

# V&V Reference Report

## L2 ASCDS Version : 10.1.1

Observation 16228 - L2 Version 2  
Chandra X-Ray Center

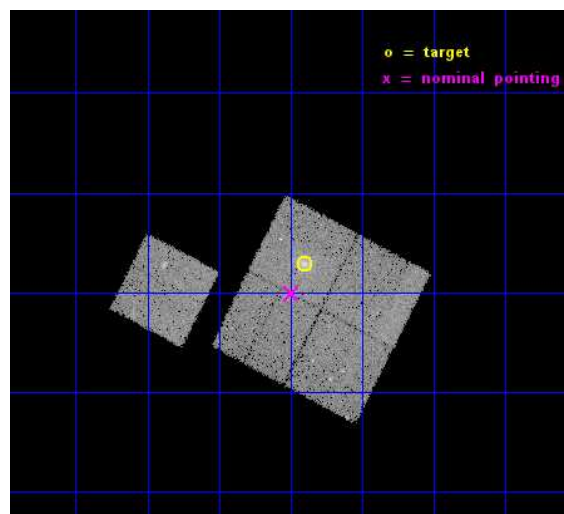
L2 Processing Date : Dec 7 2014

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# 1 Front

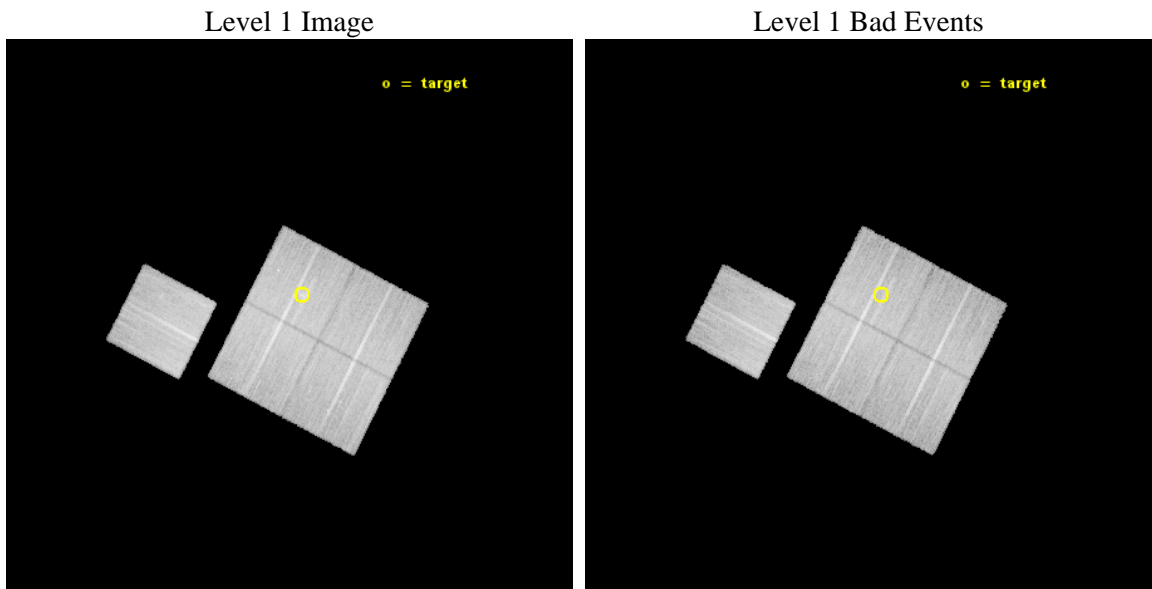
seq_num	801412	Sequence number
obs_id	16228	Observation id
title	Chandra Observations of a Complete Sample of SZE Clusters from ACT	&#160
observer	Prof. John Hughes	Principal investigator
object	ACT-CL_J0014-0056	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	3.725417	Observer's specified target RA [deg]
dec_targ	-0.952361	Observer's specified target Dec [deg]
ra_nom	3.748709970359	Nominal RA [deg]
dec_nom	-1.0015243055482	Nominal Dec [deg]
roll_nom	297.37617044499	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30214.725660384	Sum of GTIs [s]
livetime	29819.948025873	Livetime [s]
ontime0	30217.743631184	Sum of GTIs [s]
ontime1	30217.784671187	Sum of GTIs [s]
ontime2	30217.825711191	Sum of GTIs [s]
ontime3	30214.725660384	Sum of GTIs [s]
ontime6	30214.561600804	Sum of GTIs [s]
l2events	88355	Number of level 2 events



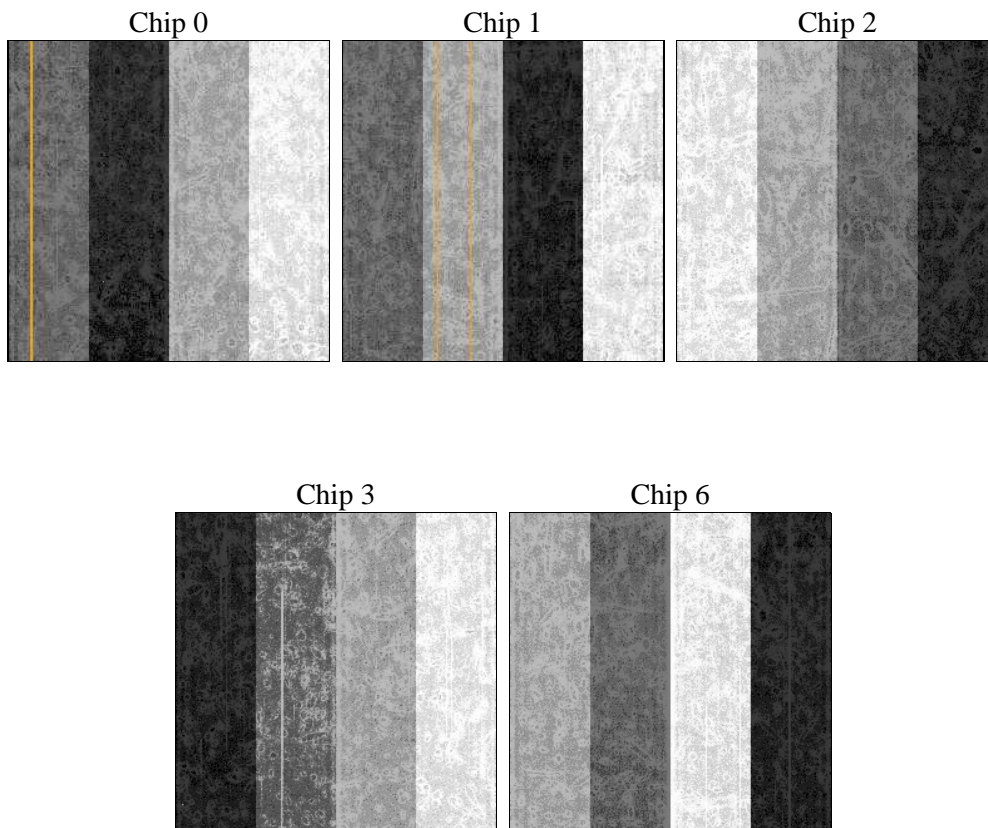
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30138.152000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	30214.725660384	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	30217.743631184	Sum of GTIs [s]
date	2014-12-07T20:00:50	Date and time of file creation	ontime1	30217.784671187	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	30217.825711191	Sum of GTIs [s]
			ontime3	30214.725660384	Sum of GTIs [s]
			ontime6	30214.561600804	Sum of GTIs [s]
			l1events	843788	Number of level 1 events

