

# V&V Reference Report

## L2 ASCDS Version : 7.6.10

Observation 2010 - L2 Version 001  
Chandra X-Ray Center

L2 Processing Date : Jan 21 2007

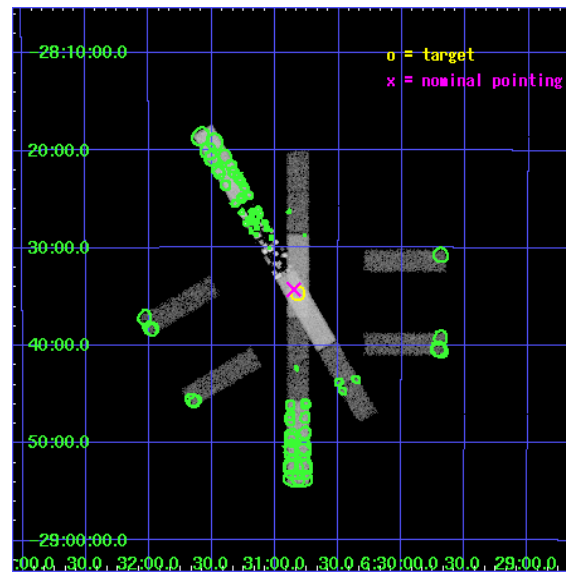
## Contents

<b>1</b>	<b>Front</b>	<b>3</b>
<b>2</b>	<b>OBI</b>	<b>4</b>
2.1	OBI . . . . .	4
2.1.1	Images . . . . .	4
2.1.2	Bias . . . . .	4
2.1.3	Parameters . . . . .	5
2.1.4	Events . . . . .	5
2.2	Compared Parameters . . . . .	6
2.3	Aspect . . . . .	7
2.4	Star Slots . . . . .	10
2.4.1	Slot 3 . . . . .	10
2.4.2	Slot 4 . . . . .	11
2.4.3	Slot 5 . . . . .	12
2.4.4	Slot 6 . . . . .	13
2.4.5	Slot 7 . . . . .	14
2.5	FID Slots . . . . .	15
2.5.1	Slot 0 . . . . .	15
2.5.2	Slot 1 . . . . .	16
2.5.3	Slot 2 . . . . .	17
<b>3</b>	<b>OBI</b>	<b>18</b>
3.1	OBI . . . . .	18
3.1.1	Images . . . . .	18
3.1.2	Bias . . . . .	18
3.1.3	Parameters . . . . .	19
3.1.4	Events . . . . .	19
3.2	Compared Parameters . . . . .	20
3.3	Aspect . . . . .	21
3.4	Star Slots . . . . .	24
3.4.1	Slot 3 . . . . .	24
3.4.2	Slot 4 . . . . .	25
3.4.3	Slot 5 . . . . .	26
3.4.4	Slot 6 . . . . .	27

3.4.5	Slot 7	28
3.5	FID Slots	29
3.5.1	Slot 0	29
3.5.2	Slot 1	30
3.5.3	Slot 2	31
<b>4</b>	<b>Point Sources</b>	<b>32</b>
<b>A</b>	<b>Summary</b>	<b>33</b>
A.1	Status	33
A.2	Comments	33

# 1 Front

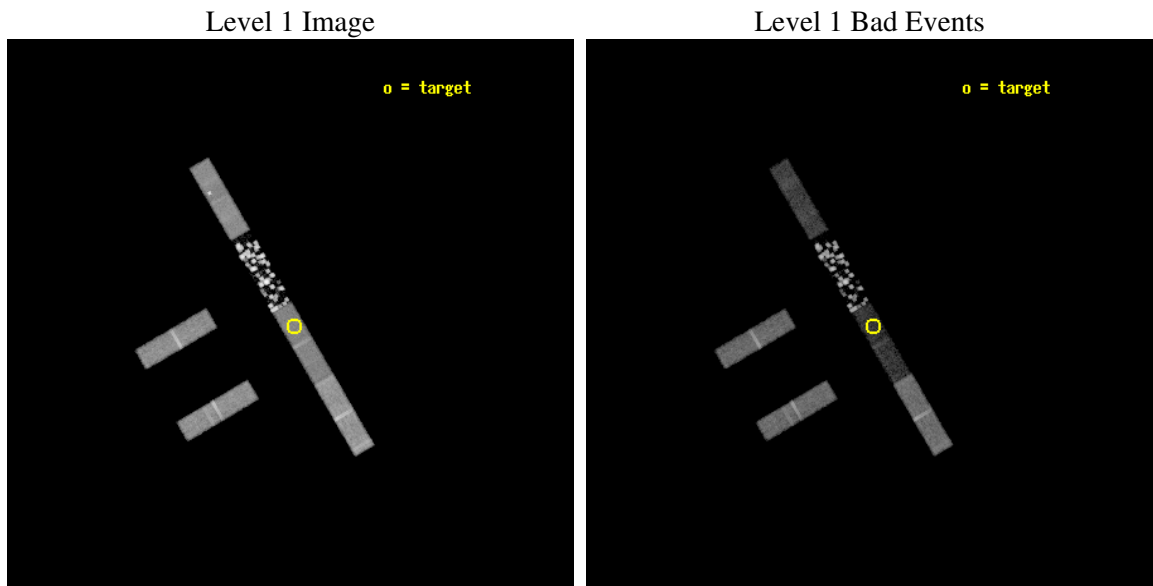
seq_num	500187
obs_id	2010
title	LET US EXAMINE SOME NEW ISOLATED NEUTRON STARS WITH CHANDRA
observer	Hakk Ogelman
object	PSR0628-28
dtcycle	0
cycle	P
ra_targ	97.70625
dec_targ	-28.578778
ra_nom	97.713367754779
dec_nom	-28.57141381323
roll_nom	59.65309118106
revision	3
ontime	19271.999895573
livetime	18578.840255495
ontime2	18169.202314466
ontime3	18340.931104124
ontime5	19271.999895573
ontime6	18495.659246072
ontime7	19271.999895573
ontime8	18502.586190313
l2events	124437



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias

Chip 2

Chip 3

Chip 5



Chip 6

Chip 7

Chip 8



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.10
caldsver	3.3.0
date	2007-01-18T18:24:20
revision	2

sched_exp_time	20000.000000
ontime	2136.1999884248
ontime2	1034.5434174091
ontime3	1205.1311969757
ontime5	2136.1999884248
ontime6	1359.8593389243
ontime7	2136.1999884248
ontime8	1366.7862831652
l1events	350738

### 2.1.4 Events

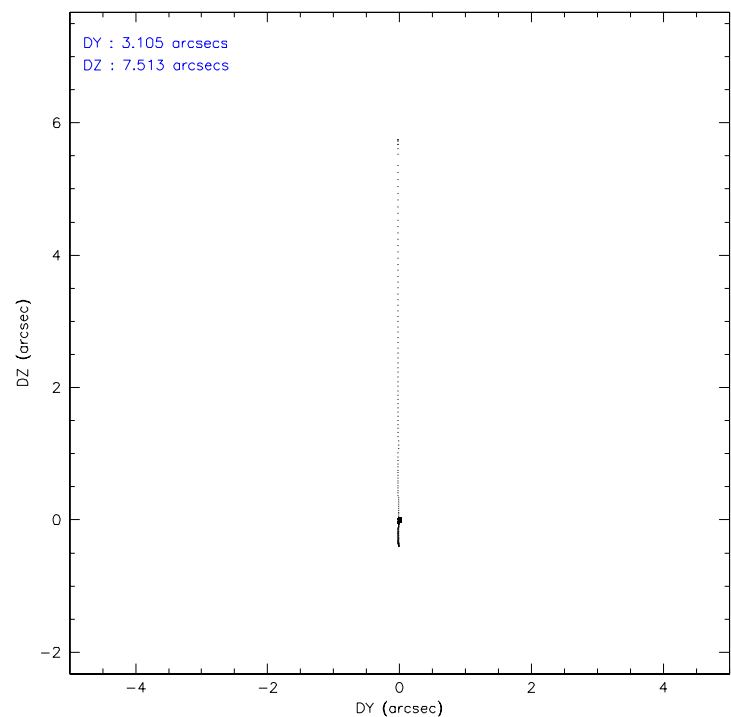
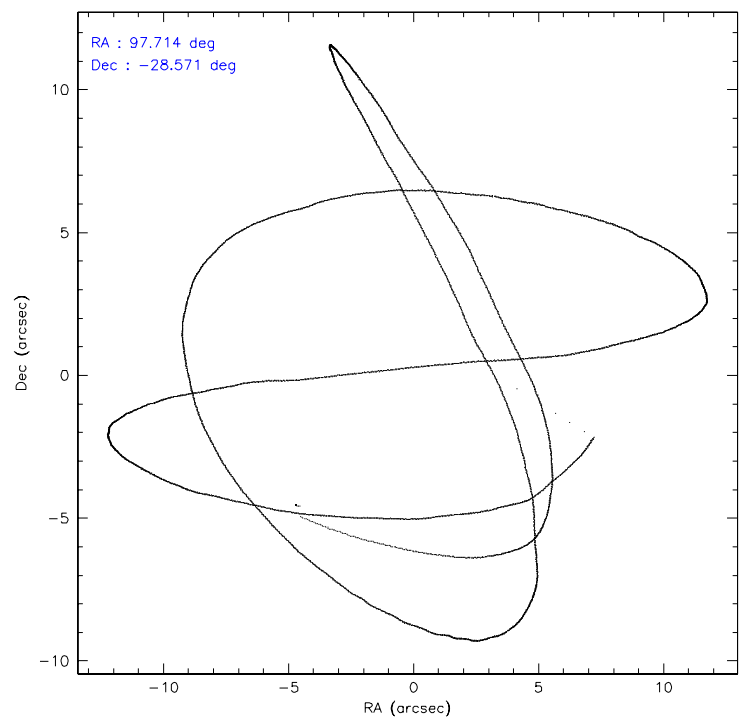
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	53686	57474	48979	82238	37730	70631
rejected events	50872	54345	15901	63329	11270	59616
rejected %	94%	94%	32%	77%	29%	84%

