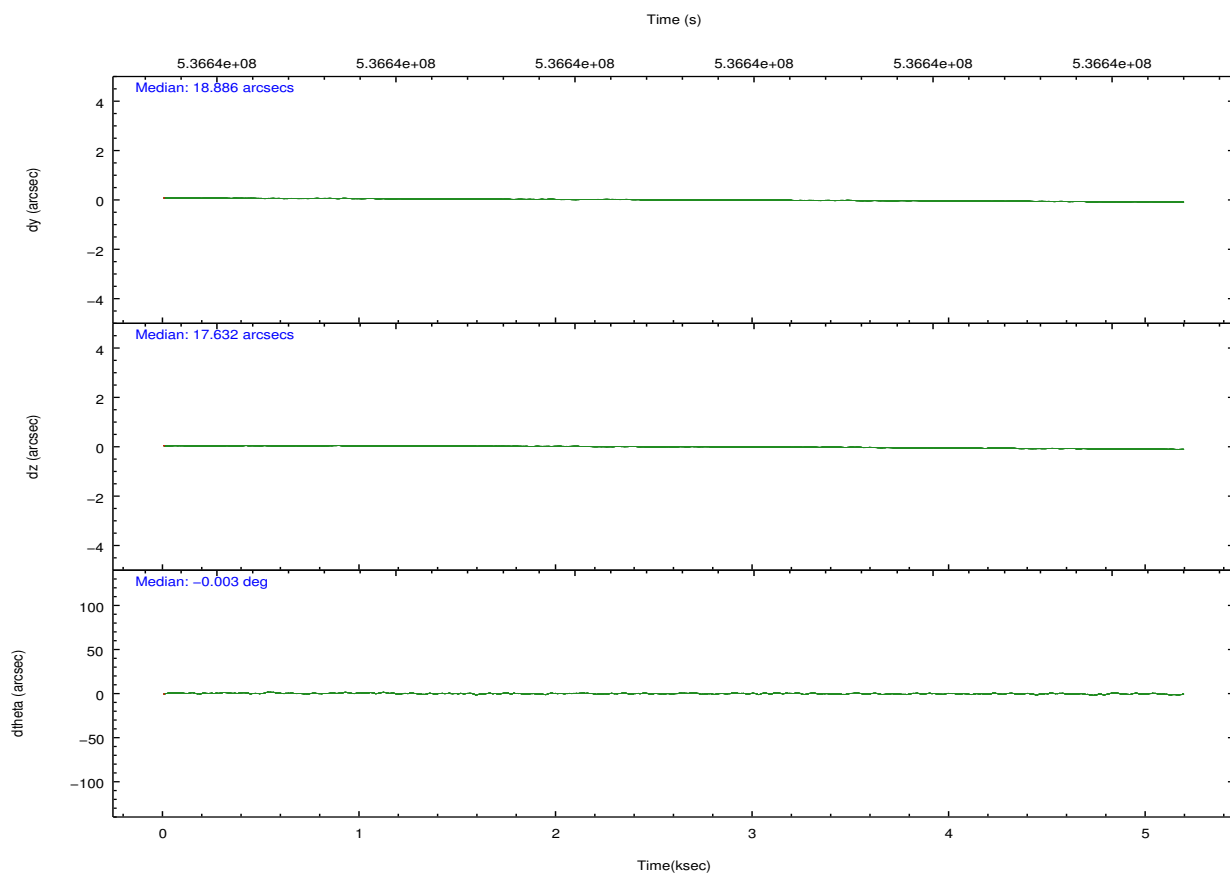
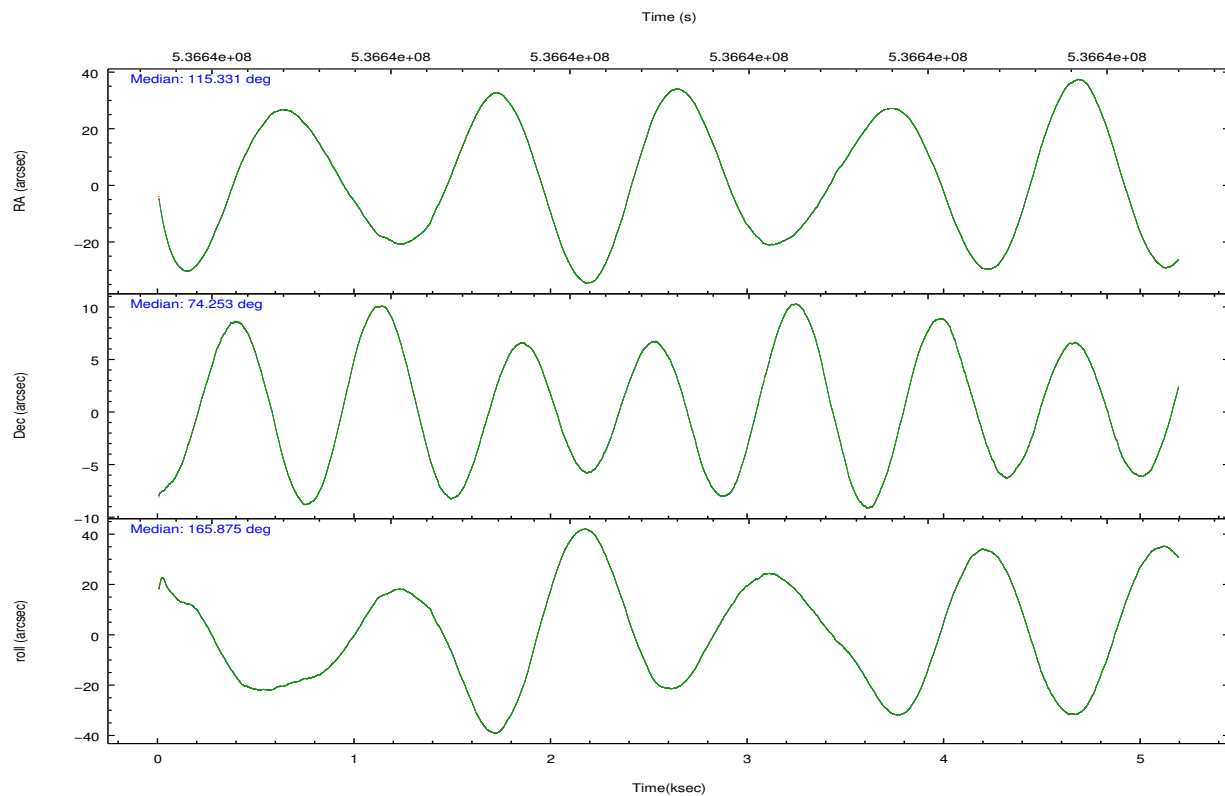


