

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12957 - L2 Version 2  
Chandra X-Ray Center

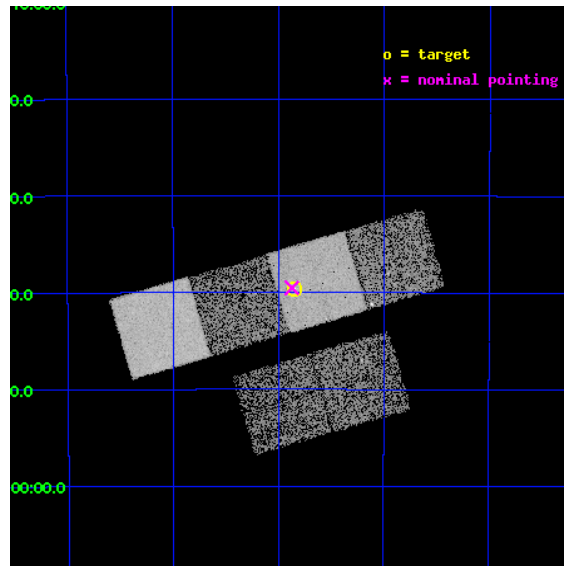
L2 Processing Date : Feb 8 2012

## 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>A</b>	<b>Summary</b>	<b>17</b>
A.1	Status . . . . .	17
A.2	Comments . . . . .	17

# 1 Front

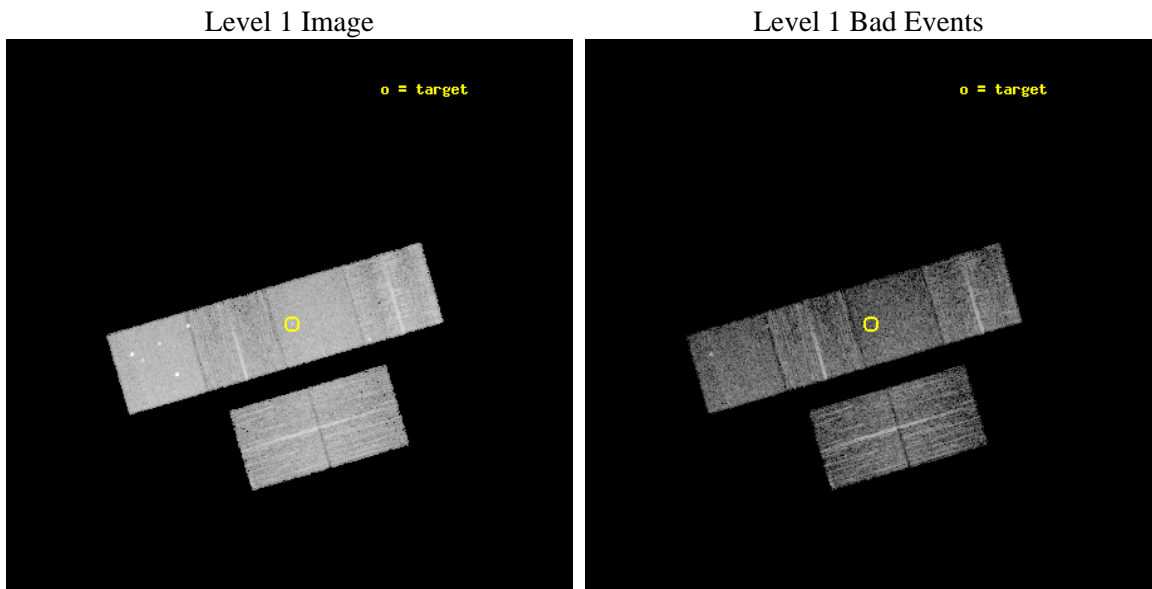
seq_num	600925	Sequence number
obs_id	12957	Observation id
title	Building a Chandra sample of Black Hole Masses	Proposal title
observer	Dr Philip Humphrey	Principal investigator
object	NGC 4751	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	193.211667	Observer's specified target RA [deg]
dec_targ	-42.659917	Observer's specified target Dec [deg]
ra_nom	193.21796842896	Nominal RA [deg]
dec_nom	-42.658626635984	Nominal Dec [deg]
roll_nom	343.712099198	Nominal Roll [deg]
revision	2	Processing version of data
ontime	7551.9999719262	Sum of GTIs [s]
livetime	7456.3720010132	Livetime [s]
ontime2	7551.9999719262	Sum of GTIs [s]
ontime3	7551.9999719262	Sum of GTIs [s]
ontime5	7551.9999719262	Sum of GTIs [s]
ontime6	7551.9999719262	Sum of GTIs [s]
ontime7	7551.9999719262	Sum of GTIs [s]
ontime8	7551.9999719262	Sum of GTIs [s]
l2events	81096	Number of level 2 events



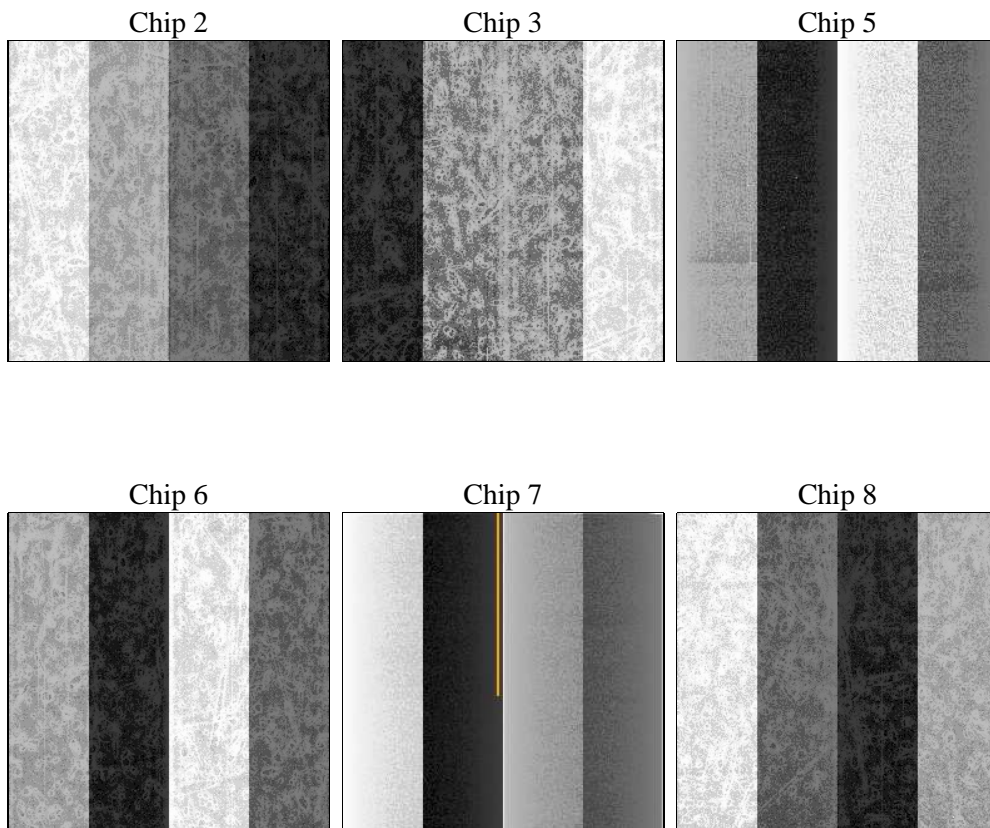
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	7500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	7551.9999719262	Sum of GTIs [s]
caldbver	4.4.7	&#160	ontime2	7551.9999719262	Sum of GTIs [s]
date	2012-02-08T03:29:00	Date and time of file creation	ontime3	7551.9999719262	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	7551.9999719262	Sum of GTIs [s]
			ontime6	7551.9999719262	Sum of GTIs [s]
			ontime7	7551.9999719262	Sum of GTIs [s]
			ontime8	7551.9999719262	Sum of GTIs [s]
			l1events	340870	Number of level 1 events