### 2.1.4 Events

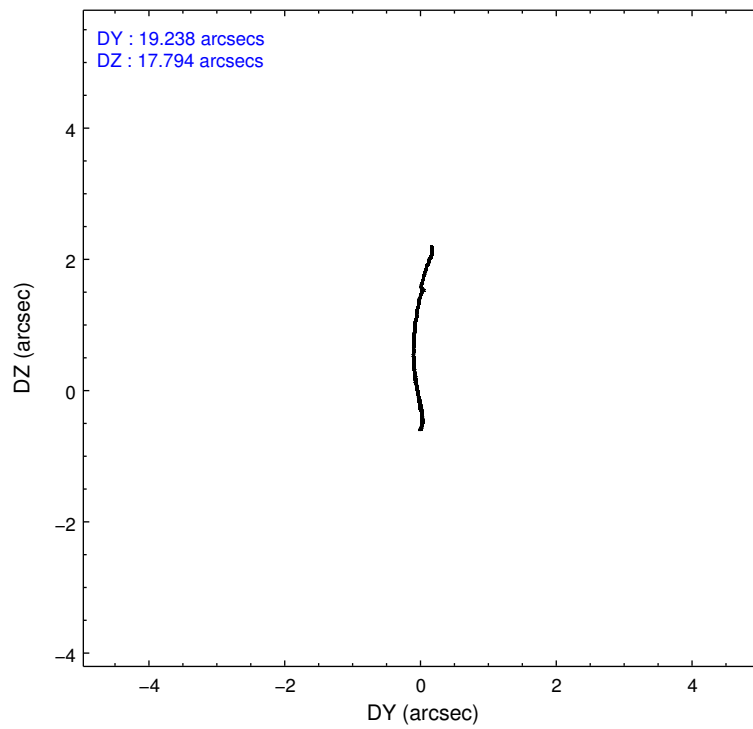
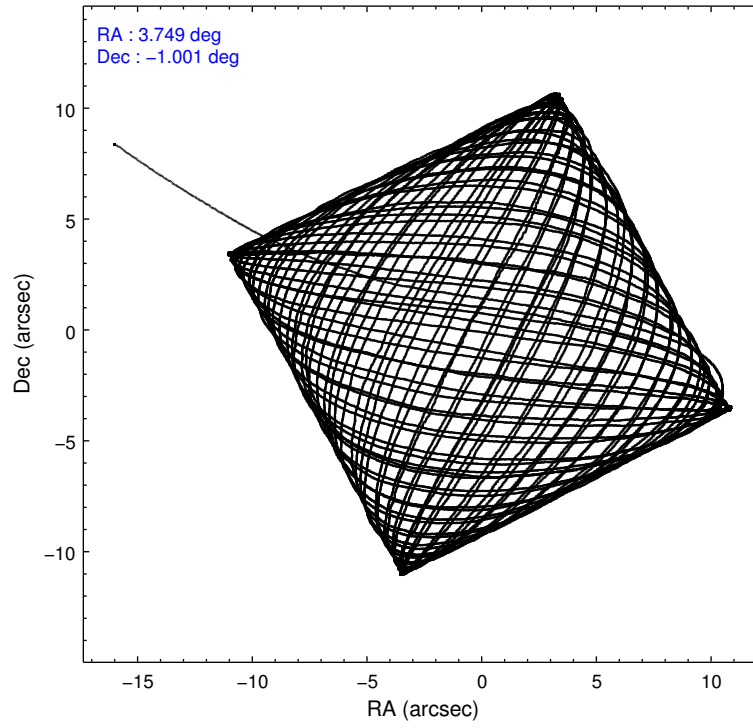
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	156762	155685	176536	176077	178728
rejected events	135583	133791	155493	153607	157219
rejected %	86%	85%	88%	87%	87%

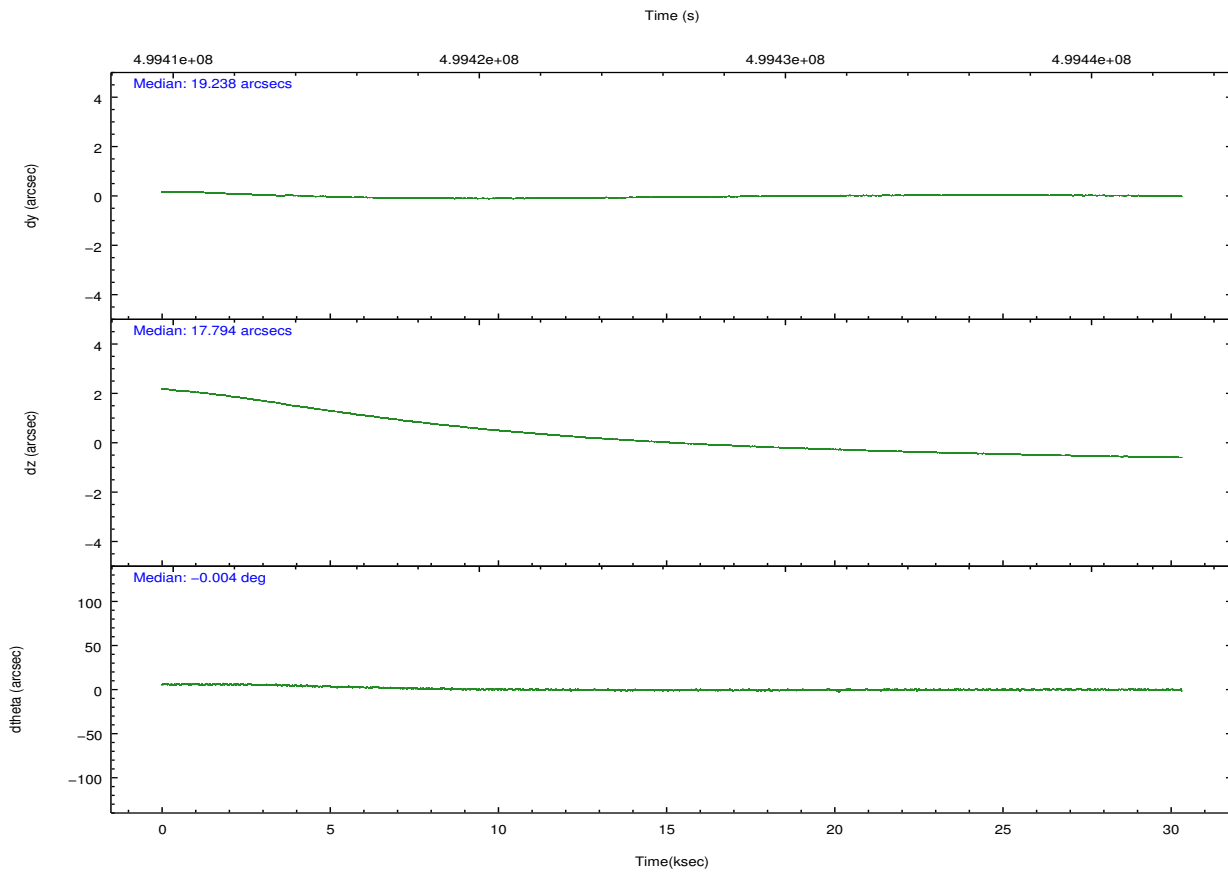
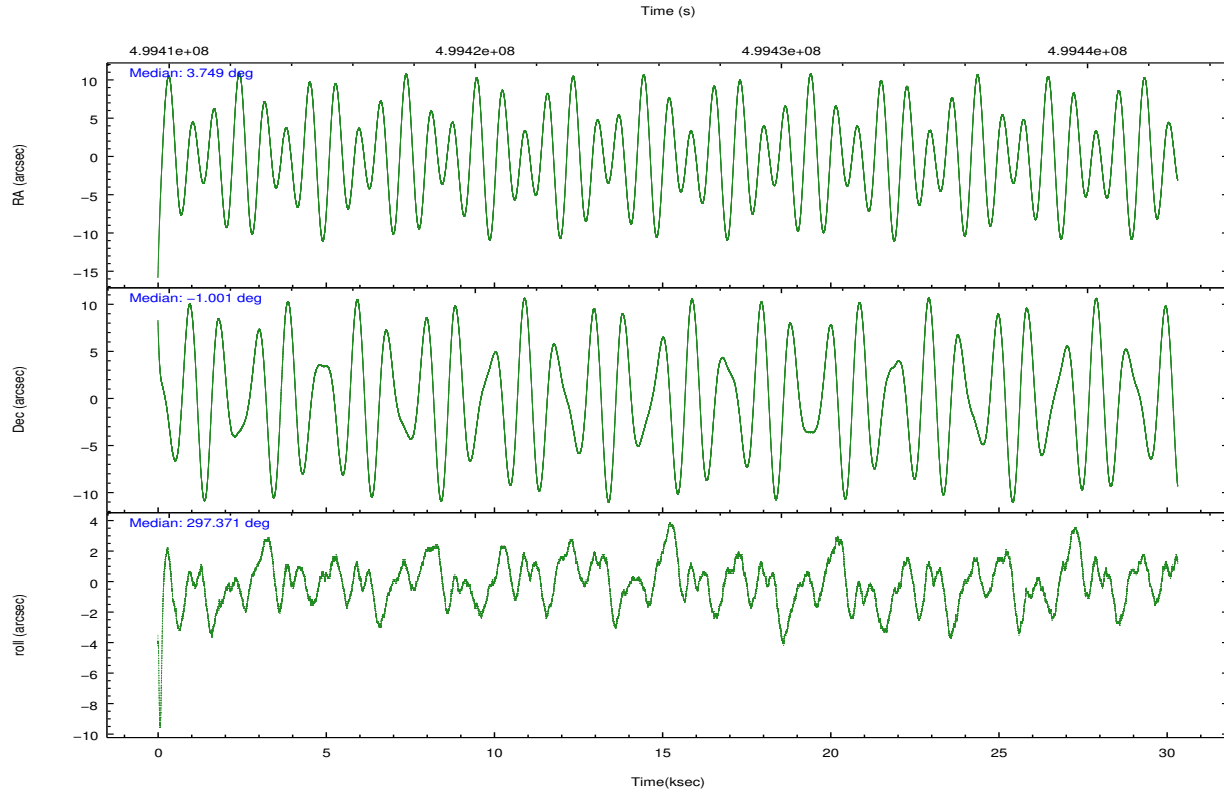
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	8063	7836	8292	9806	8111
	5%	5%	4%	5%	4%
grade 1 events	87	93	101	113	106
	0%	0%	0%	0%	0%
grade 2 events	5327	5265	5013	4618	4857
	3%	3%	2%	2%	2%
grade 3 events	2049	2149	1857	2009	2032
	1%	1%	1%	1%	1%
grade 4 events	1788	2093	2167	2095	2008
	1%	1%	1%	1%	1%
grade 5 events	7166	7747	6676	8263	7965
	4%	4%	3%	4%	4%
grade 6 events	3958	4556	3719	3947	4507
	2%	2%	2%	2%	2%
grade 7 events	128324	125946	148711	145226	149142
	81%	80%	84%	82%	83%

