

# V&V Reference Report

## L2 ASCDS Version : 8.3.3

Observation 52 - L2 Version 6  
Chandra X-Ray Center

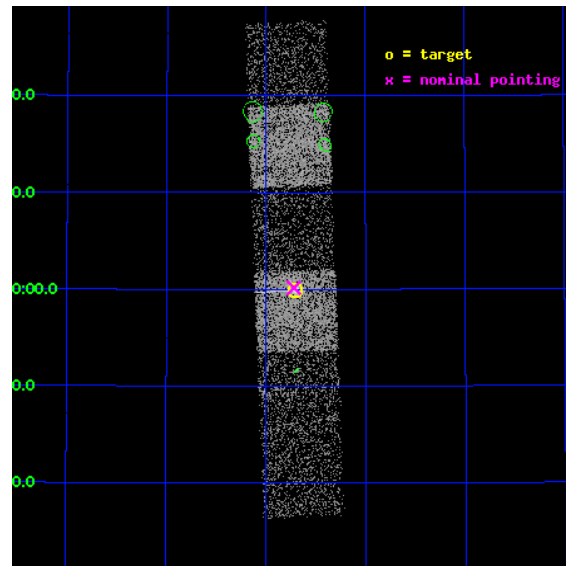
L2 Processing Date : Nov 9 2010

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Point Sources</b>	<b>17</b>
<b>A</b>	<b>Summary</b>	<b>18</b>
A.1	Status . . . . .	18
A.2	Comments . . . . .	18

# 1 Front

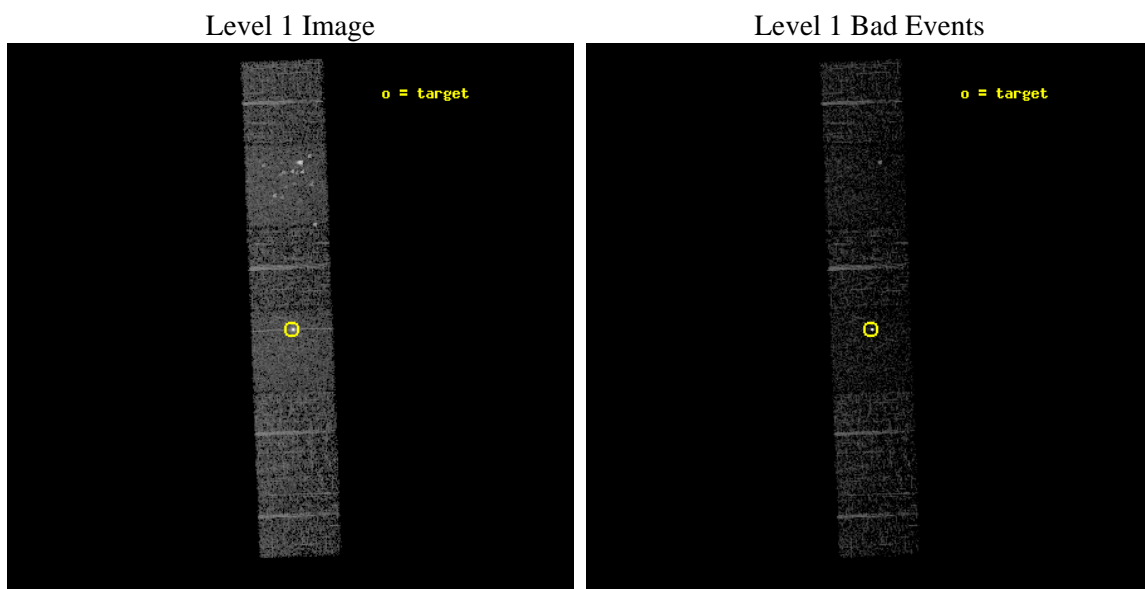
seq_num	290021	Sequence number
obs_id	52	Observation id
title	GRATINGS CALIBRATION OBSERVATION OF AN EMISSION LINE SOURCE: CAPELLA	&#160
observer	Dr. CXC Calibration	Principal investigator
object	CAPELLA	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	79.17625	Observer's specified target RA
dec_targ	45.997889	Observer's specified target Dec
ra_nom	79.179811192945	Nominal RA
dec_nom	46.002682620423	Nominal Dec
roll_nom	87.781563666675	Nominal Roll
revision	6	Processing version of data
ontime	1278.7101904228	Sum of GTIs [s]
livetime	1262.5183920449	Livetime [s]
ontime4	1278.6281104237	Sum of GTIs [s]
ontime5	1278.6691504195	Sum of GTIs [s]
ontime6	1278.5049904212	Sum of GTIs [s]
ontime7	1278.7101904228	Sum of GTIs [s]
ontime8	1278.5870704204	Sum of GTIs [s]
ontime9	1278.5460304245	Sum of GTIs [s]
l2events	18232	Number of level 2 events



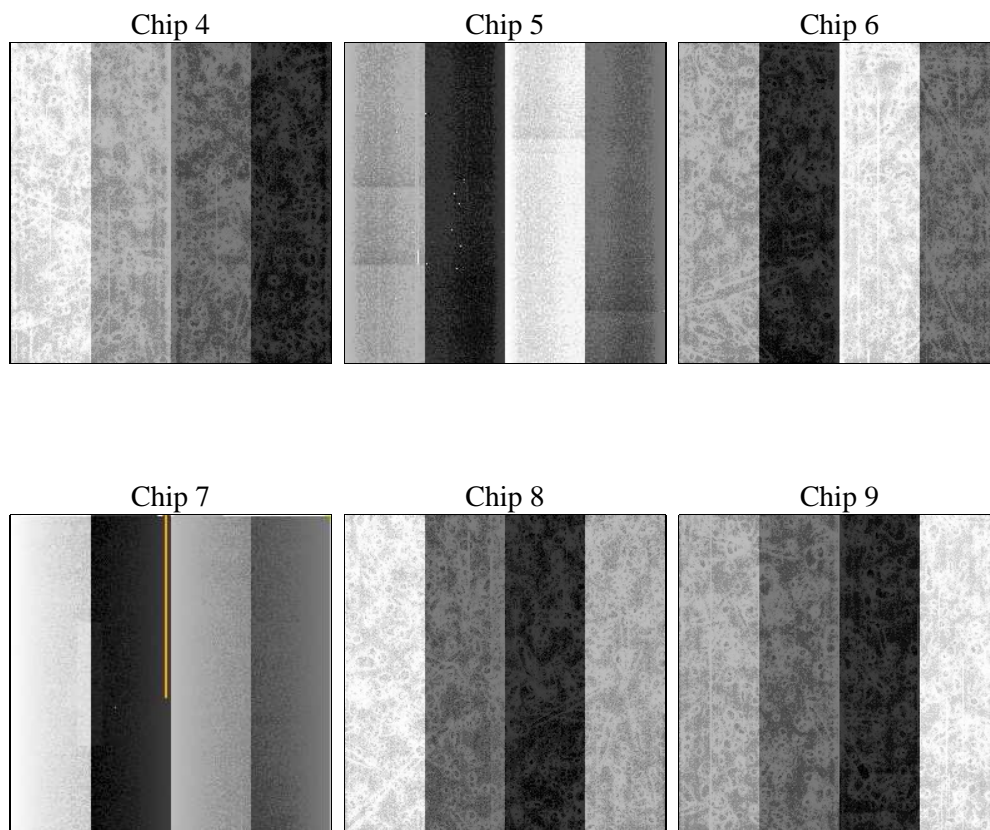
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	2250.000000	Scheduled observation exposure time
ascdsver	8.3.3	ASCDS version number	ontime	1278.7101904228	Sum of GTIs [s]
caldsver	4.4.0	&#160	ontime4	1278.6281104237	Sum of GTIs [s]
date	2010-11-09T20:48:29	Date and time of file creation	ontime5	1278.6691504195	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	1278.5049904212	Sum of GTIs [s]
			ontime7	1278.7101904228	Sum of GTIs [s]
			ontime8	1278.5870704204	Sum of GTIs [s]
			ontime9	1278.5460304245	Sum of GTIs [s]
			l1events	94347	Number of level 1 events

### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	13594	20111	12960	19954	15603	12125
rejected events	12380	8734	11717	12470	13213	10874
rejected %	91%	43%	90%	62%	84%	89%

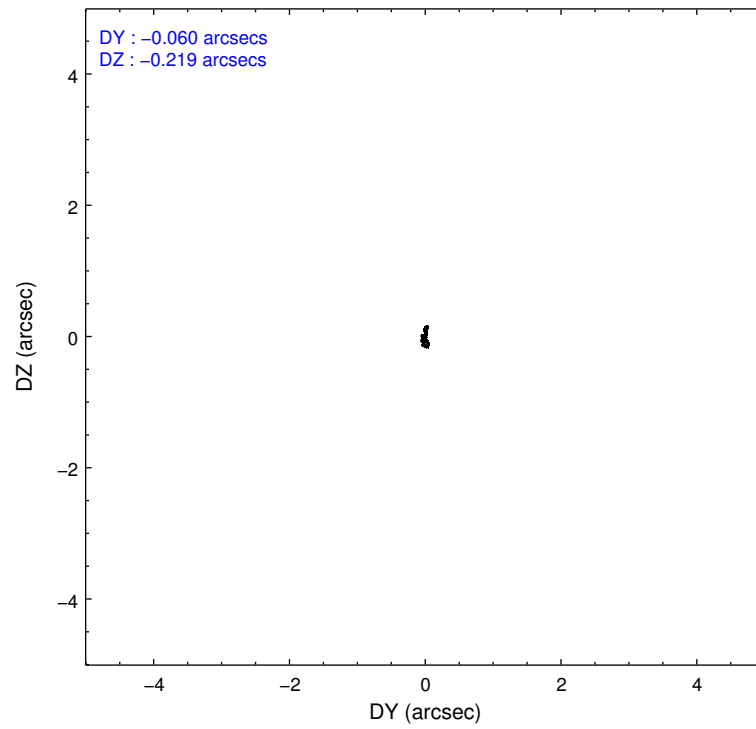
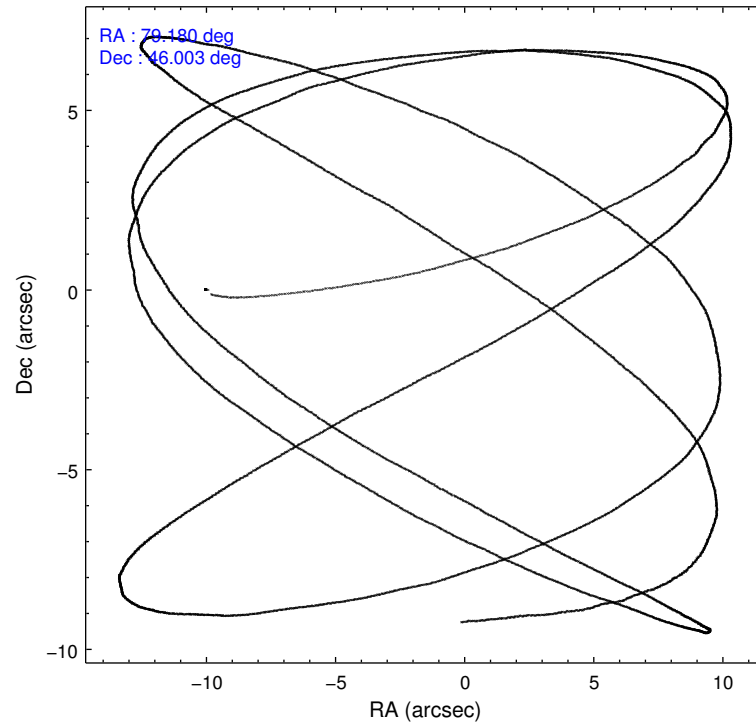
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	401	3956	378	978	701	359
	2%	19%	2%	4%	4%	2%
grade 1 events	5	85	0	80	8	6
	0%	0%	0%	0%	0%	0%
grade 2 events	384	2195	362	1356	733	371
	2%	10%	2%	6%	4%	3%
grade 3 events	96	544	94	802	173	115
	0%	2%	0%	4%	1%	0%
grade 4 events	101	545	97	655	169	109
	0%	2%	0%	3%	1%	0%
grade 5 events	246	735	320	1053	434	303
	1%	3%	2%	5%	2%	2%
grade 6 events	233	4170	317	3718	620	302
	1%	20%	2%	18%	3%	2%
grade 7 events	12128	7881	11392	11312	12765	10560
	89%	39%	87%	56%	81%	87%

