

# V&V Reference Report

## L2 ASCDS Version : 8.5.1

Observation 2077 - L2 Version 4  
Chandra X-Ray Center

L2 Processing Date : Dec 18 2012

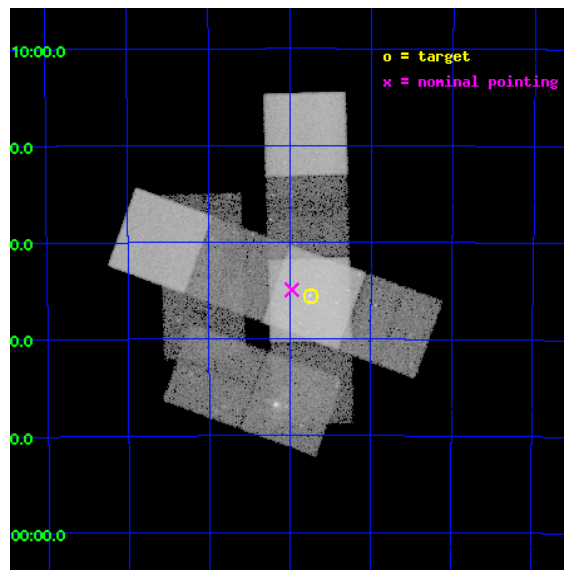
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# 1 Front

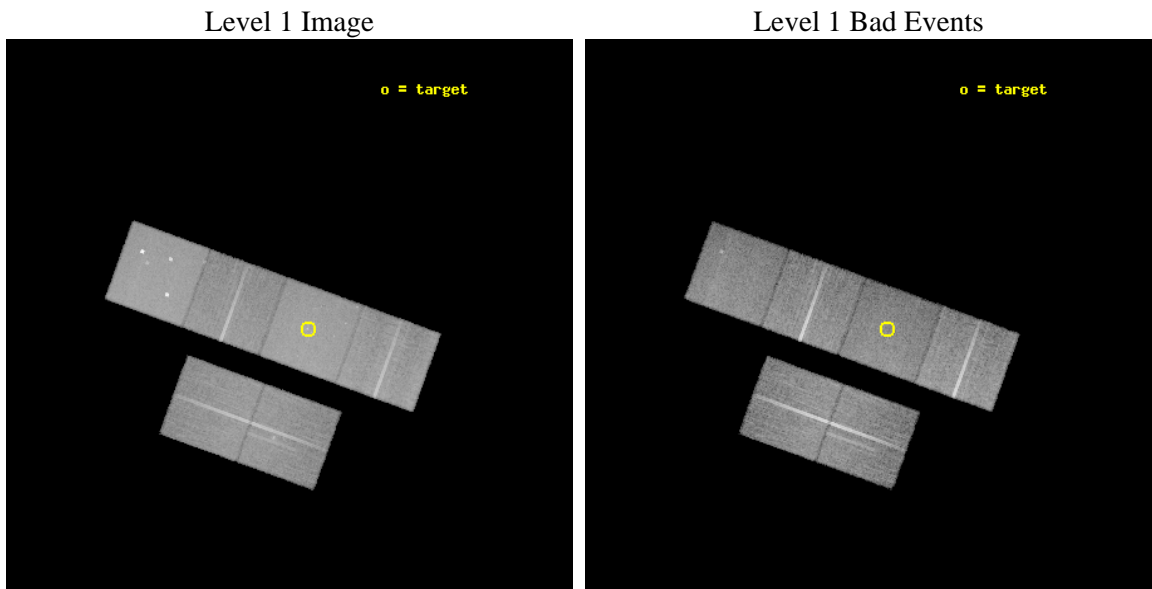
seq_num	600211	Sequence number
obs_id	2077	Observation id
title	GALACTIC WINDS AND COOLING FLOWS IN ELLIPTICAL GALAXIES	Proposal t
observer	JOEL BREGMAN	Principal investigator
object	NGC 1549	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	63.9375	Observer's specified target RA [deg]
dec_targ	-55.591944	Observer's specified target Dec [deg]
ra_nom	63.994134036793	Nominal RA [deg]
dec_nom	-55.582297156022	Nominal Dec [deg]
roll_nom	19.95241999013	Nominal Roll [deg]
revision	4	Processing version of data
ontime	36997.414818421	Sum of GTIs [s]
livetime	36528.931274822	Livetime [s]
ontime2	36997.455858424	Sum of GTIs [s]
ontime3	36997.291698426	Sum of GTIs [s]
ontime5	36997.373778418	Sum of GTIs [s]
ontime6	36994.091758266	Sum of GTIs [s]
ontime7	36997.414818421	Sum of GTIs [s]
ontime8	36994.009678259	Sum of GTIs [s]
l2events	513188	Number of level 2 events



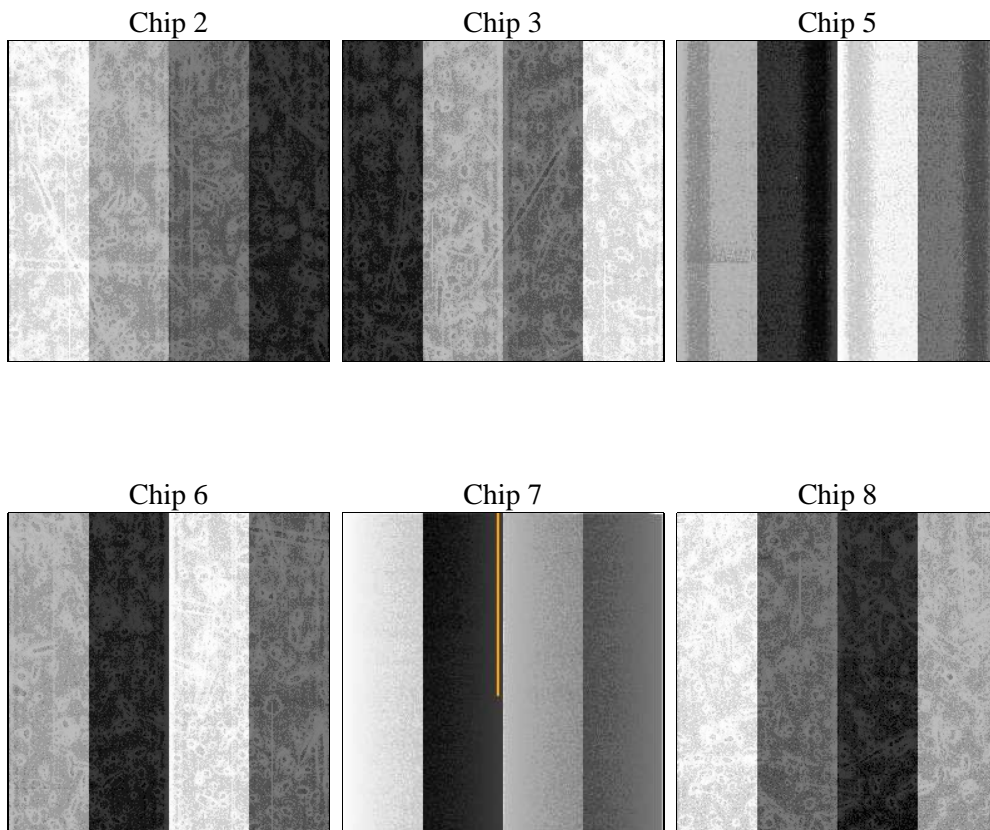
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37319.151000	[s] Scheduled observation exposure time
ascdsver	8.5	Processing system revision	ontime	26085.414808273	Sum of GTIs [s]
caldsver	4.5.4	&#160	ontime2	26085.455848277	Sum of GTIs [s]
date	2012-12-12T03:10:26	Date and time of file creation	ontime3	26085.291688278	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	26085.37376827	Sum of GTIs [s]
			ontime6	26085.332728282	Sum of GTIs [s]
			ontime7	26085.414808273	Sum of GTIs [s]
			ontime8	26082.009668112	Sum of GTIs [s]
			l1events	1104062	Number of level 1 events

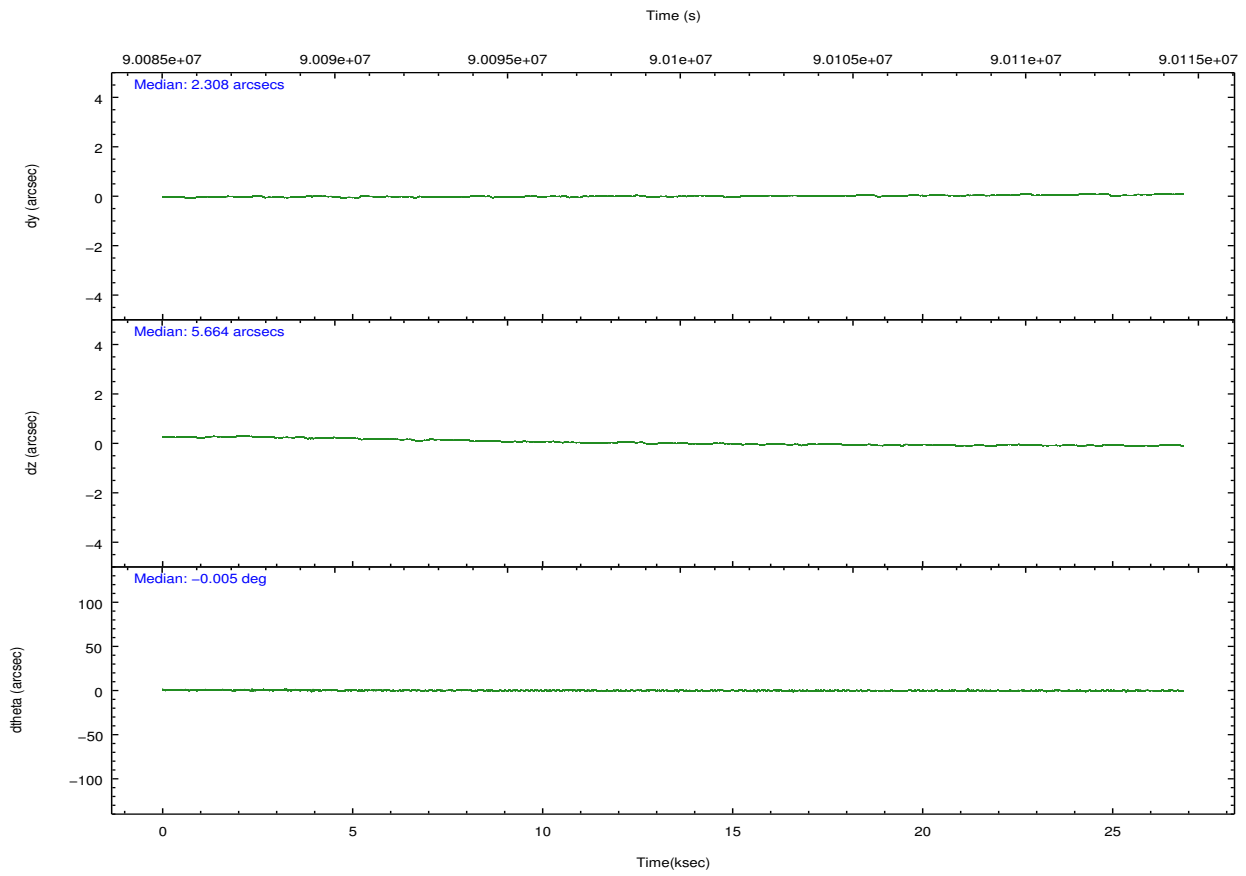
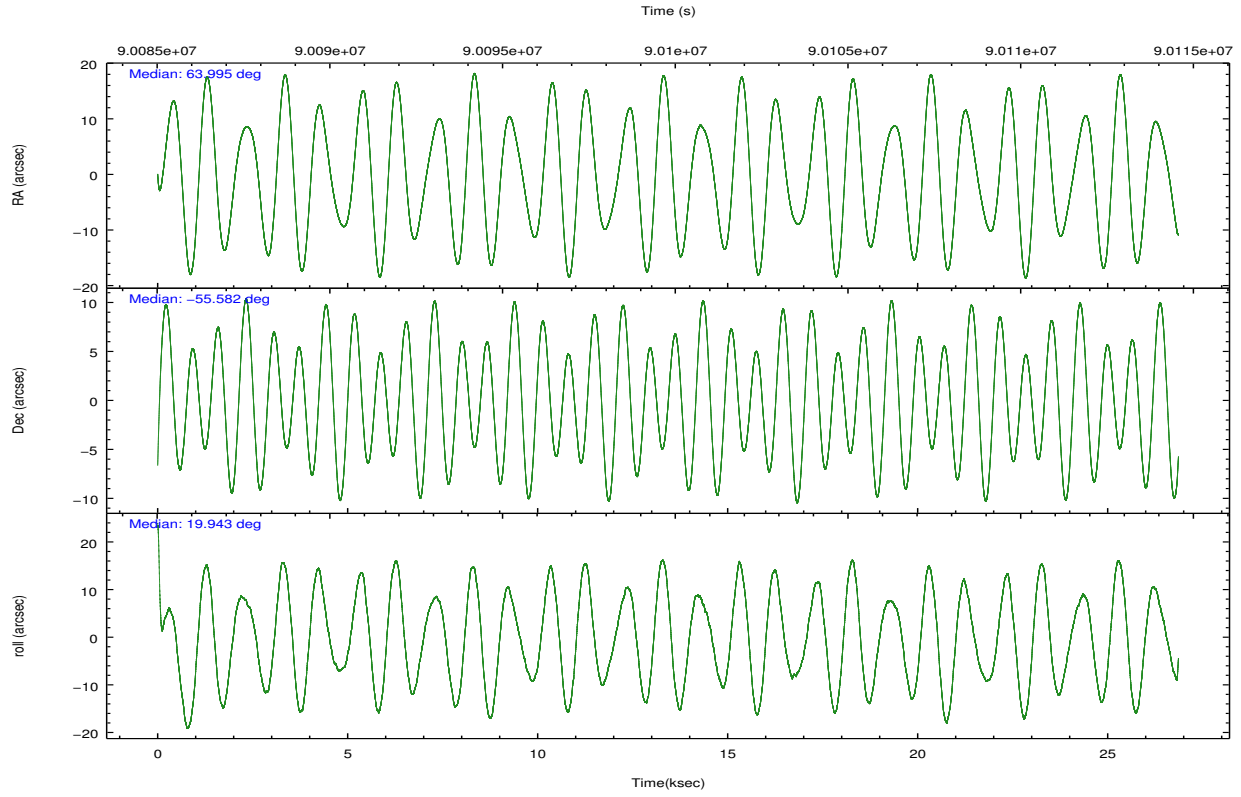
### 2.1.4 Events

	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	160805	155561	231140	157680	205564	193312	grade 0 events	8953	10714	19839	8551	11029	13296
rejected events	141264	134022	113595	137754	112974	153739		5%	6%	8%	5%	5%	6%
rejected %	87%	86%	49%	87%	54%	79%	grade 1 events	76	90	543	72	192	108
								0%	0%	0%	0%	0%	0%
							grade 2 events	4009	3947	35800	3853	18448	8470
								2%	2%	15%	2%	8%	4%
							grade 3 events	1757	1793	4911	1908	8481	4096
								1%	1%	2%	1%	4%	2%
							grade 4 events	1661	1870	4782	1847	8571	3739
								1%	1%	2%	1%	4%	1%
							grade 5 events	5153	5658	16270	6240	18699	7851
								3%	3%	7%	3%	9%	4%
							grade 6 events	3360	3408	53073	3977	46880	10180
								2%	2%	22%	2%	22%	5%
							grade 7 events	135836	128081	95922	131232	93264	145572
								84%	82%	41%	83%	45%	75%