## 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	3.725479	3.748709970358959	CCD I2 on	Y	Y
[deg] Pointing Dec	-0.986802	-1.001524305548233	CCD I3 on	Y	Y
[deg] Pointing Roll	297.167084	297.3761704449919	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	-225.792463	-225.7829997647864	CCD S3 on	N	N
[mm] SIM translation stage offset	-7.8	-7.809453238143249	CCD S4 on	N	N
[s] Observation start time (MET)	499411311.184000	499410084.37928	CCD S5 on	N	N
Observation start date	2013-10-29T05:20:44	2013-10-29T05:01:24	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	499441450.184000	499441689.23101	On-chip summing requested	N	N
Observation end date	2013-10-29T13:43:03	2013-10-29T13:48:09	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



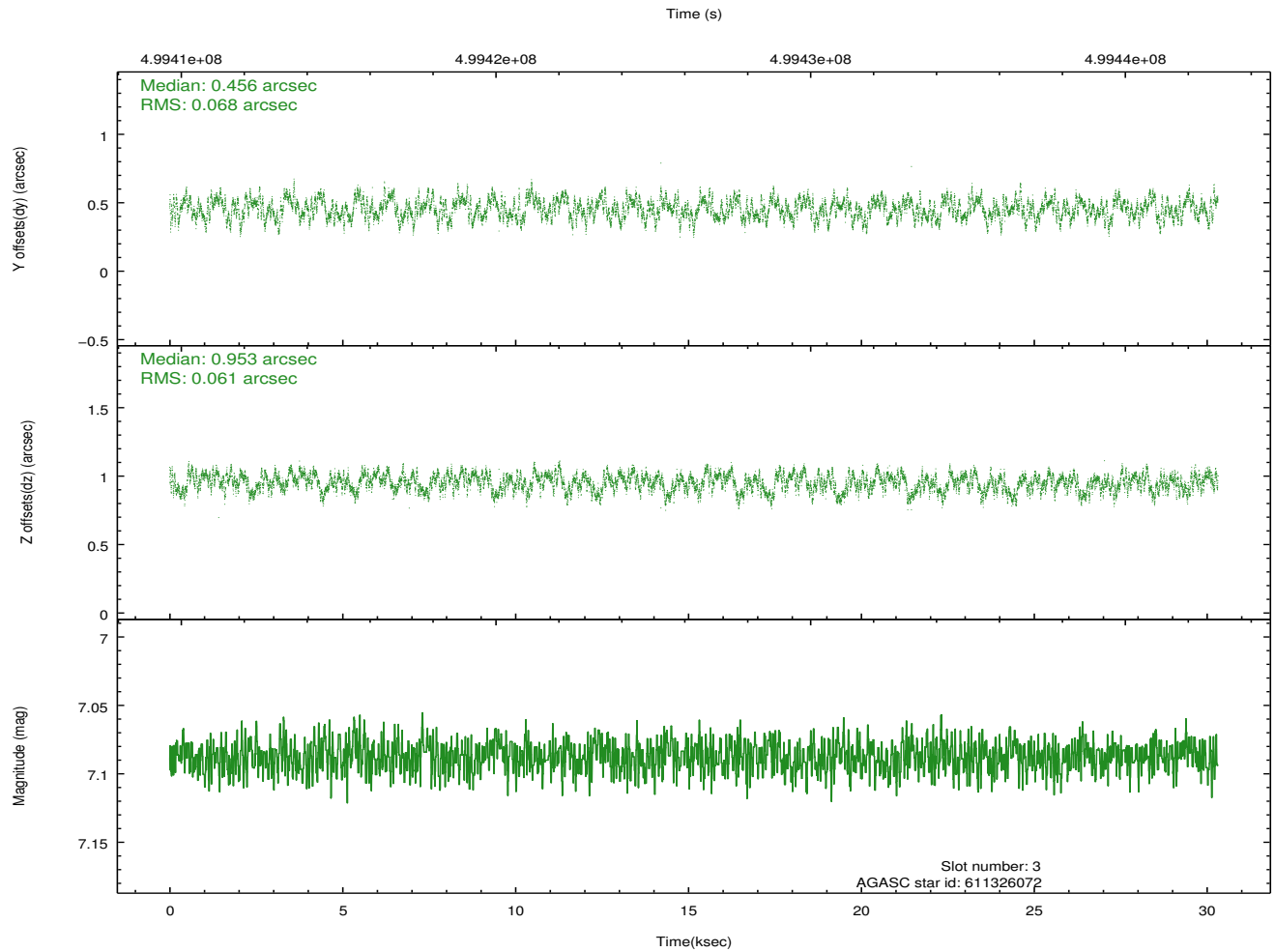
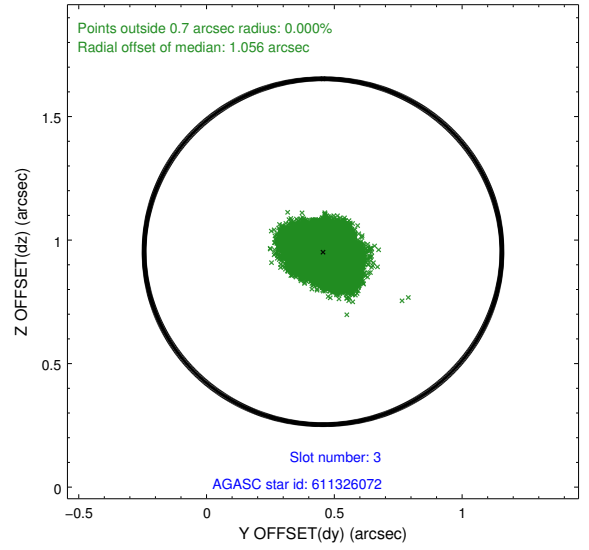
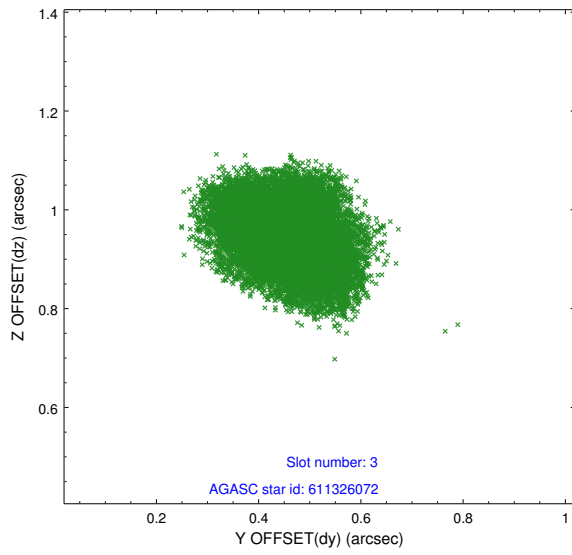


