

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 14487 - L2 Version 2  
Chandra X-Ray Center

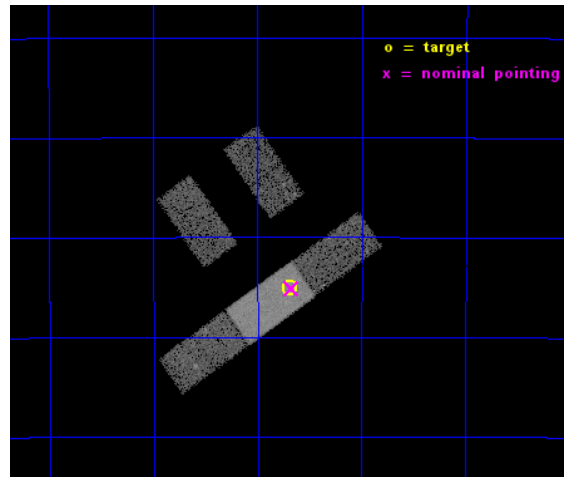
L2 Processing Date : Dec 11 2014

## 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	702724	Sequence number
obs_id	14487	Observation id
title	ENERGY DEPENDENT X-RAY MICROLENSING AND THE STRUCTURE OF QUASARS	P
observer	Prof. Christopher Kochanek	Principal investigator
object	QJ0158-4325	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	29.6725	Observer's specified target RA [deg]
dec_targ	-43.417833	Observer's specified target Dec [deg]
ra_nom	29.668662857111	Nominal RA [deg]
dec_nom	-43.418982862885	Nominal Dec [deg]
roll_nom	144.72173636397	Nominal Roll [deg]
revision	2	Processing version of data
ontime	19065.499866366	Sum of GTIs [s]
livetime	18616.085657321	Livetime [s]
ontime2	19065.499866366	Sum of GTIs [s]
ontime3	19065.499866366	Sum of GTIs [s]
ontime6	19065.499866366	Sum of GTIs [s]
ontime7	19065.499866366	Sum of GTIs [s]
ontime8	19063.758905649	Sum of GTIs [s]
l2events	49074	Number of level 2 events

