

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 16522 - L2 Version 2  
Chandra X-Ray Center

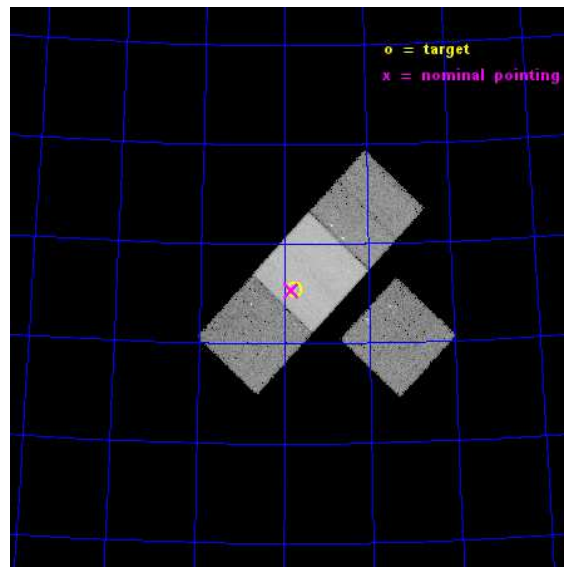
L2 Processing Date : Dec 12 2014

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# 1 Front

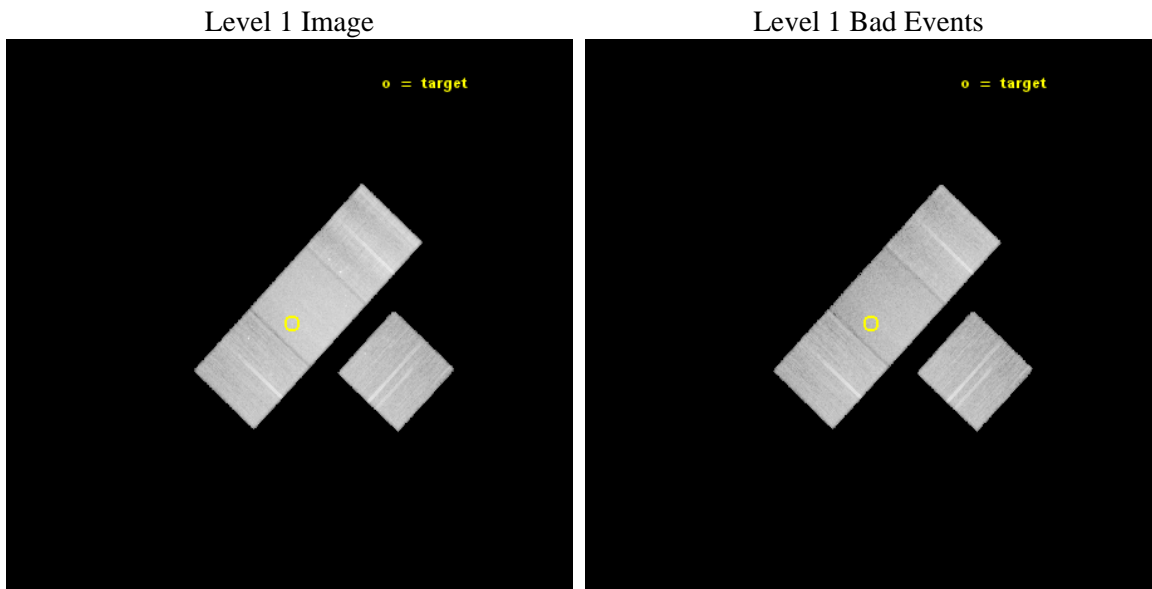
seq_num	702973	Sequence number
obs_id	16522	Observation id
title	Probing dark matter in the luminous radio galaxy 3C220.3 and the structure of the z=2.22 SMG/AGN it is lensing.	Proposal title
observer	Dr Belinda Wilkes	Principal investigator
object	3C 220.3	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	144.849292	Observer's specified target RA [deg]
dec_targ	83.25725	Observer's specified target Dec [deg]
ra_nom	144.89420469393	Nominal RA [deg]
dec_nom	83.256541411272	Nominal Dec [deg]
roll_nom	313.11203221972	Nominal Roll [deg]
revision	2	Processing version of data
ontime	45074.000346661	Sum of GTIs [s]
livetime	44485.075349135	Livetime [s]
ontime3	45074.000346661	Sum of GTIs [s]
ontime6	45070.859485805	Sum of GTIs [s]
ontime7	45074.000346661	Sum of GTIs [s]
ontime8	45074.000346661	Sum of GTIs [s]
l2events	192130	Number of level 2 events



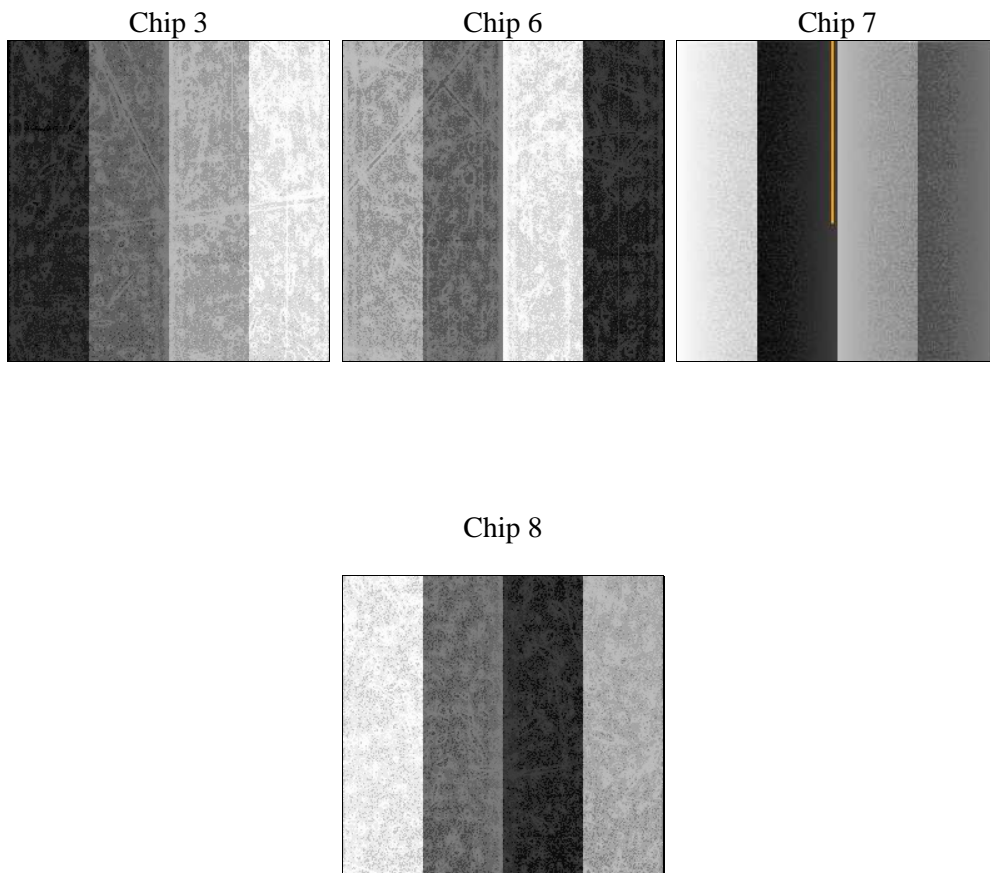
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	45000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	45074.000346661	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime3	45074.000346661	Sum of GTIs [s]
date	2014-12-12T06:58:40	Date and time of file creation	ontime6	45070.859485805	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	45074.000346661	Sum of GTIs [s]
			ontime8	45074.000346661	Sum of GTIs [s]
			l1events	962687	Number of level 1 events

