

# V&V Reference Report

## L2 ASCDS Version : 10.1.1

Observation 16021 - L2 Version 3  
Chandra X-Ray Center

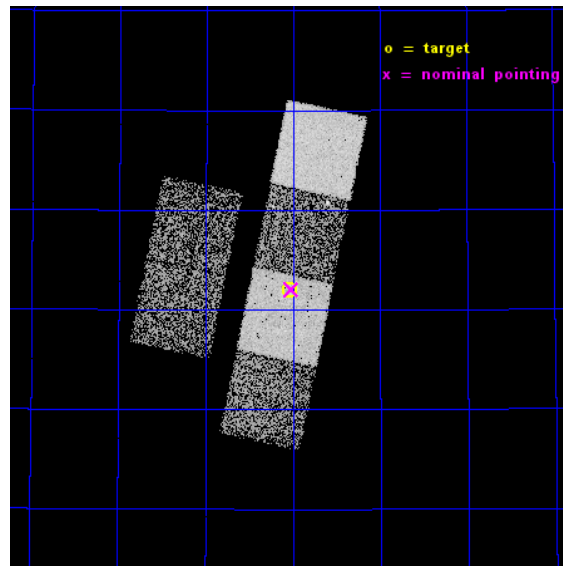
L2 Processing Date : Dec 8 2014

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# 1 Front

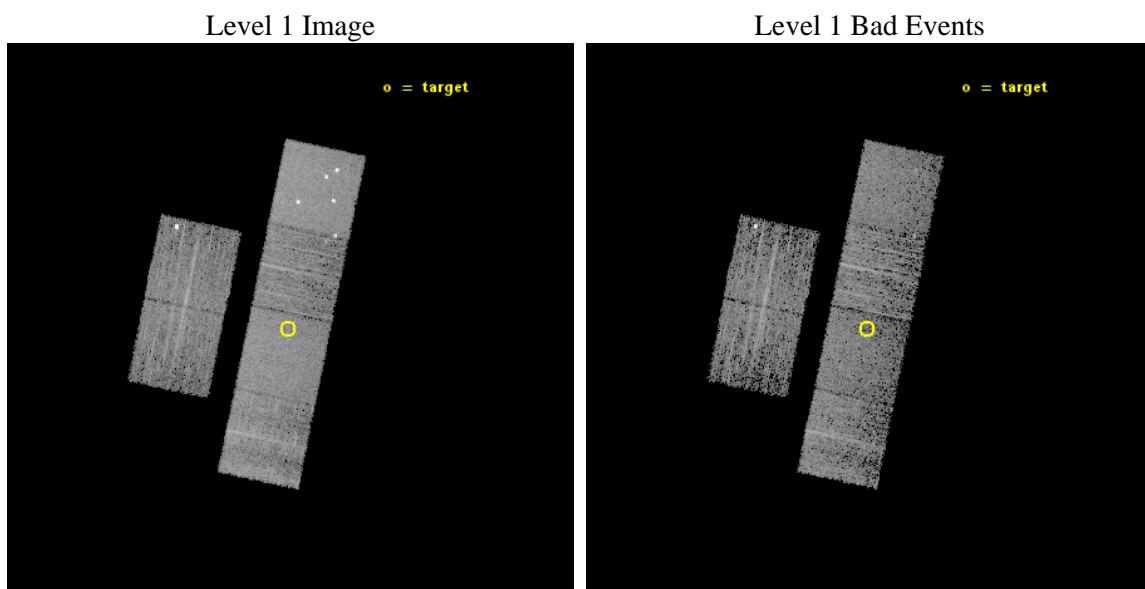
seq_num	601109	Sequence number
obs_id	16021	Observation id
title	X-Rays from Lyman Break Analog	Proposal title
observer	Prof. Philip Kaaret	Principal investigator
object	SDSS J084602.23+523159.1	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	131.509167	Observer's specified target RA [deg]
dec_targ	52.533083	Observer's specified target Dec [deg]
ra_nom	131.50451532463	Nominal RA [deg]
dec_nom	52.53417804787	Nominal Dec [deg]
roll_nom	101.92359342755	Nominal Roll [deg]
revision	3	Processing version of data
ontime	6963.1999741197	Sum of GTIs [s]
livetime	6875.0277433117	Livetime [s]
ontime2	6963.1999741197	Sum of GTIs [s]
ontime3	6963.1999741197	Sum of GTIs [s]
ontime5	6963.1999741197	Sum of GTIs [s]
ontime6	6963.1999741197	Sum of GTIs [s]
ontime7	6963.1999741197	Sum of GTIs [s]
ontime8	6963.1999741197	Sum of GTIs [s]
l2events	57958	Number of level 2 events



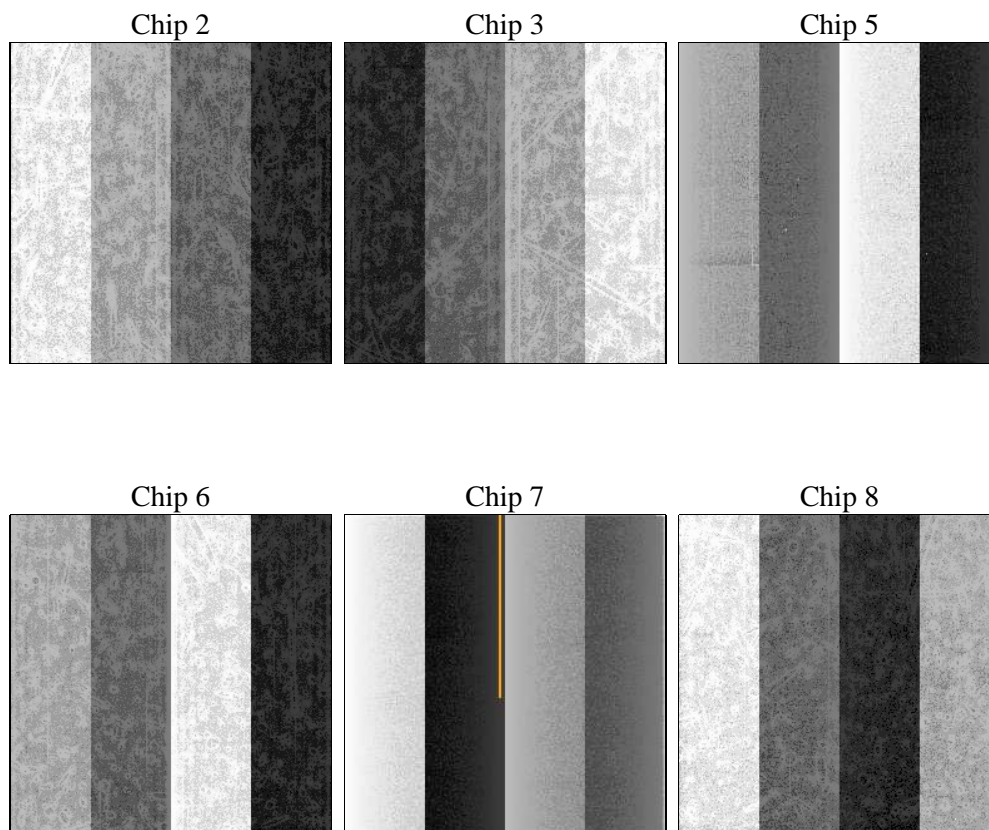
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	7000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	6963.1999741197	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	6963.1999741197	Sum of GTIs [s]
date	2014-12-08T07:36:10	Date and time of file creation	ontime3	6963.1999741197	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	6963.1999741197	Sum of GTIs [s]
			ontime6	6963.1999741197	Sum of GTIs [s]
			ontime7	6963.1999741197	Sum of GTIs [s]
			ontime8	6963.1999741197	Sum of GTIs [s]
			l1events	256314	Number of level 1 events

