

# V&V Reference Report

## L2 ASCDS Version : 8.5.1

Observation 6101 - L2 Version 5  
Chandra X-Ray Center

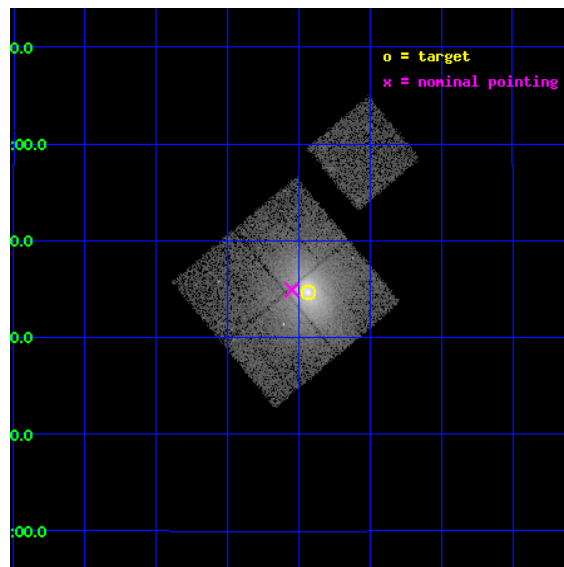
L2 Processing Date : Jan 23 2013

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# 1 Front

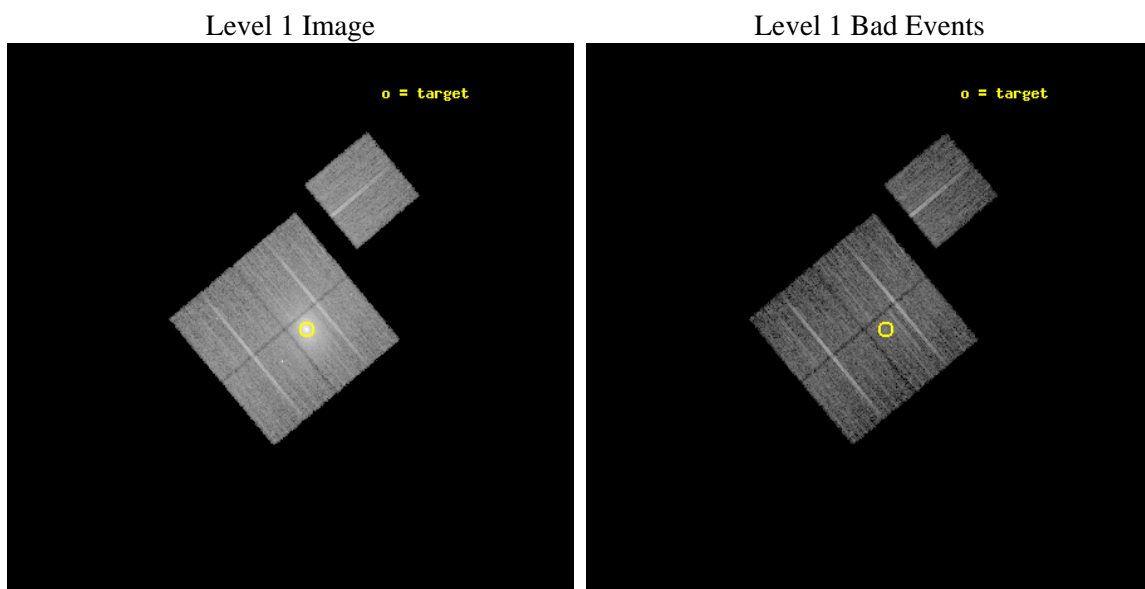
seq_num	800549	Sequence number
obs_id	6101	Observation id
title	Probing dark energy using the X-ray gas mass fraction in dynamically relaxed galaxy clusters	Proposal title
observer	Prof. Steven Allen	Principal investigator
object	Abell 2029	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	227.734167	Observer's specified target RA [deg]
dec_targ	5.744583	Observer's specified target Dec [deg]
ra_nom	227.76198328639	Nominal RA [deg]
dec_nom	5.7487463905704	Nominal Dec [deg]
roll_nom	50.156216060943	Nominal Roll [deg]
revision	5	Processing version of data
ontime	10050.199980646	Sum of GTIs [s]
livetime	9918.8867190496	Livetime [s]
ontime0	10047.059010416	Sum of GTIs [s]
ontime1	10050.199980646	Sum of GTIs [s]
ontime2	10050.199980646	Sum of GTIs [s]
ontime3	10050.199980646	Sum of GTIs [s]
ontime6	10047.058990479	Sum of GTIs [s]
l2events	125129	Number of level 2 events



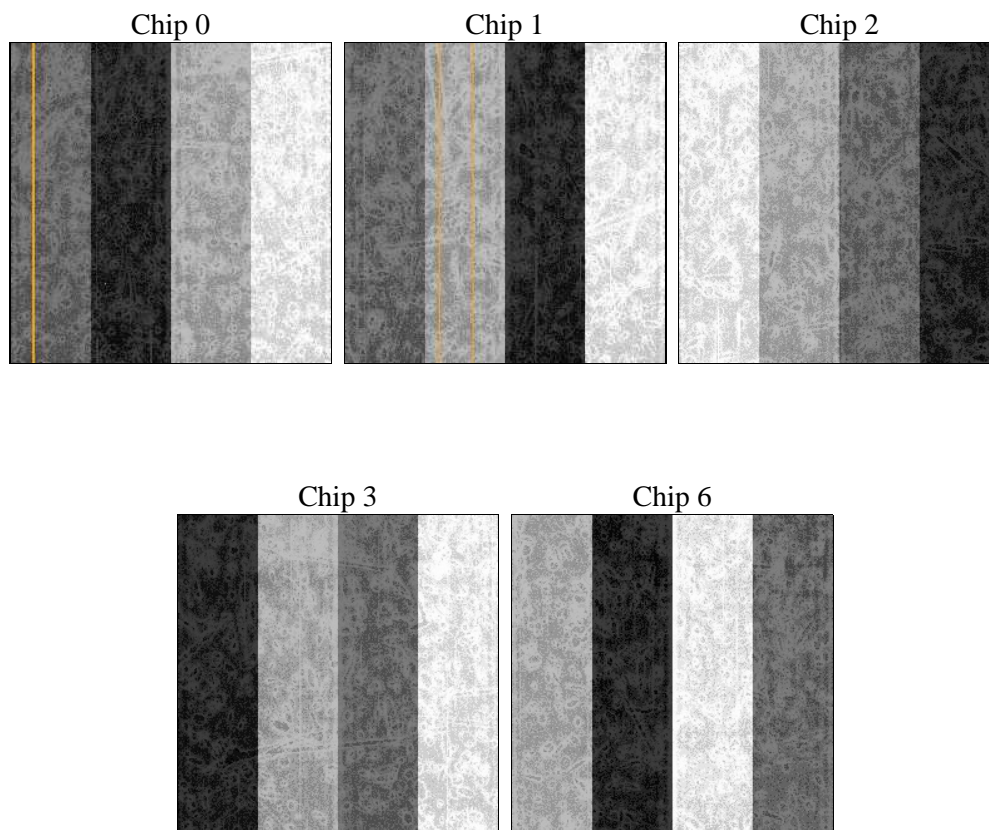
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	10050.199980646	Sum of GTIs [s]
caldsver	4.5.5	&#160	ontime0	10047.059010416	Sum of GTIs [s]
date	2013-01-23T22:26:07	Date and time of file creation	ontime1	10050.199980646	Sum of GTIs [s]
revision	5	Processing version of data	ontime2	10050.199980646	Sum of GTIs [s]
			ontime3	10050.199980646	Sum of GTIs [s]
			ontime6	10047.058990479	Sum of GTIs [s]
			l1events	429872	Number of level 1 events