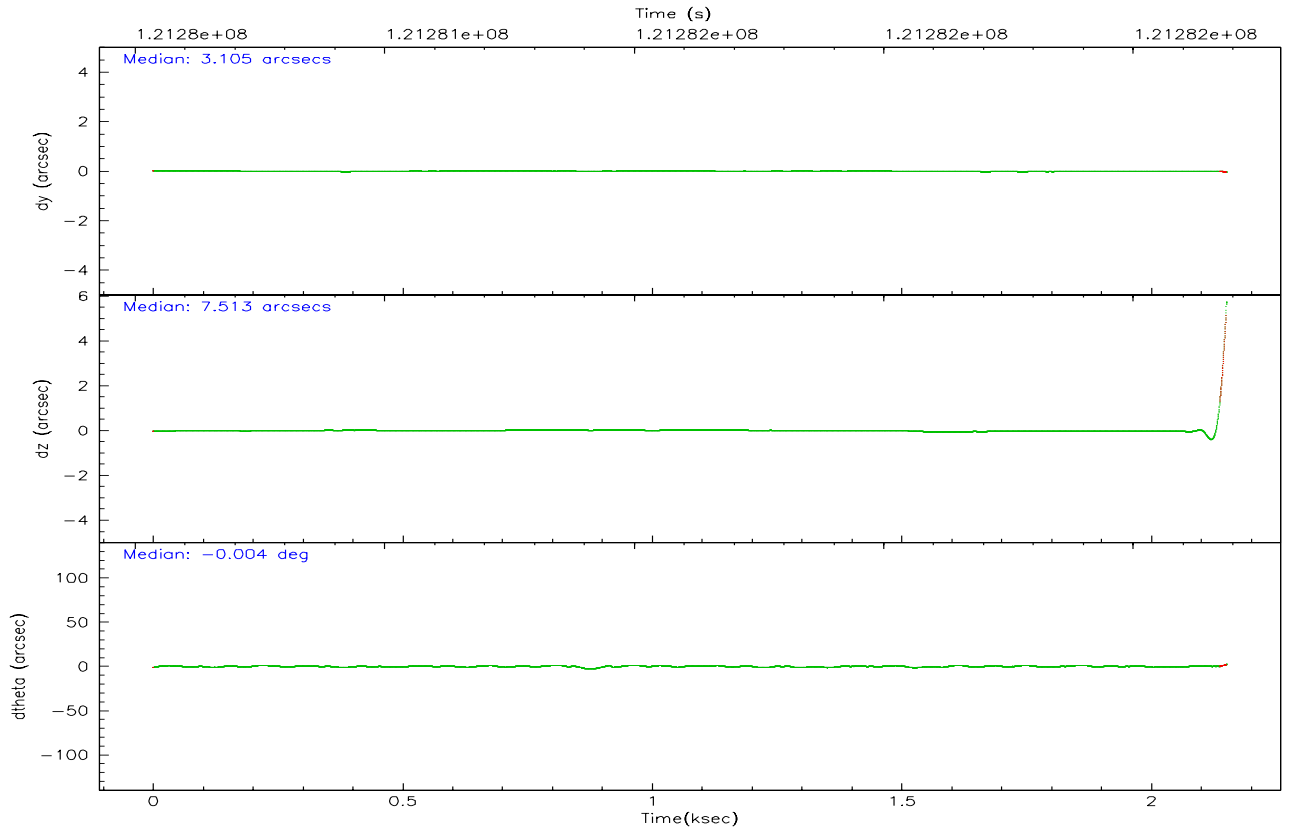
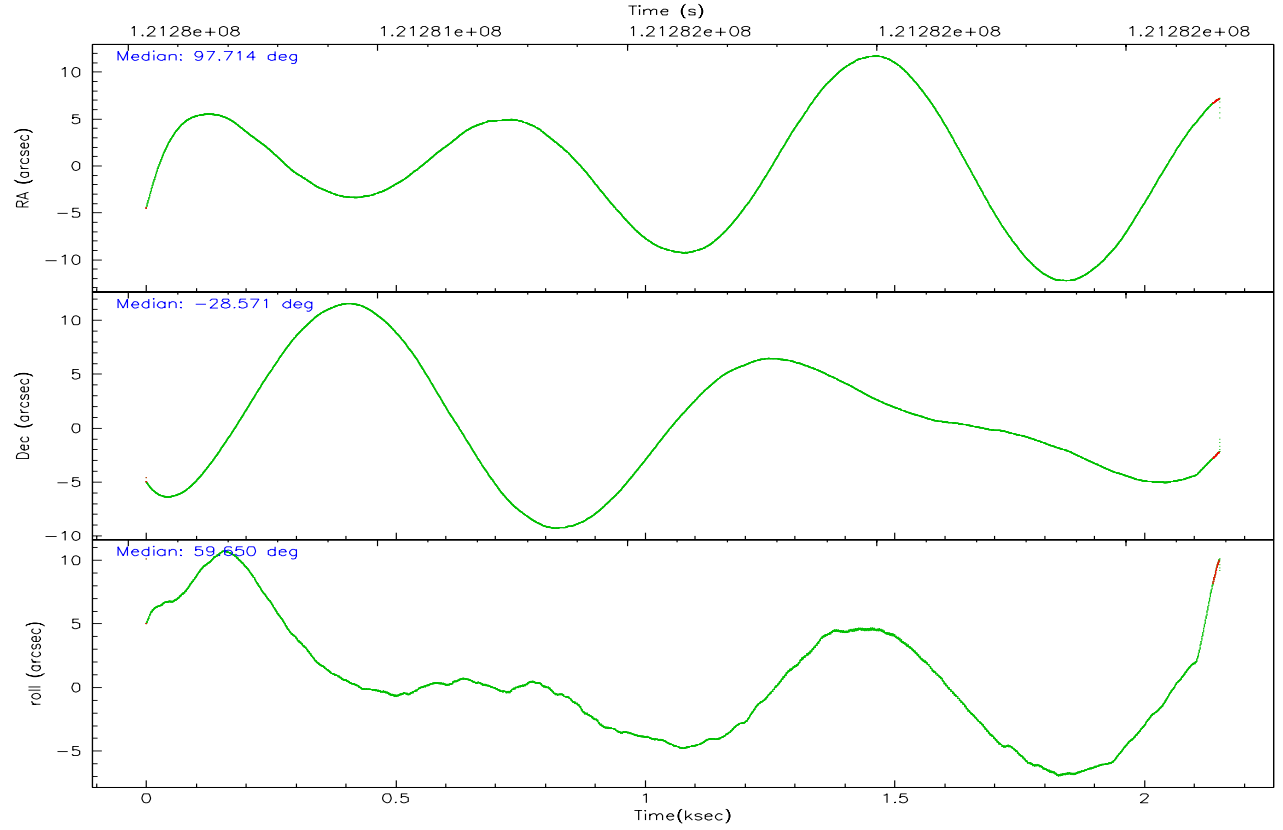
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	1404	1519	4945	2322	3463	3723
	2%	2%	10%	2%	9%	5%
grade 1 events	53	65	302	3846	131	135
	0%	0%	0%	4%	0%	0%
grade 2 events	405	398	13651	5268	7337	2414
	0%	0%	27%	6%	19%	3%
grade 3 events	389	526	2582	4334	3149	1466
	0%	0%	5%	5%	8%	2%
grade 4 events	448	480	2440	3186	2839	1360
	0%	0%	4%	3%	7%	1%
grade 5 events	163	221	2773	9078	1847	553
	0%	0%	5%	11%	4%	0%
grade 6 events	289	337	10409	4129	10358	2363
	0%	0%	21%	5%	27%	3%
grade 7 events	50535	53928	11877	50075	8606	58617
	94%	93%	24%	60%	22%	82%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
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
Pointing RA	97.713627	97.7133677547789	Subarray requested	1/4	1/4
Pointing Dec	-28.598654	-28.57141381323029	Subarray start row	384	385
Pointing Roll	59.496546	59.65309118106006	Subarray row count	256	256
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
SIM defocus (mm)	0	0.001444936568705701	Primary exposure time	0.000000	1.1
SIM translation stage pos (mm)	-190.132523	-190.1425803651734			
SIM translation stage offset (mm)	0	0.01005778216563158			
Observation start time	121281154.184000	121279983.07625			
Observation start date	2001-11-04T17:11:30	2001-11-04T16:53:03			
Observation end time	121301154.184000	121282707.01385			
Observation end date	2001-11-04T22:44:50	2001-11-04T17:38:27			
Read mode	TIMED	TIMED			

2.3 Aspect





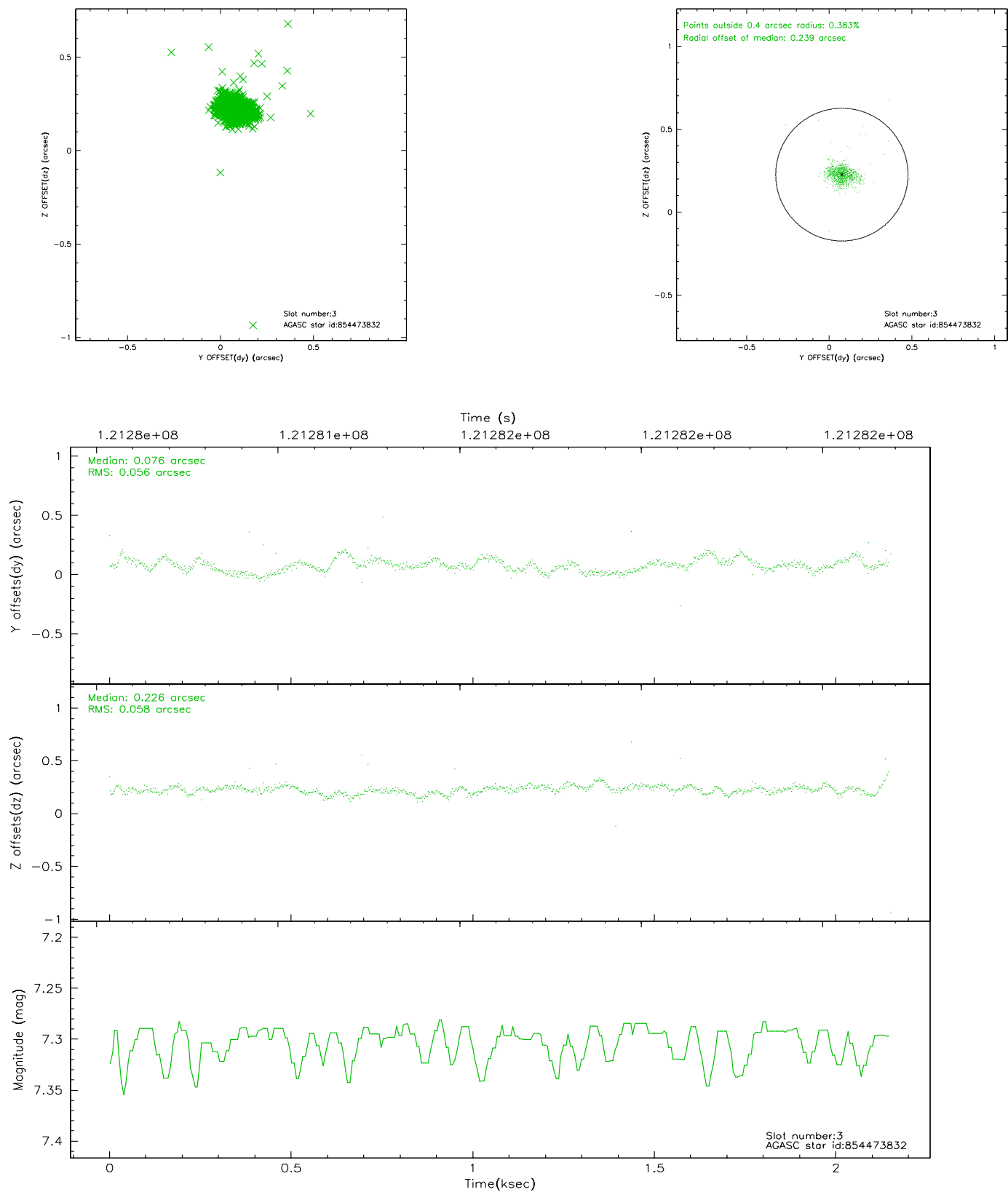


### Slot Statistics

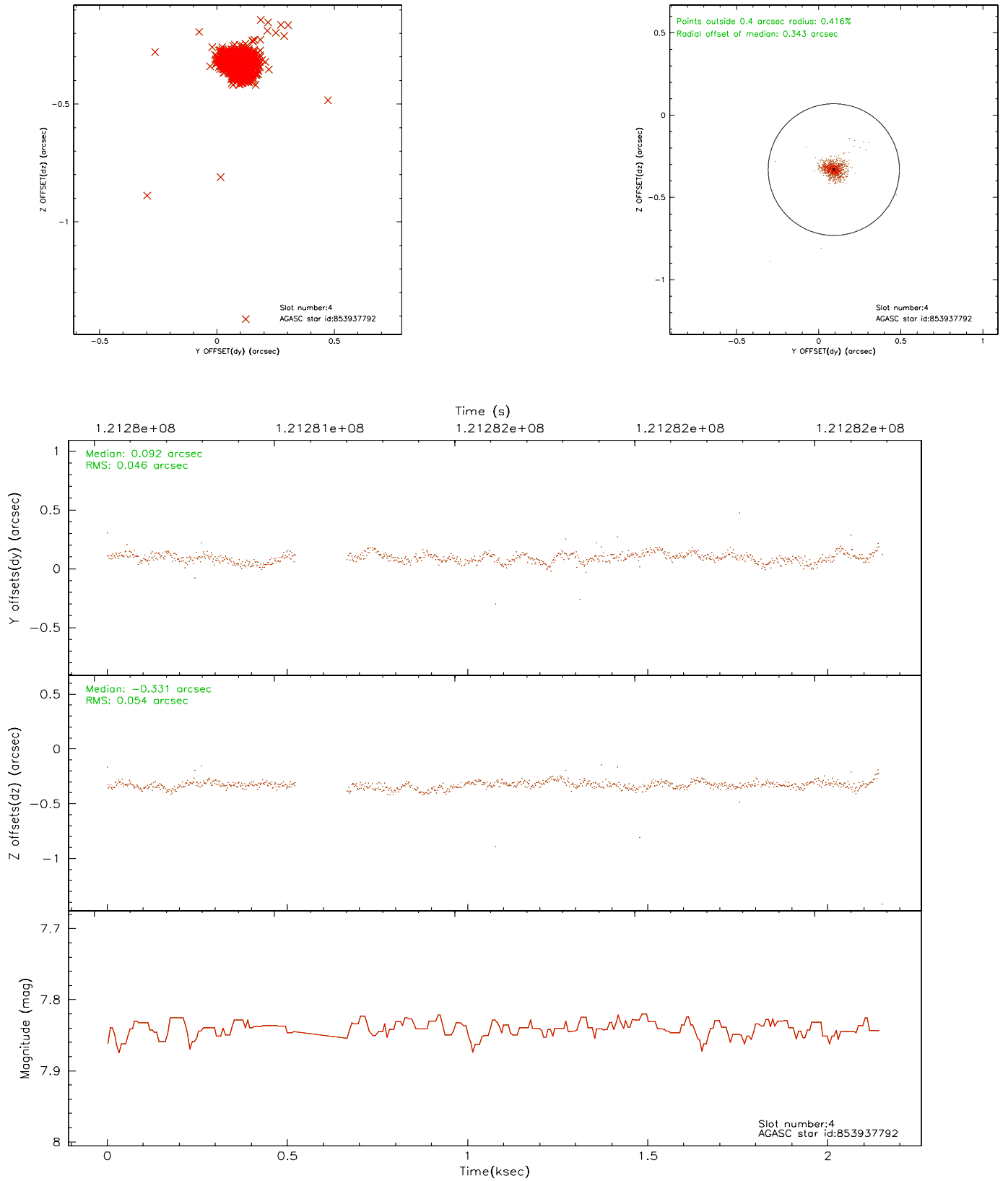
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.19	521	0.014	-0.016	0.008	0.017	0.000000	0.000000	940.26	-1724.31
1	FID	ACIS-S-5	7.24	520	0.021	0.031	0.007	0.015	0.000000	0.000000	-1806.96	170.21
2	FID	ACIS-S-6	7.35	520	-0.056	-0.003	0.008	0.018	0.000000	0.000000	402.50	817.54
3	GUIDE	854473832	7.30	1044	0.076	0.226	0.066	0.115	97.984344	-29.309659	-1774.61	-2031.89
4	BAD	853937792	7.84	961	0.092	-0.331	0.054	0.090	98.001643	-28.031039	2222.29	246.16
5	GUIDE	854464176	8.65	1022	-0.287	-0.103	0.114	0.174	97.178346	-28.237486	257.10	2120.96
6	GUIDE	854468048	9.39	1025	0.022	-0.109	0.112	0.187	96.778209	-28.827020	-2215.69	2120.58
7	GUIDE	854467712	9.99	1004	0.103	0.301	0.132	0.210	98.306328	-28.977117	-232.40	-2299.80

