

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 15190 - L2 Version 2  
Chandra X-Ray Center

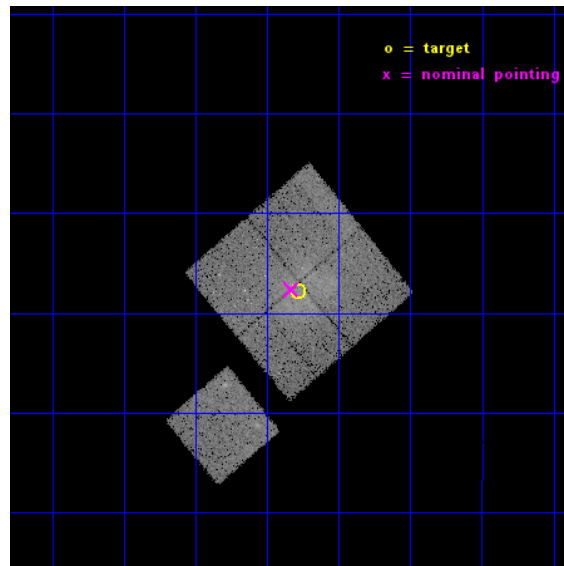
L2 Processing Date : Dec 11 2014

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# 1 Front

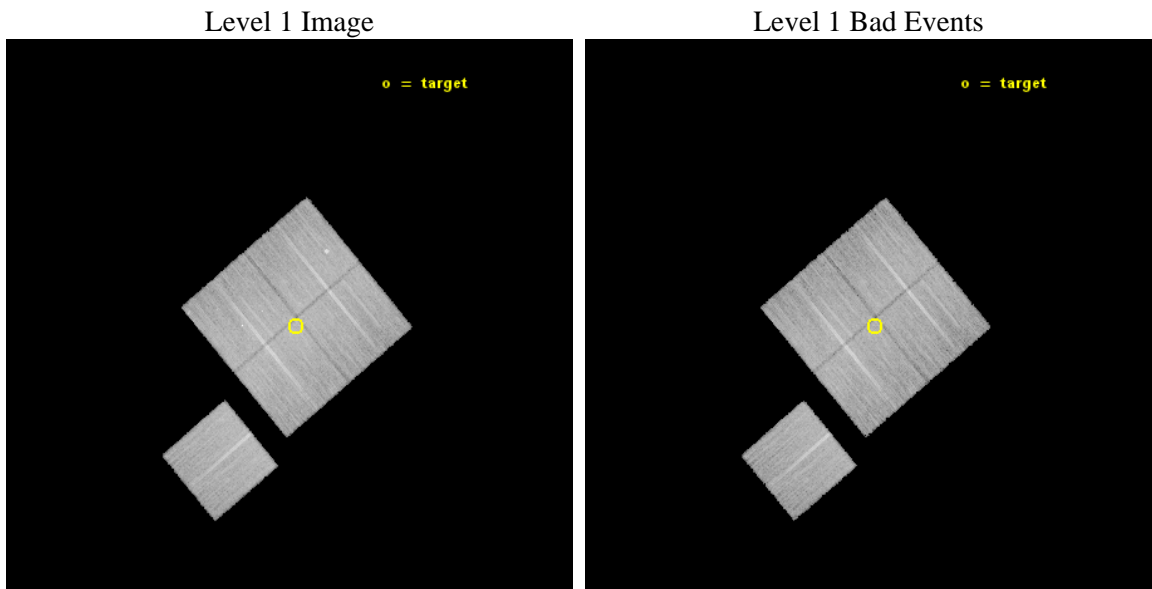
seq_num	801315	Sequence number
obs_id	15190	Observation id
title	The radio relic/cluster merger connection	Proposal title
observer	Dr. Stephen Murray	Principal investigator
object	A1612	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	191.9467	Observer's specified target RA [deg]
dec_targ	-2.7973	Observer's specified target Dec [deg]
ra_nom	191.95786367931	Nominal RA [deg]
dec_nom	-2.7939218240031	Nominal Dec [deg]
roll_nom	229.83063756694	Nominal Roll [deg]
revision	2	Processing version of data
ontime	29174.100224376	Sum of GTIs [s]
livetime	28792.919127284	Livetime [s]
ontime0	29170.959204137	Sum of GTIs [s]
ontime1	29174.100224376	Sum of GTIs [s]
ontime2	29174.100224376	Sum of GTIs [s]
ontime3	29170.959194005	Sum of GTIs [s]
ontime6	29174.100224376	Sum of GTIs [s]
l2events	81080	Number of level 2 events



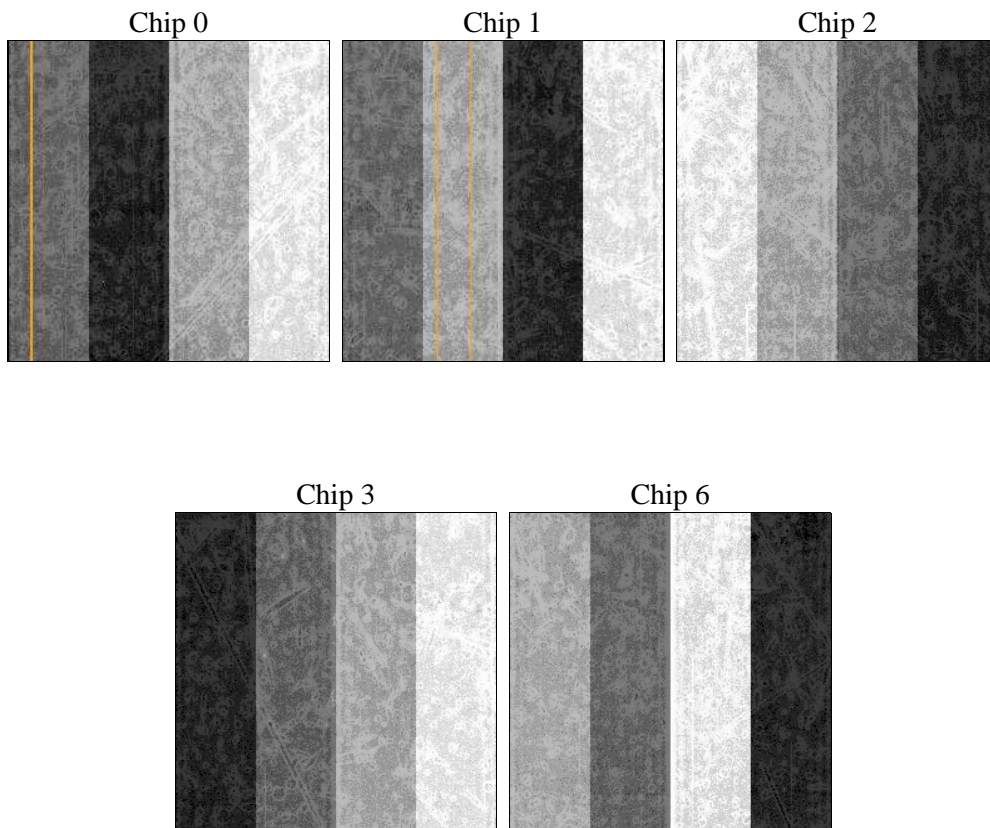
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	29088.206000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	29174.100224376	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	29170.959204137	Sum of GTIs [s]
date	2014-12-11T21:09:54	Date and time of file creation	ontime1	29174.100224376	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	29174.100224376	Sum of GTIs [s]
			ontime3	29170.959194005	Sum of GTIs [s]
			ontime6	29174.100224376	Sum of GTIs [s]
			l1events	698059	Number of level 1 events