### 2.1.4 Events

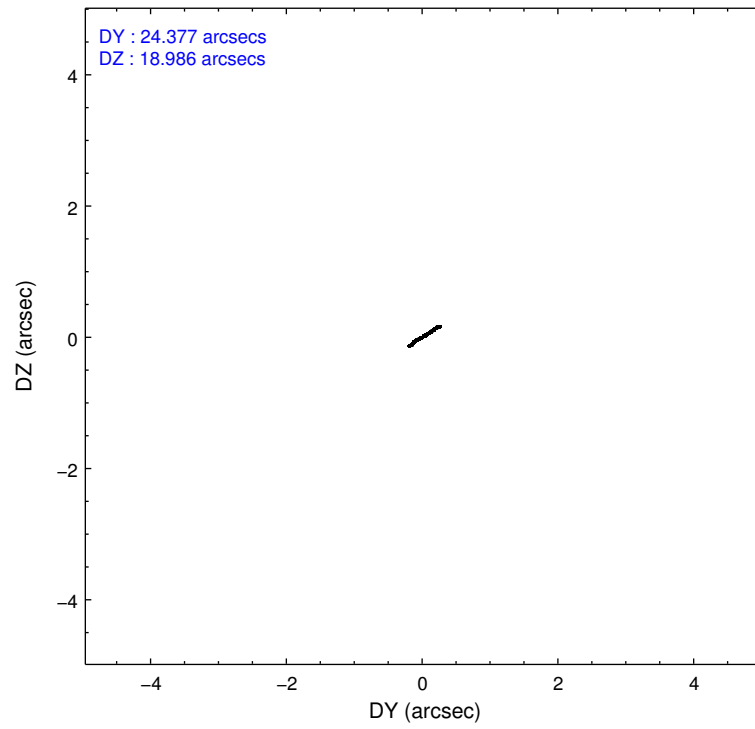
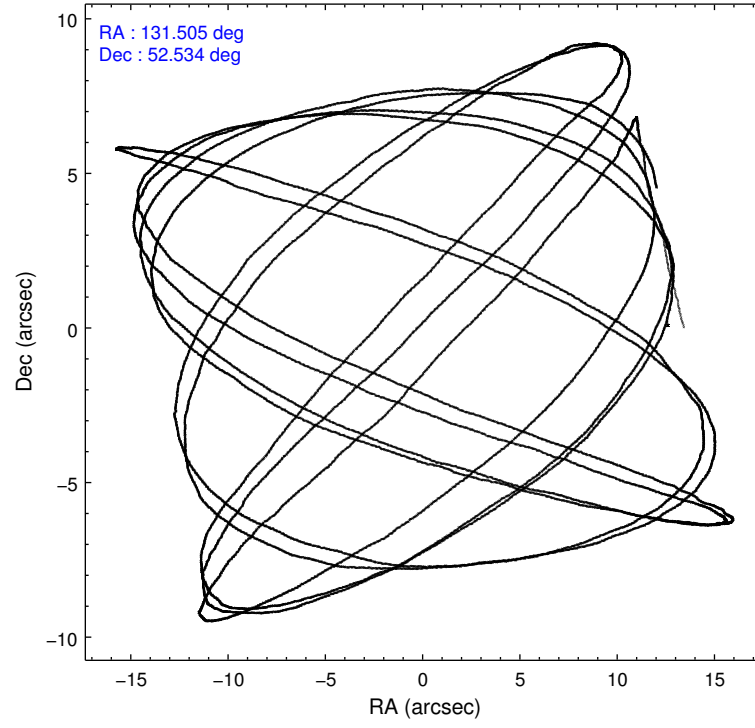
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	37567	30927	63668	34683	45734	43735	grade 0 events	3384	1219	8339	1583	1718	3215
rejected events	31796	27380	29124	30427	25986	32078		9%	3%	13%	4%	3%	7%
rejected %	84%	88%	45%	87%	56%	73%	grade 1 events	2140	11	241	17	58	31
								5%	0%	0%	0%	0%	0%
							grade 2 events	921	795	9841	915	4165	2781
								2%	2%	15%	2%	9%	6%
							grade 3 events	339	424	901	418	1628	1275
								0%	1%	1%	1%	3%	2%
							grade 4 events	378	360	893	390	1562	1207
								1%	1%	1%	1%	3%	2%
							grade 5 events	1452	1752	4021	1745	4668	2453
								3%	5%	6%	5%	10%	5%
							grade 6 events	755	751	14588	951	10688	3201
								2%	2%	22%	2%	23%	7%
							grade 7 events	28198	25615	24844	28664	21247	29572
								75%	82%	39%	82%	46%	67%