### 2.1.4 Events

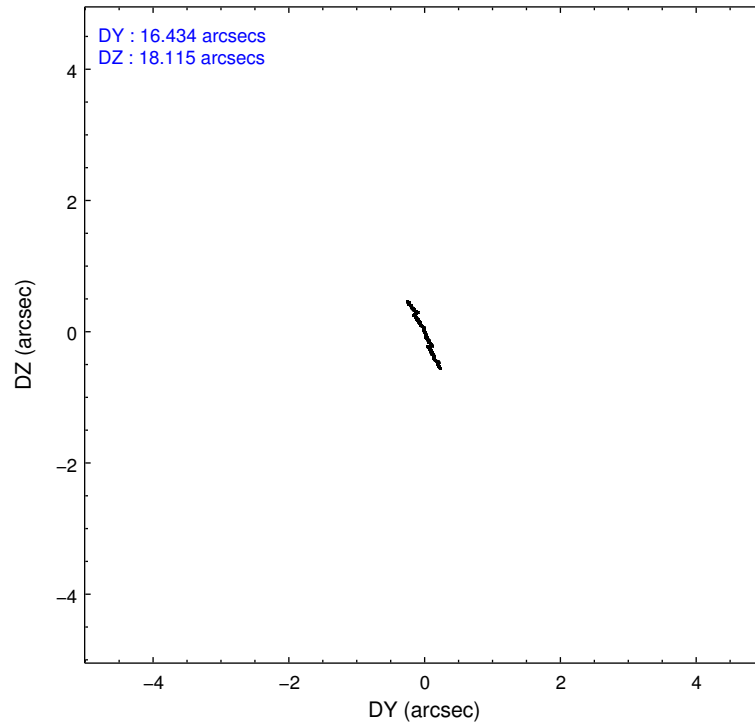
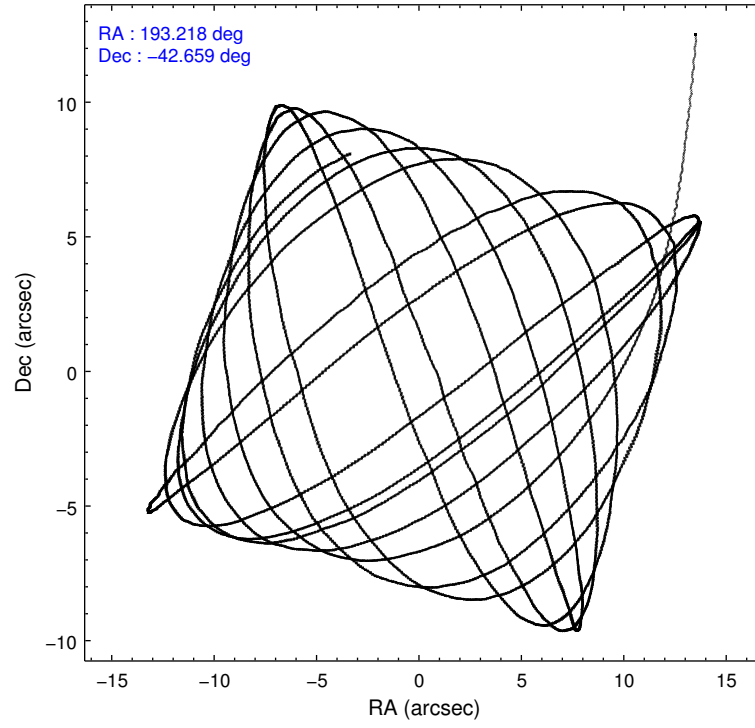
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	48344	45277	75978	48413	60612	62246	grade 0 events	1788	1805	5015	1965	2525	5345
rejected events	43249	40273	37472	42879	32967	44586		3%	3%	6%	4%	4%	8%
rejected %	89%	88%	49%	88%	54%	71%	grade 1 events	30	22	165	13	83	49
								0%	0%	0%	0%	0%	0%
							grade 2 events	1250	1018	11391	1223	5654	4120
								2%	2%	14%	2%	9%	6%
							grade 3 events	511	563	1483	549	2371	1924
								1%	1%	1%	1%	3%	3%
							grade 4 events	554	575	1405	578	2458	1736
								1%	1%	1%	1%	4%	2%
							grade 5 events	1844	2145	5677	2337	6220	3240
								3%	4%	7%	4%	10%	5%
							grade 6 events	996	1048	19244	1224	14657	4570
								2%	2%	25%	2%	24%	7%
							grade 7 events	41371	38101	31598	40524	26644	41262
								85%	84%	41%	83%	43%	66%