### 2.1.4 Events

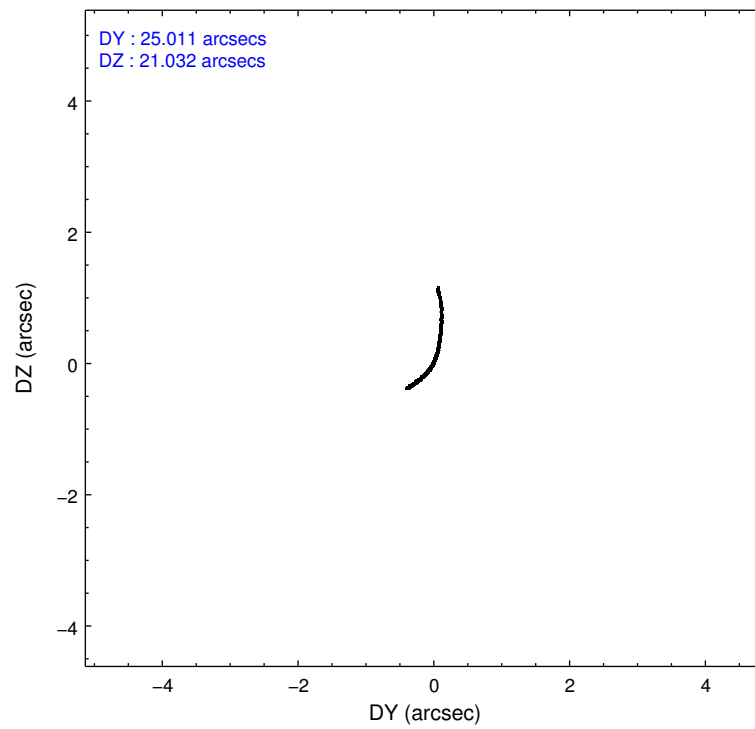
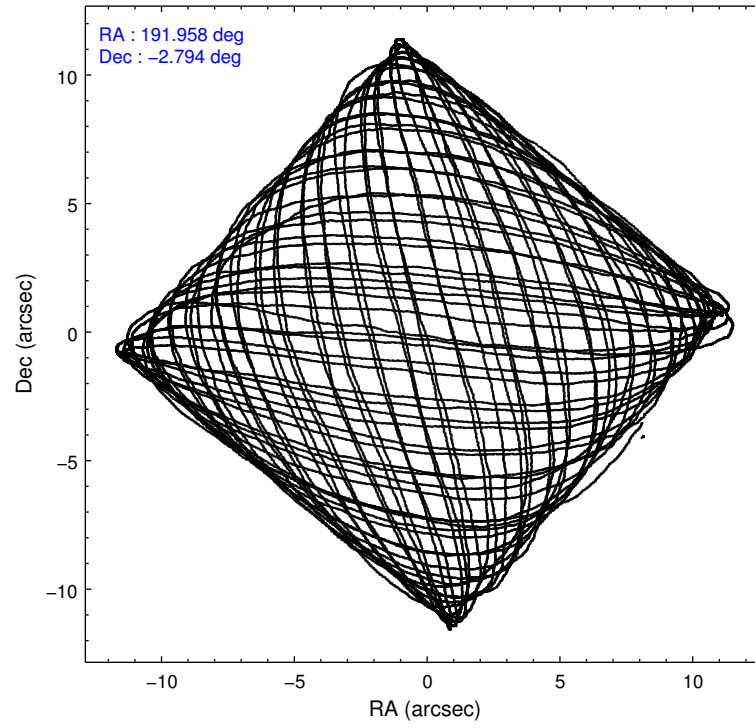
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	133396	136277	144797	141585	142004
rejected events	113346	115540	125252	123636	124480
rejected %	84%	84%	86%	87%	87%

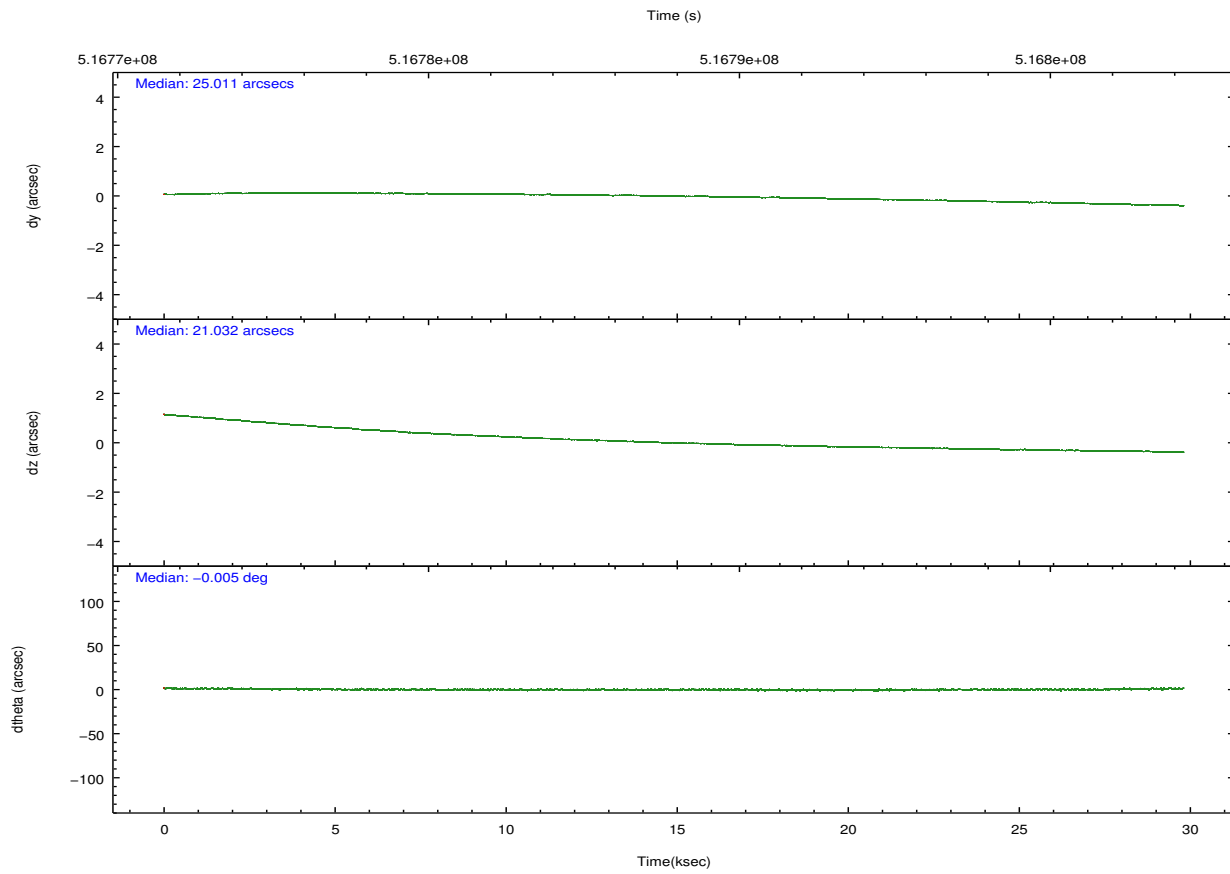
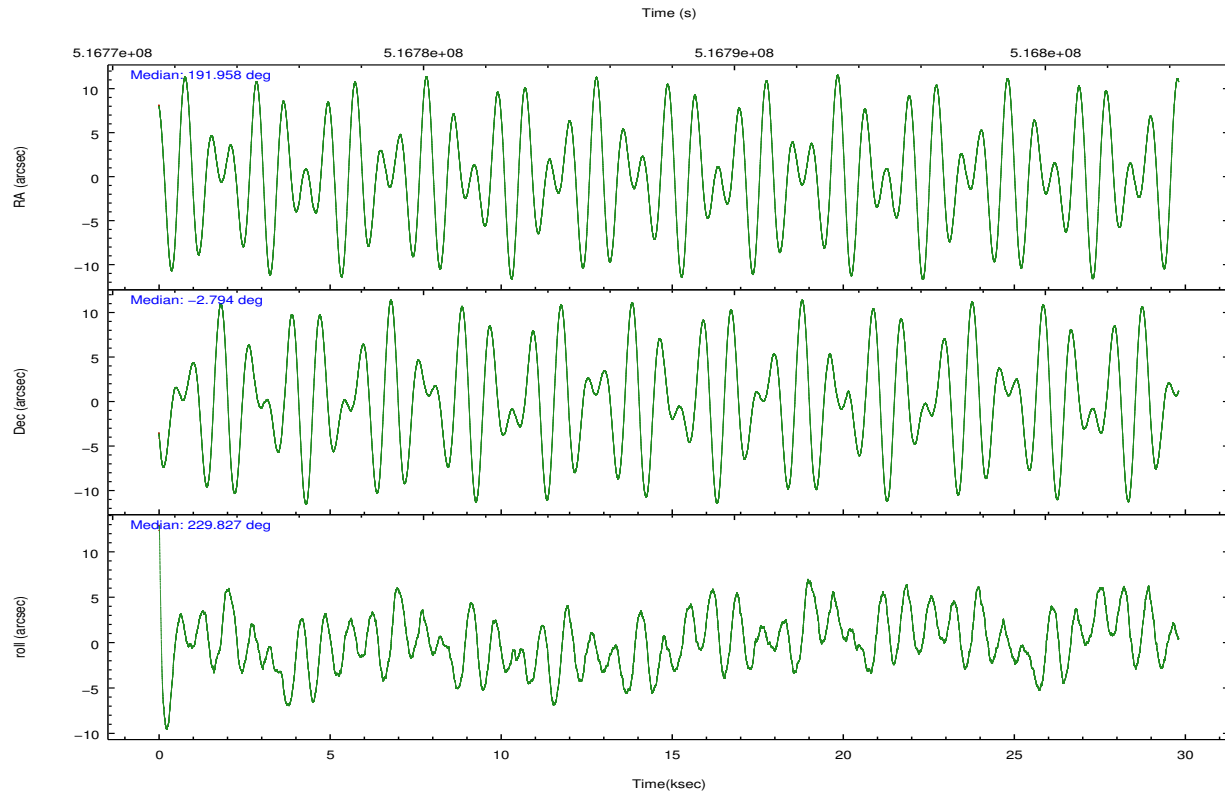
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	8384	8338	8380	7183	6175
	6%	6%	5%	5%	4%
grade 1 events	82	100	83	98	77
	0%	0%	0%	0%	0%
grade 2 events	4536	4557	4363	3874	3833
	3%	3%	3%	2%	2%
grade 3 events	1846	1936	1726	1663	1775
	1%	1%	1%	1%	1%
grade 4 events	1672	1926	1795	1819	1789
	1%	1%	1%	1%	1%
grade 5 events	6824	7317	6316	7585	7545
	5%	5%	4%	5%	5%
grade 6 events	3616	3986	3285	3412	3953
	2%	2%	2%	2%	2%
grade 7 events	106436	108117	118849	115951	116857
	79%	79%	82%	81%	82%