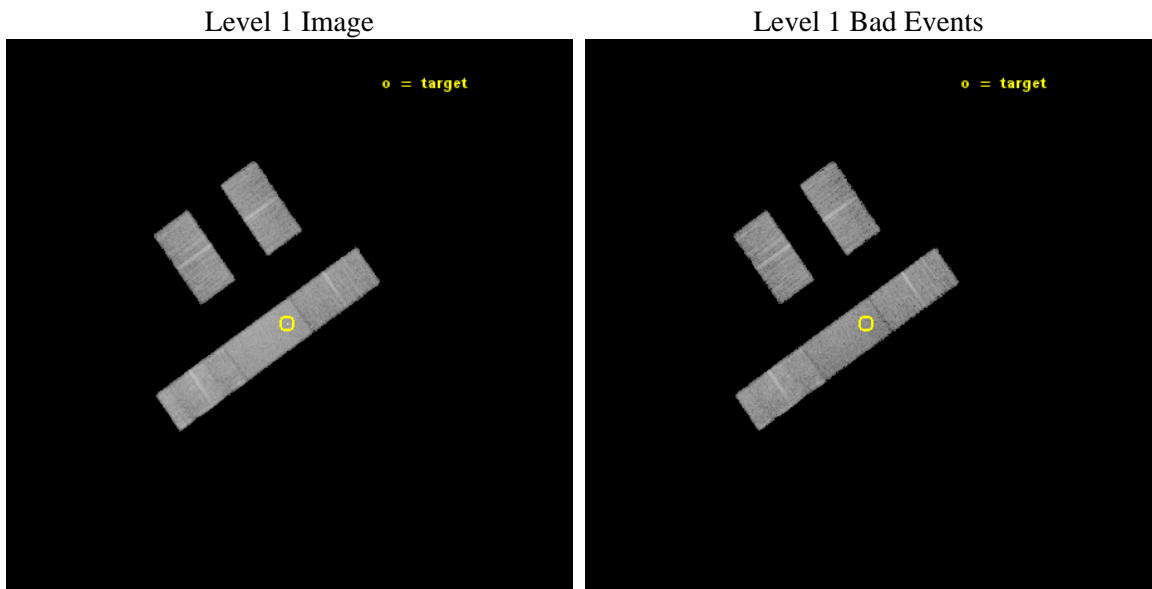




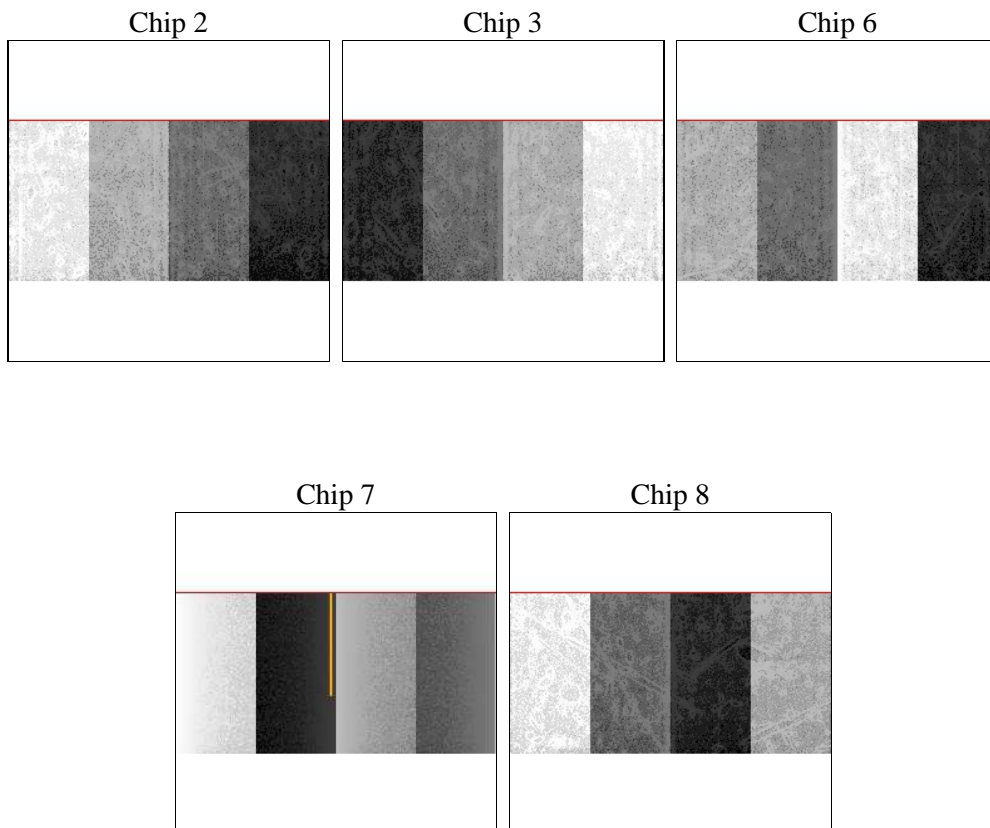
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	19000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	19065.499866366	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	19065.499866366	Sum of GTIs [s]
date	2014-12-11T21:27:20	Date and time of file creation	ontime3	19065.499866366	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	19065.499866366	Sum of GTIs [s]
			ontime7	19065.499866366	Sum of GTIs [s]
			ontime8	19063.758905649	Sum of GTIs [s]
			l1events	274808	Number of level 1 events

### 2.1.4 Events

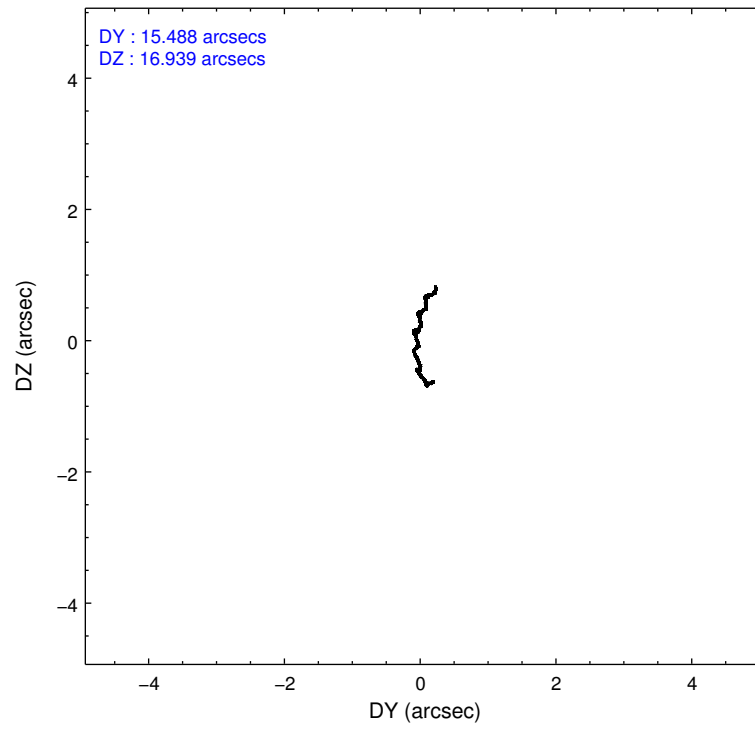
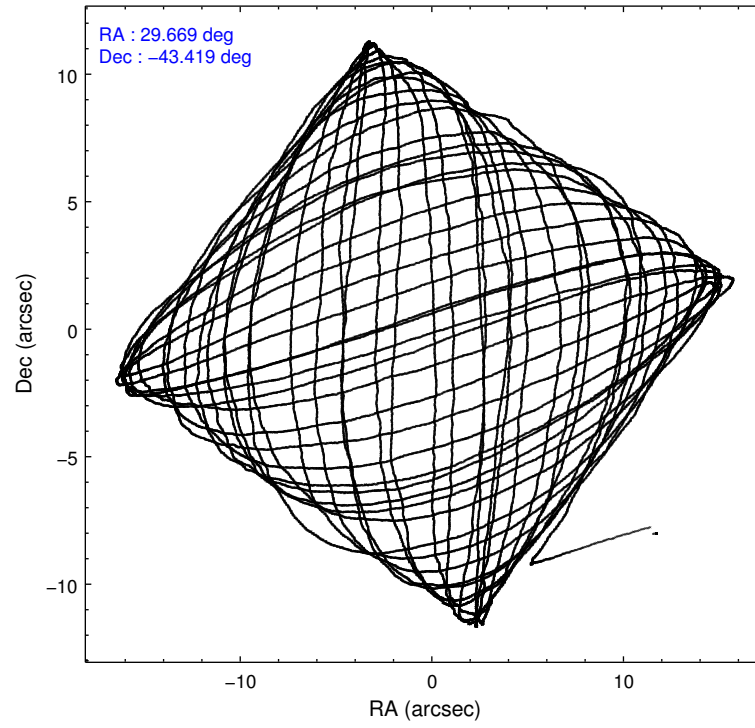
	<b>ccd 2</b>	<b>ccd 3</b>	<b>ccd 6</b>	<b>ccd 7</b>	<b>ccd 8</b>
level 1 events	47417	47394	48647	66021	65329
rejected events	41907	42165	42565	36488	49035
rejected %	88%	88%	87%	55%	75%