## 2.2 Compared Parameters

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	115.429150	115.3310917741116	CCD I2 on	Y	Y
[deg] Pointing Dec	74.260746	74.25304561902838	CCD I3 on	Y	Y
[deg] Pointing Roll	165.576388	165.8795296679903	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	-229.592463	-229.5871588160467	CCD S3 on	N	N
[mm] SIM translation stage offset	-4	-4.005294186882963	CCD S4 on	N	N
[s] Observation start time (MET)	536637156.184000	536635945.7244	CCD S5 on	N	N
Observation start date	2015-01-03T01:51:29	2015-01-03T01:32:25	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	536642156.184000	536643519.96233	On-chip summing requested	N	N
Observation end date	2015-01-03T03:14:49	2015-01-03T03:38:39	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



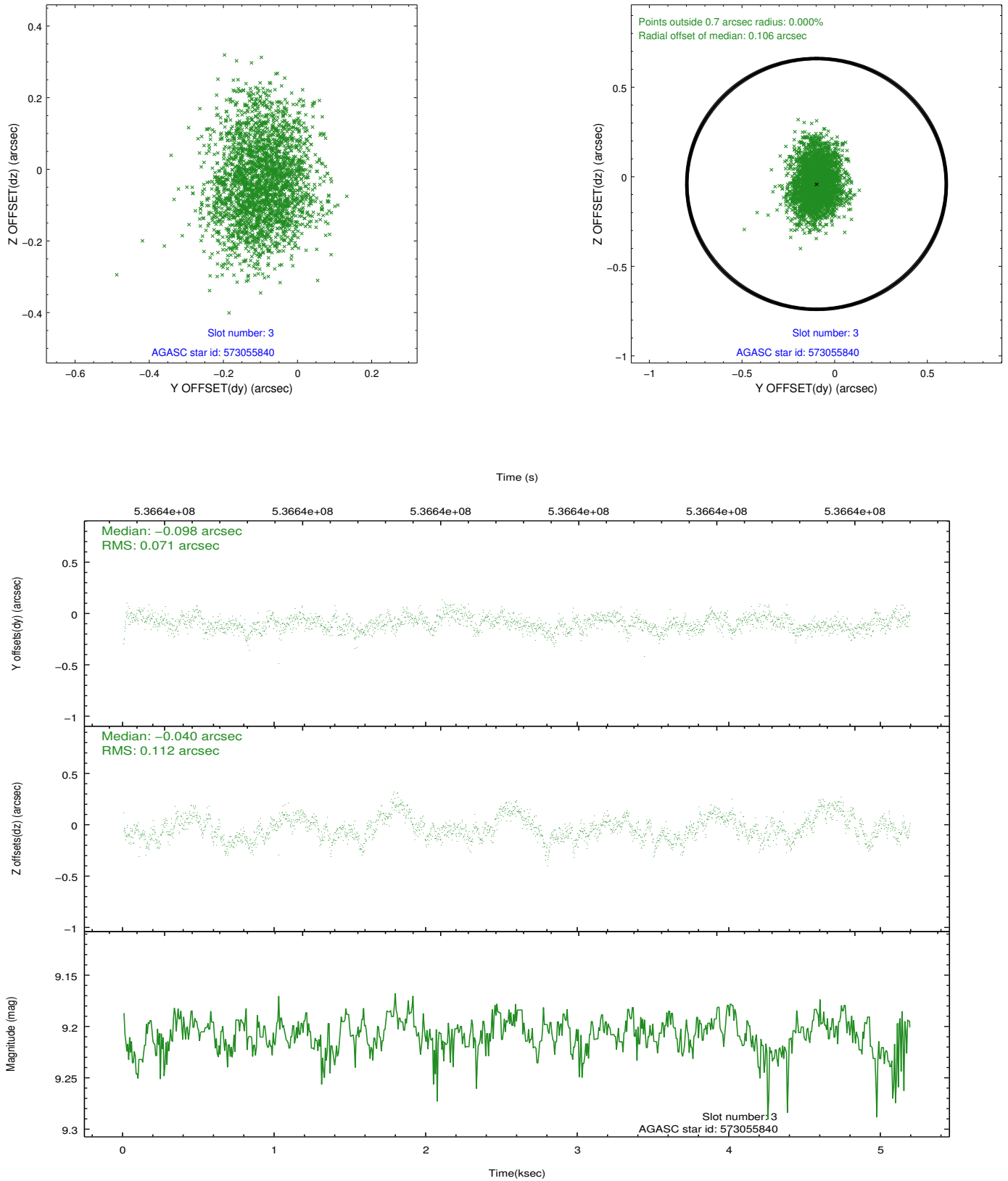


### Slot Statistics

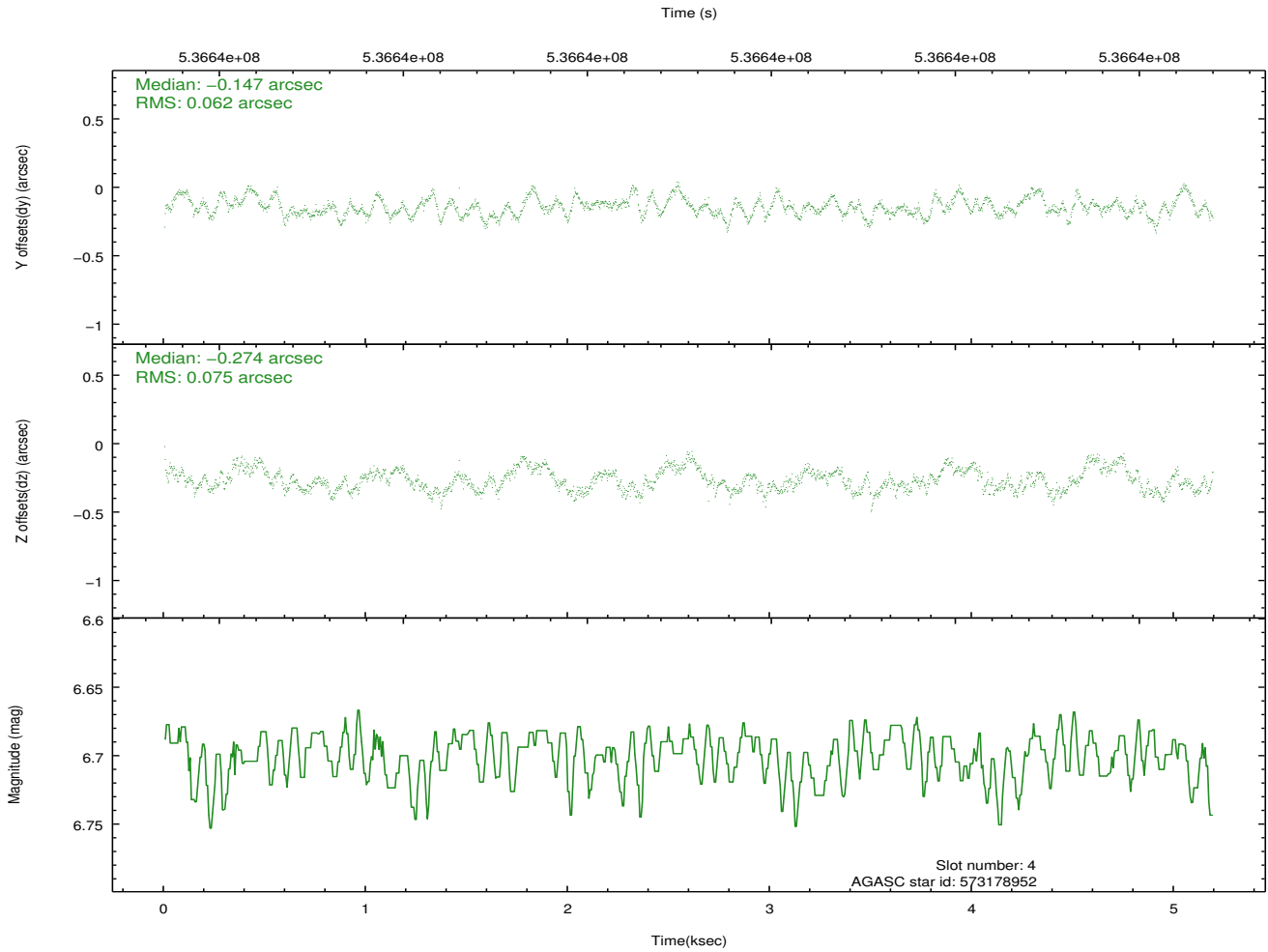