### 2.1.4 Events

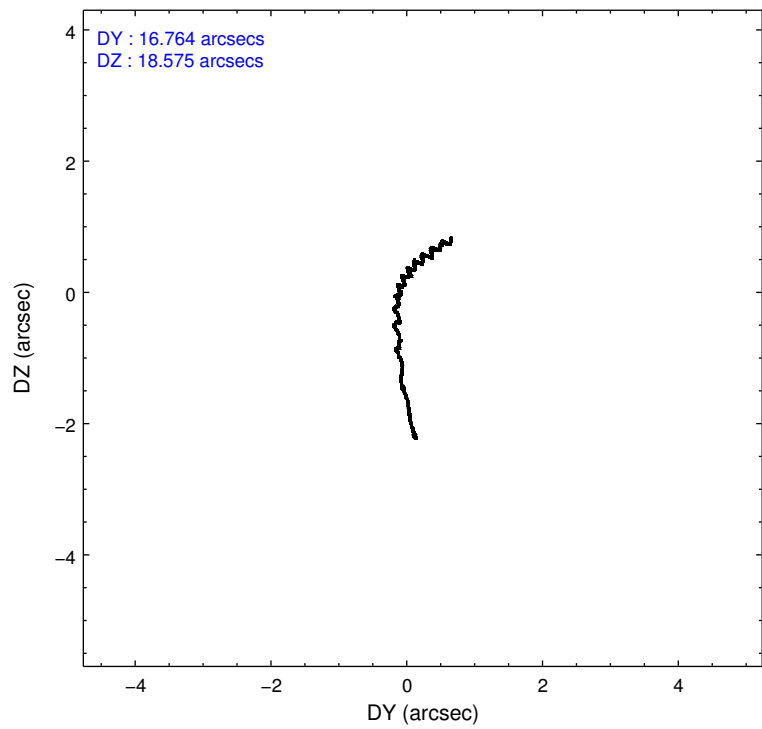
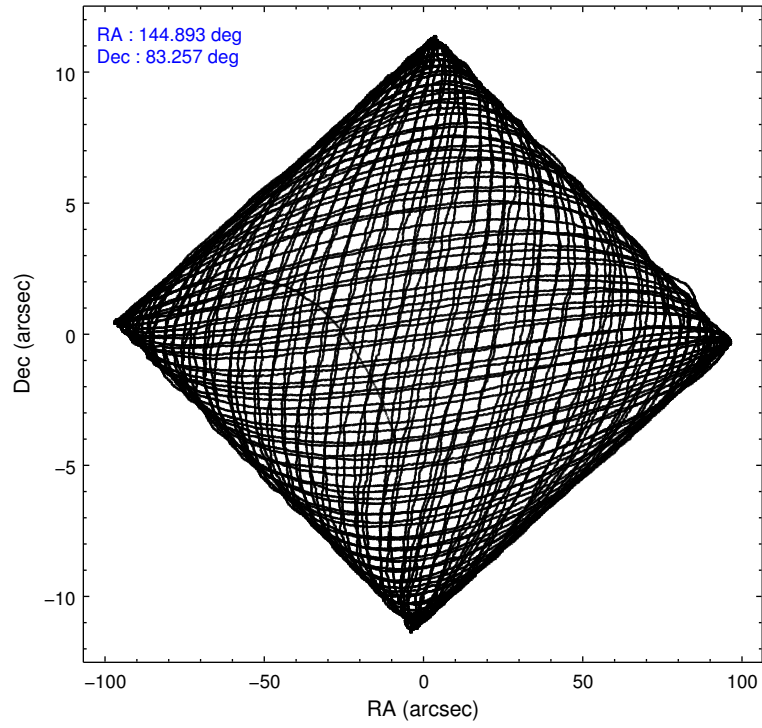
	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	193506	210430	282759	275992
rejected events	169999	184790	159840	199963
rejected %	87%	87%	56%	72%

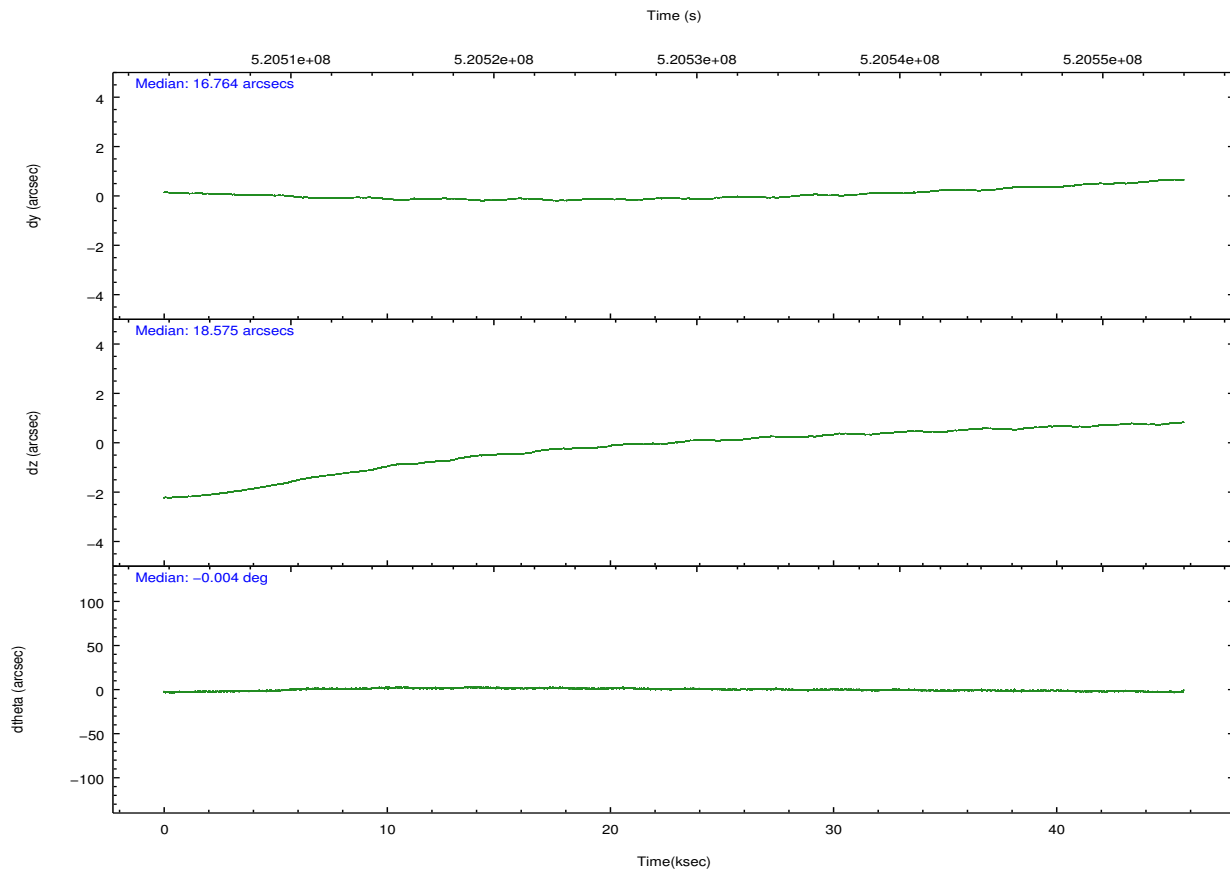
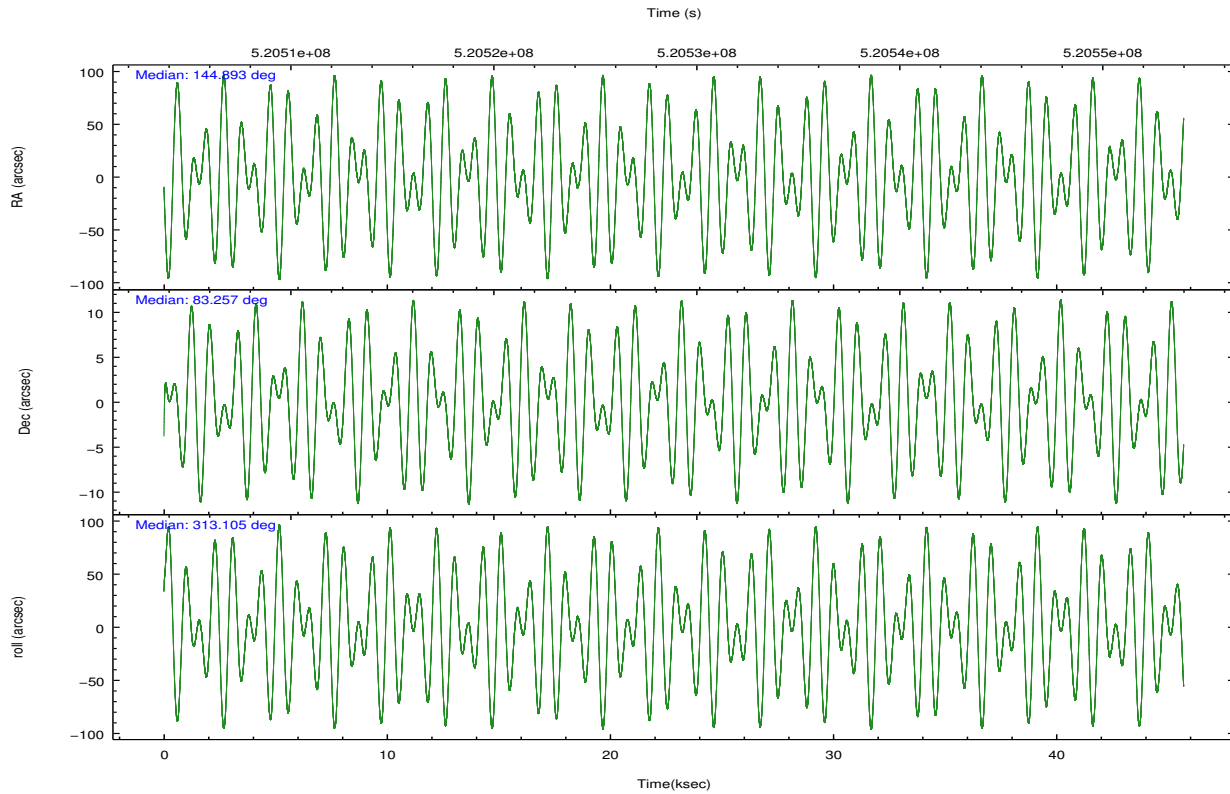
	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	8597	8809	10832	22749
	4%	4%	3%	8%
grade 1 events	113	116	344	227
	0%	0%	0%	0%
grade 2 events	5153	5748	24988	17916
	2%	2%	8%	6%
grade 3 events	2460	2624	10422	7610
	1%	1%	3%	2%
grade 4 events	2485	2569	10511	7347
	1%	1%	3%	2%
grade 5 events	11049	11123	29259	15832
	5%	5%	10%	5%
grade 6 events	4814	5892	66171	20413
	2%	2%	23%	7%
grade 7 events	158835	173549	130232	183898
	82%	82%	46%	66%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-3678	ACIS-3678	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	144.670383	144.8942046939295	CCD I2 on	N	N
[deg] Pointing Dec	83.264083	83.25654141127184	CCD I3 on	O2	Y
[deg] Pointing Roll	313.177681	313.1120322197229	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O3	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	O1	Y
[s] Observation start time (MET)	520506707.184000	520504936.0907	CCD S5 on	N	N
Observation start date	2014-06-30T09:10:40	2014-06-30T08:42:16	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	520551707.184000	520552448.43083	On-chip summing requested	N	N
Observation end date	2014-06-30T21:40:40	2014-06-30T21:54:08	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