## 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	191.962614	191.957863679312	CCD I2 on	Y	Y
[deg] Pointing Dec	-2.766821	-2.793921824003143	CCD I3 on	Y	Y
[deg] Pointing Roll	229.622178	229.8306375669406	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	-232.714963	-232.7250243123936	CCD S3 on	N	N
[mm] SIM translation stage offset	-0.8774999999999999	-0.8674286905360873	CCD S4 on	N	N
[s] Observation start time (MET)	516773708.184000	516772499.85934	CCD S5 on	N	N
Observation start date	2014-05-18T04:14:01	2014-05-18T03:54:59	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	516802796.184000	516803032.56103	On-chip summing requested	N	N
Observation end date	2014-05-18T12:18:49	2014-05-18T12:23:52	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





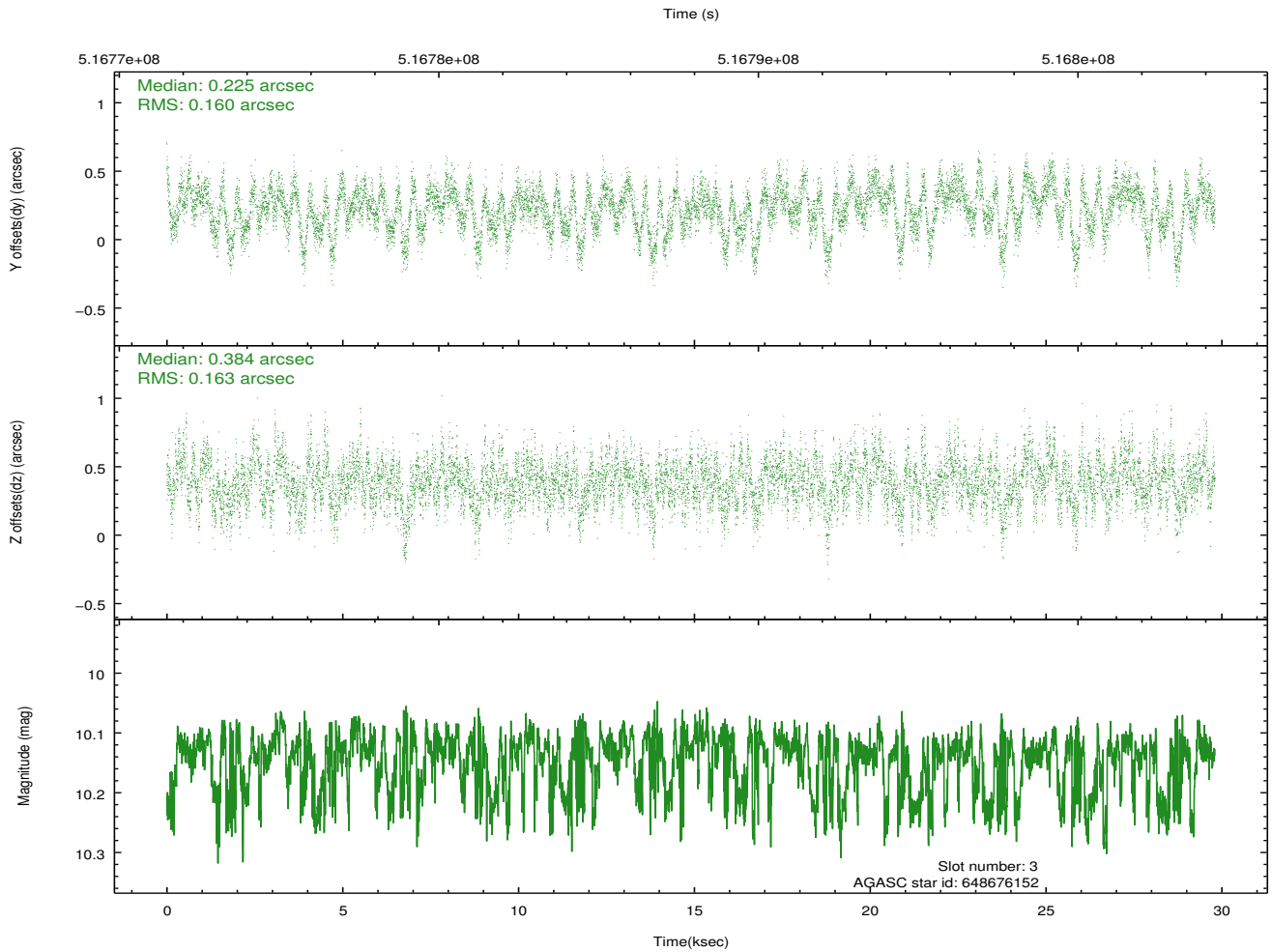
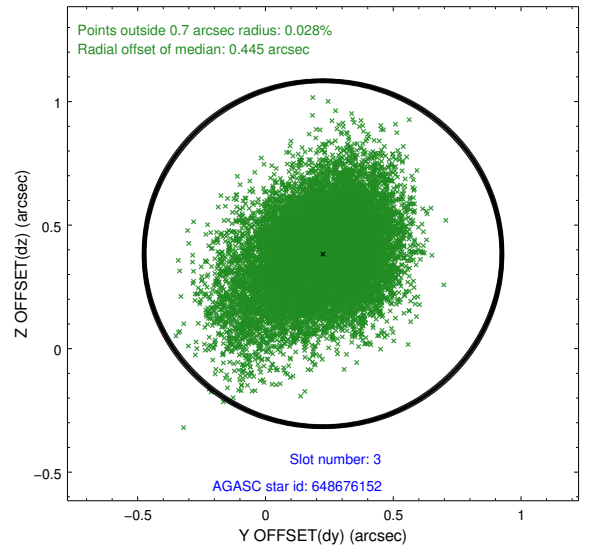
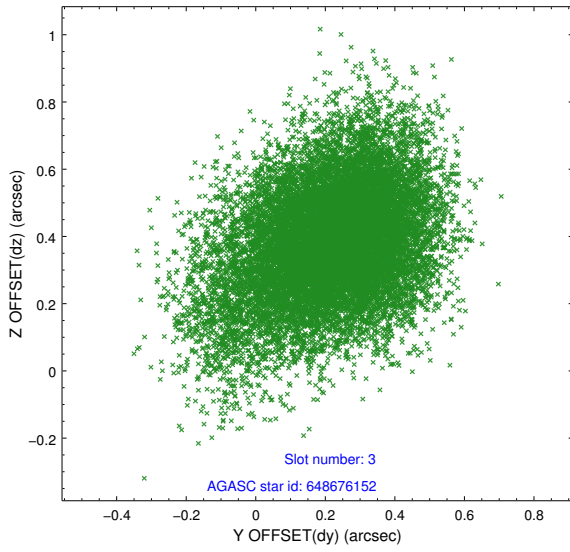
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.10	7271	0.052	0.030	0.017	0.027	0.000000	0.000000	914.31	-862.55
1	FID		ACIS-I-5	7.09	7270	-0.322	0.035	0.007	0.012	0.000000	0.000000	-1834.23	1034.75
2	FID		ACIS-I-6	7.10	7270	0.180	0.003	0.014	0.025	0.000000	0.000000	379.76	1679.43
3	GUIDE	used	648676152	10.14	14361	0.225	0.384	0.238	0.408	191.765246	-2.085351	-1407.99	-2129.76
4	GUIDE	used	649069248	9.60	14524	-0.116	-0.144	0.154	0.264	191.477558	-3.033409	1862.34	-705.84
5	GUIDE	used	649070024	8.74	14535	0.079	-0.139	0.122	0.196	191.167932	-2.707781	1691.03	-2313.91
6	GUIDE	used	649077184	7.22	14541	0.222	-0.075	0.097	0.177	191.046576	-2.842562	2344.28	-2332.27
7	GUIDE	used	648675712	8.96	14535	-0.407	-0.023	0.104	0.166	192.426039	-2.289299	-2388.66	156.20