## 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	OVERRIDE	OVERRIDE
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	63.963256	63.99413403679288	Subarray requested	NONE	NONE
[deg] Pointing Dec	-55.603362	-55.58229715602184	Alternating exposures requested	N	N
[deg] Pointing Roll	19.770306	19.95241999012958	[s] Primary exposure time	3.2	3.2
[mm] SIM focus pos	-0.68282252473119	-0.68282252473119			
[mm] SIM defocus	0.001444942264670734	0.001444942264670734			
[mm] SIM translation stage pos	-190.1400660499	-190.1400660499			
[mm] SIM translation stage offset	0.007542945932812017	0.007542945932812017			
[s] Observation start time (MET)	90085610.184	90085610.184			
Observation start date	2000-11-08T16:08:59	2000-11-08T15:46:50			
[s] Observation end time (MET)	90113224.03848	90113224.03848			
Observation end date	2000-11-09T02:30:58	2000-11-08T23:27:04			
Read mode	TIMED	TIMED			

## 2.3 Aspect

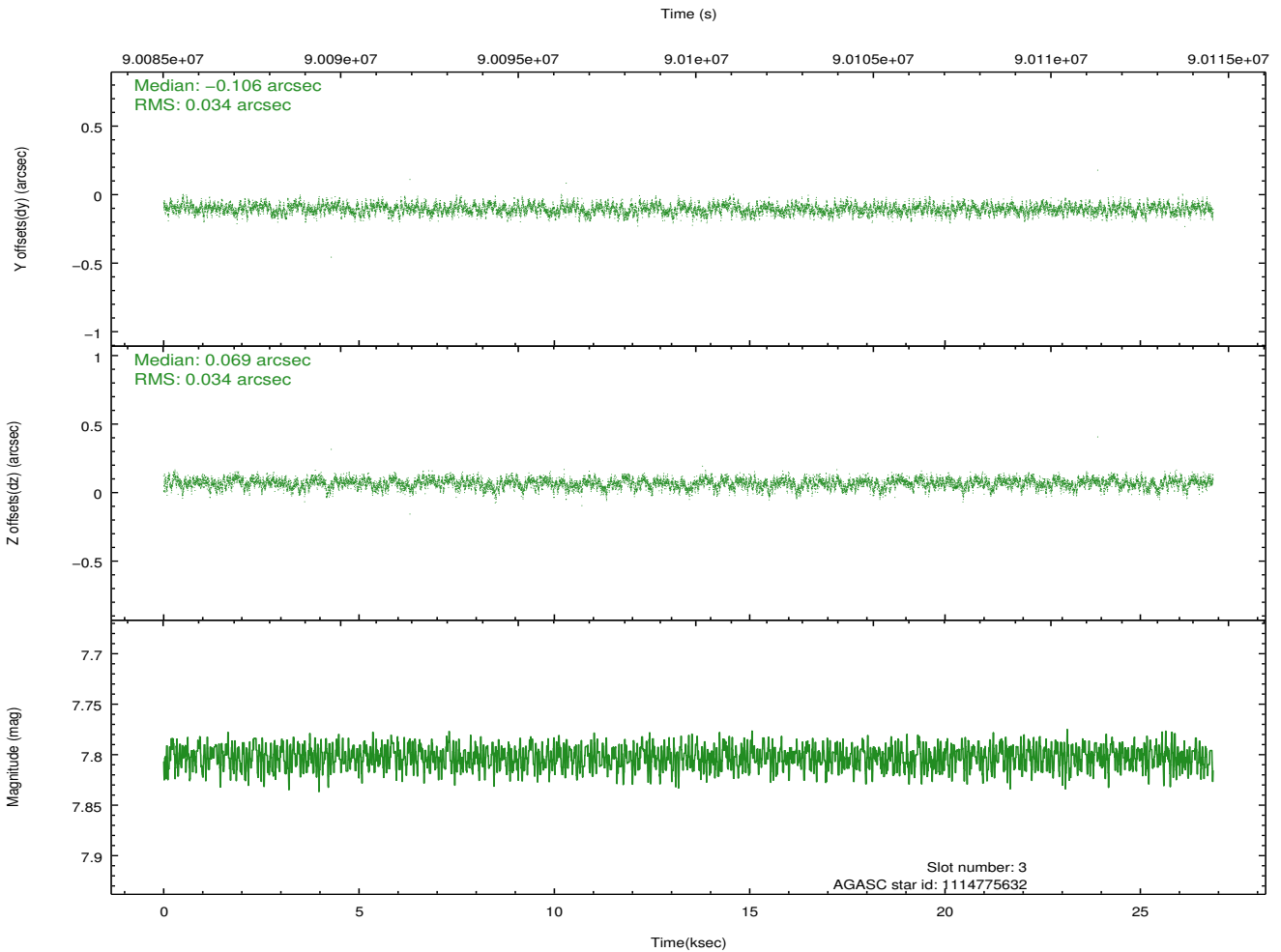
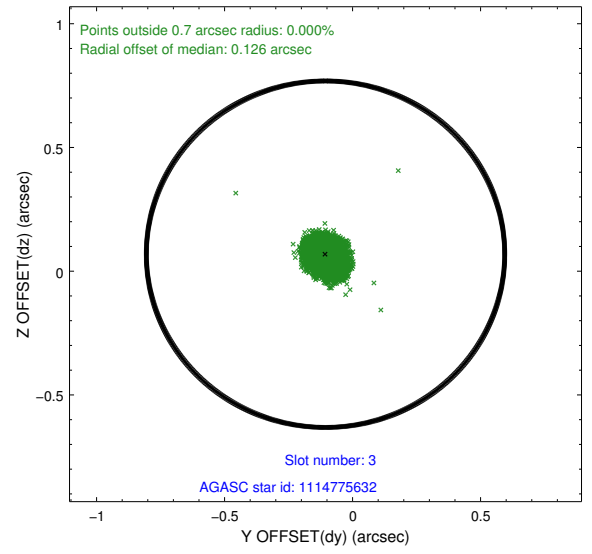
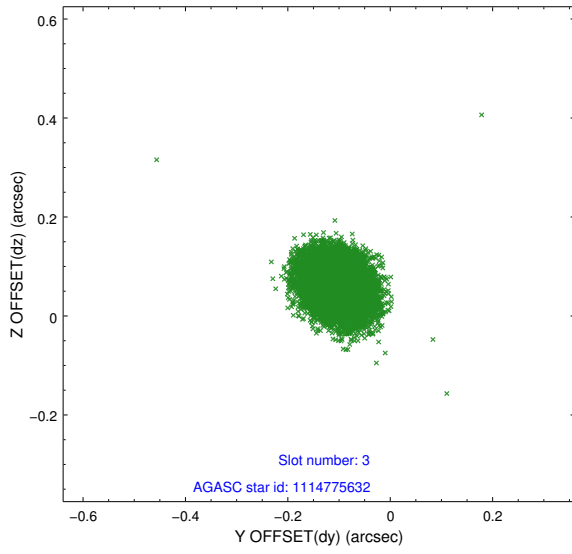


### Slot Statistics

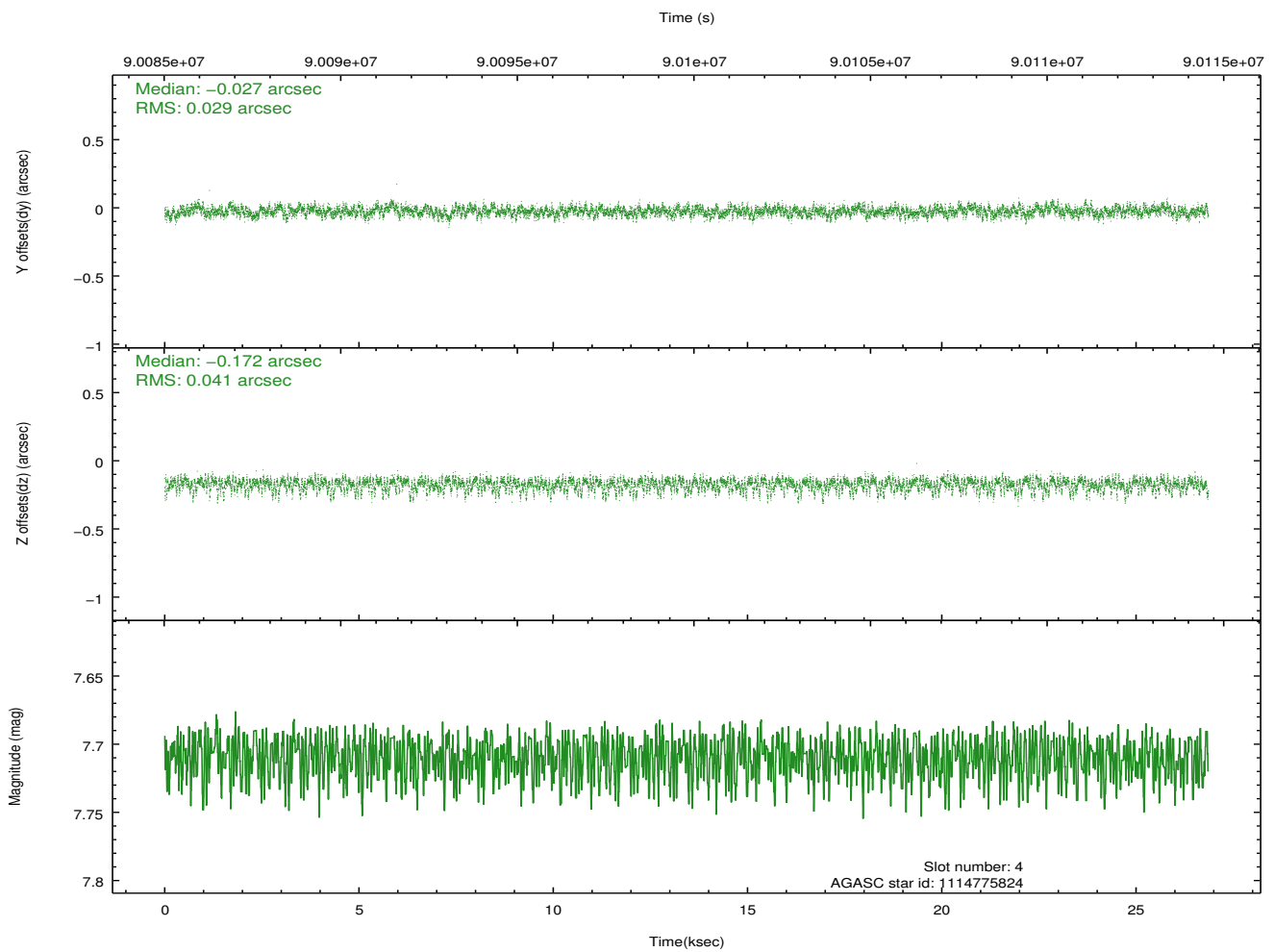
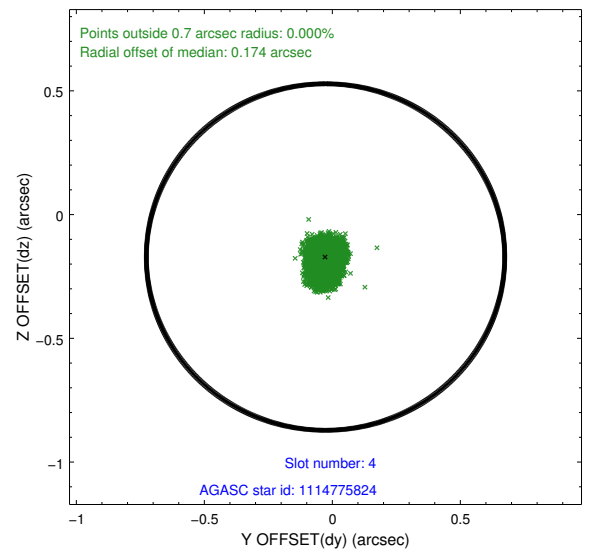
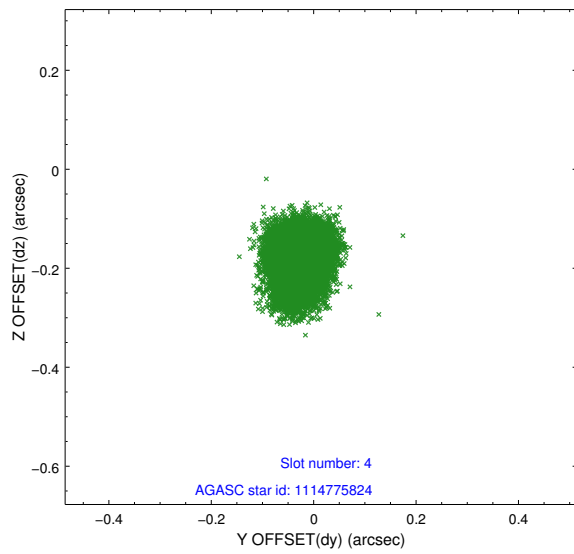
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	6552	-0.049	-0.006	0.007	0.012	0.000000	0.000000	-754.95	-1726.86
1	FID	ACIS-S-4	7.20	6550	0.004	0.025	0.006	0.010	0.000000	0.000000	2158.30	181.61
2	FID	ACIS-S-5	7.24	6549	0.014	-0.010	0.007	0.011	0.000000	0.000000	-1807.64	175.28
3	GUIDE	1114775632	7.80	13101	-0.106	0.069	0.051	0.083	64.496457	-56.186453	293.49	-2340.22
4	GUIDE	1114775824	7.71	13103	-0.027	-0.172	0.052	0.089	63.546841	-56.176767	-1484.71	-1663.05
5	GUIDE	1114778096	8.35	13103	0.015	0.032	0.055	0.089	63.962428	-55.646331	-54.62	-144.87
6	GUIDE	1114780856	8.94	13097	-0.041	-0.098	0.073	0.118	63.289565	-55.495207	-1164.26	824.78
7	GUIDE	1114781480	10.30	13094	0.157	0.178	0.139	0.230	63.991337	-55.124059	637.29	1604.89

