

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 602 - L2 Version 4  
Chandra X-Ray Center

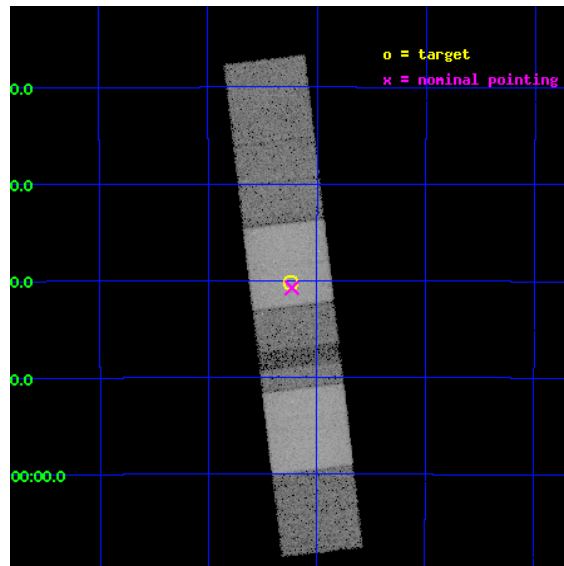
L2 Processing Date : Aug 22 2012

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# 1 Front

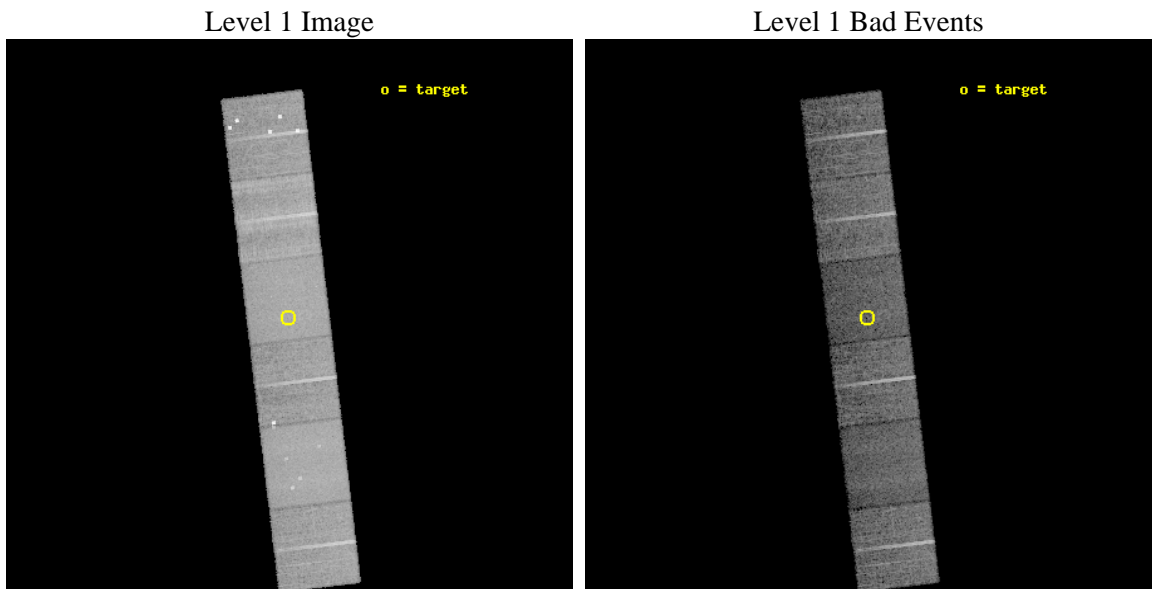
seq_num	500088	Sequence number
obs_id	602	Observation id
title	X-RAY POSITIONS AND AFTERGLOWS OF GAMMA-RAY BURSTS	Proposal title
observer	Dr Luigi Piro	Principal investigator
object	GRB000210	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	29.8117	Observer's specified target RA [deg]
dec_targ	-40.6694	Observer's specified target Dec [deg]
ra_nom	29.807627695297	Nominal RA [deg]
dec_nom	-40.679075943779	Nominal Dec [deg]
roll_nom	263.15392052643	Nominal Roll [deg]
revision	4	Processing version of data
ontime	9043.2000084221	Sum of GTIs [s]
livetime	8928.6895647542	Livetime [s]
ontime4	9043.2000084221	Sum of GTIs [s]
ontime5	9043.2000084221	Sum of GTIs [s]
ontime6	9043.2000084221	Sum of GTIs [s]
ontime7	9043.2000084221	Sum of GTIs [s]
ontime8	9043.2000084221	Sum of GTIs [s]
ontime9	9043.1903427988	Sum of GTIs [s]
l2events	190591	Number of level 2 events



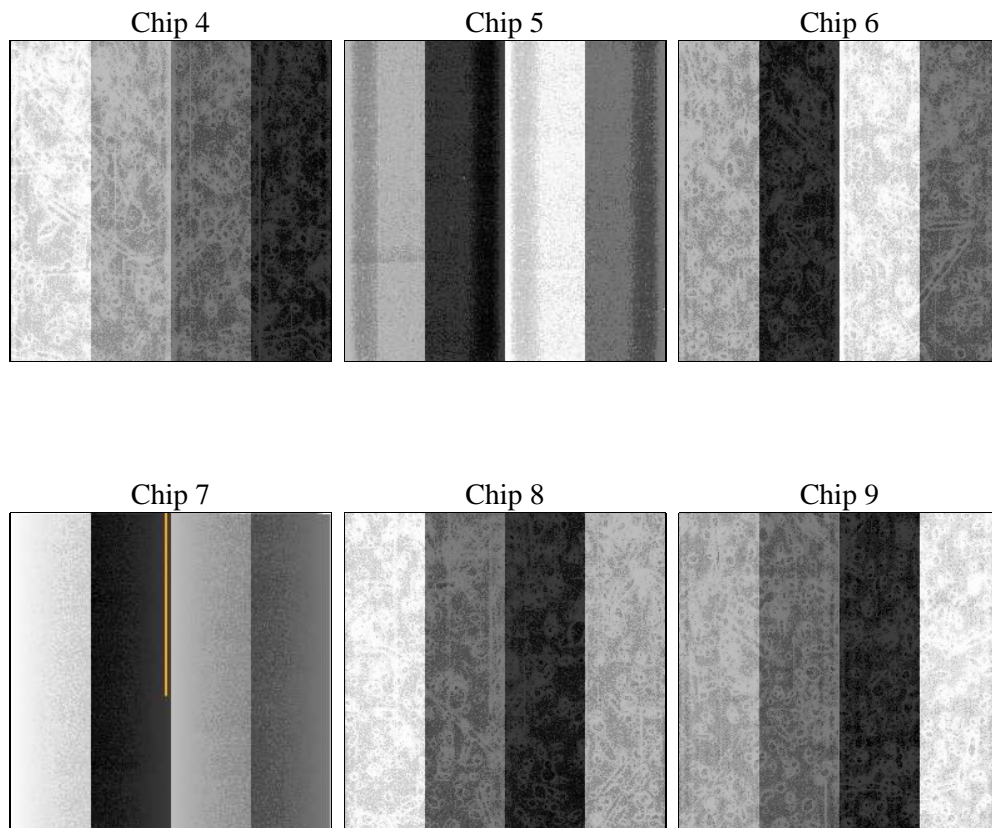
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	9043.2000084221	Sum of GTIs [s]
caldsver	4.5.1.1	&#160	ontime4	9043.2000084221	Sum of GTIs [s]
date	2012-08-22T13:14:53	Date and time of file creation	ontime5	9043.2000084221	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	9043.2000084221	Sum of GTIs [s]
			ontime7	9043.2000084221	Sum of GTIs [s]
			ontime8	9043.2000084221	Sum of GTIs [s]
			ontime9	9043.1903427988	Sum of GTIs [s]
			l1events	640725	Number of level 1 events