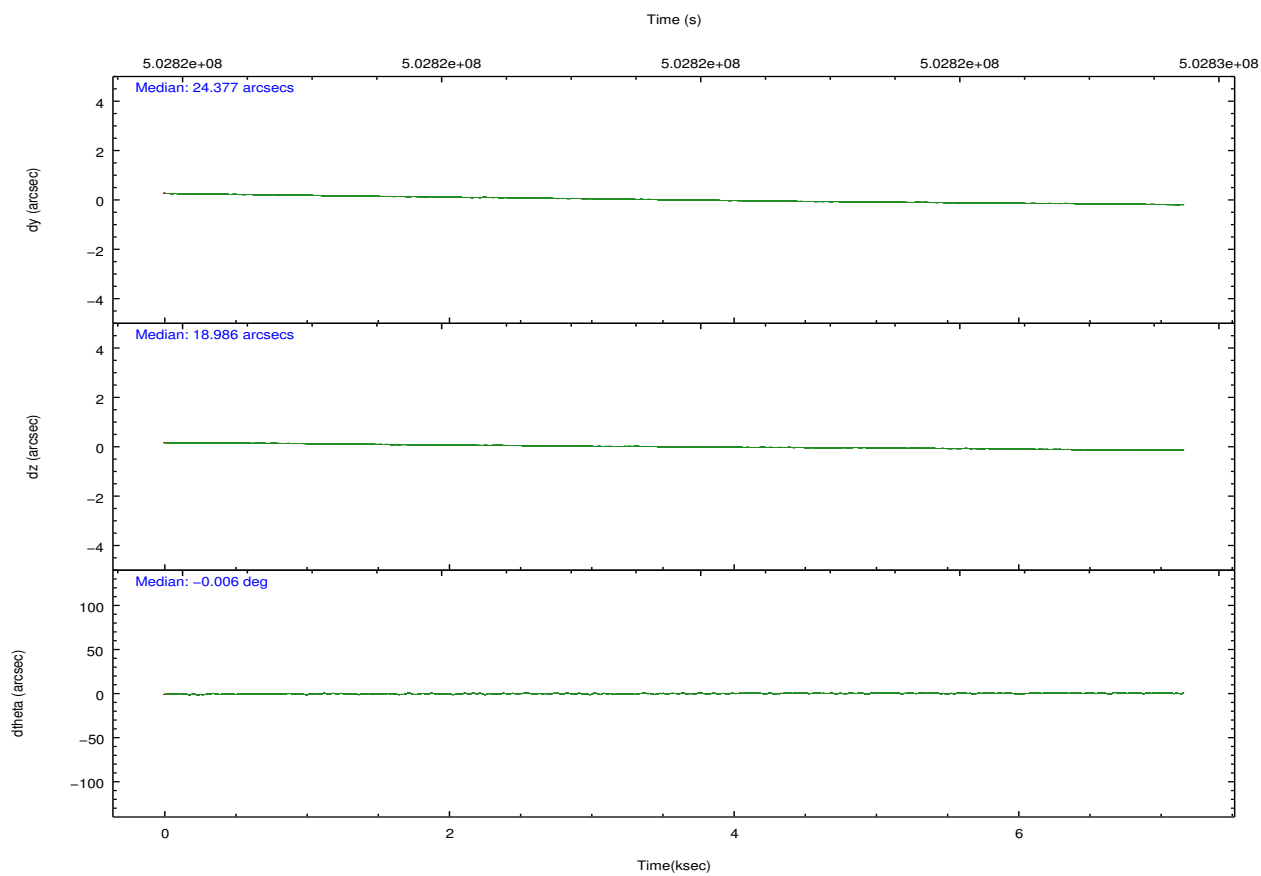
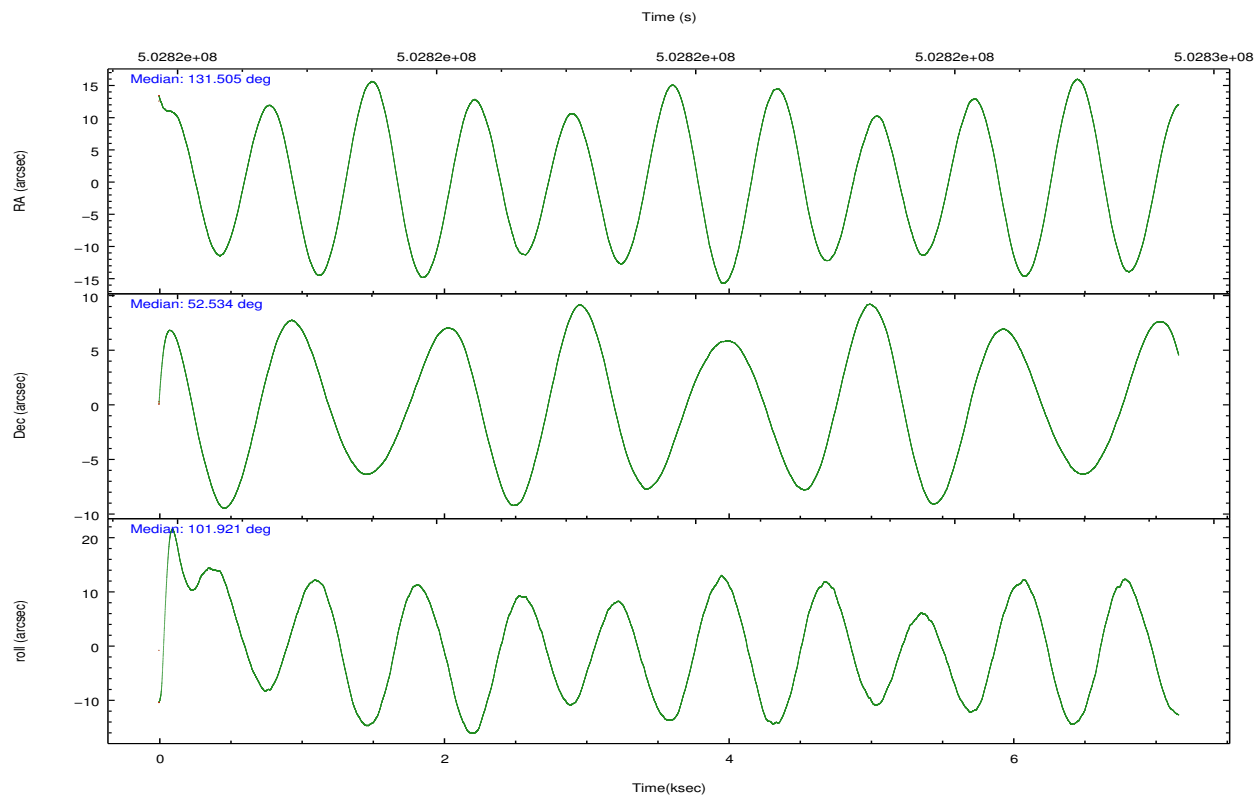


## 2.2 Compared Parameters

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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	131.534978	131.5045153246263	CCD I2 on	O2	Y
[deg] Pointing Dec	52.514038	52.53417804787047	CCD I3 on	O3	Y
[deg] Pointing Roll	101.742844	101.9235934275481	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O5	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	O4	Y
[s] Observation start time (MET)	502818367.184000	502817023.64097	CCD S5 on	N	N
Observation start date	2013-12-07T15:45:00	2013-12-07T15:23:43	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	502825367.184000	502825975.47896	On-chip summing requested	N	N
Observation end date	2013-12-07T17:41:40	2013-12-07T17:52:55	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