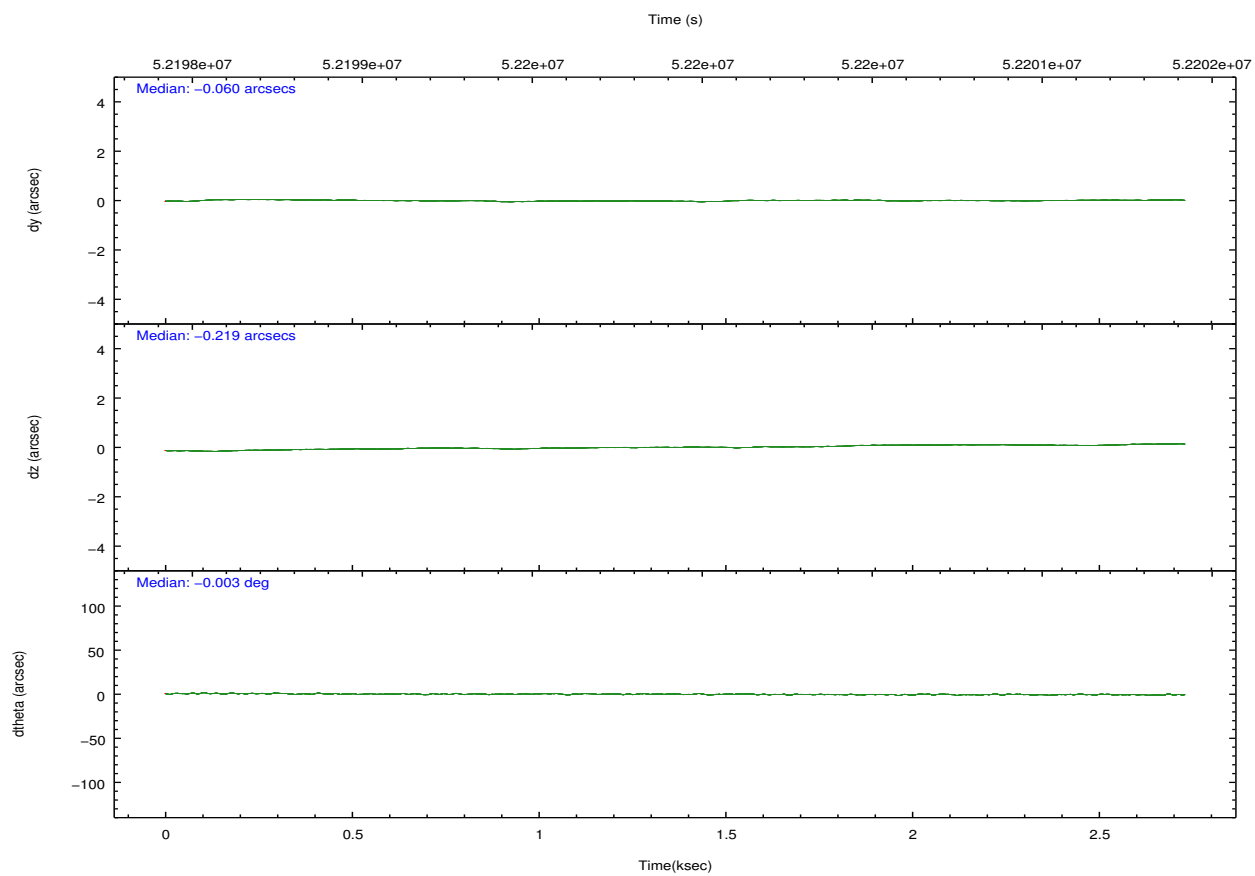
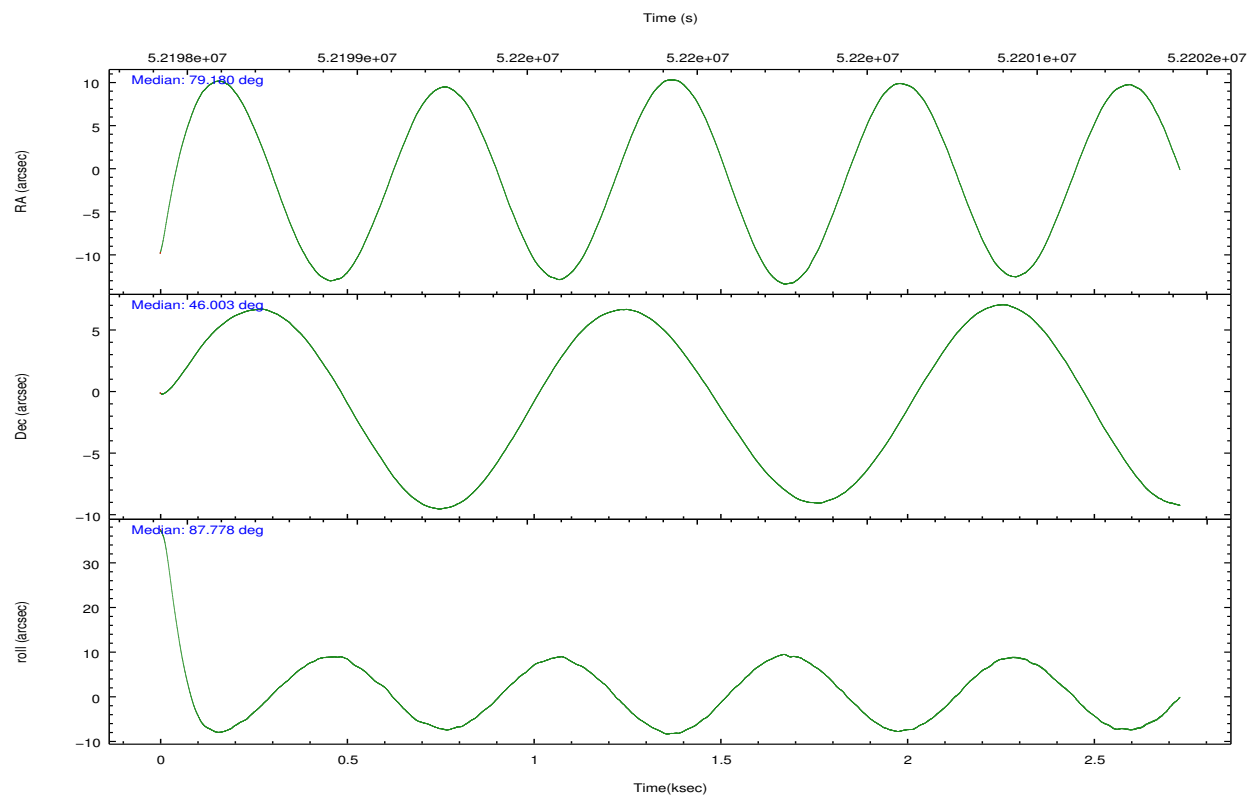
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	79.197627	79.17981119294456
Pointing Dec	45.977914	46.00268262042295
Pointing Roll	87.612005	87.7815636666755
SIM focus pos (mm)	-0.684267	-0.7362356599963374
SIM defocus (mm)	0	-0.0519681986964412
SIM translation stage pos (mm)	-190.132523	-190.1425803651734
SIM translation stage offset (mm)	0	0.01005778216563158
Observation start time	52199036.184000	52196551.737802
Observation start date	1999-08-28T03:42:52	1999-08-28T03:02:31
Observation end time	52201286.184000	52201419.975477
Observation end date	1999-08-28T04:20:22	1999-08-28T04:23:39
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	6	6
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
Primary exposure time	0.000000	3.2

