

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 13708 - L2 Version 2  
Chandra X-Ray Center

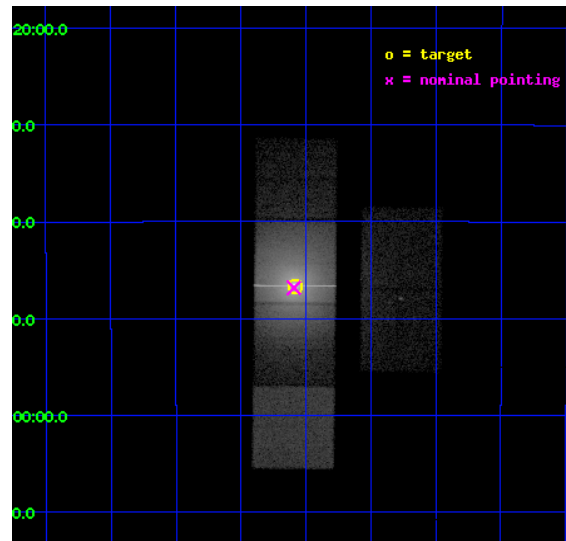
L2 Processing Date : Aug 6 2012

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# 1 Front

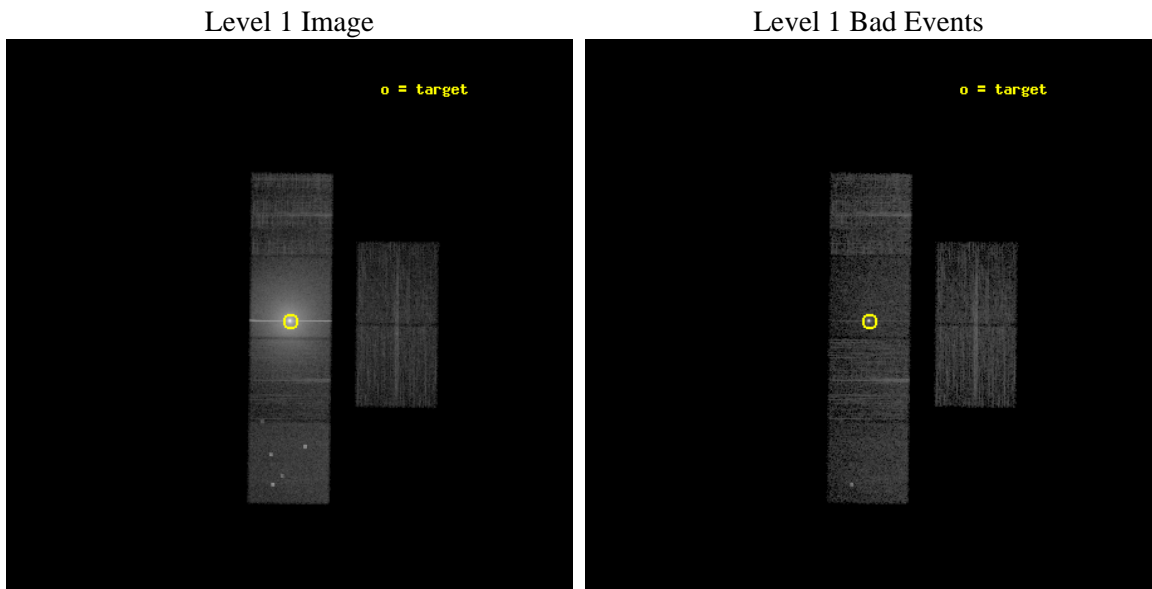
seq_num	401394	Sequence number
obs_id	13708	Observation id
title	Transient LMXBs in Globular Clusters: More Numerous than We Thought?	&#160
observer	Prof. David Pooley	Principal investigator
object	Terzan 5	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	267.020417	Observer's specified target RA [deg]
dec_targ	-24.779167	Observer's specified target Dec [deg]
ra_nom	267.02329059338	Nominal RA [deg]
dec_nom	-24.780771861704	Nominal Dec [deg]
roll_nom	270.63462340422	Nominal Roll [deg]
revision	2	Processing version of data
ontime	9971.199962914	Sum of GTIs [s]
livetime	9844.9386250478	Livetime [s]
ontime2	9971.199962914	Sum of GTIs [s]
ontime3	9971.199962914	Sum of GTIs [s]
ontime5	9971.199962914	Sum of GTIs [s]
ontime6	9971.199962914	Sum of GTIs [s]
ontime7	9971.199962914	Sum of GTIs [s]
ontime8	9971.199962914	Sum of GTIs [s]
l2events	495723	Number of level 2 events



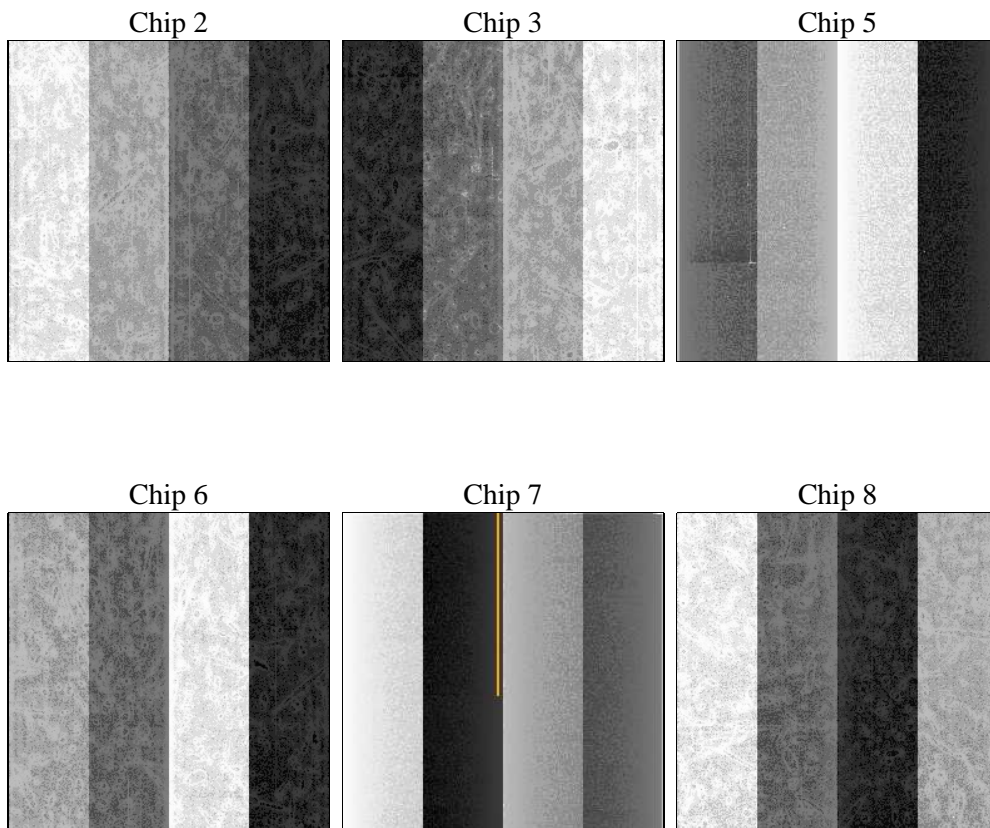
## 2 OBI

### 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	8.4.5	Processing system revision	ontime	9971.199962914	Sum of GTIs [s]
caldsver	4.5.1	&#160	ontime2	9971.199962914	Sum of GTIs [s]
date	2012-08-06T17:00:01	Date and time of file creation	ontime3	9971.199962914	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	9971.199962914	Sum of GTIs [s]
			ontime6	9971.199962914	Sum of GTIs [s]
			ontime7	9971.199962914	Sum of GTIs [s]
			ontime8	9971.199962914	Sum of GTIs [s]
			l1events	773088	Number of level 1 events