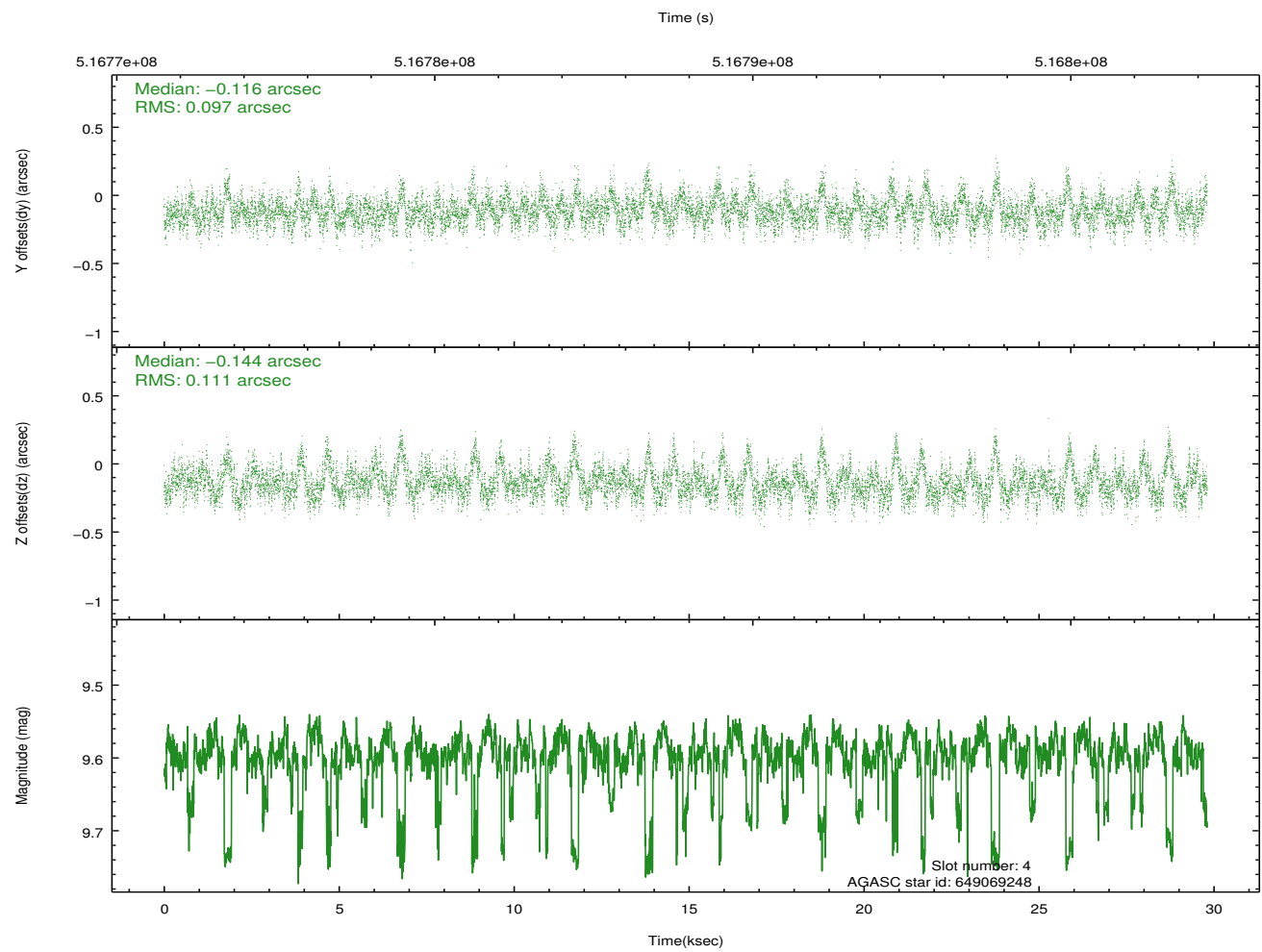
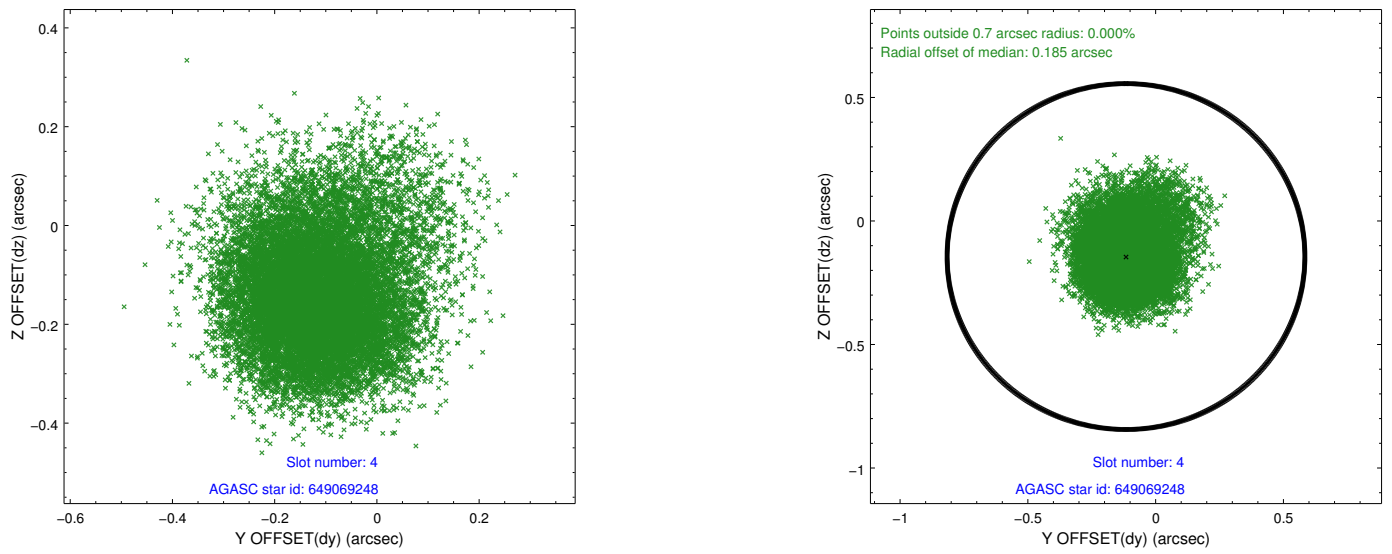
∞