## 2.3 Aspect





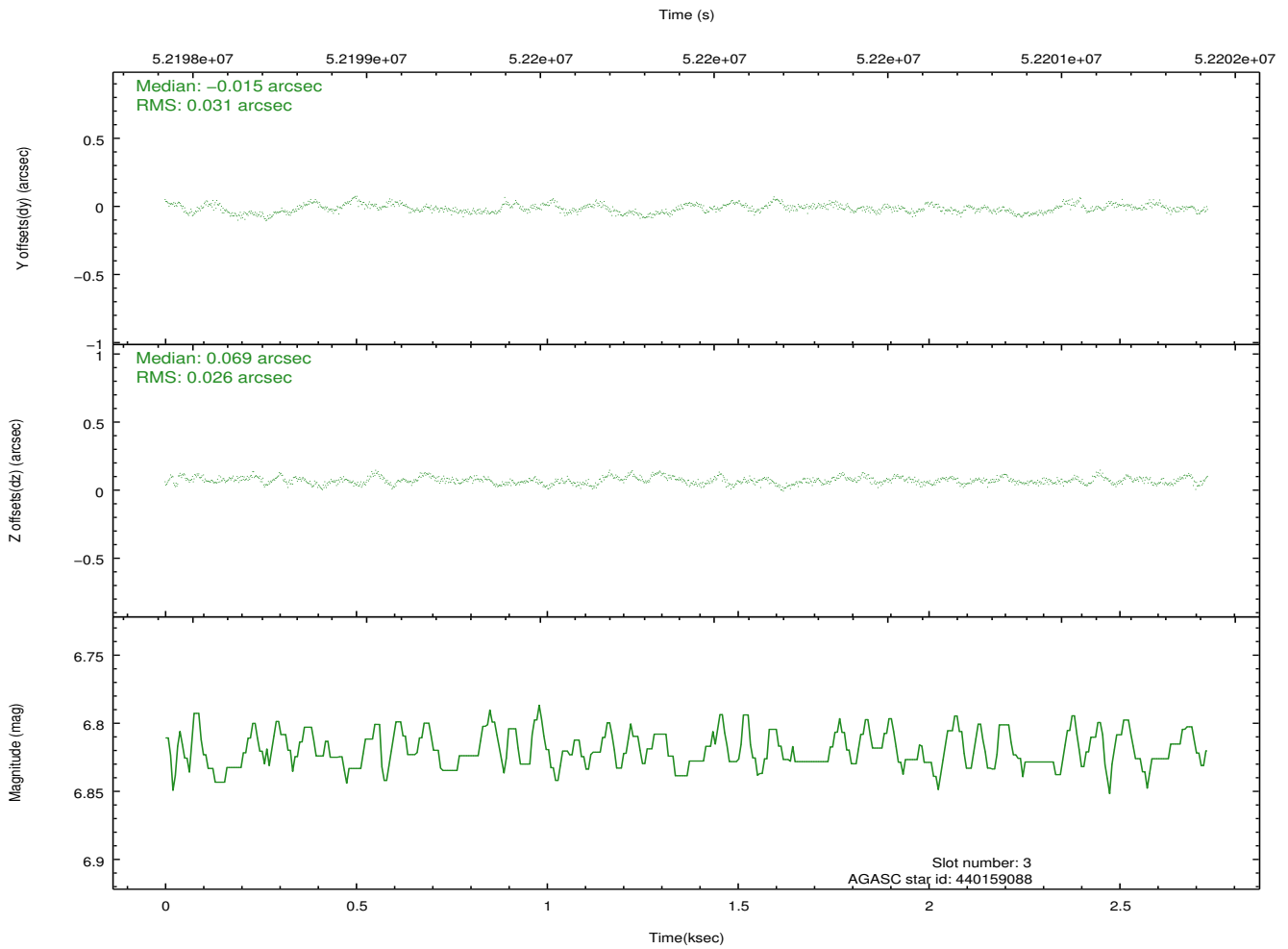
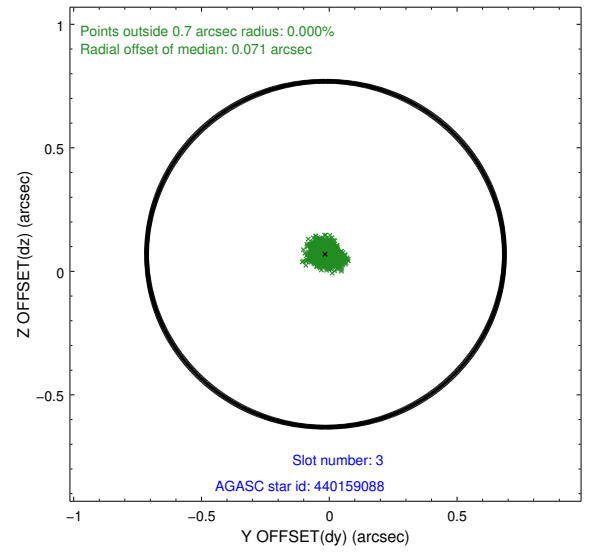
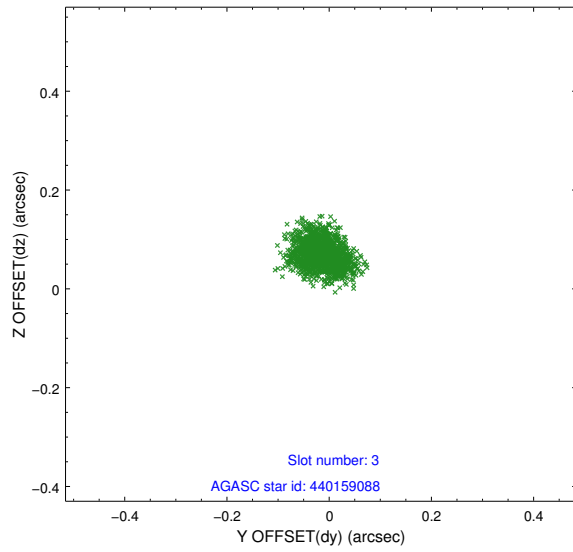
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	1333	-0.024	-0.029	0.007	0.012	0.000000	0.000000	-752.56	-1720.70
1	FID	ACIS-S-4	7.21	1333	0.126	0.020	0.006	0.011	0.000000	0.000000	2160.40	186.62
2	FID	ACIS-S-5	7.25	1332	-0.134	0.018	0.007	0.012	0.000000	0.000000	-1804.04	181.64
3	GUIDE	440159088	6.82	1333	-0.015	0.069	0.043	0.068	79.453034	46.128063	567.33	-613.10
4	GUIDE	440158344	7.92	1333	0.116	0.022	0.047	0.079	79.344888	45.394991	-2080.59	-459.01
5	GUIDE	440149808	8.50	1333	-0.049	-0.069	0.056	0.086	78.873930	46.405955	1505.79	867.71
6	GUIDE	438438936	8.97	1333	-0.119	-0.126	0.071	0.115	78.241026	46.550197	1974.65	2454.32
7	GUIDE	440145944	9.09	1332	0.071	0.107	0.080	0.128	80.083717	45.428844	-1868.01	-2315.85