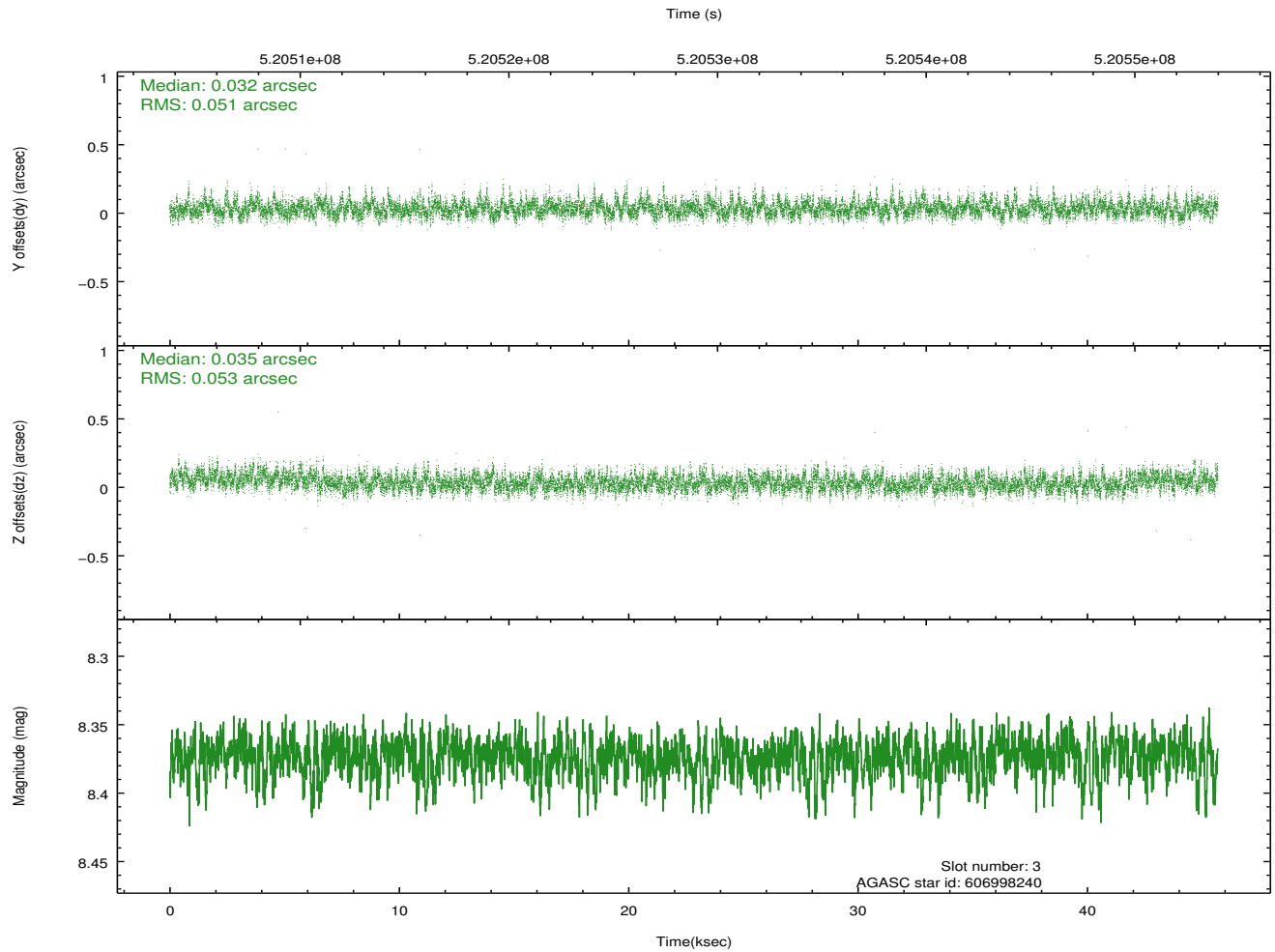
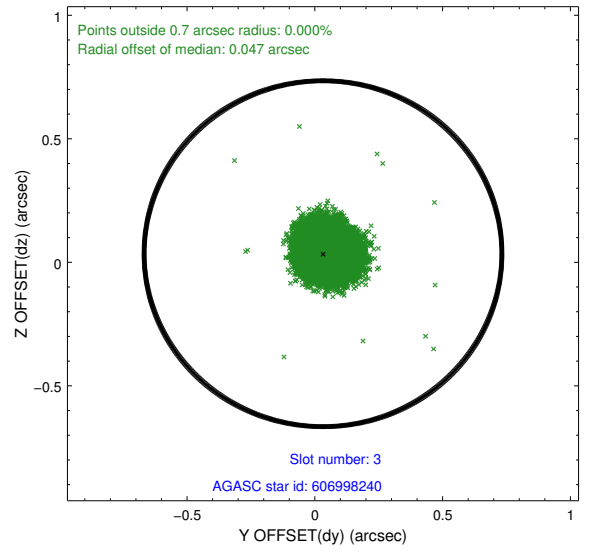
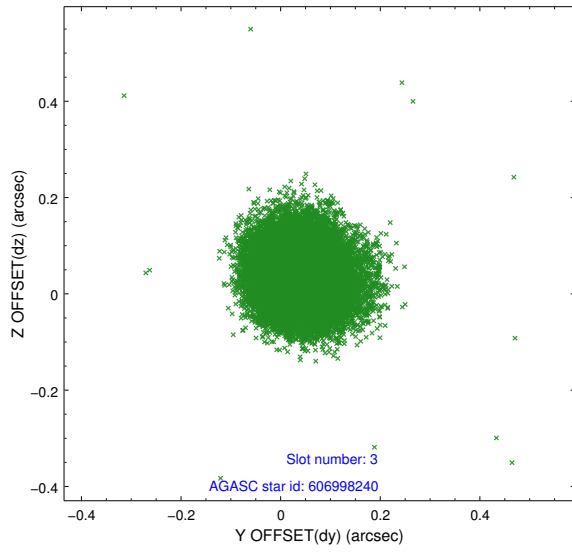