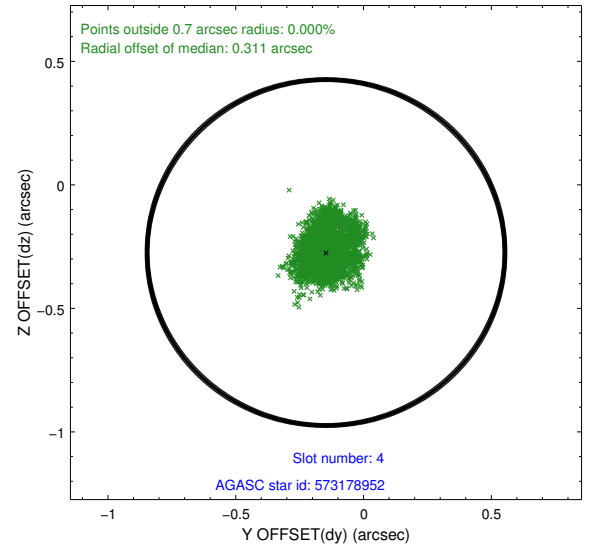
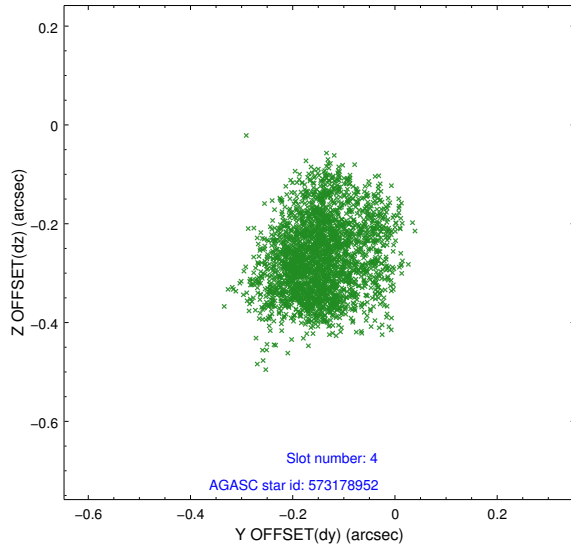
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.29	1266	0.129	-0.077	0.007	0.012	0.000000	0.000000	920.54	-923.51
1	FID		ACIS-I-5	7.28	1266	-0.359	0.088	0.007	0.011	0.000000	0.000000	-1827.46	973.42
2	FID		ACIS-I-6	7.28	1266	0.139	0.059	0.007	0.012	0.000000	0.000000	384.76	1619.27
3	GUIDE	used	573055840	9.21	2530	-0.098	-0.040	0.142	0.233	113.597023	74.523847	1946.96	-505.16
4	GUIDE	used	573178952	6.70	2532	-0.147	-0.274	0.105	0.165	117.150959	74.043209	-1838.97	310.44
5	GUIDE	used	573179104	9.22	2531	0.007	-0.129	0.176	0.265	116.721510	73.777279	-1689.48	1348.14
6	GUIDE	used	573179776	9.11	2531	0.196	0.070	0.136	0.208	115.887555	74.372574	-330.76	-501.32
7	GUIDE	used	573183424	10.21	2520	0.053	0.387	0.354	0.541	118.310962	74.662764	-2279.42	-2149.33