## 2.4 Star Slots

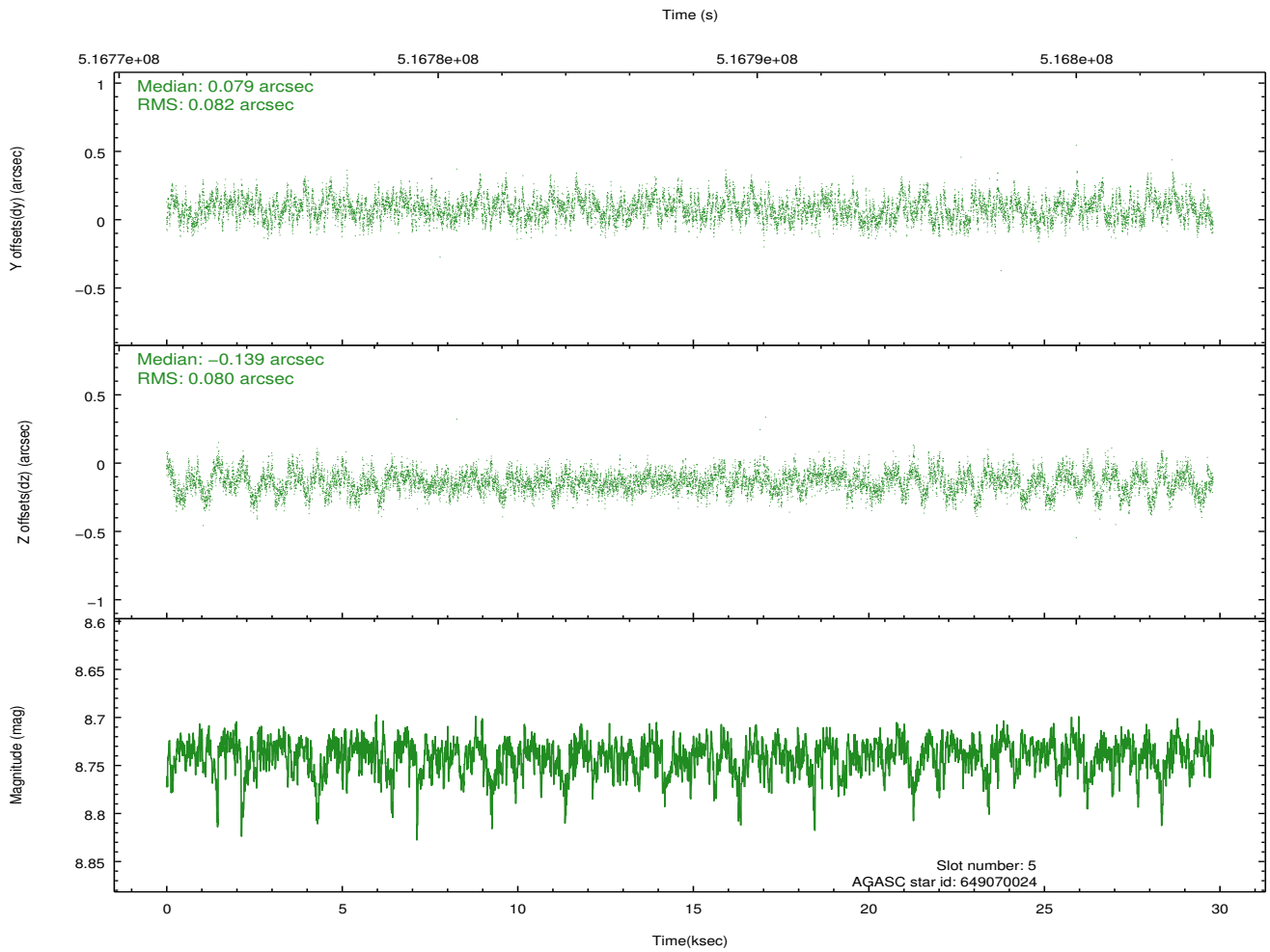
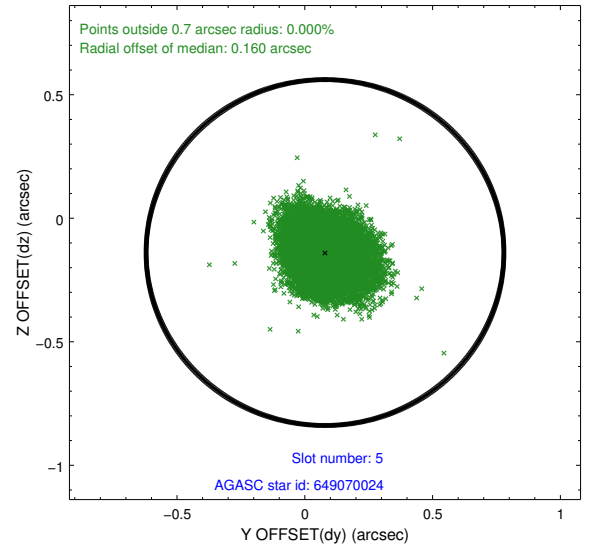
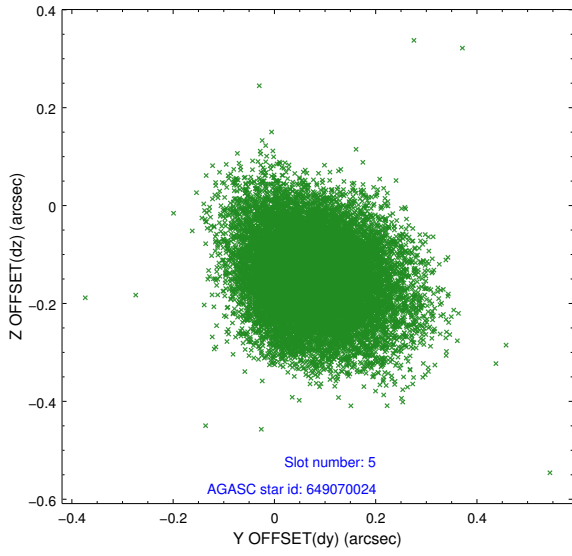
### 2.4.1 Slot 3



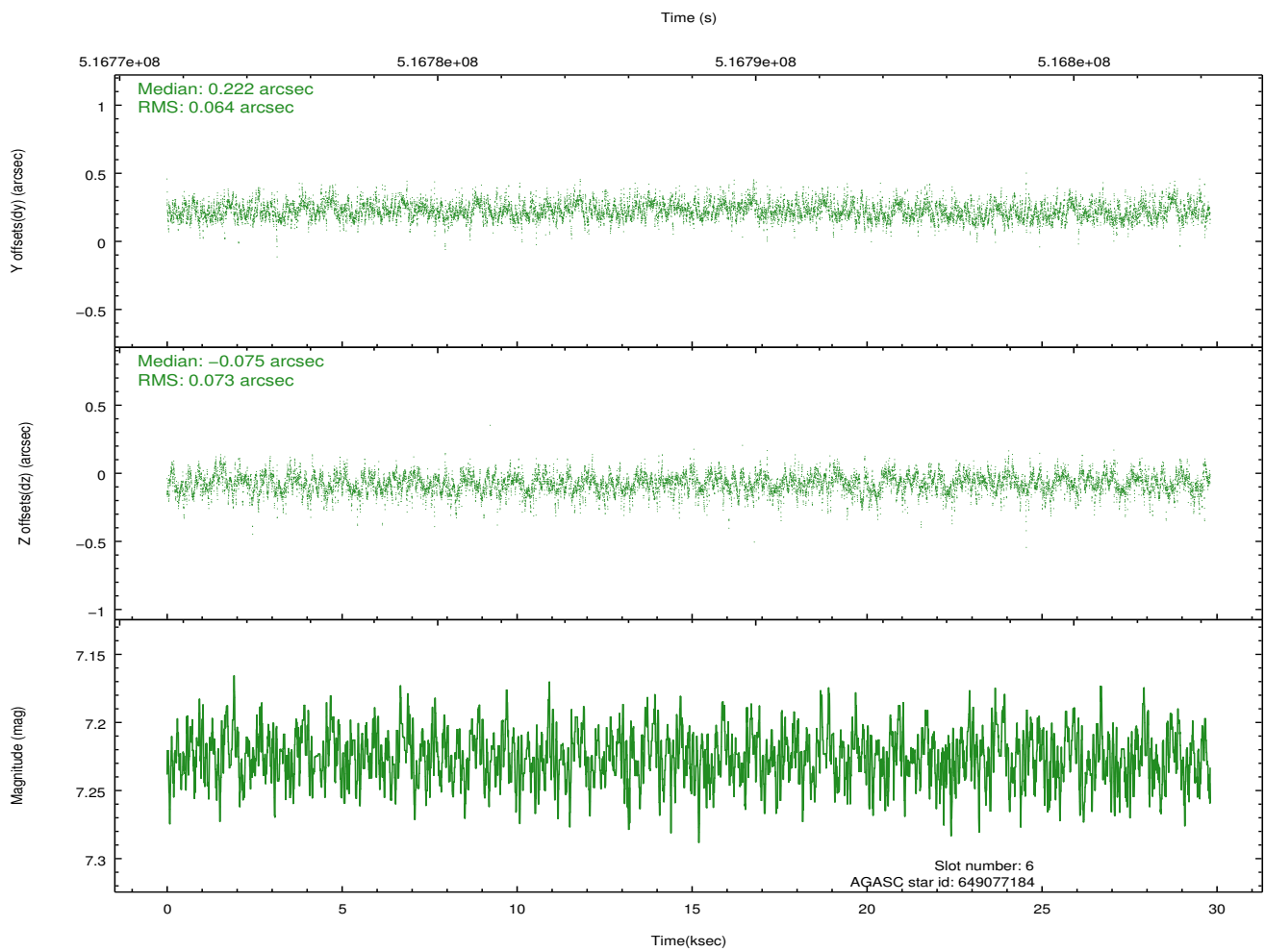
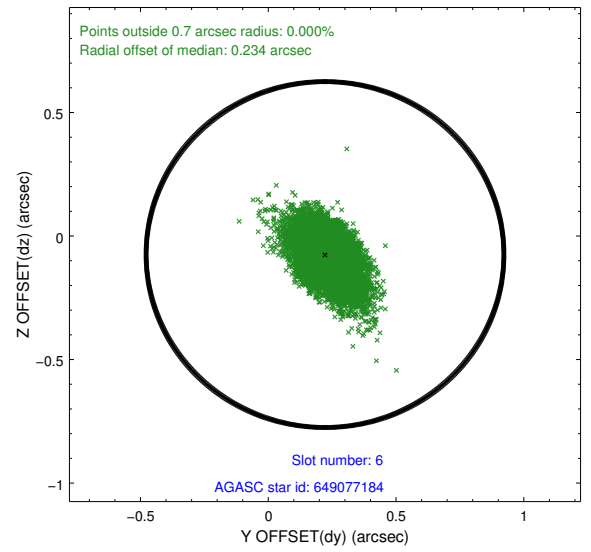
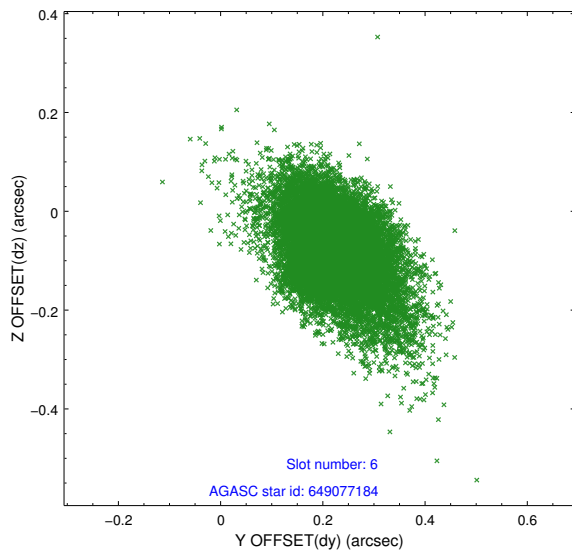
## 2.4.2 Slot 4