## 2.4 Star Slots

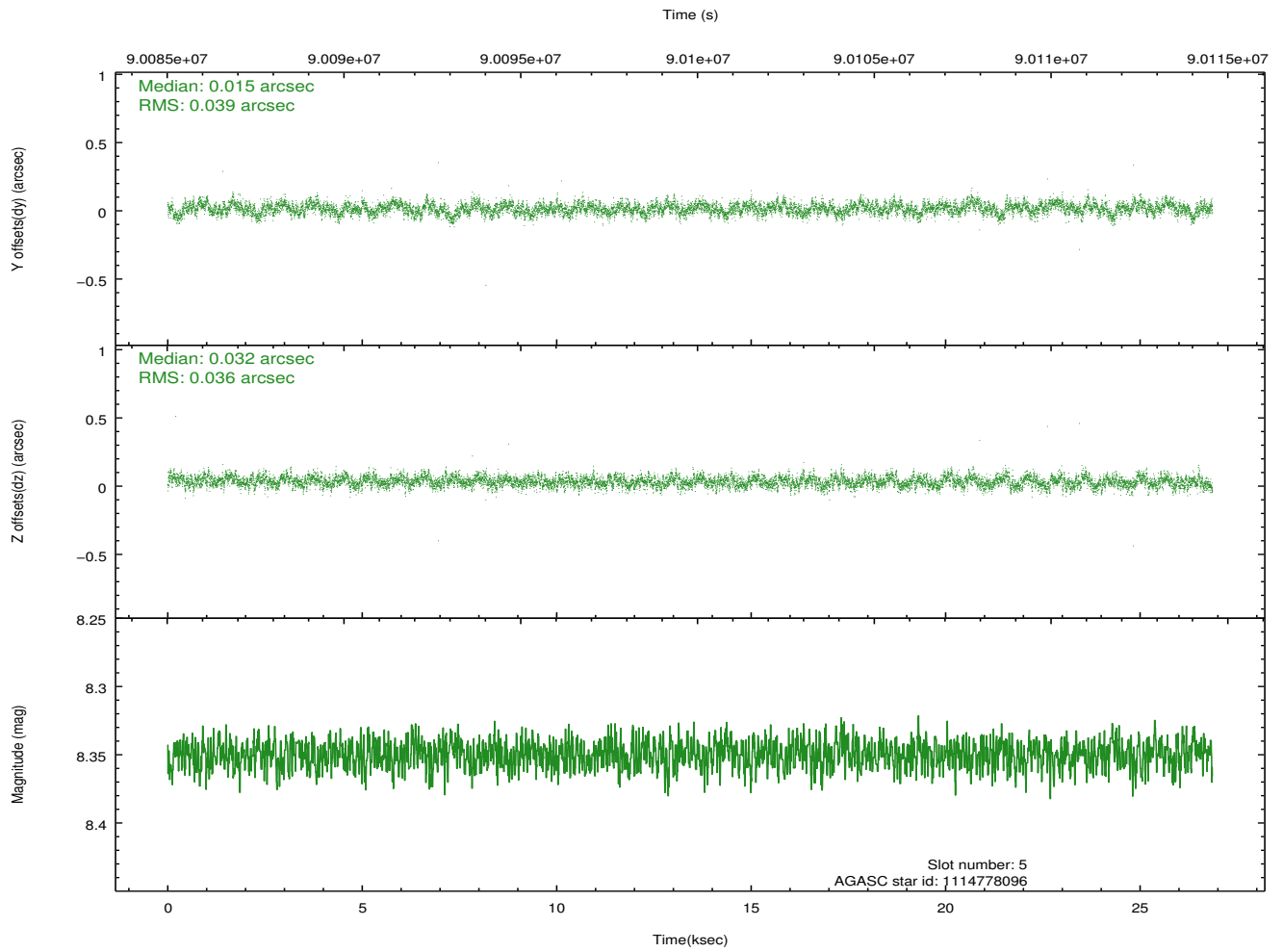
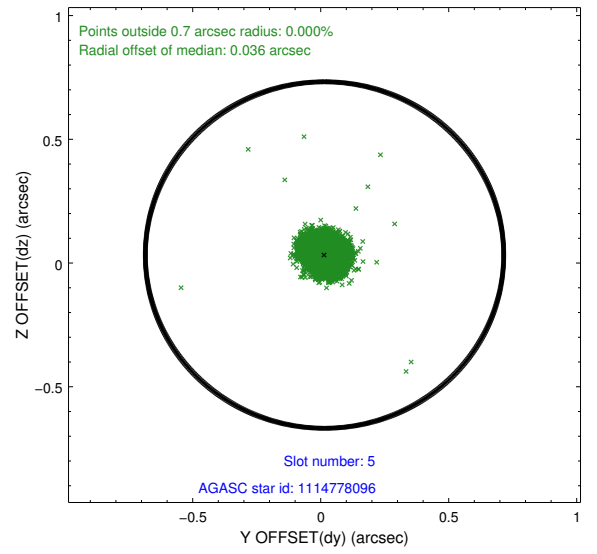
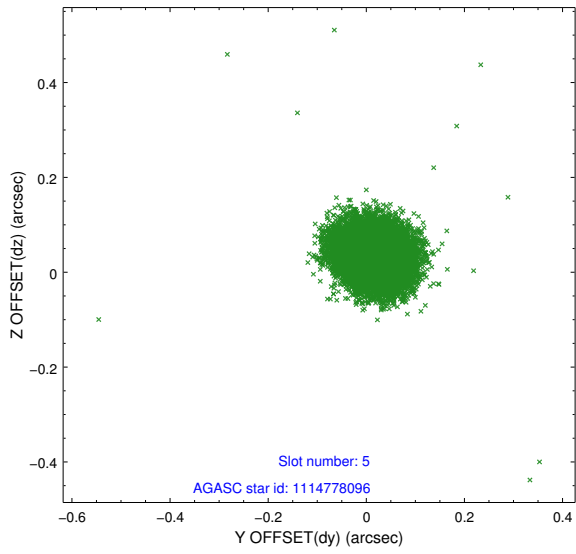
### 2.4.1 Slot 3



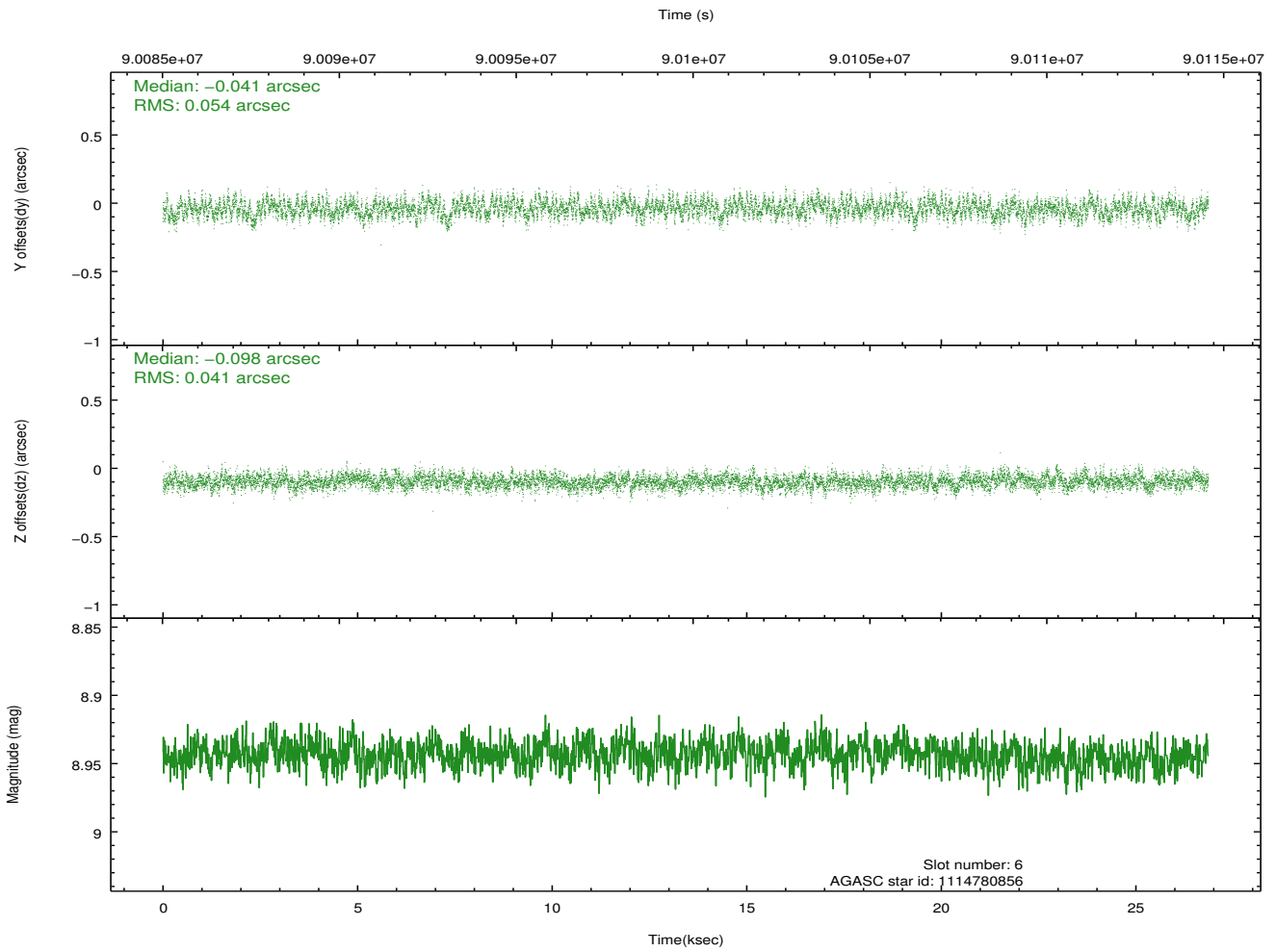
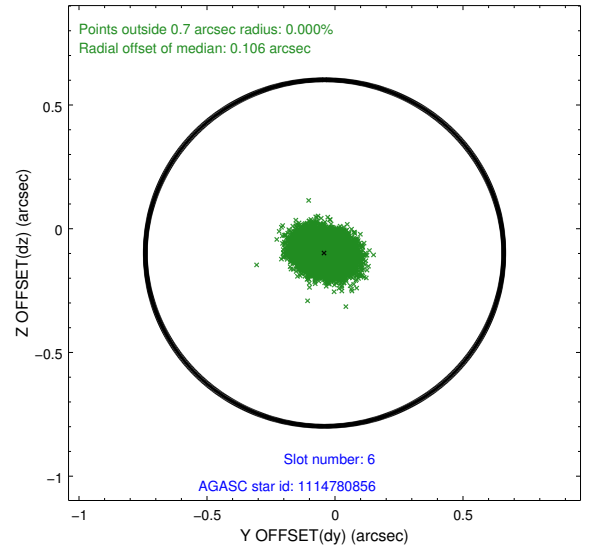
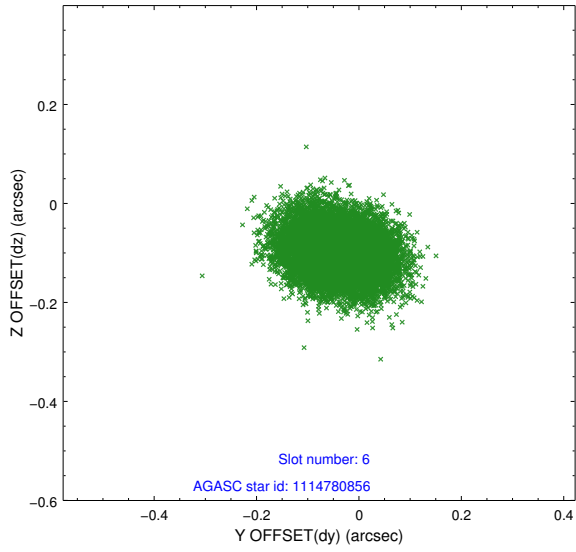
## 2.4.2 Slot 4



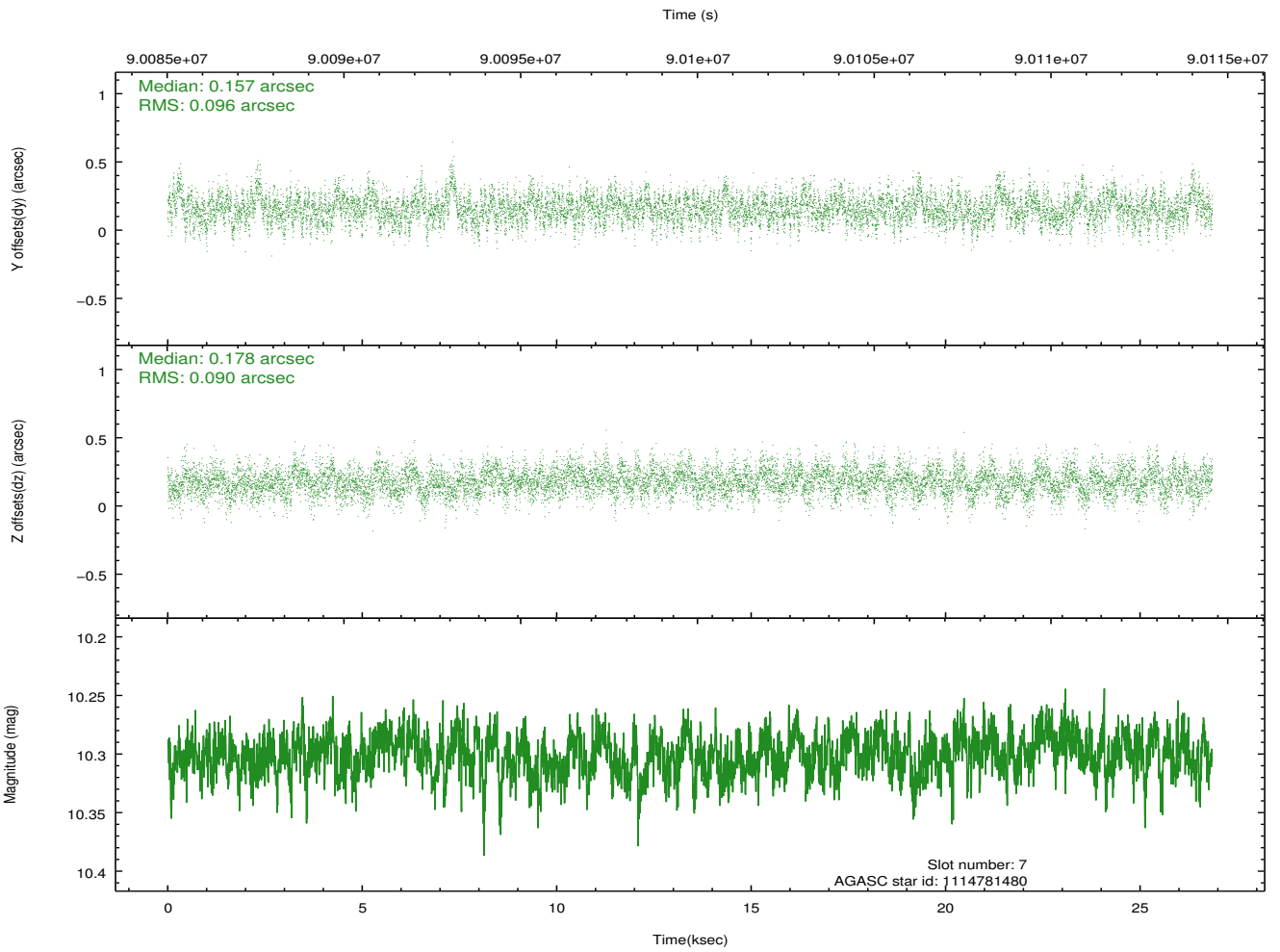
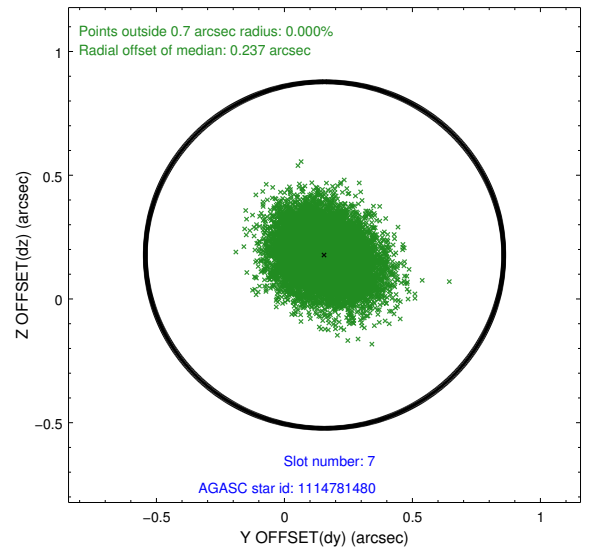
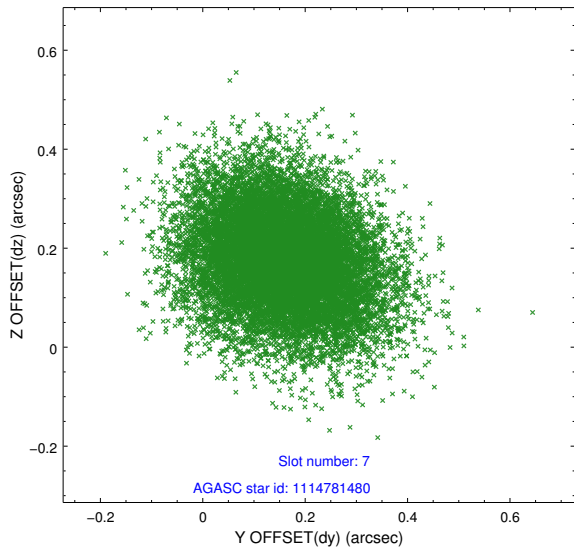
### 2.4.3 Slot 5