## 2.4 Star Slots

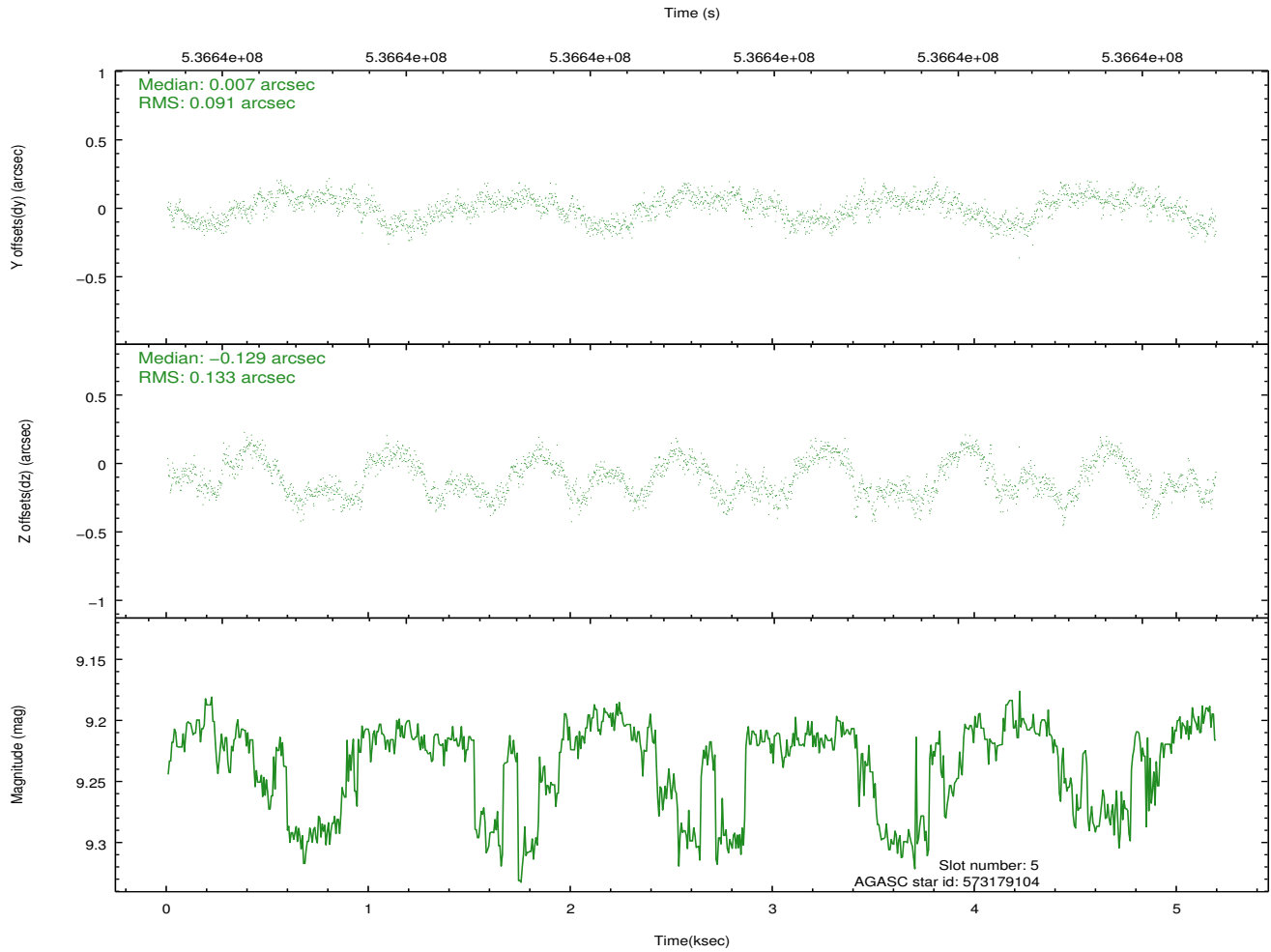
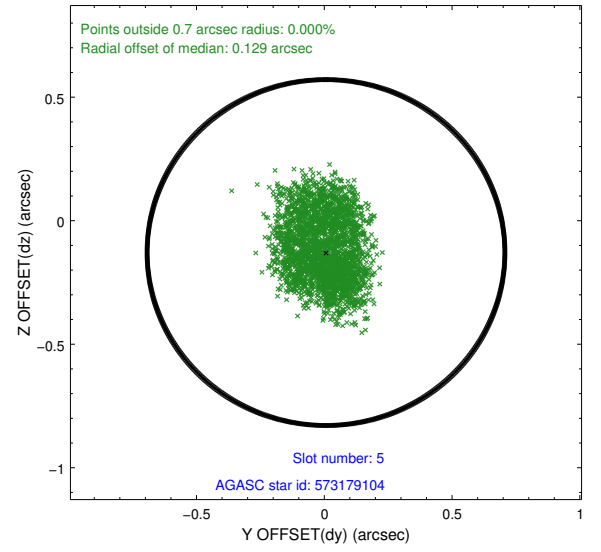
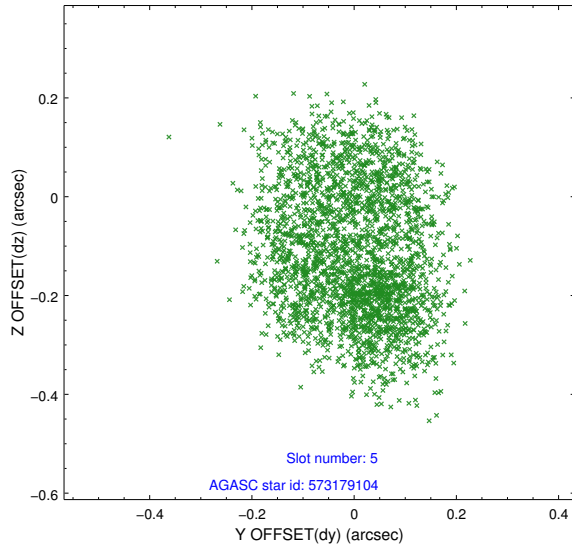
### 2.4.1 Slot 3