### Slot Statistics

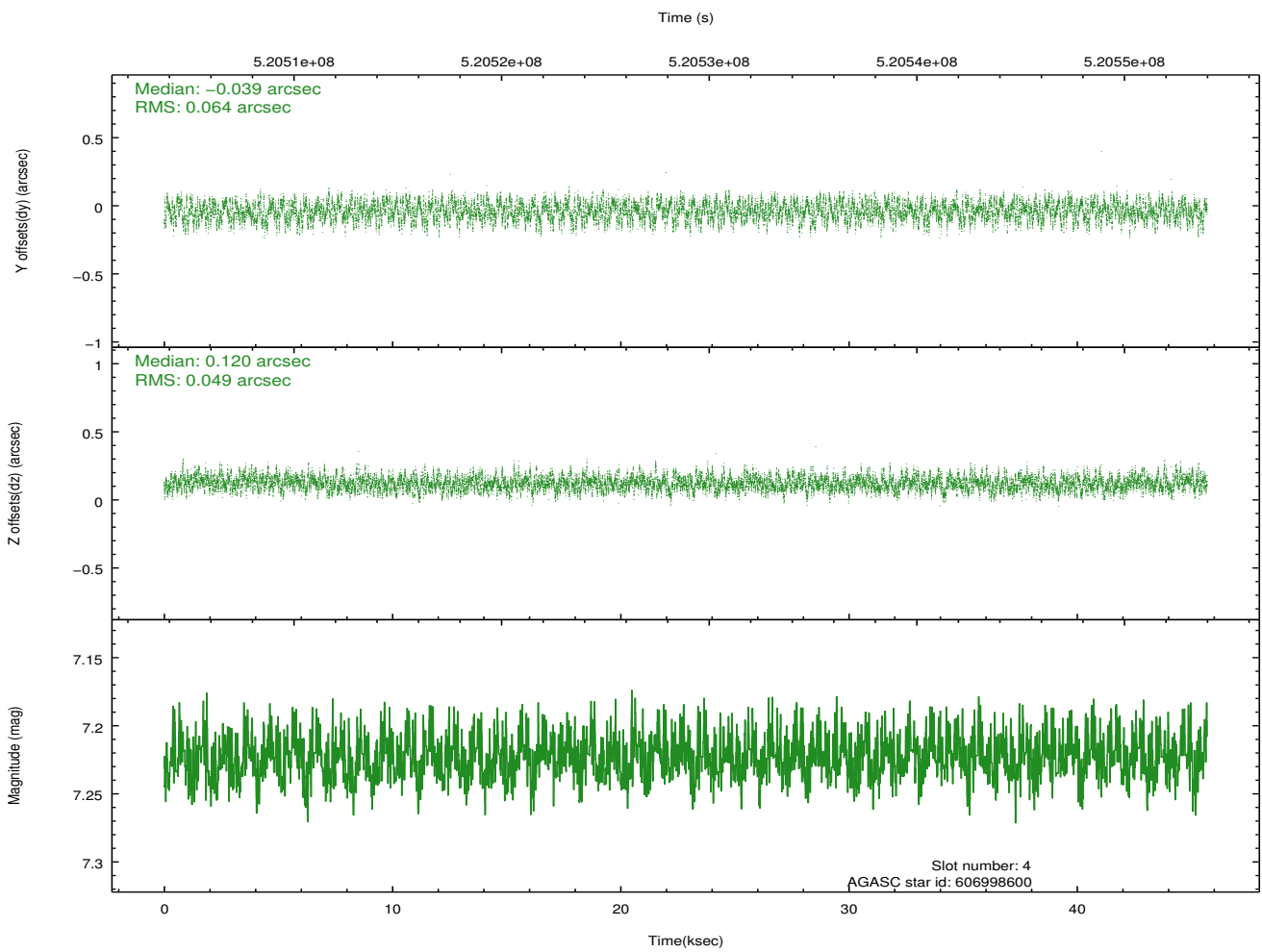
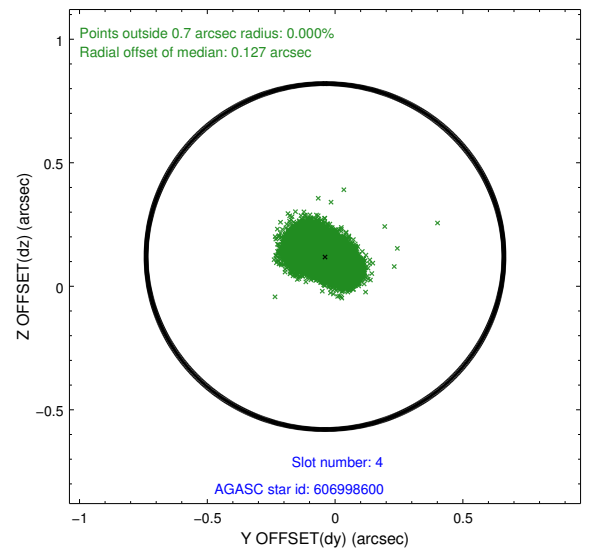
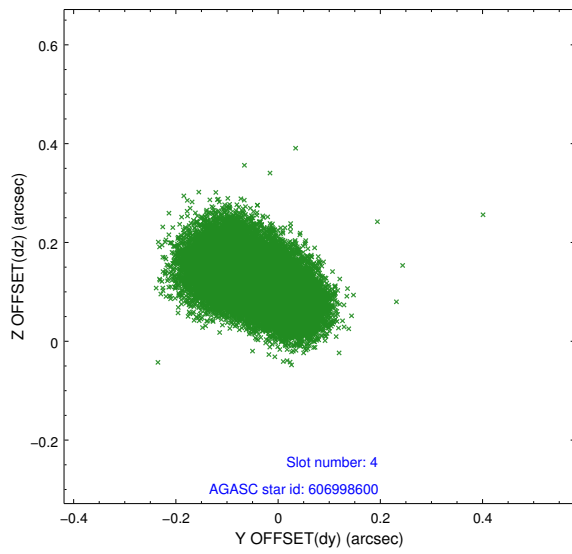
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.93	11147	-0.092	-0.022	0.016	0.033	0.000000	0.000000	-769.95	-1739.80
1	FID		ACIS-S-4	7.02	11146	0.196	0.049	0.009	0.015	0.000000	0.000000	2143.63	168.73
2	FID		ACIS-S-5	7.05	11147	-0.136	-0.020	0.013	0.025	0.000000	0.000000	-1822.83	162.36
3	GUIDE	used	606998240	8.37	22289	0.032	0.035	0.077	0.127	142.037328	82.688368	667.17	-2278.12
4	GUIDE	used	606998600	7.22	22295	-0.039	0.120	0.088	0.138	144.240165	82.925382	758.87	-972.48
5	GUIDE	used	607011680	7.69	22293	0.015	-0.069	0.063	0.106	147.023548	83.784890	-753.40	1964.22
6	GUIDE	used	607012224	7.67	22291	0.122	0.117	0.073	0.122	143.315443	83.741617	-1621.40	793.40
7	GUIDE	used	607003496	8.21	22290	-0.137	-0.208	0.074	0.118	149.989507	83.475683	858.17	2172.59