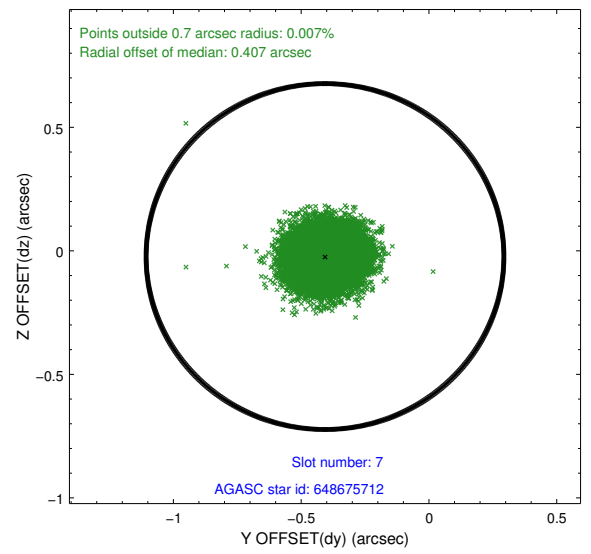
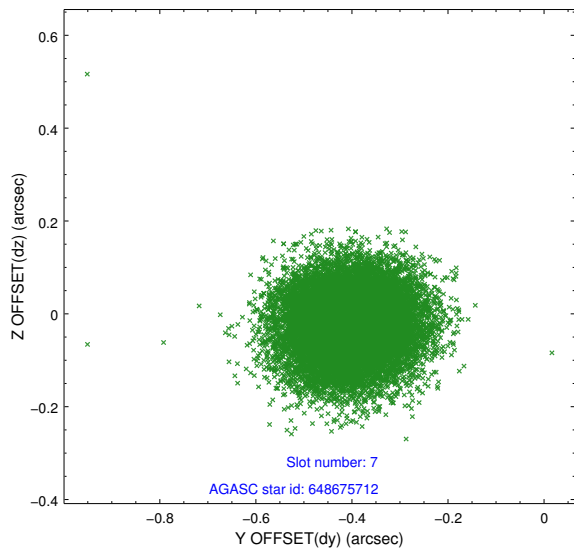
### 2.4.3 Slot 5