## 2.4 Star Slots

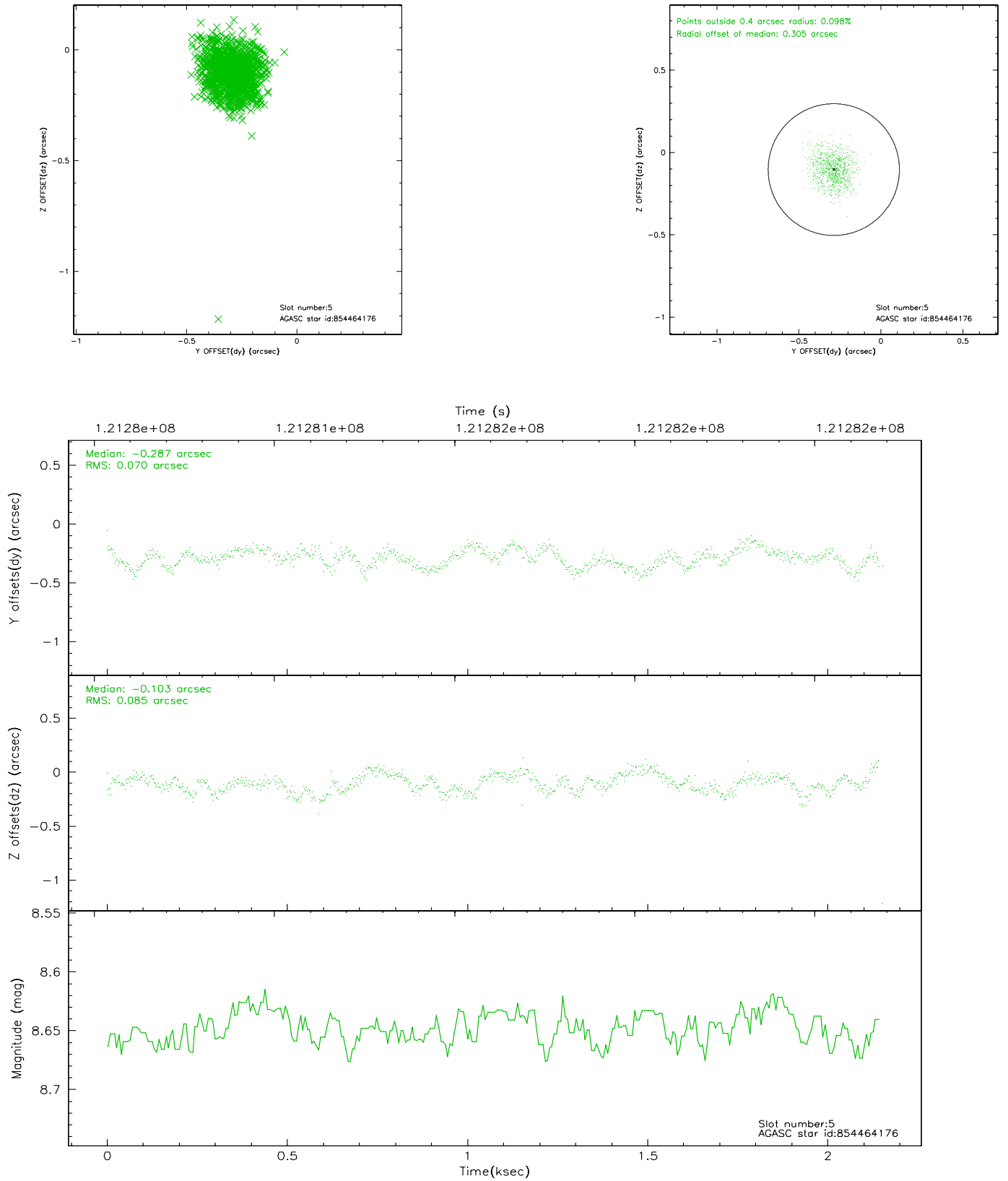
### 2.4.1 Slot 3



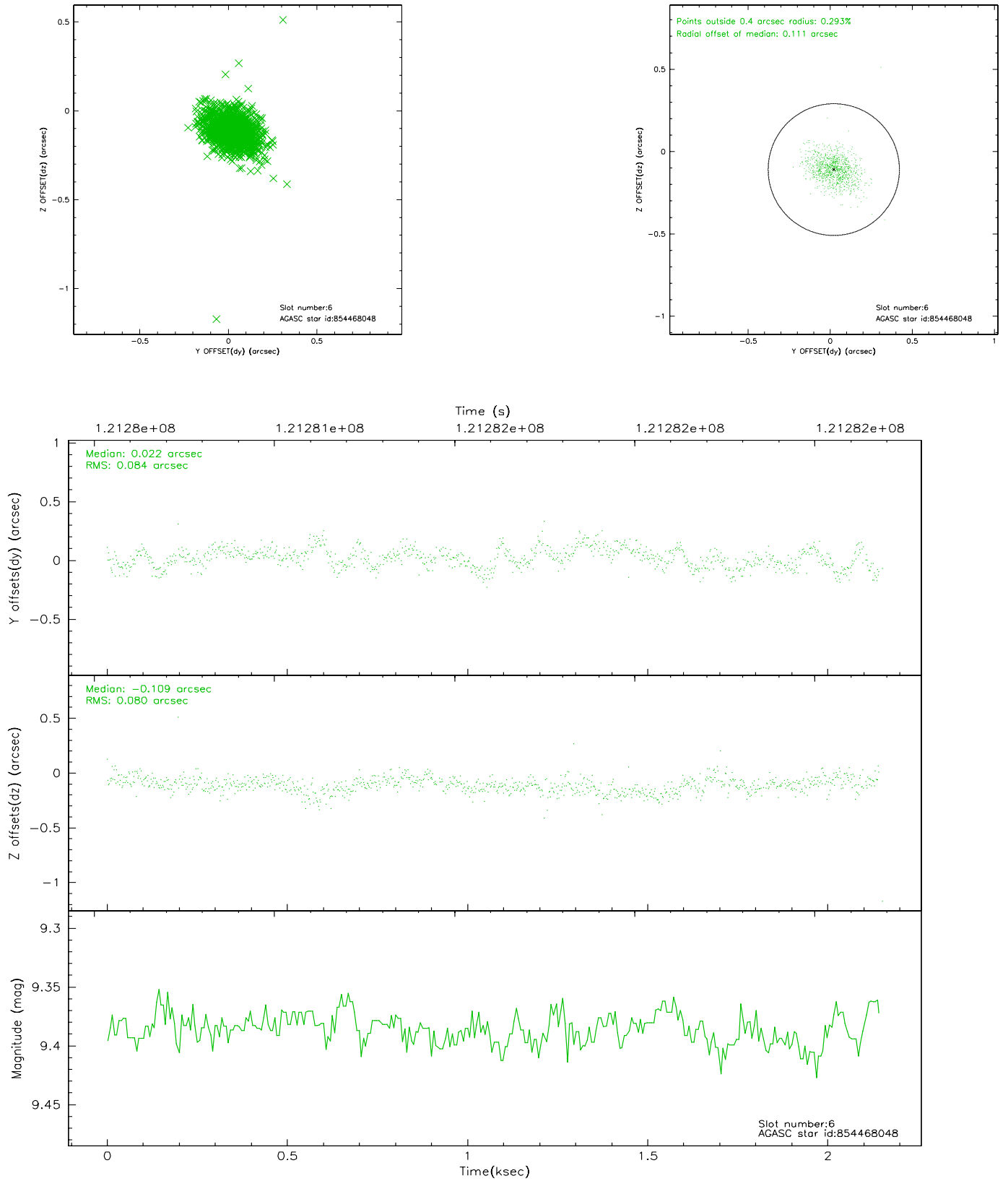
## 2.4.2 Slot 4



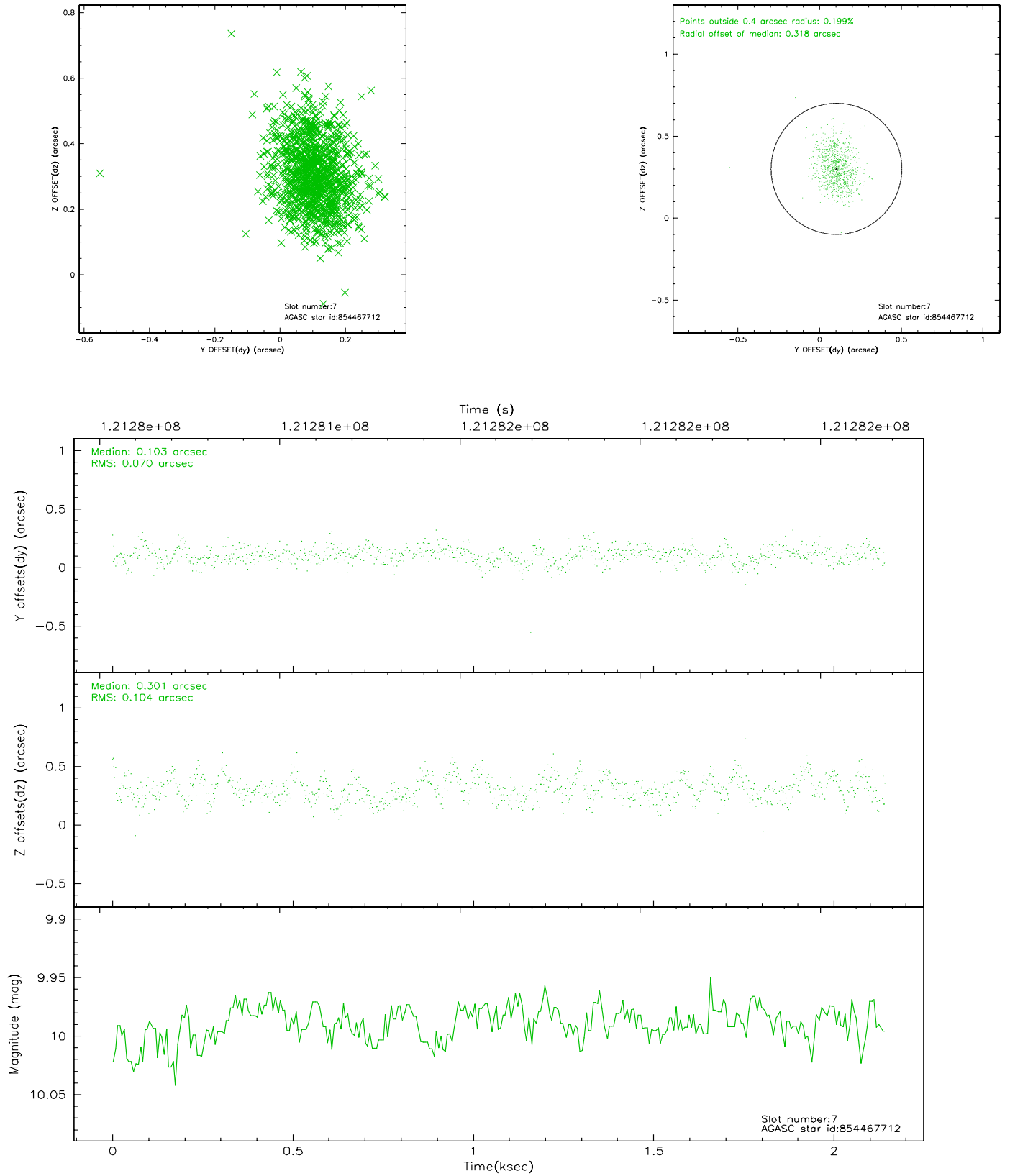
### 2.4.3 Slot 5



## 2.4.4 Slot 6

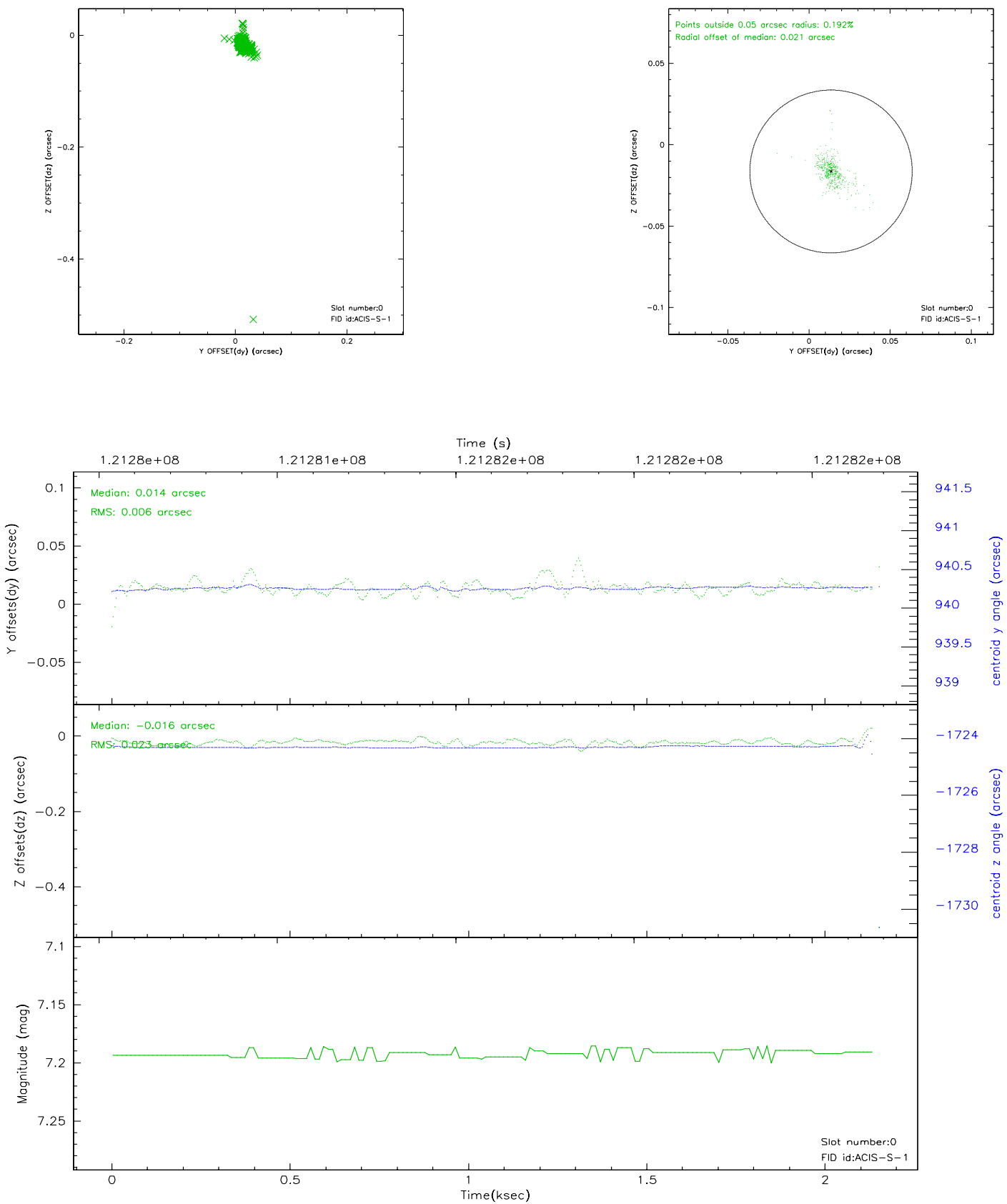


## 2.4.5 Slot 7

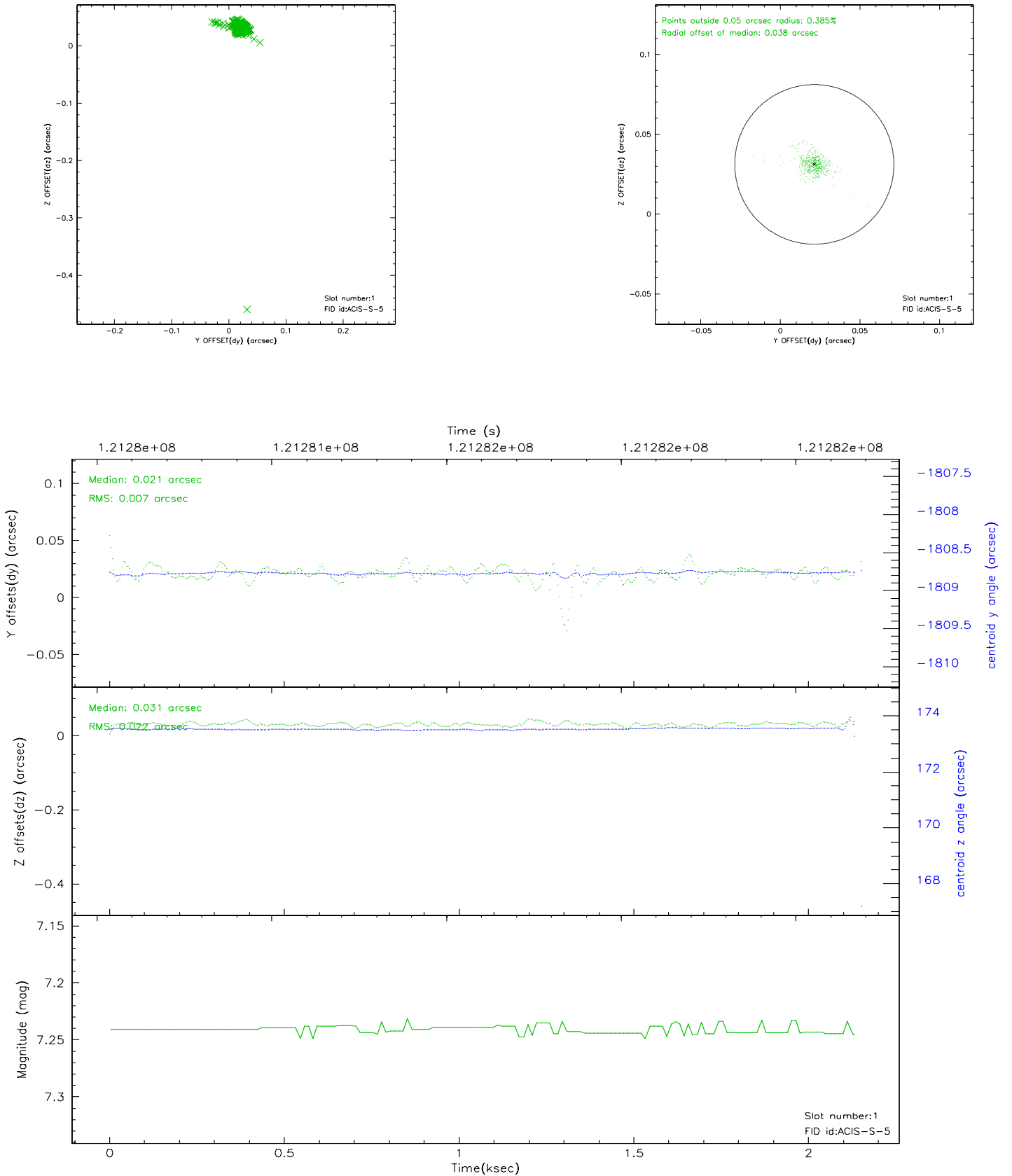


## 2.5 FID Slots

### 2.5.1 Slot 0

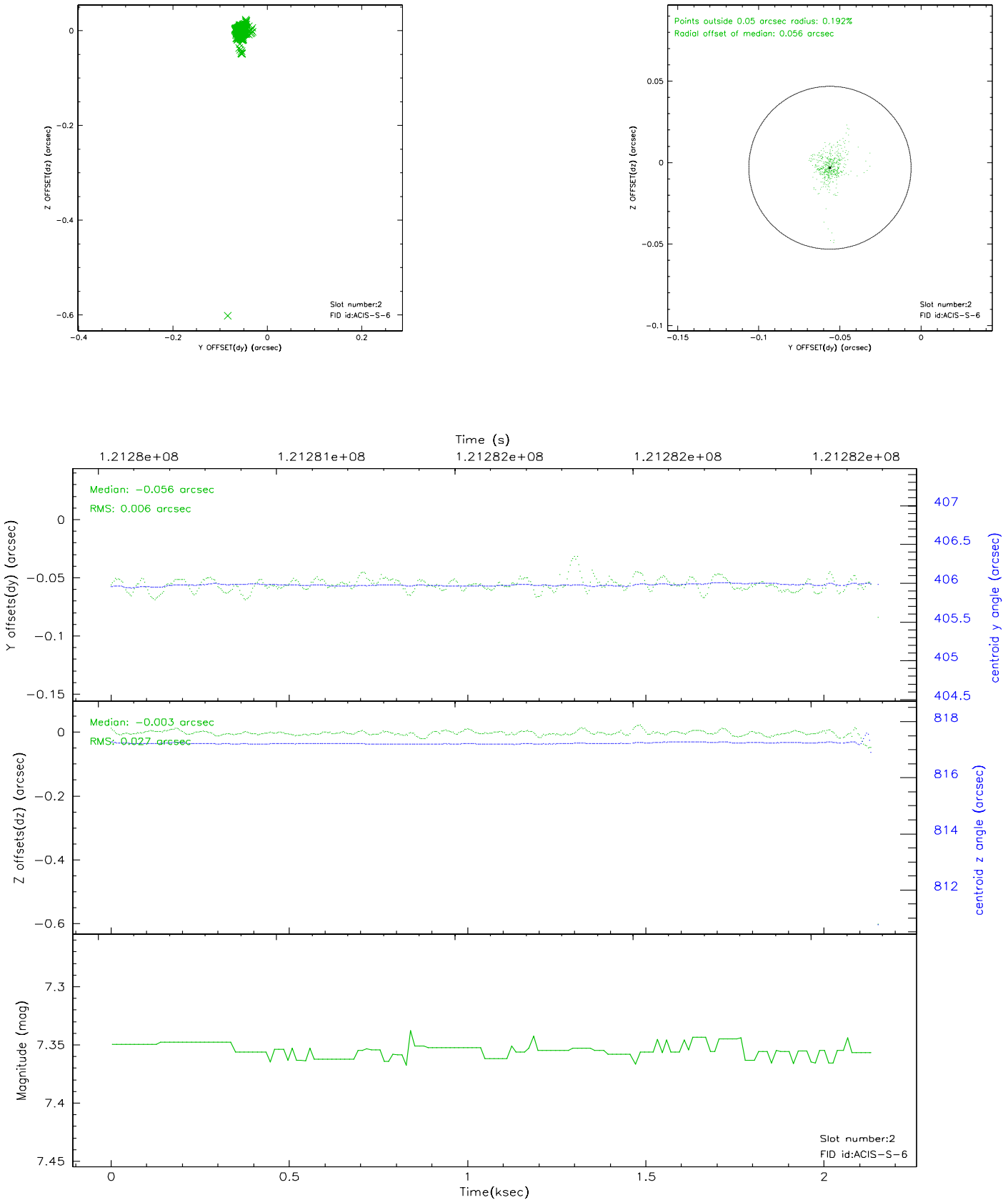


## 2.5.2 Slot 1





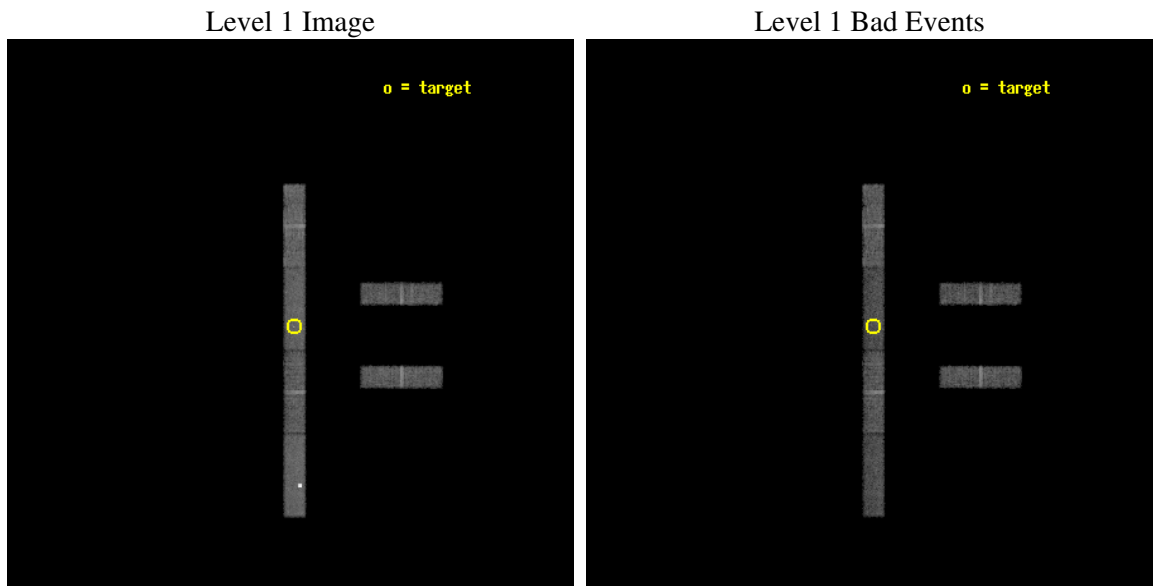
2.5.3 Slot 2



## 3 OBI

### 3.1 OBI

#### 3.1.1 Images

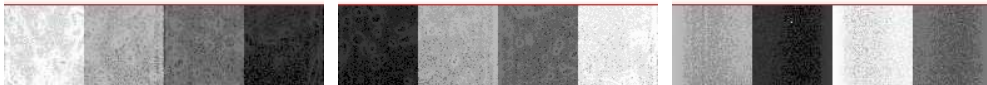


#### 3.1.2 Bias

Chip 2

Chip 3

Chip 5



Chip 6