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	96919	119833	90255	110141	125246	98331	grade 0 events	7865	10406	7966	7561	20764	21288
rejected events	78122	52866	69940	48392	76215	65946		8%	8%	8%	6%	16%	21%
rejected %	80%	44%	77%	43%	60%	67%	grade 1 events	61	252	72	118	167	179
								0%	0%	0%	0%	0%	0%
							grade 2 events	5925	18707	7381	12285	8076	5886
								6%	15%	8%	11%	6%	5%
							grade 3 events	912	3973	1003	5569	6901	1035
								0%	3%	1%	5%	5%	1%
							grade 4 events	933	3861	985	5495	6311	1080
								0%	3%	1%	4%	5%	1%
							grade 5 events	2255	7670	2652	8175	3399	2729
								2%	6%	2%	7%	2%	2%
							grade 6 events	3182	30056	2998	30870	6996	3118
								3%	25%	3%	28%	5%	3%
							grade 7 events	75786	44908	67198	40068	72632	63016
								78%	37%	74%	36%	57%	64%

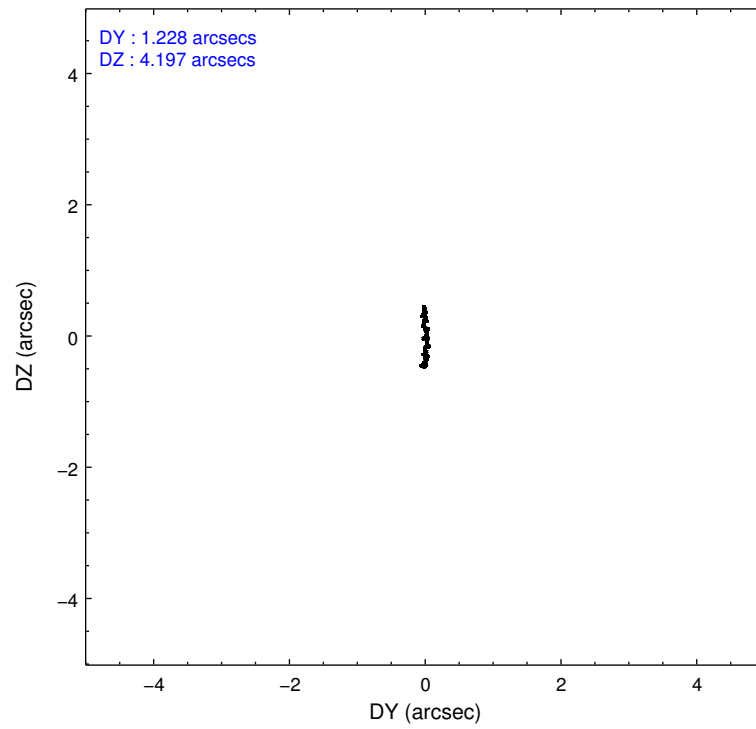
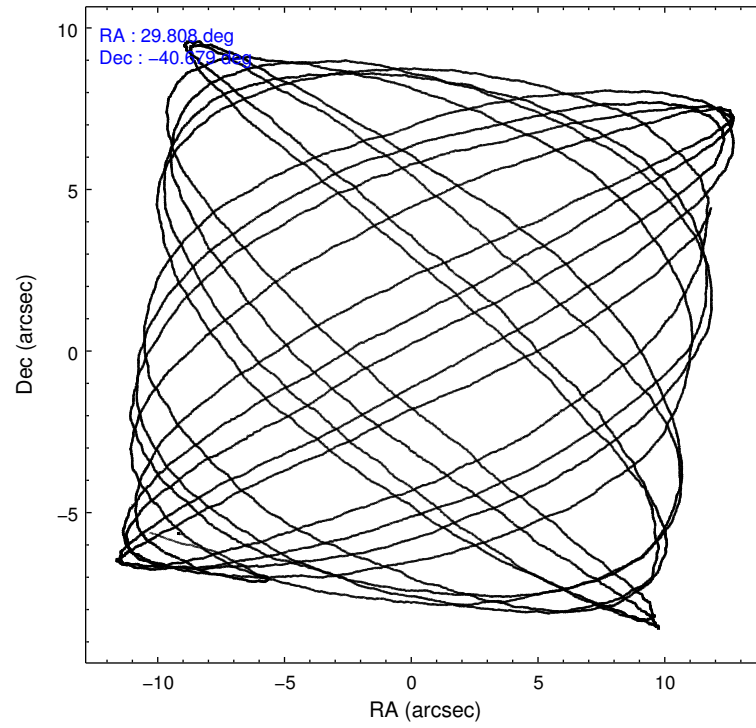