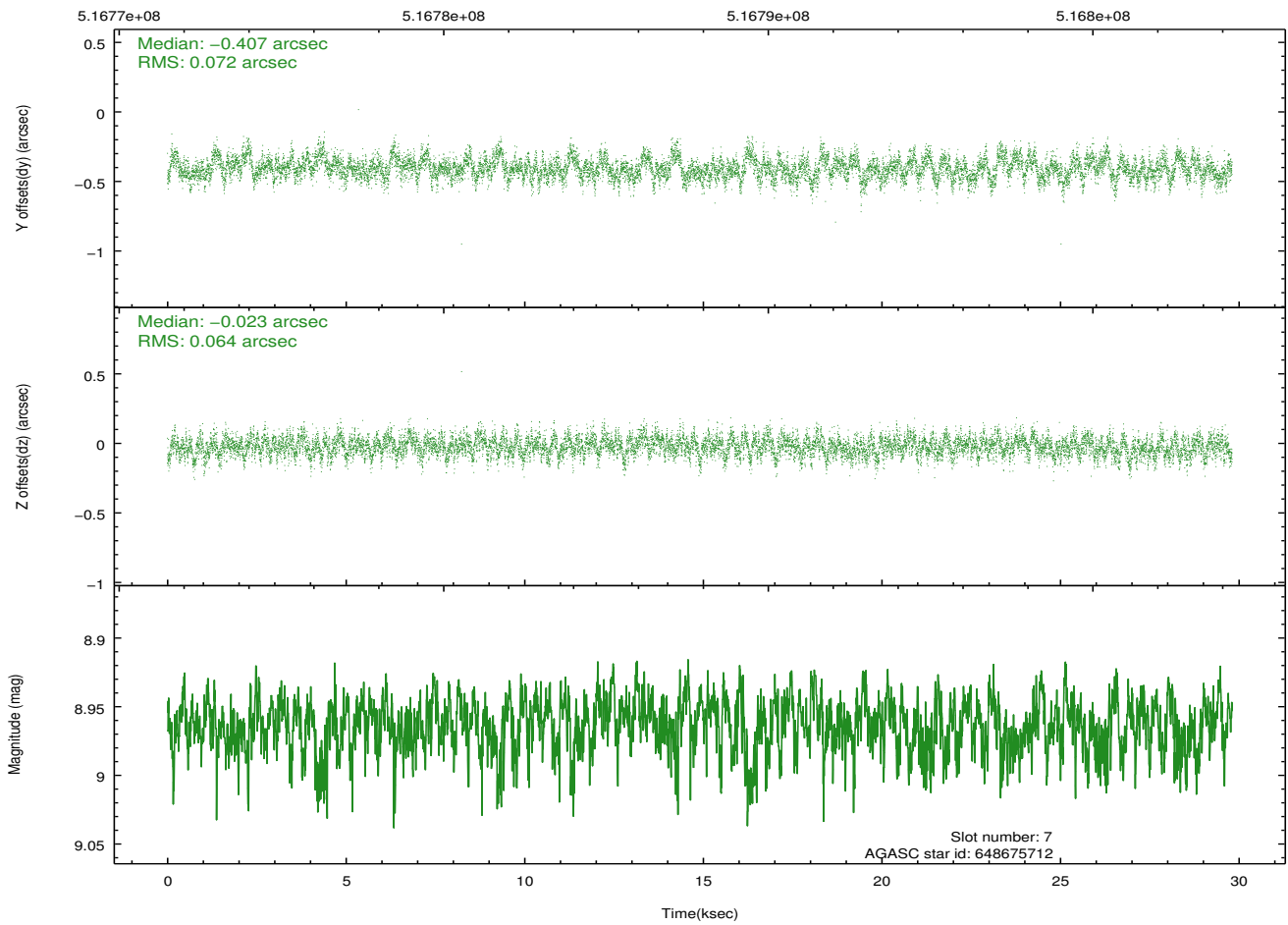
## 2.4.4 Slot 6



## 2.4.5 Slot 7

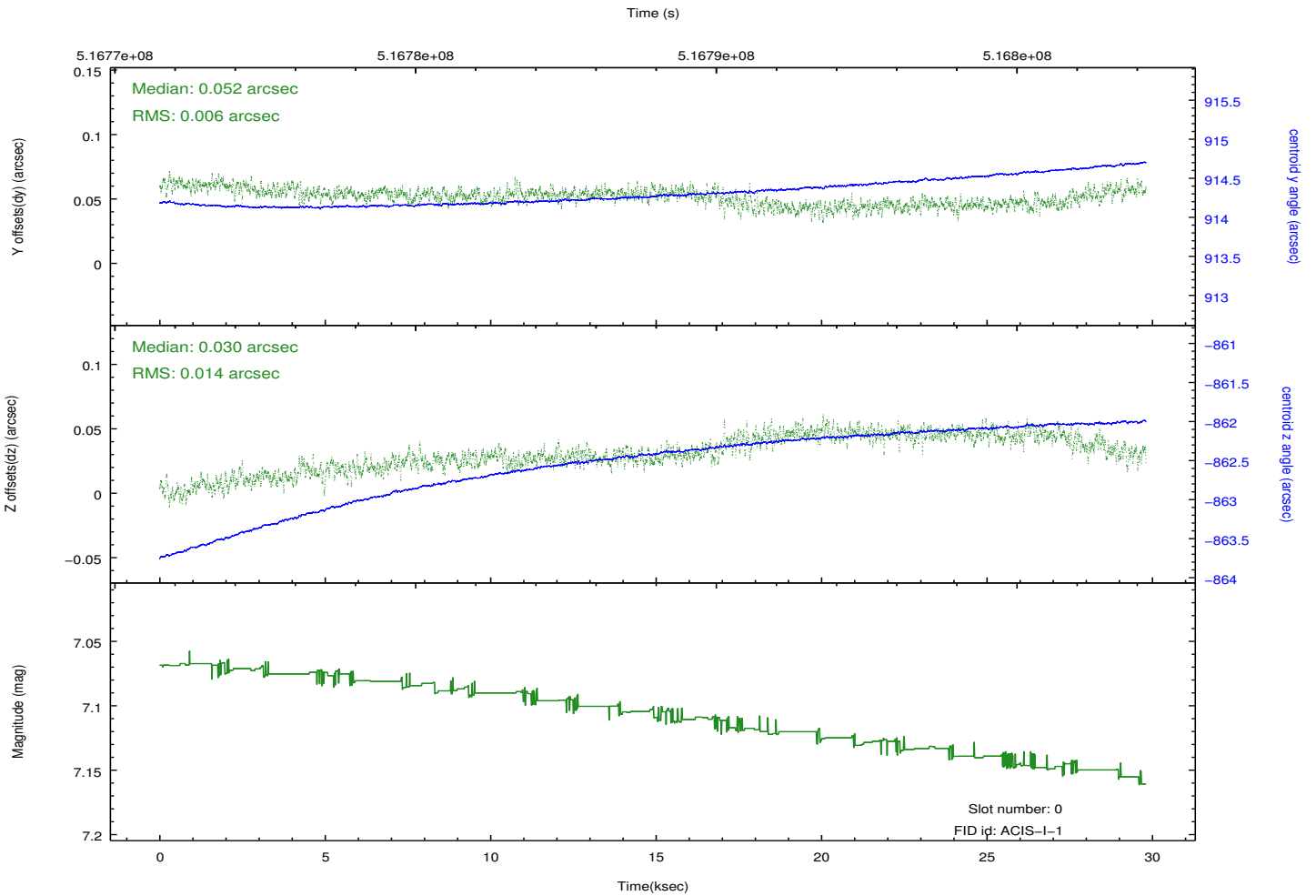
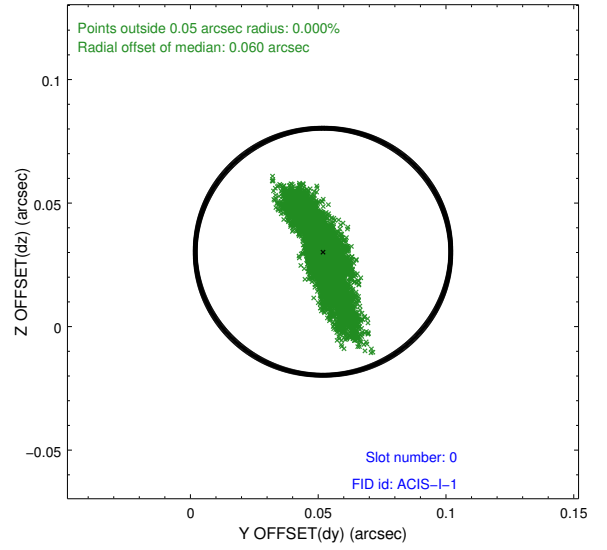
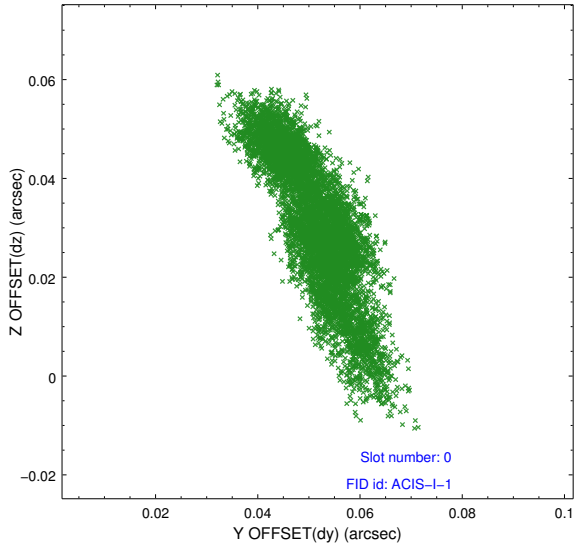


Time (s)

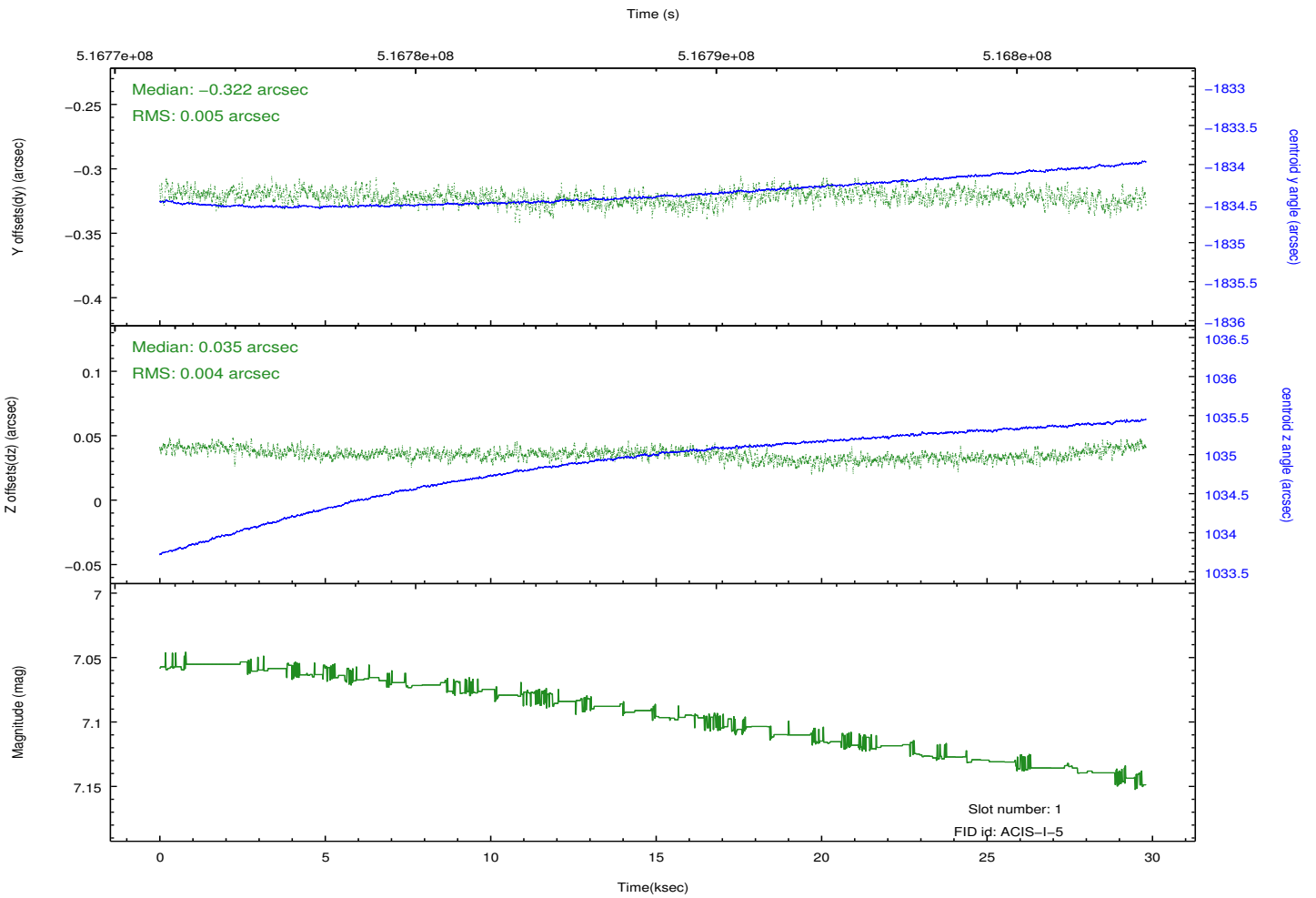
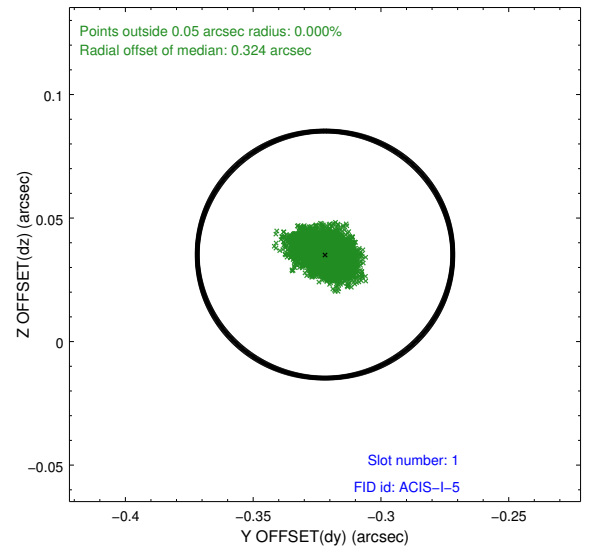
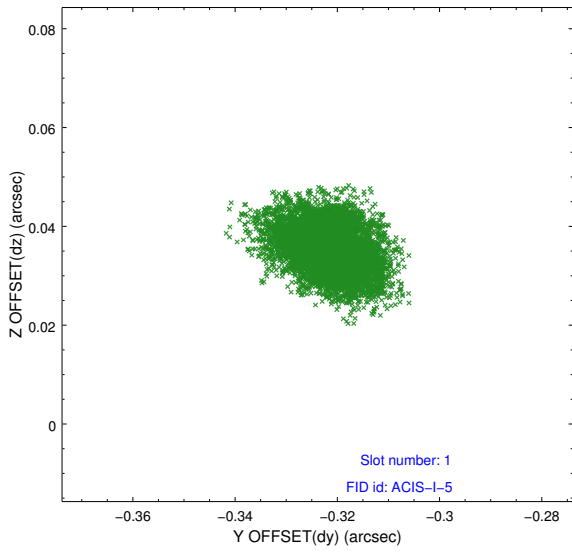