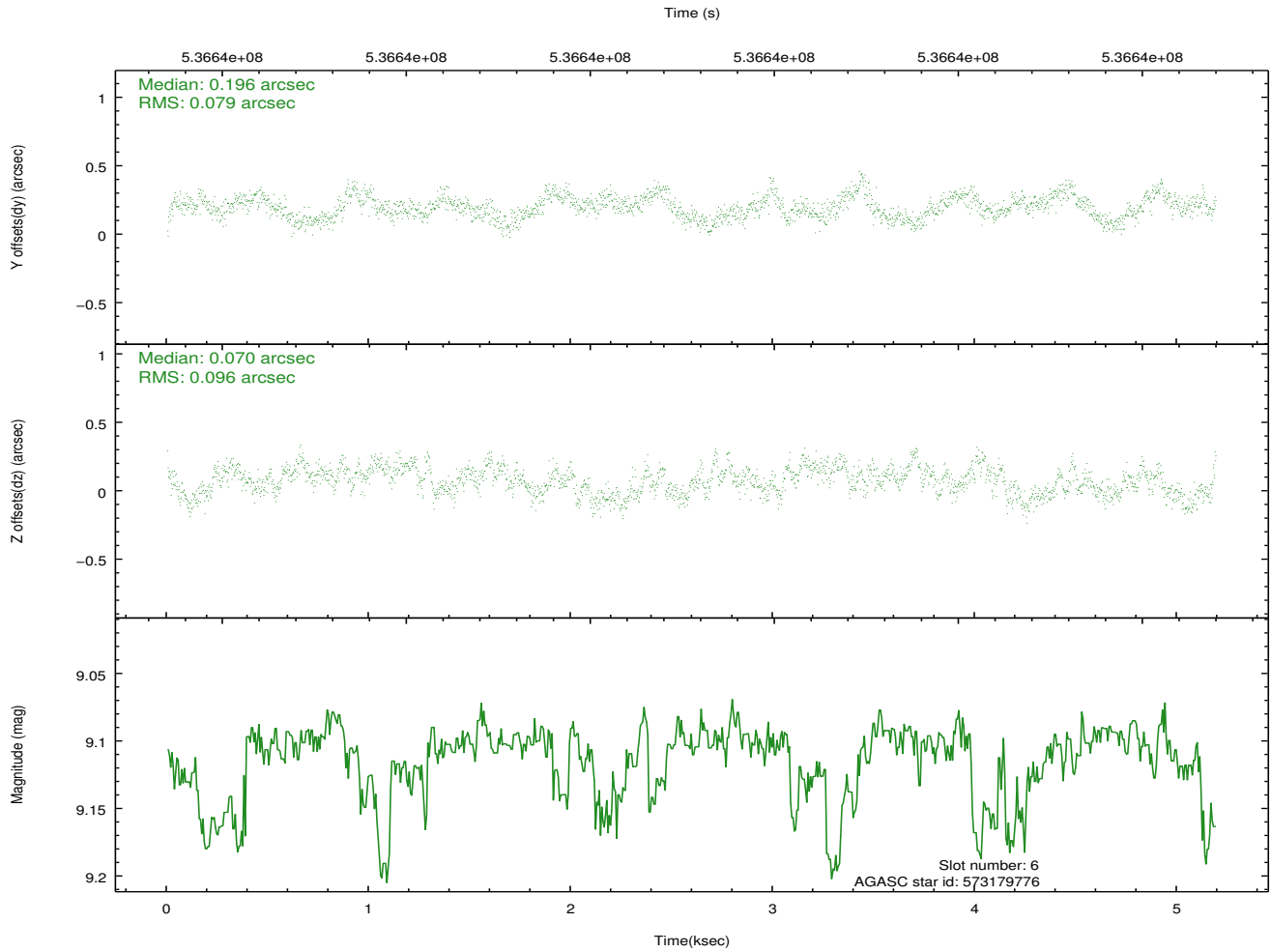
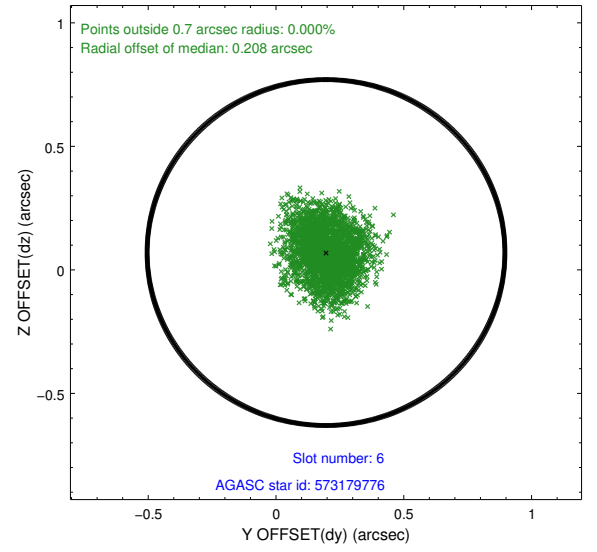
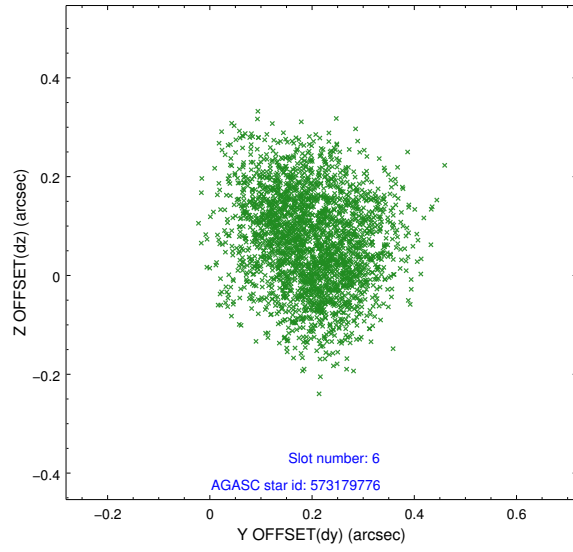
## 2.4.2 Slot 4