### 2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	66908	72221	83837	140147	66759
rejected events	56226	54710	63848	61939	59192
rejected %	84%	75%	76%	44%	88%

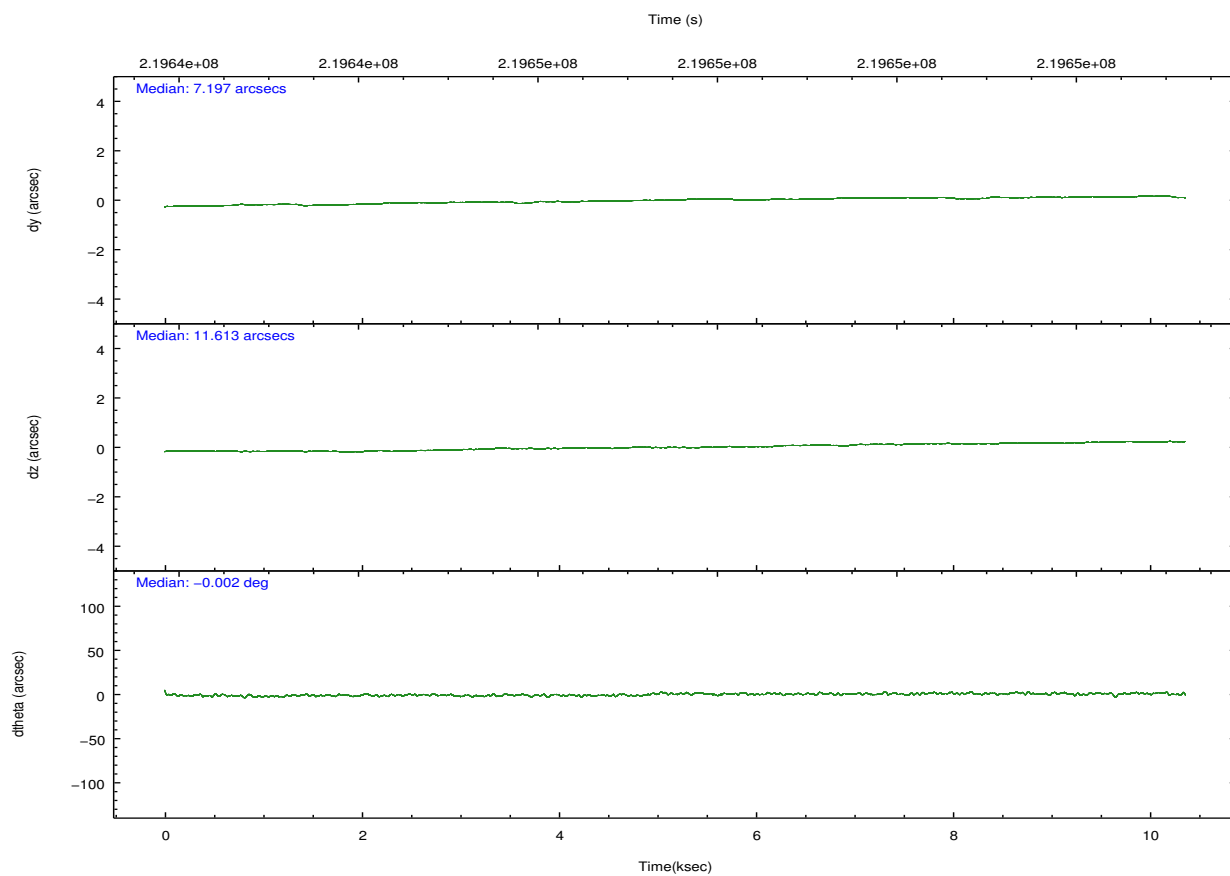
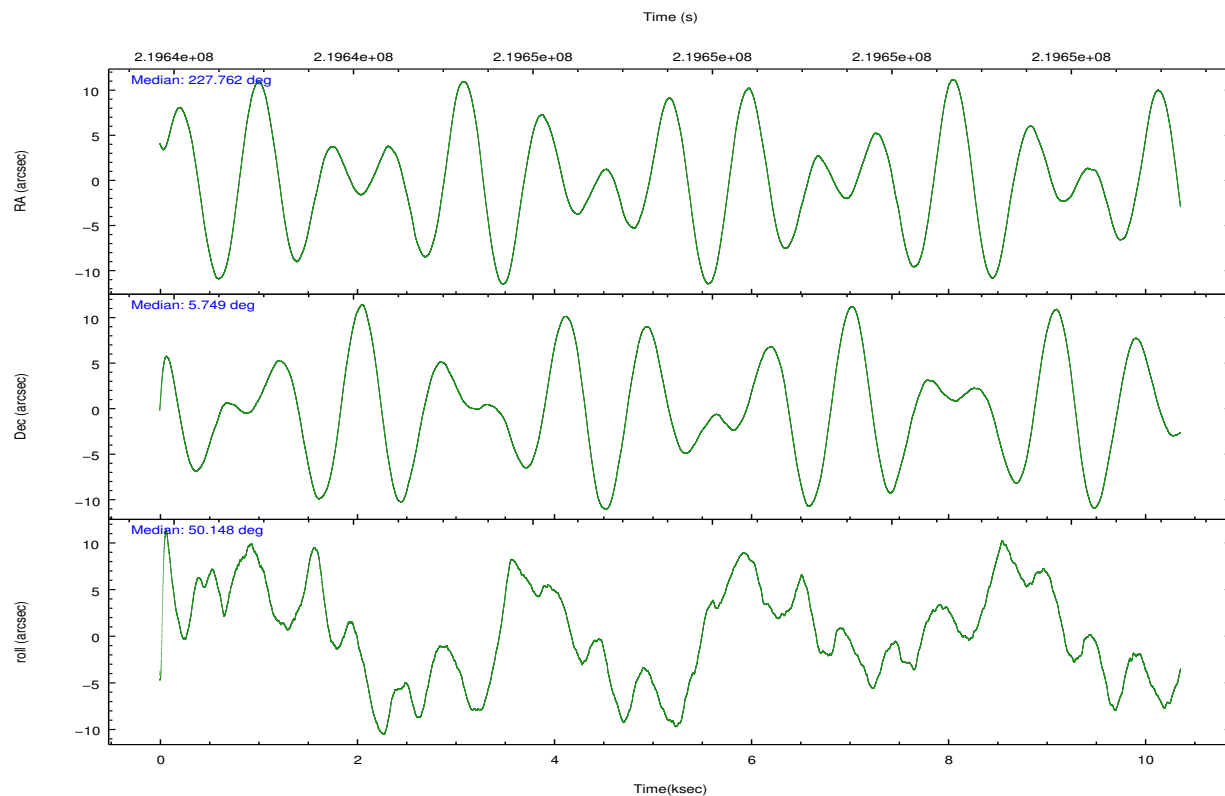
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	5603	10958	13530	61234	3125
	8%	15%	16%	43%	4%
grade 1 events	49	60	90	412	32
	0%	0%	0%	0%	0%
grade 2 events	2013	2612	2721	8309	1515
	3%	3%	3%	5%	2%
grade 3 events	896	1105	1160	2797	780
	1%	1%	1%	1%	1%
grade 4 events	832	1121	1092	2844	756
	1%	1%	1%	2%	1%
grade 5 events	2244	2536	2267	2878	2527
	3%	3%	2%	2%	3%
grade 6 events	1339	1721	1495	3042	1393
	2%	2%	1%	2%	2%
grade 7 events	53932	52108	61482	58631	56631
	80%	72%	73%	41%	84%



