

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 16024 - L2 Version 3  
Chandra X-Ray Center

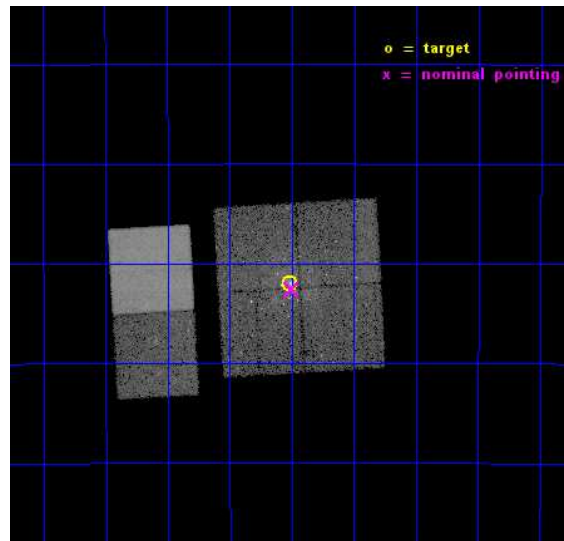
L2 Processing Date : Dec 11 2014

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# 1 Front

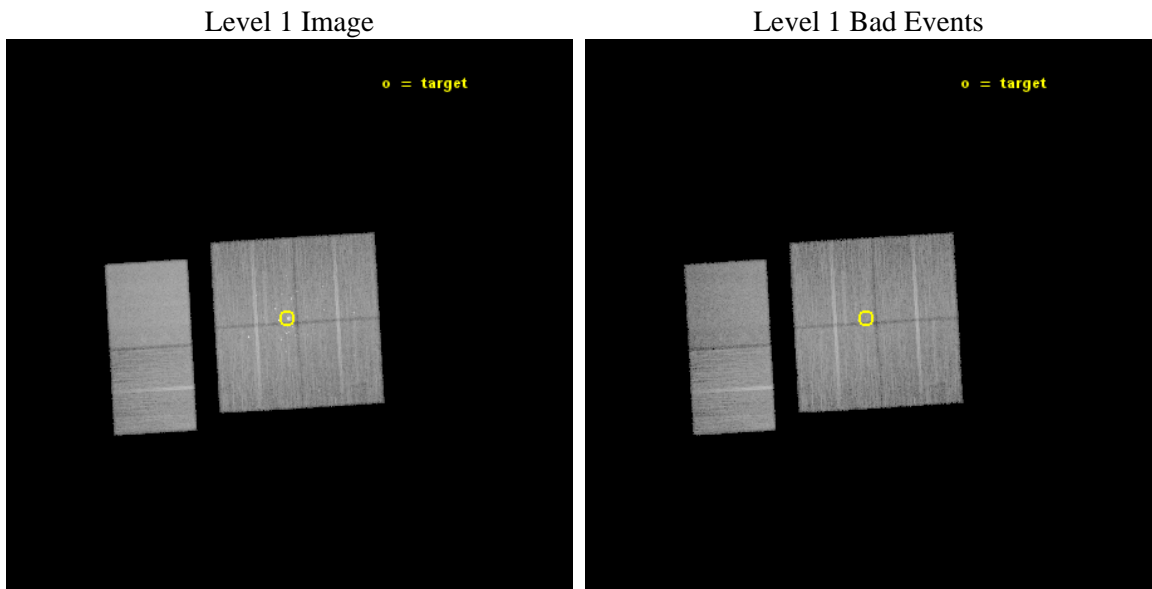
seq_num	601112	Sequence number
obs_id	16024	Observation id
title	0.5-30 KEV IMAGING OF STARBURSTS WITH CHANDRA AND NUSTAR	Proposal
observer	Dr. Ann Hornschemeier	Principal investigator
object	M83	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	204.25375	Observer's specified target RA [deg]
dec_targ	-29.86575	Observer's specified target Dec [deg]
ra_nom	204.25094876575	Nominal RA [deg]
dec_nom	-29.876649948501	Nominal Dec [deg]
roll_nom	266.61712286175	Nominal Roll [deg]
revision	3	Processing version of data
ontime	29967.958838284	Sum of GTIs [s]
livetime	29588.486498935	Livetime [s]
ontime0	29967.958817959	Sum of GTIs [s]
ontime1	29964.717767656	Sum of GTIs [s]
ontime2	29964.717807949	Sum of GTIs [s]
ontime3	29967.958838284	Sum of GTIs [s]
ontime6	29967.958817959	Sum of GTIs [s]
ontime7	29967.958838284	Sum of GTIs [s]
l2events	178821	Number of level 2 events



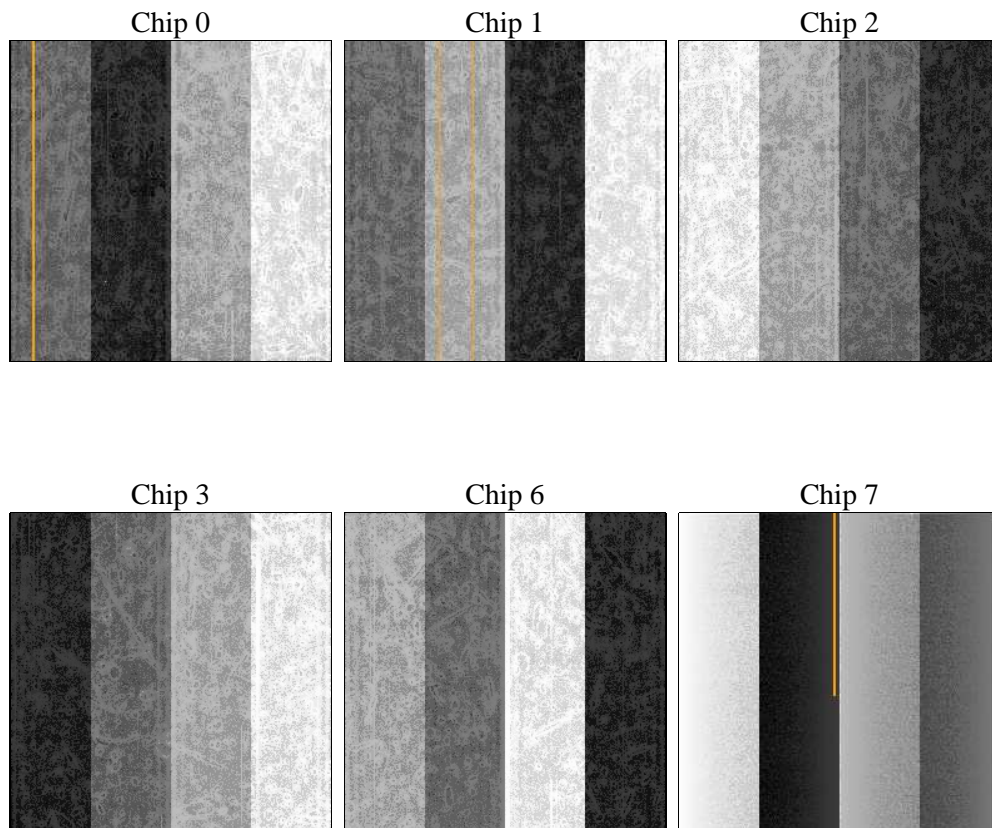
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	29967.958838284	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime0	29967.958817959	Sum of GTIs [s]
date	2014-12-12T01:32:52	Date and time of file creation	ontime1	29964.717767656	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	29964.717807949	Sum of GTIs [s]
			ontime3	29967.958838284	Sum of GTIs [s]
			ontime6	29967.958817959	Sum of GTIs [s]
			ontime7	29967.958838284	Sum of GTIs [s]
			l1events	935817	Number of level 1 events