### 2.1.4 Events

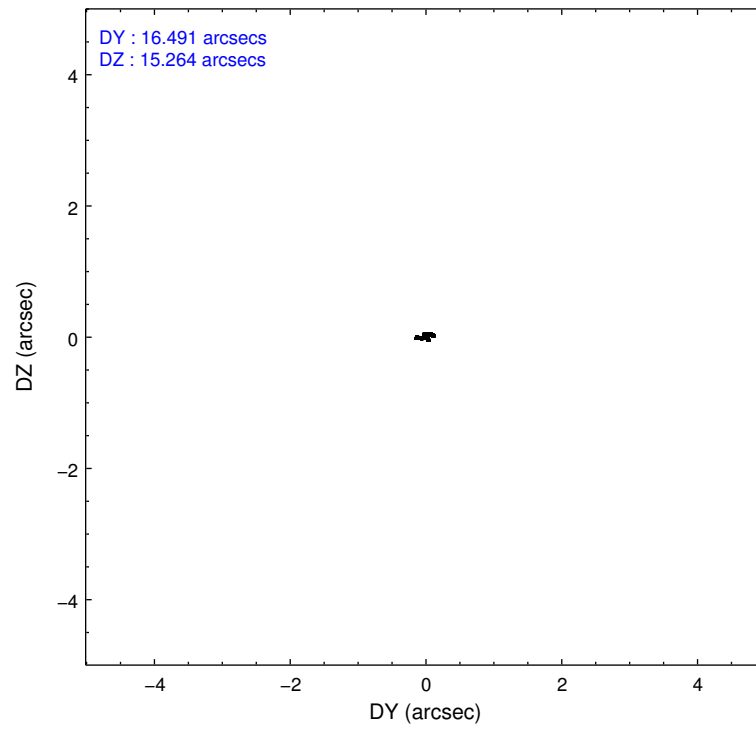
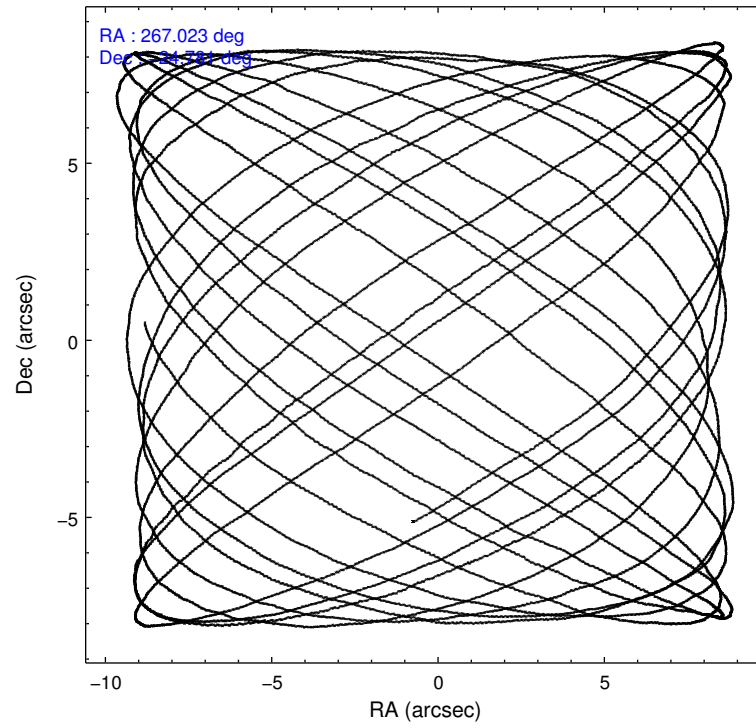
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	52045	45972	79024	100024	428359	67664	grade 0 events	4936	4775	7990	42686	77023	8851
rejected events	42759	37115	34640	42334	48025	44812		9%	10%	10%	42%	17%	13%
rejected %	82%	80%	43%	42%	11%	66%	grade 1 events	44	34	154	194	1351	58
								0%	0%	0%	0%	0%	0%
							grade 2 events	1787	1585	13474	7226	95269	4900
								3%	3%	17%	7%	22%	7%
							grade 3 events	666	675	1597	2389	41544	2108
								1%	1%	2%	2%	9%	3%
							grade 4 events	733	664	1545	2458	40587	1909
								1%	1%	1%	2%	9%	2%
							grade 5 events	1861	2011	5807	2173	11461	3189
								3%	4%	7%	2%	2%	4%
							grade 6 events	1167	1161	19790	2944	126036	5089
								2%	2%	25%	2%	29%	7%
							grade 7 events	40851	35067	28667	39954	35088	41560
								78%	76%	36%	39%	8%	61%