## 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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	227.757317	227.7619832863878	Subarray requested	NONE	NONE
[deg] Pointing Dec	5.721736	5.748746390570446	Alternating exposures requested	N	N
[deg] Pointing Roll	49.948022	50.15621606094337	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-233.592463	-233.5874344608287			
[mm] SIM translation stage offset	0	-0.005018542100998502			
[s] Observation start time (MET)	219642705.184000	219641685.5667			
Observation start date	2004-12-17T03:50:41	2004-12-17T03:34:45			
[s] Observation end time (MET)	219652705.184000	219653301.89222			
Observation end date	2004-12-17T06:37:21	2004-12-17T06:48:21			
Read mode	TIMED	TIMED			

## 2.3 Aspect

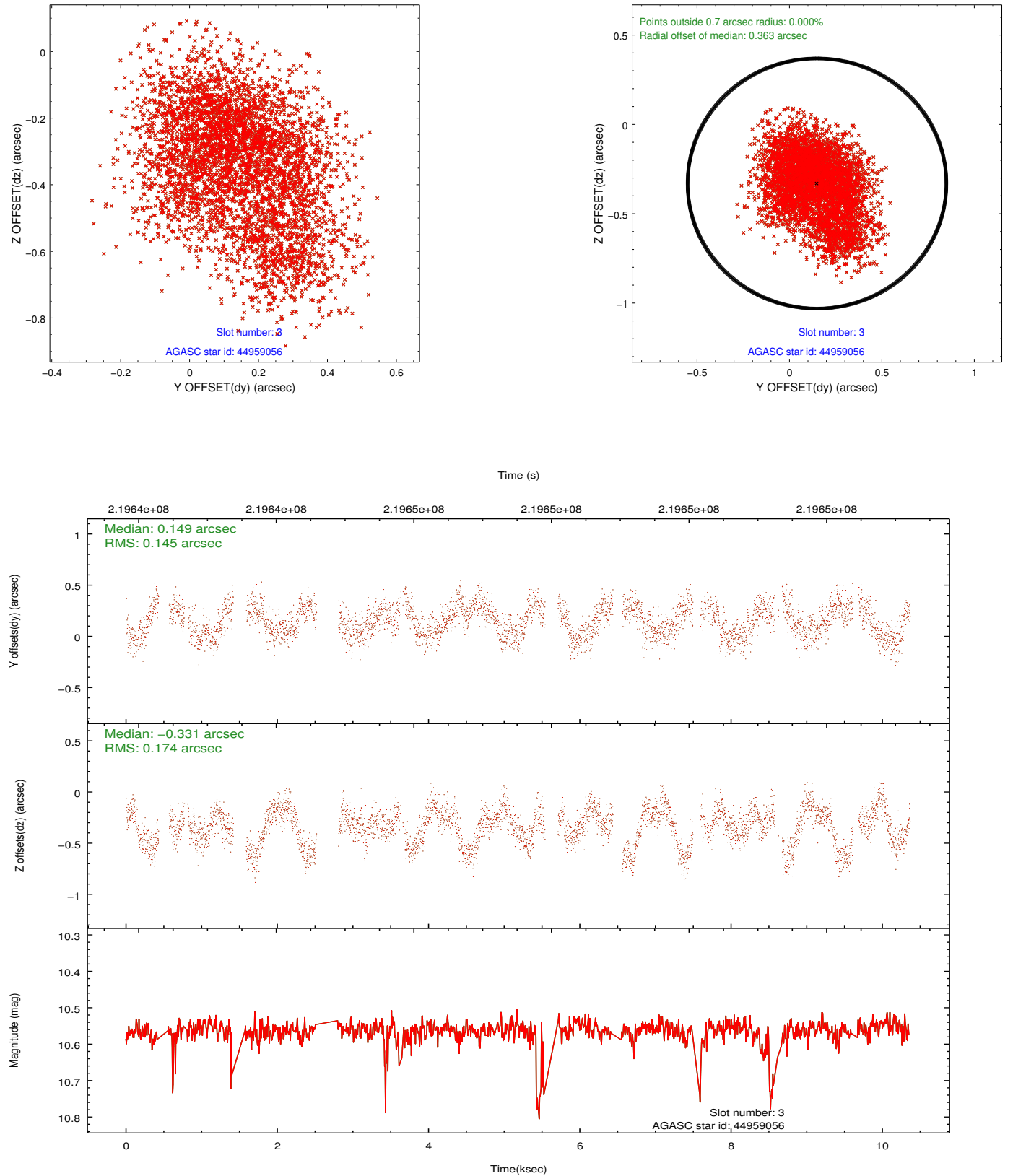