### 2.4.4 Slot 6

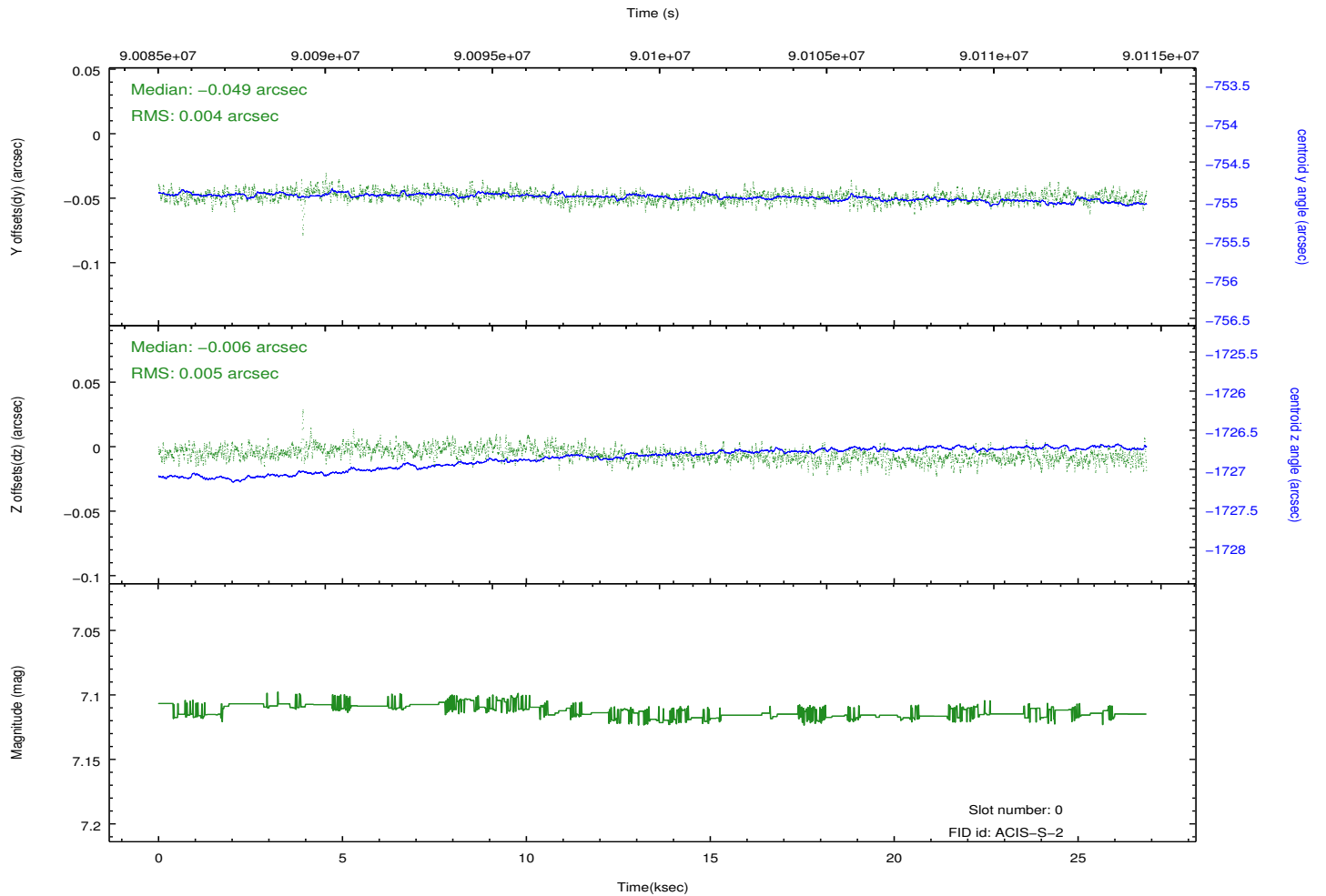
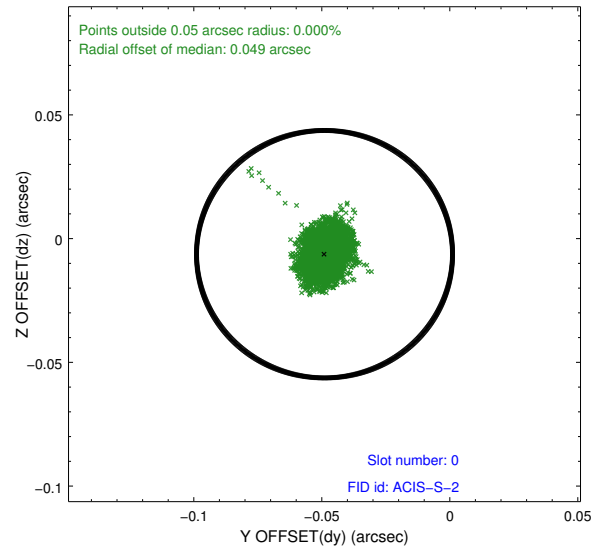
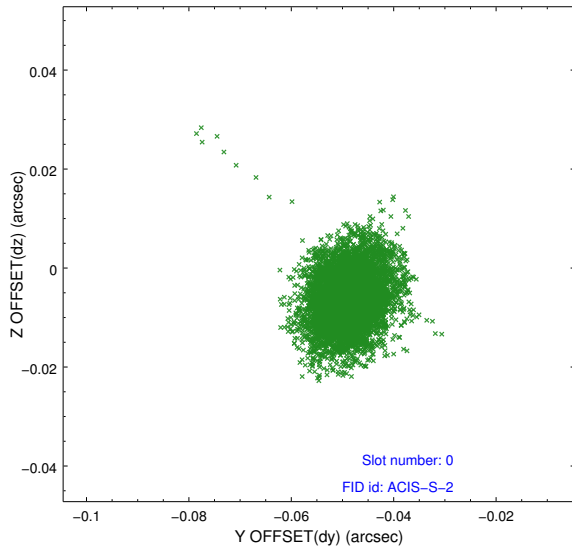


### 2.4.5 Slot 7

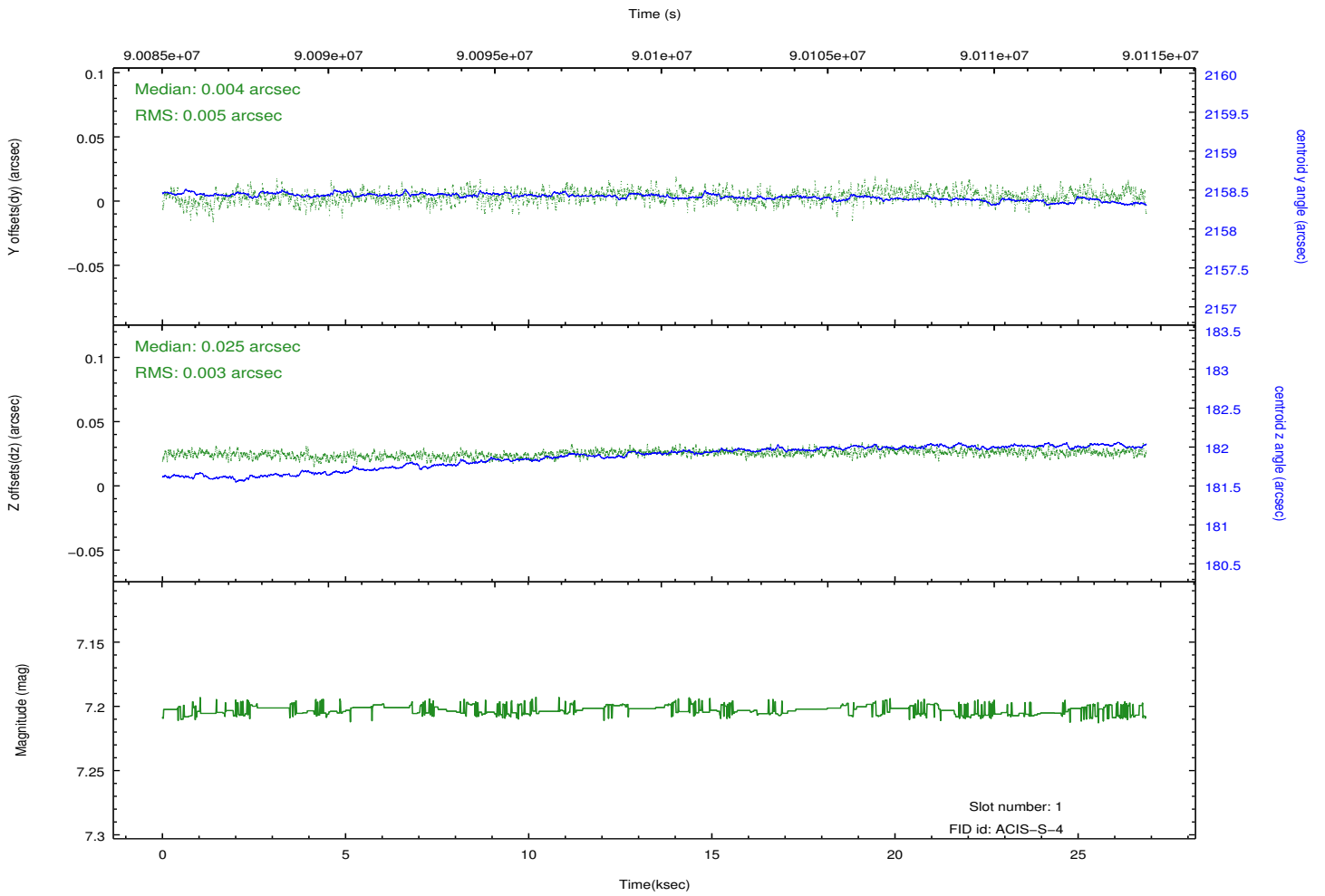
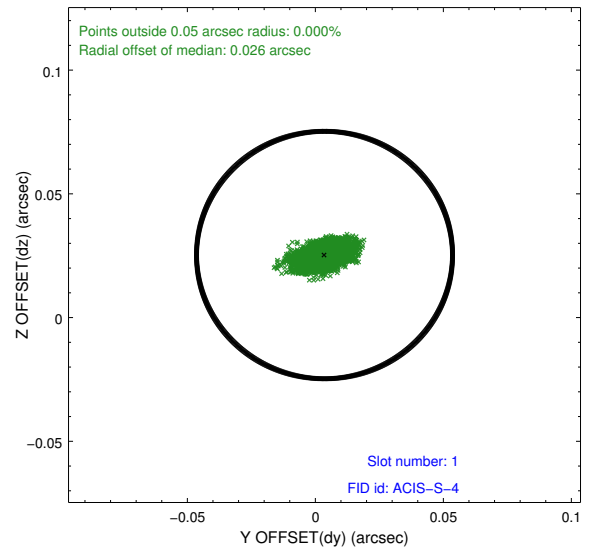
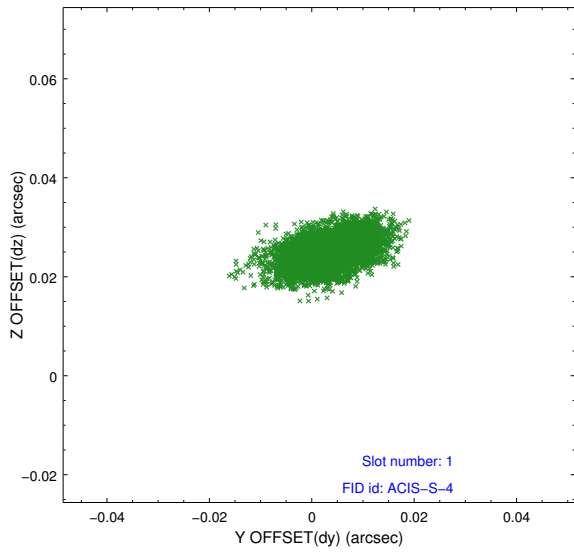


## 2.5 FID Slots

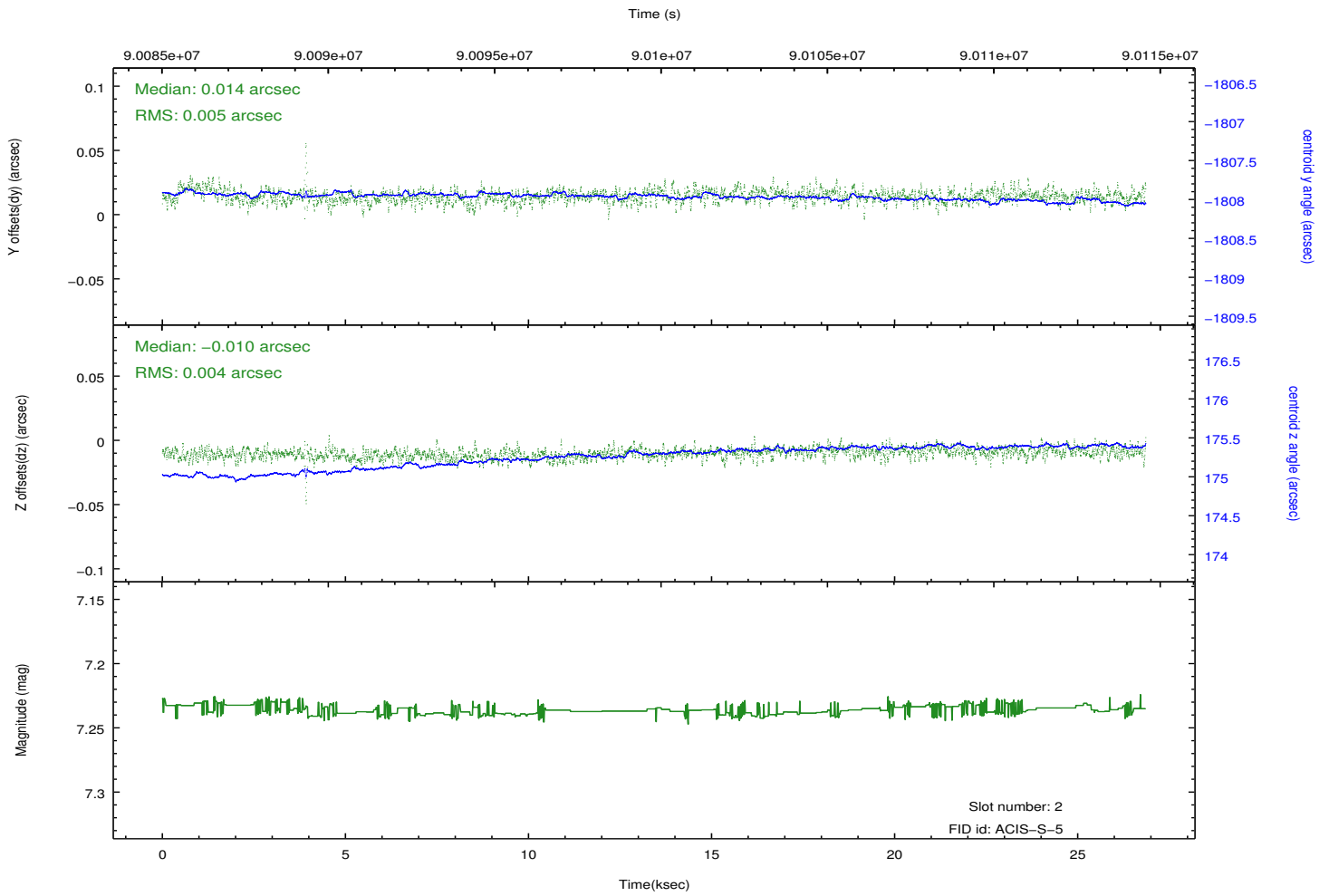
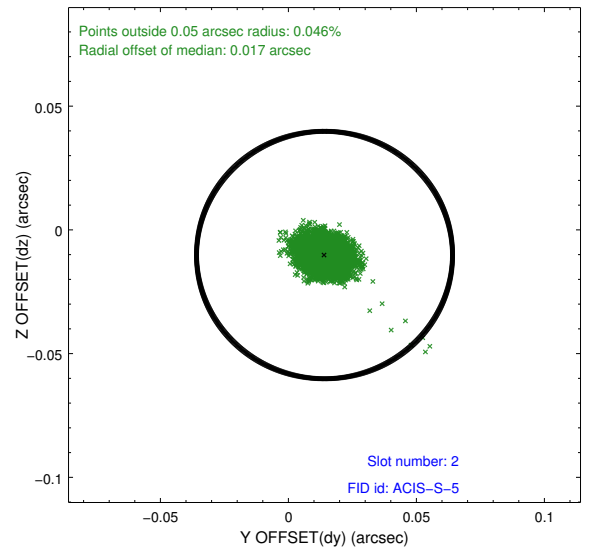
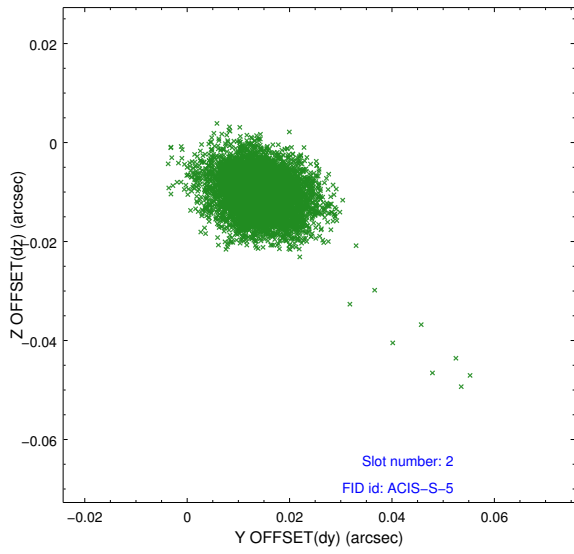
### 2.5.1 Slot 0