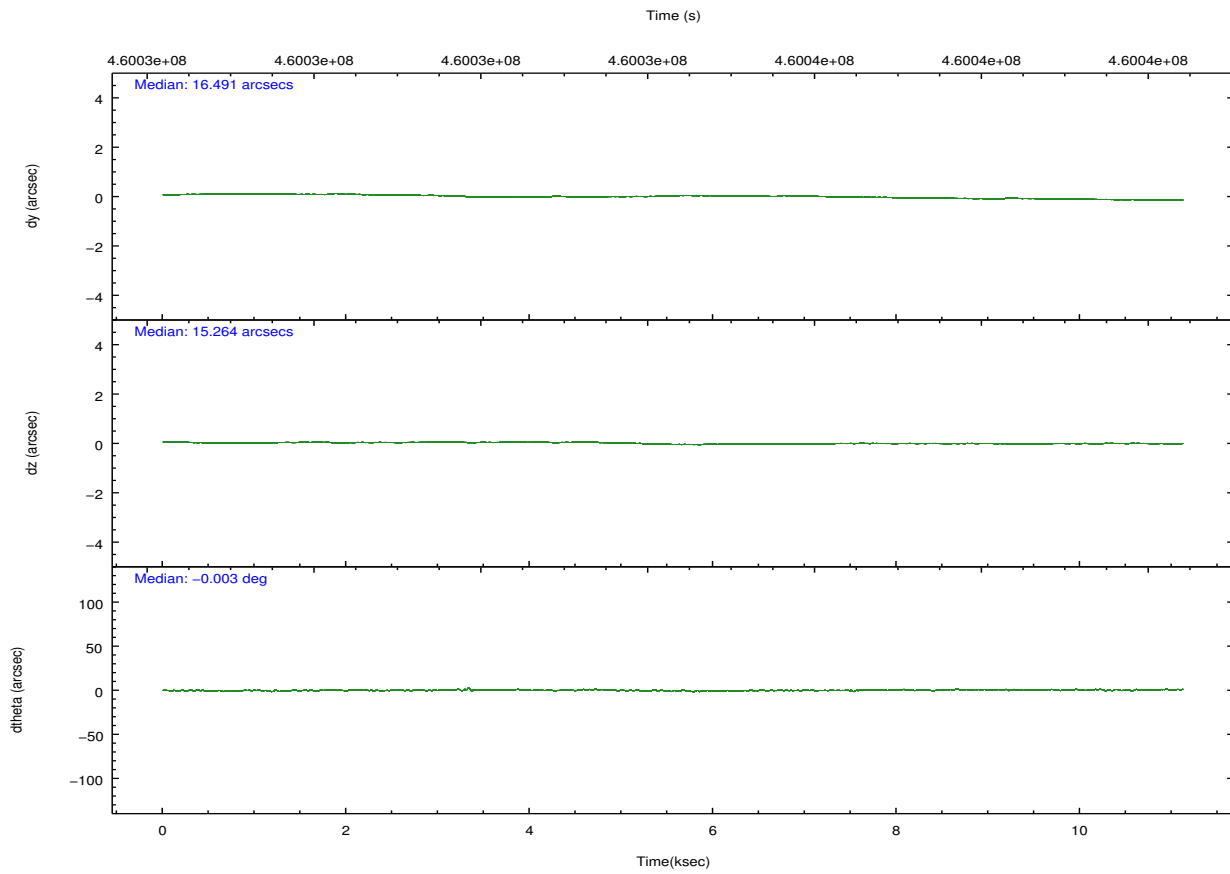
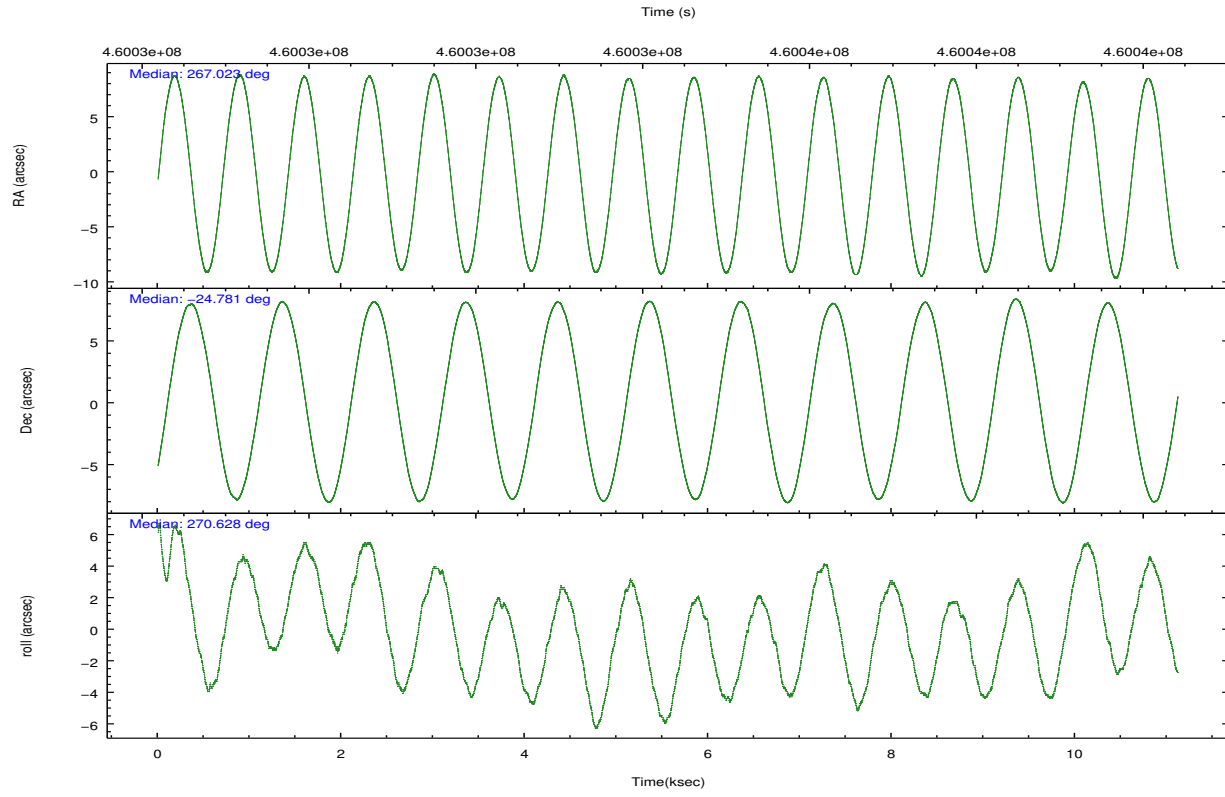


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	267.007552	267.0232905933843	CCD I2 on	O1	Y
[deg] Pointing Dec	-24.757435	-24.78077186170363	CCD I3 on	O2	Y
[deg] Pointing Roll	270.471403	270.6346234042172	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O3	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
[s] Observation start time (MET)	460029865.184000	460028436.81191	CCD S5 on	N	N
Observation start date	2012-07-30T10:03:18	2012-07-30T09:40:36	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	460039865.184000	460040228.92504	On-chip summing requested	N	N
Observation end date	2012-07-30T12:49:58	2012-07-30T12:57:08	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