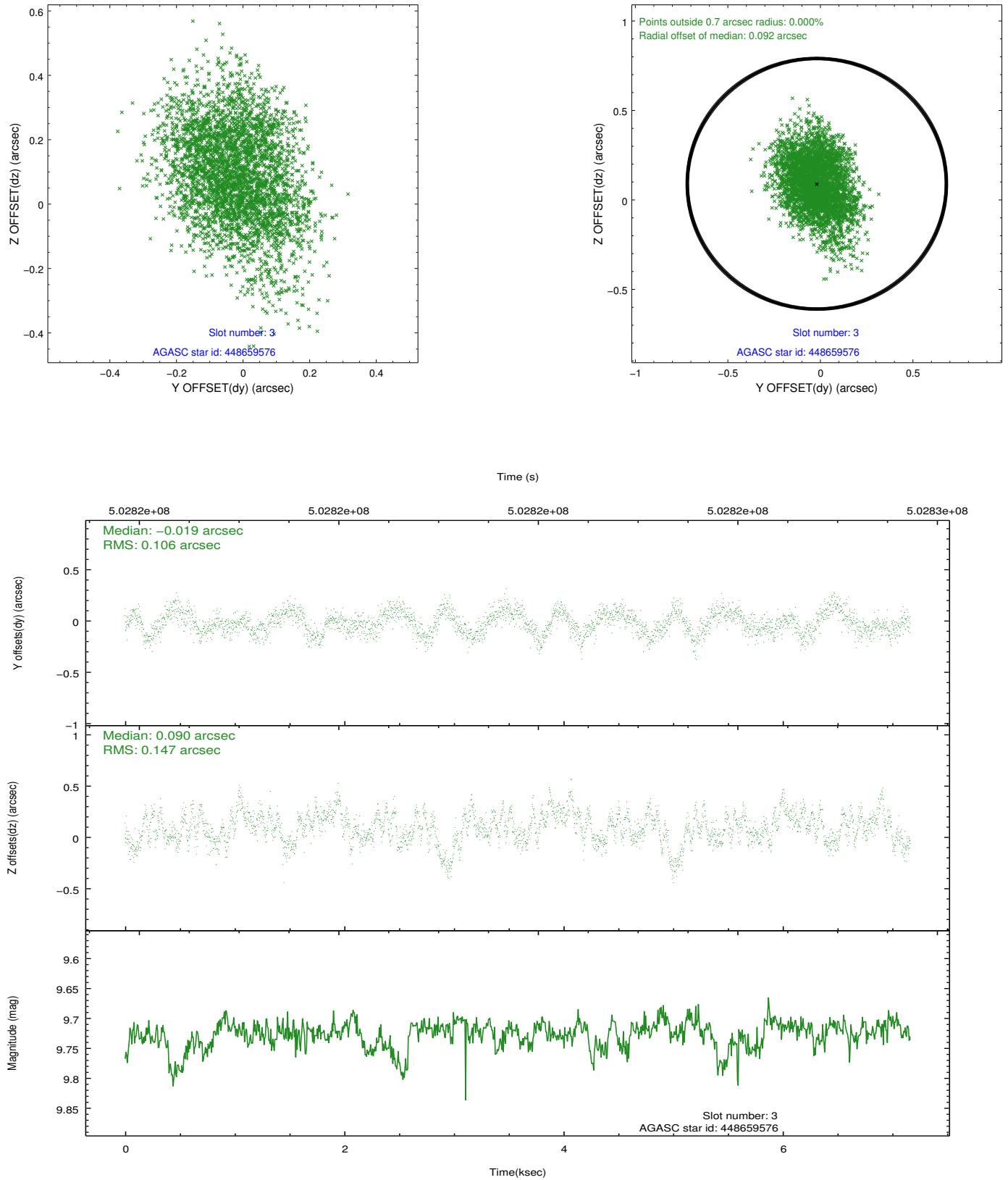


### Slot Statistics

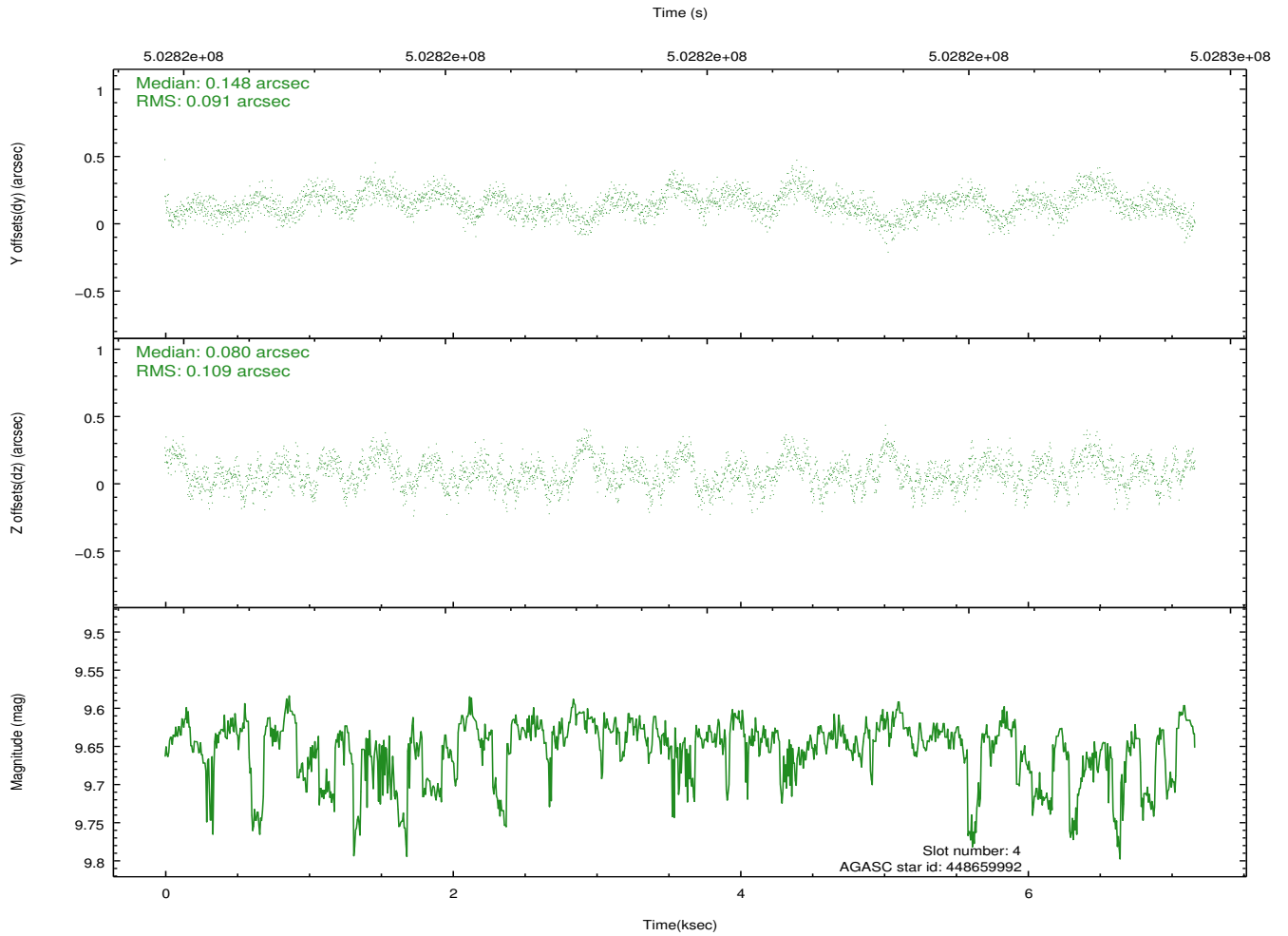
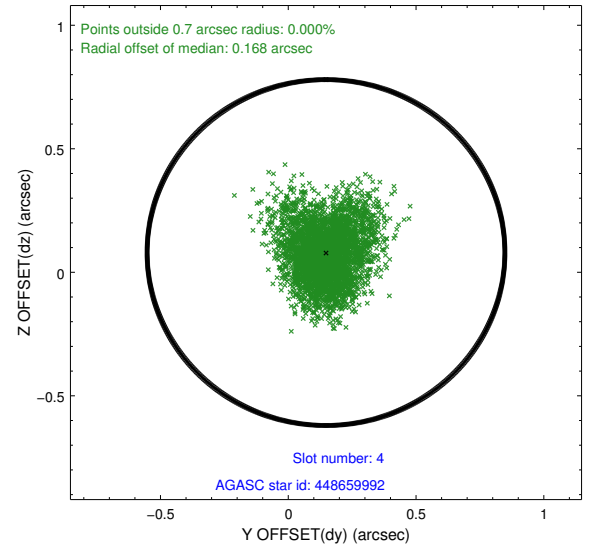
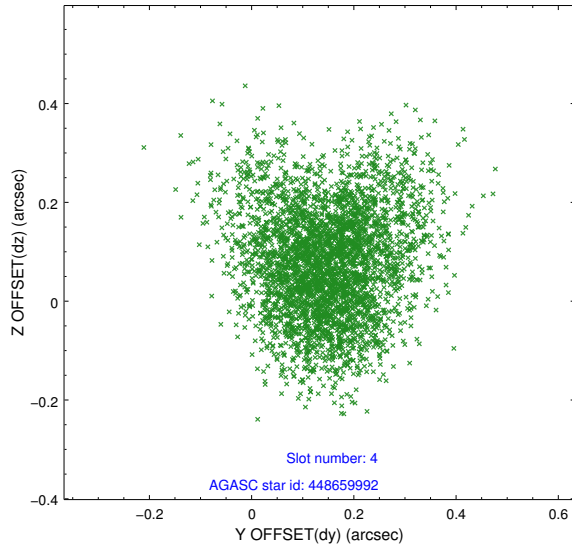
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.13	1748	-0.006	-0.002	0.009	0.014	0.000000	0.000000	918.42	-1736.11
1	FID		ACIS-S-4	7.14	1748	0.307	0.009	0.008	0.013	0.000000	0.000000	2136.56	167.24
2	FID		ACIS-S-5	7.16	1748	-0.328	0.006	0.007	0.012	0.000000	0.000000	-1829.77	161.71
3	GUIDE	used	448659576	9.72	3493	-0.019	0.090	0.191	0.318	131.250233	52.185489	-1028.63	856.29
4	GUIDE	used	448659992	9.64	3493	0.148	0.080	0.150	0.247	132.460800	52.353608	-966.75	-1877.48
5	GUIDE	used	448663480	9.02	3492	0.166	-0.097	0.092	0.148	132.001095	52.125973	-1574.17	-725.08
6	GUIDE	used	497822824	9.44	3493	-0.206	-0.061	0.142	0.246	131.654970	53.047882	1828.67	-645.19
7	GUIDE	used	497822856	8.63	3494	-0.078	-0.004	0.094	0.158	132.164743	52.928877	1190.31	-1642.76