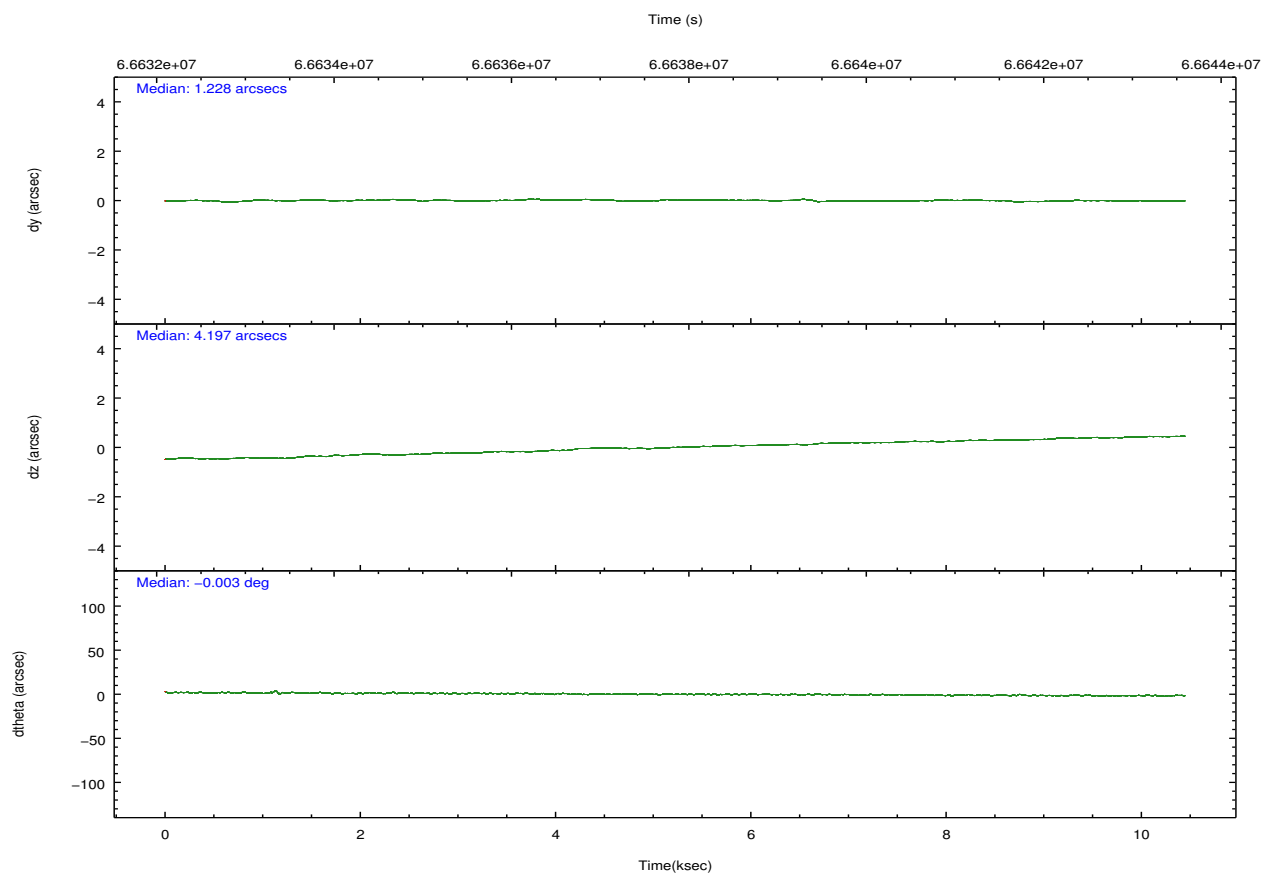
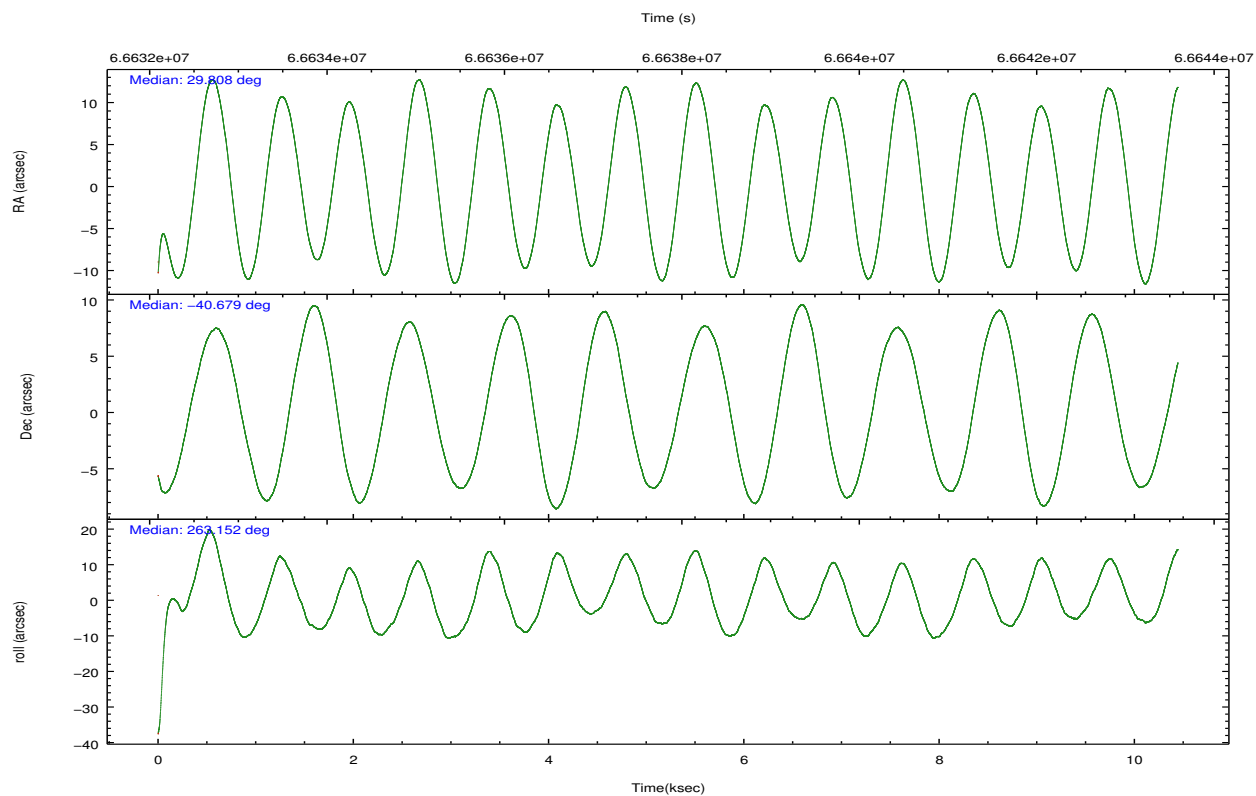
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	29.793419	29.80762769529738
[deg] Pointing Dec	-40.653761	-40.67907594377893
[deg] Pointing Roll	262.988088	263.1539205264327
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	66633065.184000	66631598.564771
Observation start date	2000-02-11T05:10:01	2000-02-11T04:46:38
[s] Observation end time (MET)	66643065.184000	66644082.552726
Observation end date	2000-02-11T07:56:41	2000-02-11T08:14:42
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