## 2.5.2 Slot 1



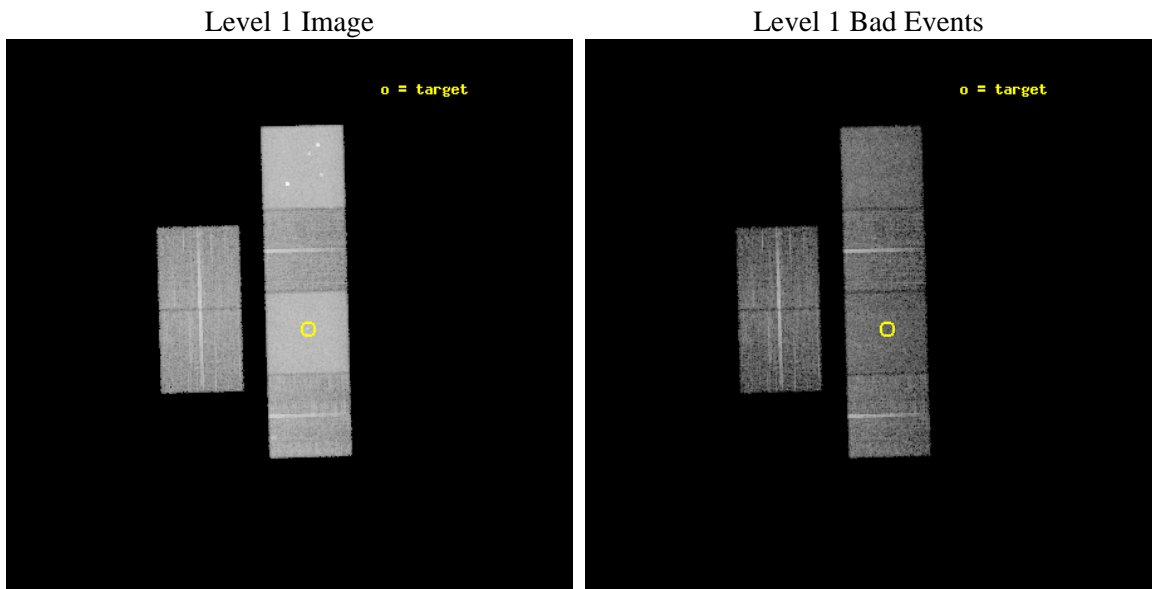
### 2.5.3 Slot 2



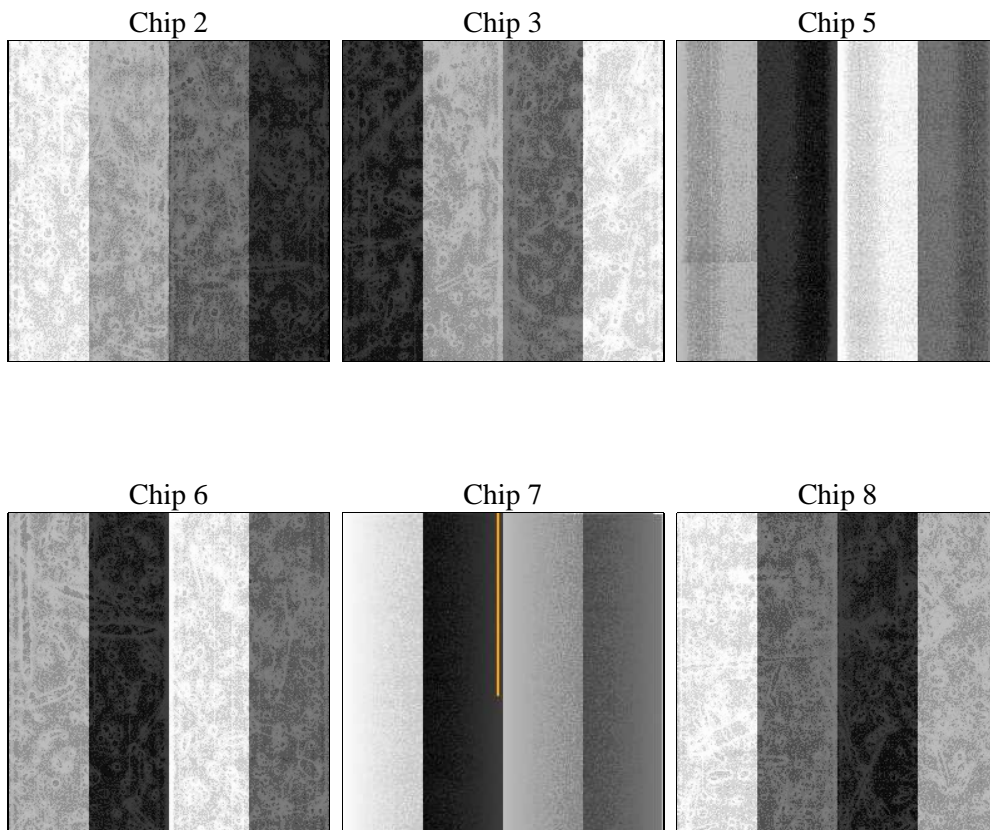
### 3 OBI

#### 3.1 OBI

##### 3.1.1 Images



##### 3.1.2 Bias



### 3.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	10962.363000	[s] Scheduled observation exposure time
ascdsver	8.5.1	Processing system revision	ontime	10912.000010148	Sum of GTIs [s]
caldbver	4.5.5	&#160	ontime2	10912.000010148	Sum of GTIs [s]
date	2012-12-18T23:52:56	Date and time of file creation	ontime3	10912.000010148	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	10912.000010148	Sum of GTIs [s]
			ontime6	10908.759029984	Sum of GTIs [s]
			ontime7	10912.000010148	Sum of GTIs [s]
			ontime8	10912.000010148	Sum of GTIs [s]
			l1events	618337	Number of level 1 events

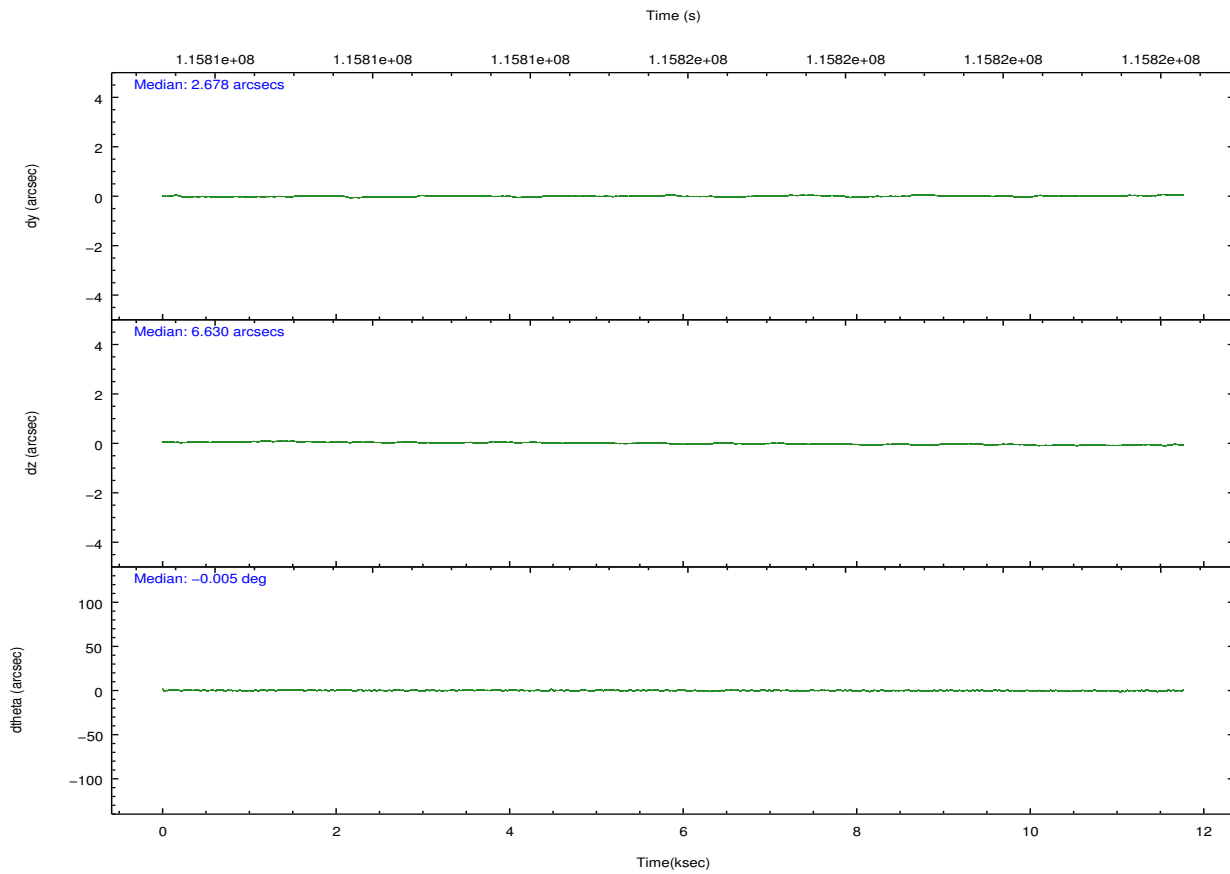
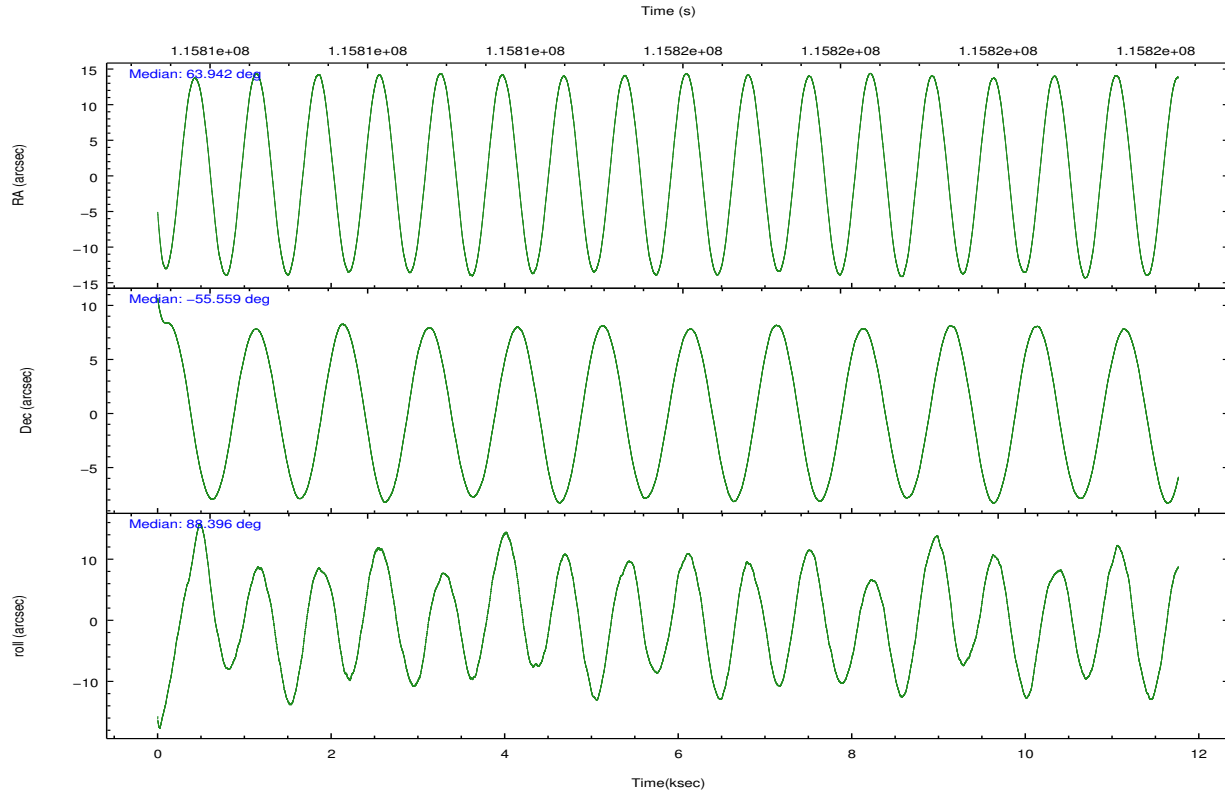
### 3.1.4 Events

	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	68088	67965	169226	70577	155806	86675	grade 0 events	5293	5380	21115	6987	13227	9301
rejected events	57783	57584	56268	58082	50933	64549		7%	7%	12%	9%	8%	10%
rejected %	84%	84%	33%	82%	32%	74%	grade 1 events	41	31	171	40	94	57
								0%	0%	0%	0%	0%	0%
							grade 2 events	2019	1801	30813	2056	19499	4199
								2%	2%	18%	2%	12%	4%
							grade 3 events	774	863	6547	862	8867	2052
								1%	1%	3%	1%	5%	2%
							grade 4 events	768	794	6580	868	8812	1987
								1%	1%	3%	1%	5%	2%
							grade 5 events	2421	2544	8018	2919	8631	3646
								3%	3%	4%	4%	5%	4%
							grade 6 events	1462	1550	48005	1741	54556	4605
								2%	2%	28%	2%	35%	5%
							grade 7 events	55310	55002	47977	55104	42120	60828
								81%	80%	28%	78%	27%	70%