## 2.4 Star Slots

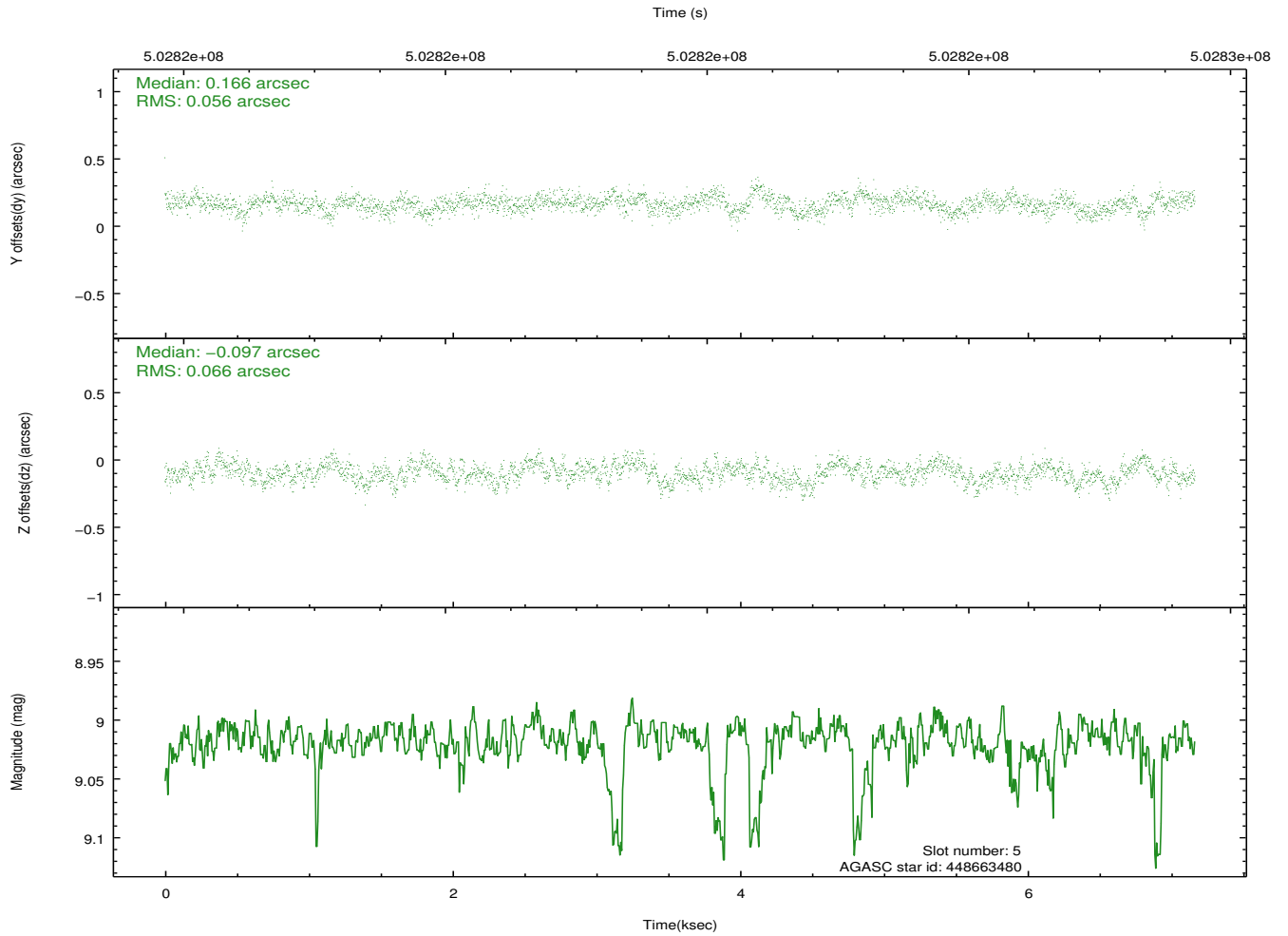
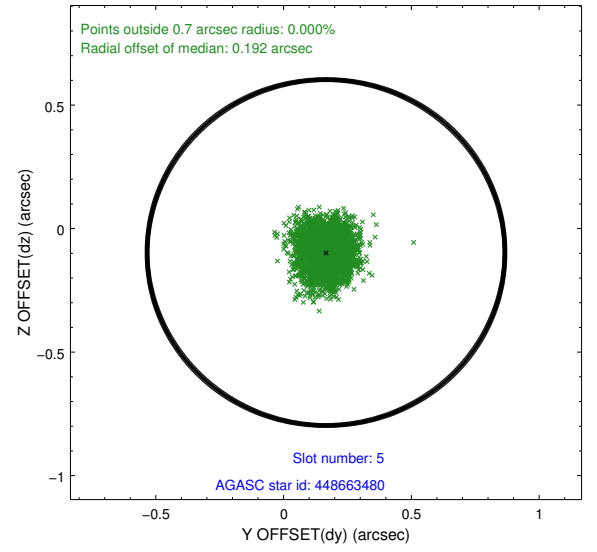
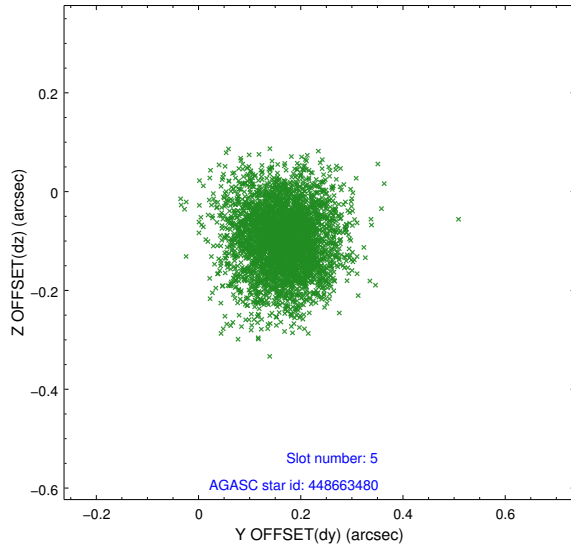
### 2.4.1 Slot 3