### Slot Statistics

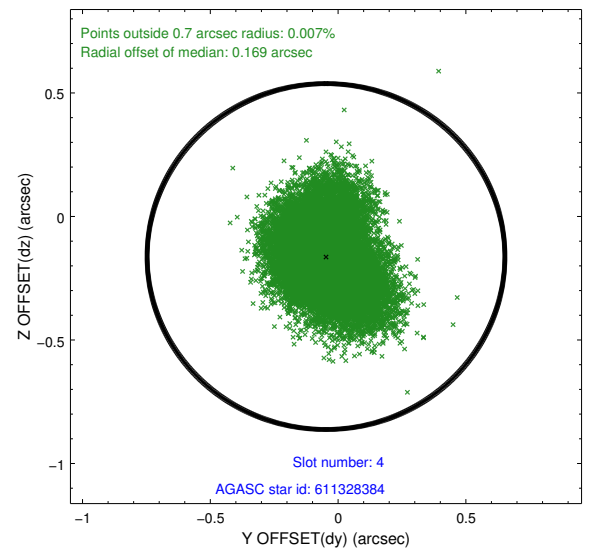
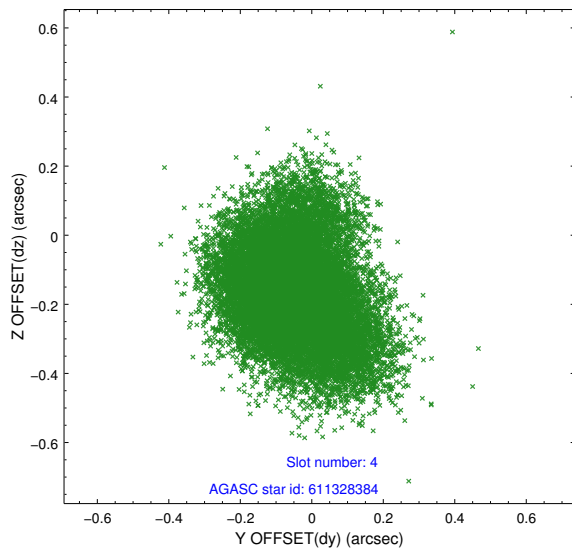
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.09	7394	0.122	-0.077	0.014	0.061	0.000000	0.000000	920.13	-1002.14
1	FID		ACIS-I-5	7.08	7394	-0.315	0.092	0.010	0.031	0.000000	0.000000	-1828.44	895.37
2	FID		ACIS-I-6	7.10	7394	0.102	0.058	0.015	0.038	0.000000	0.000000	385.48	1540.01
3	GUIDE	used	611326072	7.09	14791	0.456	0.953	0.099	0.153	3.168071	-1.227195	-144.79	-2179.11
4	GUIDE	used	611328384	9.83	14771	-0.047	-0.162	0.190	0.303	4.437661	-1.047786	1366.36	2179.76
5	GUIDE	used	611328704	9.87	14774	-0.204	-0.102	0.190	0.301	4.355524	-1.080720	1336.97	1863.41
6	GUIDE	used	611328744	7.91	14788	-0.177	-0.299	0.085	0.133	4.267963	-1.067881	1151.61	1603.86
7	GUIDE	used	611329432	8.62	14779	-0.019	-0.387	0.127	0.186	4.146272	-1.523221	2410.00	463.97

## 2.4 Star Slots

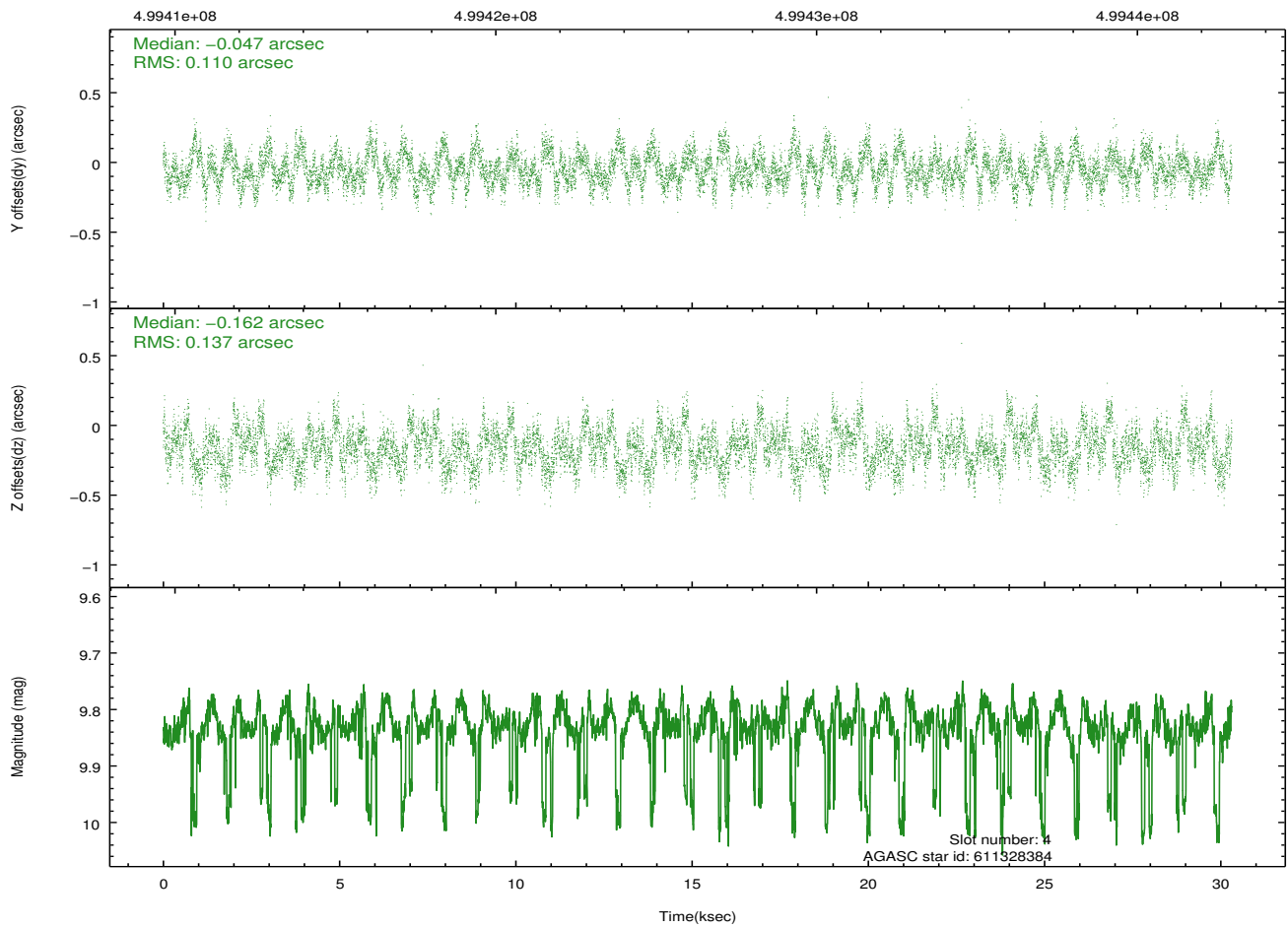
### 2.4.1 Slot 3



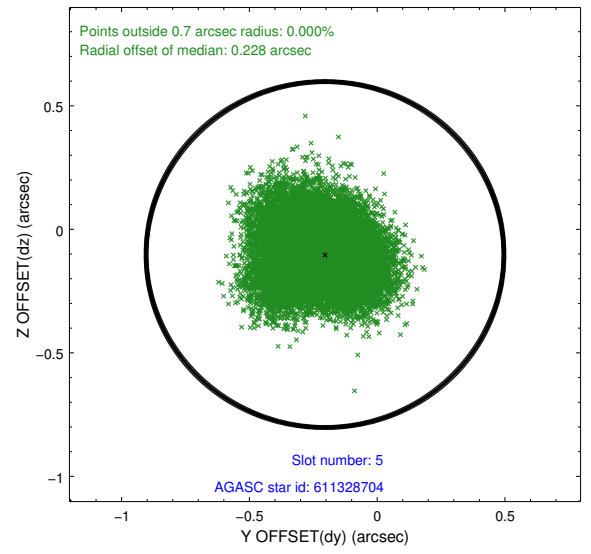
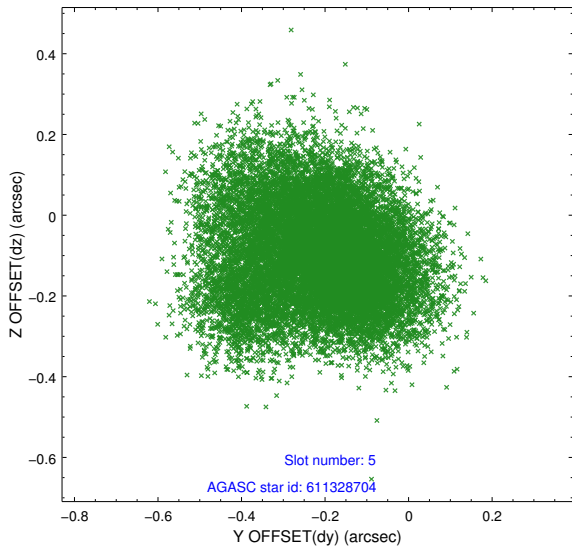
## 2.4.2 Slot 4