### 3.2 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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	63.965743	63.94228688521925	Subarray requested	NONE	NONE
[deg] Pointing Dec	-55.582599	-55.55874612141541	Alternating exposures requested	N	N
[deg] Pointing Roll	88.263038	88.40031775999265	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	115810731.184000	115809462.53439			
Observation start date	2001-09-02T09:37:47	2001-09-02T09:17:42			
[s] Observation end time (MET)	115821693.184000	115822008.02238			
Observation end date	2001-09-02T12:40:29	2001-09-02T12:46:48			
Read mode	TIMED	TIMED			

### 3.3 Aspect

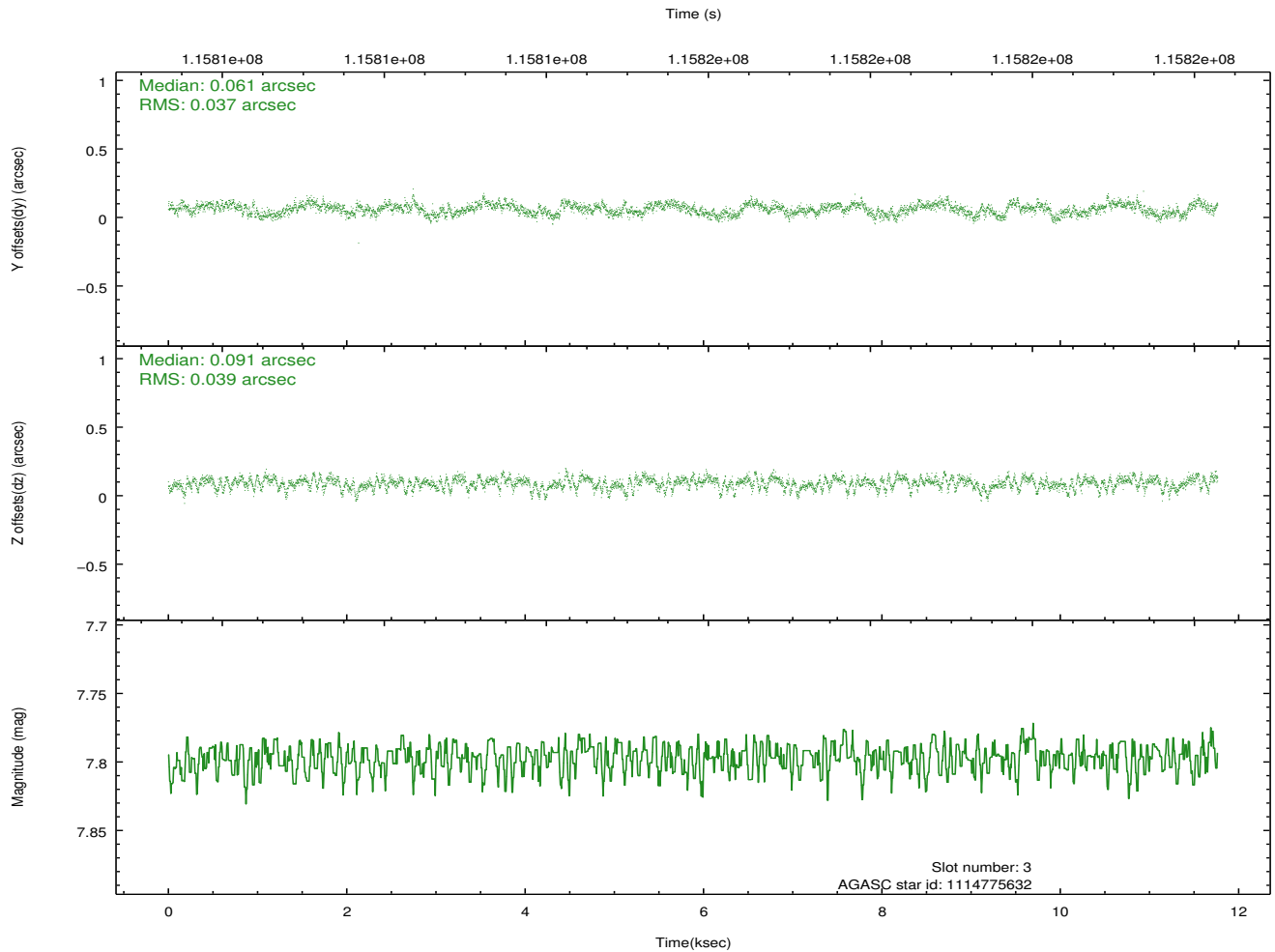
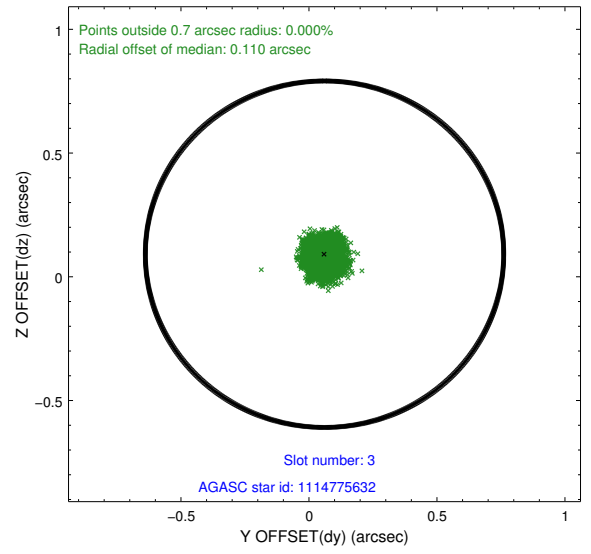
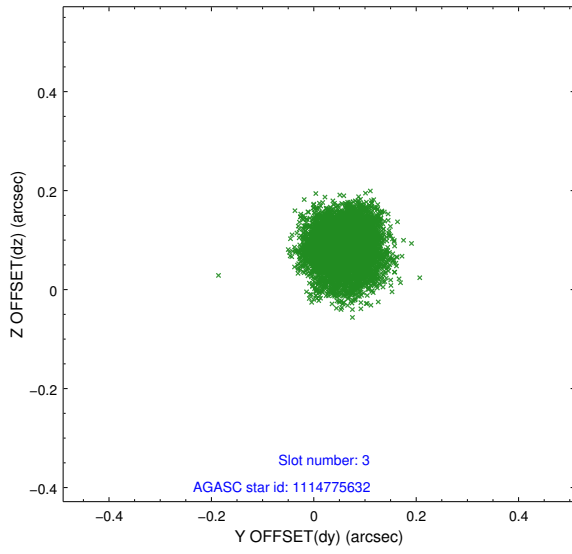


### Slot Statistics

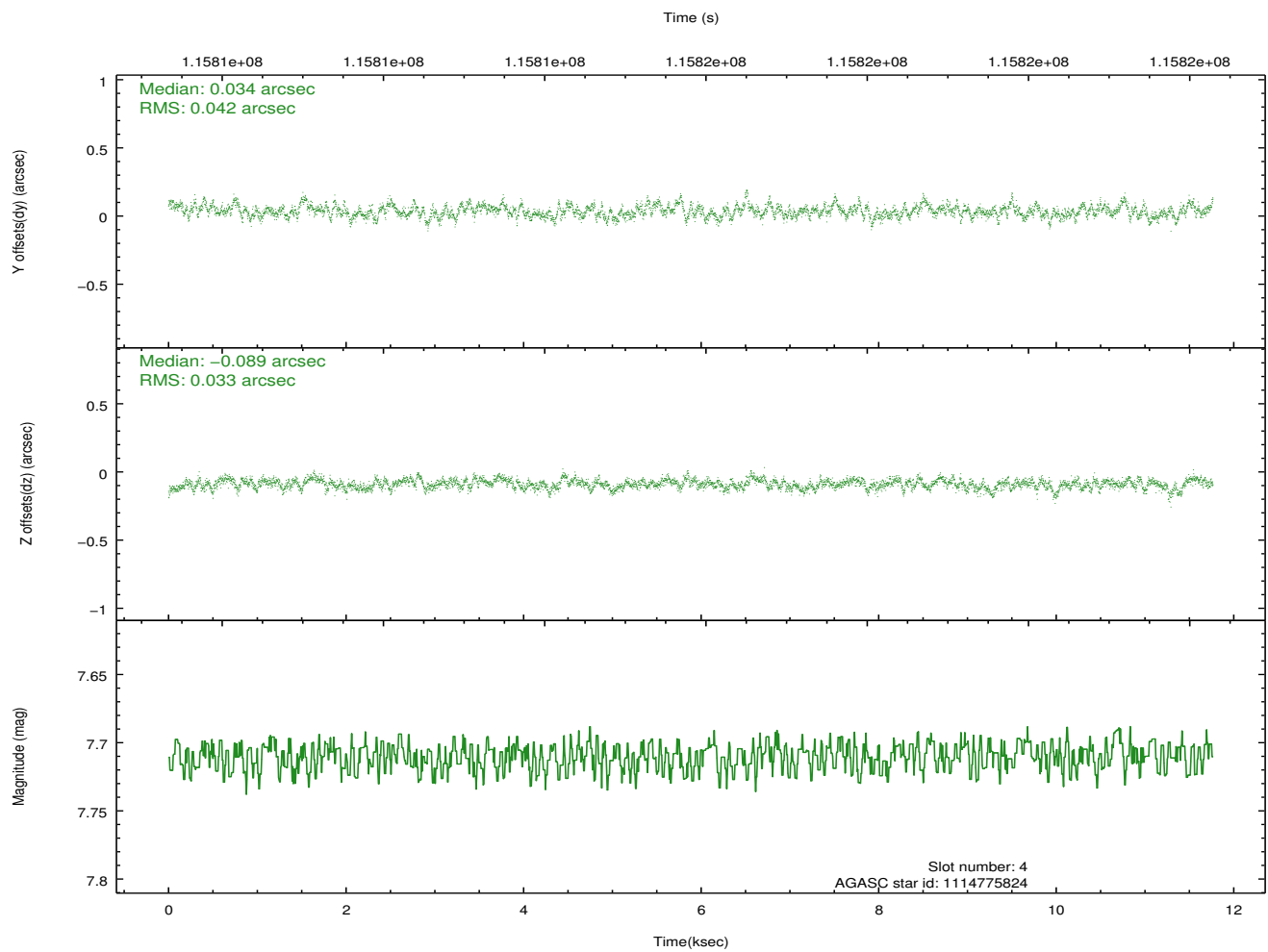
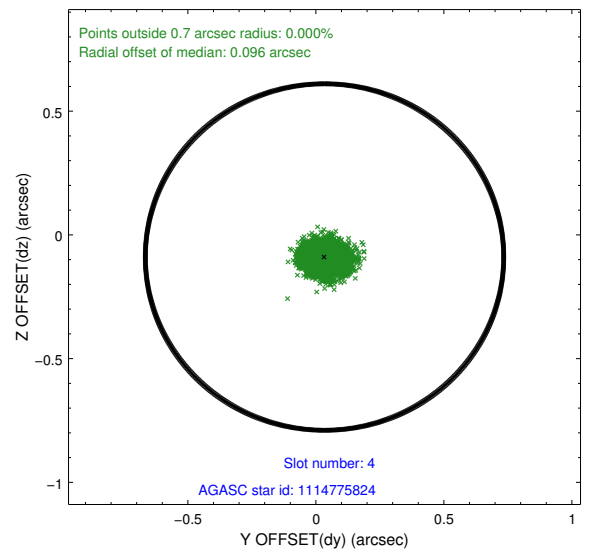
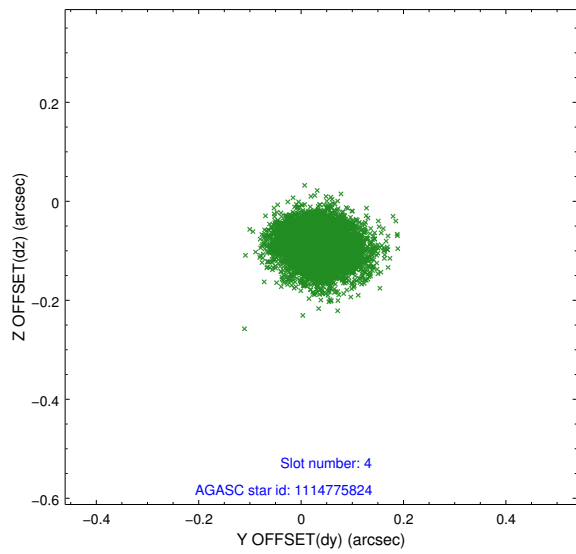
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	6552	-0.049	-0.006	0.007	0.012	0.000000	0.000000	-754.95	-1726.86
1	FID	ACIS-S-4	7.20	6550	0.004	0.025	0.006	0.010	0.000000	0.000000	2158.30	181.61
2	FID	ACIS-S-5	7.24	6549	0.014	-0.010	0.007	0.011	0.000000	0.000000	-1807.64	175.28
3	GUIDE	1114775632	7.80	13101	-0.106	0.069	0.051	0.083	64.496457	-56.186453	293.49	-2340.22
4	GUIDE	1114775824	7.71	13103	-0.027	-0.172	0.052	0.089	63.546841	-56.176767	-1484.71	-1663.05
5	GUIDE	1114778096	8.35	13103	0.015	0.032	0.055	0.089	63.962428	-55.646331	-54.62	-144.87
6	GUIDE	1114780856	8.94	13097	-0.041	-0.098	0.073	0.118	63.289565	-55.495207	-1164.26	824.78
7	GUIDE	1114781480	10.30	13094	0.157	0.178	0.139	0.230	63.991337	-55.124059	637.29	1604.89