## 2.4 Star Slots

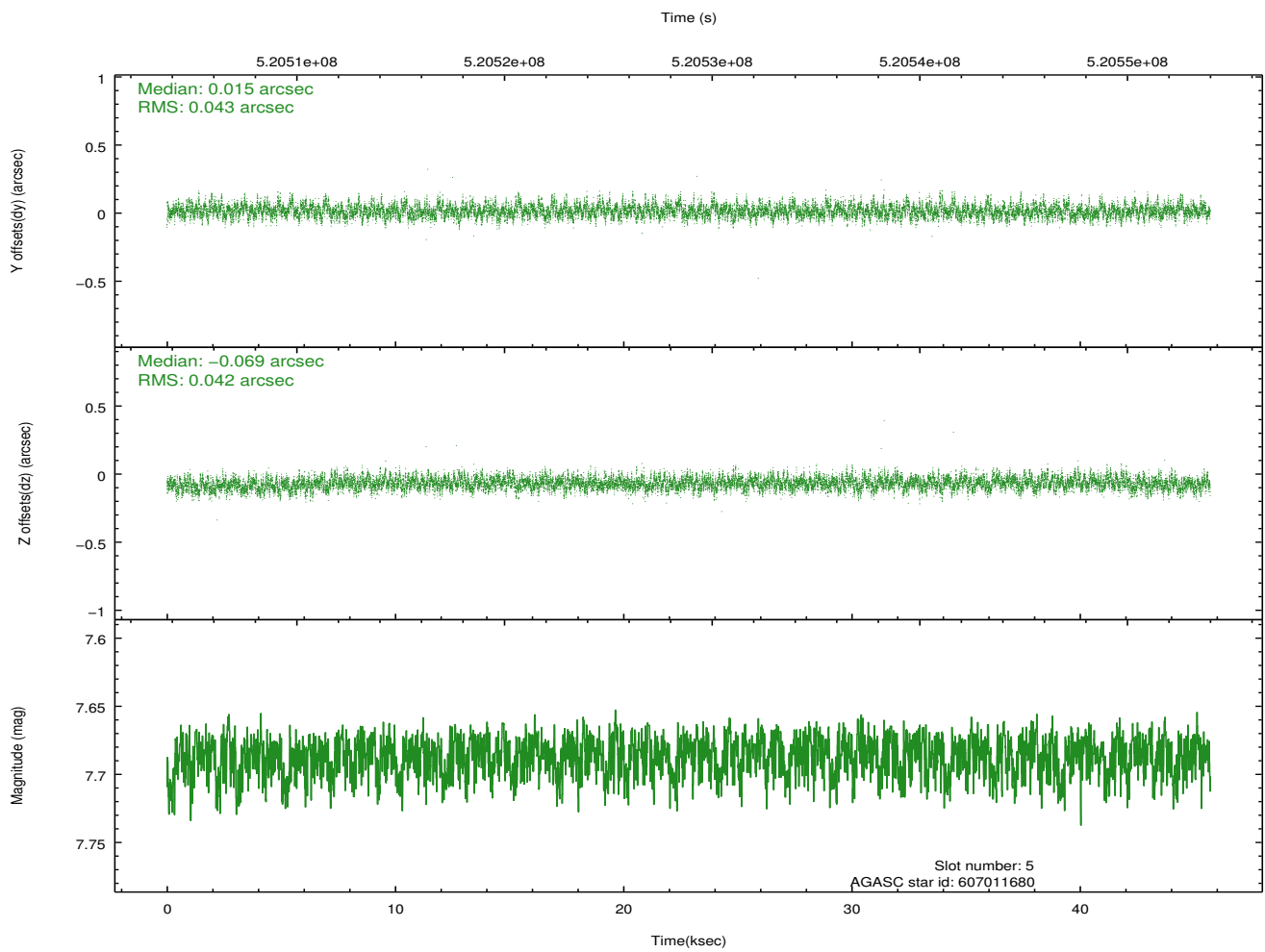
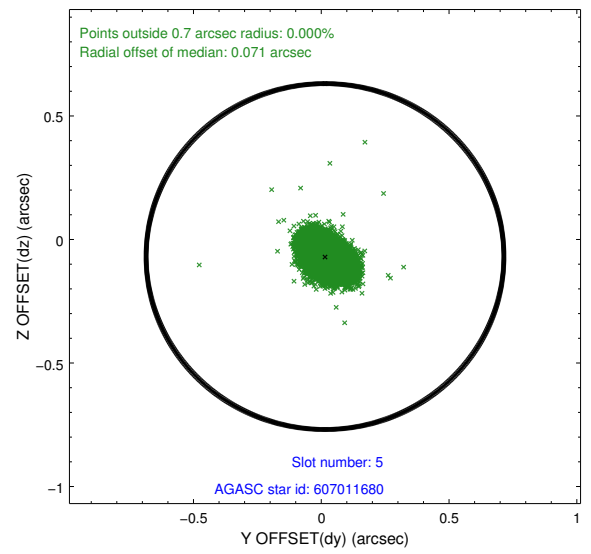
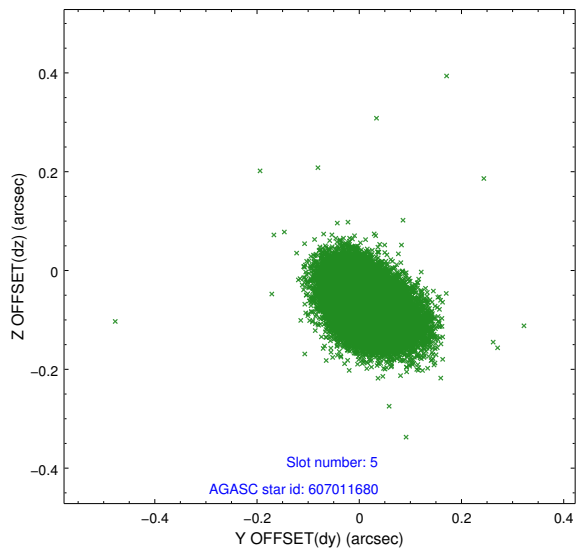
### 2.4.1 Slot 3



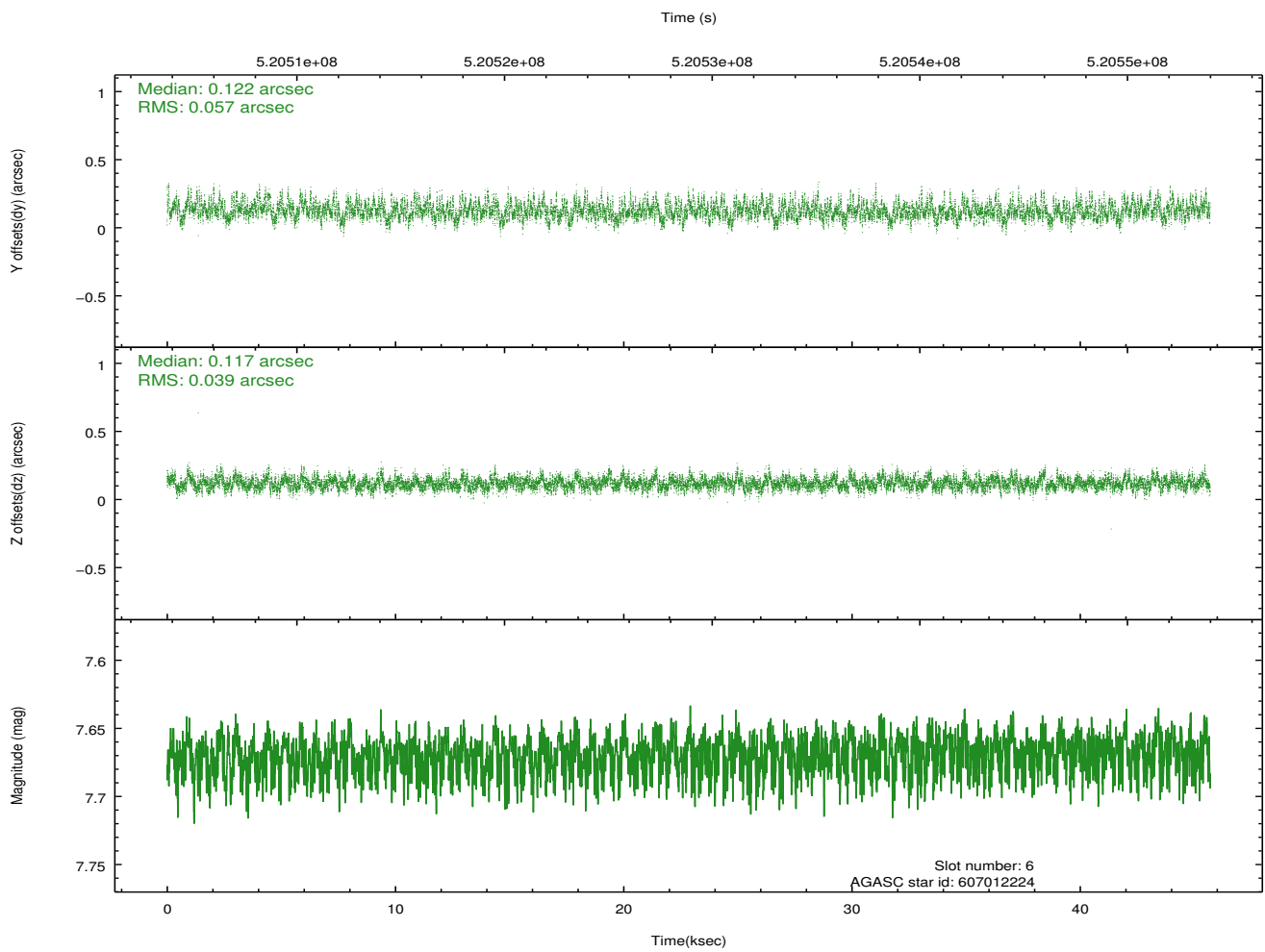
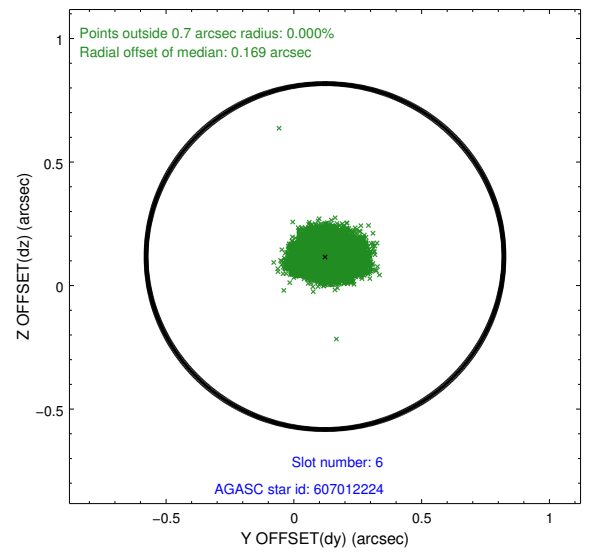
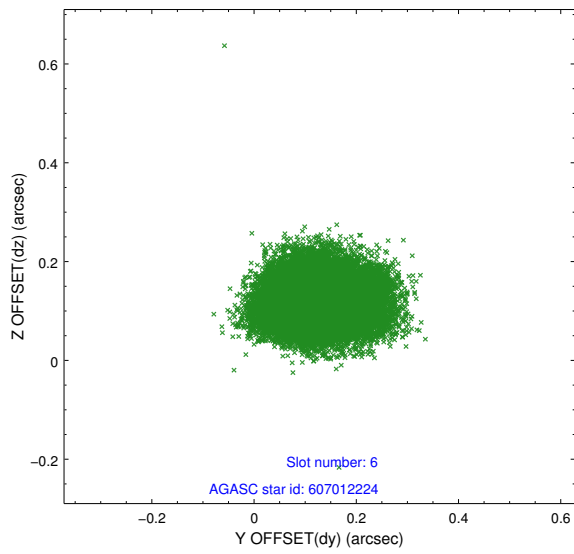
## 2.4.2 Slot 4