Chip 7

Chip 8



### 3.1.3 Parameters

obi_num	1
ascdsver	7.6.10
caldbver	3.3.0
date	2007-01-20T07:37:36
revision	2

sched_exp_time	17000.000000
ontime	17135.799907148
ontime2	17134.658897057
ontime3	17135.799907148
ontime5	17135.799907148
ontime6	17135.799907148
ontime7	17135.799907148
ontime8	17135.799907148
l1events	228296

### 3.1.4 Events

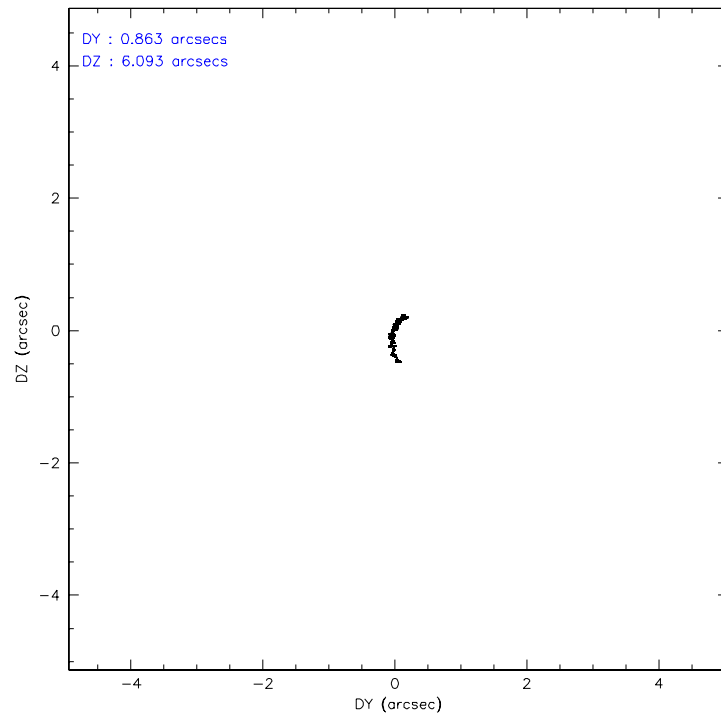
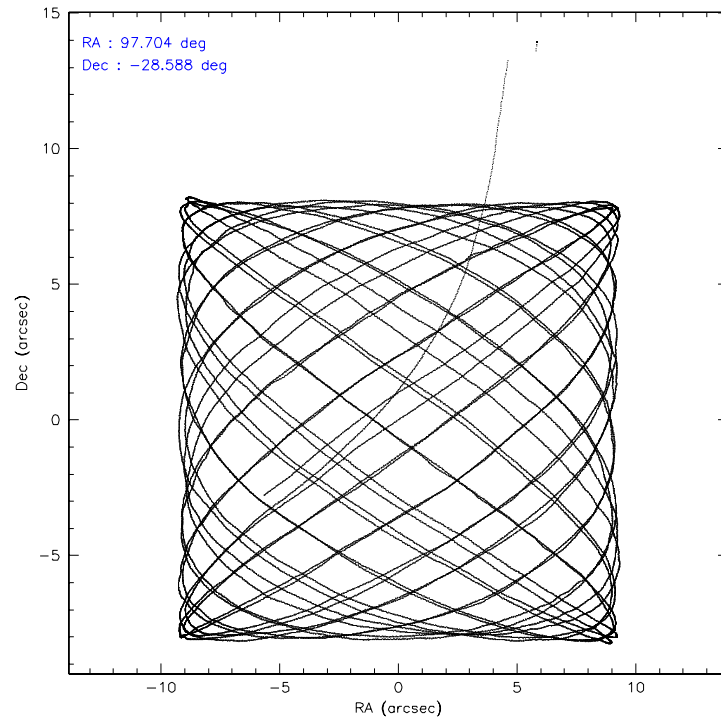
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	33263	30618	52872	32373	36656	42514
rejected events	29485	27152	22006	28733	21497	33779
rejected %	88%	88%	41%	88%	58%	79%