### Slot Statistics

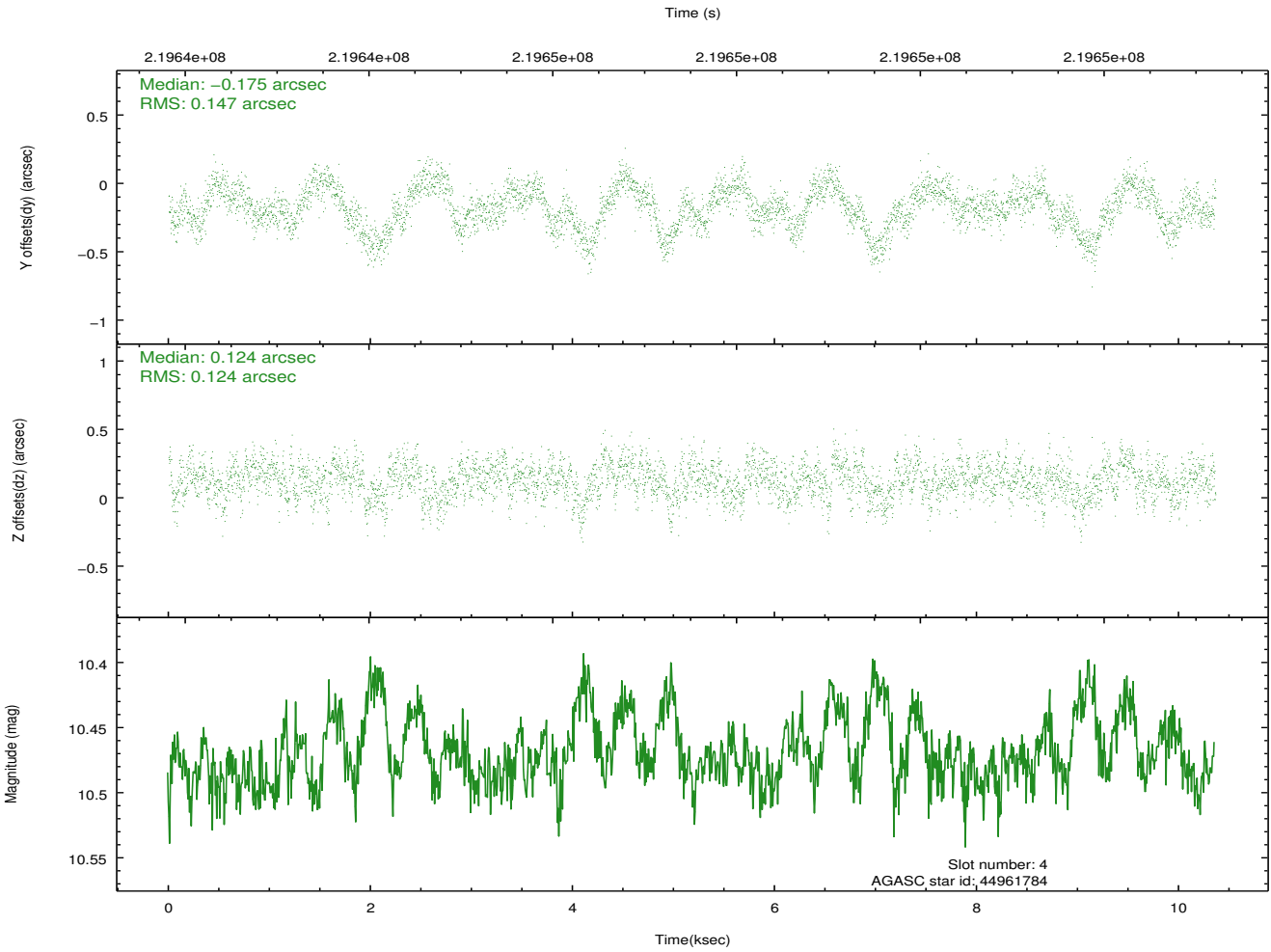
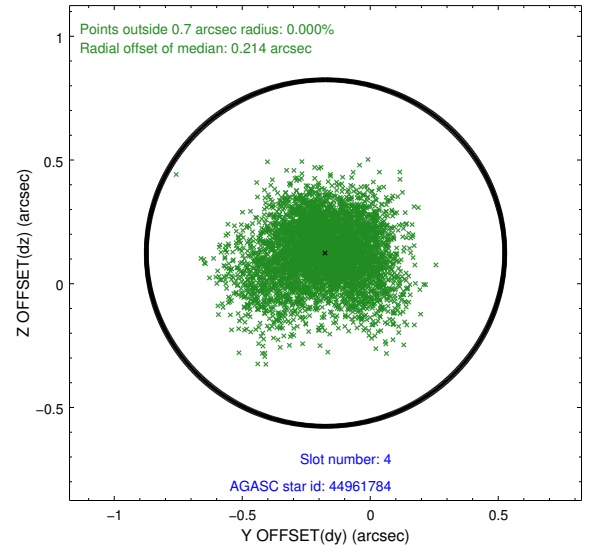
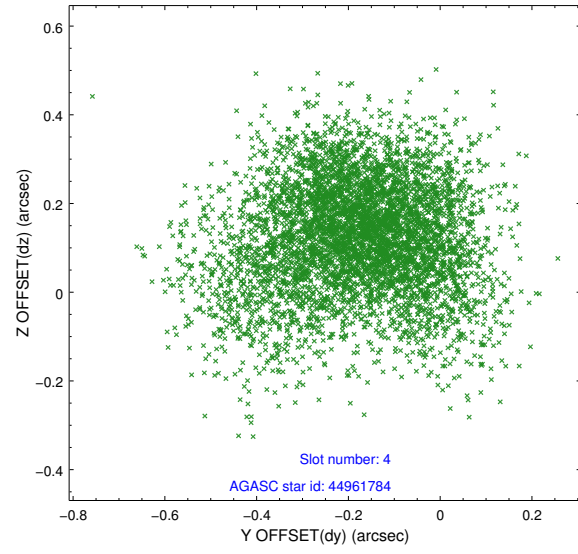
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.24	2528	-0.056	-0.017	0.012	0.020	0.000000	0.000000	932.45	-835.15
1	FID	ACIS-I-2	7.14	2528	-0.135	-0.045	0.008	0.013	0.000000	0.000000	-761.44	-841.88
2	FID	ACIS-I-4	7.17	2528	0.092	0.130	0.008	0.014	0.000000	0.000000	2152.24	1064.55
3	BAD	44959056	10.56	4380	0.149	-0.331	0.242	0.388	227.388506	5.331015	-1928.01	107.91
4	GUIDE	44961784	10.47	5051	-0.175	0.124	0.203	0.340	228.123885	5.352388	-172.59	-1860.05
5	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
6	GUIDE	44959920	11.19	5047	0.073	0.251	0.323	0.484	227.796954	4.888165	-2205.57	-2039.48
7	GUIDE	44961936	10.26	5052	-0.014	-0.074	0.166	0.283	226.889483	5.605009	-2321.44	2111.13