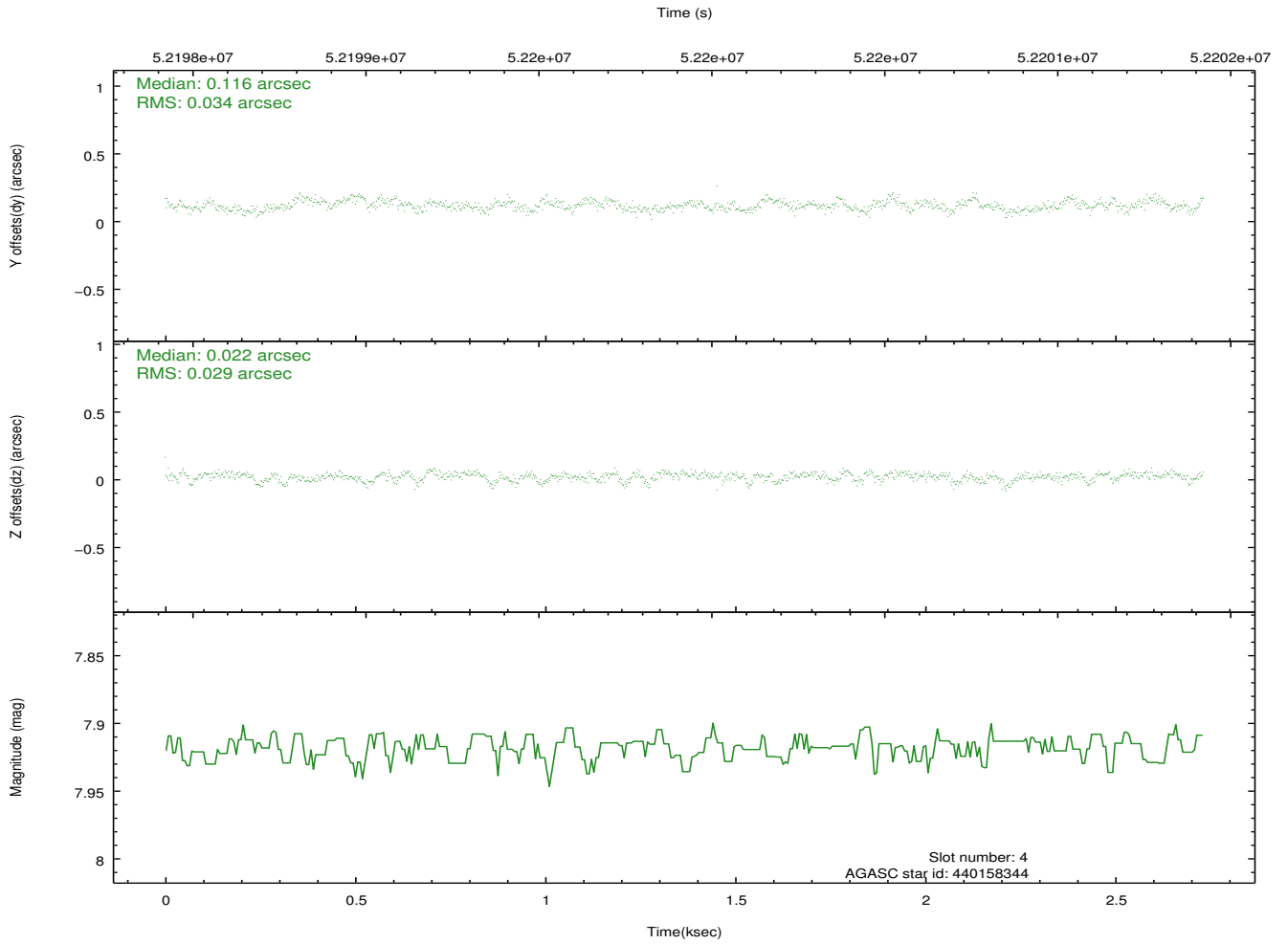
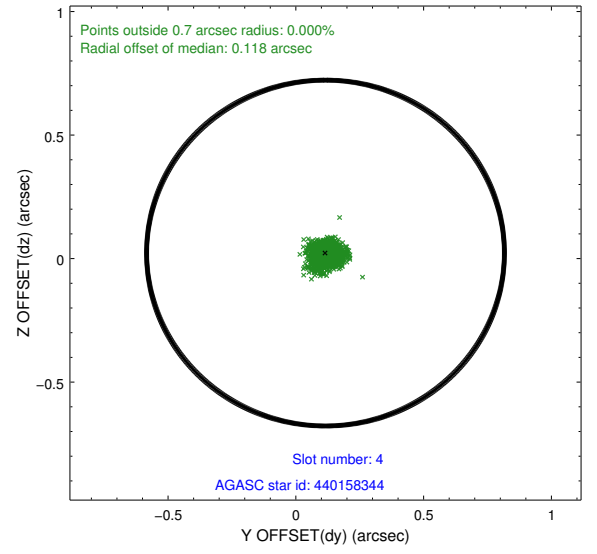
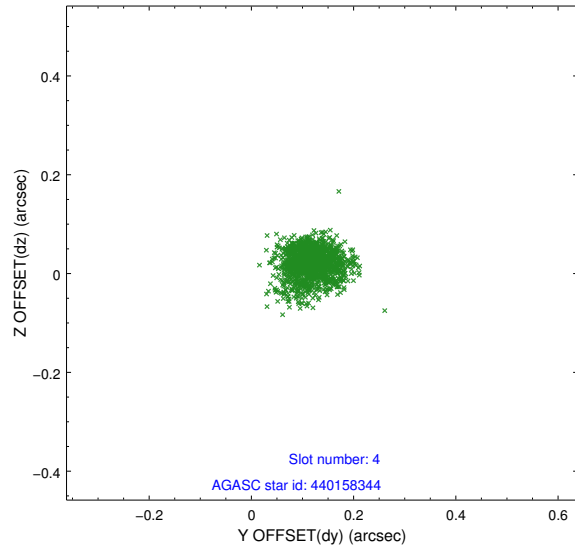