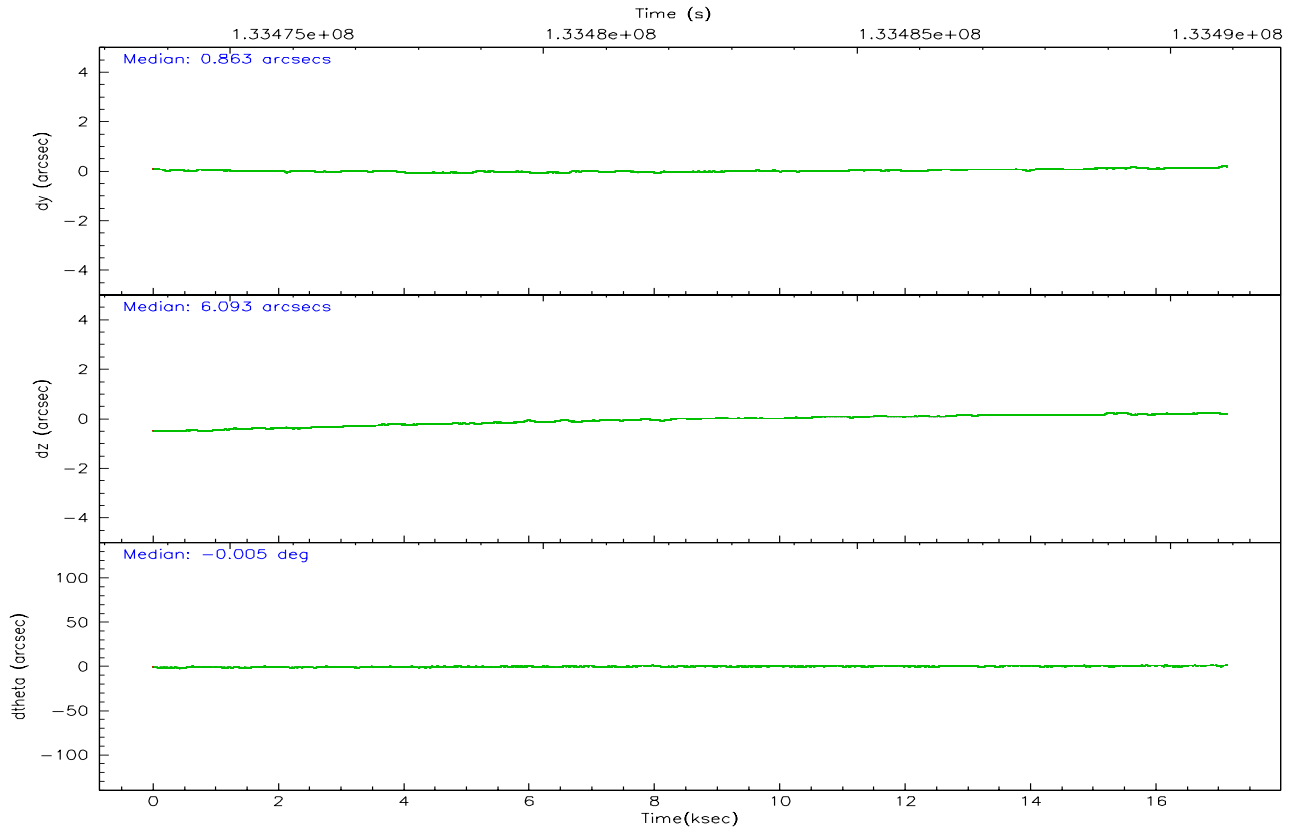
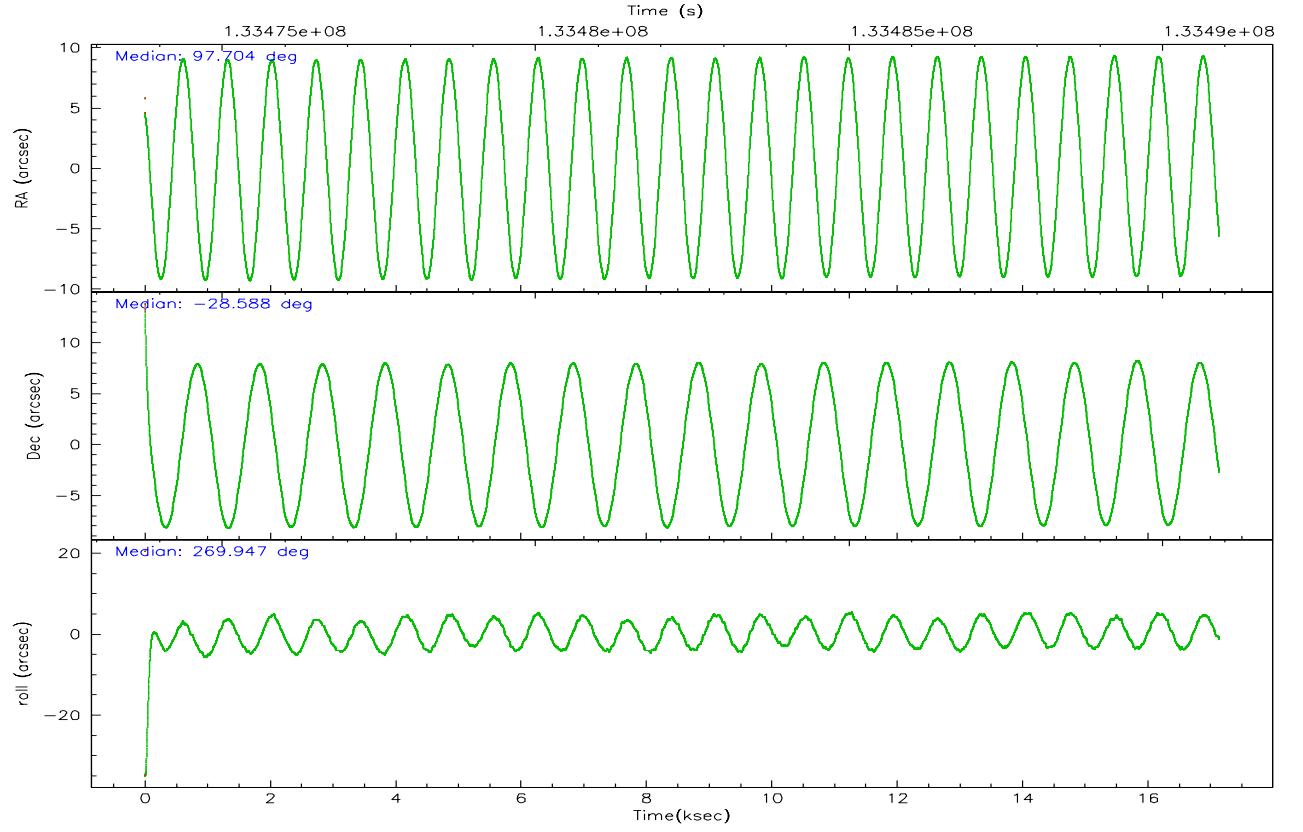
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	1467	1389	11818	1333	1675	2784
	4%	4%	22%	4%	4%	6%
grade 1 events	14	14	57	7	40	8
	0%	0%	0%	0%	0%	0%
grade 2 events	806	647	8944	727	3161	1663
	2%	2%	16%	2%	8%	3%
grade 3 events	510	458	1179	515	1691	1192
	1%	1%	2%	1%	4%	2%
grade 4 events	497	494	1084	524	1675	1117
	1%	1%	2%	1%	4%	2%
grade 5 events	1037	1023	3208	1171	3420	1510
	3%	3%	6%	3%	9%	3%
grade 6 events	648	599	8925	661	7524	2324
	1%	1%	16%	2%	20%	5%
grade 7 events	28284	25994	17657	27435	17470	31916
	85%	84%	33%	84%	47%	75%