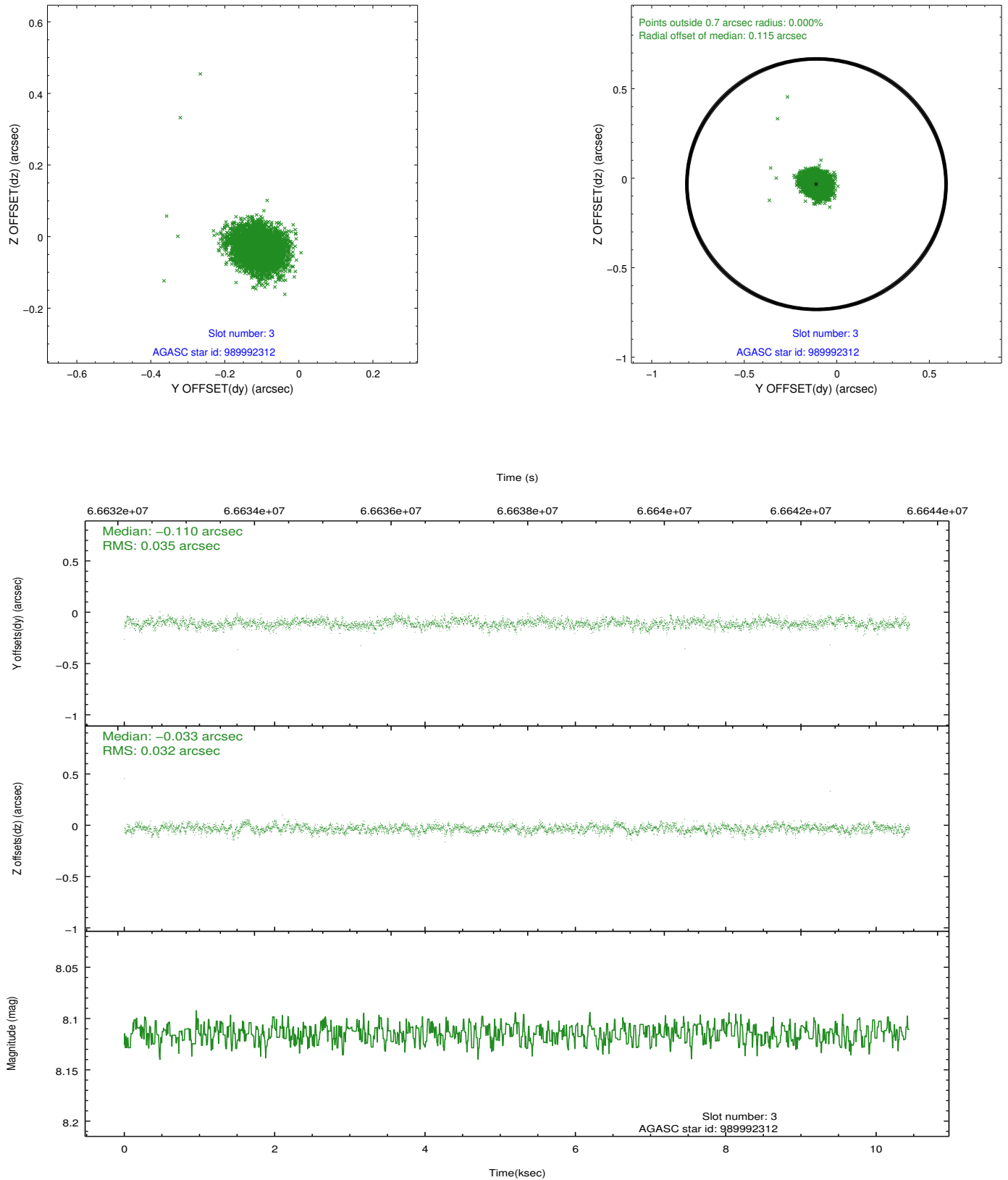


Slot Statistics

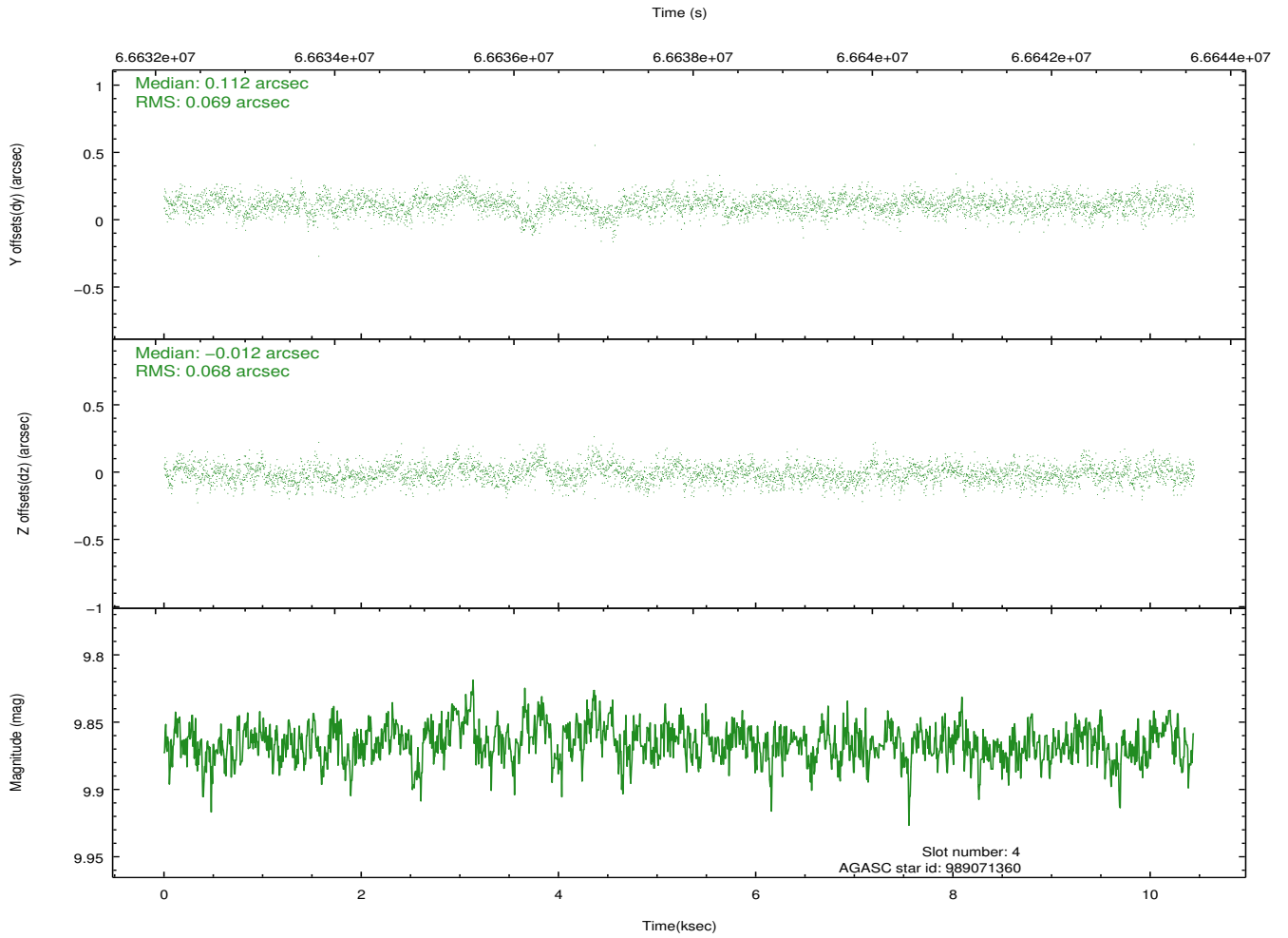
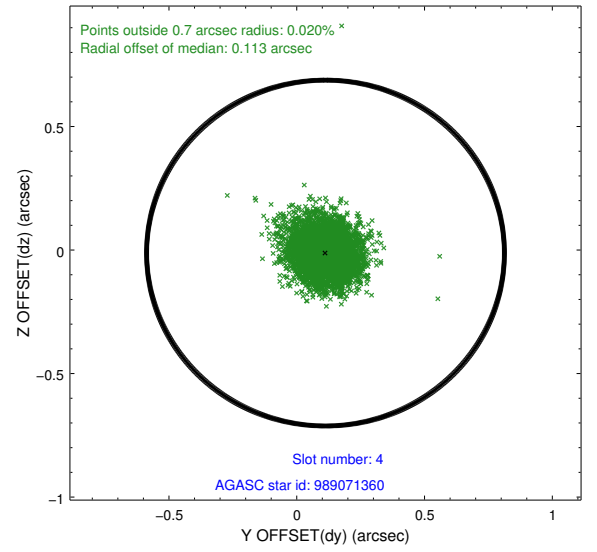
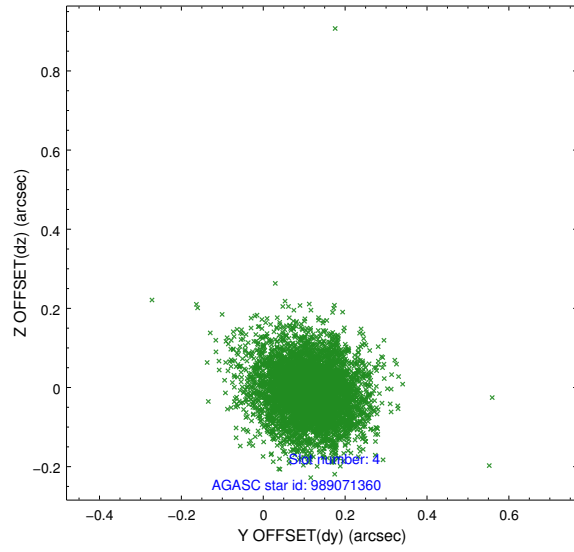
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2548	-0.014	-0.010	0.010	0.015	0.000000	0.000000	-753.87	-1725.27
1	FID	ACIS-S-4	7.21	2548	0.001	0.010	0.006	0.011	0.000000	0.000000	2159.23	182.66
2	FID	ACIS-S-5	7.23	2547	-0.018	0.009	0.010	0.015	0.000000	0.000000	-1806.03	176.98
3	GUIDE	989992312	8.11	5094	-0.110	-0.033	0.050	0.081	30.141289	-40.267805	-1494.15	779.18
4	GUIDE	989071360	9.87	5044	0.112	-0.012	0.101	0.167	29.563405	-41.043894	1470.69	-447.92
5	GUIDE	989073312	10.41	5083	-0.058	-0.029	0.133	0.217	28.922971	-40.750048	645.66	-2312.27
6	GUIDE	989069480	10.05	5086	0.092	0.088	0.110	0.183	29.788207	-40.436709	-773.75	-109.74
7	GUIDE	989991576	7.44	5094	-0.038	-0.015	0.056	0.089	30.133855	-40.731246	164.91	956.28