### 2.4.3 Slot 5

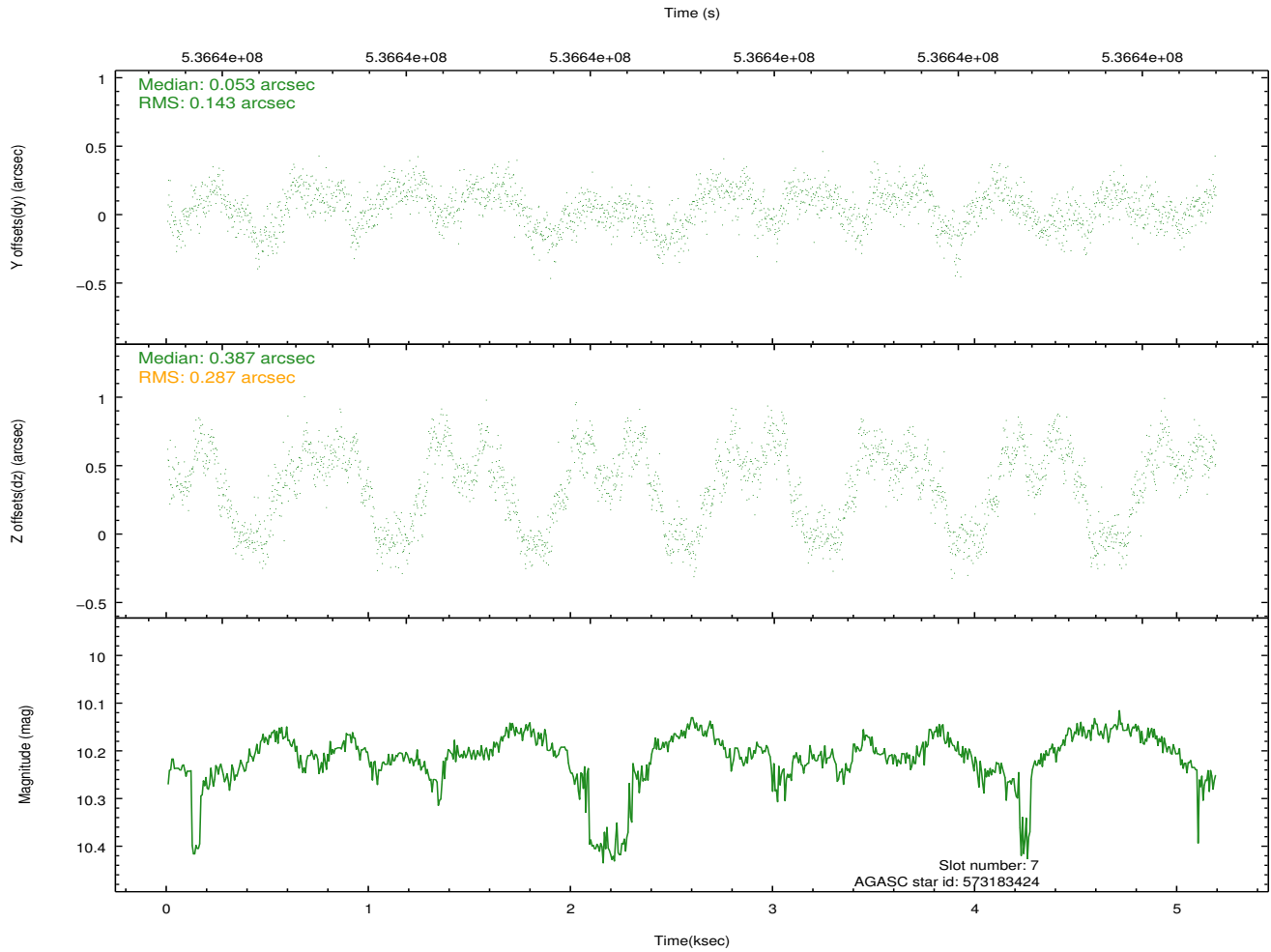
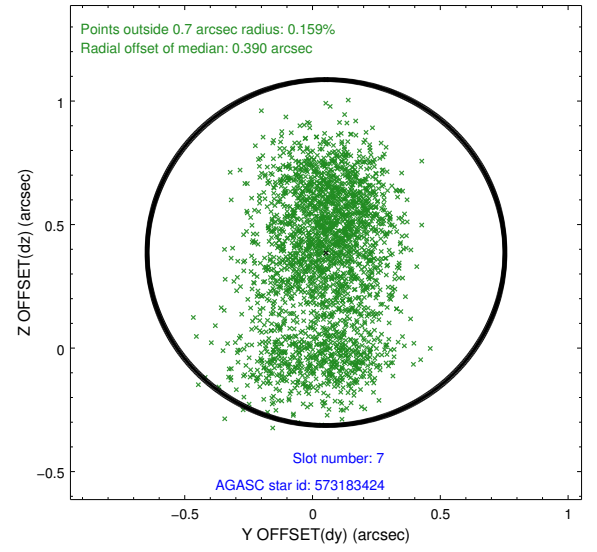
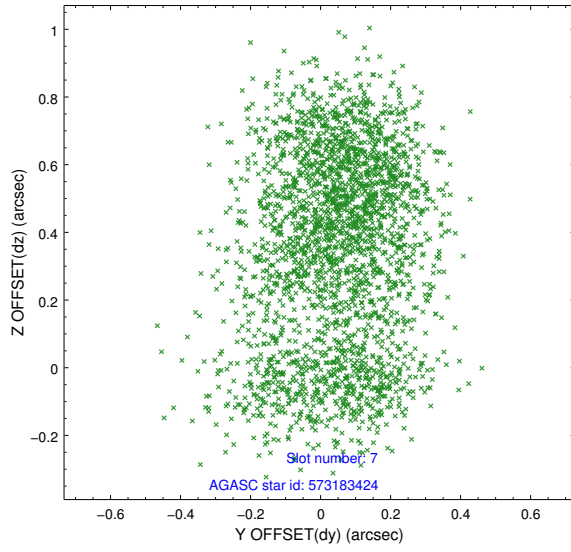