### 3.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
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
Pointing RA	97.688470	97.70429066660398	Subarray requested	1/4	1/4
Pointing Dec	-28.564895	-28.58832441599909	Subarray start row	384	385
Pointing Roll	269.787746	269.9519093541812	Subarray row count	256	256
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
SIM defocus (mm)	0	0.001444936568705701	Primary exposure time	0.000000	1.1
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	133473906.184000	133472852.10411			
Observation start date	2002-03-25T20:04:02	2002-03-25T19:47:32			
Observation end time	133490906.184000	133491572.19237			
Observation end date	2002-03-26T00:47:22	2002-03-26T00:59:32			
Read mode	TIMED	TIMED			

### 3.3 Aspect



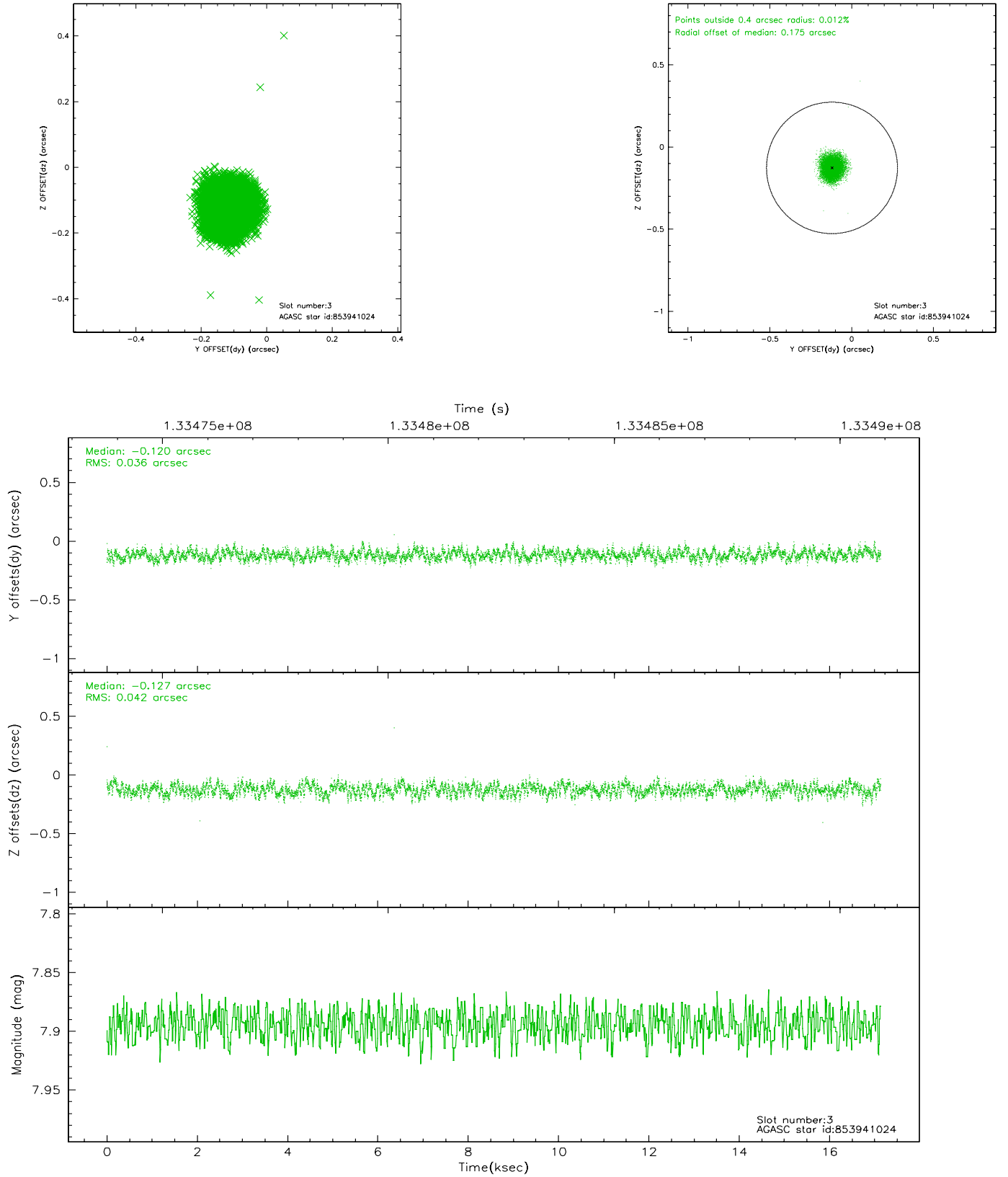


### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.19	521	0.014	-0.016	0.008	0.017	0.000000	0.000000	940.26	-1724.31
1	FID	ACIS-S-5	7.24	520	0.021	0.031	0.007	0.015	0.000000	0.000000	-1806.96	170.21
2	FID	ACIS-S-6	7.35	520	-0.056	-0.003	0.008	0.018	0.000000	0.000000	402.50	817.54
3	GUIDE	854473832	7.30	1044	0.076	0.226	0.066	0.115	97.984344	-29.309659	-1774.61	-2031.89
4	BAD	853937792	7.84	961	0.092	-0.331	0.054	0.090	98.001643	-28.031039	2222.29	246.16
5	GUIDE	854464176	8.65	1022	-0.287	-0.103	0.114	0.174	97.178346	-28.237486	257.10	2120.96
6	GUIDE	854468048	9.39	1025	0.022	-0.109	0.112	0.187	96.778209	-28.827020	-2215.69	2120.58
7	GUIDE	854467712	9.99	1004	0.103	0.301	0.132	0.210	98.306328	-28.977117	-232.40	-2299.80