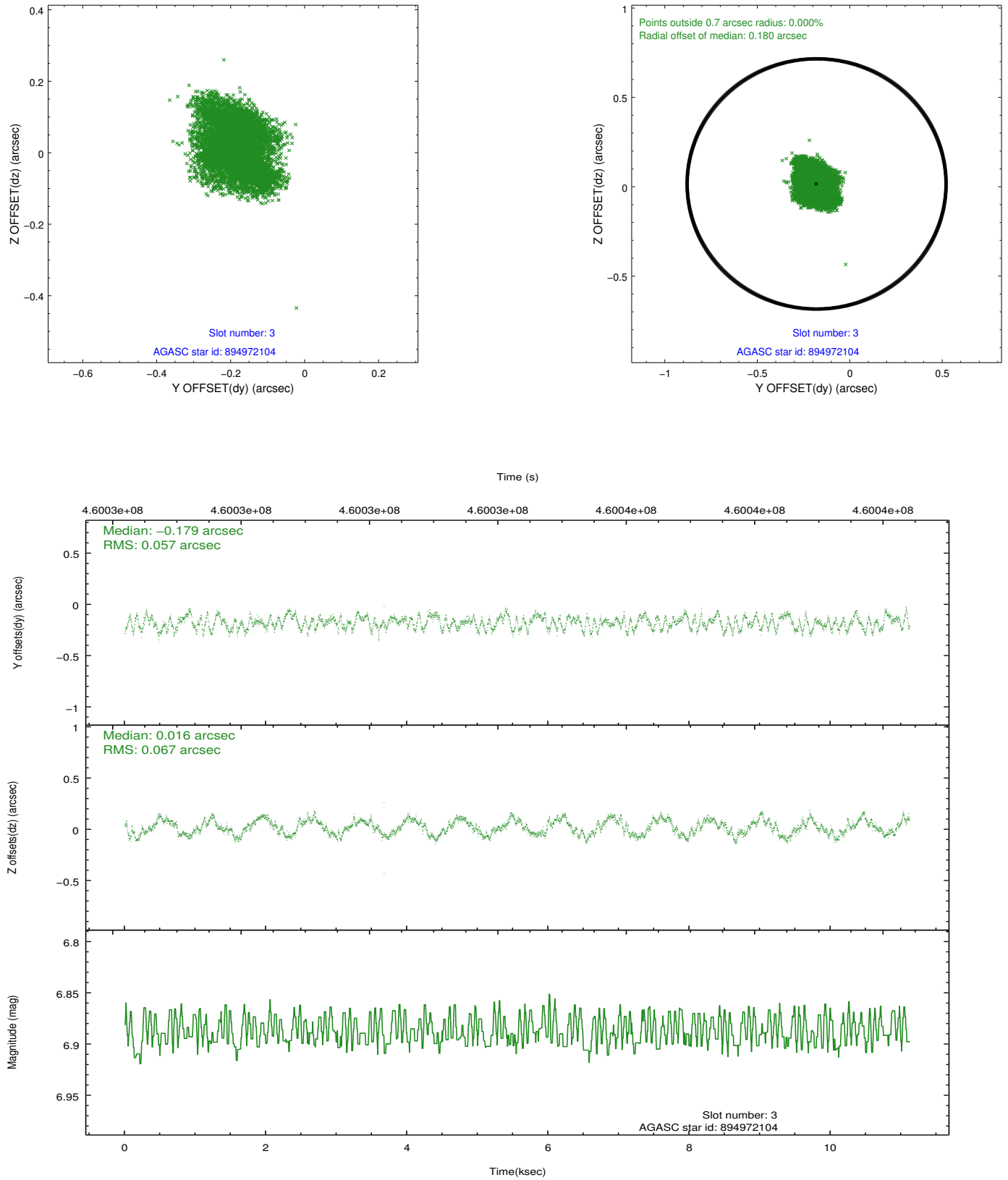


### Slot Statistics

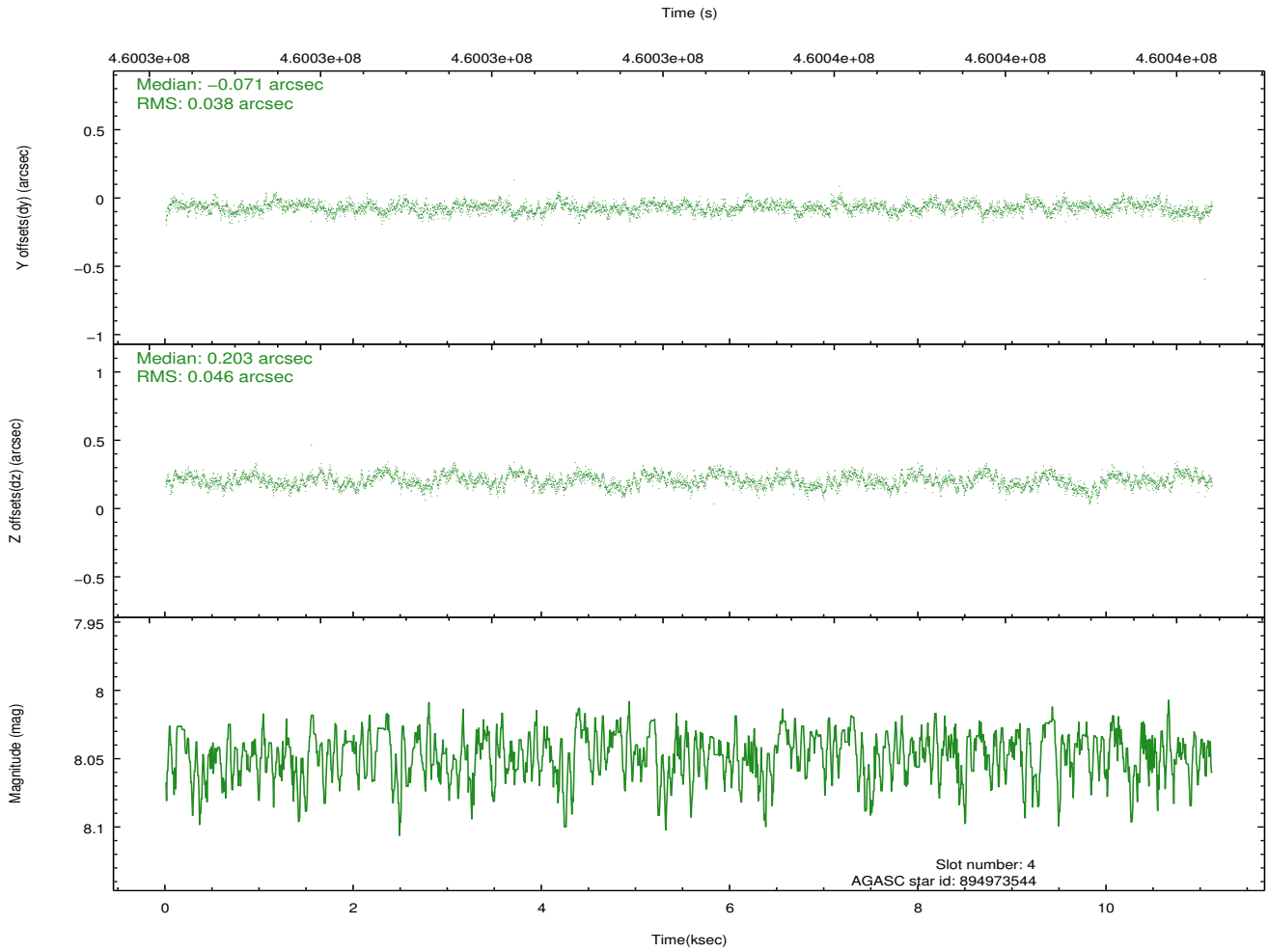
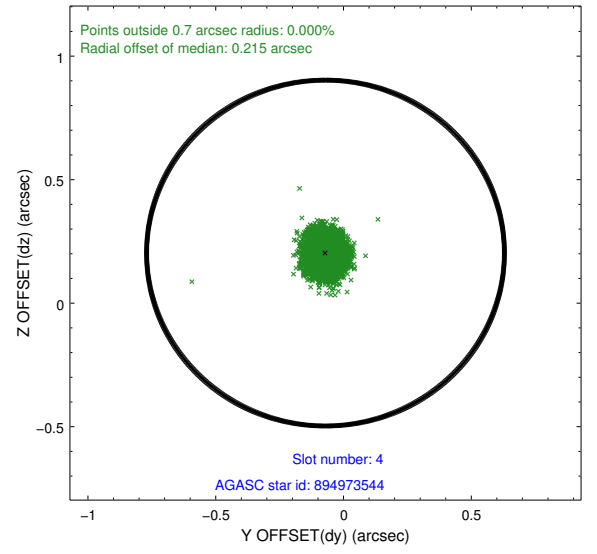
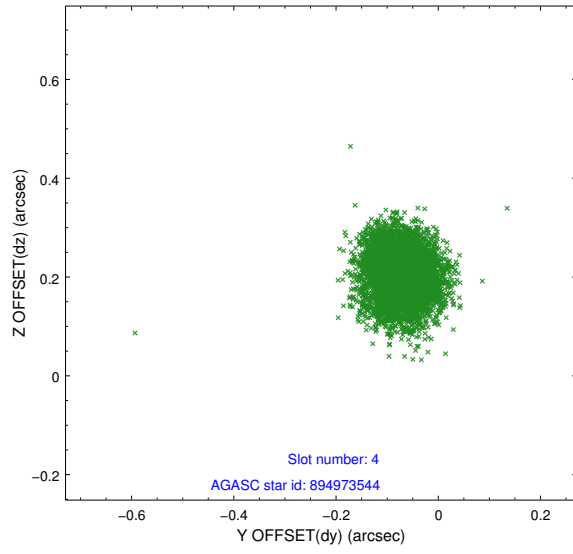
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.94	2712	-0.125	-0.070	0.006	0.011	0.000000	0.000000	-769.65	-1736.71
1	FID	ACIS-S-4	7.03	2712	0.161	0.065	0.006	0.011	0.000000	0.000000	2143.73	171.37
2	FID	ACIS-S-6	7.16	2711	-0.064	0.012	0.007	0.011	0.000000	0.000000	393.03	809.27
3	GUIDE	894972104	6.89	5425	-0.179	0.016	0.096	0.142	267.489380	-24.207054	-1965.19	1597.56
4	GUIDE	894973544	8.05	5424	-0.071	0.203	0.064	0.102	266.605572	-24.141151	-2227.25	-1302.21
5	GUIDE	895486672	9.02	5398	-0.089	-0.047	0.087	0.145	267.522168	-25.216127	1668.32	1662.14
6	GUIDE	895488888	8.53	5422	0.127	-0.007	0.075	0.118	266.751949	-24.913497	556.55	-838.68
7	GUIDE	895489704	8.80	5422	0.209	-0.168	0.104	0.176	266.328076	-25.361339	2163.18	-2228.11