## 2.5 FID Slots

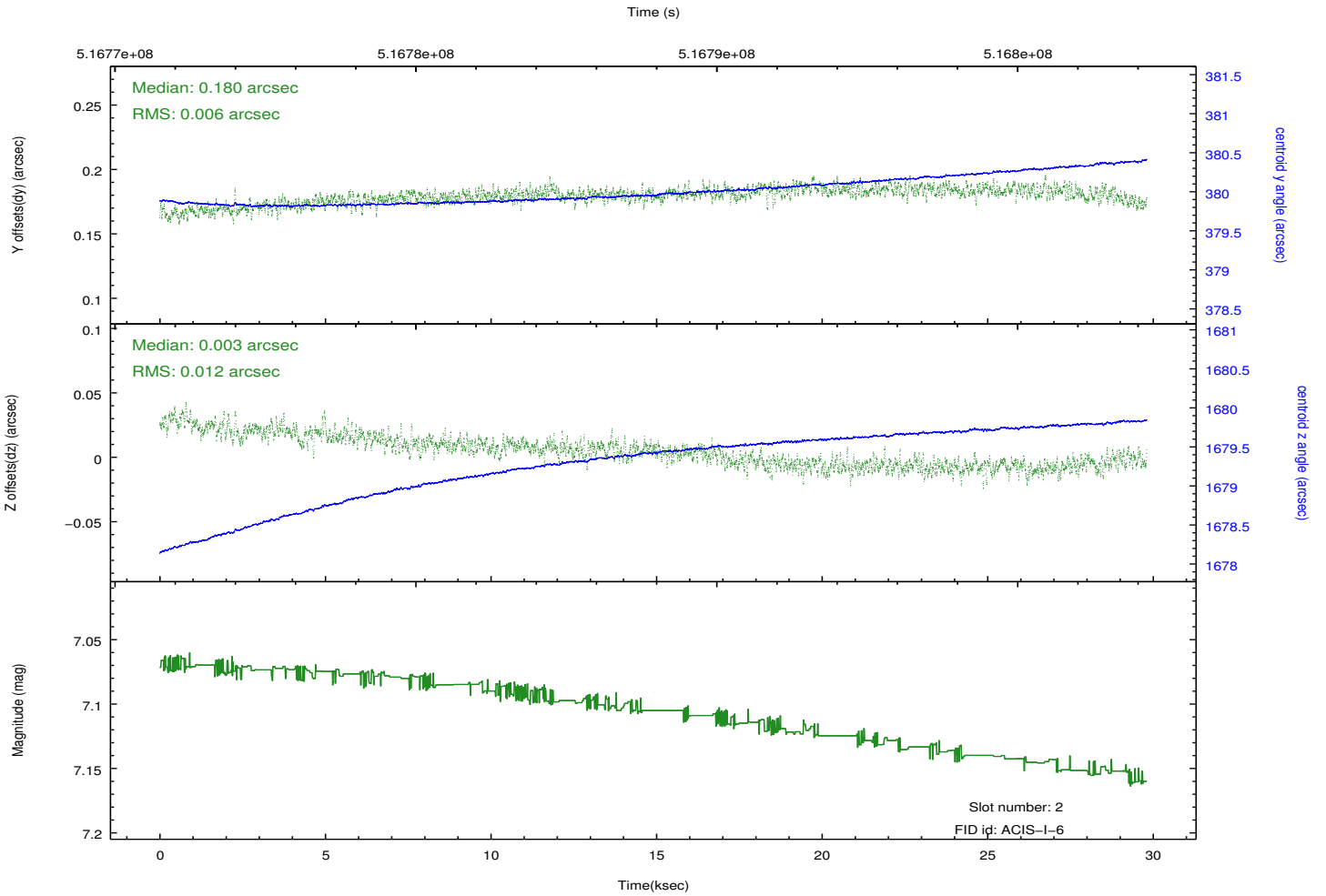
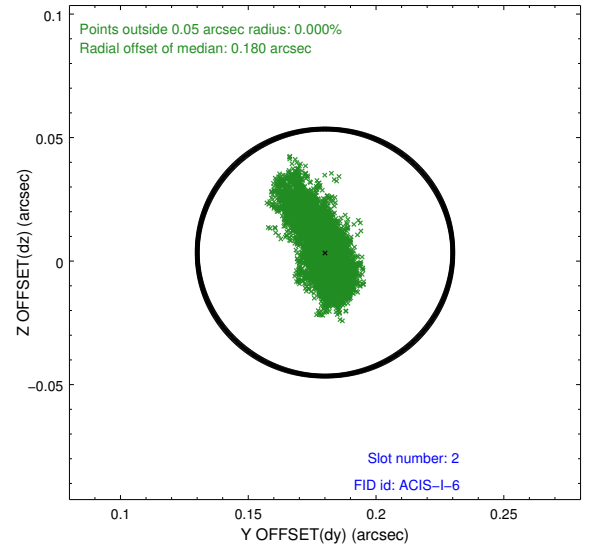
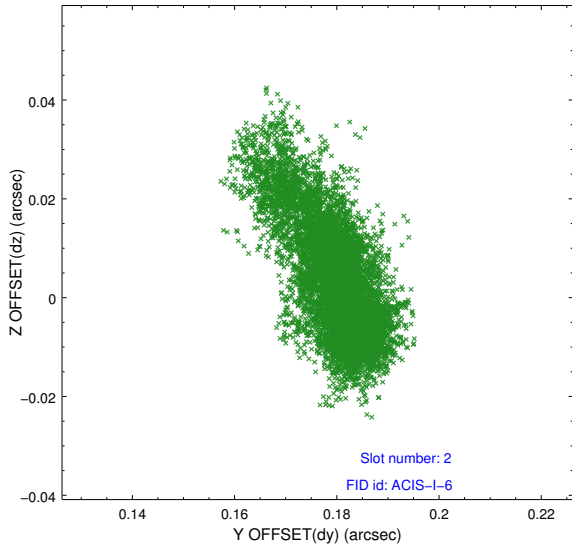
### 2.5.1 Slot 0



## 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)	2014.12.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.174100224376

## 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.