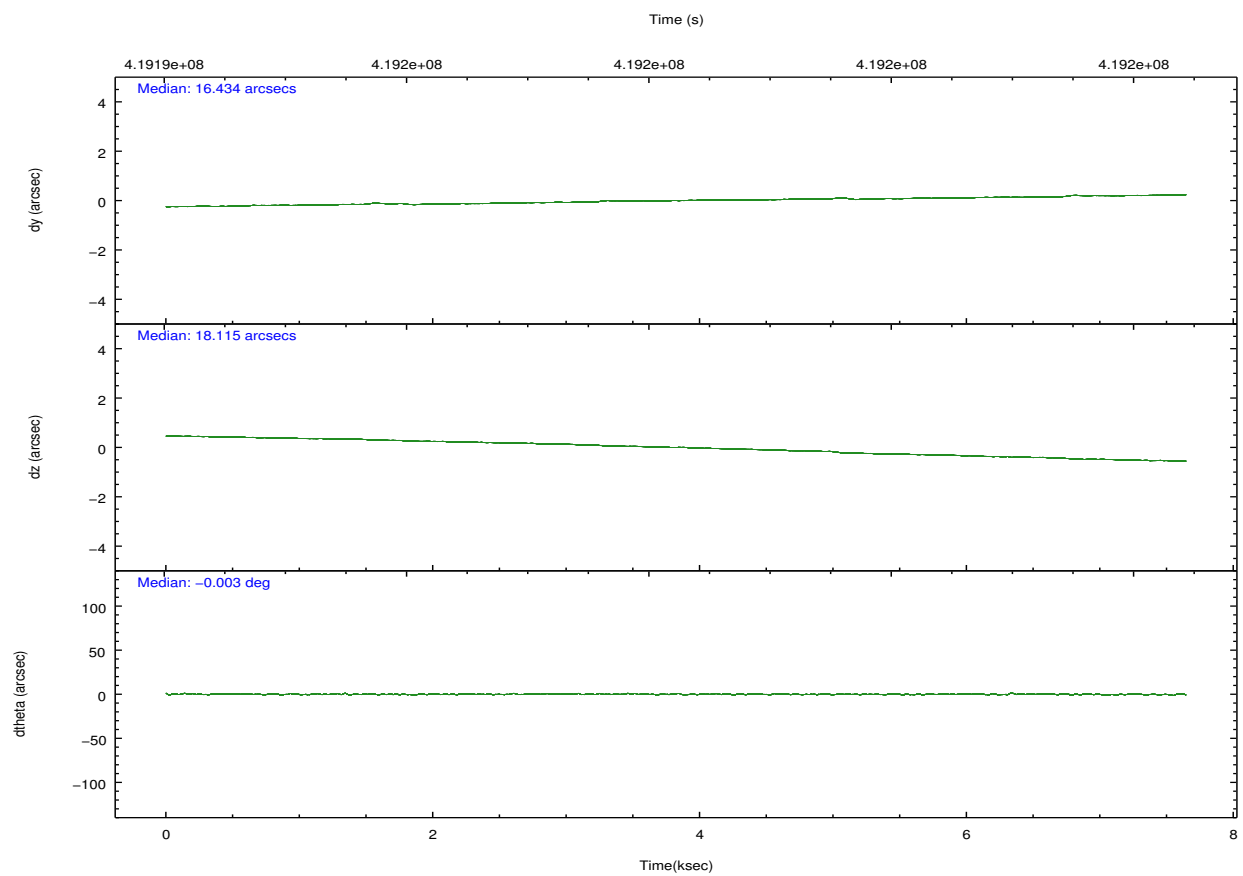
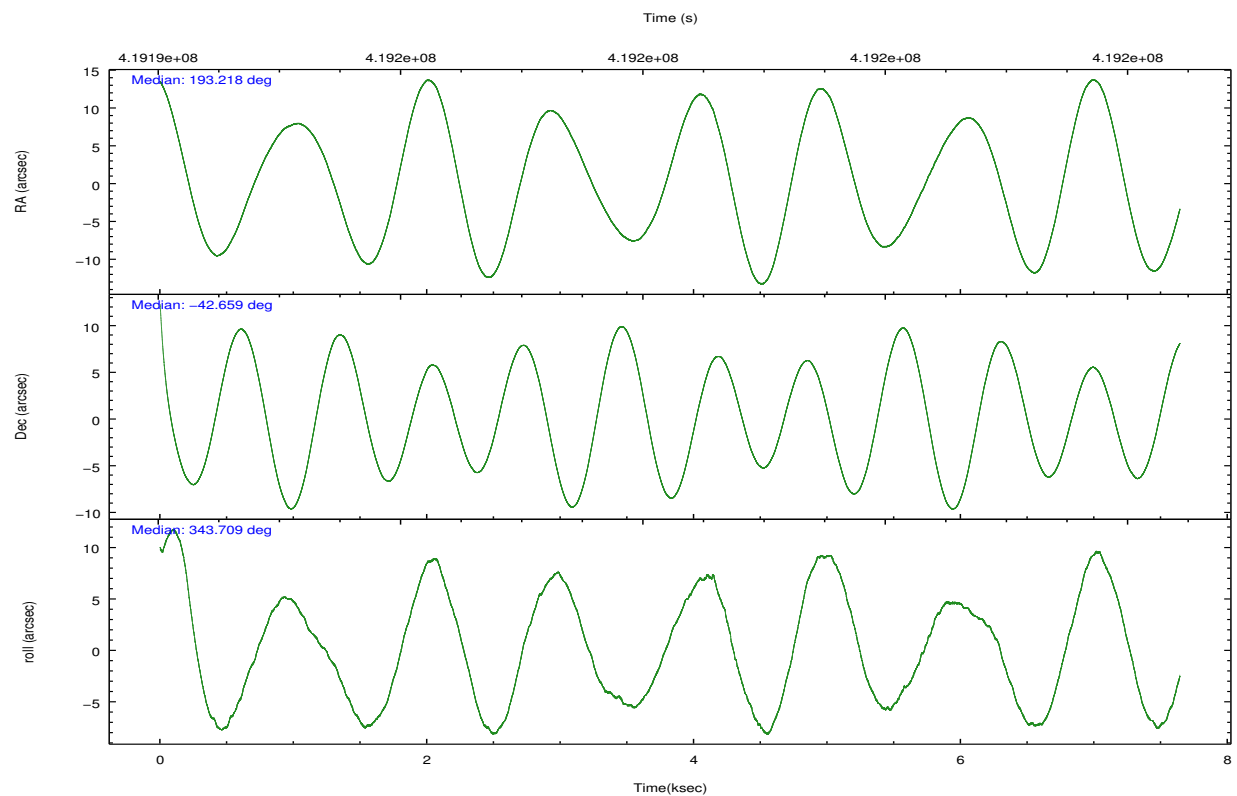


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	193.182017	193.2179684289615	CCD I2 on	O2	Y
[deg] Pointing Dec	-42.665467	-42.65862663598391	CCD I3 on	Y	Y
[deg] Pointing Roll	343.531114	343.7120991980033	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	O1	Y
[s] Observation start time (MET)	419194546.184000	419193403.87422	CCD S5 on	N	N
Observation start date	2011-04-14T18:54:40	2011-04-14T18:36:43	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	419202046.184000	419202656.5497	On-chip summing requested	N	N
Observation end date	2011-04-14T20:59:40	2011-04-14T21:10:56	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