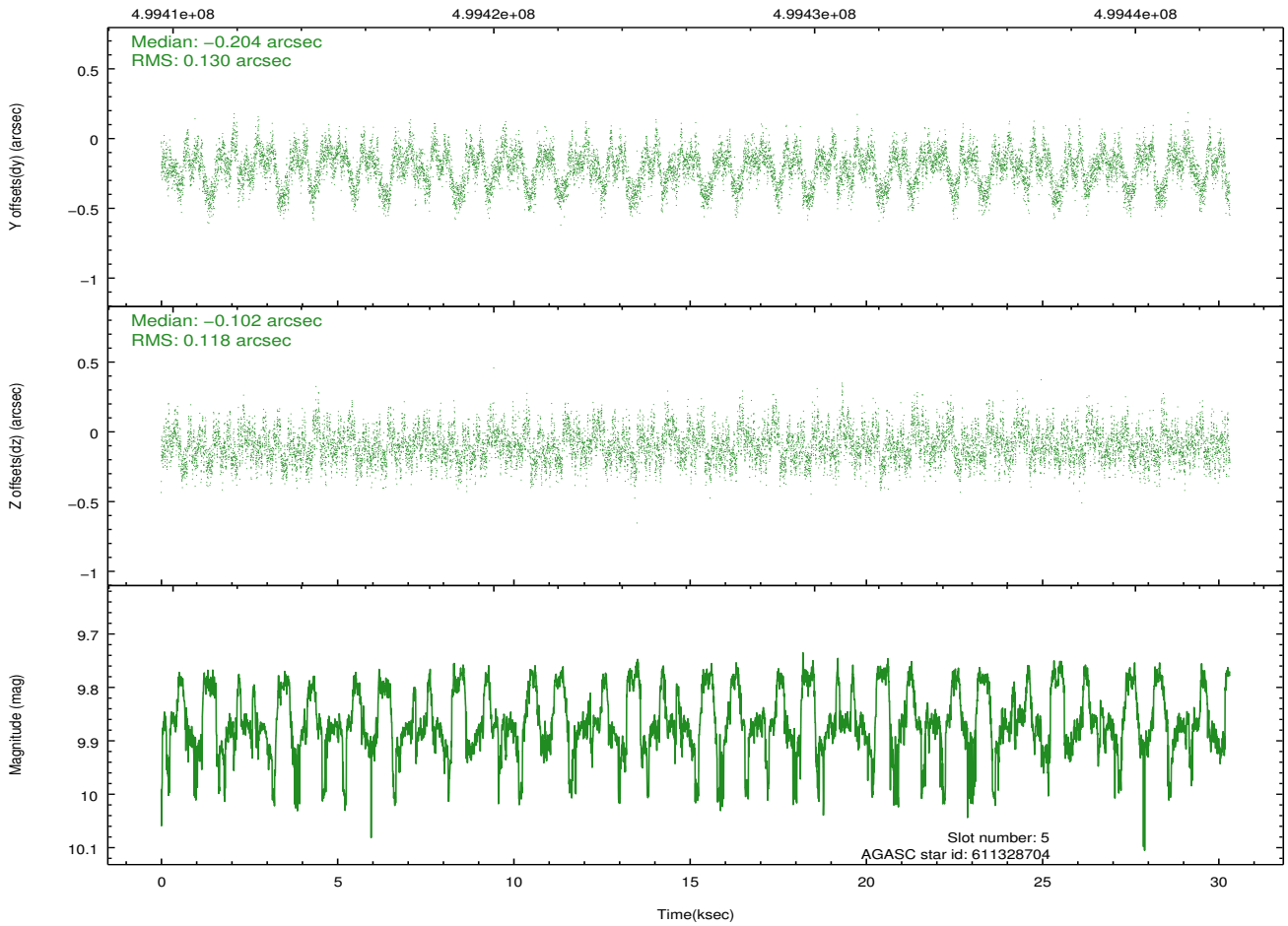
Time (s)



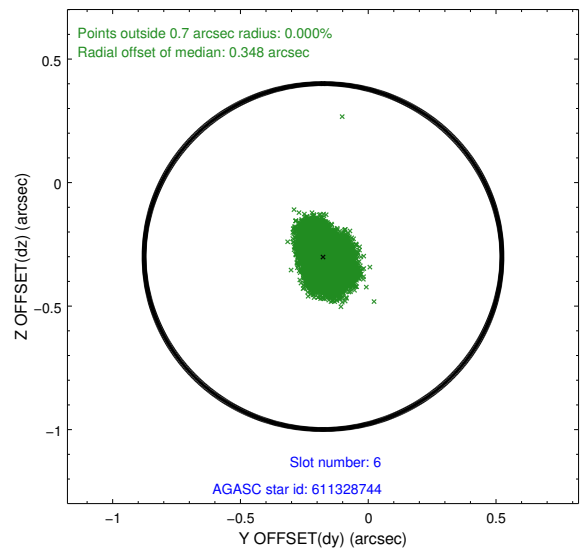
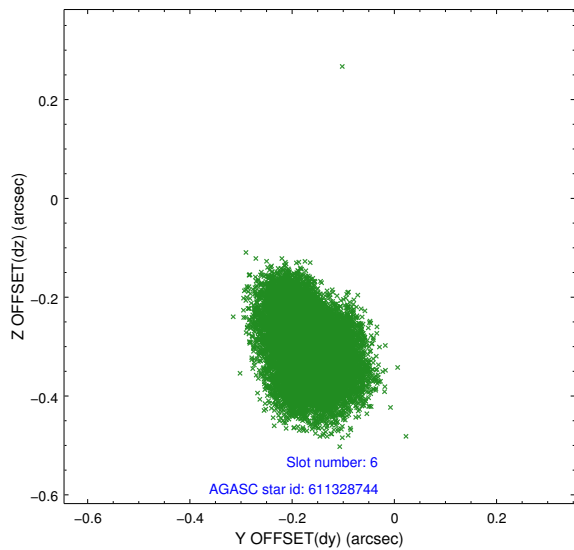
### 2.4.3 Slot 5



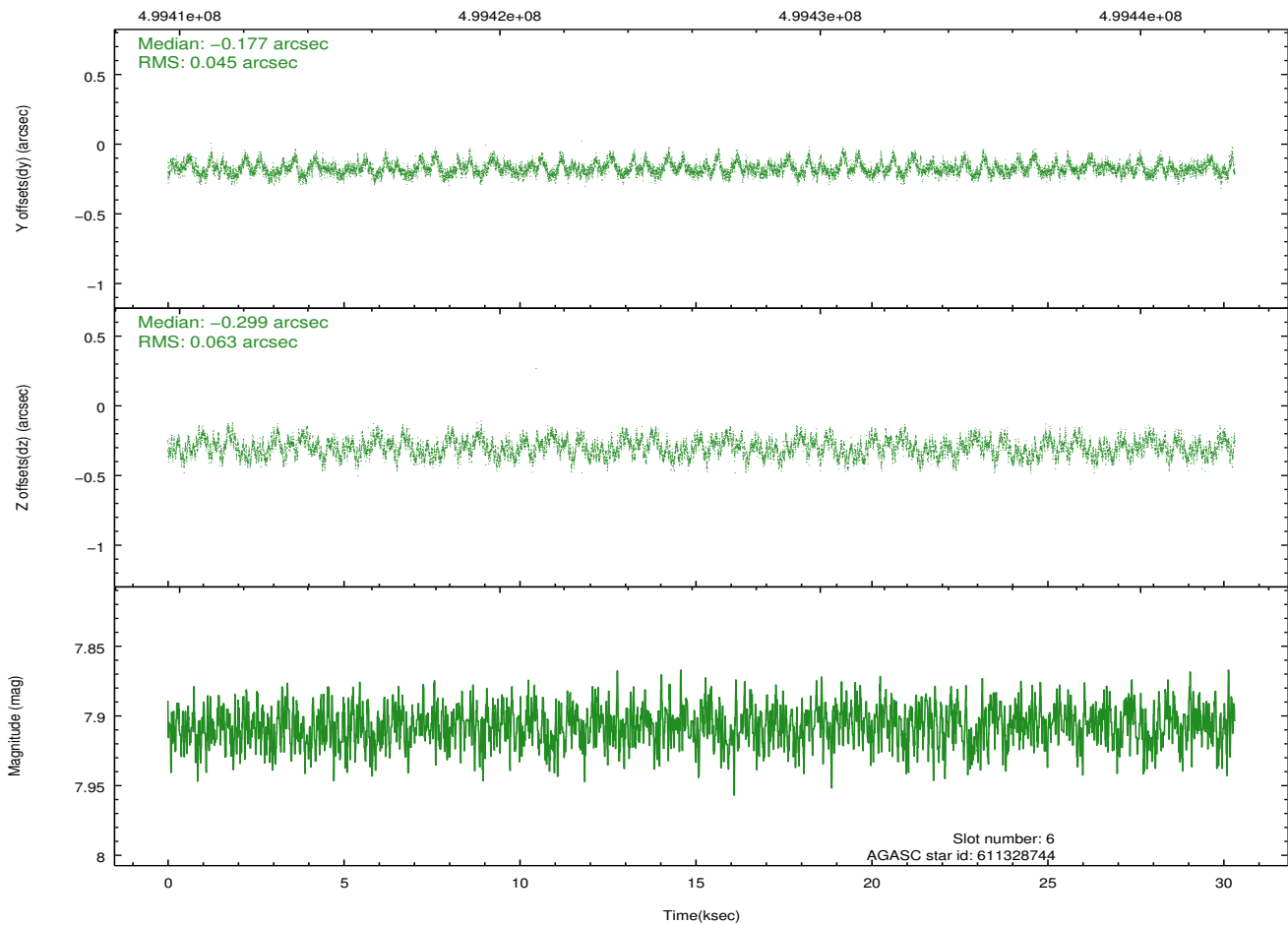
Time (s)