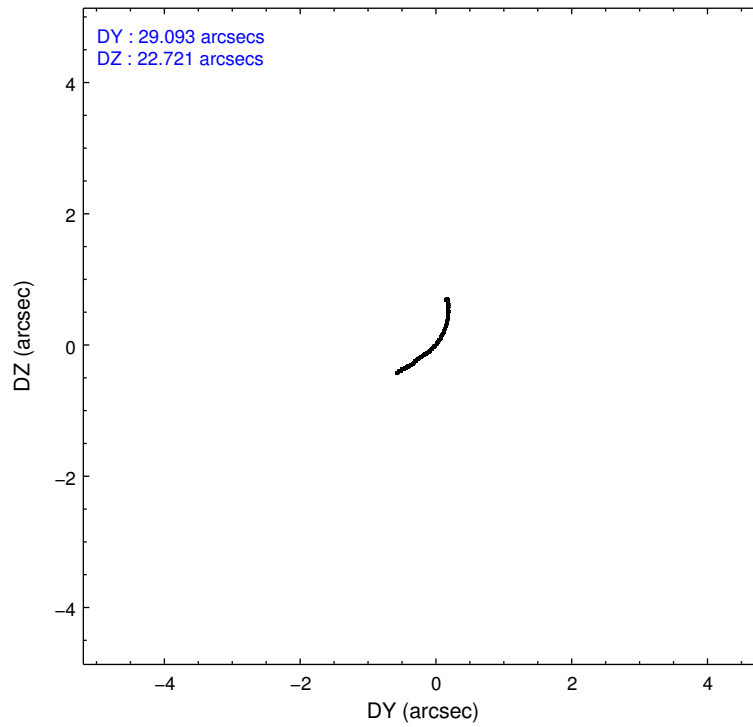
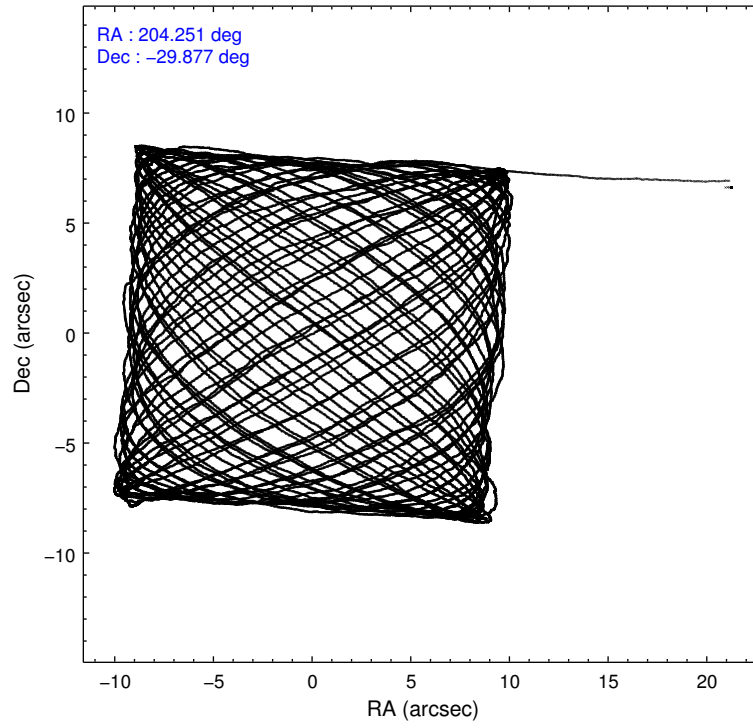
### 2.1.4 Events

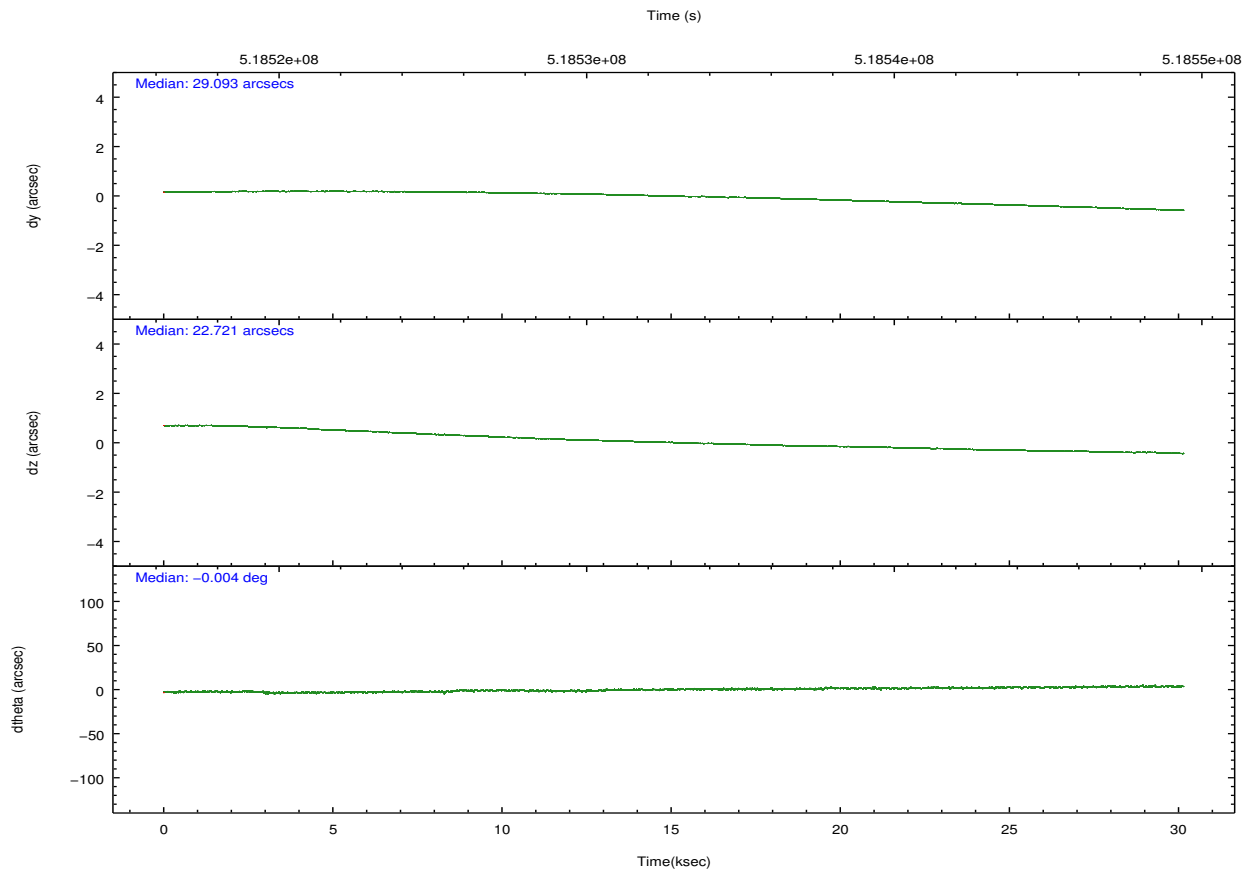
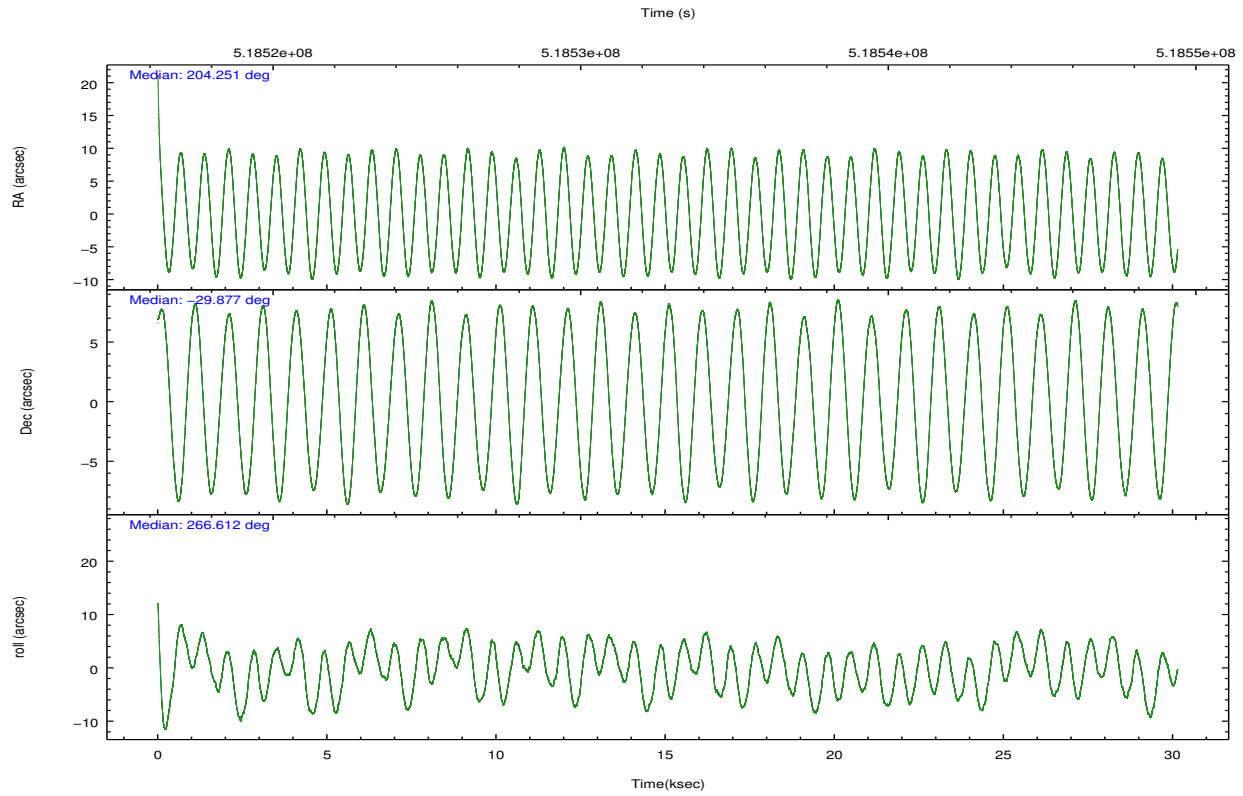
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7		ccd 0	ccd 1	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	130637	137837	154875	150314	155023	207131	grade 0 events	7109	8171	9196	13088	6824	8317
rejected events	111982	116634	133883	125049	136079	116140		5%	5%	5%	8%	4%	4%
rejected %	85%	84%	86%	83%	87%	56%	grade 1 events	88	89	117	170	92	279
								0%	0%	0%	0%	0%	0%
							grade 2 events	4436	4920	4633	4561	4251	18745
								3%	3%	2%	3%	2%	9%
							grade 3 events	1870	1913	1880	1993	1888	7637
								1%	1%	1%	1%	1%	3%
							grade 4 events	1722	1908	1857	2013	1792	7629
								1%	1%	1%	1%	1%	3%
							grade 5 events	6861	7346	6394	8115	7772	21192
								5%	5%	4%	5%	5%	10%
							grade 6 events	3519	4291	3432	3614	4195	48676
								2%	3%	2%	2%	2%	23%
							grade 7 events	105032	109199	127366	116760	128209	94656
								80%	79%	82%	77%	82%	45%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-012367	ACIS-012367	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	204.236637	204.2509487657454	CCD I2 on	Y	Y
[deg] Pointing Dec	-29.852133	-29.87664994850069	CCD I3 on	Y	Y
[deg] Pointing Roll	266.401308	266.6171228617525	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	-233.592463	-233.5874344608287	CCD S3 on	O2	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	518517912.184000	518516775.76823	CCD S5 on	N	N
Observation start date	2014-06-07T08:44:05	2014-06-07T08:26:15	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	518547912.184000	518548771.145	On-chip summing requested	N	N
Observation end date	2014-06-07T17:04:05	2014-06-07T17:19:31	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect





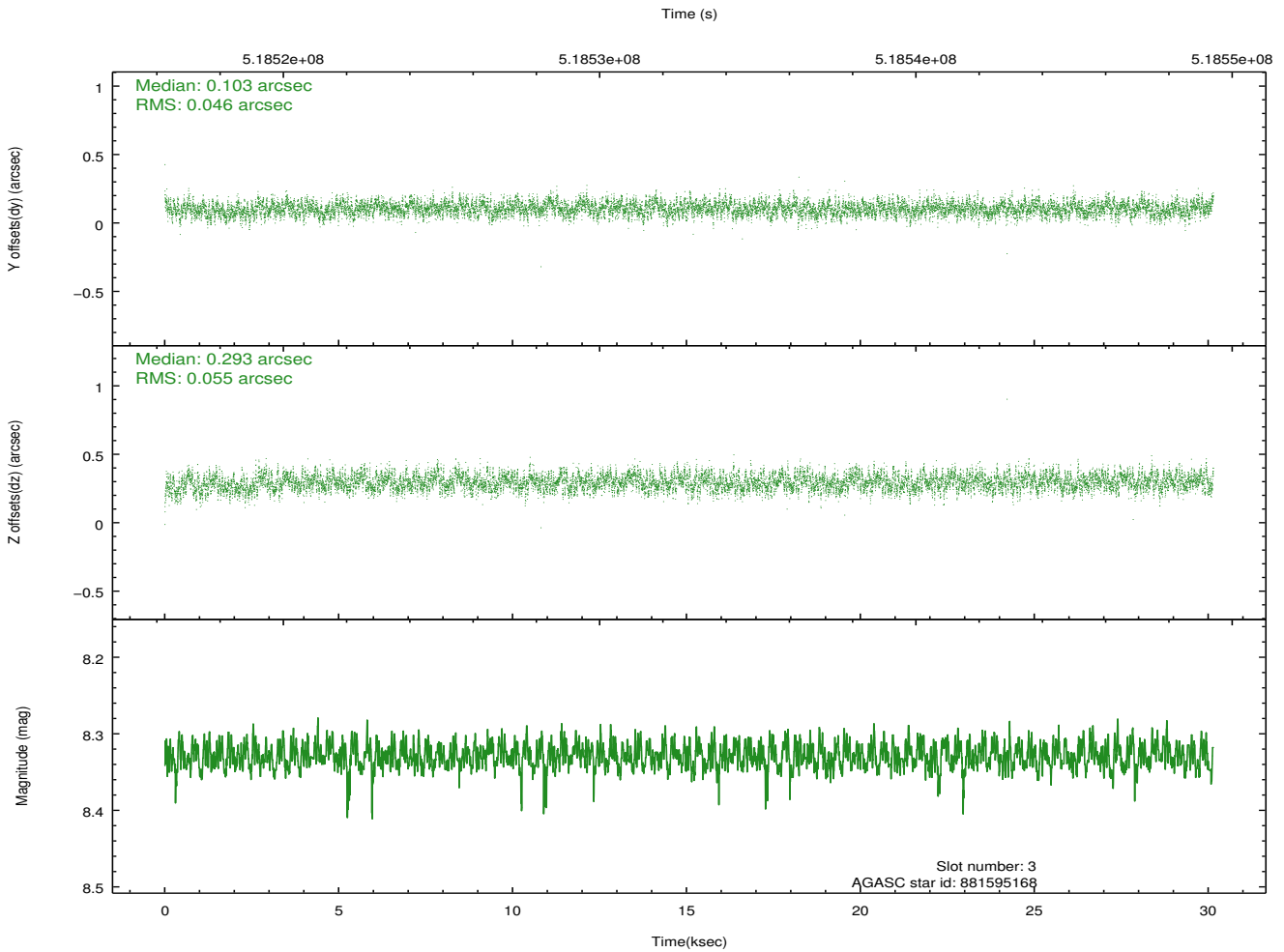
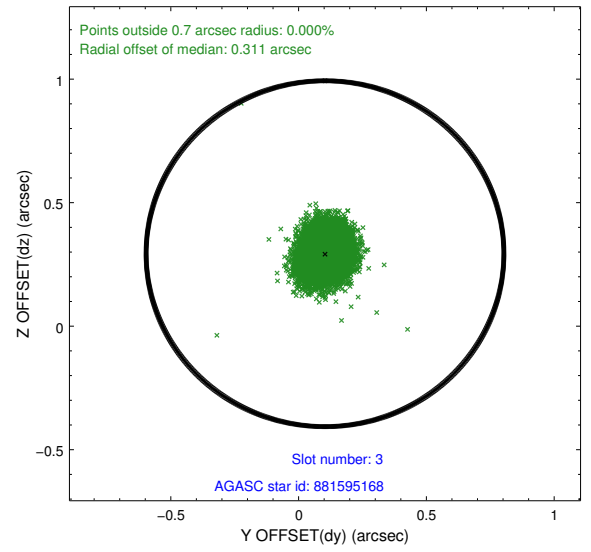
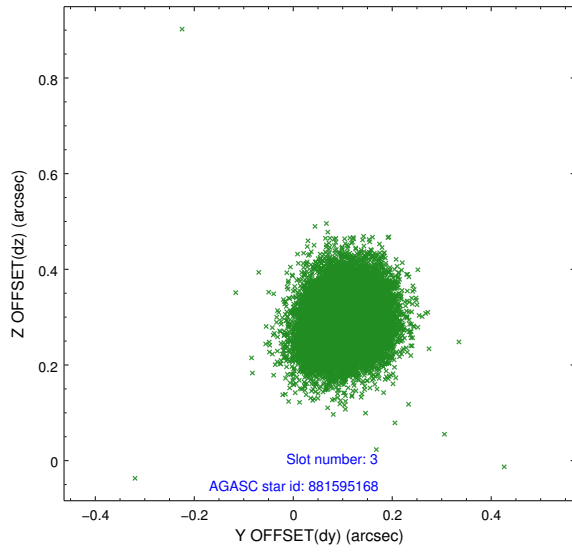
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.11	7350	-0.066	0.036	0.010	0.020	0.000000	0.000000	910.01	-846.52
1	FID		ACIS-I-4	7.09	7349	0.364	0.030	0.013	0.021	0.000000	0.000000	2130.47	1053.27
2	FID		ACIS-I-5	7.09	7351	-0.396	0.004	0.013	0.020	0.000000	0.000000	-1838.28	1051.06
3	GUIDE	used	881595168	8.33	14699	0.103	0.293	0.076	0.120	203.920919	-29.377734	-1640.51	-1095.44
4	GUIDE	used	881595568	9.15	14697	0.343	0.340	0.139	0.220	203.519167	-29.642189	-605.54	-2287.11
5	GUIDE	used	881595624	8.89	14699	0.023	0.225	0.127	0.185	204.202876	-29.365867	-1740.05	-215.34
6	GUIDE	used	881596816	9.33	14689	-0.193	-0.218	0.141	0.231	204.937618	-29.613548	-988.18	2135.85
7	GUIDE	used	952372744	7.85	14701	-0.272	-0.647	0.077	0.123	204.763193	-30.274505	1418.48	1729.50