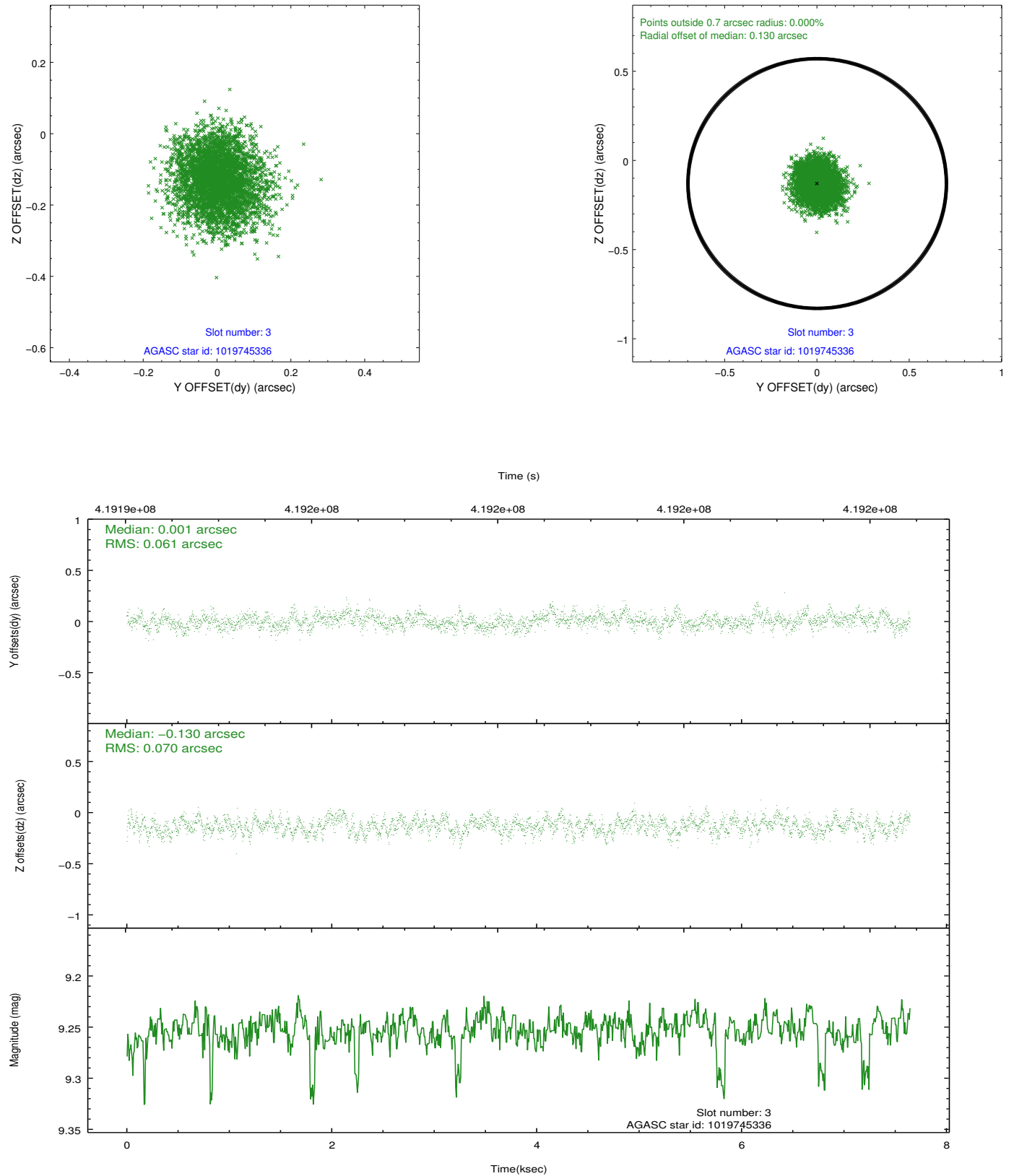


### Slot Statistics

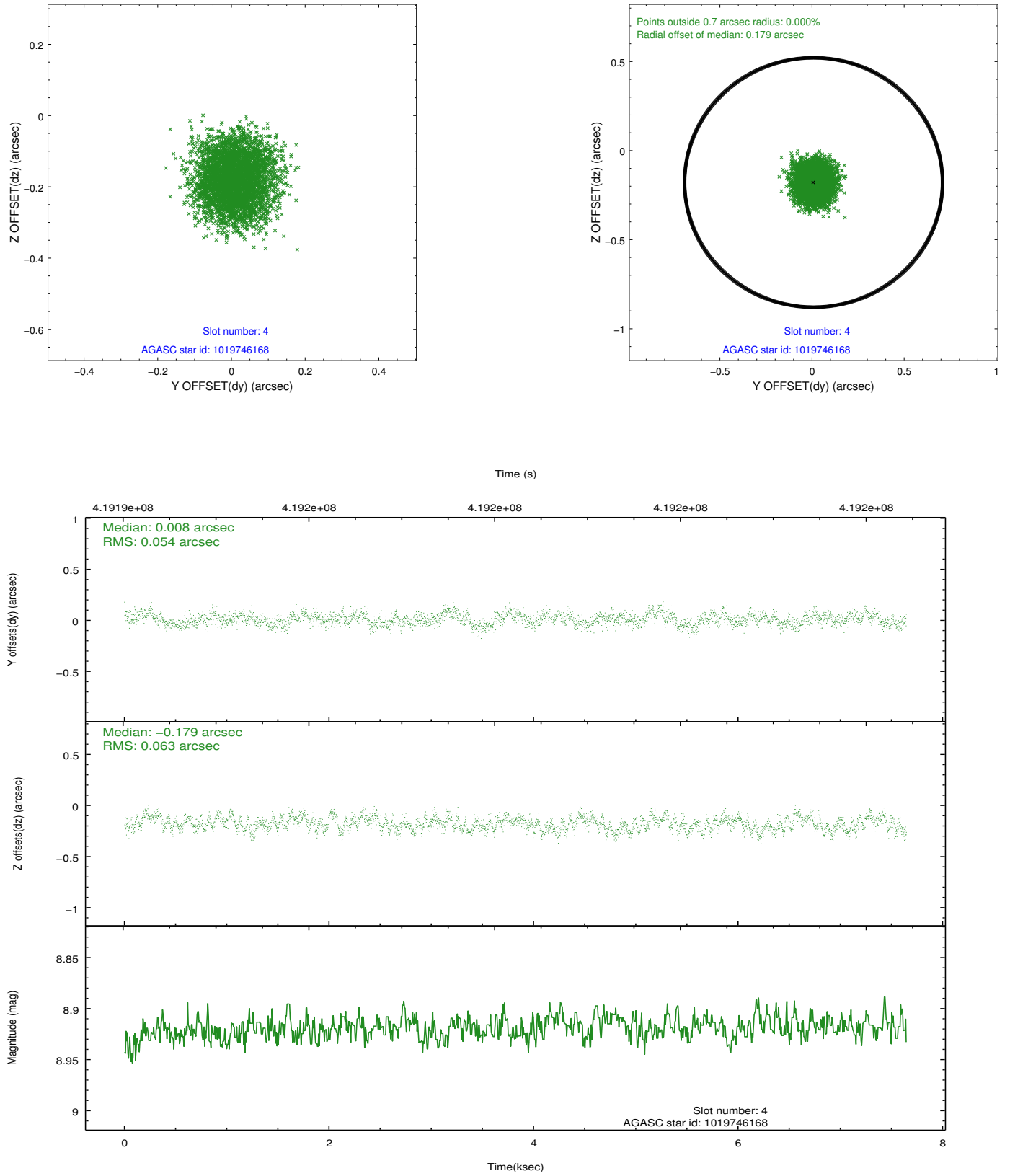
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.88	1865	-0.088	-0.036	0.009	0.014	0.000000	0.000000	-769.55	-1739.58
1	FID	ACIS-S-4	6.97	1865	0.130	0.045	0.010	0.016	0.000000	0.000000	2143.64	168.16
2	FID	ACIS-S-6	7.12	1865	-0.070	-0.003	0.011	0.019	0.000000	0.000000	393.45	806.38
3	GUIDE	1019745336	9.25	3720	0.001	-0.130	0.100	0.159	193.636850	-42.411337	901.06	1216.65
4	GUIDE	1019746168	8.92	3728	0.008	-0.179	0.090	0.139	192.610444	-42.516864	-1603.95	78.21
5	GUIDE	1019749352	7.35	3730	-0.078	-0.135	0.075	0.124	193.779089	-42.290881	1143.92	1738.47
6	GUIDE	1019616904	7.99	3669	0.069	0.271	0.062	0.099	192.279247	-42.634316	-2320.79	-581.92
7	GUIDE	1020271664	9.38	3723	-0.001	0.177	0.103	0.164	193.928912	-43.168507	2396.25	-1189.04