## 2.4 Star Slots

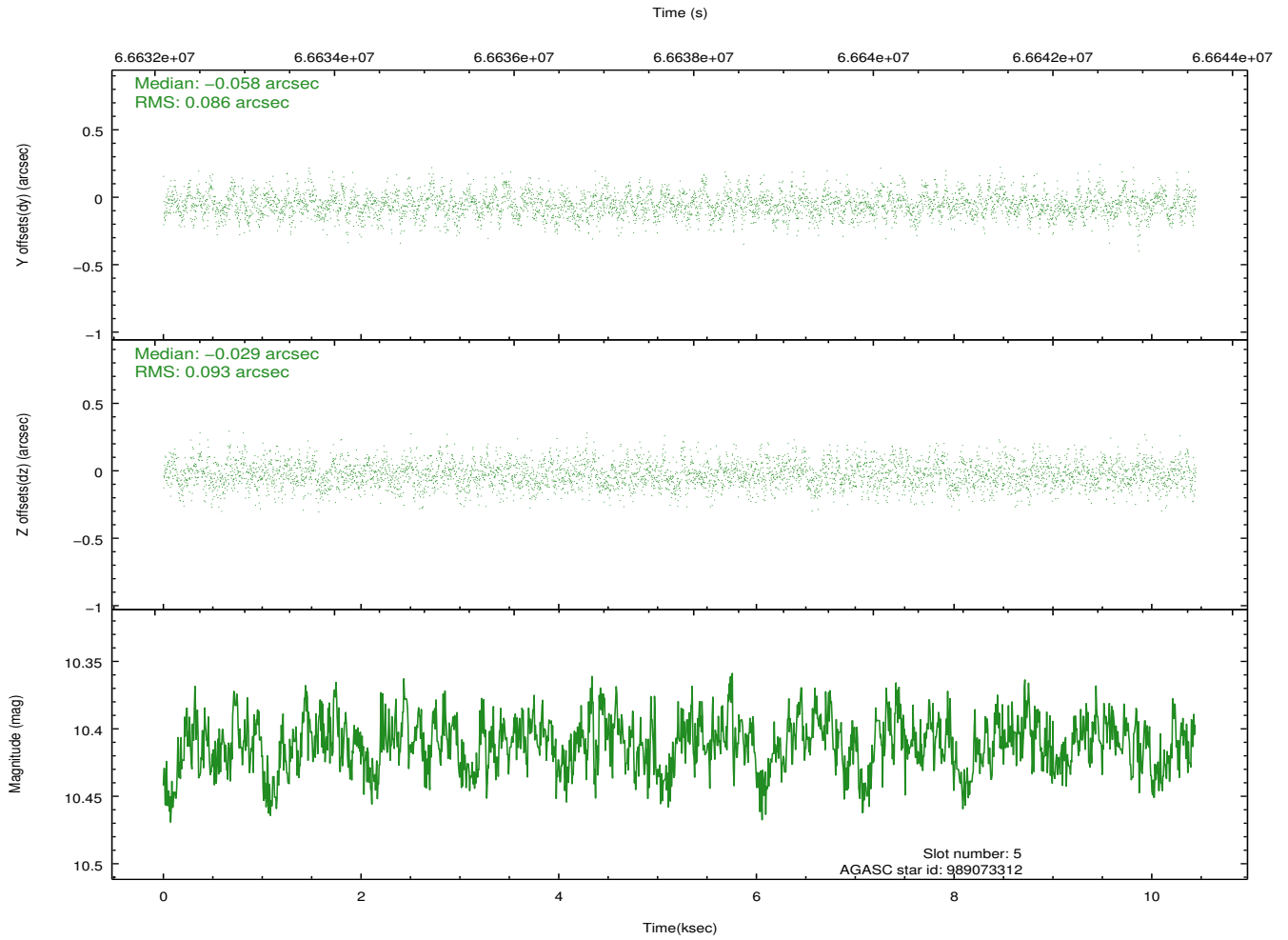
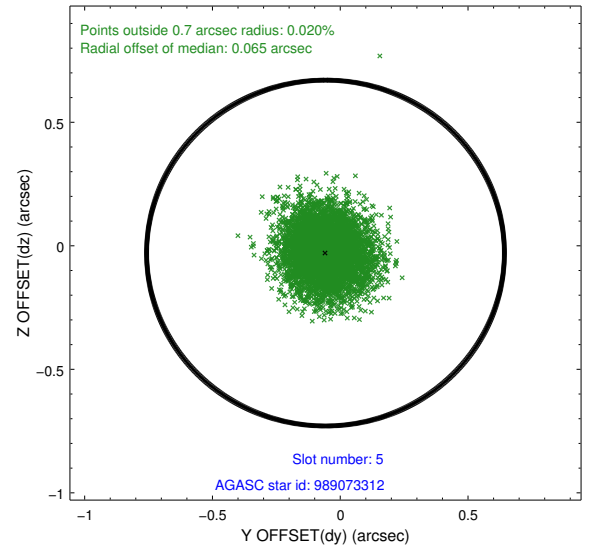
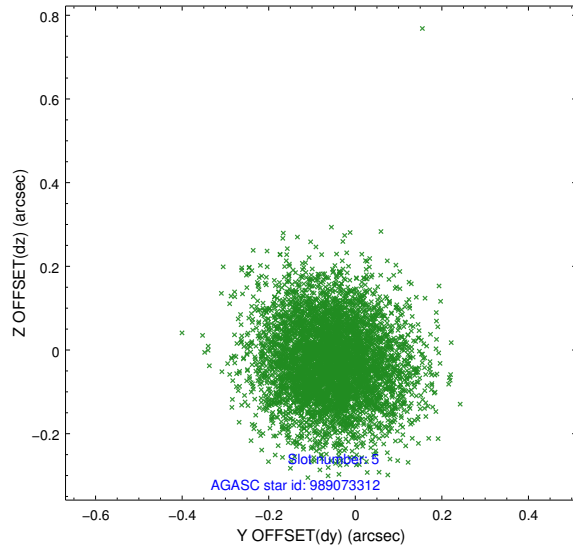
### 2.4.1 Slot 3