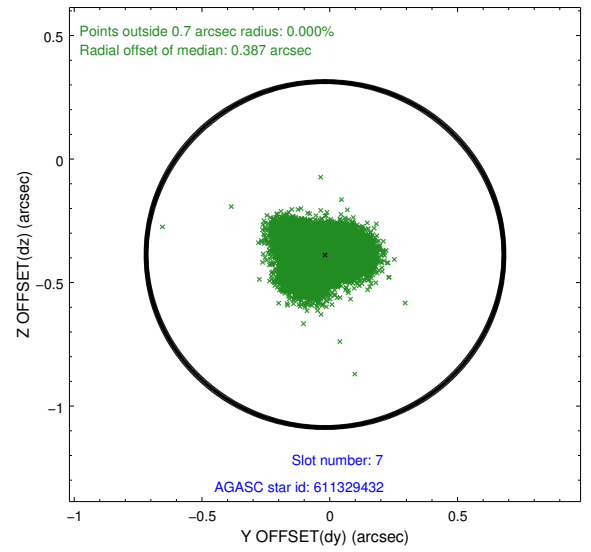
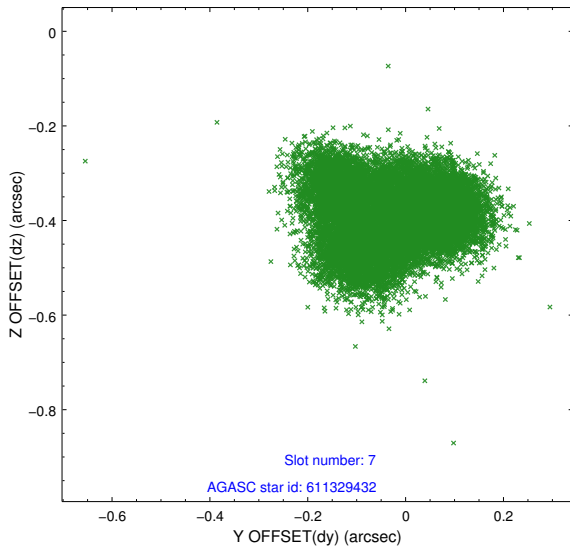
## 2.4.4 Slot 6



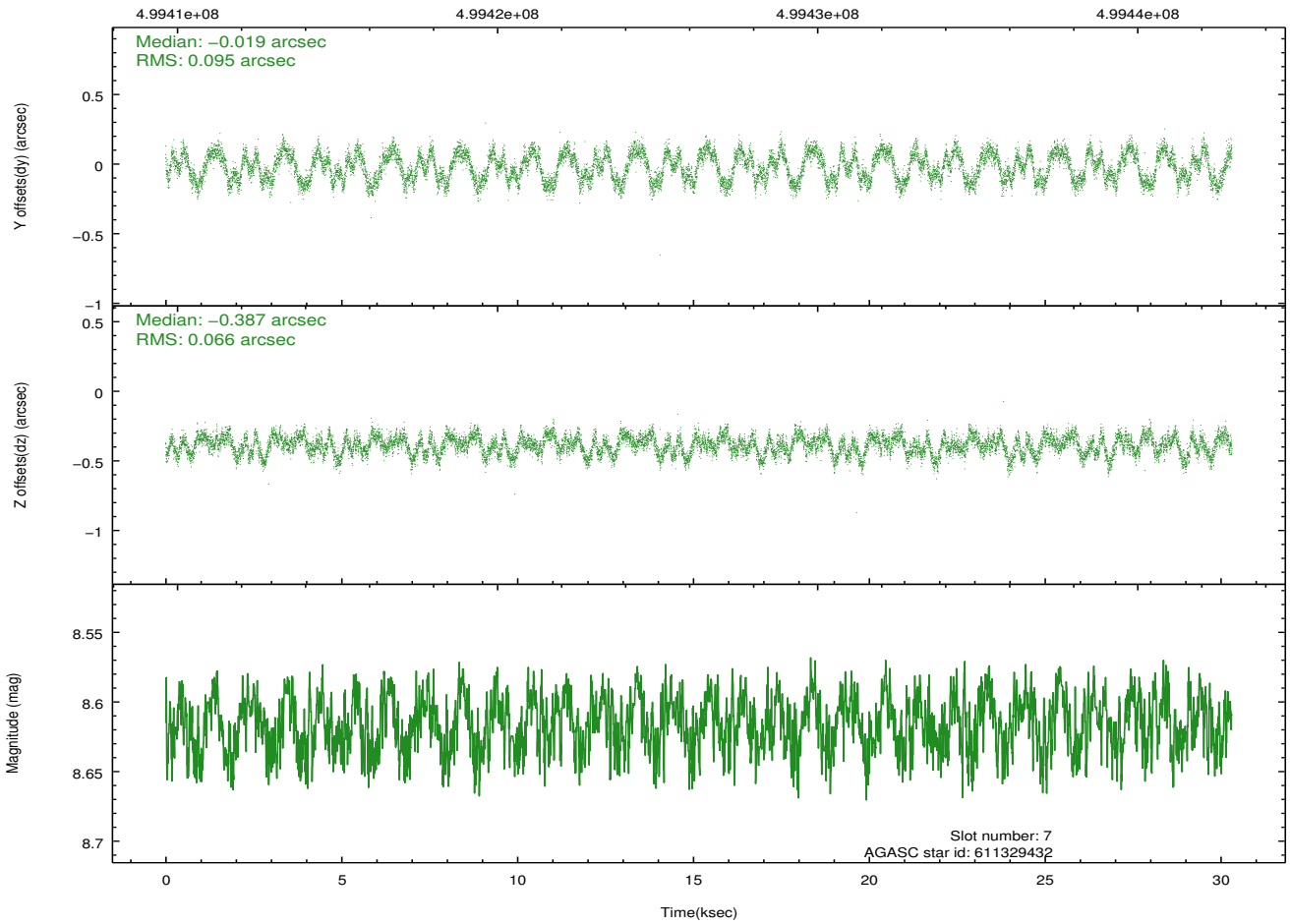
Time (s)