## 2.4 Star Slots

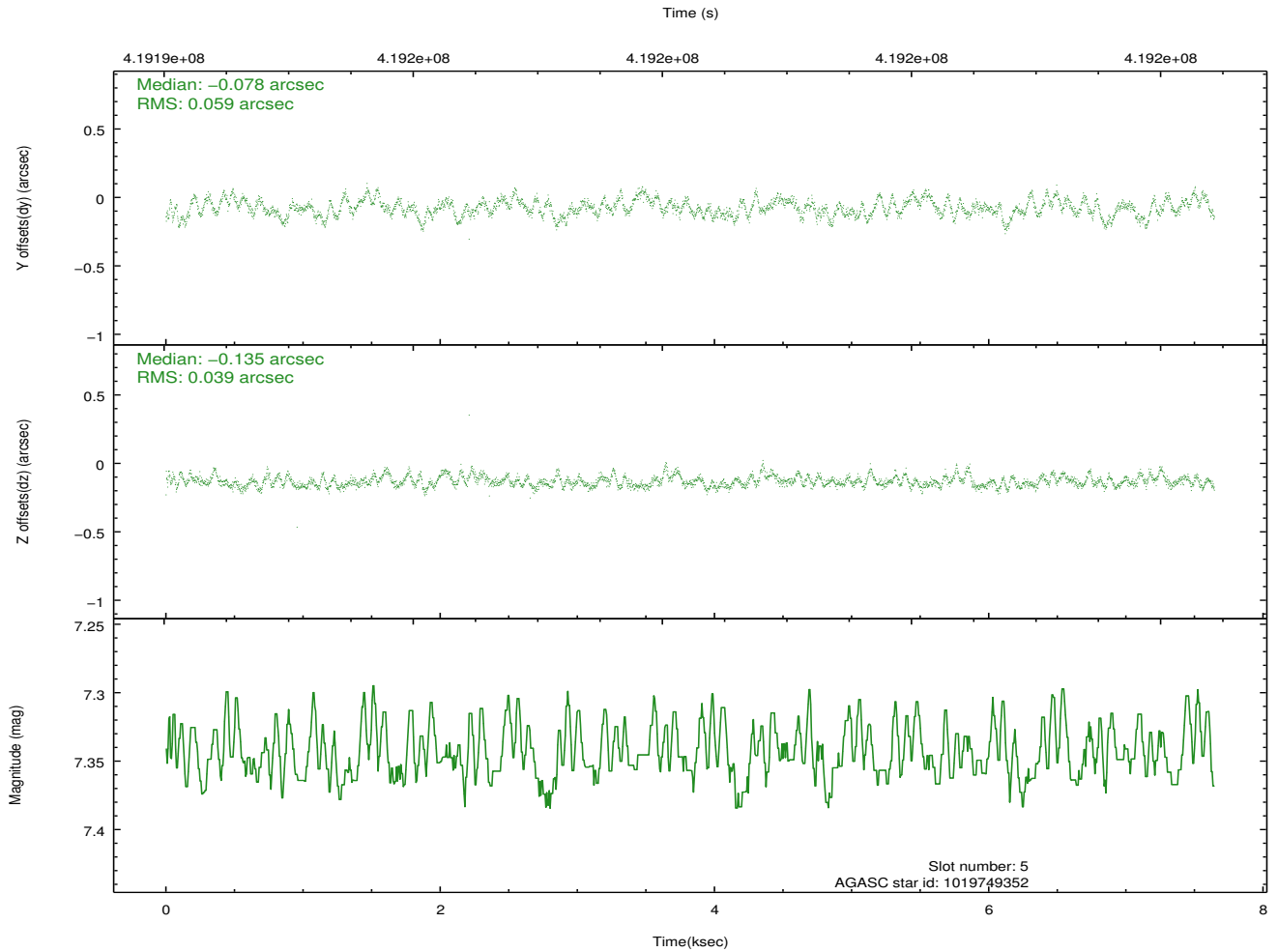
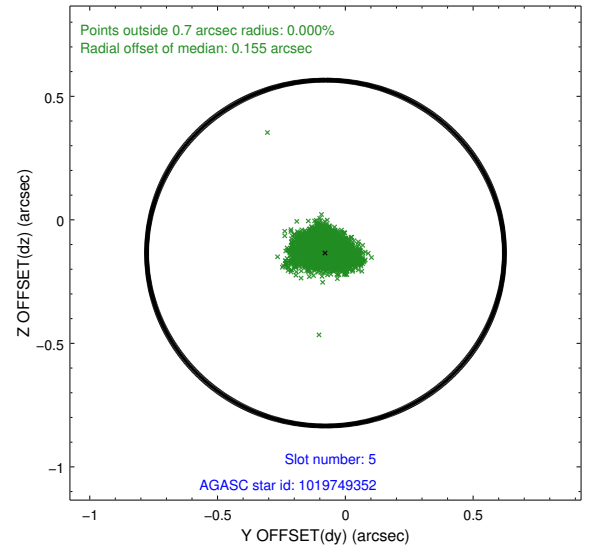
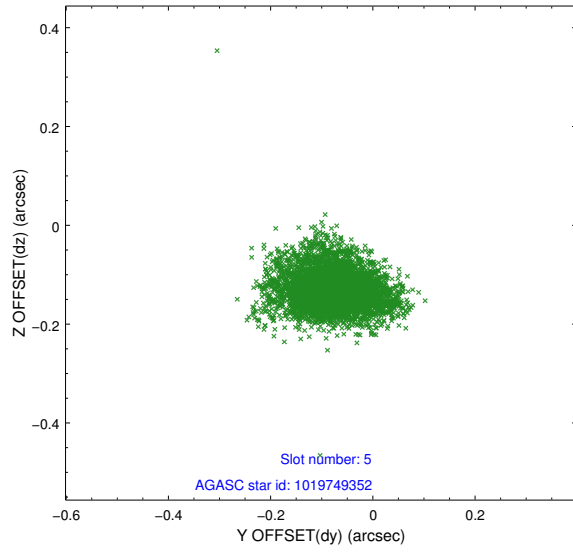
### 2.4.1 Slot 3