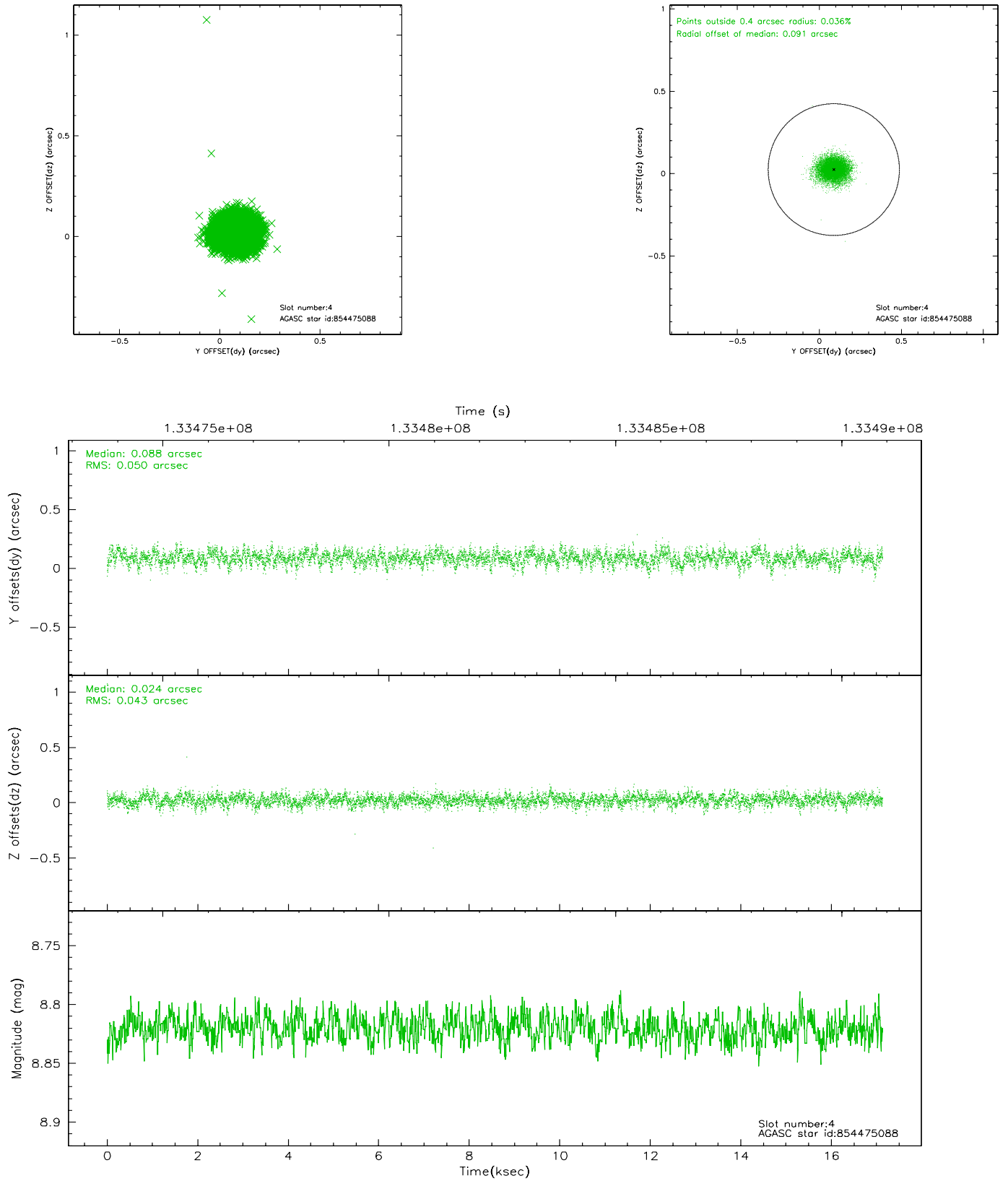
## 3.4 Star Slots

### 3.4.1 Slot 3

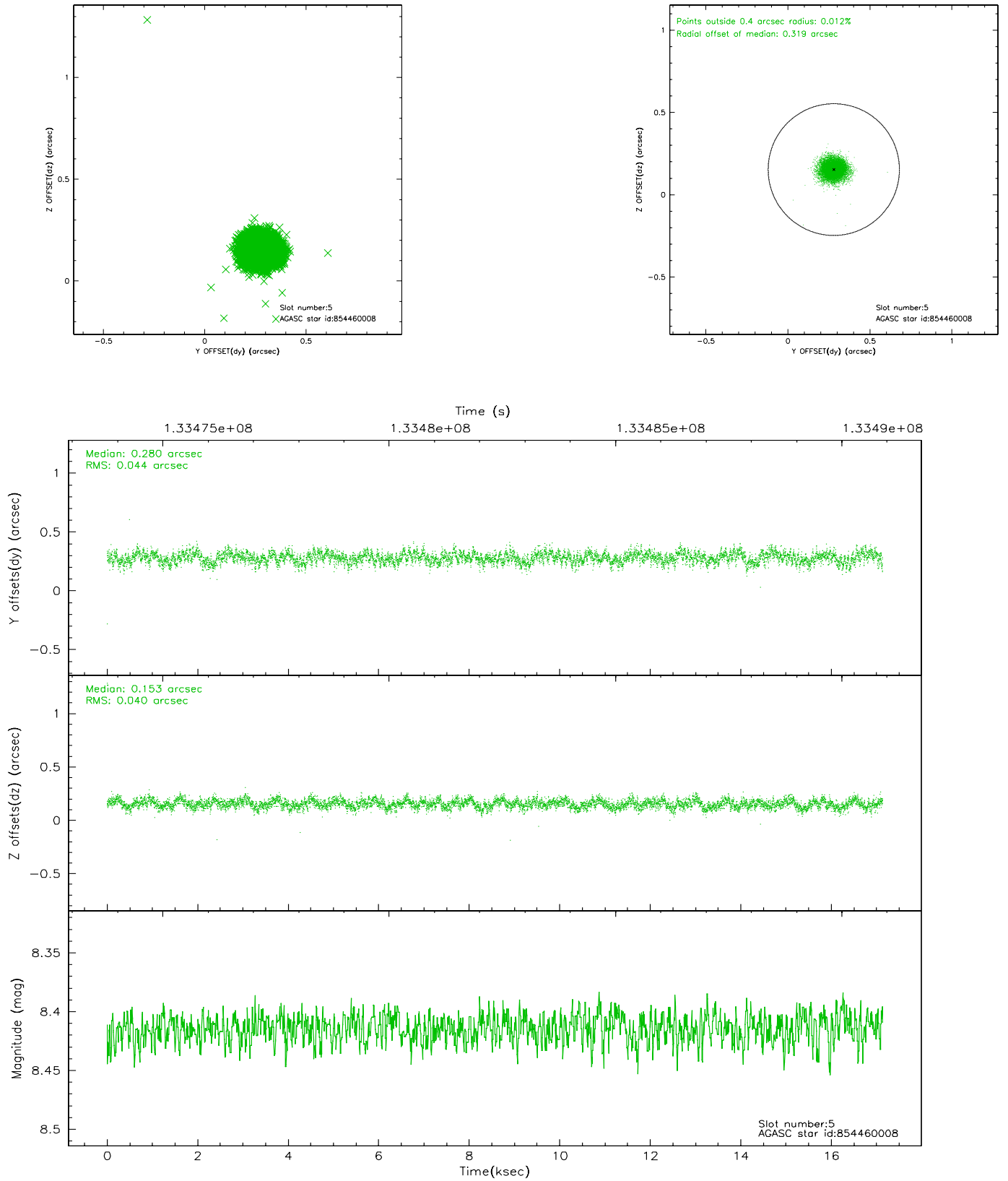




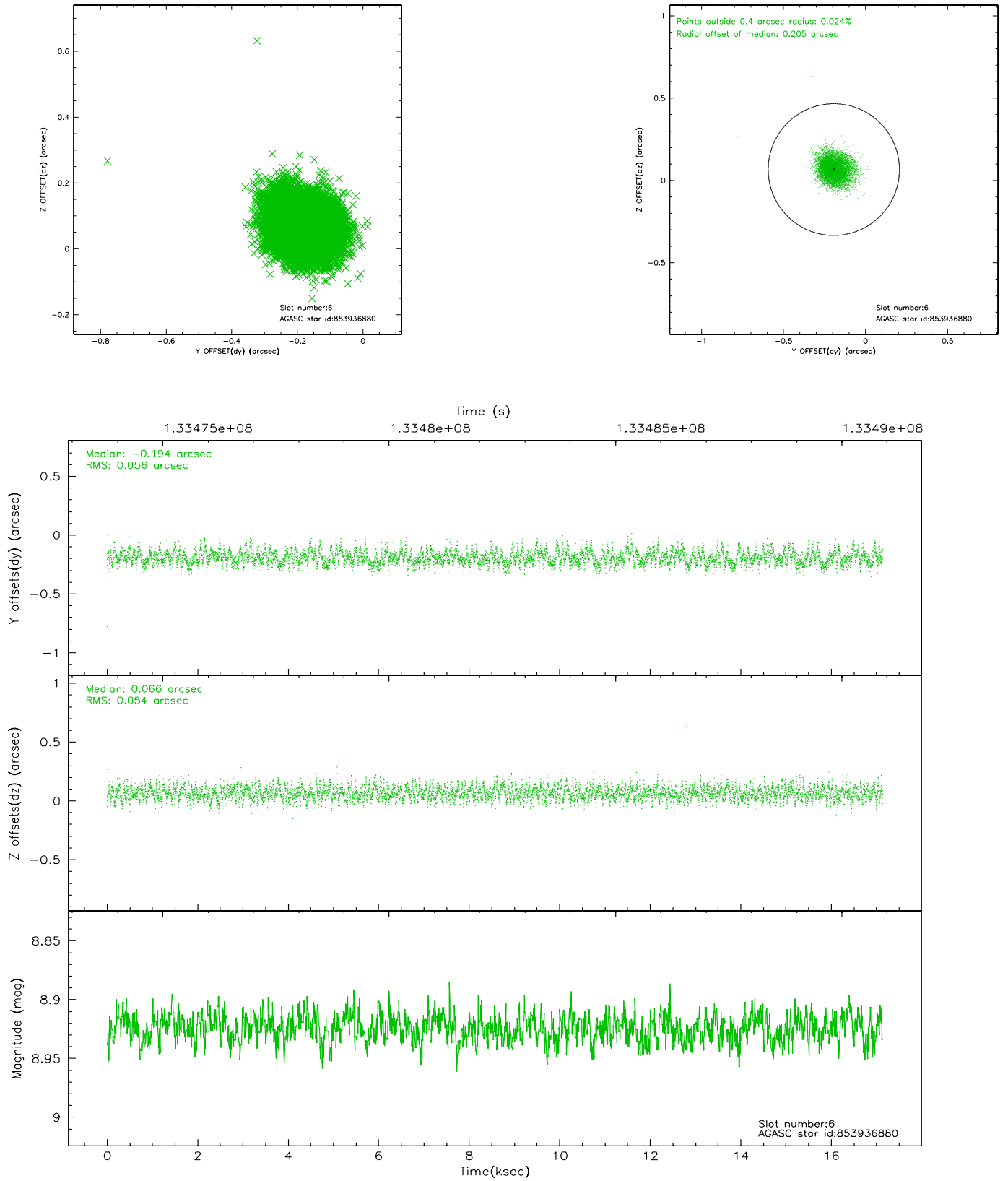
### 3.4.2 Slot 4



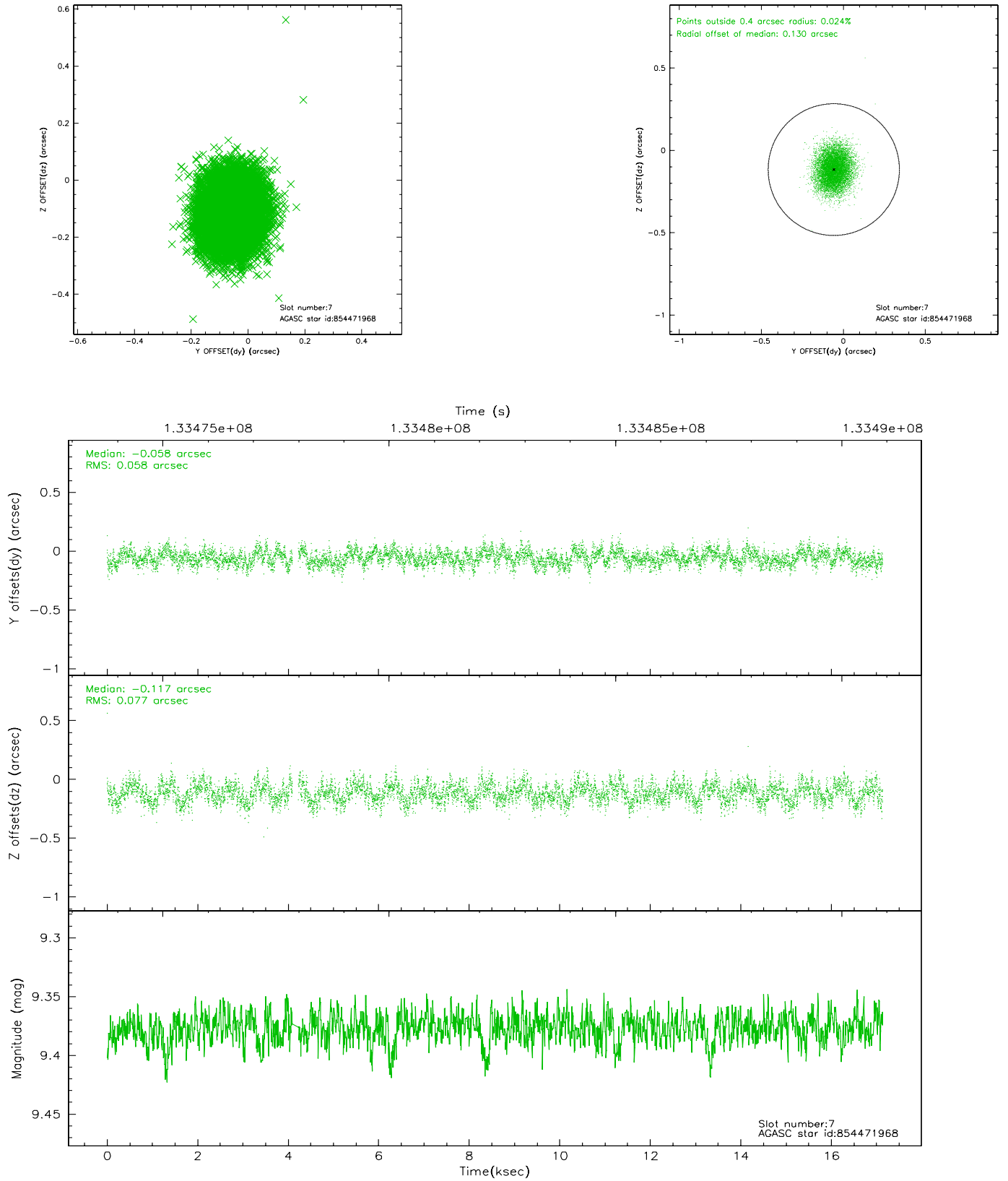
### 3.4.3 Slot 5



### 3.4.4 Slot 6

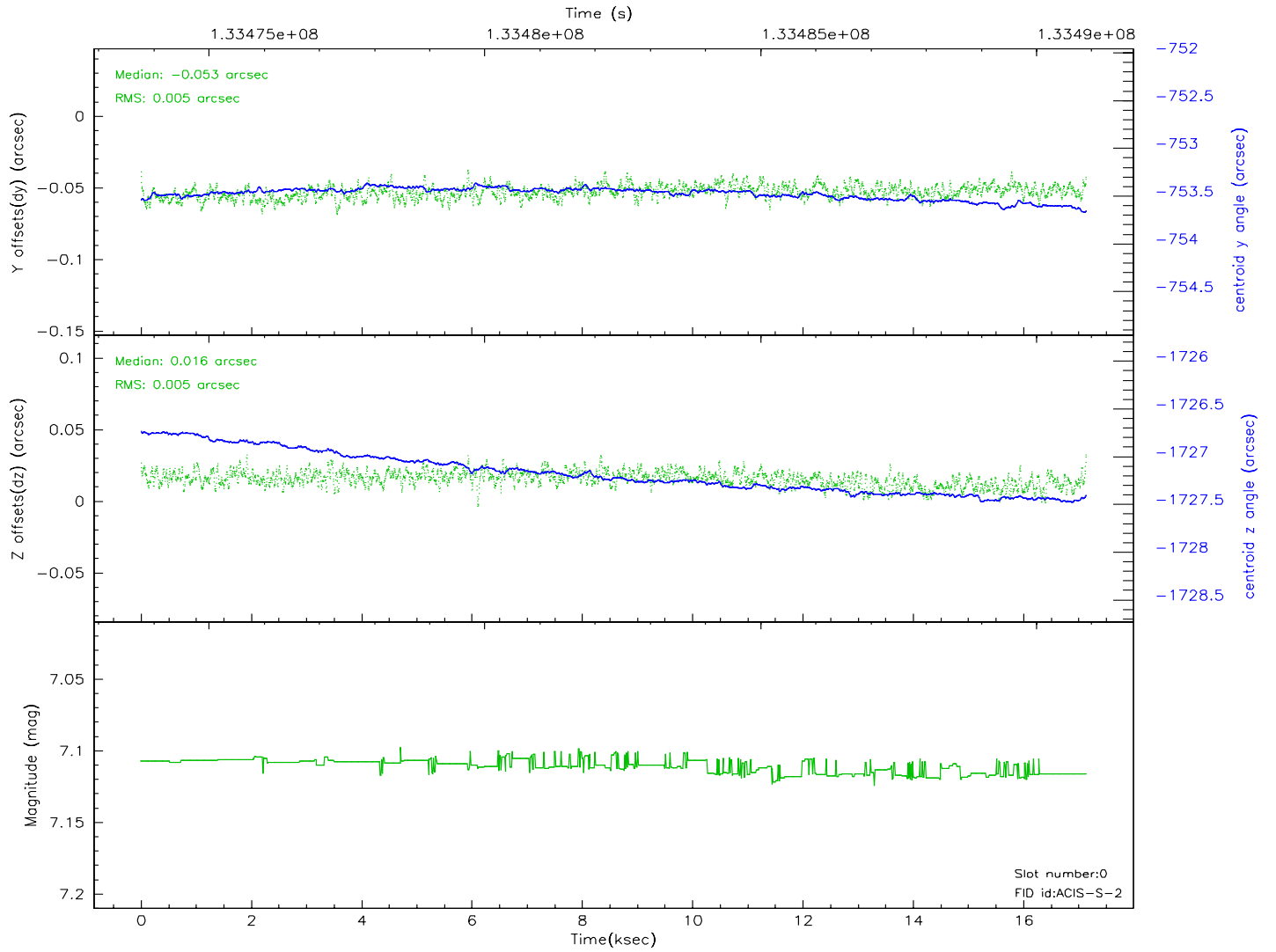
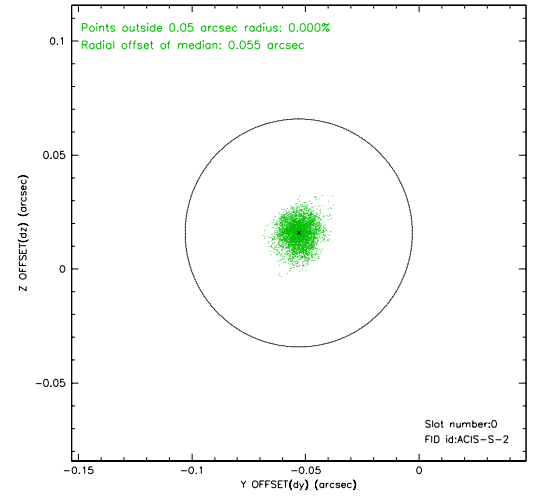
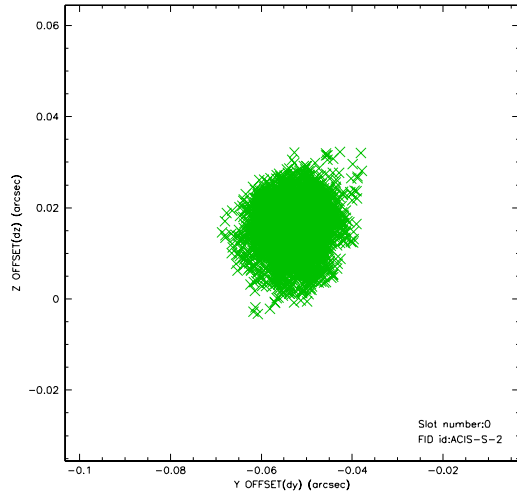