## 2.4.4 Slot 6



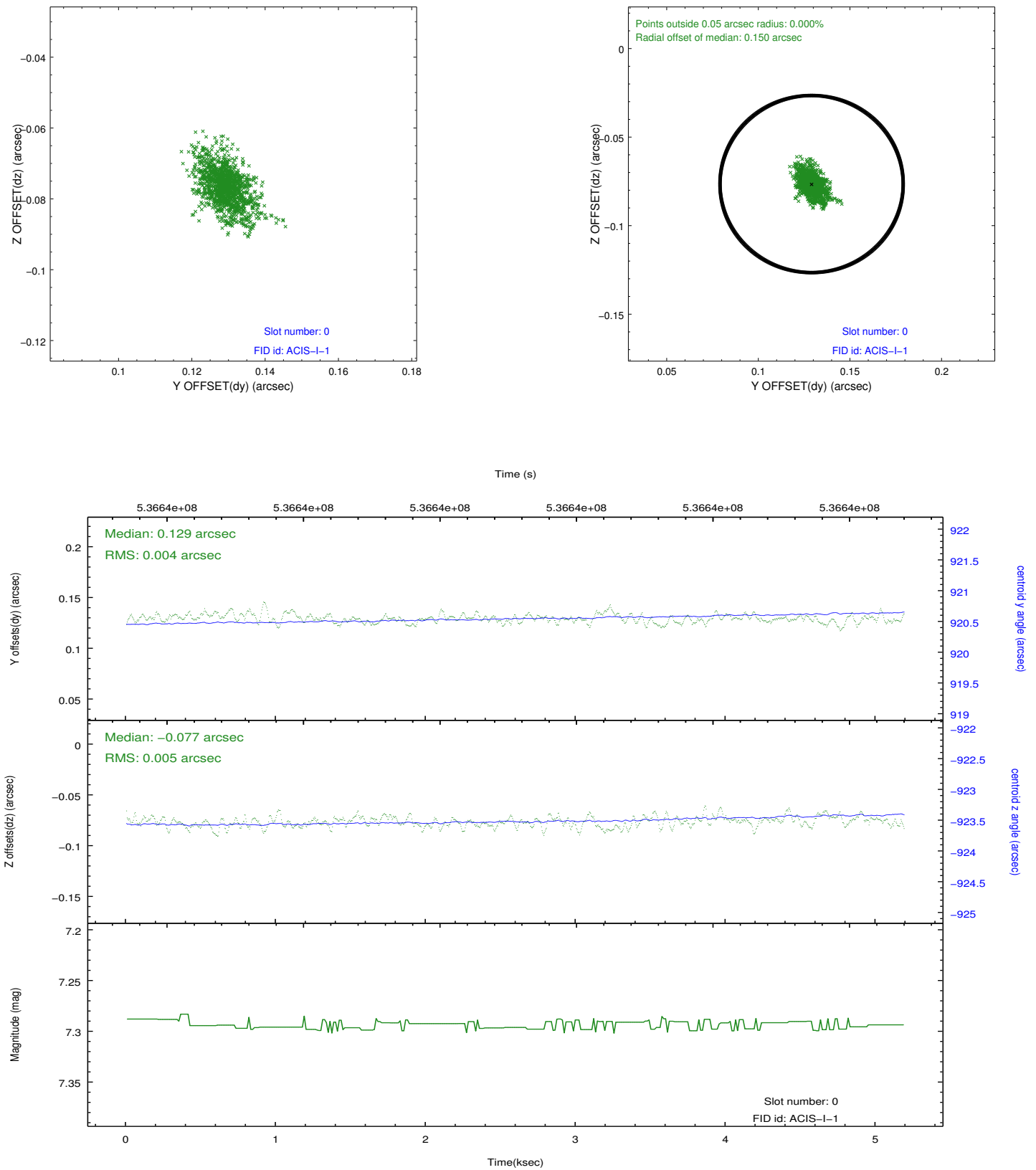


## 2.4.5 Slot 7

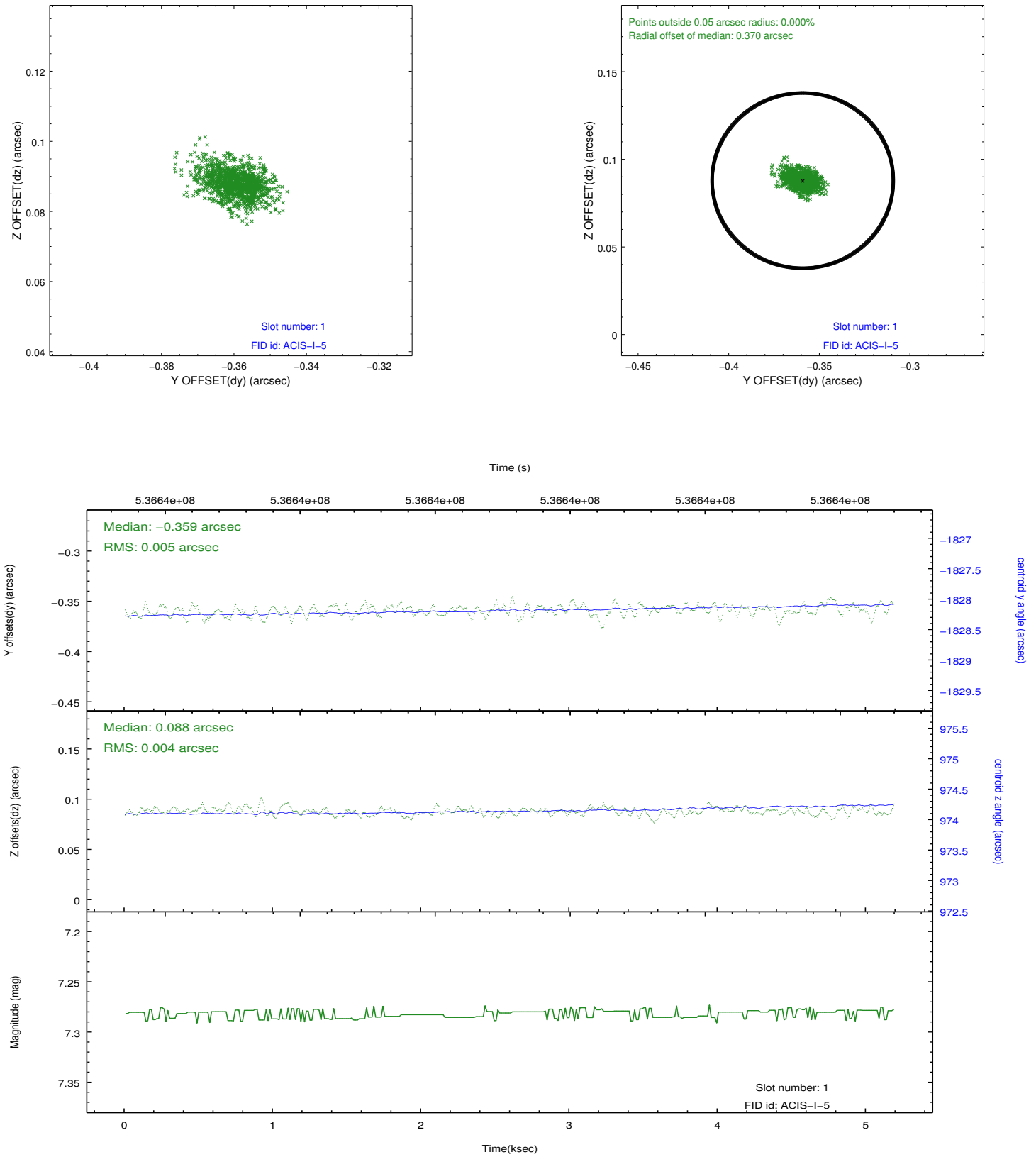


## 2.5 FID Slots

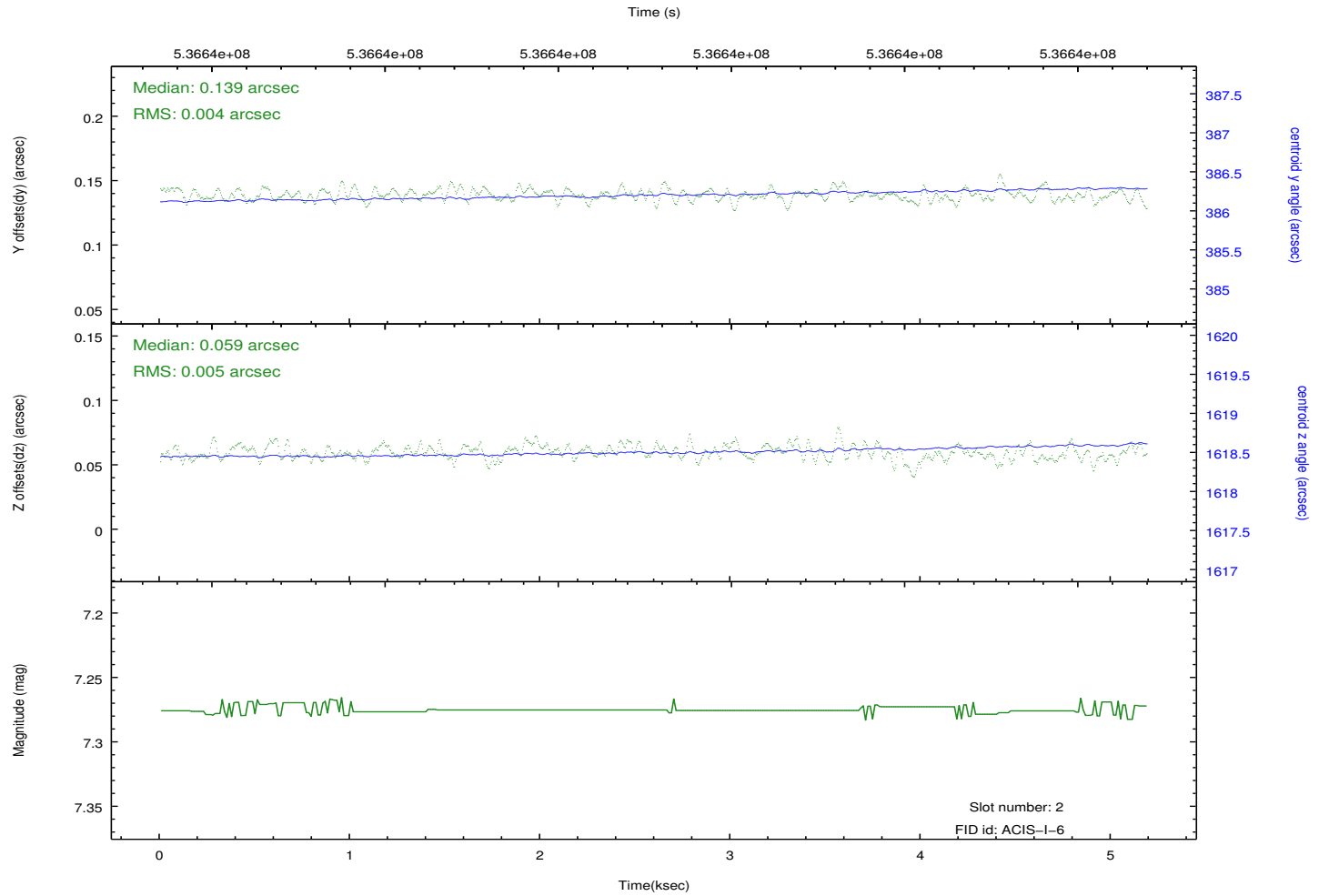
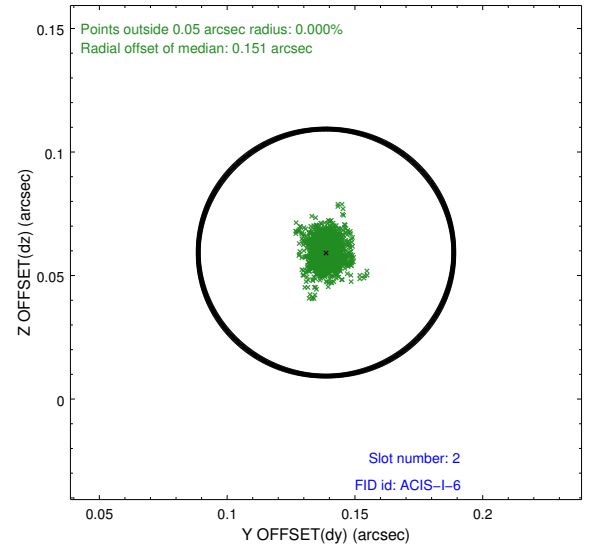
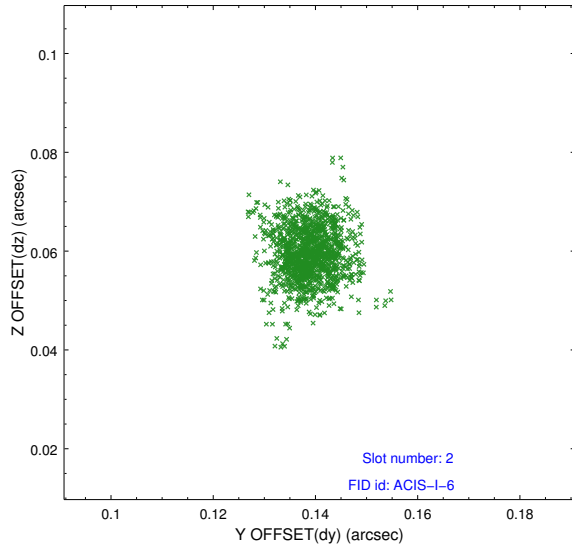
### 2.5.1 Slot 0



## 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)	2015.01.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.0809000390768

## A.2 Comments

A spatial region of the original bias map for CCD = 2 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 = 2 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: (114.85018, 74.31514), (114.84688, 74.31143), (115.34701, 74.27794), (115.35041, 74.28164).