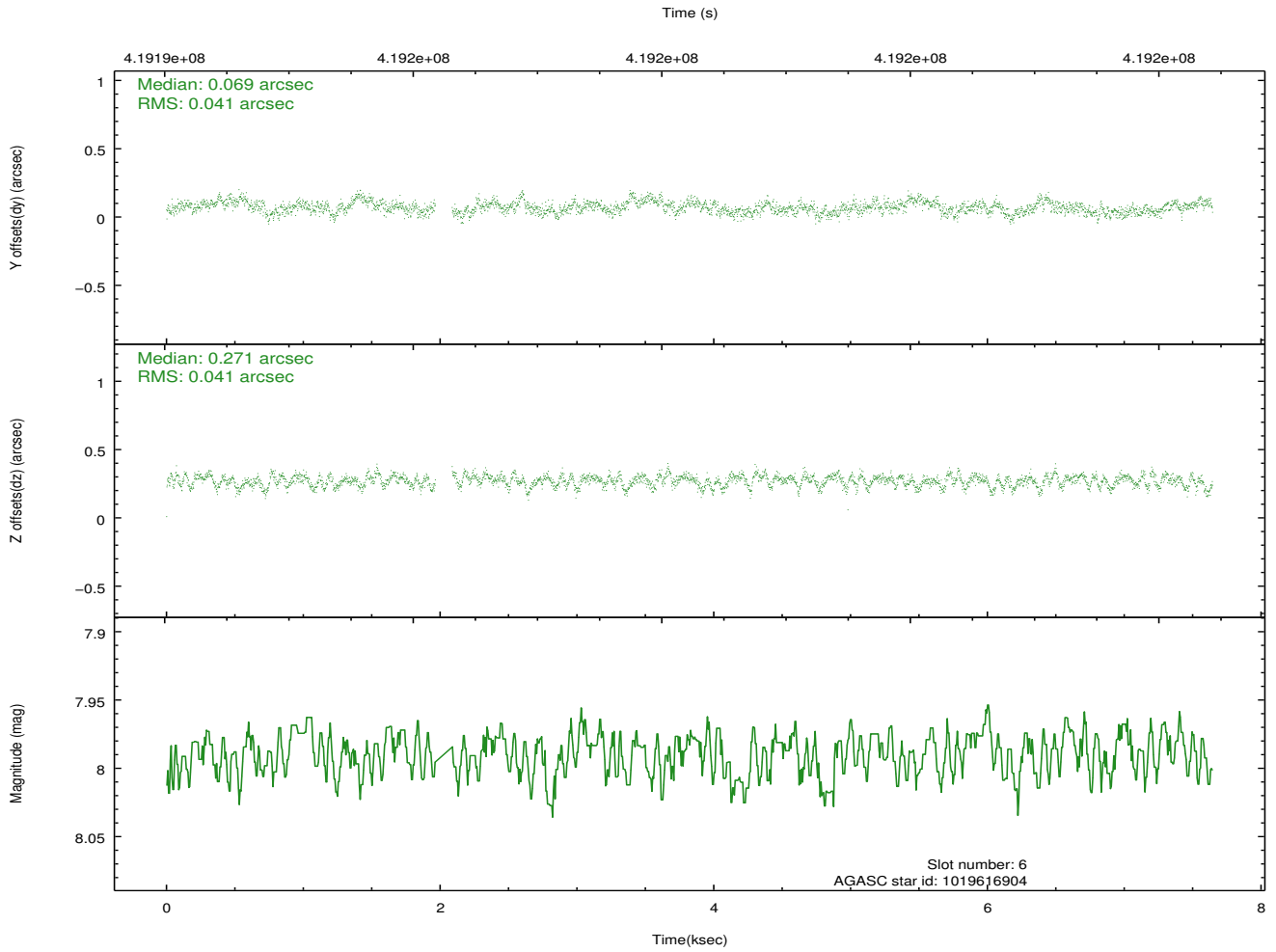
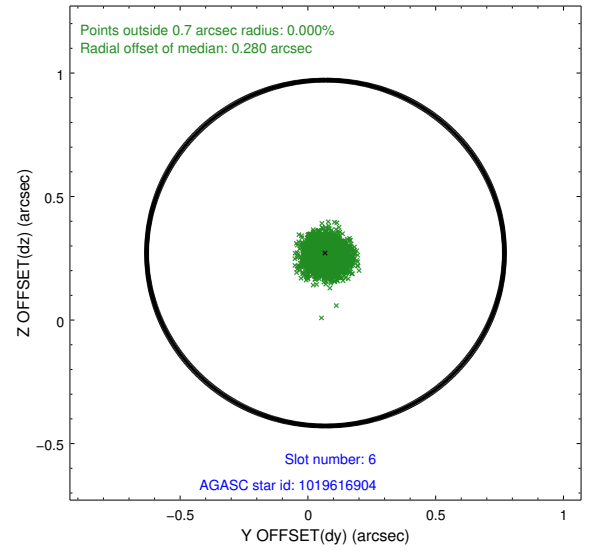
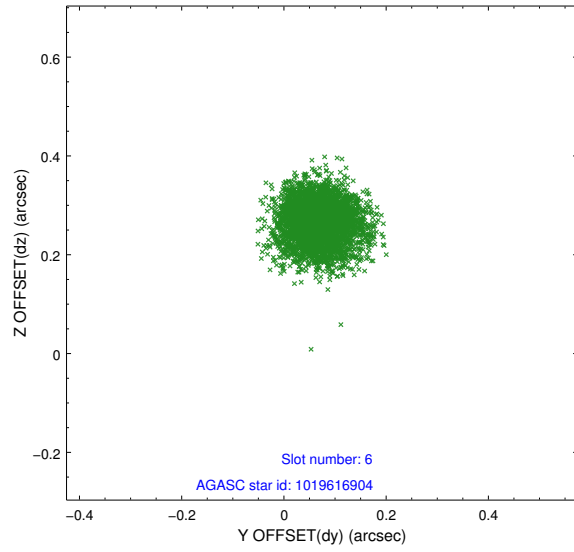