### 3.4.5 Slot 7

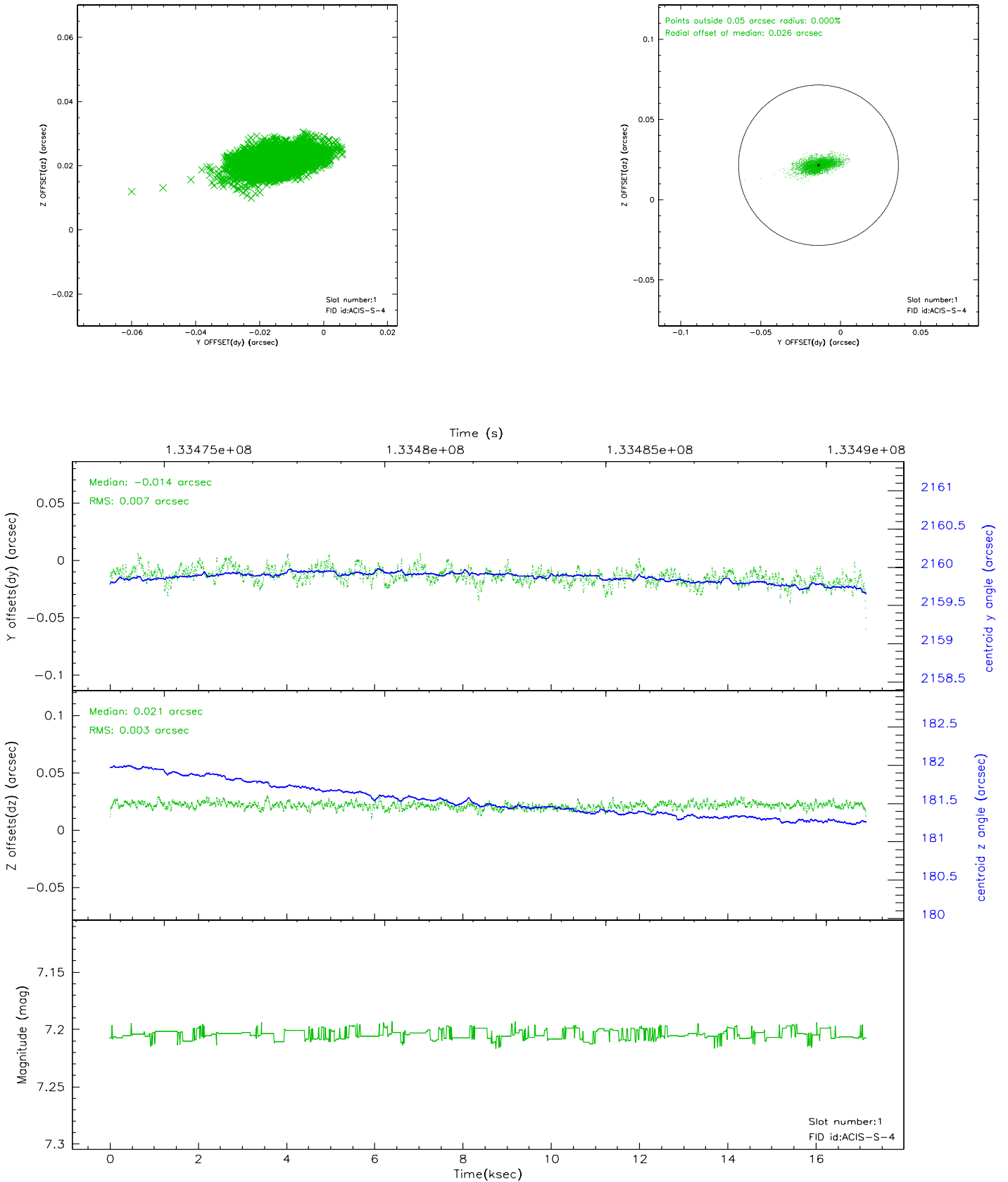


## 3.5 FID Slots

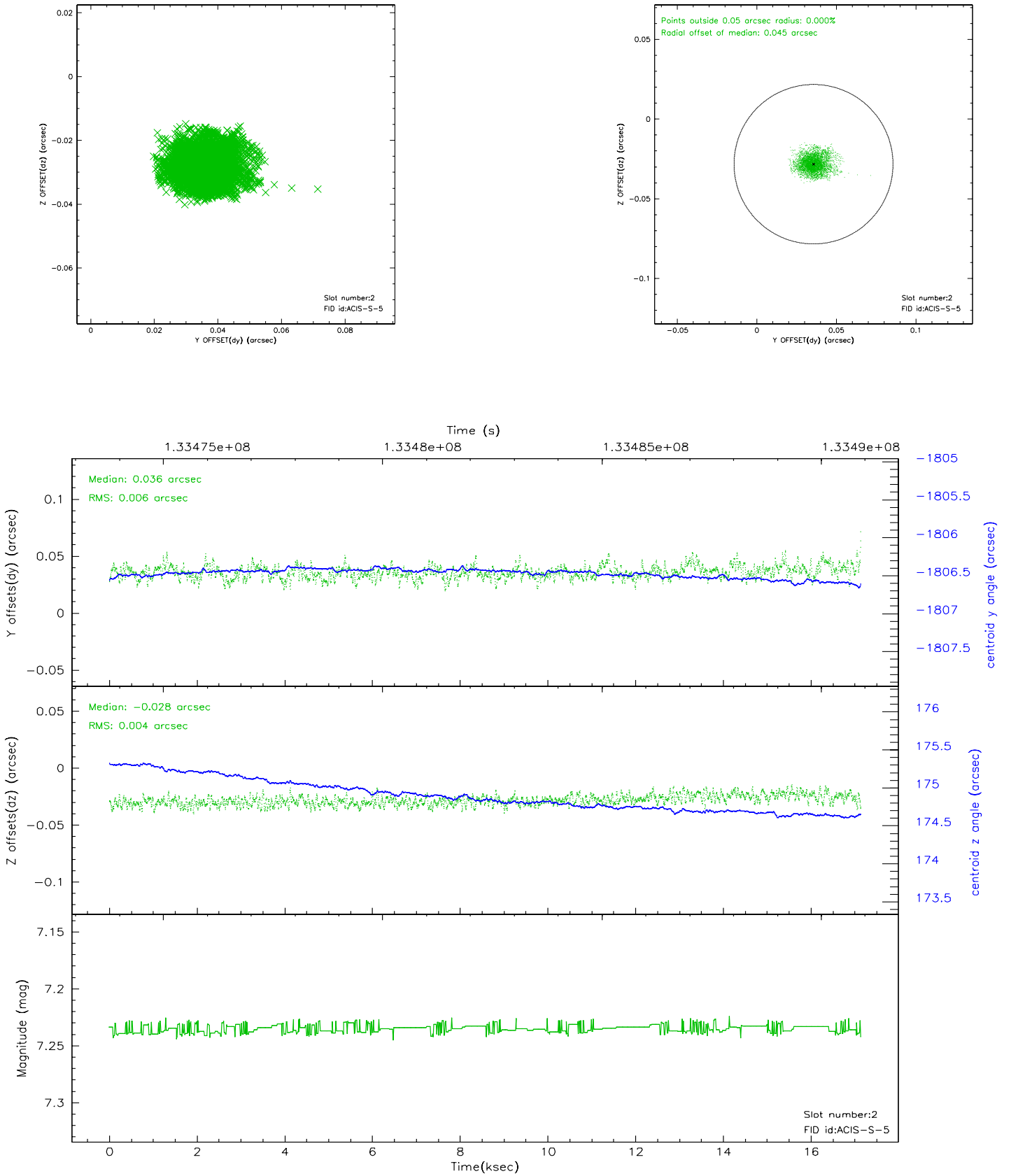
### 3.5.1 Slot 0



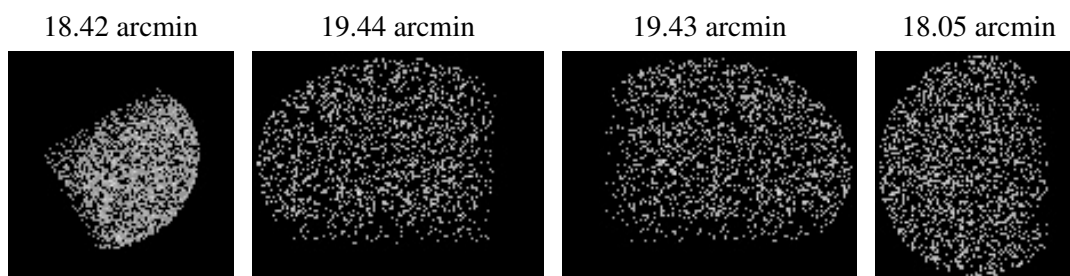
### 3.5.2 Slot 1



### 3.5.3 Slot 2



## 4 Point Sources





# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2007.01.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.276

## A.2 Comments

Comments for Obi 0:

Obi=0 was interrupted by safing of the science instruments onboard Chandra due to high solar radiation environment. The observation was interrupted at 308:17:37. In this version of the software, a few seconds of data are inadvertently included at the end of the observation after the spacecraft and its components began to move. Therefore, the aspect solution is not entirely correct. Software will be modified to correct this situation as soon as feasible. The aspect solution can be corrected in CIAO by removing data from the end of the \*asol.fits file that has a timestamp equal to or later than the above interruption time. The Level 1 event file can be recreated using CIAO and the edited \*asol.fits file.

During obi=0, an ACIS Threshold-Plane Anomaly occurred. The flight s/w is intended to delay 'start events' until after 'end bias dump'. For some unknown reason, it occasionally fails to do so, and if the overlap lasts for more than a minute or so, one or more FEPs experience a firmware latch-up that renders them useless until they are power cycled. The anomaly occurred for chip S2 only. No event data were recorded for this chip; the bright pixels on this chip are due to previously known hot pixels. The target and aim point were not affected by this anomaly.

The star in slot 4 was dropped from the aspect solution due to poor data quality; it was tracked for only 94% of the observation in obi=0. The aspect solution is not expected to be degraded by removing one star from the solution.