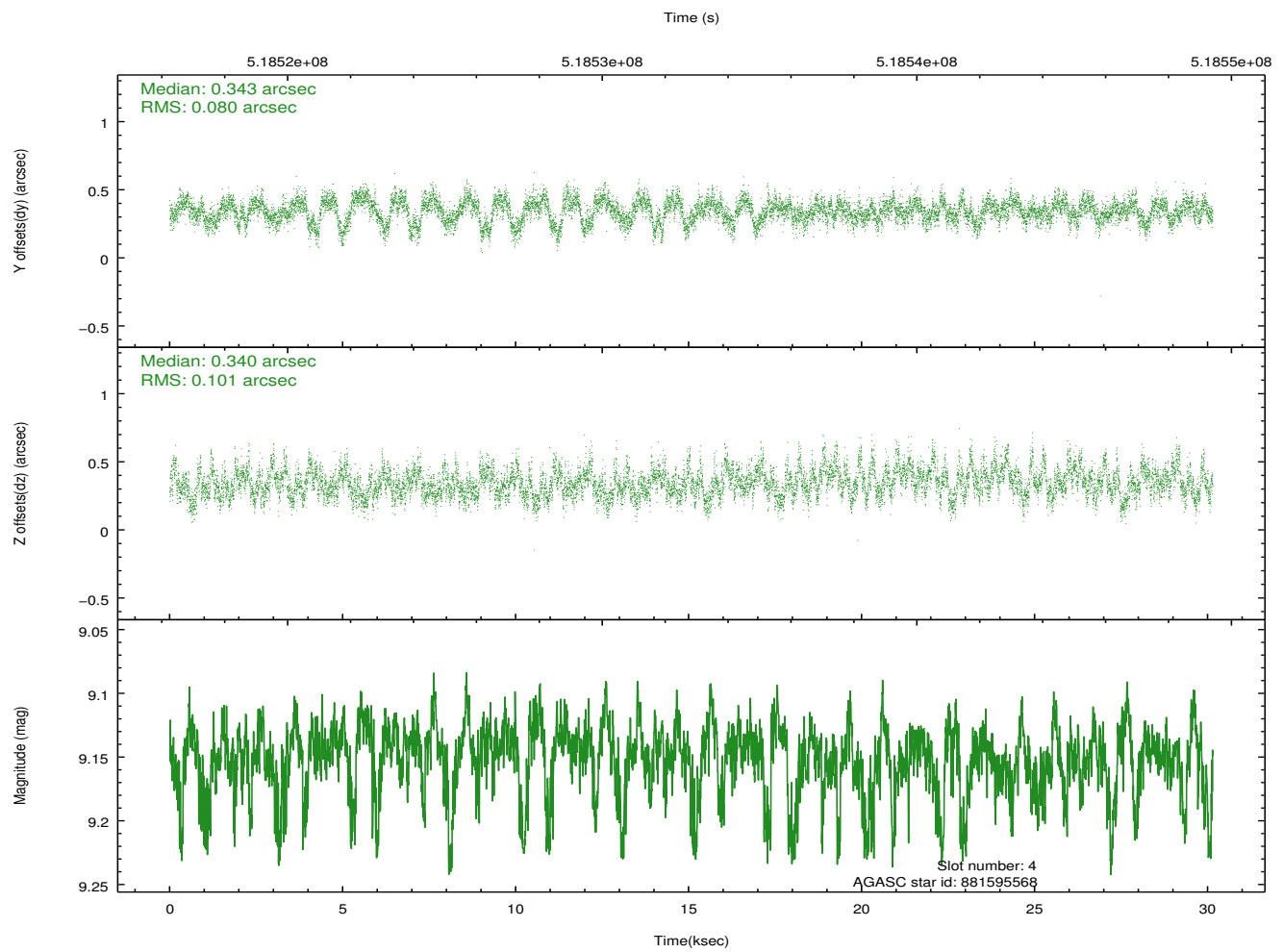
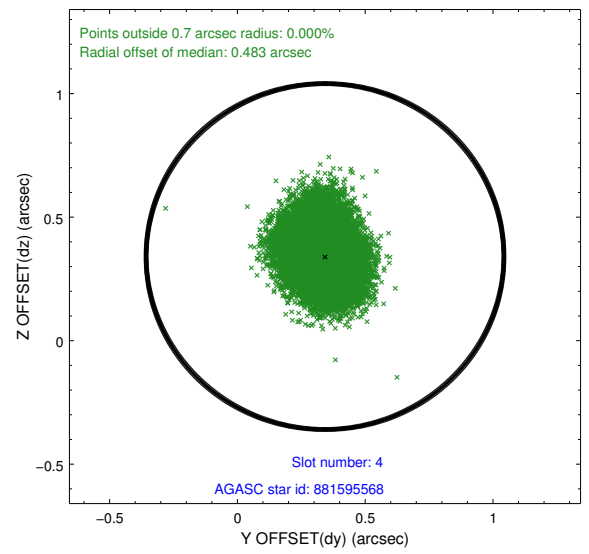
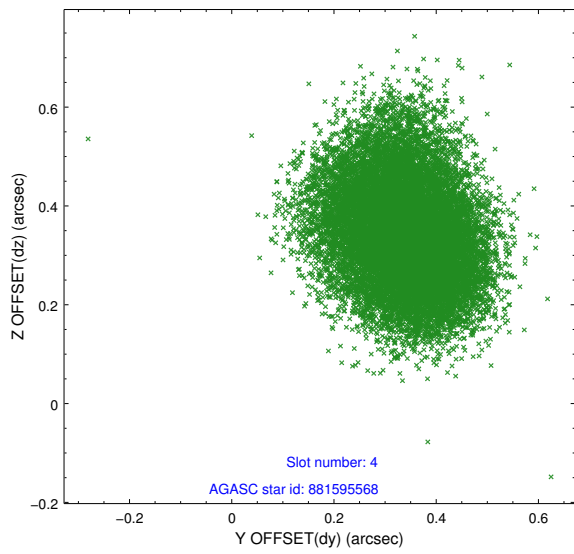
∞