## 2.4 Star Slots

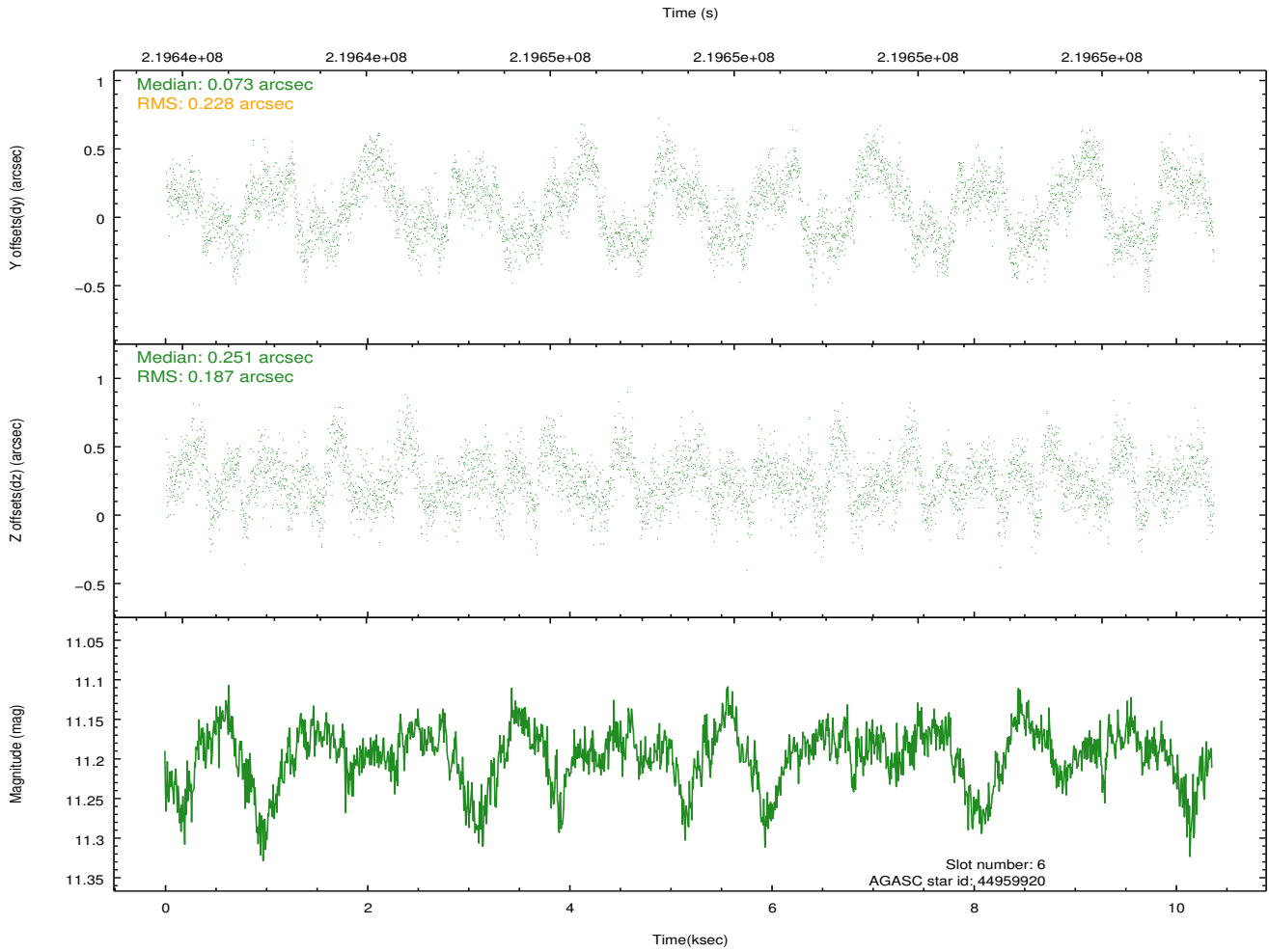
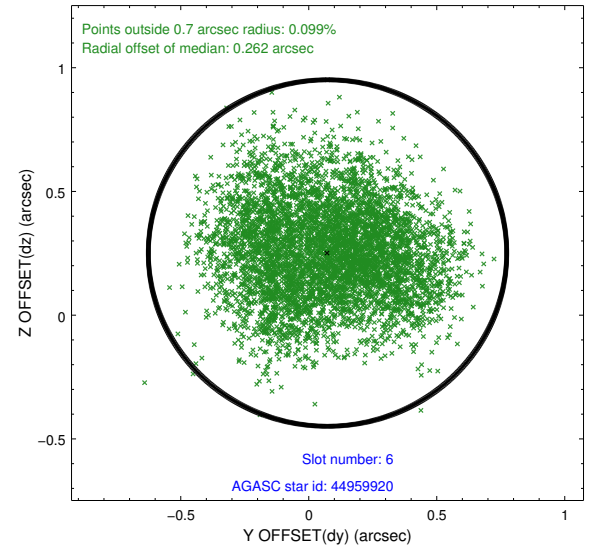
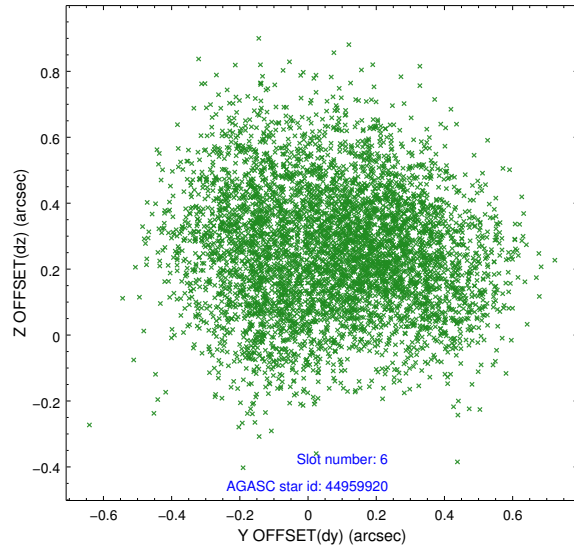
### 2.4.1 Slot 3