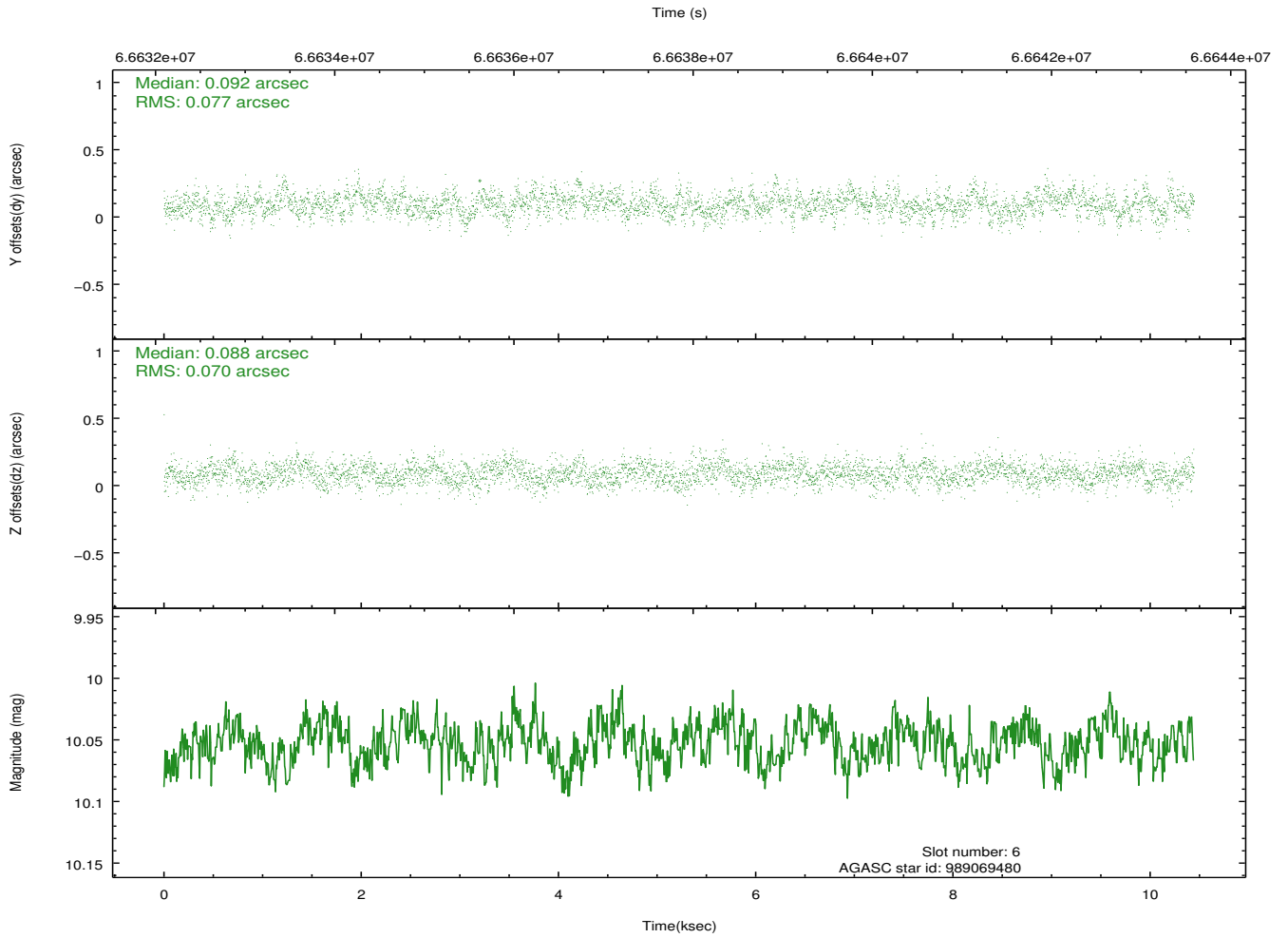
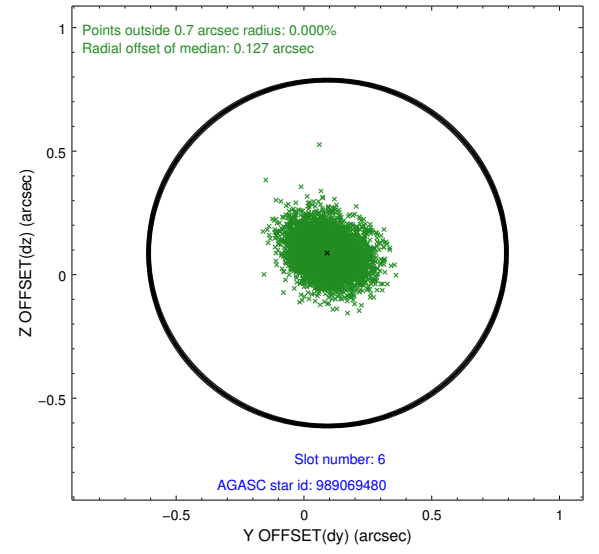
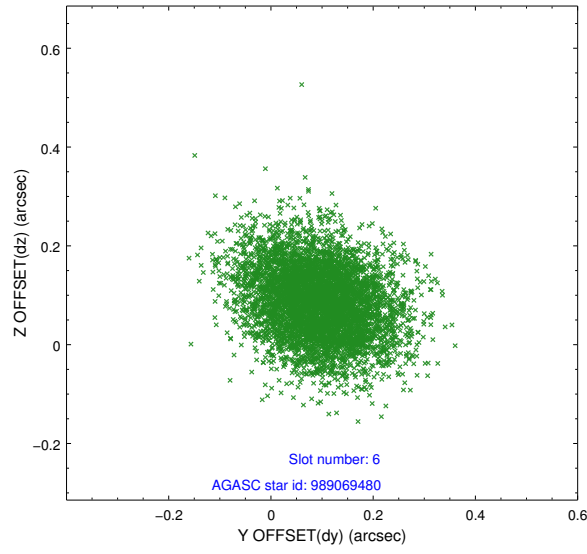
## 2.4.2 Slot 4



### 2.4.3 Slot 5

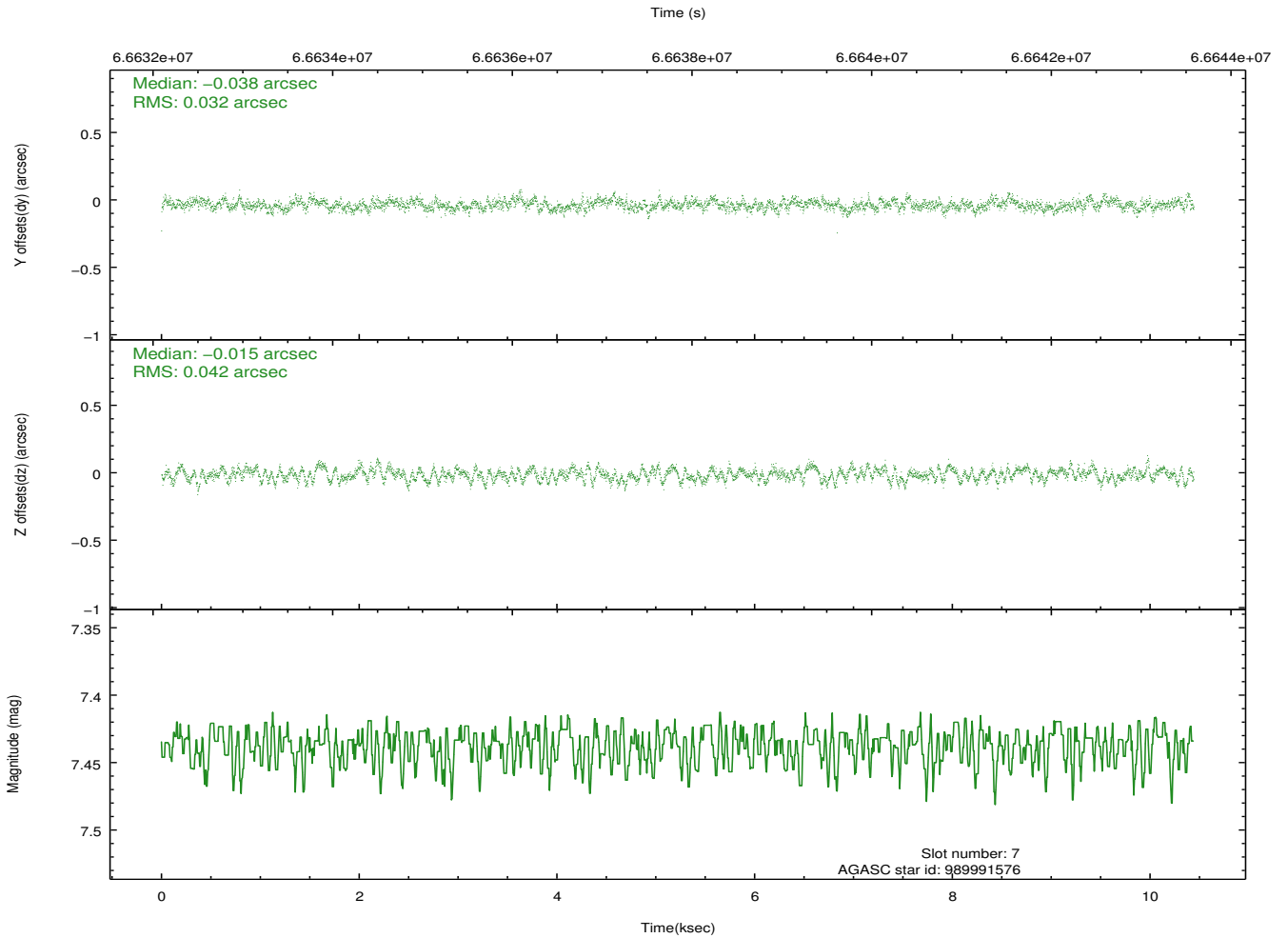
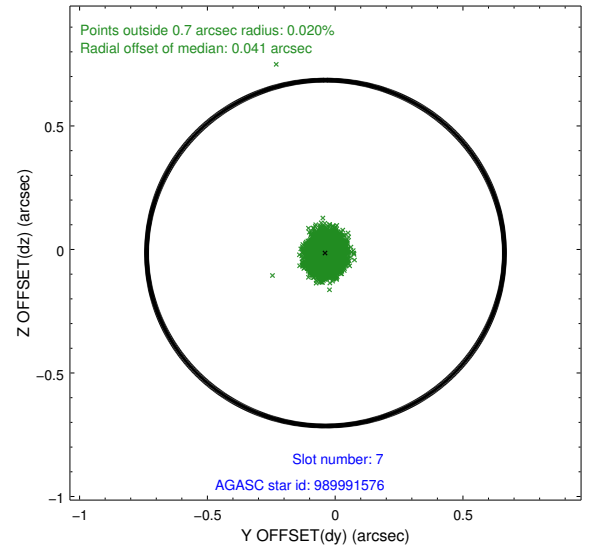
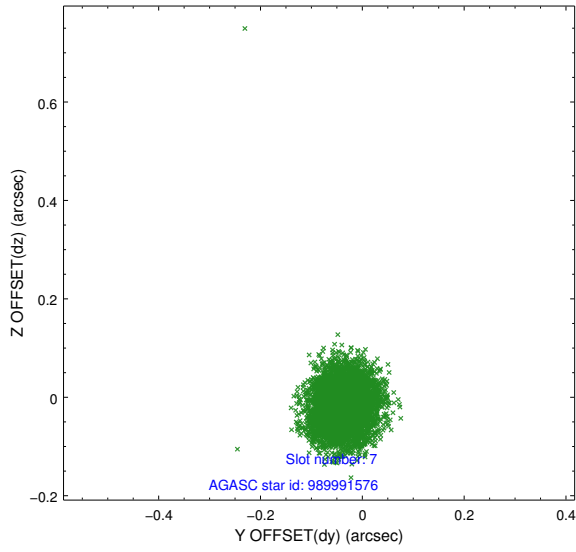