## 2.4 Star Slots

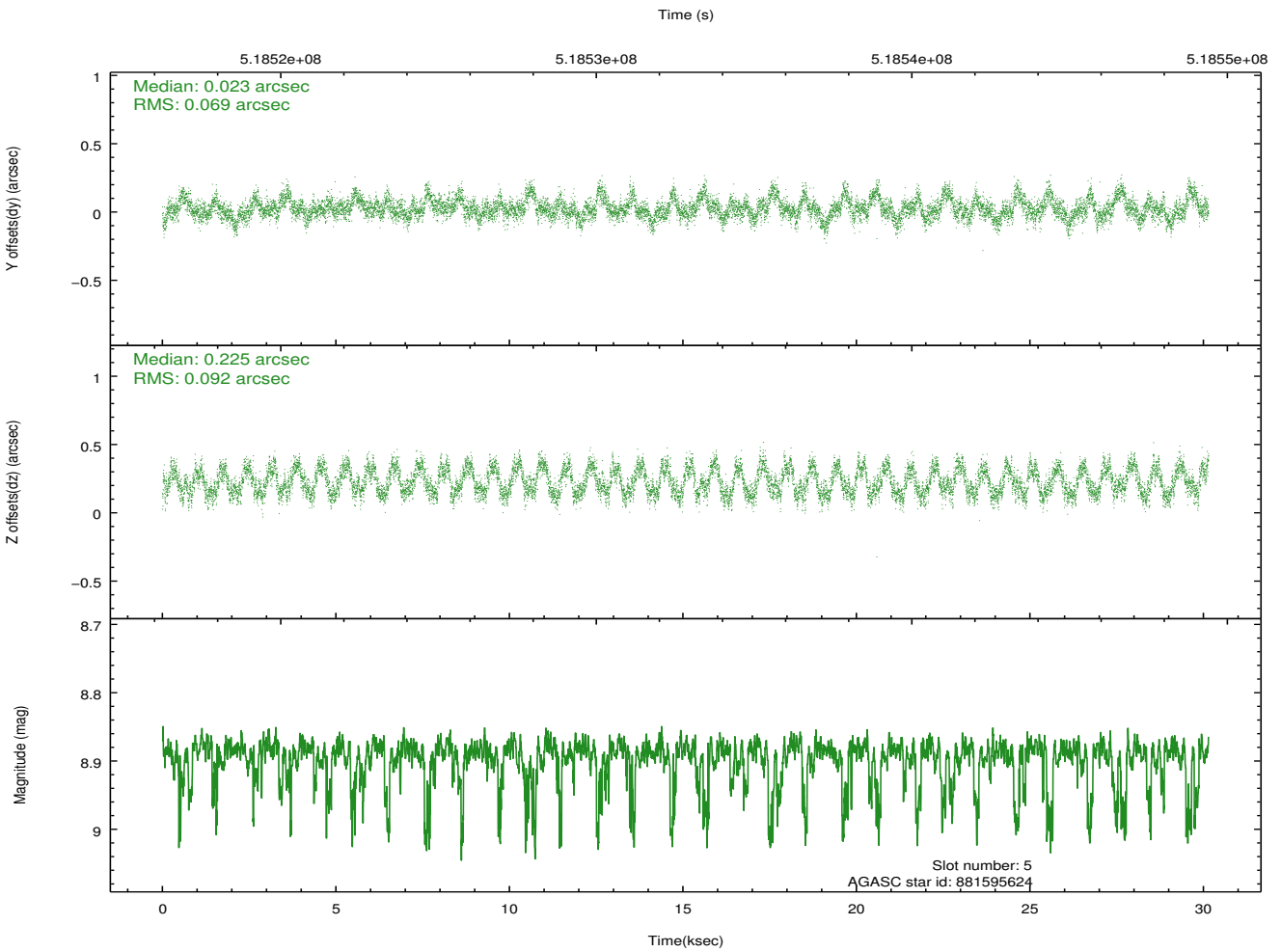
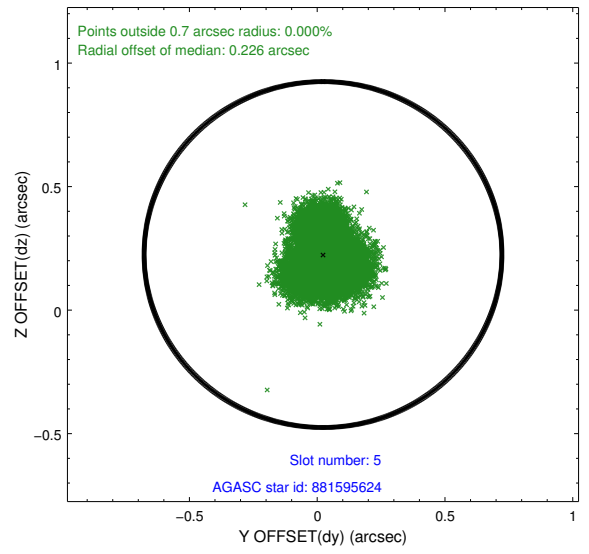
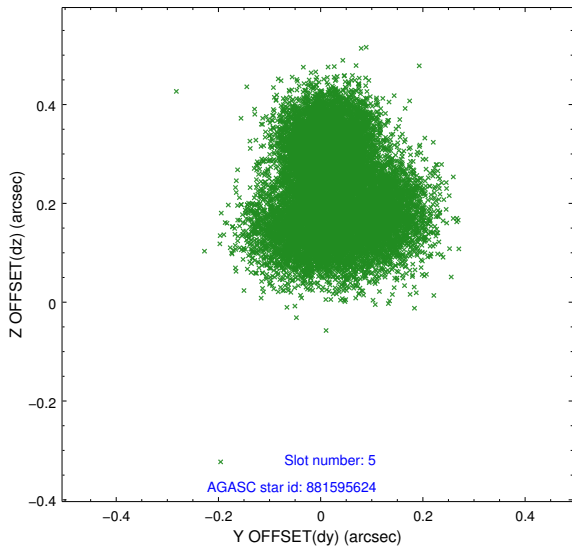
### 2.4.1 Slot 3