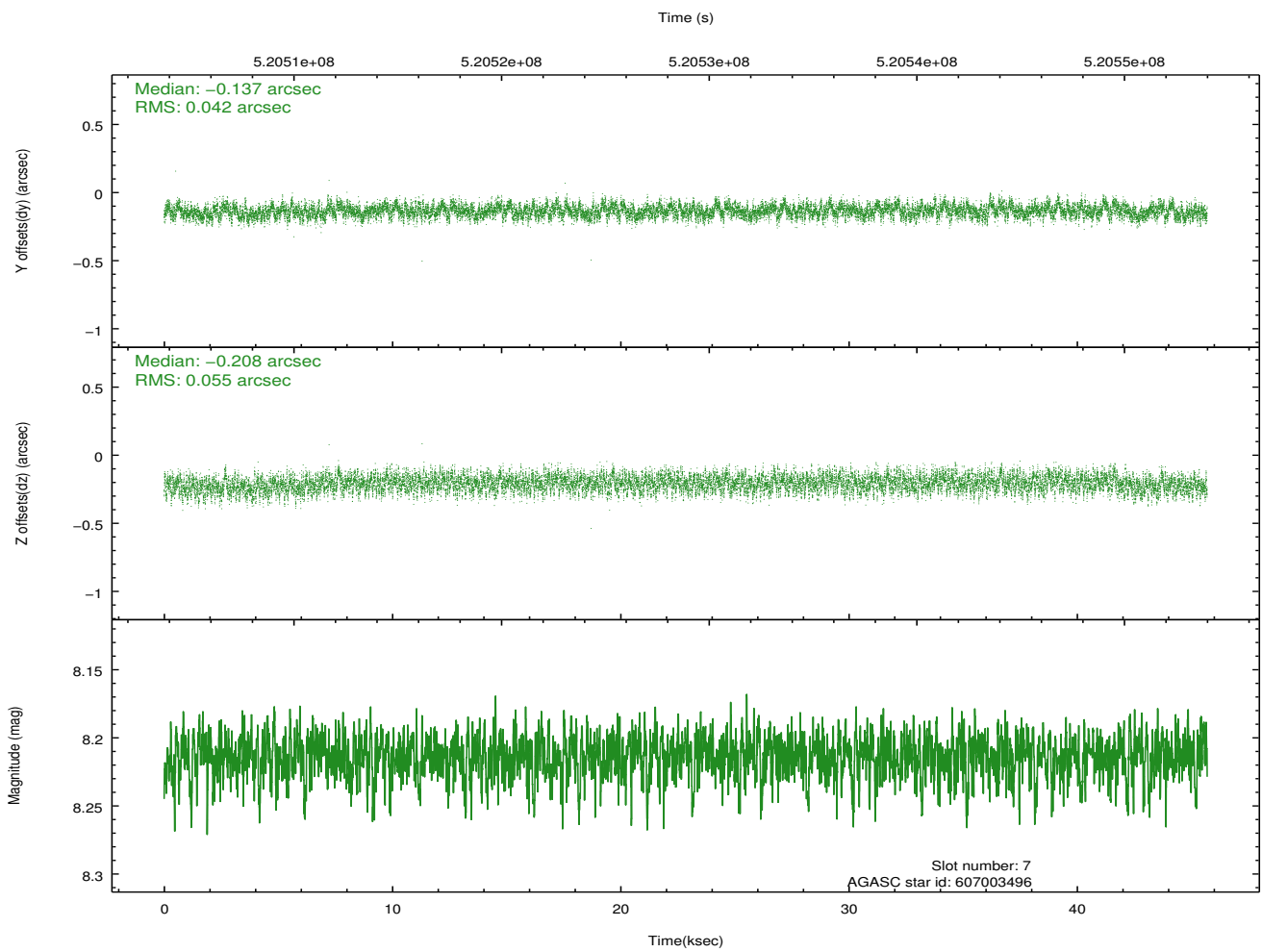
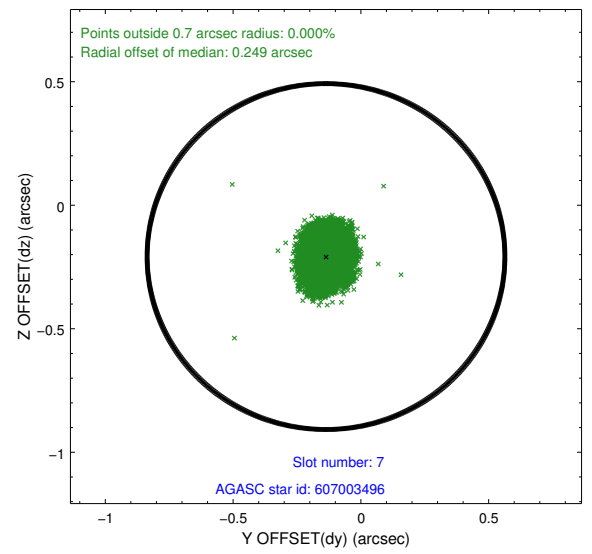
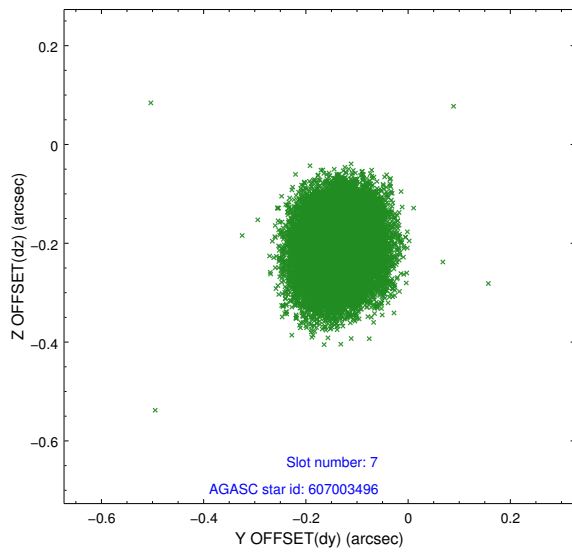
### 2.4.3 Slot 5