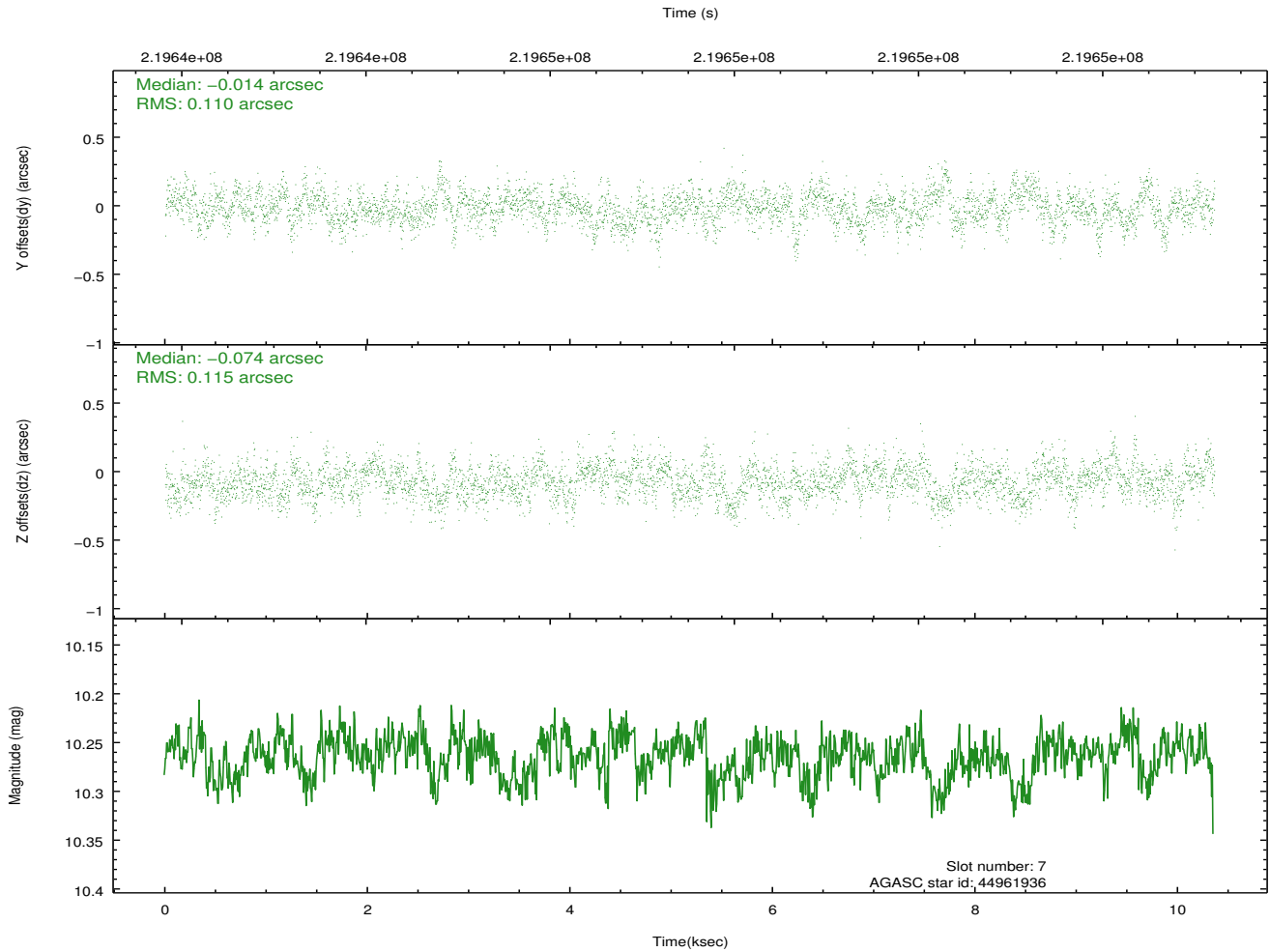
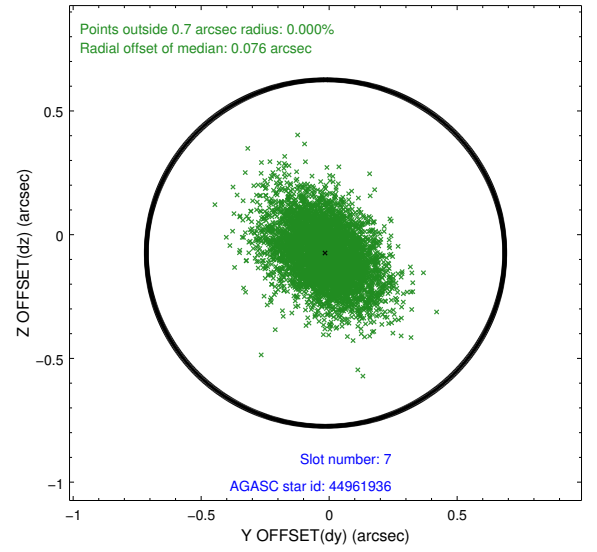
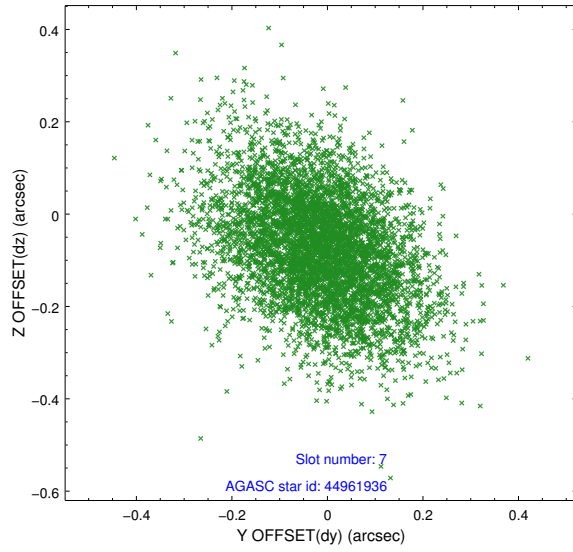
## 2.4.2 Slot 4