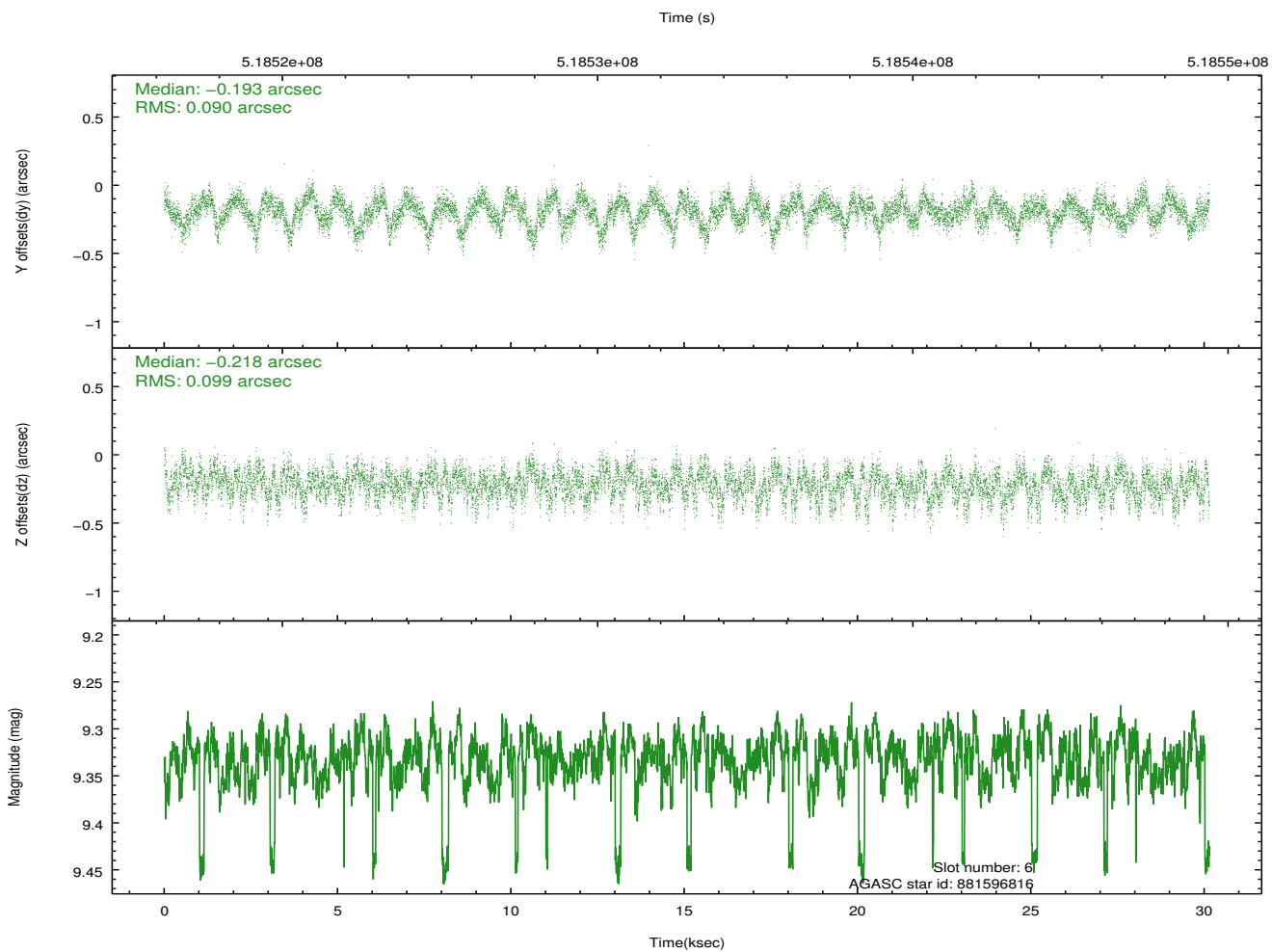
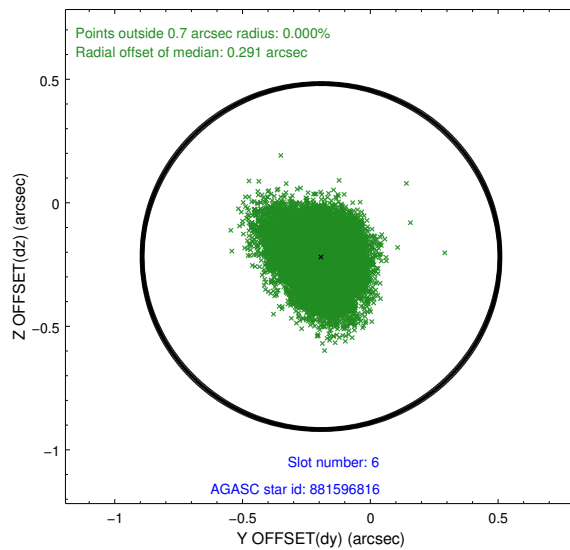
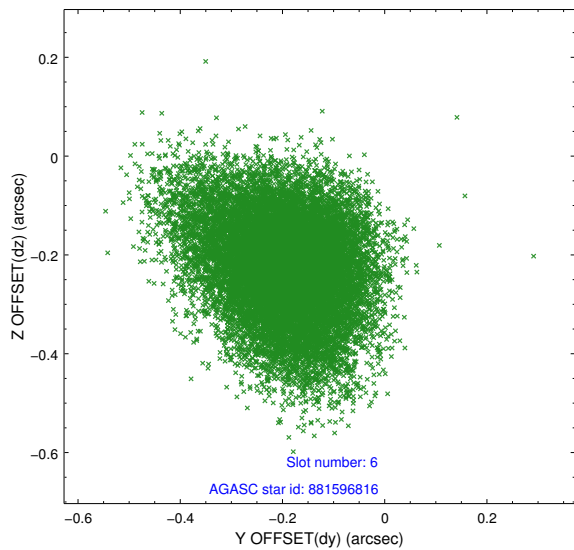
## 2.4.2 Slot 4



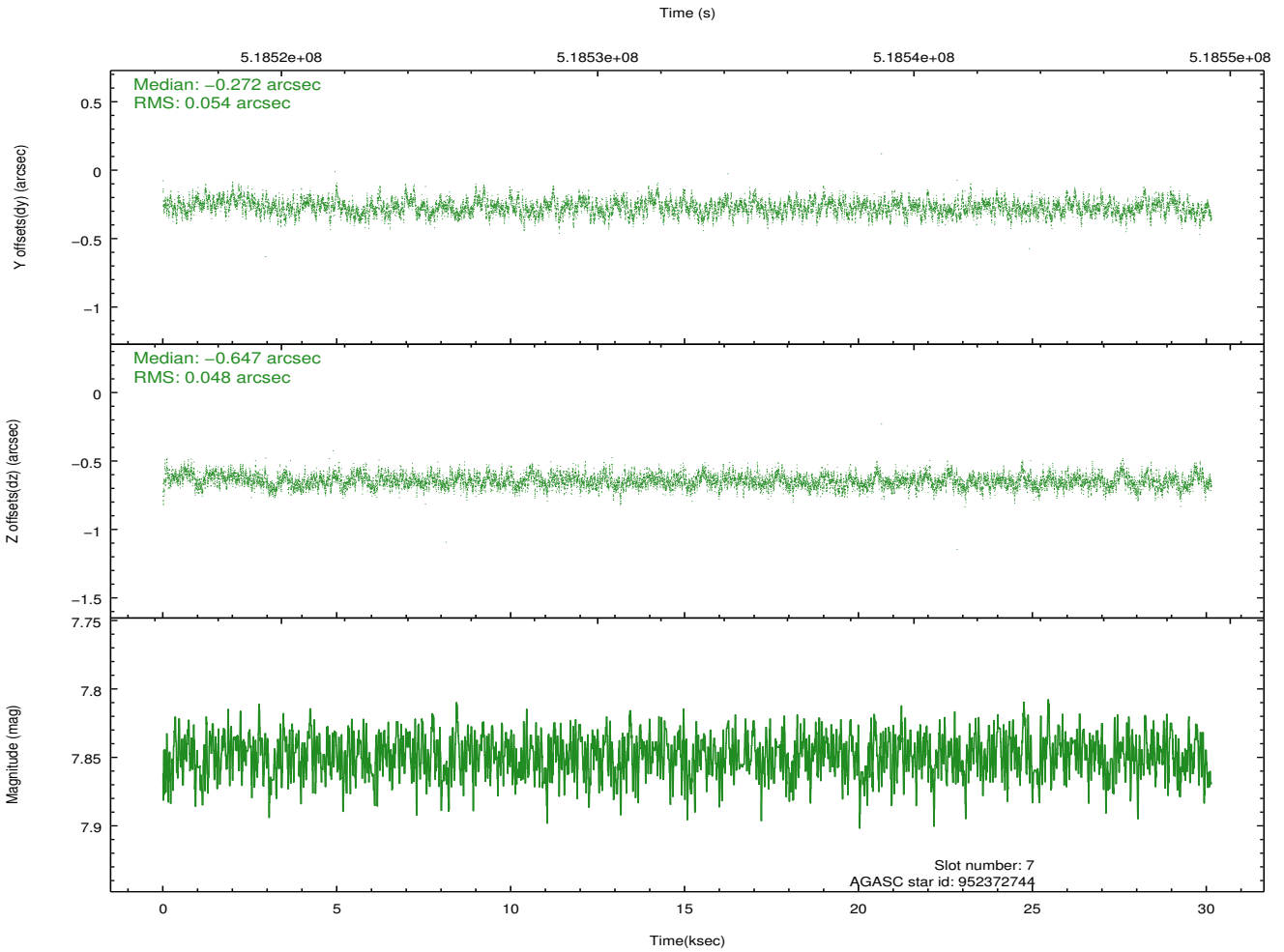
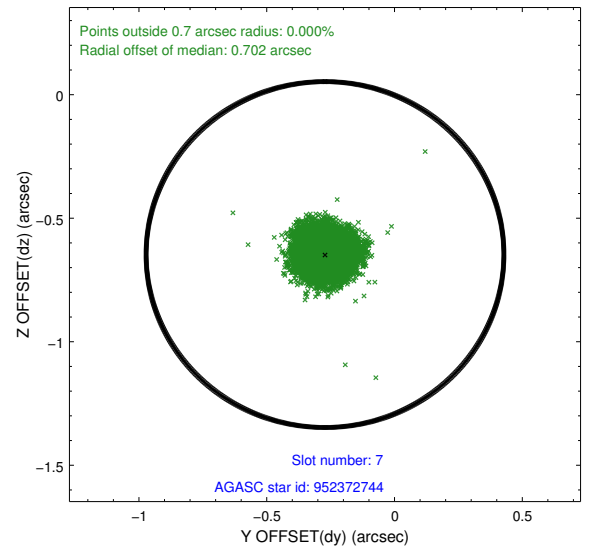
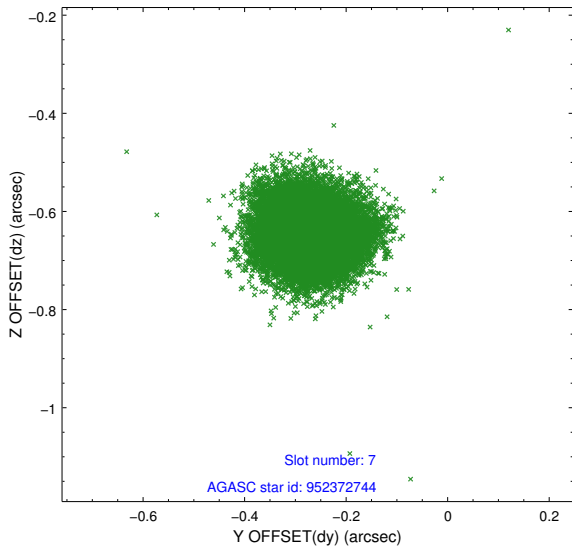
### 2.4.3 Slot 5