## 2.4 Star Slots

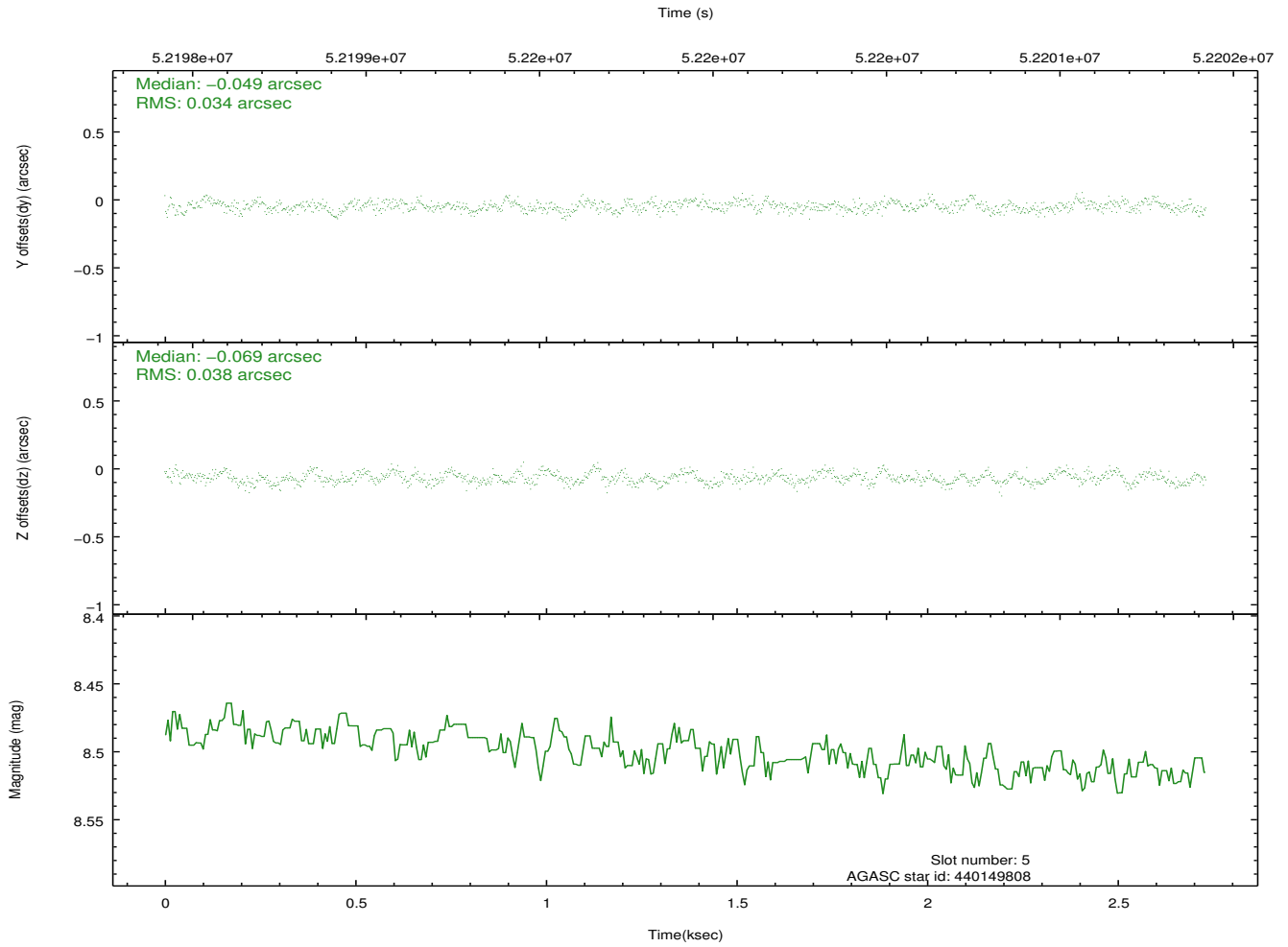
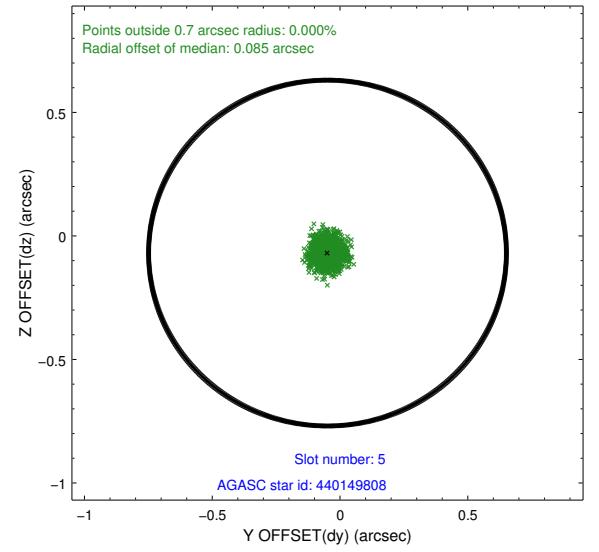
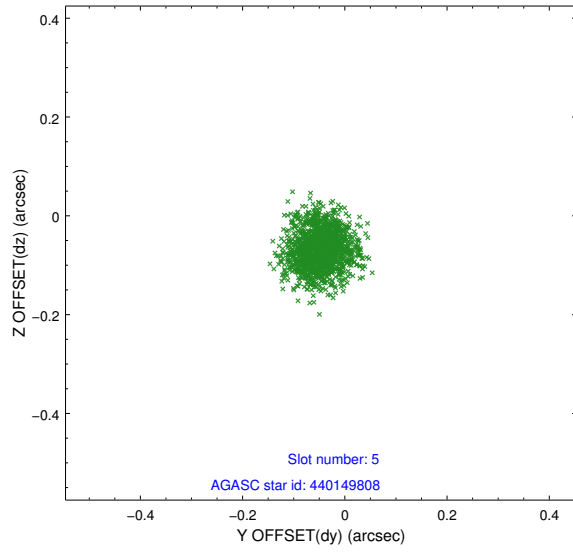
### 2.4.1 Slot 3