## 2.4.4 Slot 6

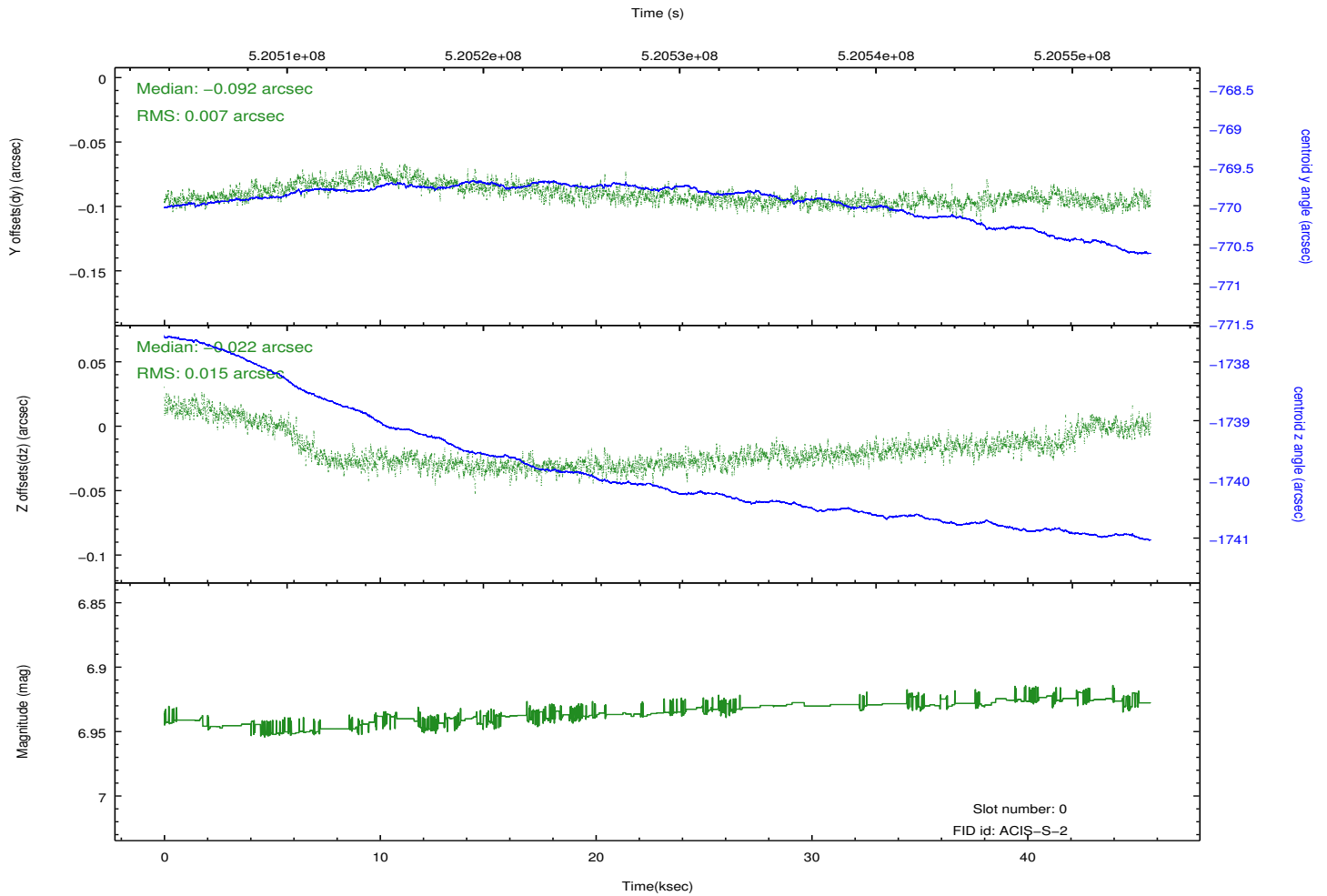
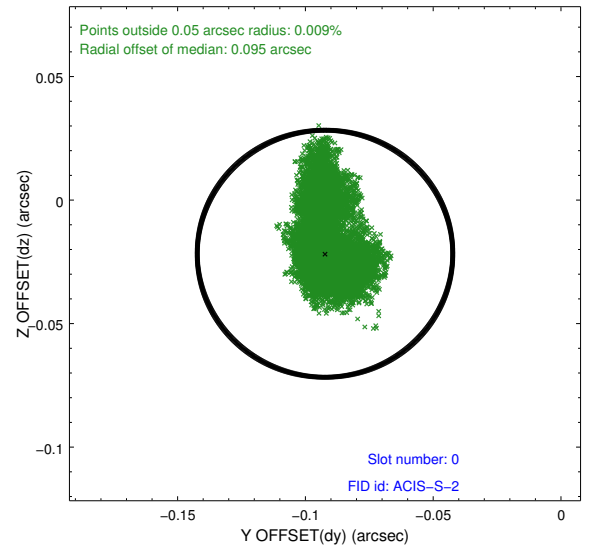
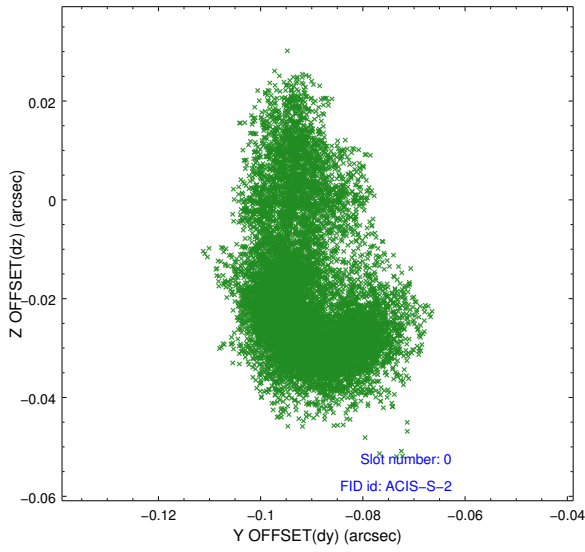


## 2.4.5 Slot 7

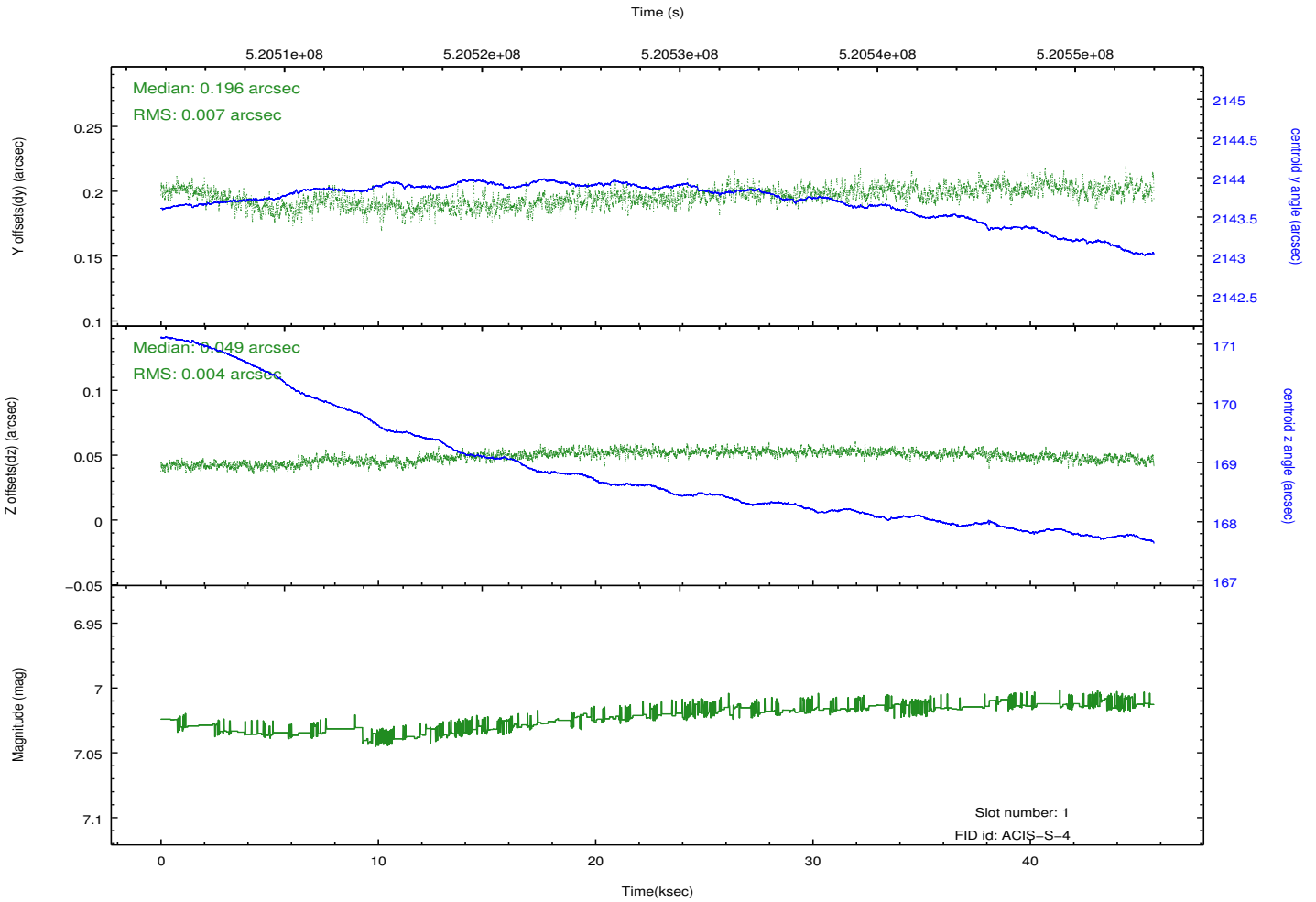
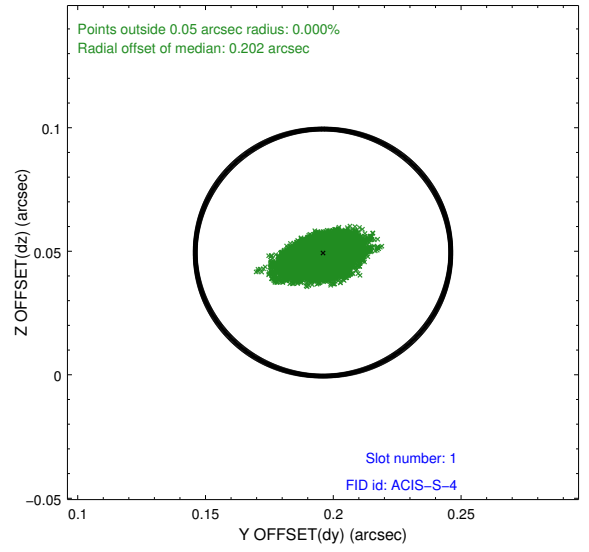
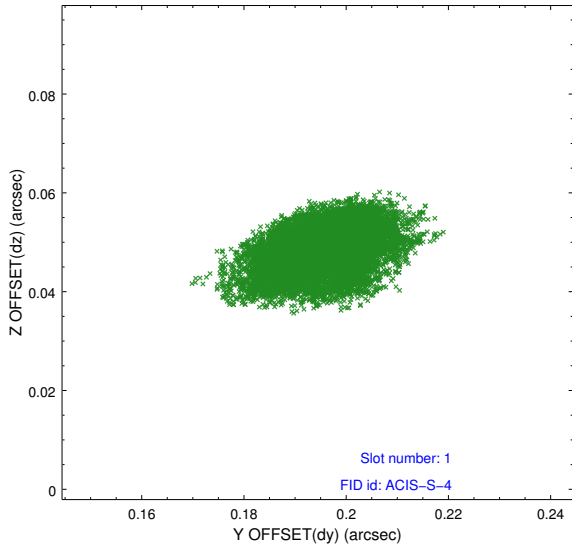