### 3.4 Star Slots

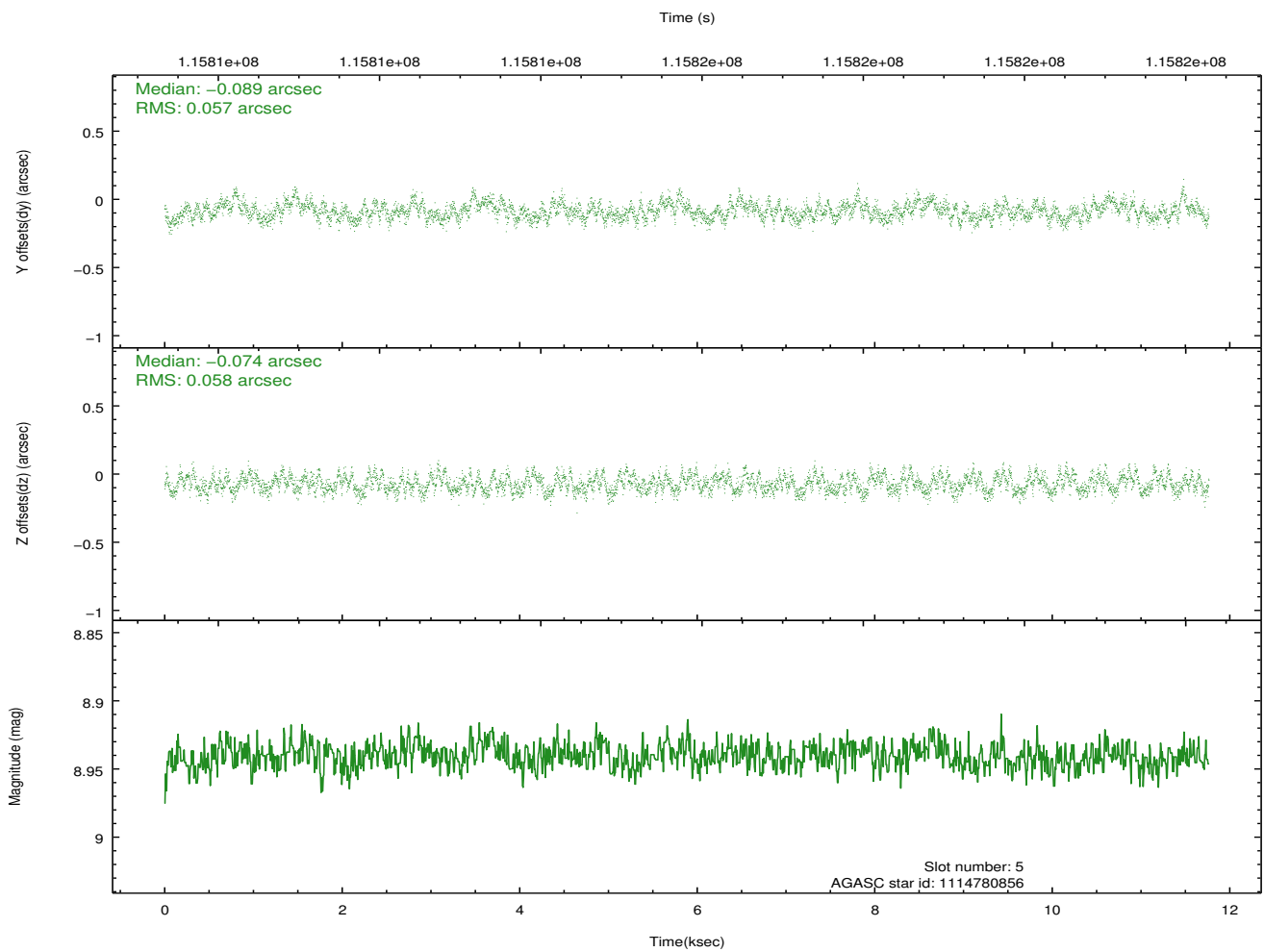
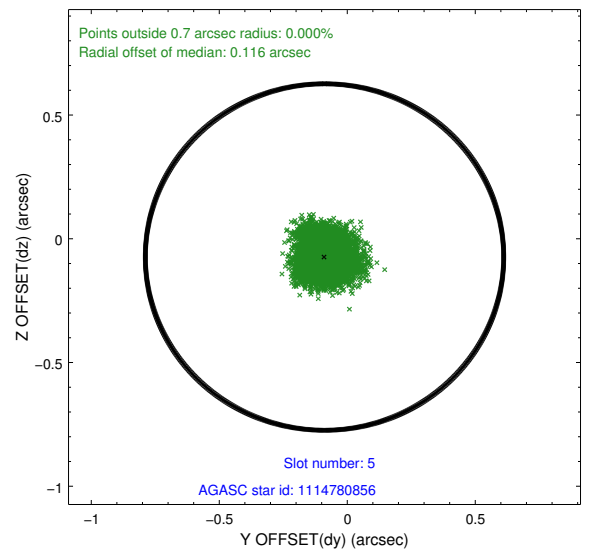
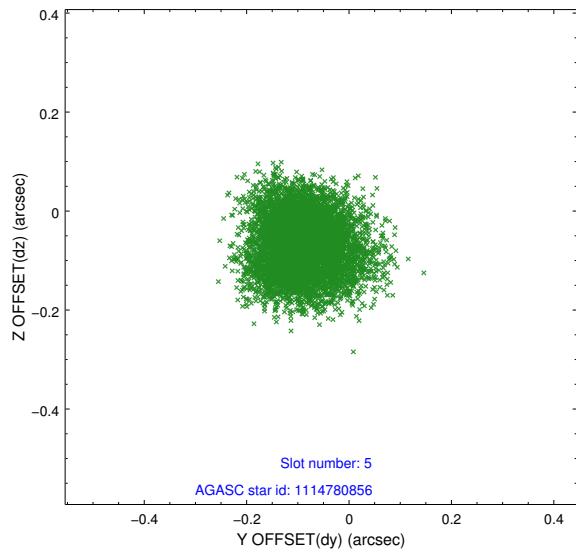
#### 3.4.1 Slot 3



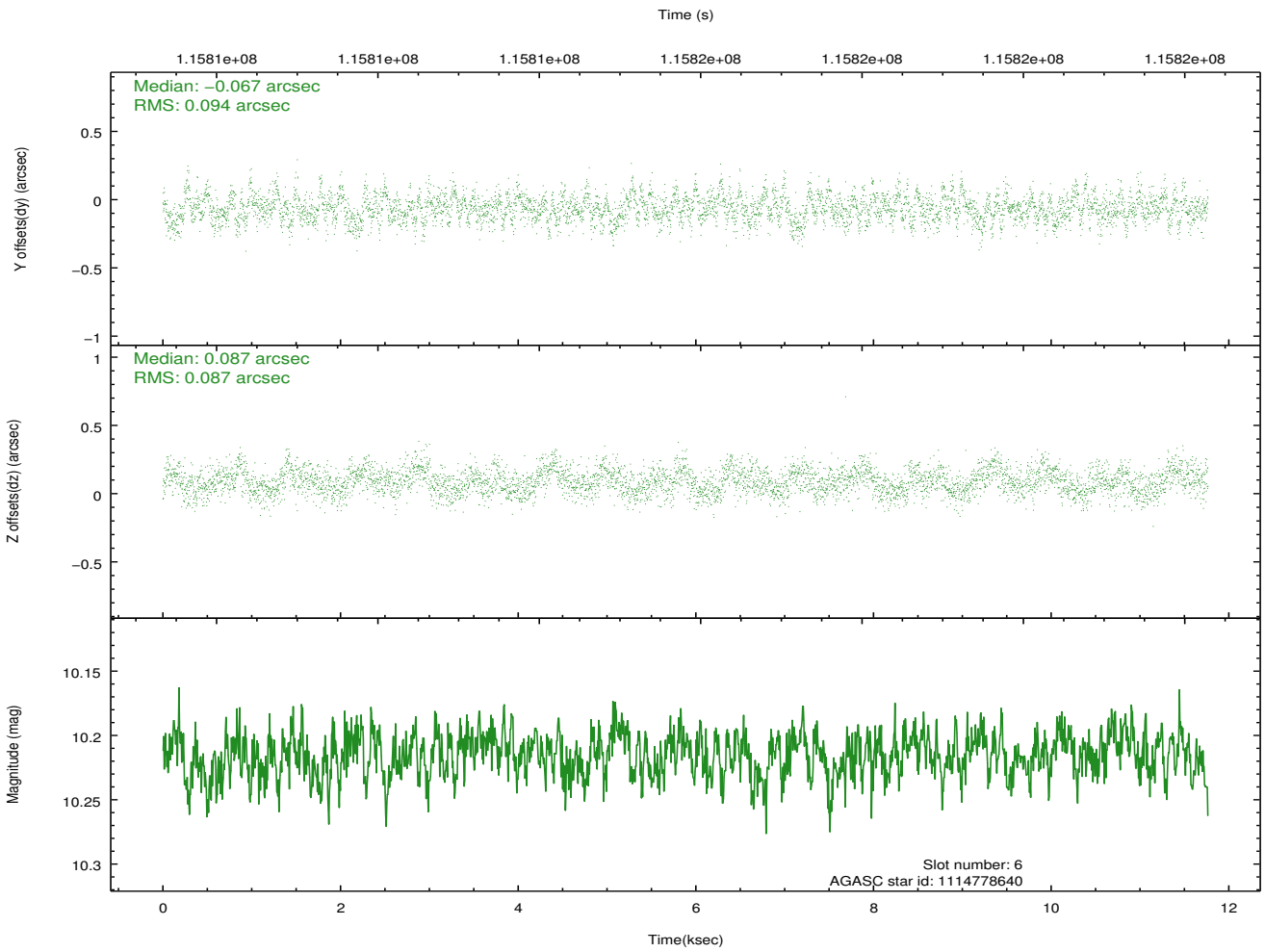
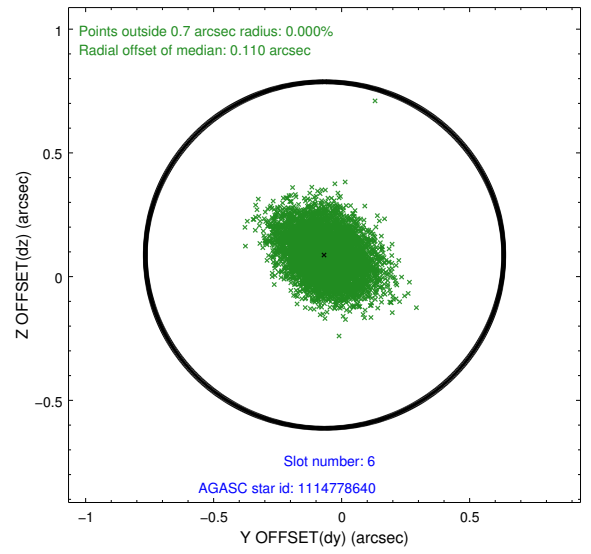
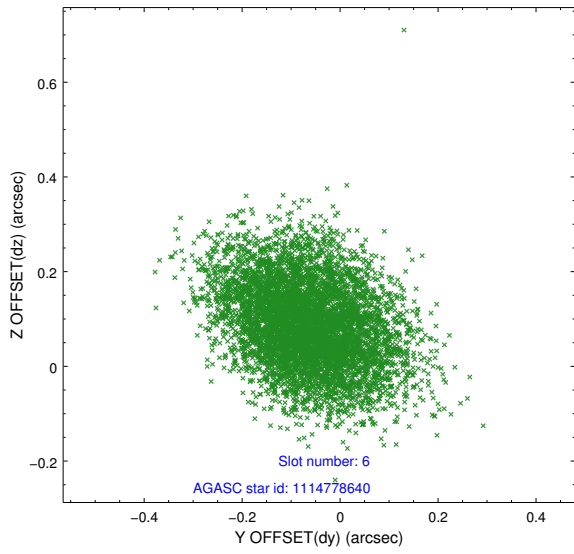
### 3.4.2 Slot 4



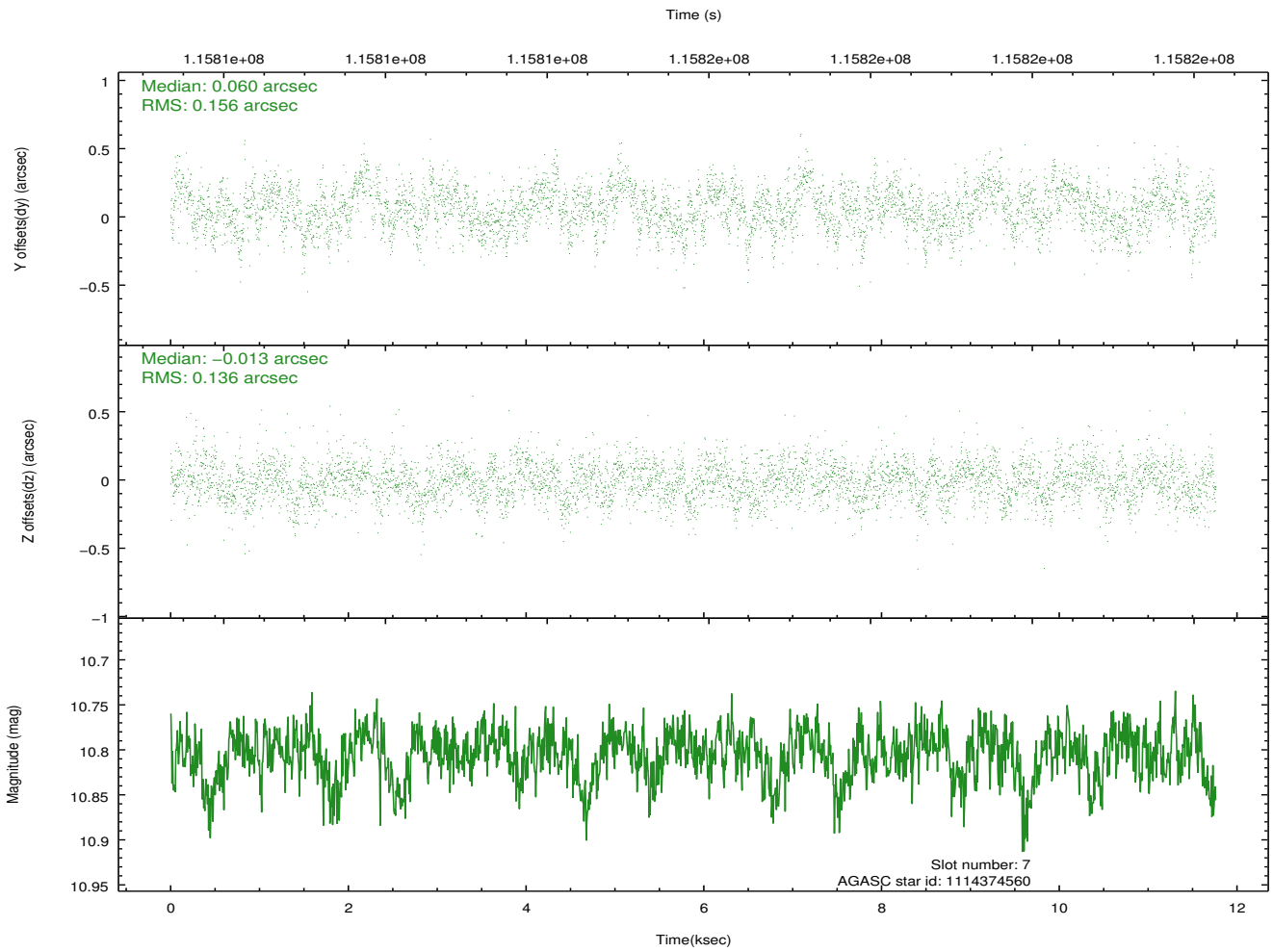
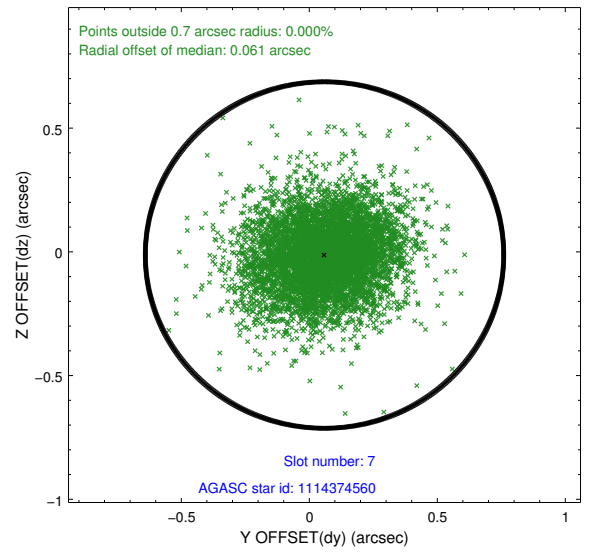
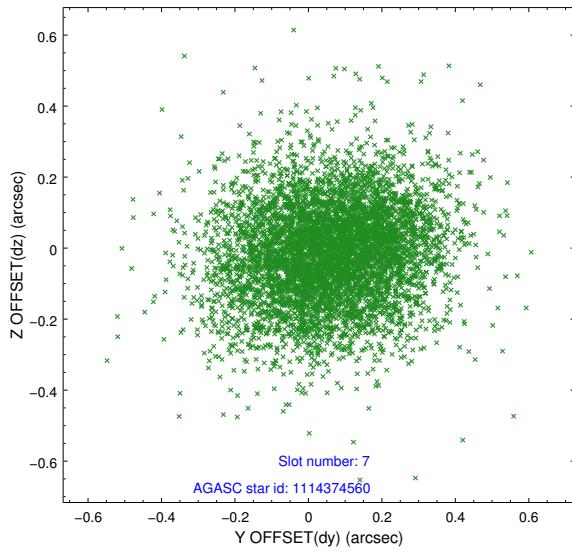
### 3.4.3 Slot 5