## 2.4 Star Slots

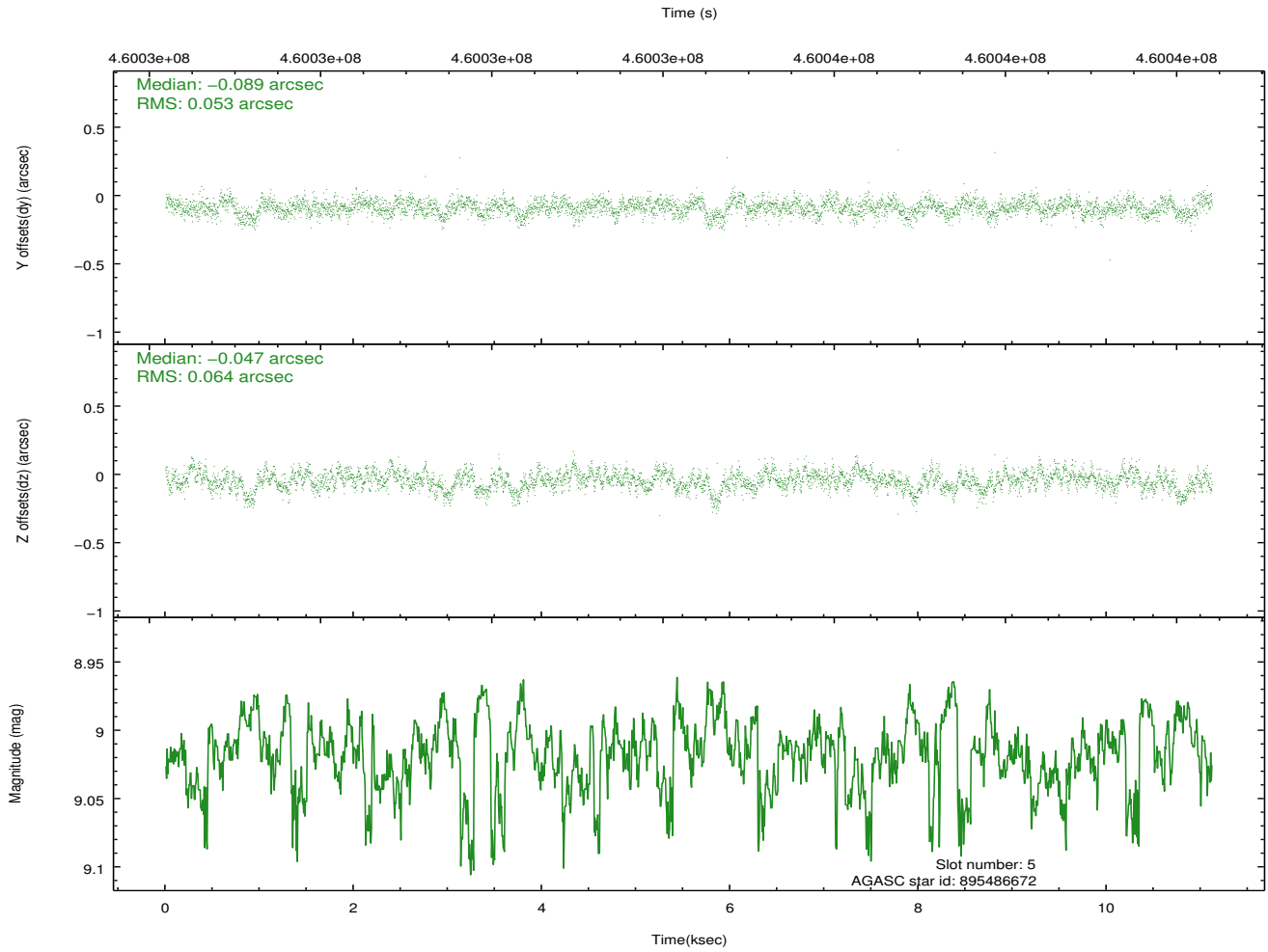
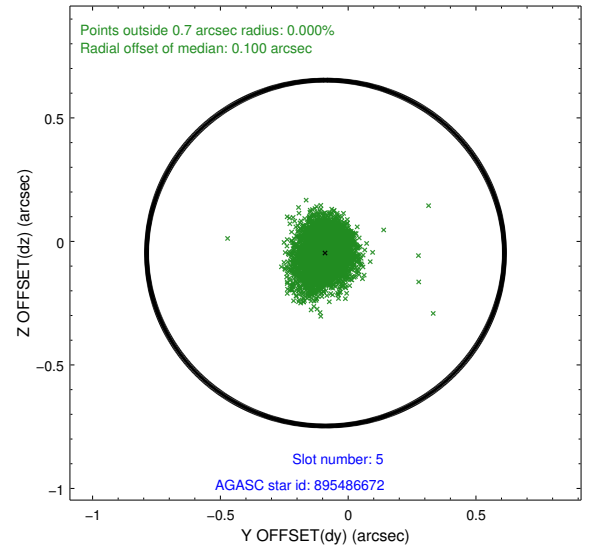
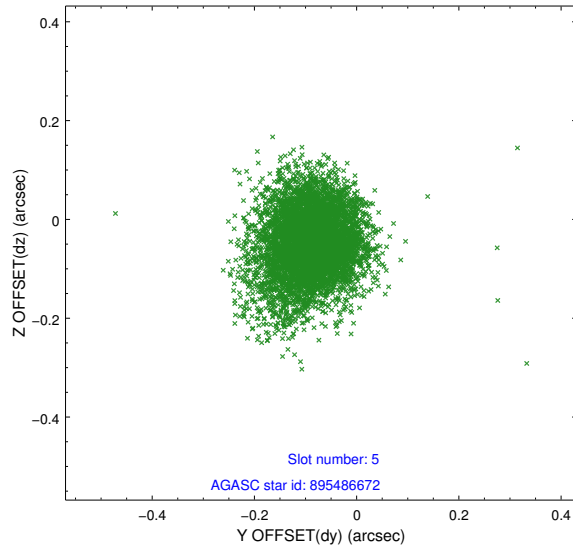
### 2.4.1 Slot 3