## 2.4.4 Slot 6

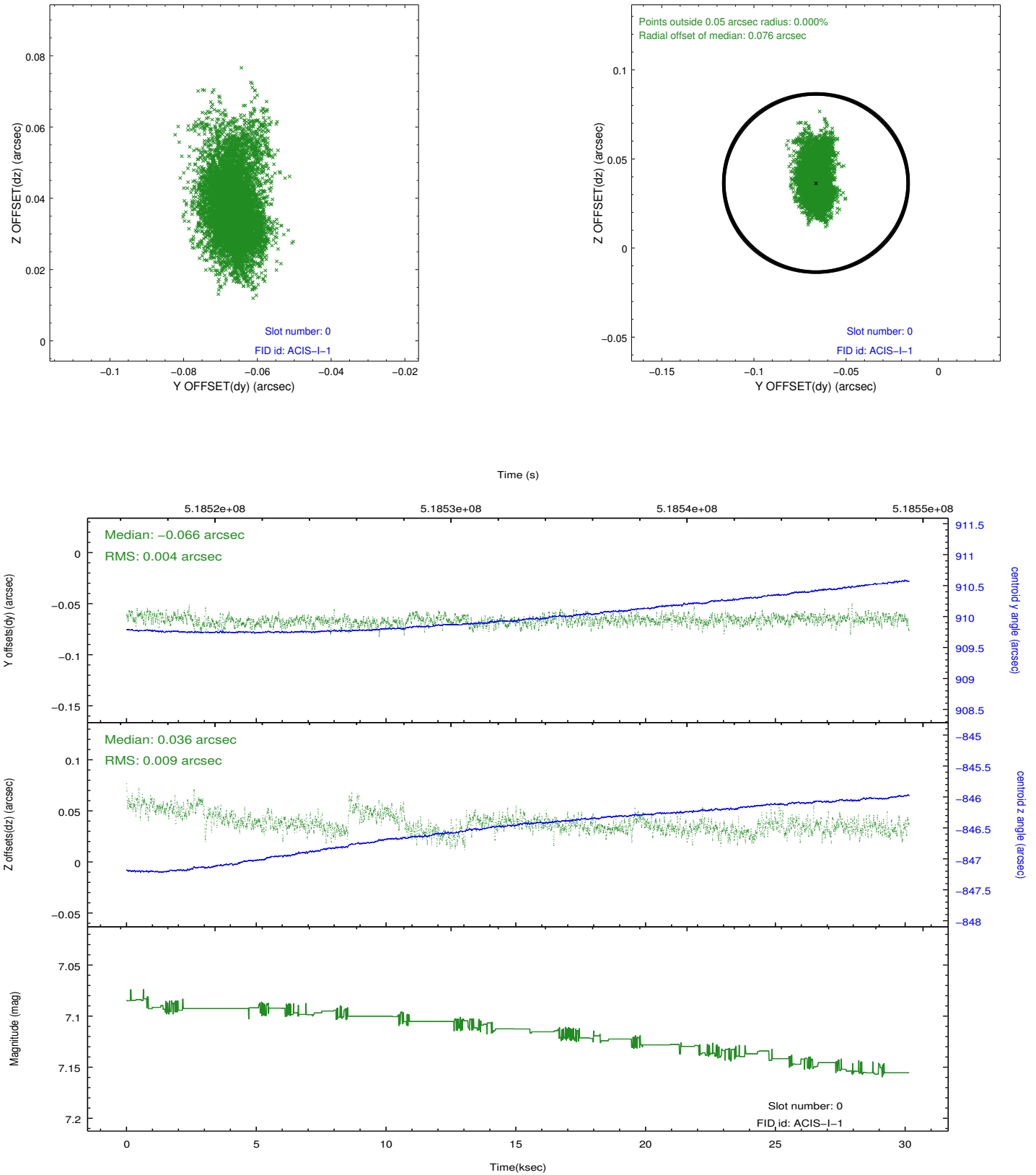


### 2.4.5 Slot 7

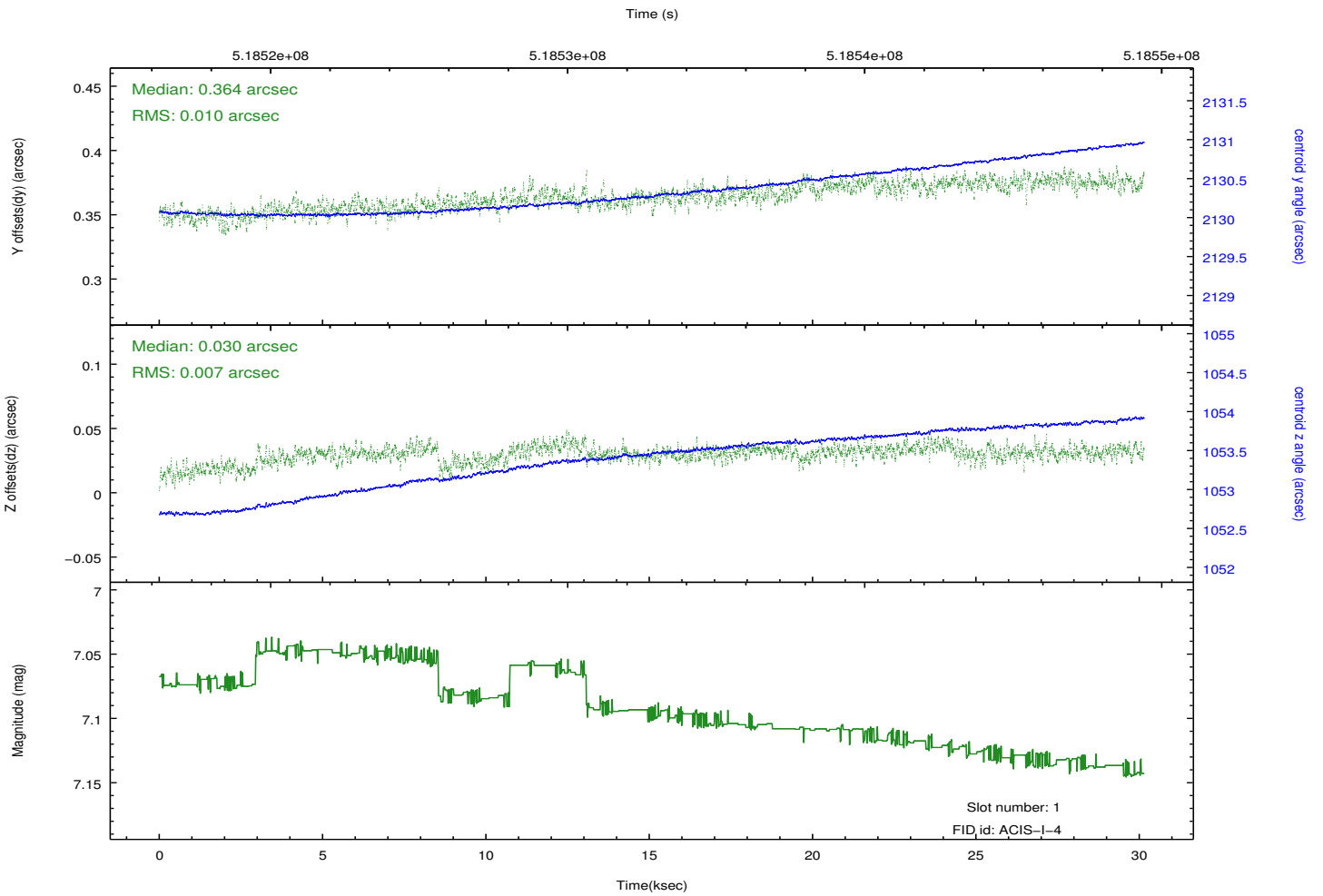
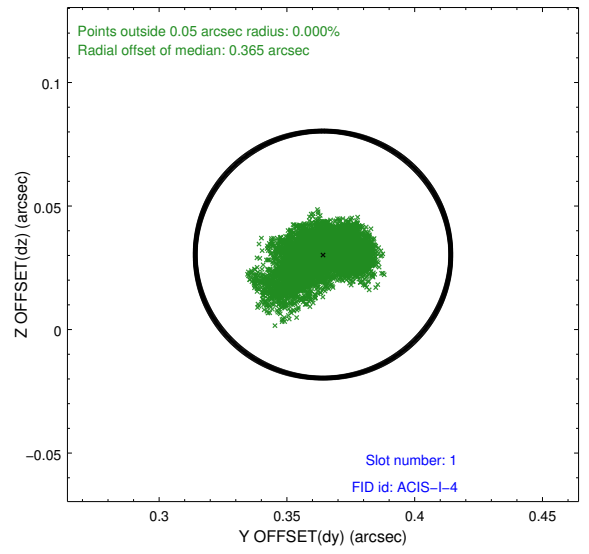
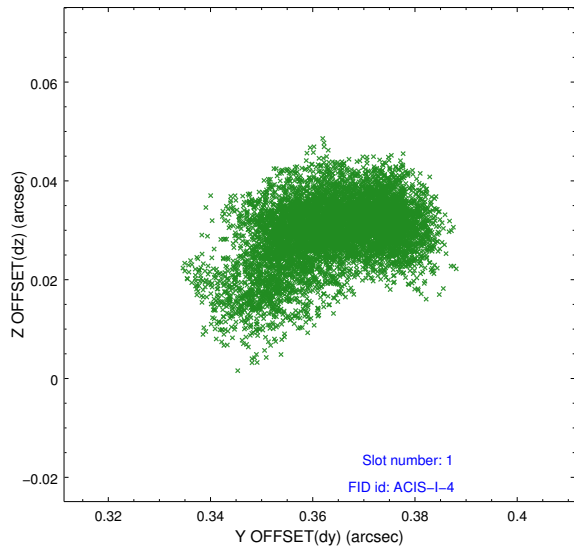