### 3.4.4 Slot 6

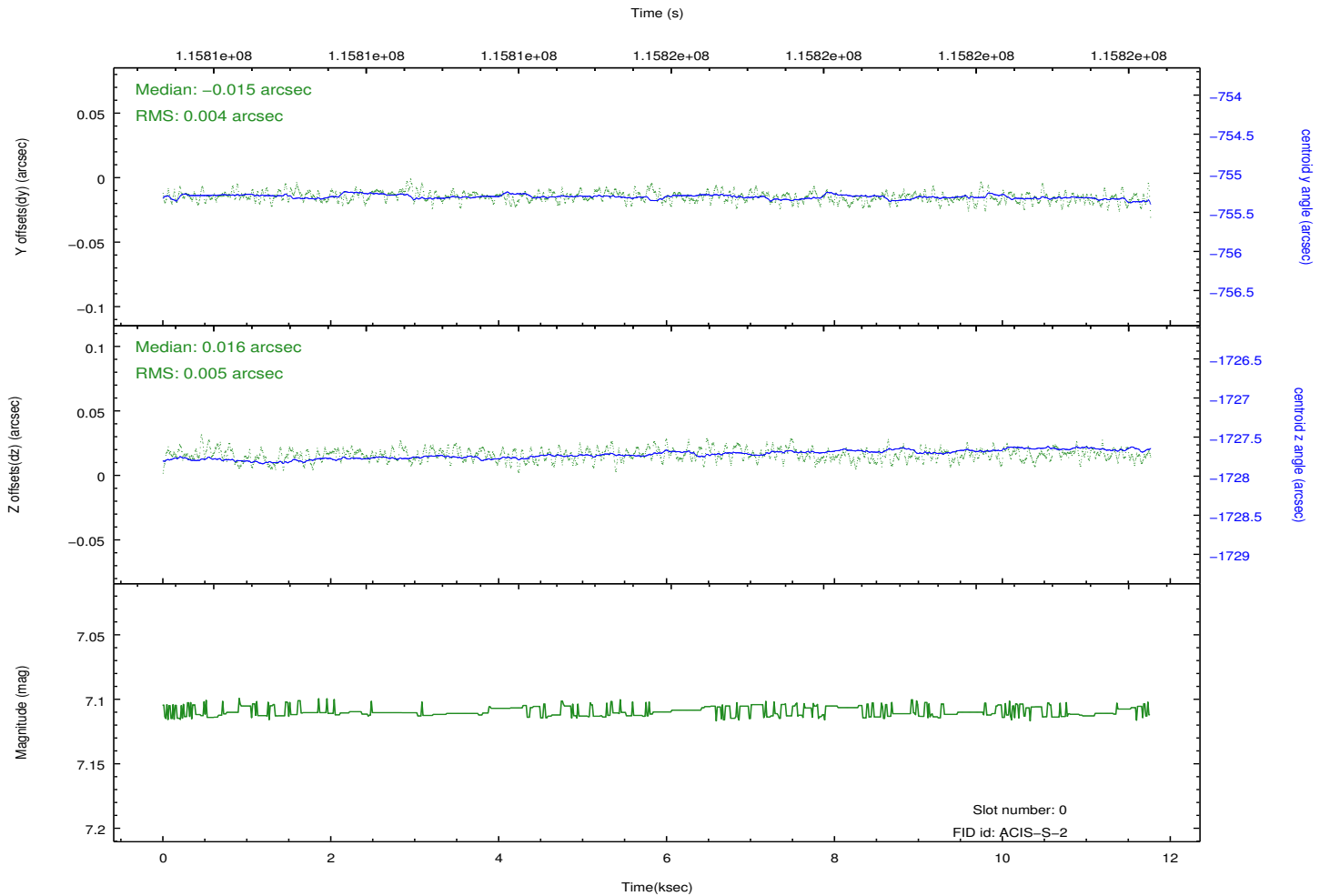
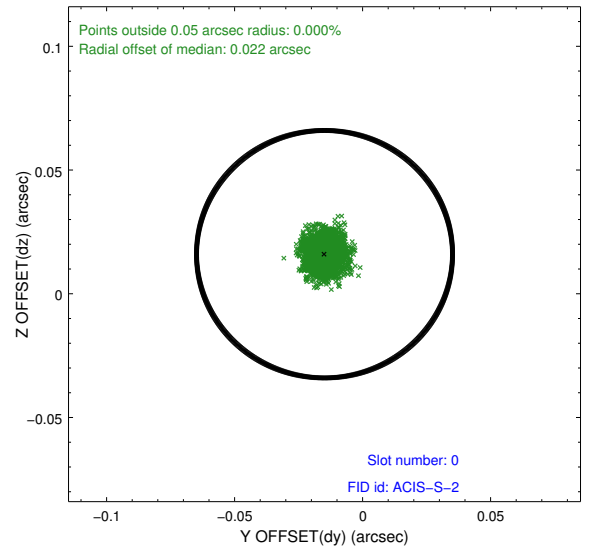
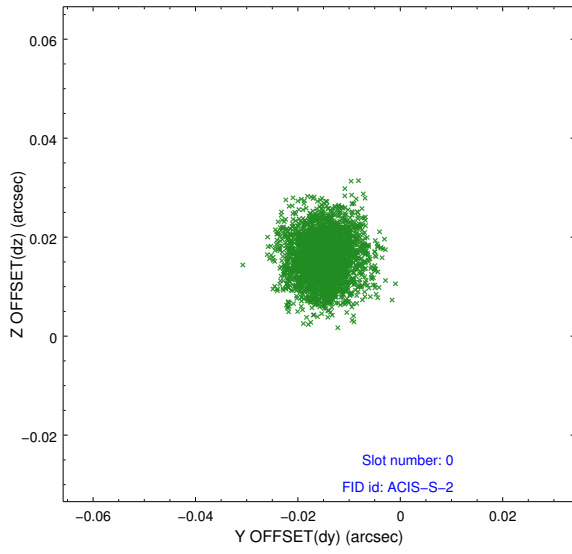


### 3.4.5 Slot 7

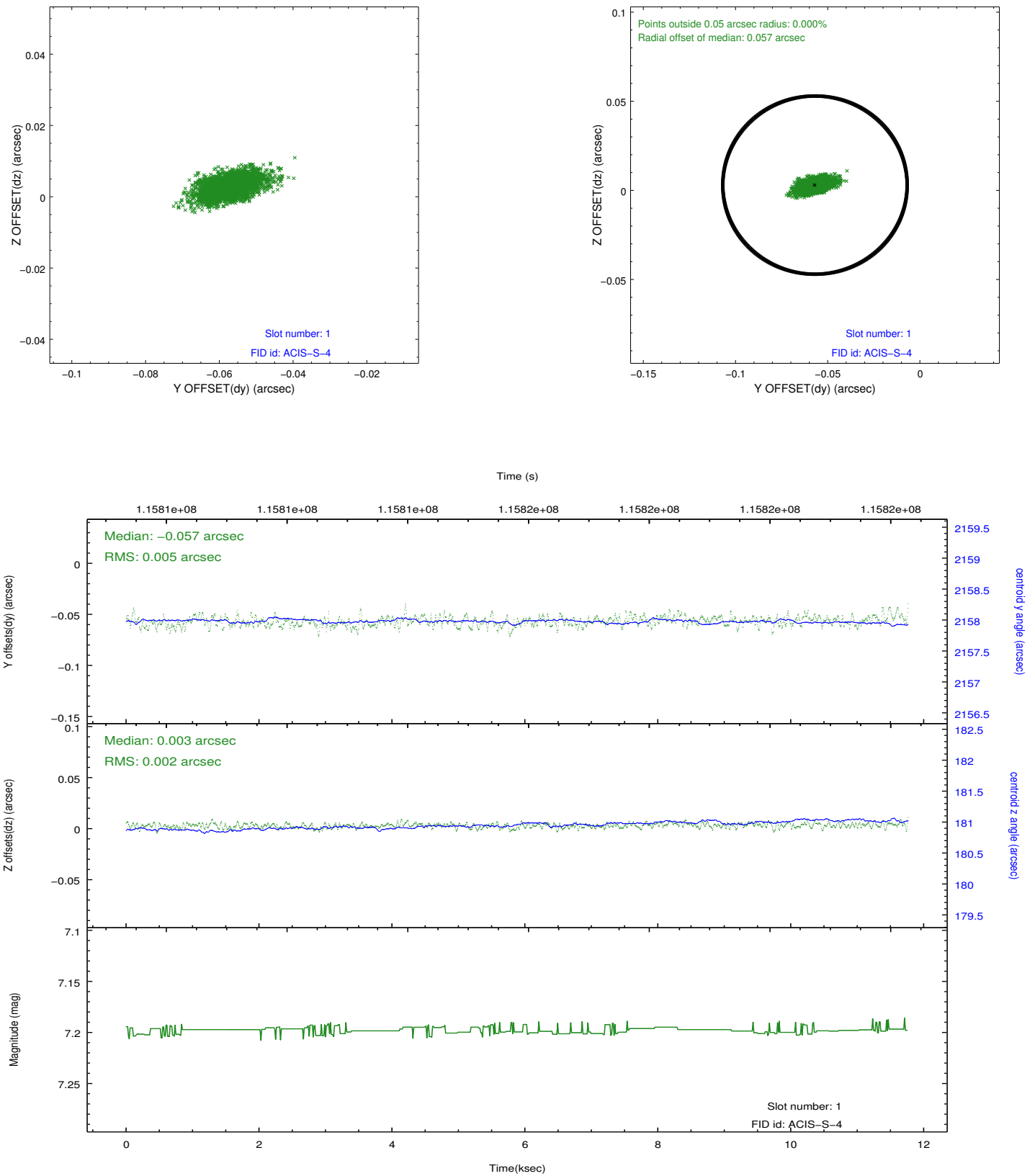


# 3.5 FID Slots

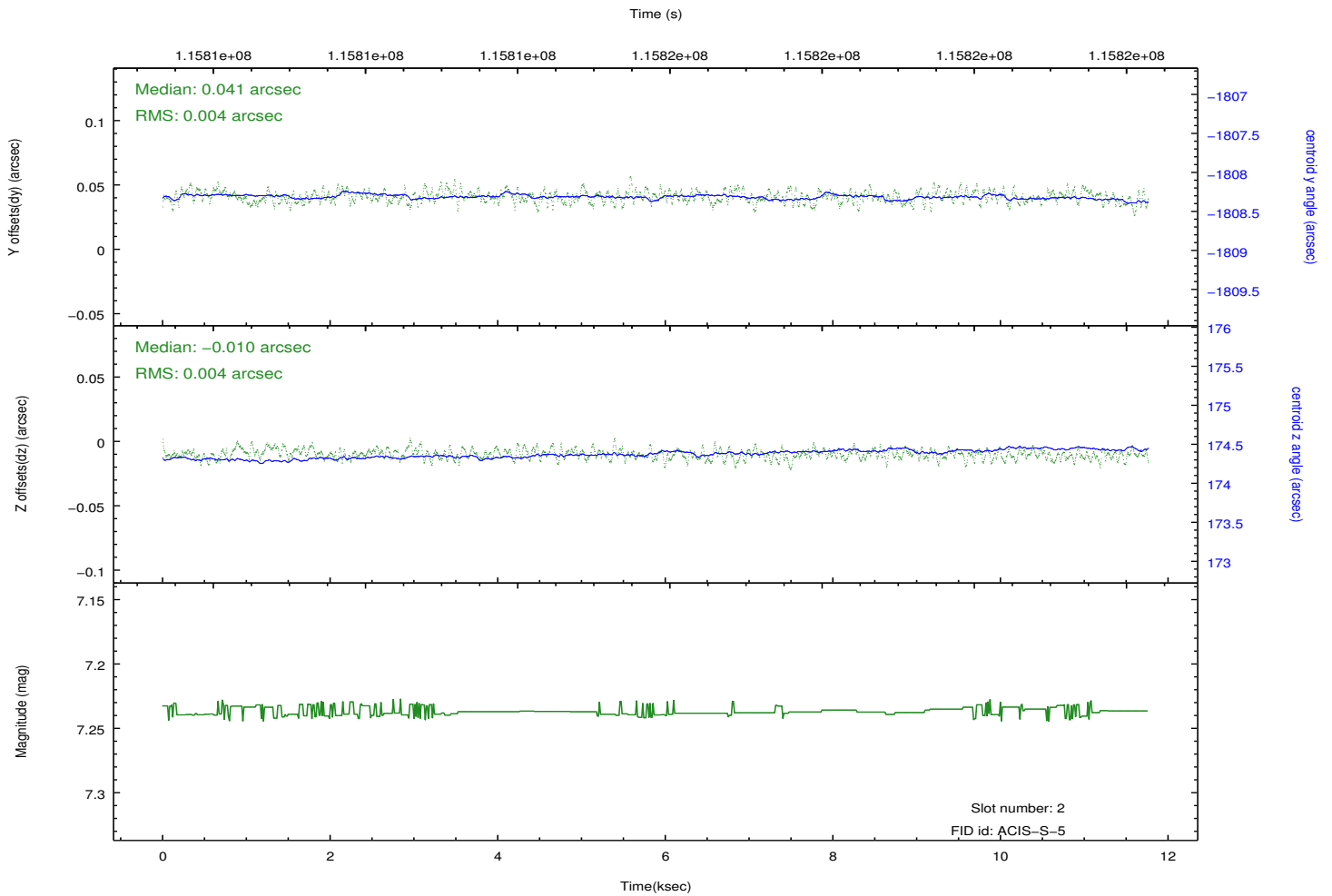
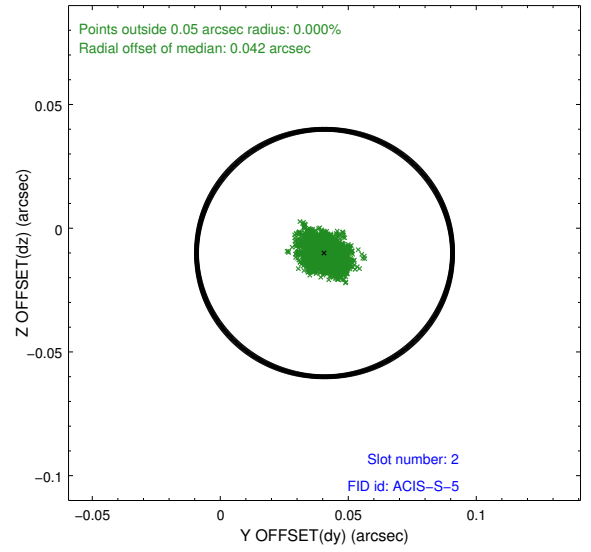
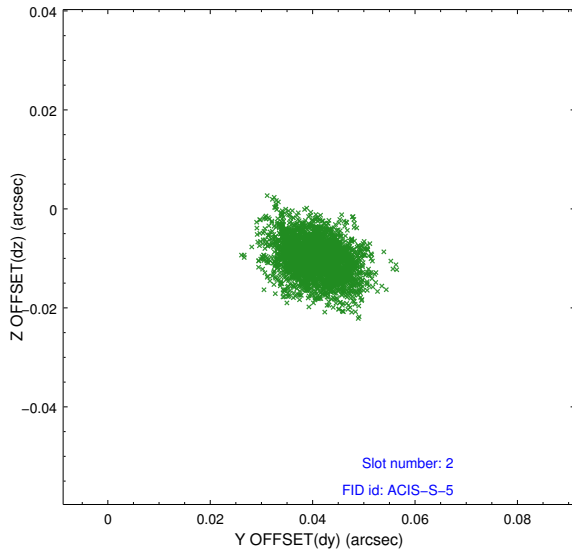
## 3.5.1 Slot 0



### 3.5.2 Slot 1



### 3.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.001

## A.2 Comments

Obi=0 of this observation was interrupted by safing of the science instruments onboard Chandra due to high solar radiation environment.