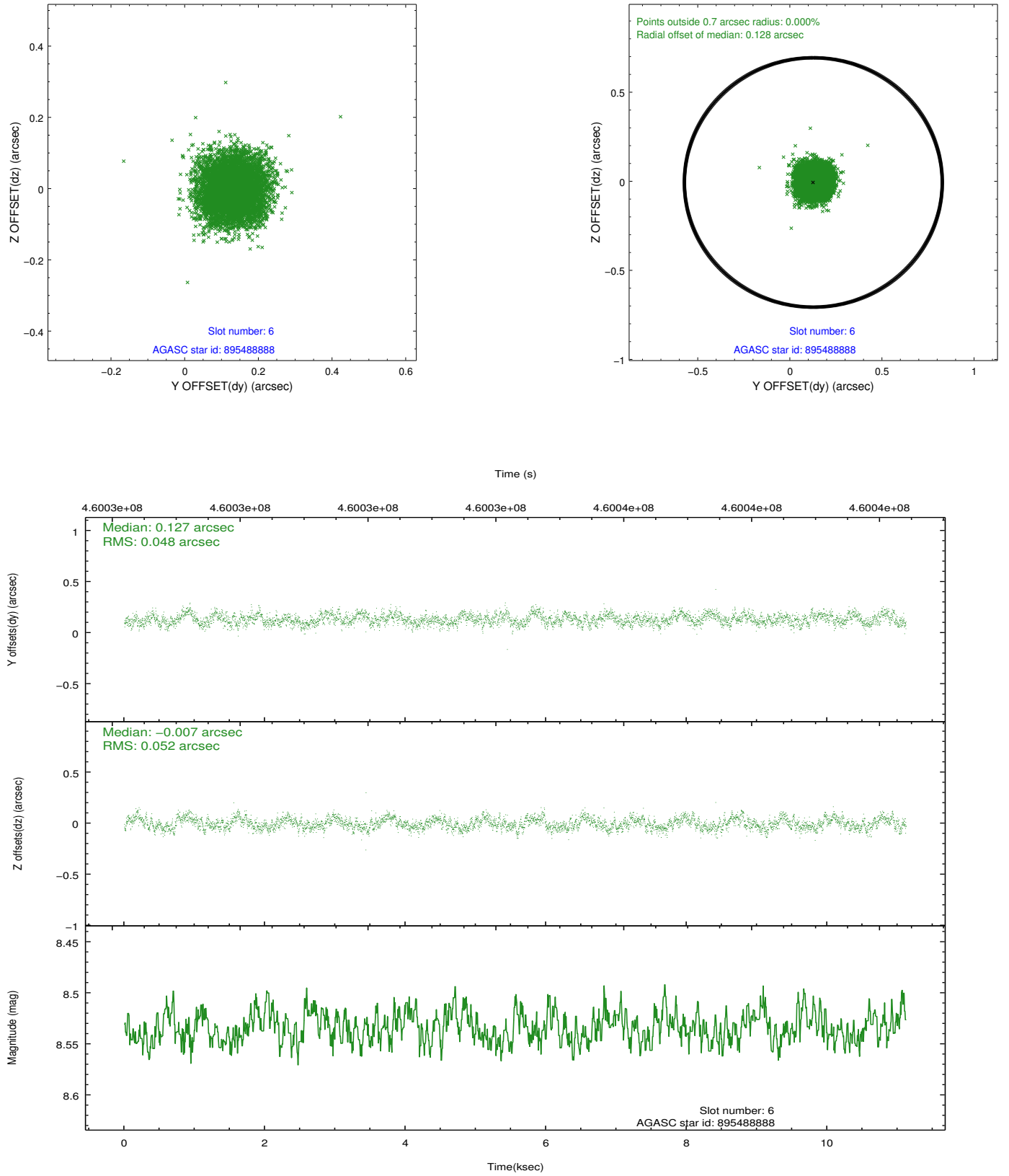
## 2.4.2 Slot 4



### 2.4.3 Slot 5

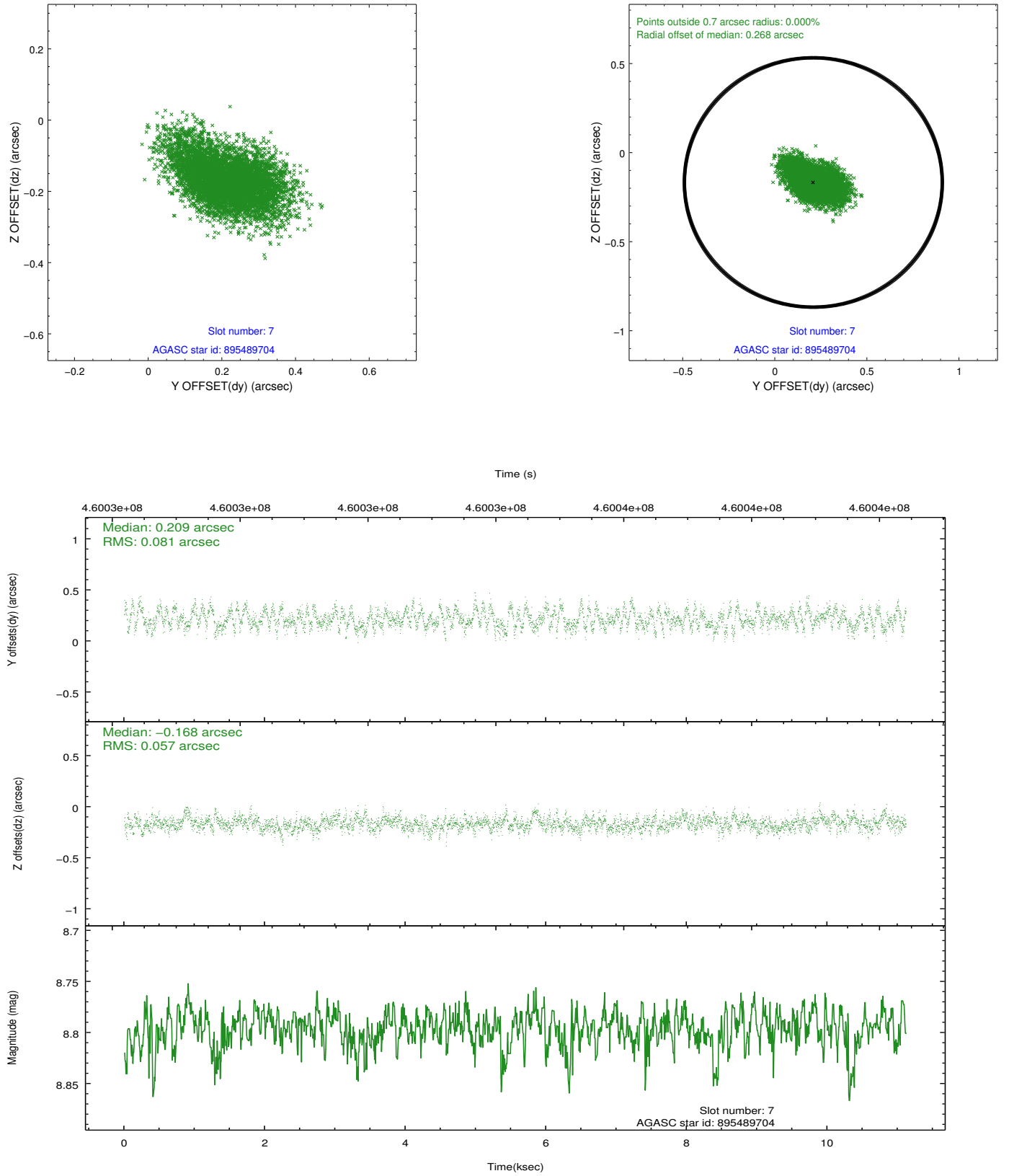


## 2.4.4 Slot 6



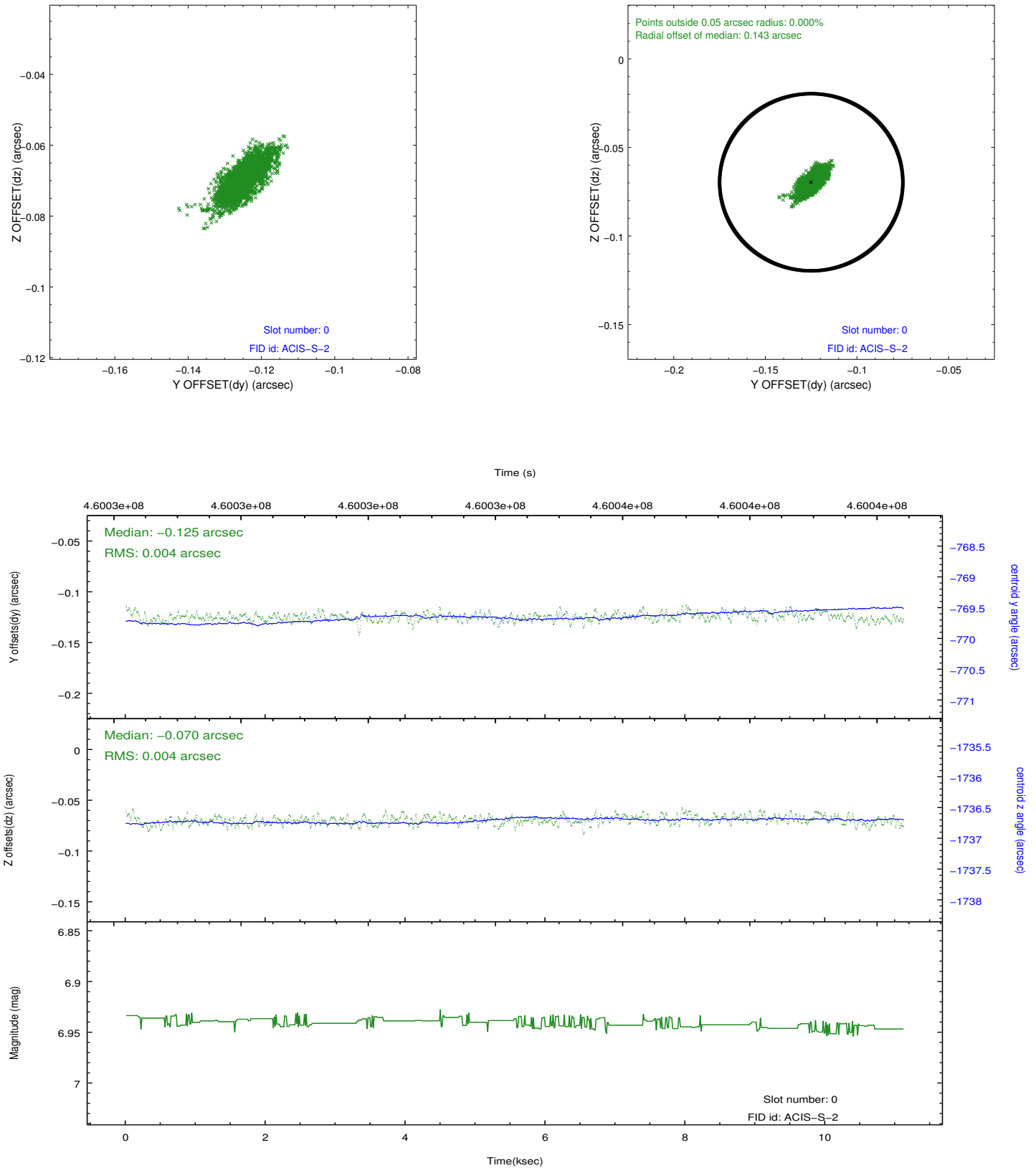


## 2.4.5 Slot 7

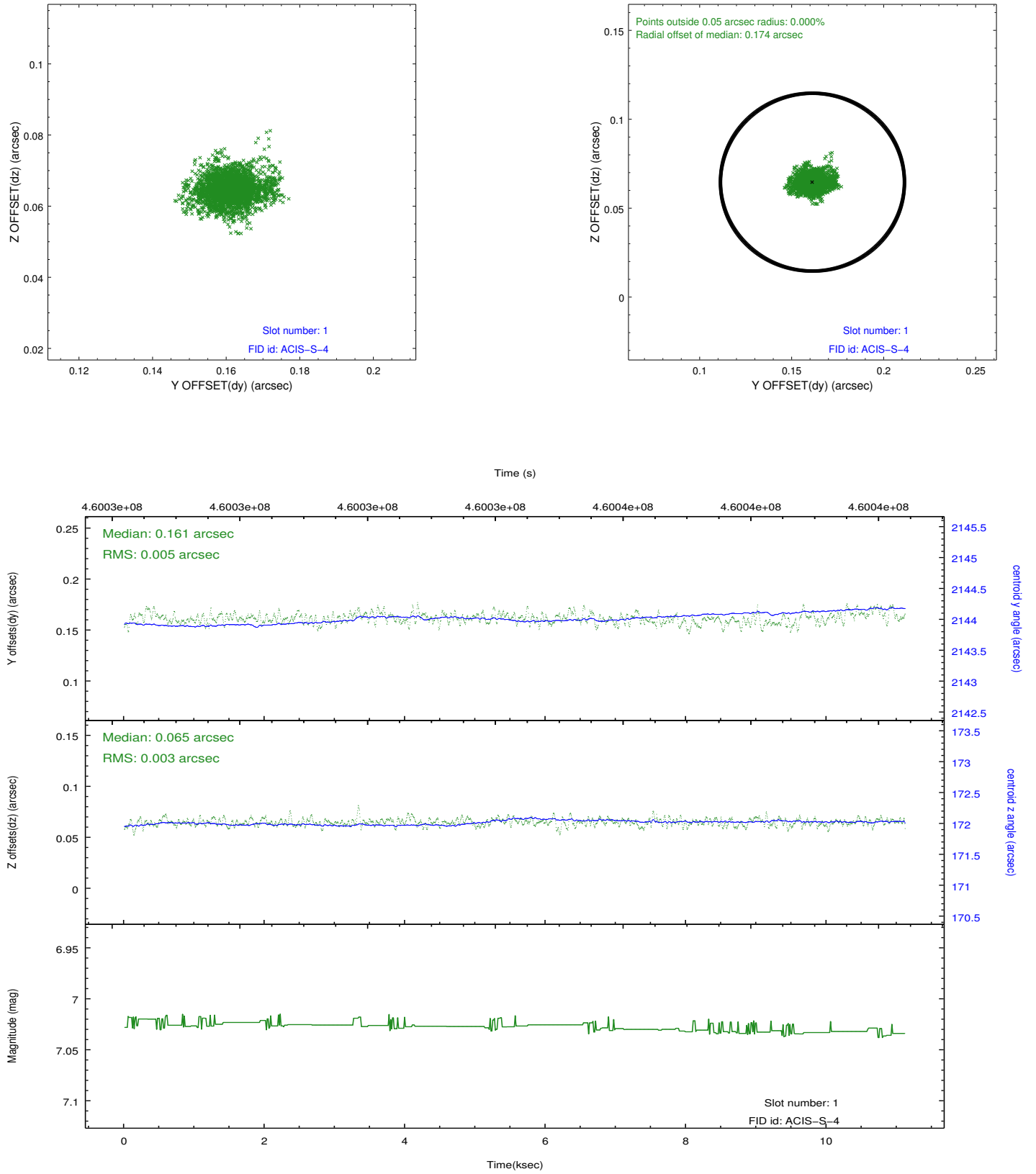


## 2.5 FID Slots

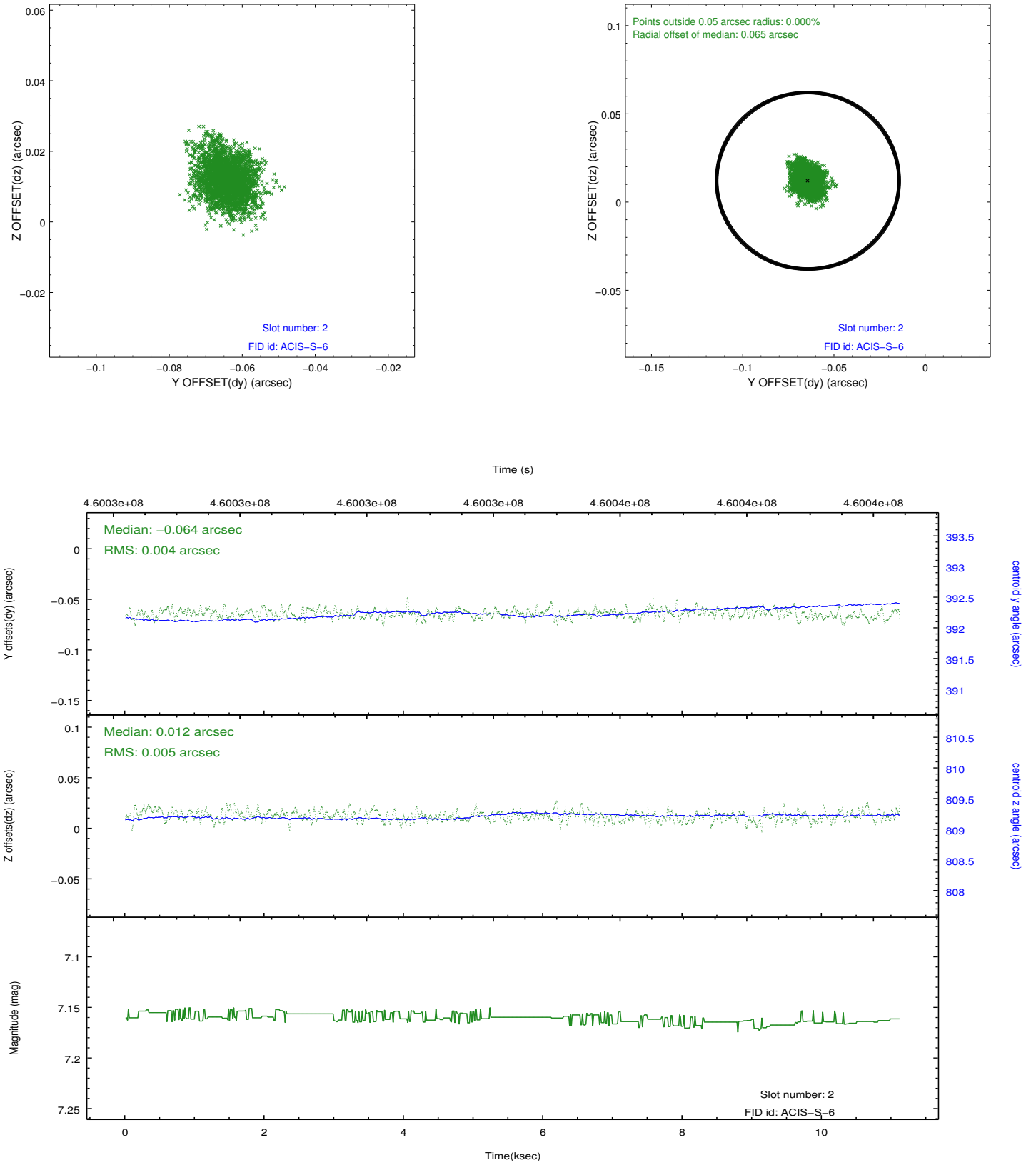
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Glenn Allen
V&V Date (YYYY-MM-DD)	2012.08.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.971199962914

## A.2 Comments

Bias bleed from the source:

coordinates(267.02302,-24.78028,267.02297,-24.77577,267.01846,-24.77582,  
267.01852,-24.78032).

The extra charge in the bias pixels near (CCD\_ID,CHIPX,CHIPY) =  
(7,204,521) seems to result in a systematic reduction of the pulse  
heights of the events on these pixels. In addition to the  
high-adu-value pixels caused by contamination by the source, node=0 of  
chip 7 has an abnormal distribution of adu values overall.

Node 0 of CCD\_ID = 7 was replaced due to source contamination. The  
pixels replaced are bounded by sky coords:  
(267.09868,-24.80525),(267.09821,-24.77045),  
(266.94445,-24.77208),(266.94488,-24.80688). After modifying the bias,  
the pulse-height data for the events on node 0 of CCD\_ID 7 seem to be  
fine.

The source is significantly piled. As a result, the central part of the  
image of the source is missing.