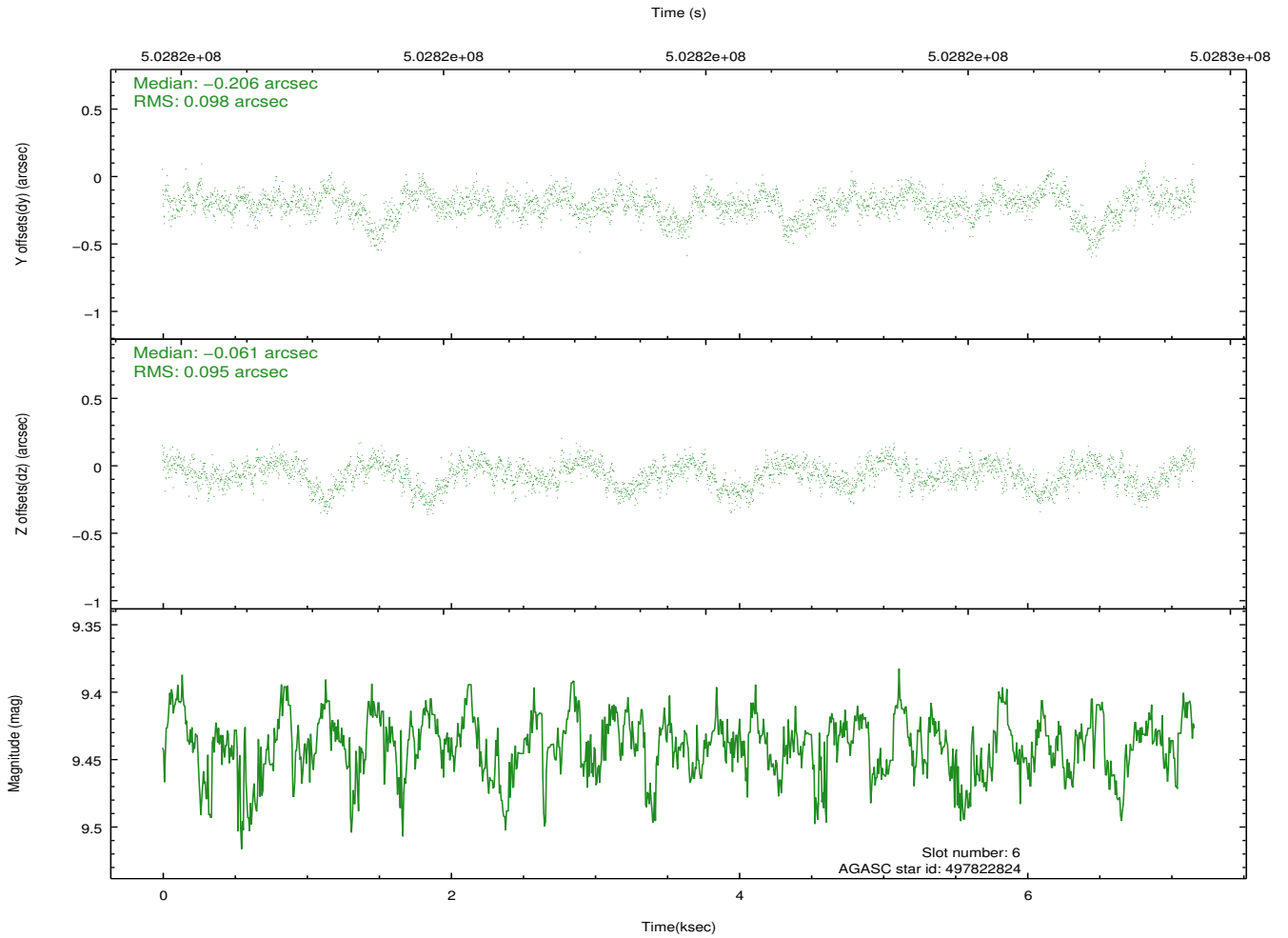
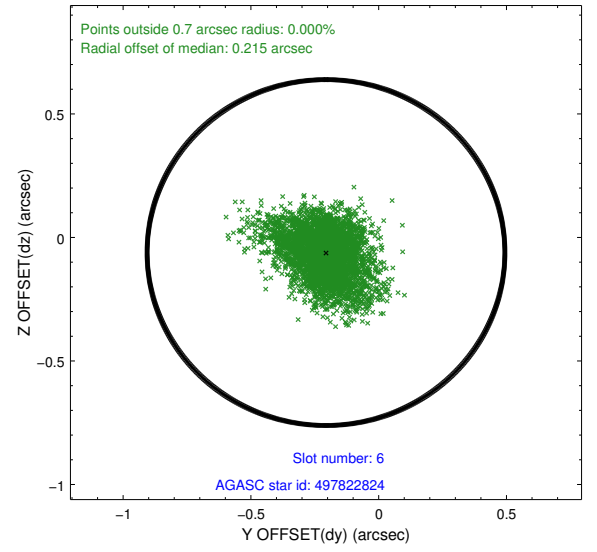
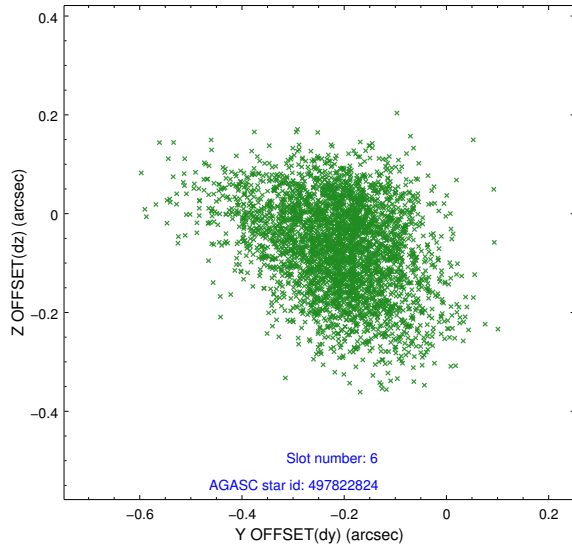
## 2.4.2 Slot 4