## 2.5 FID Slots

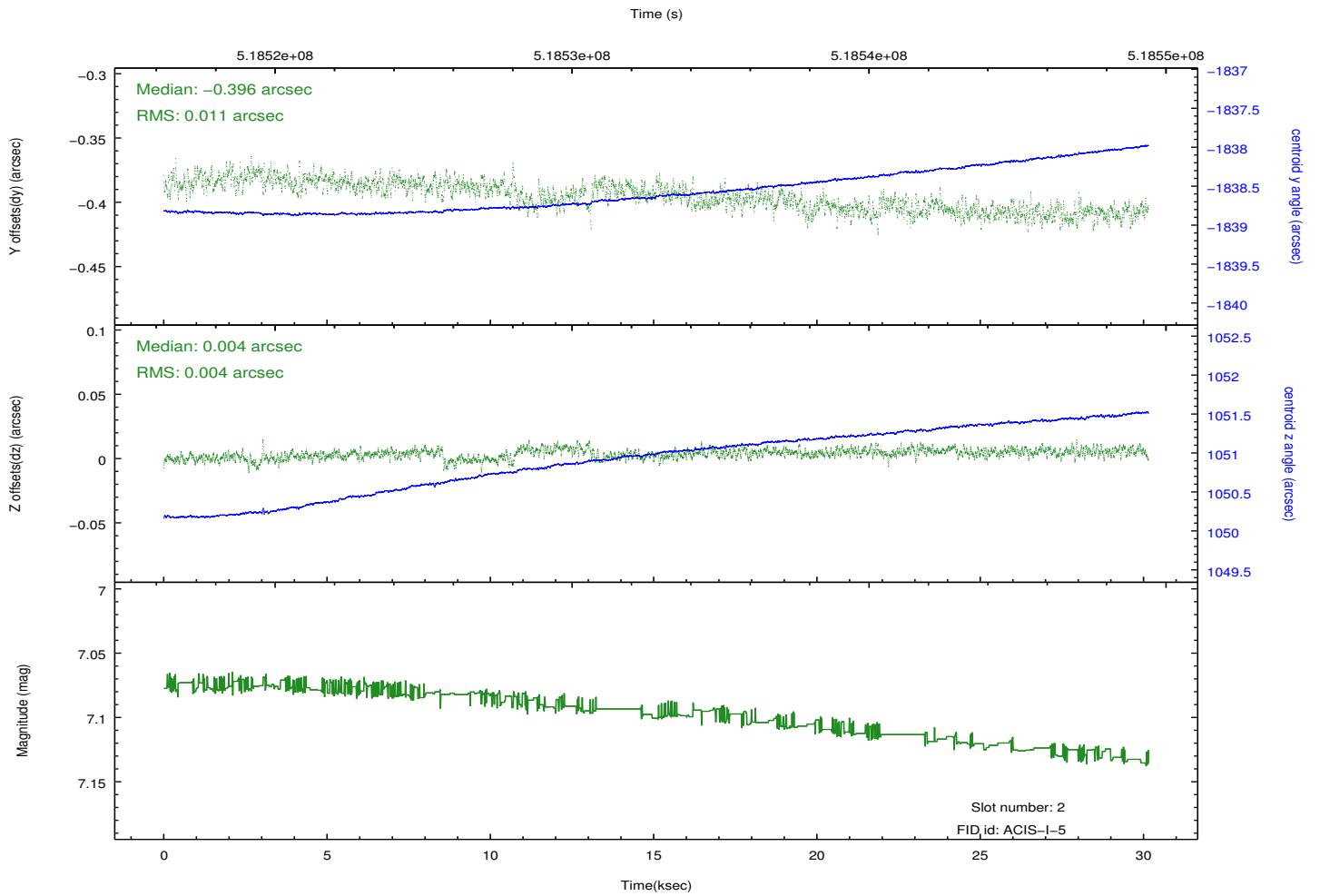
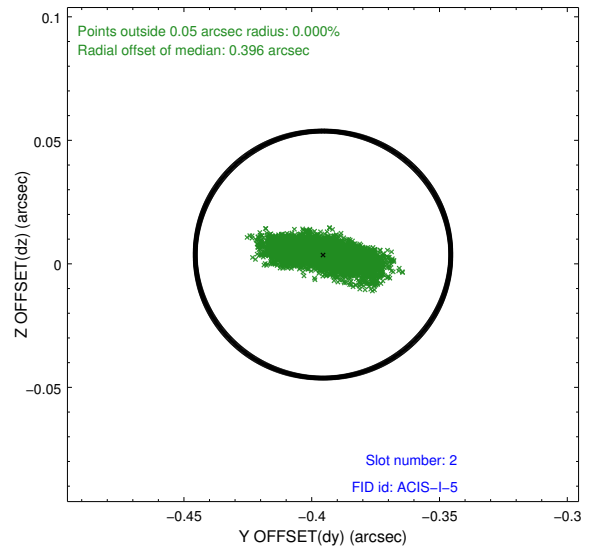
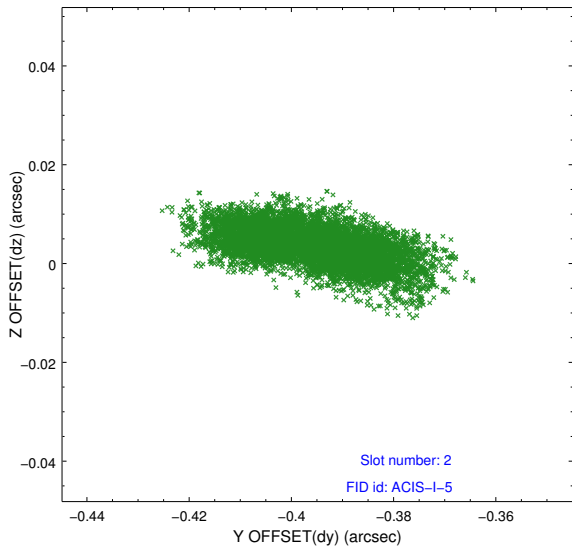
### 2.5.1 Slot 0



## 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	29.967958838284

## 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.