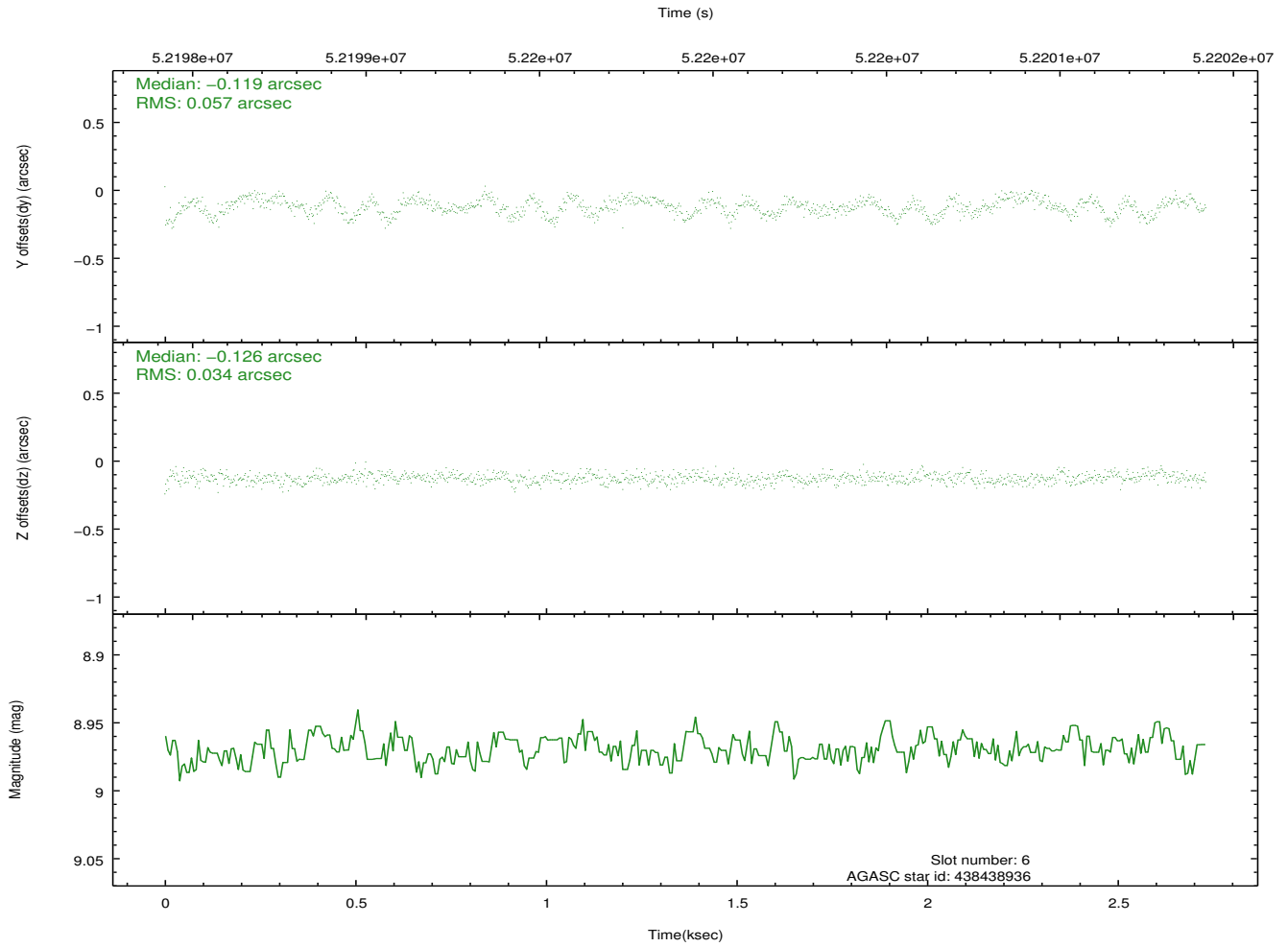
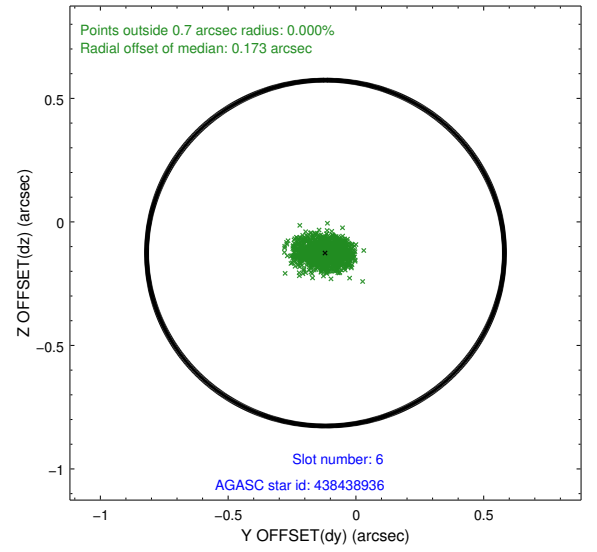
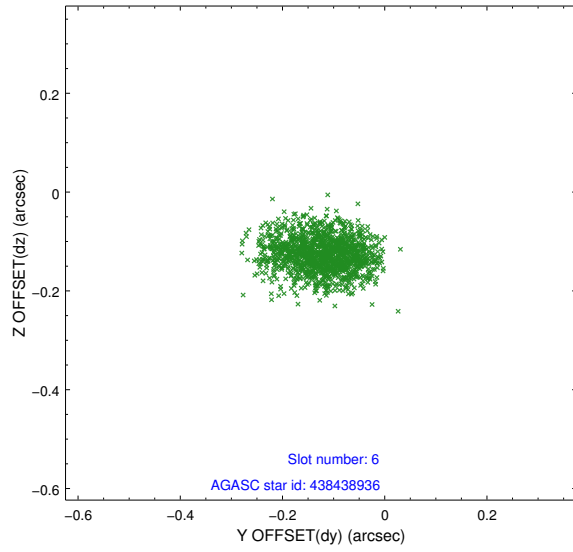
## 2.4.2 Slot 4



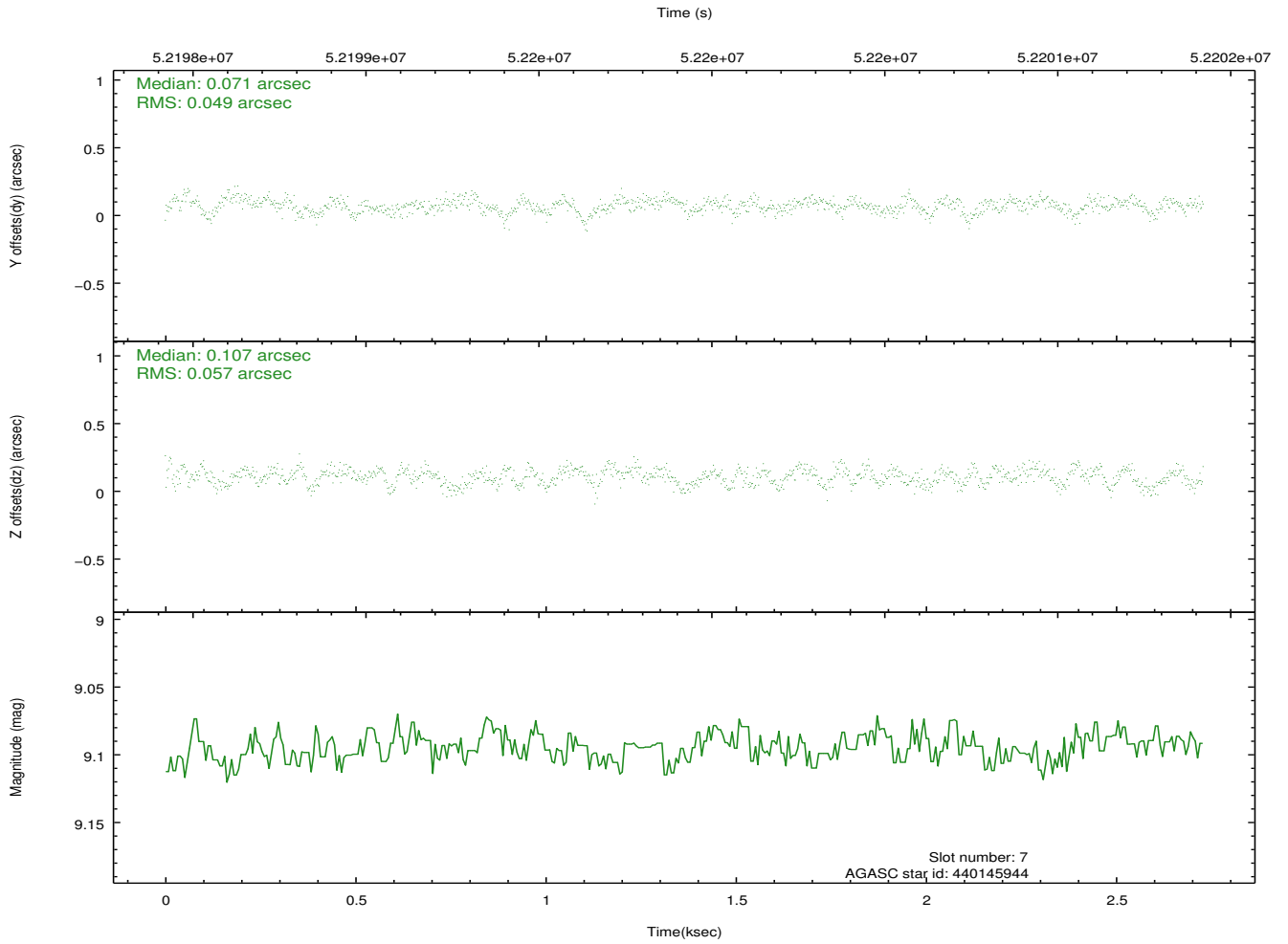
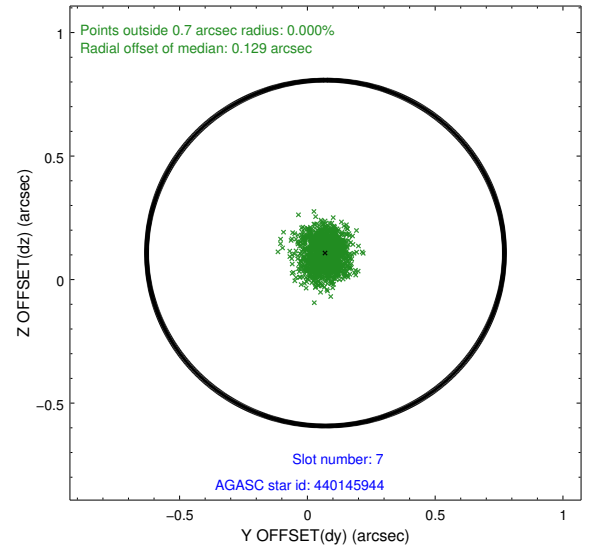
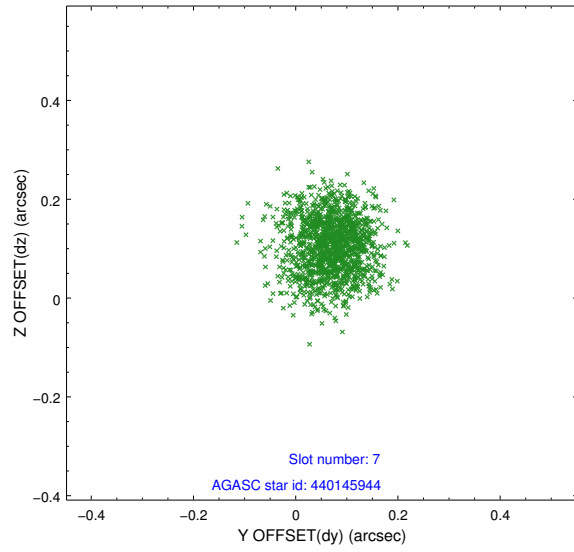
### 2.4.3 Slot 5