## 2.4.2 Slot 4



### 2.4.3 Slot 5

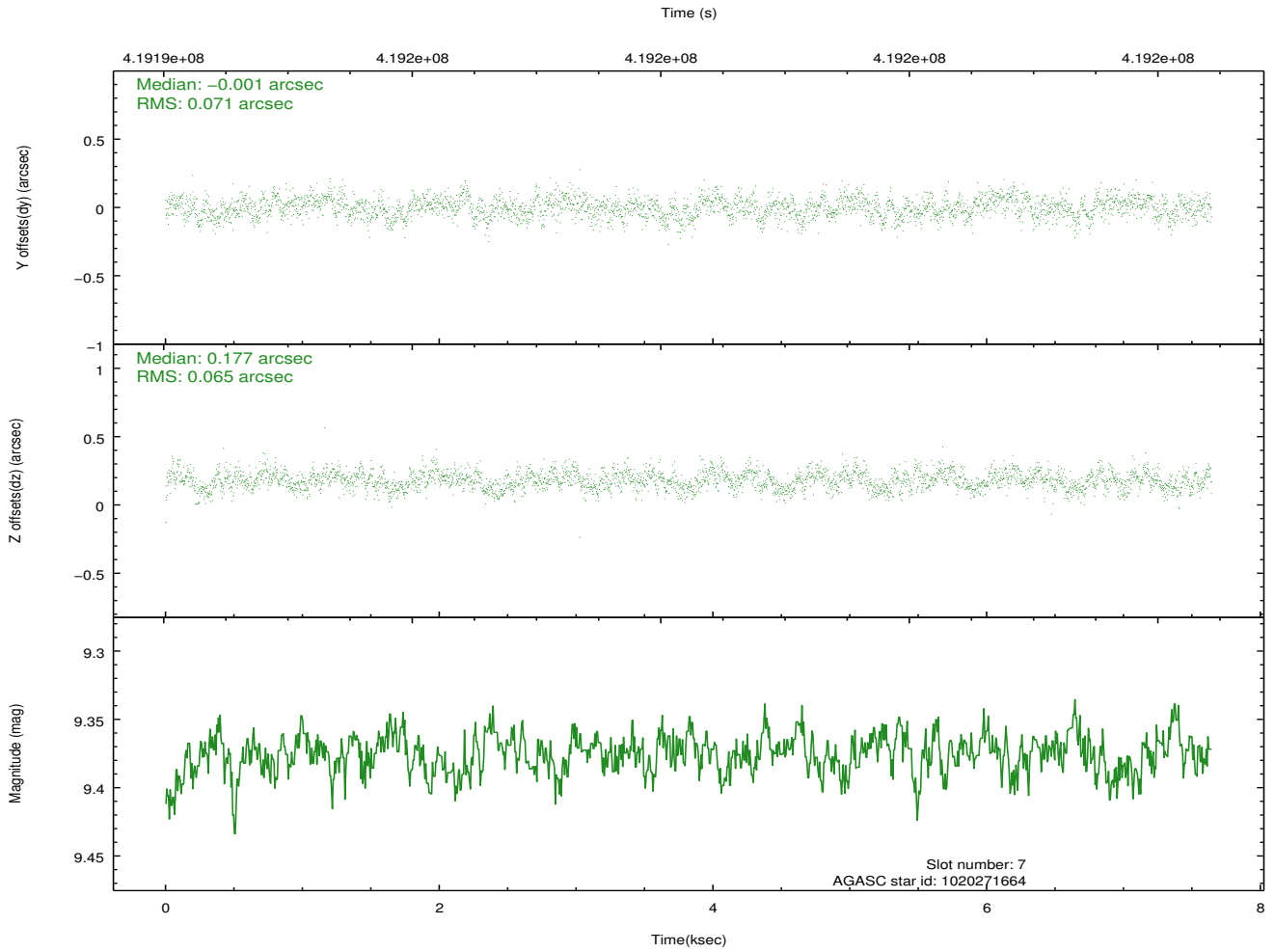
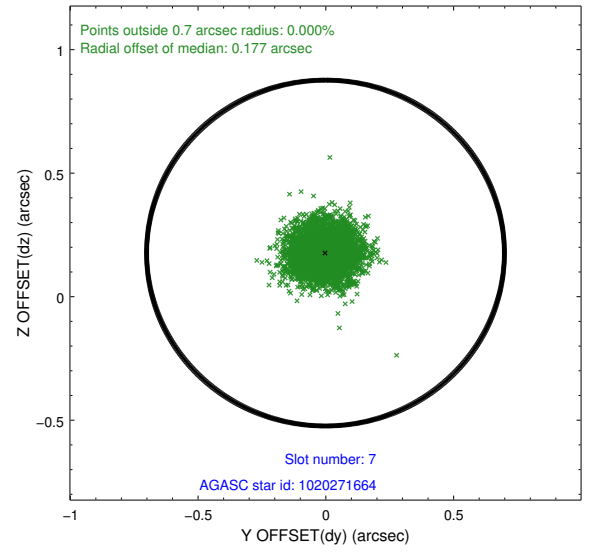
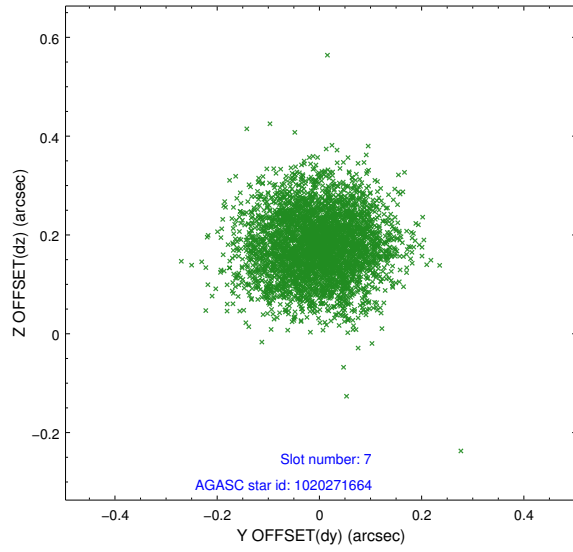