### 2.4.3 Slot 5

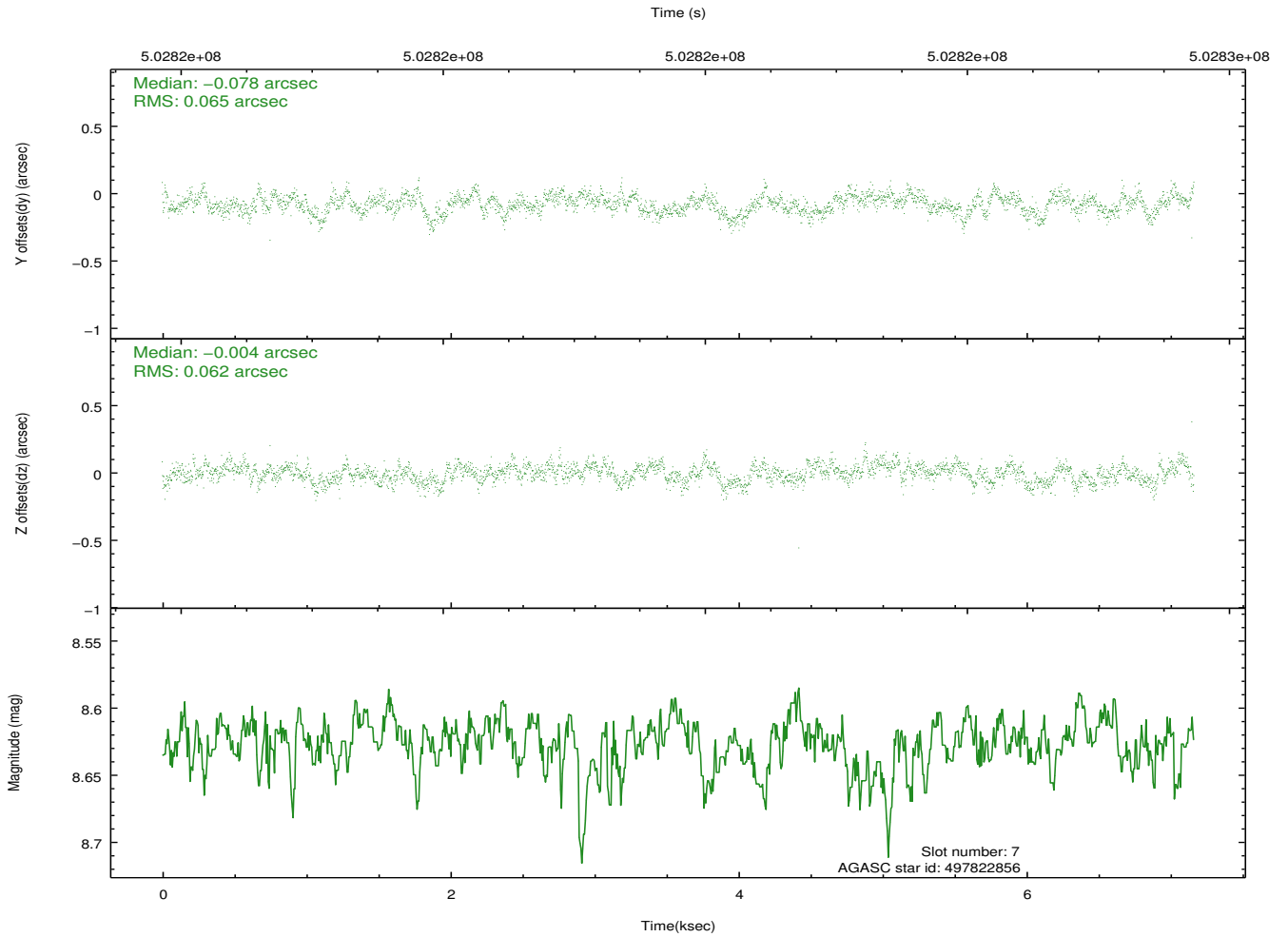
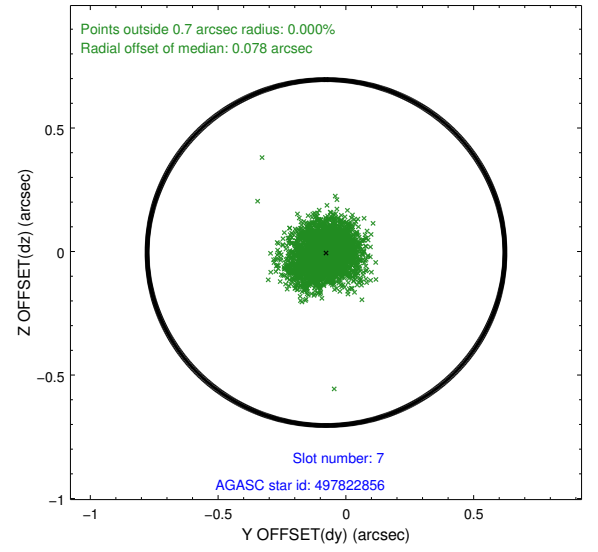
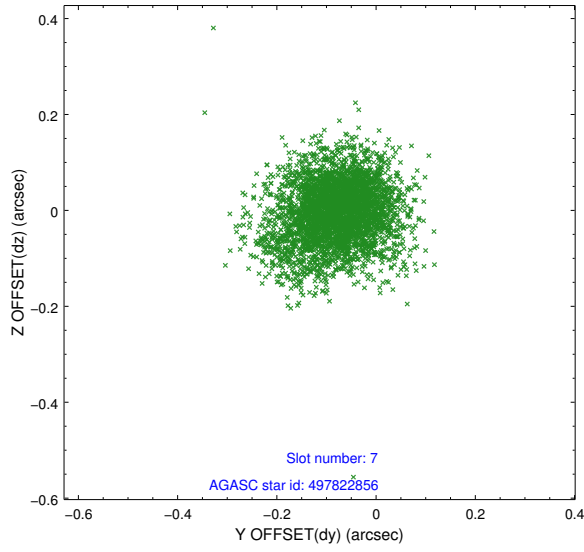