### 2.4.5 Slot 7

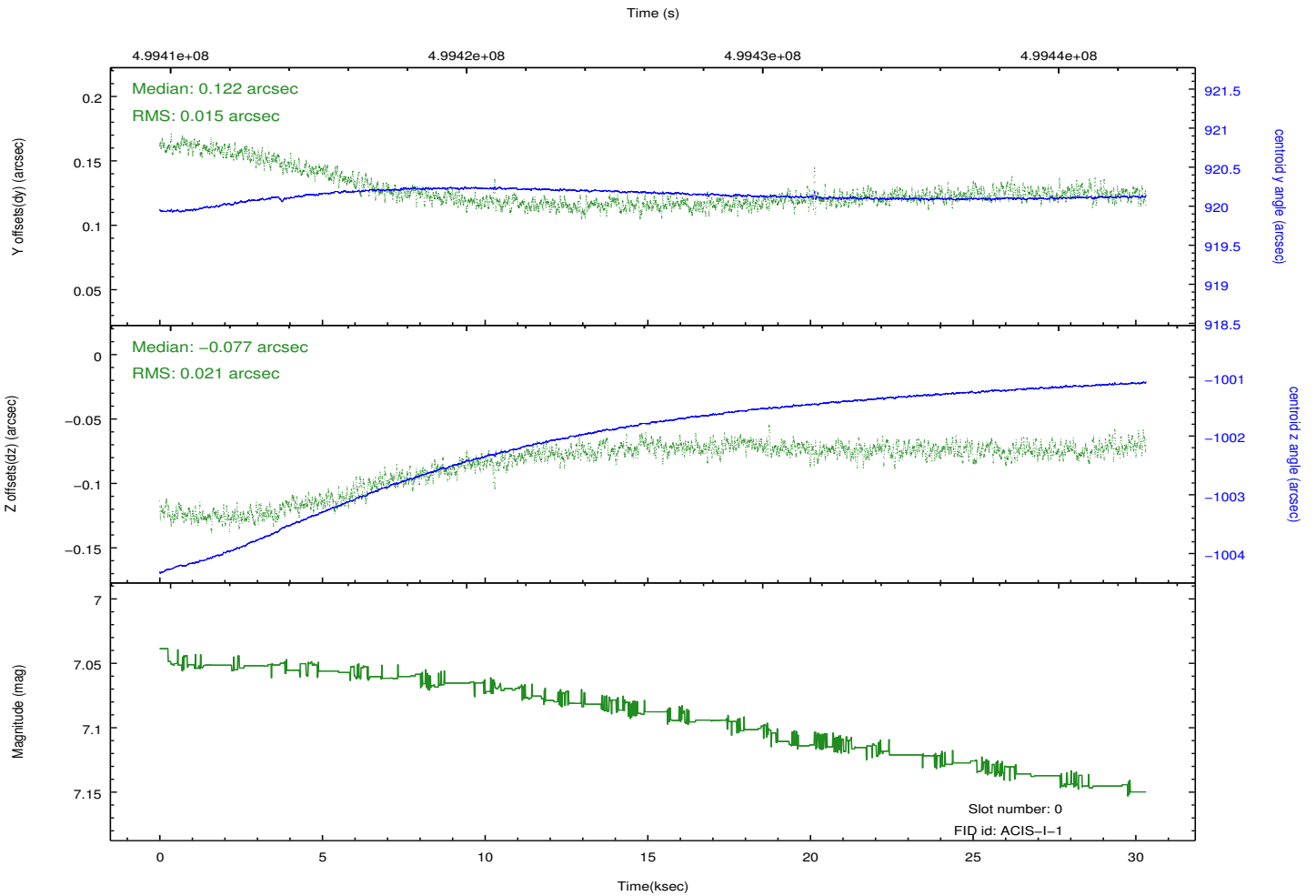
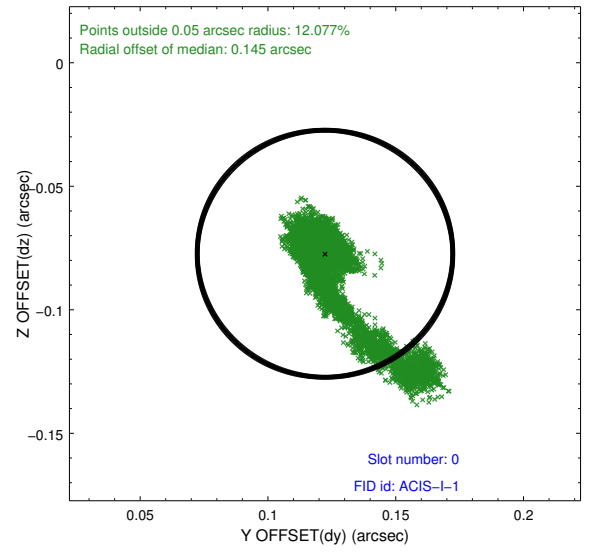
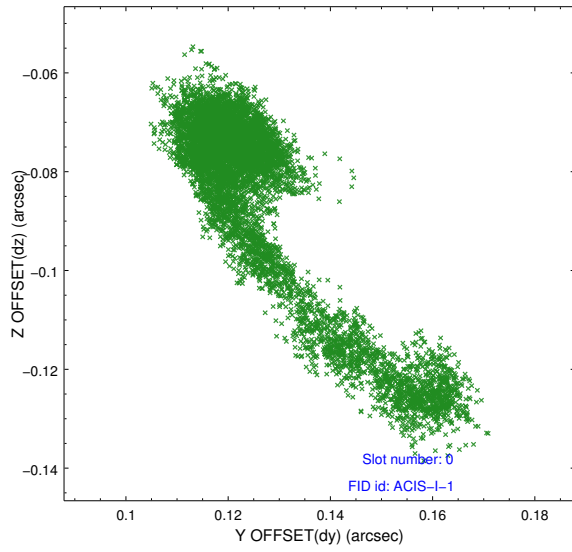


Time (s)

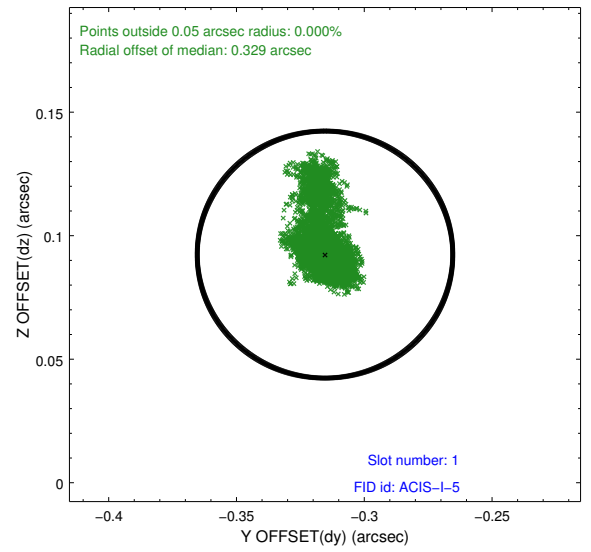
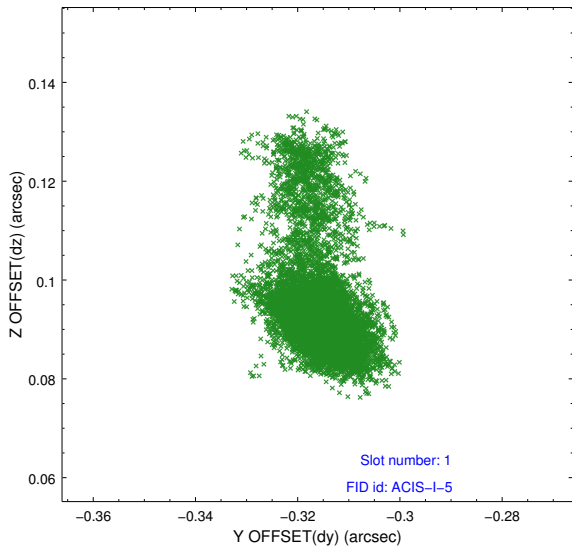