## 2.4.4 Slot 6



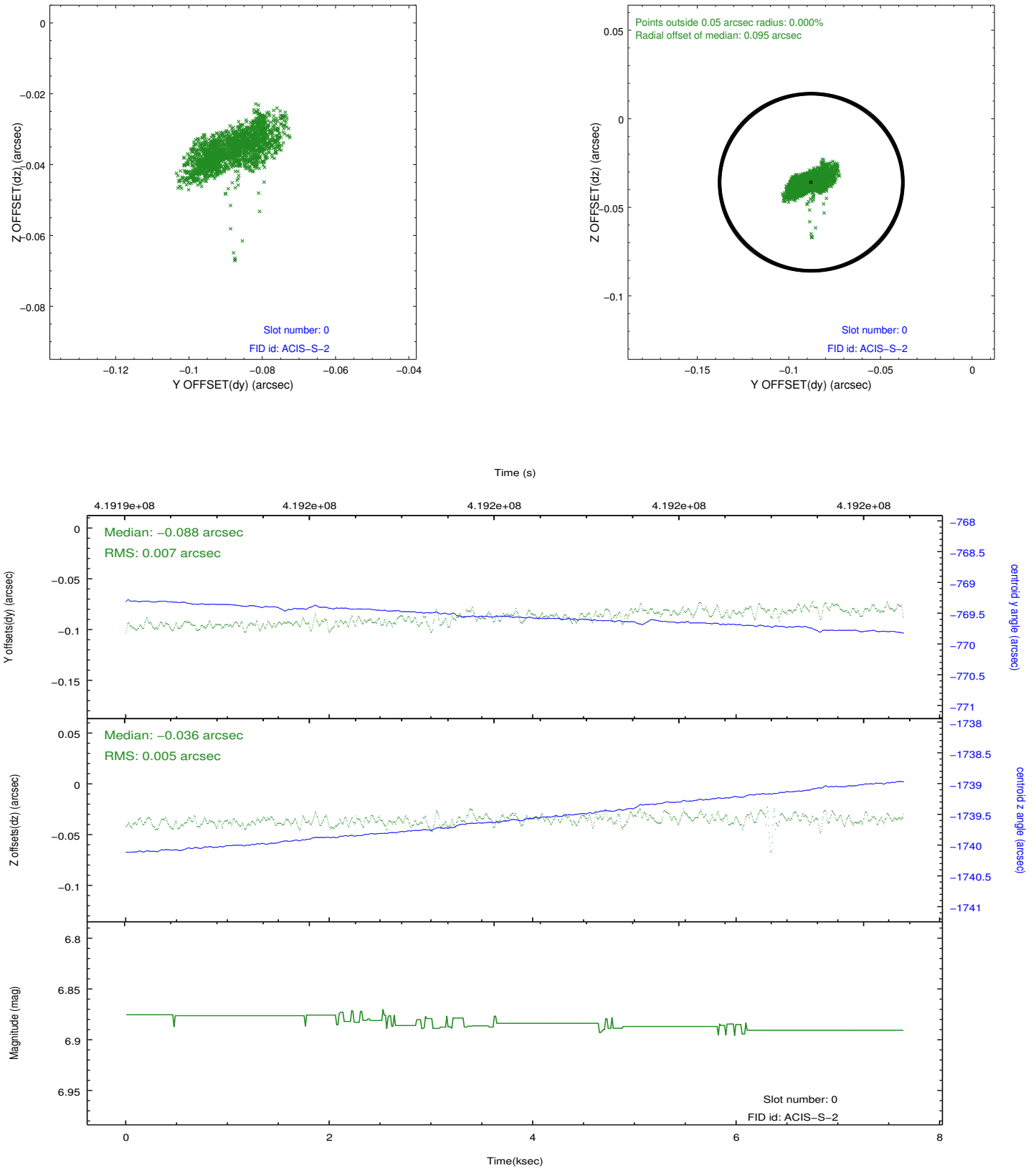


### 2.4.5 Slot 7

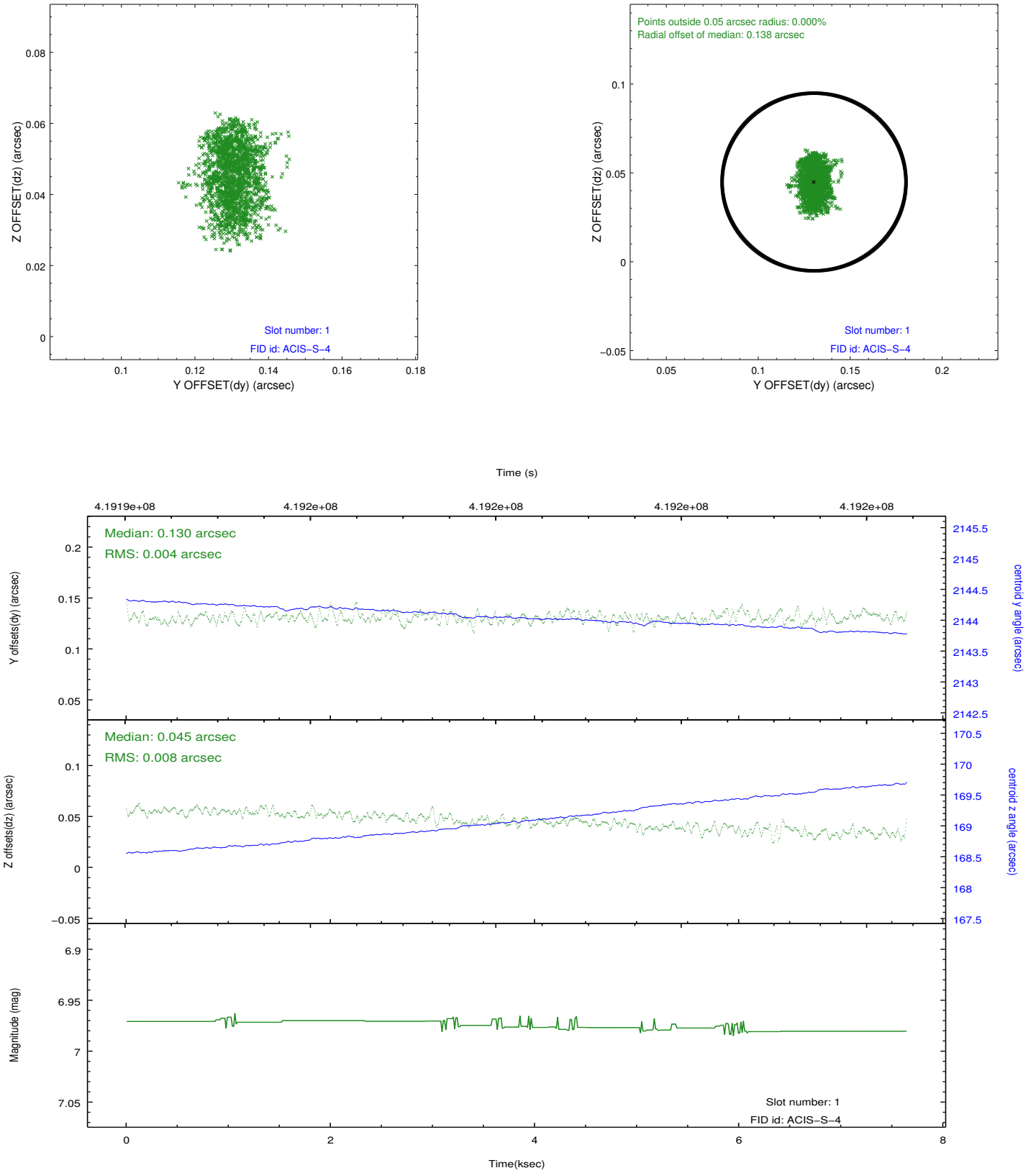


## 2.5 FID Slots

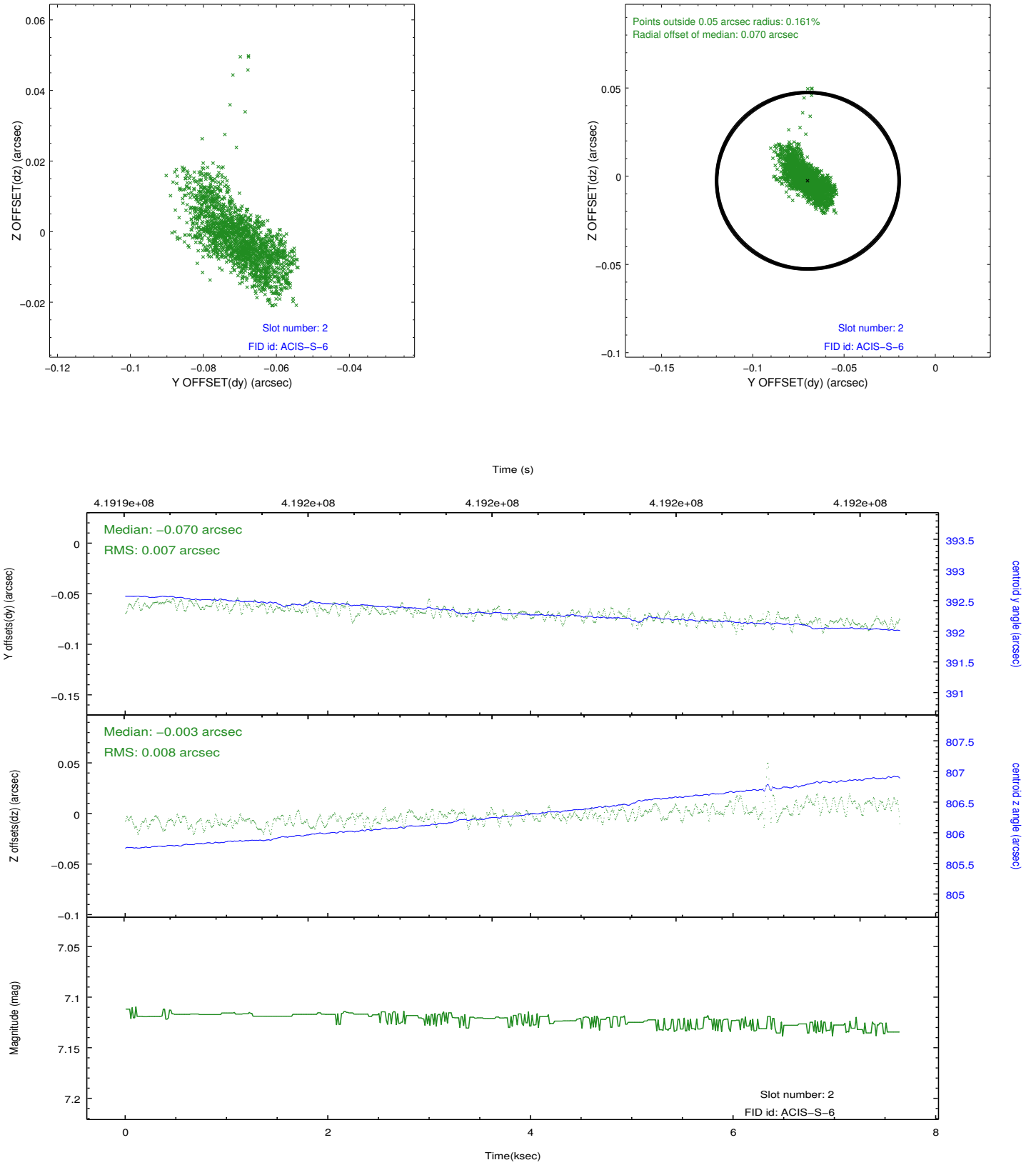
### 2.5.1 Slot 0



## 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)	2012.02.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	7.5519999719262

## A.2 Comments

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.