## 2.5 FID Slots

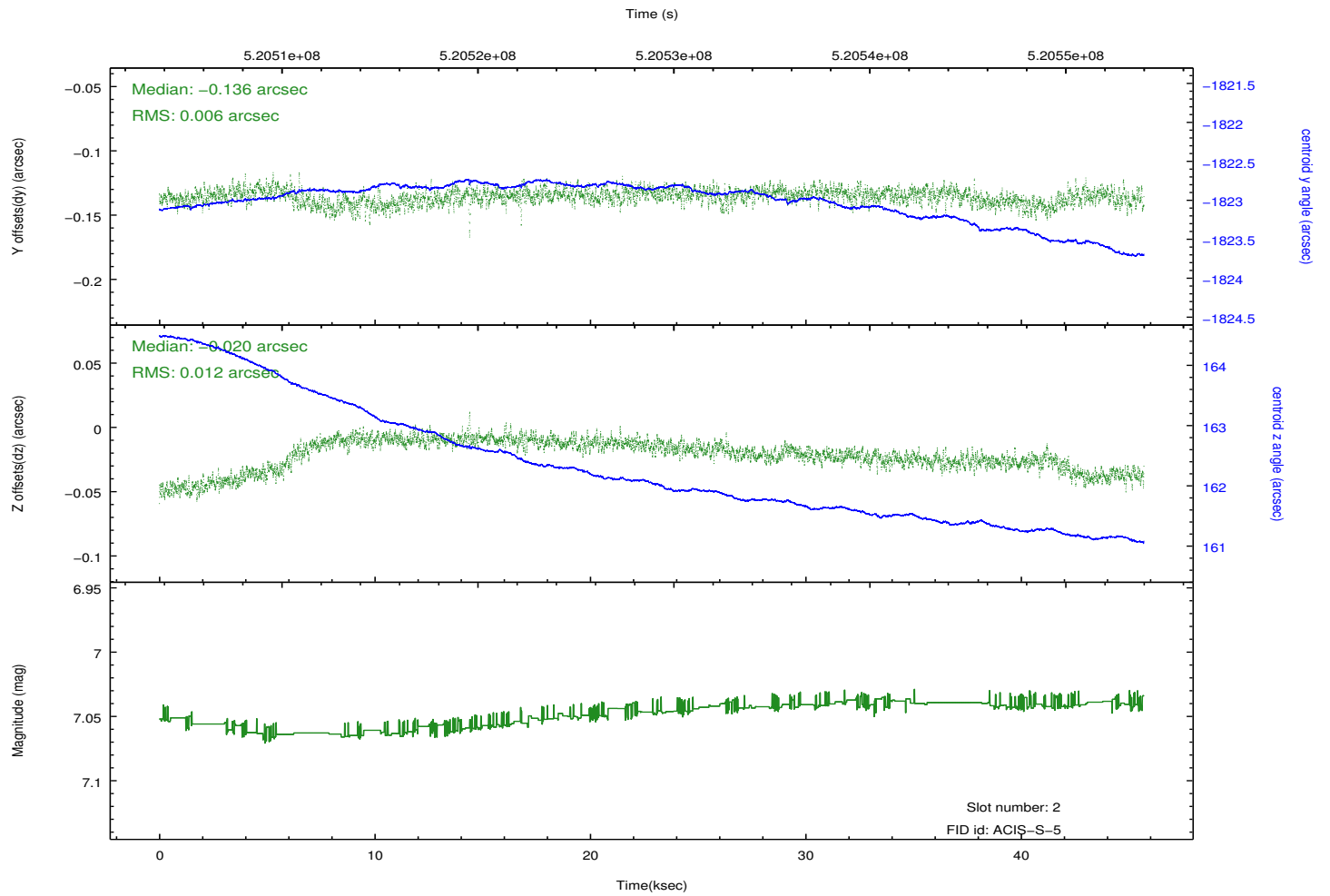
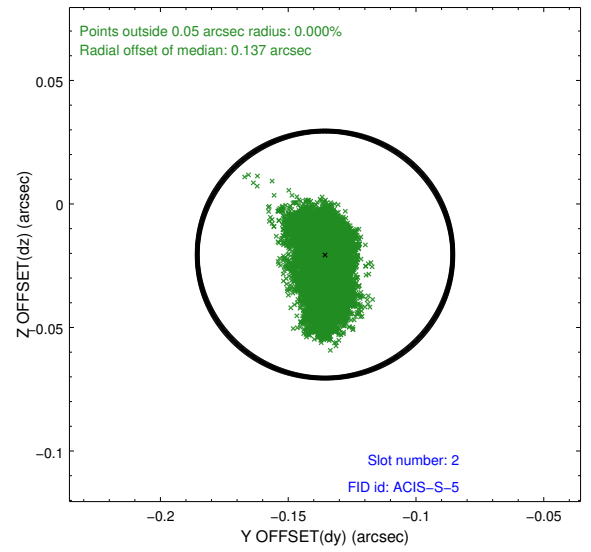
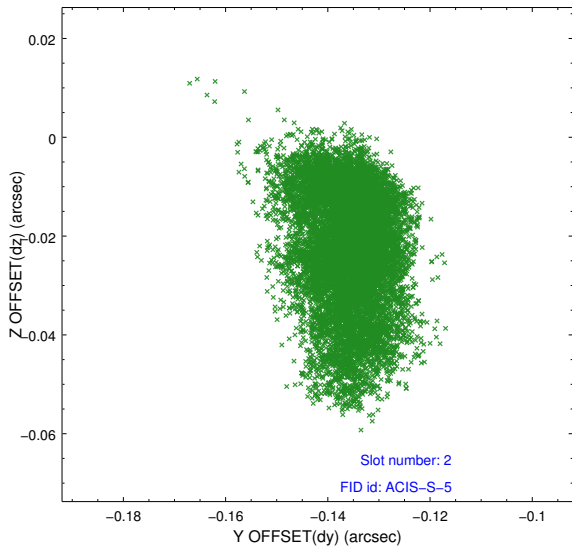
### 2.5.1 Slot 0



## 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)	2014.12.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.074000346661

## A.2 Comments

Joint proposal with HST.

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.