## 2.5 FID Slots

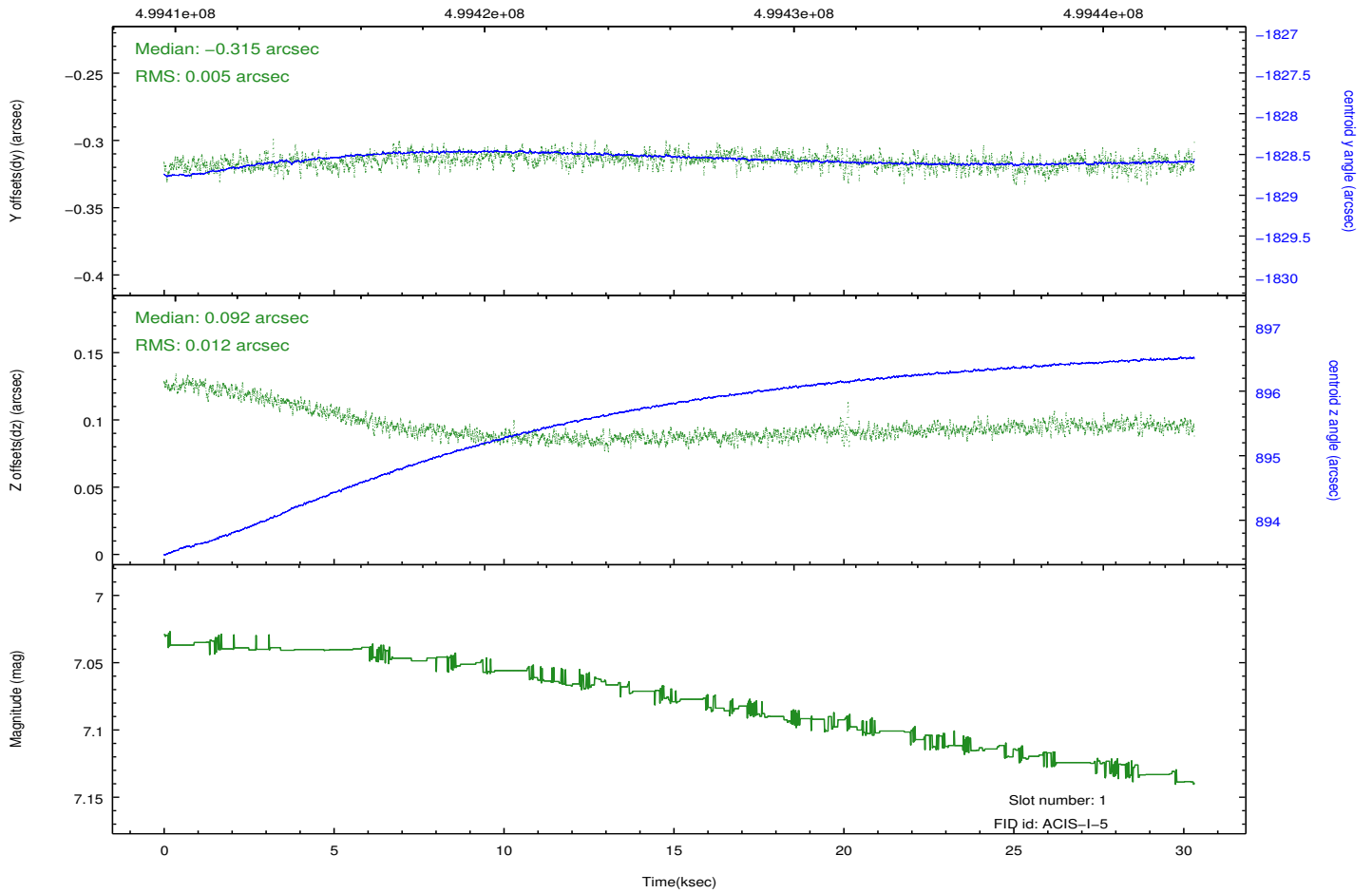
### 2.5.1 Slot 0



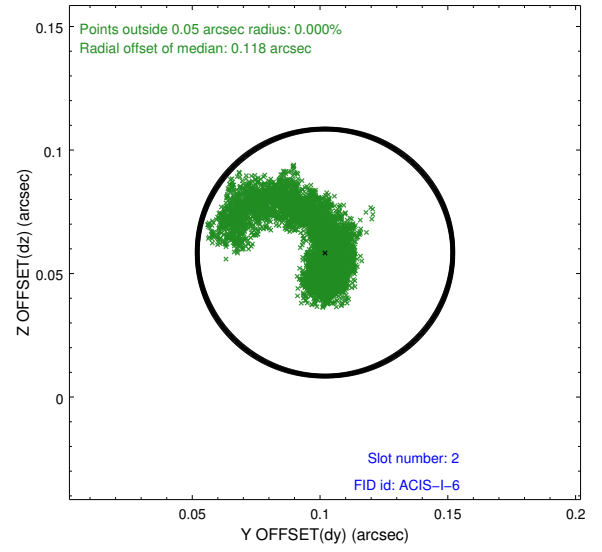
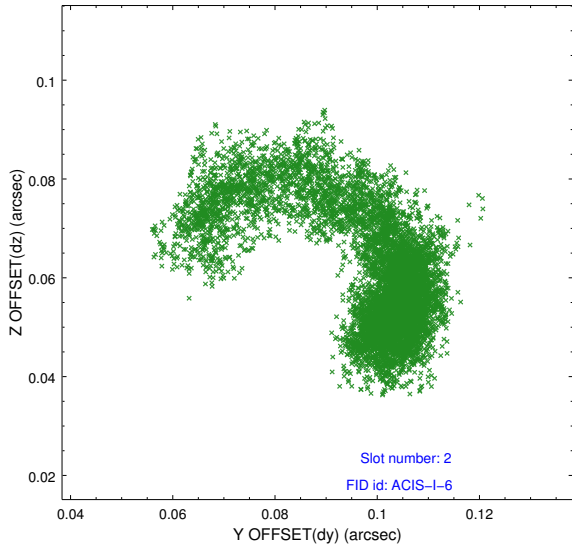
## 2.5.2 Slot 1



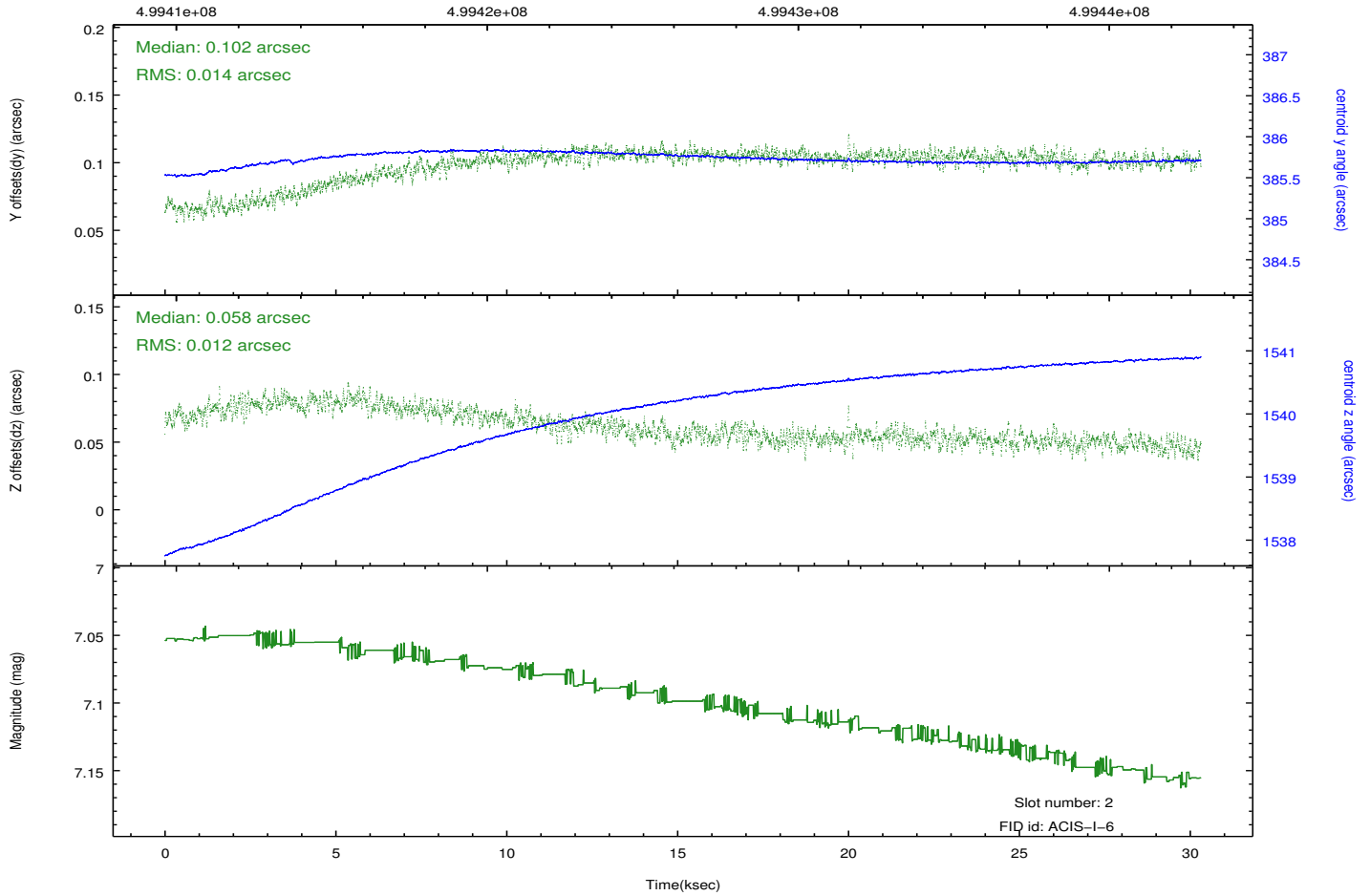
Time (s)



### 2.5.3 Slot 2



Time (s)



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.214725660384

## A.2 Comments

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.