## 2.4.4 Slot 6

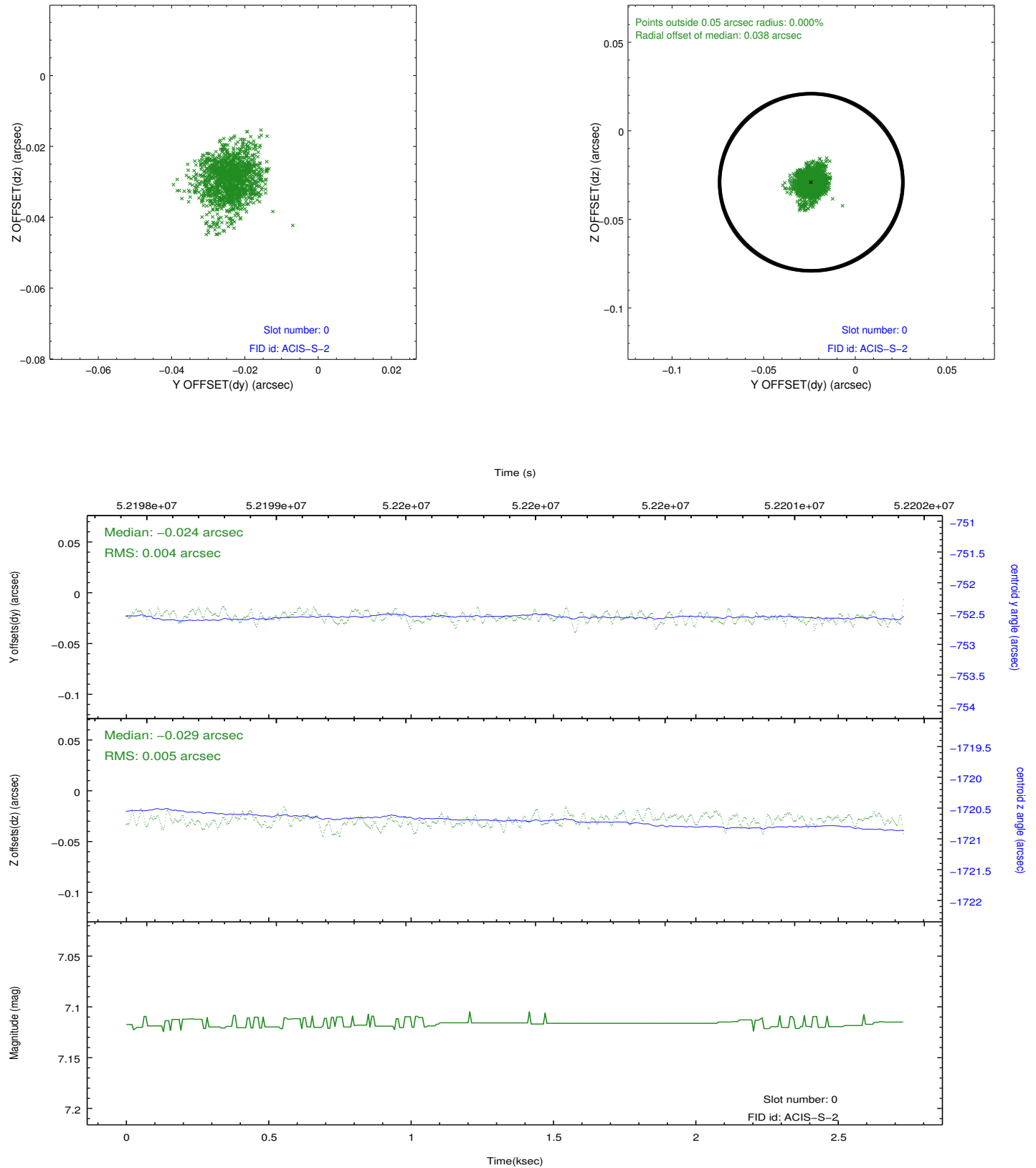


## 2.4.5 Slot 7

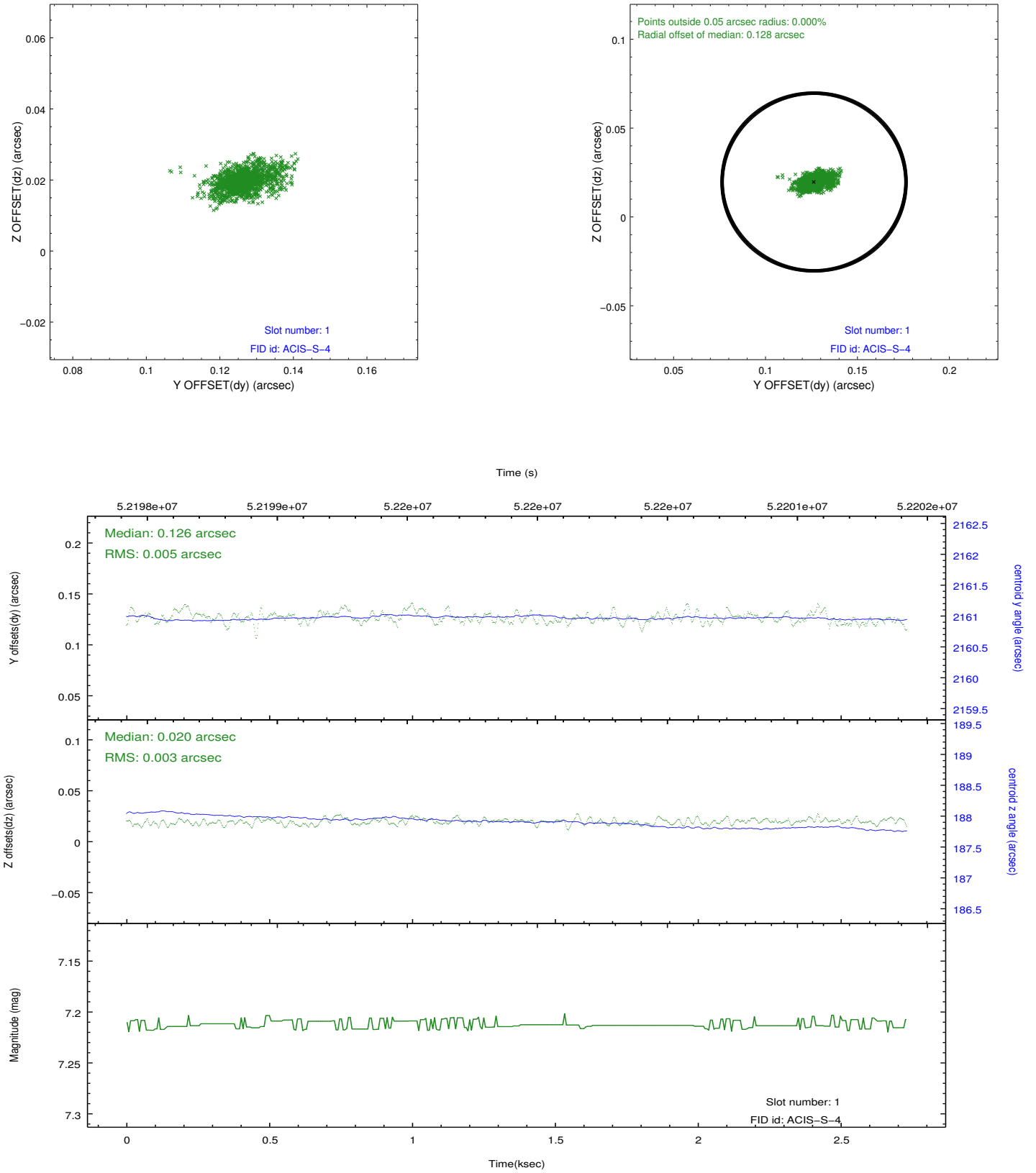


## 2.5 FID Slots

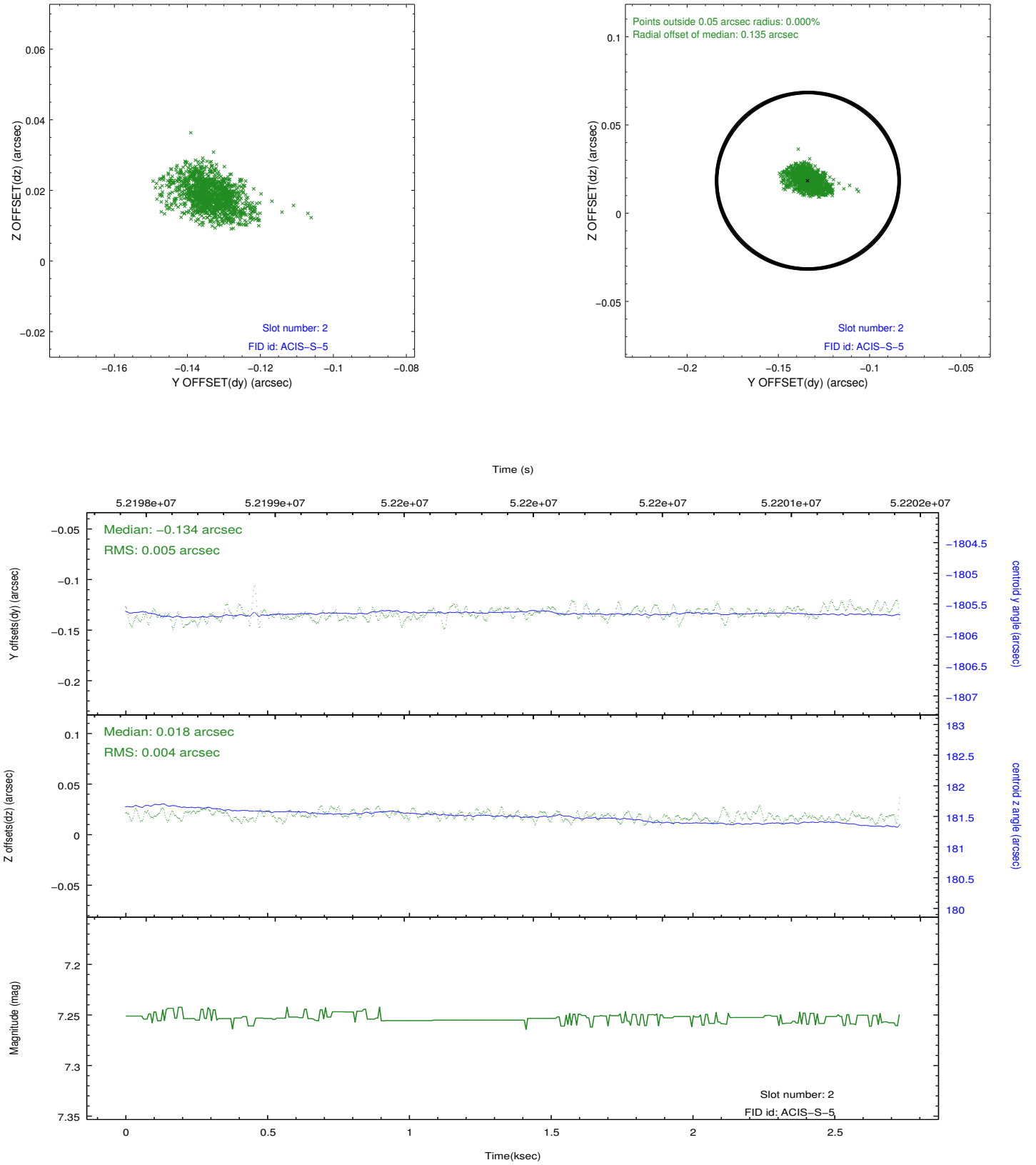
### 2.5.1 Slot 0



## 2.5.2 Slot 1

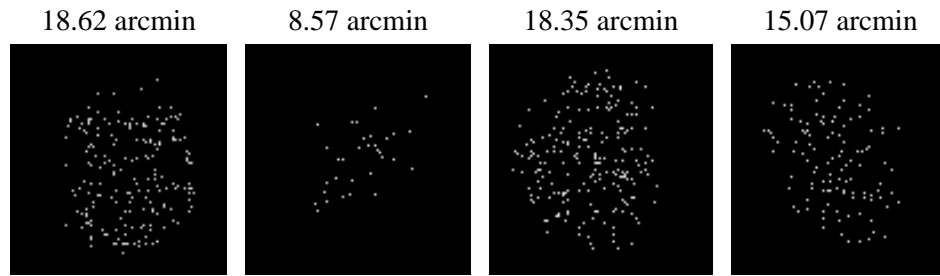


### 2.5.3 Slot 2





### 3 Point Sources



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2010.11.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.28

## A.2 Comments

In spite of the title of this observation, the grating was not inserted during the exposure. While this exposure was being taken, the launch lock pins were removed from the HETG. This observation was stopped before the HETG was inserted. Very piled up: large portion of center screened as 'bad' events image shows crown-like spikes = mirror segments.

===

The bias map for CCD\_ID = 7 suffered from anomalously high bias values at the position of the target. The spacecraft was already at the position of the target when the bias maps were calculated and thus contaminated

the bias map. Pixels in the event data were previously bias-corrected by one of the affected bias pixels may have an apparent energy shift. The bias map for CCD\_ID=7 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:

(79.13203,46.00488),(79.13146,45.99437),(79.20841,45.99234),(79.20899,46.00284)

===

The focal plane temperature is approximately -100 C during this observation. This reprocessing of the data applies no CTI correction because none is available for this temperature at present.

The ACIS CTI correction has not been calibrated at this temperature, because it was early in the mission, and ACIS had not yet been lowered to the standard -119.7 C. Both front and back illuminated chips are affected. However a T\_GAIN correction has been applied to the BI chips (ACIS-5 and ACIS-7) data included here.

The ACIS spectral response calibration is less accurate at these warmer temperatures than it is at -119.7 C. Users whose science objectives depend on the most accurate spectral response (ie: fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect.