## 2.4.4 Slot 6



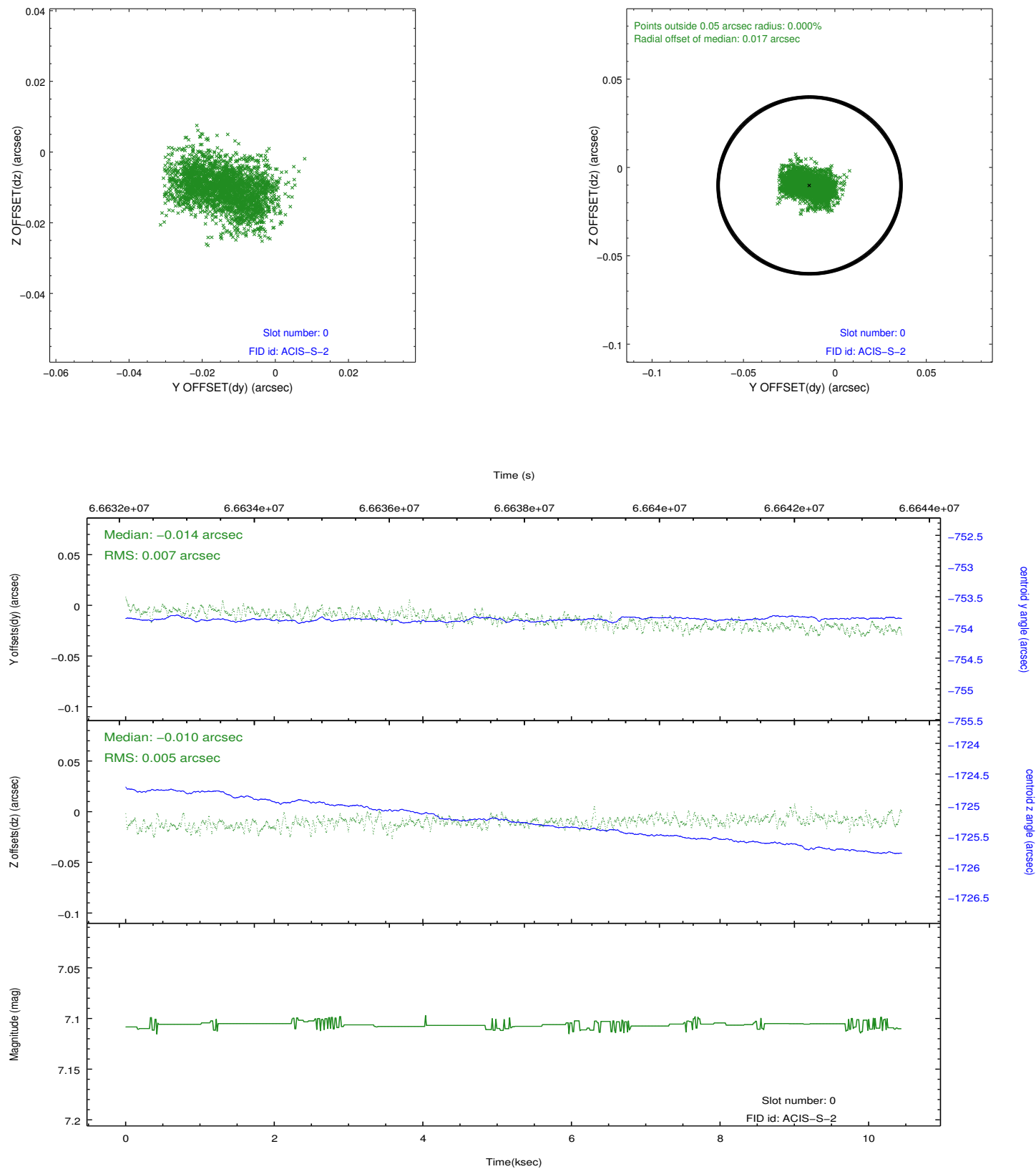


## 2.4.5 Slot 7

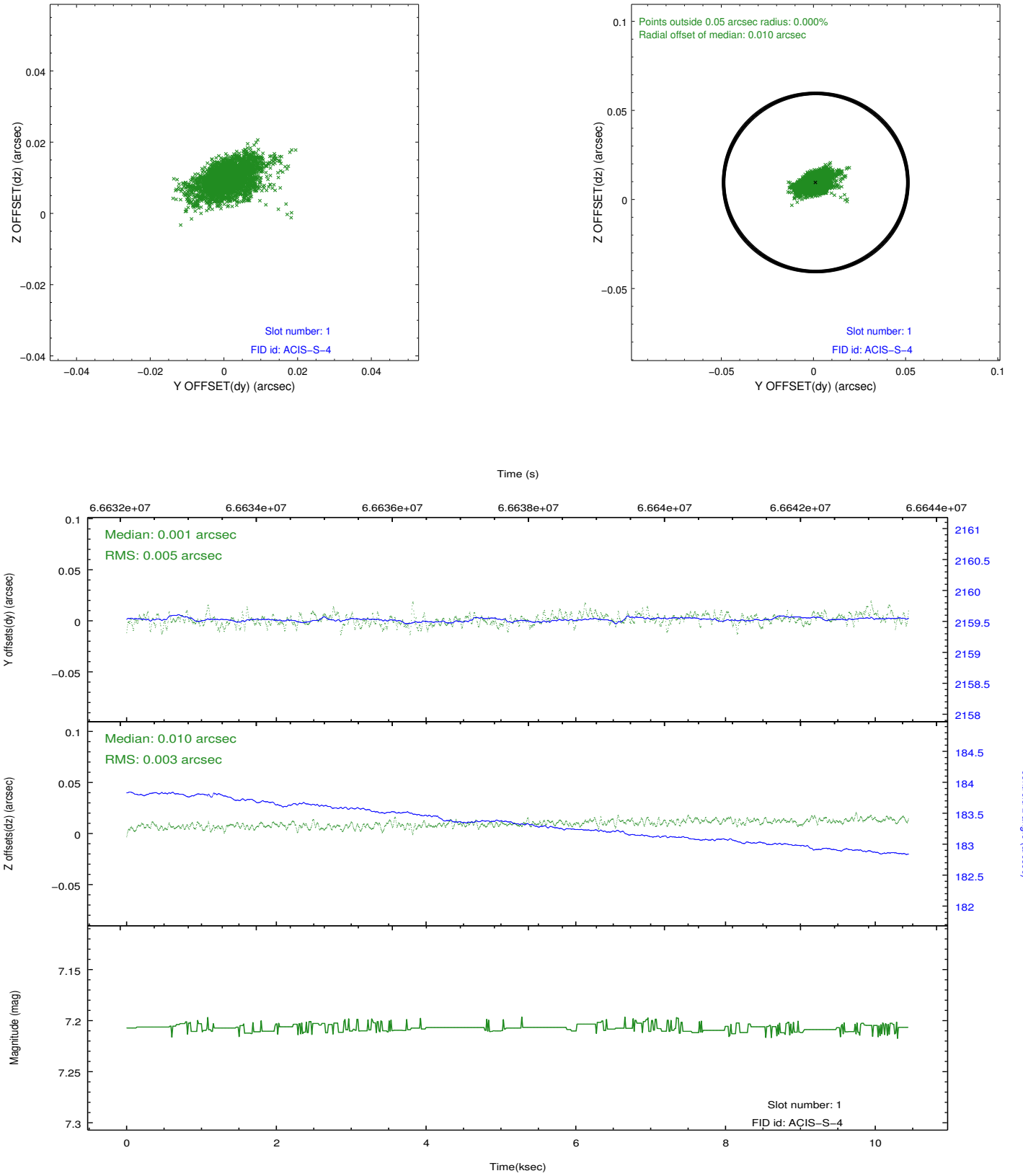


## 2.5 FID Slots

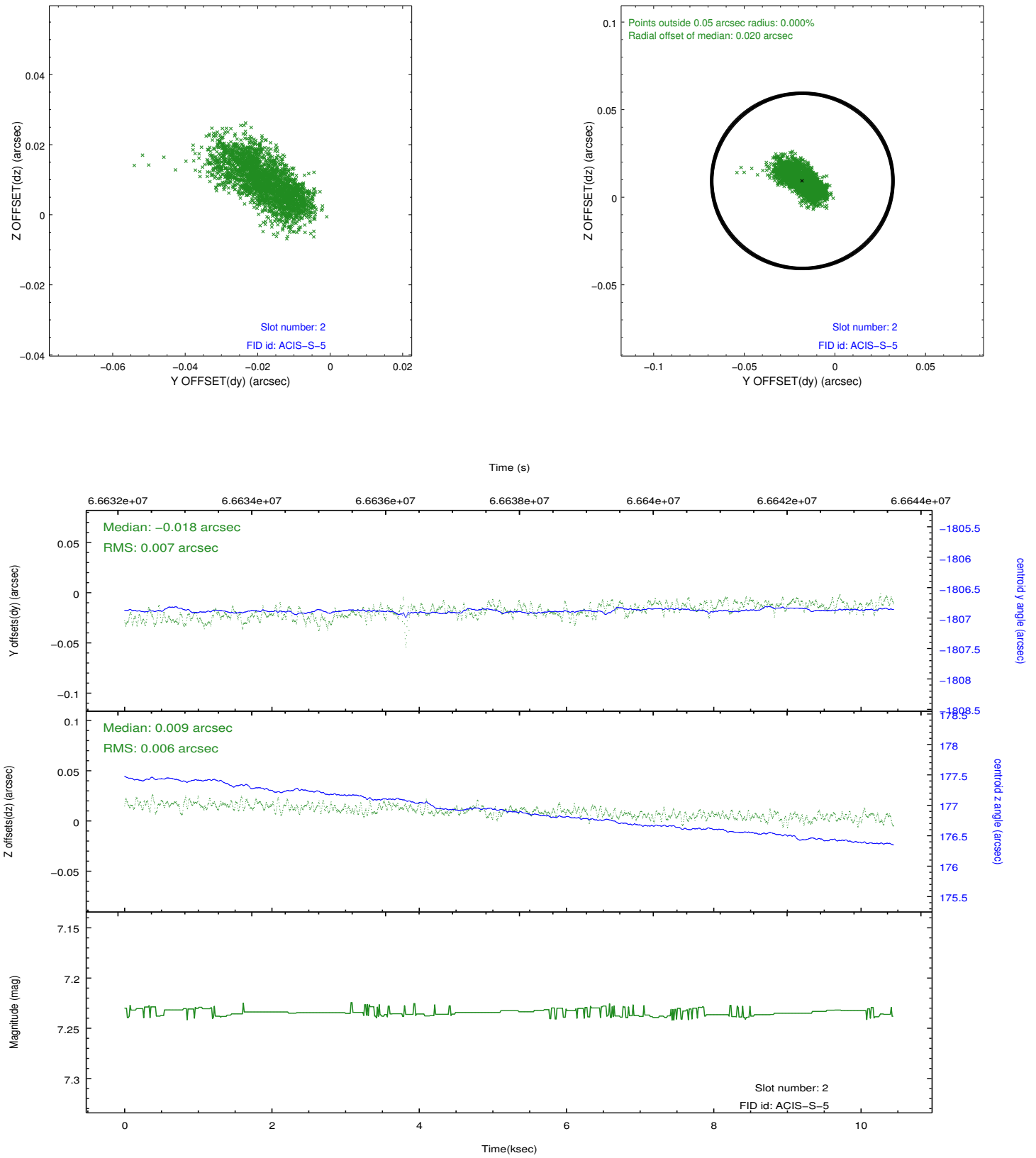
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Glenn Allen
V&V Date (YYYY-MM-DD)	2012.10.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.046

## A.2 Comments

One node on CCD\_ID = 6 is low in the evt2 file, but I don't see it on the evt1 file. The bias looks fine.

The reason that NODE\_ID=1 of CCD\_ID=6 has fewer events in the Level 2 image is that the overclock for this node is relatively low. As a result, far fewer events at large pulse heights (i.e. at PHA > 3000 adu or approximately ENERGY > 12 keV) are telemetered. Filtering the event data to remove all events at pulse heights > 3000 adu yields an image that appears to have a uniform event density on CCD\_ID=6. NODE\_ID=1 does not appear to be low in this case. The events at these large pulse heights are not real X-ray events because the telescope has no effective area at these energies. The events are due to cosmic rays. Therefore, the lack of these events does not compromise the scientific utility of the data.

Glenn