## 2.4.4 Slot 6



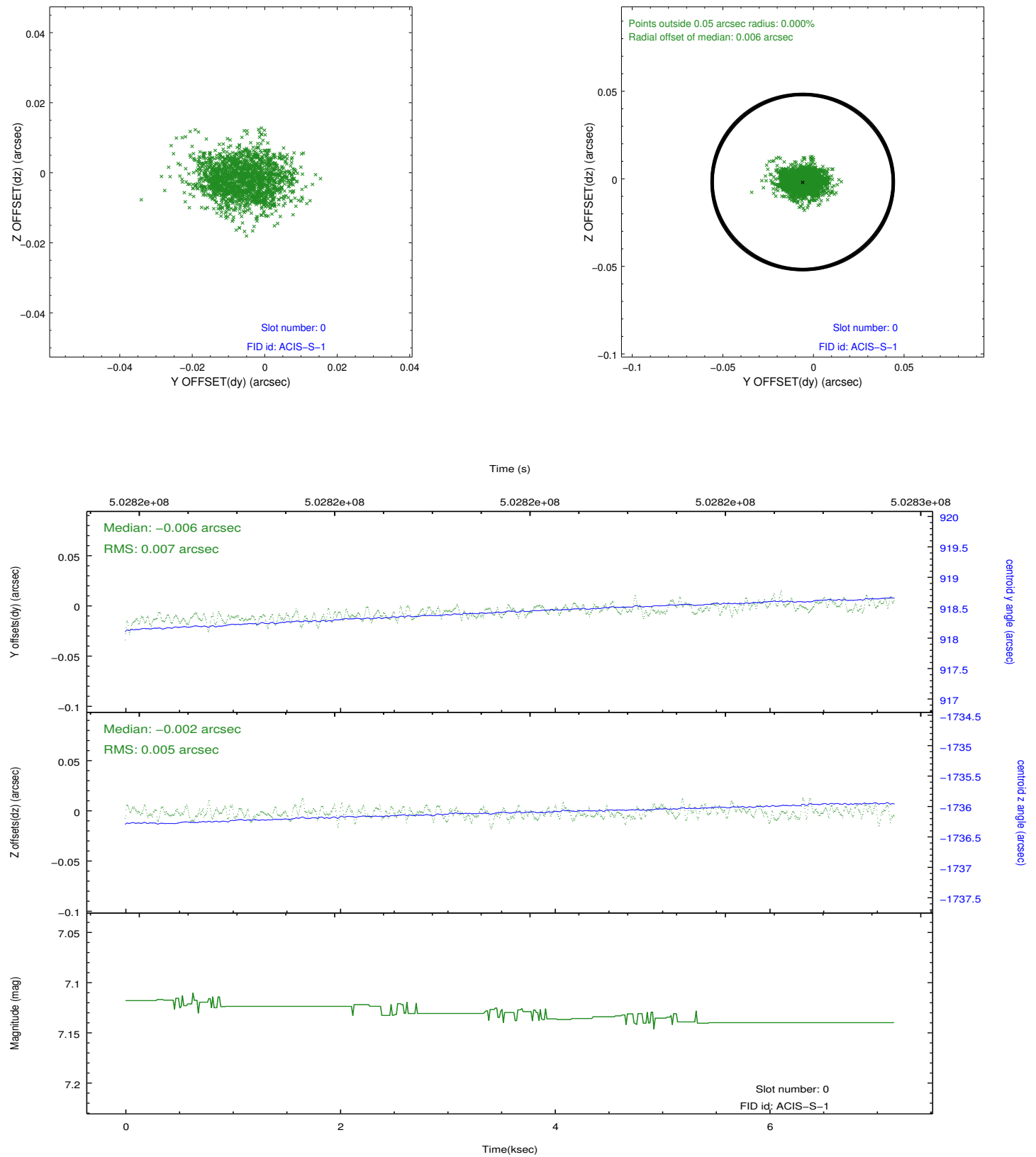


## 2.4.5 Slot 7

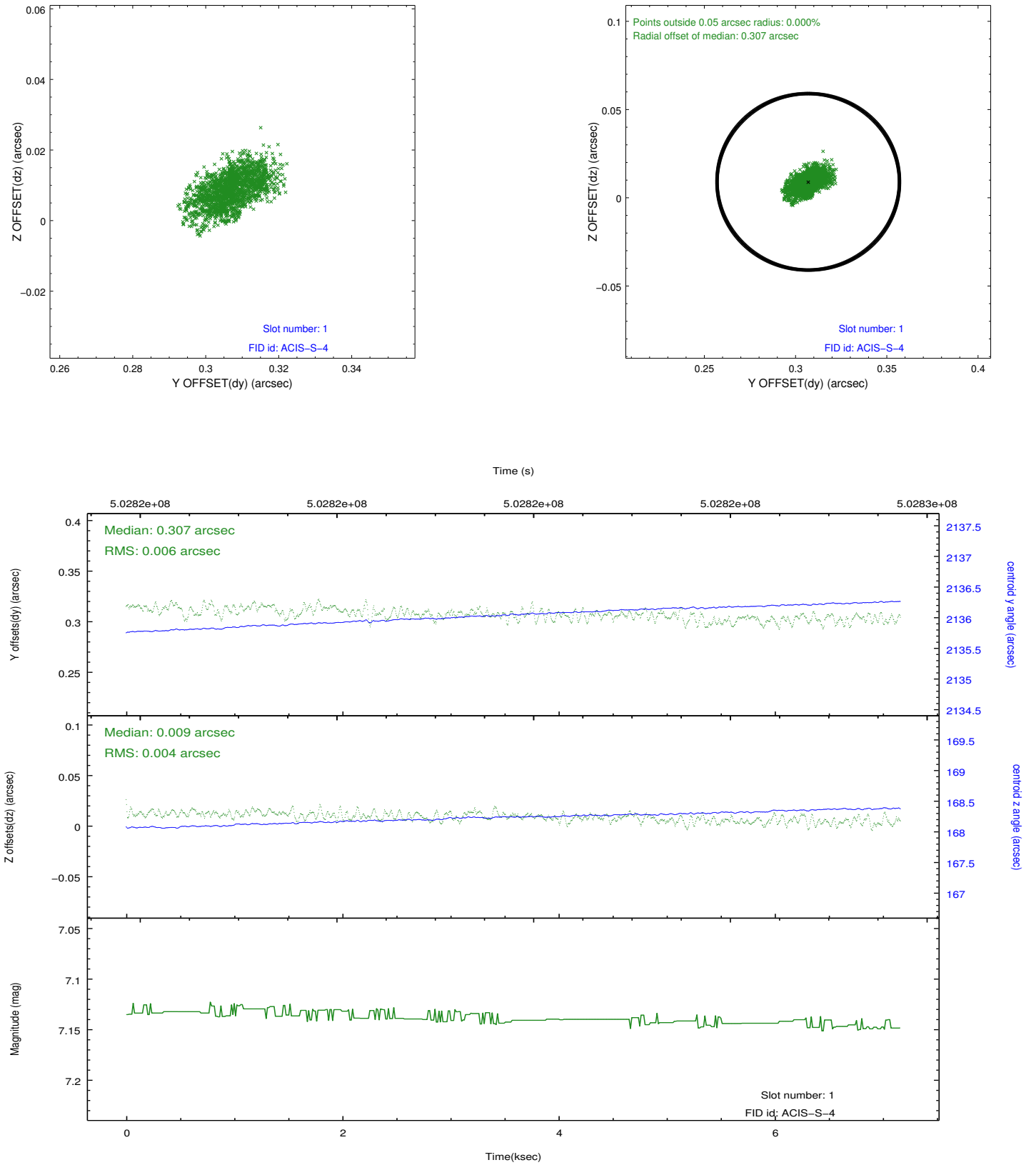


## 2.5 FID Slots

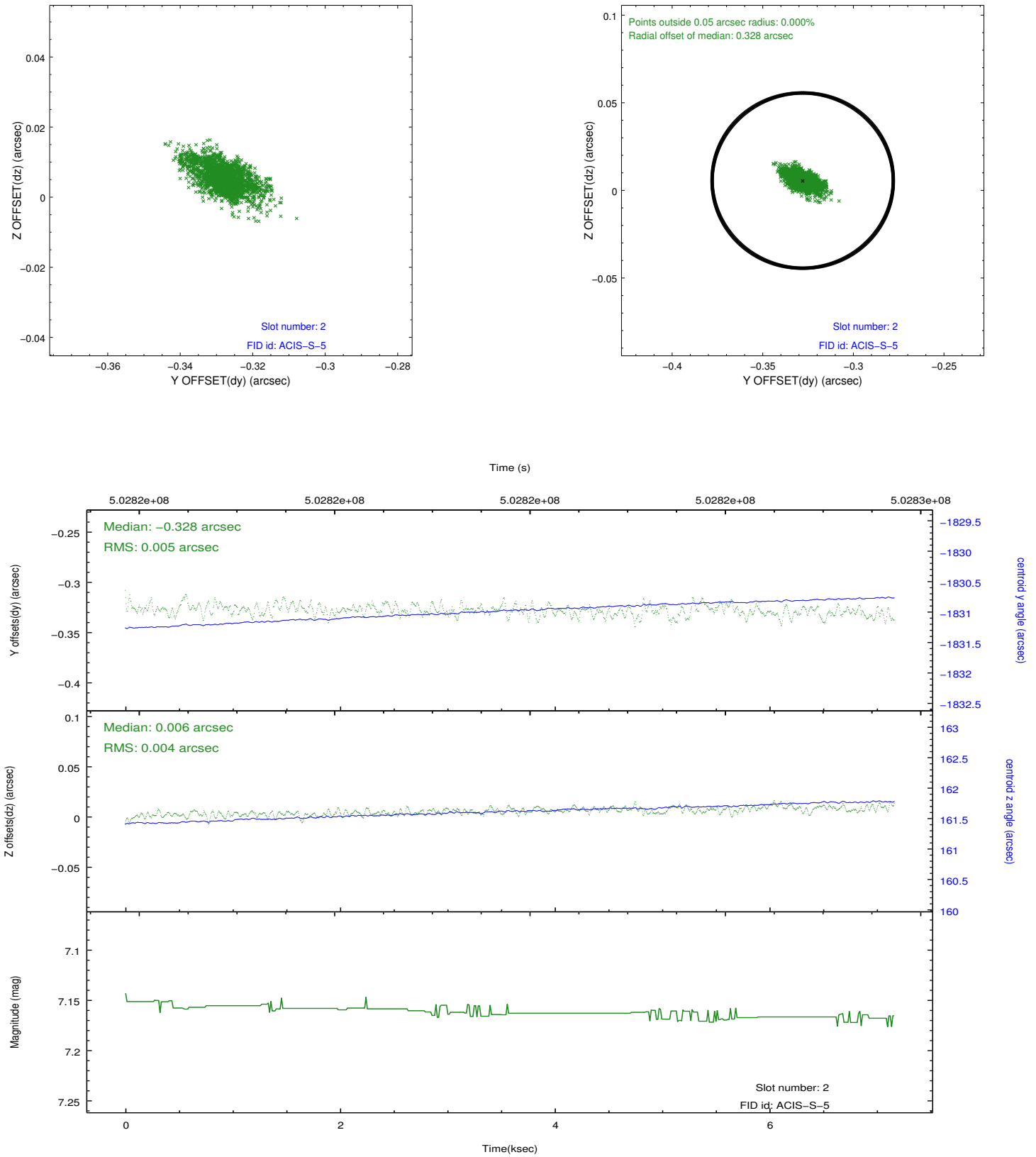
### 2.5.1 Slot 0



## 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)	2014.12.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	6.9631999741197

## 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:  
(131.68328,52.69953),(131.67888,52.69897),(131.72573,52.56242),(131.73012,52.56298)

=====

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.