### 2.4.3 Slot 6



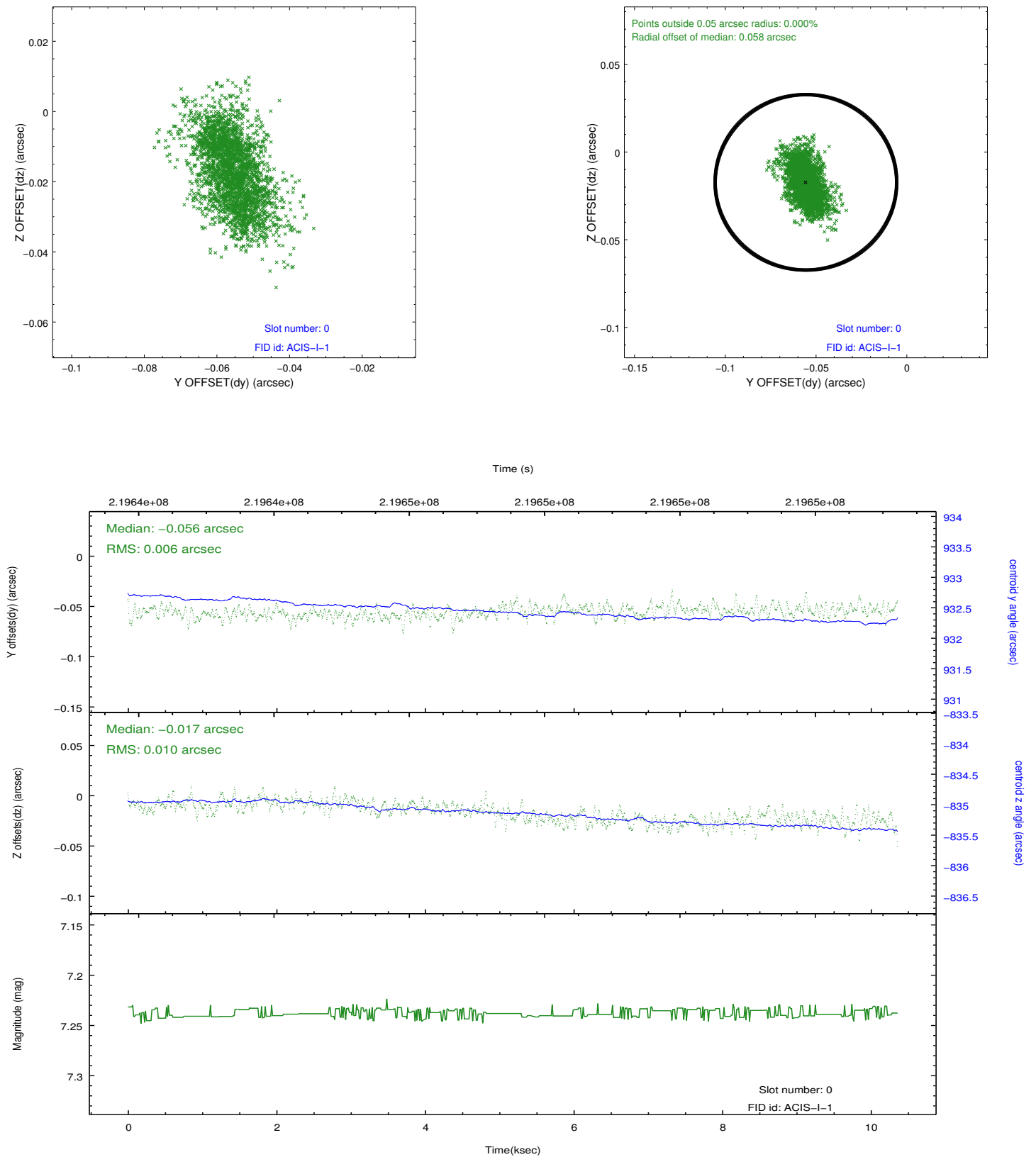
## 2.4.4 Slot 7



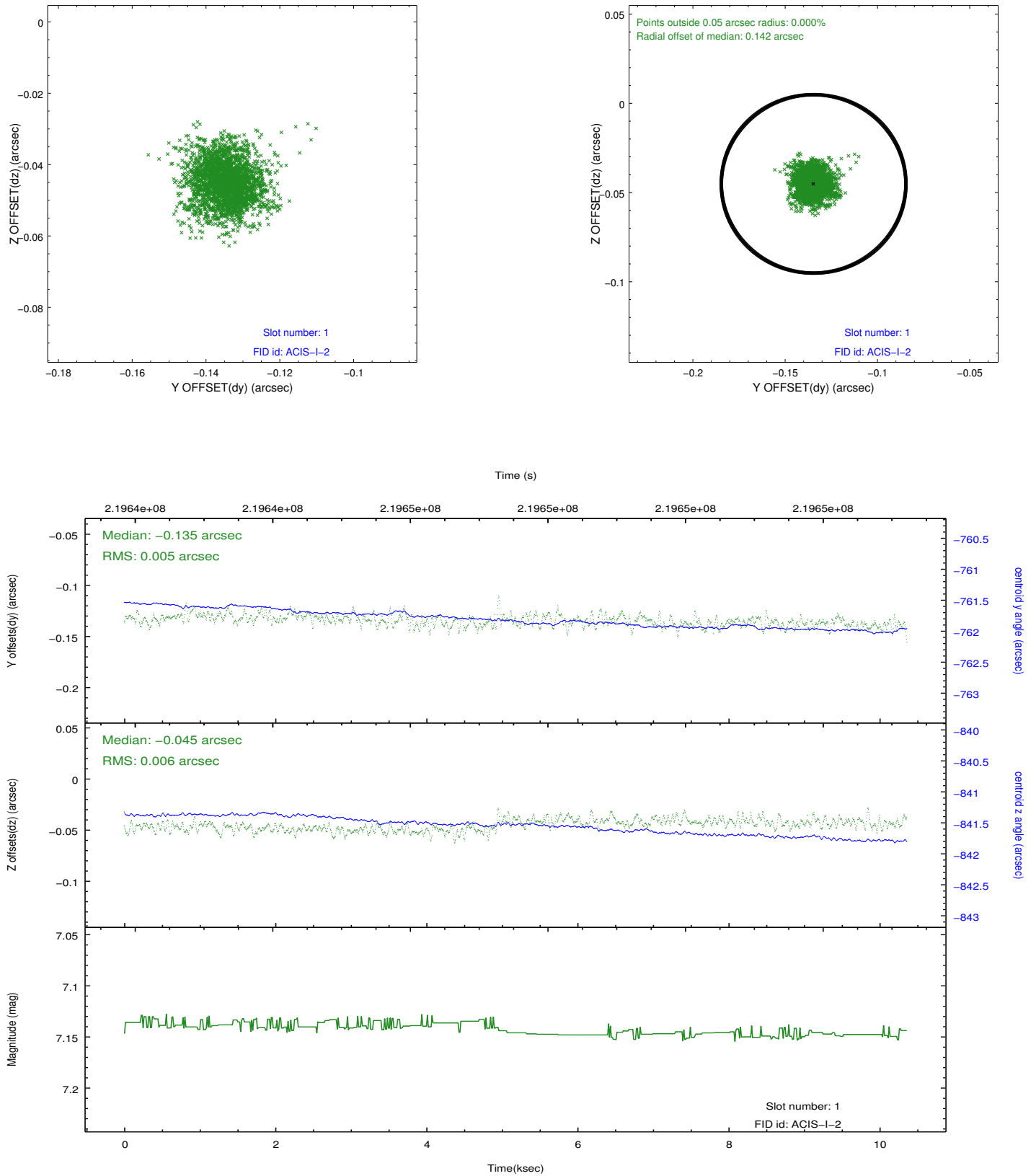


## 2.5 FID Slots

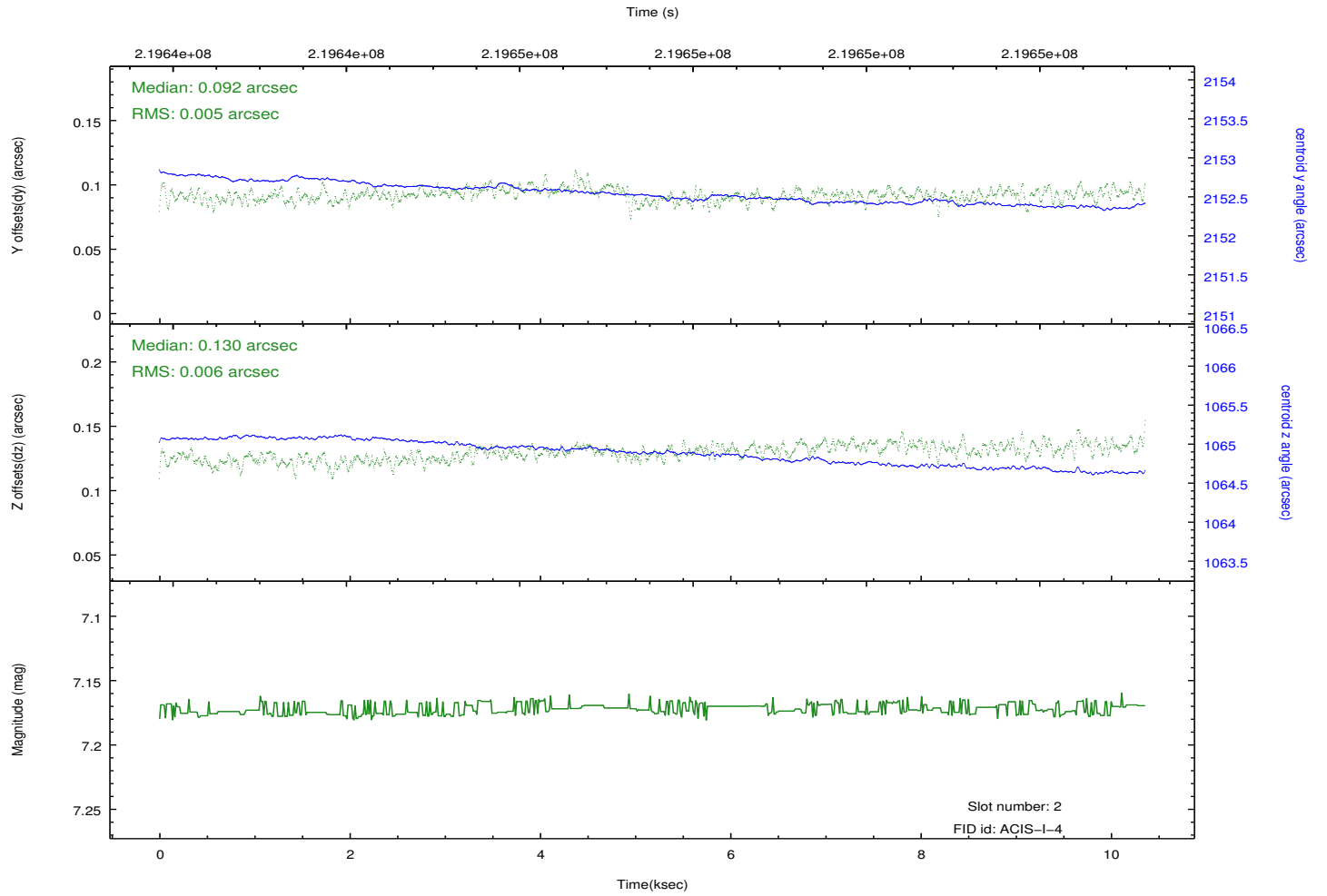
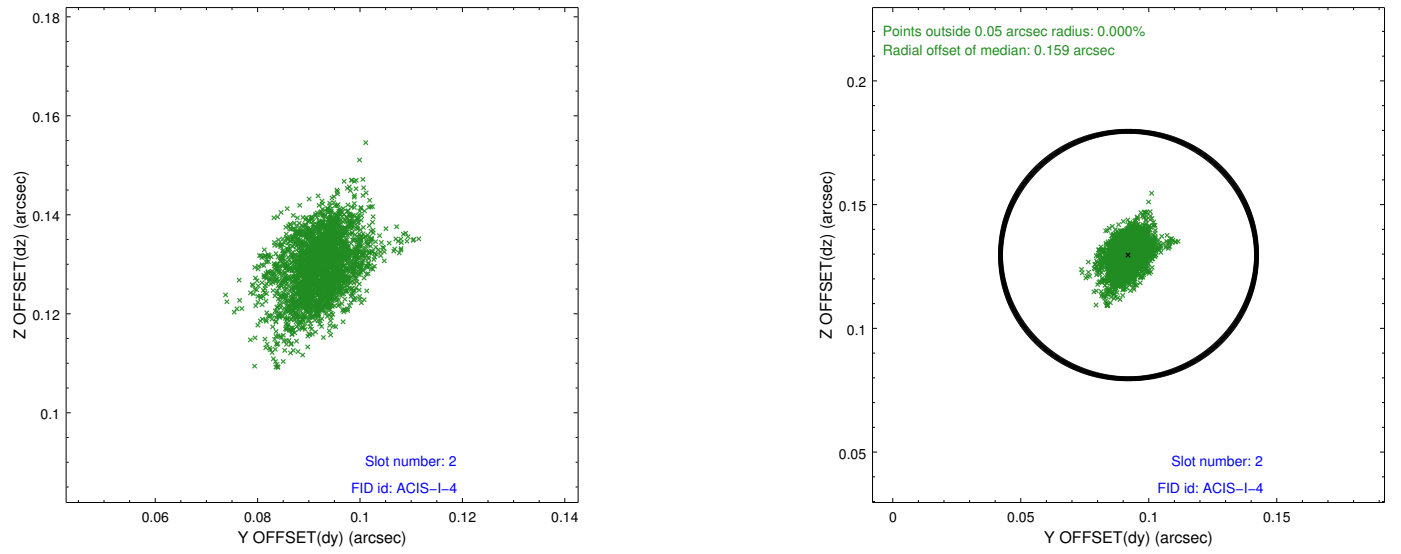
### 2.5.1 Slot 0



## 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)	2013.01.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.05019

## A.2 Comments

The guide star in slot 5 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this star from the solution.