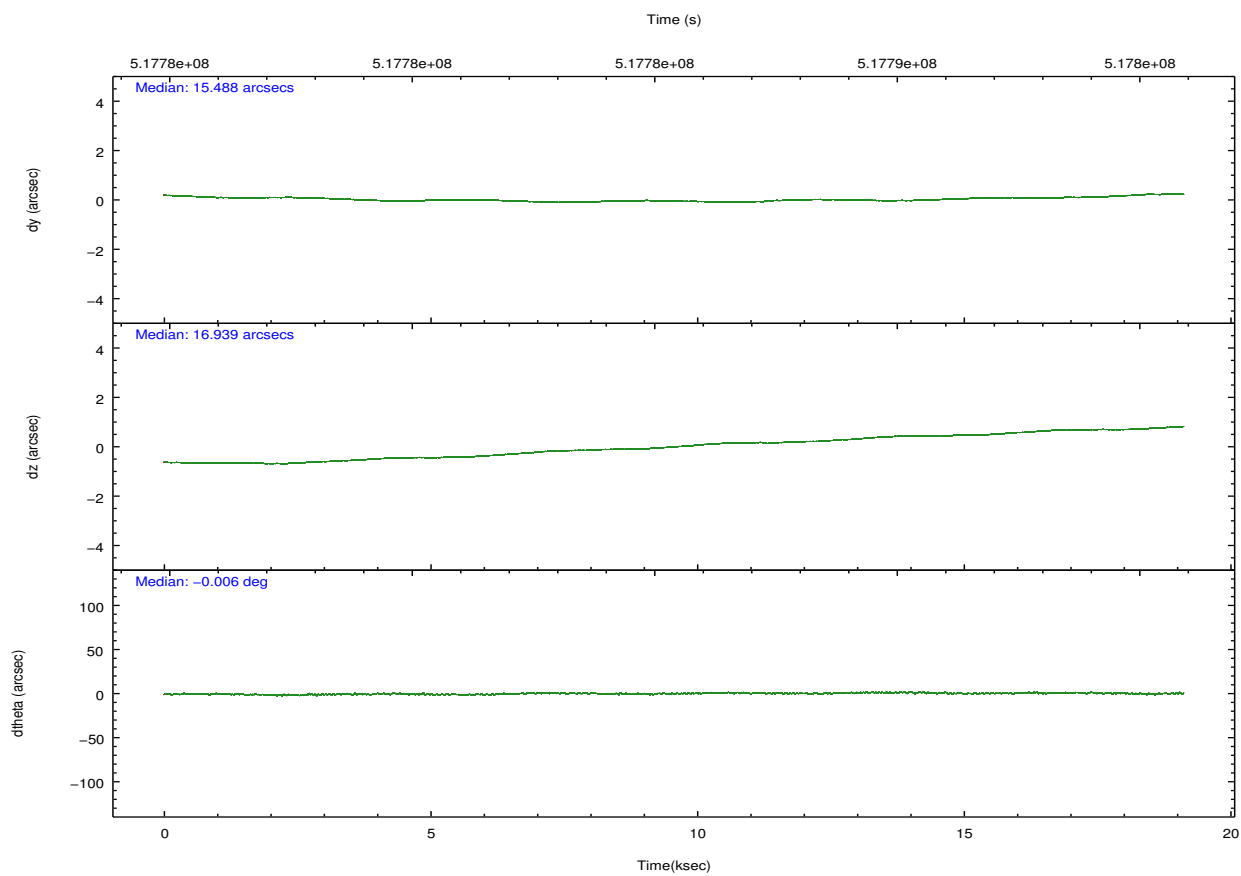
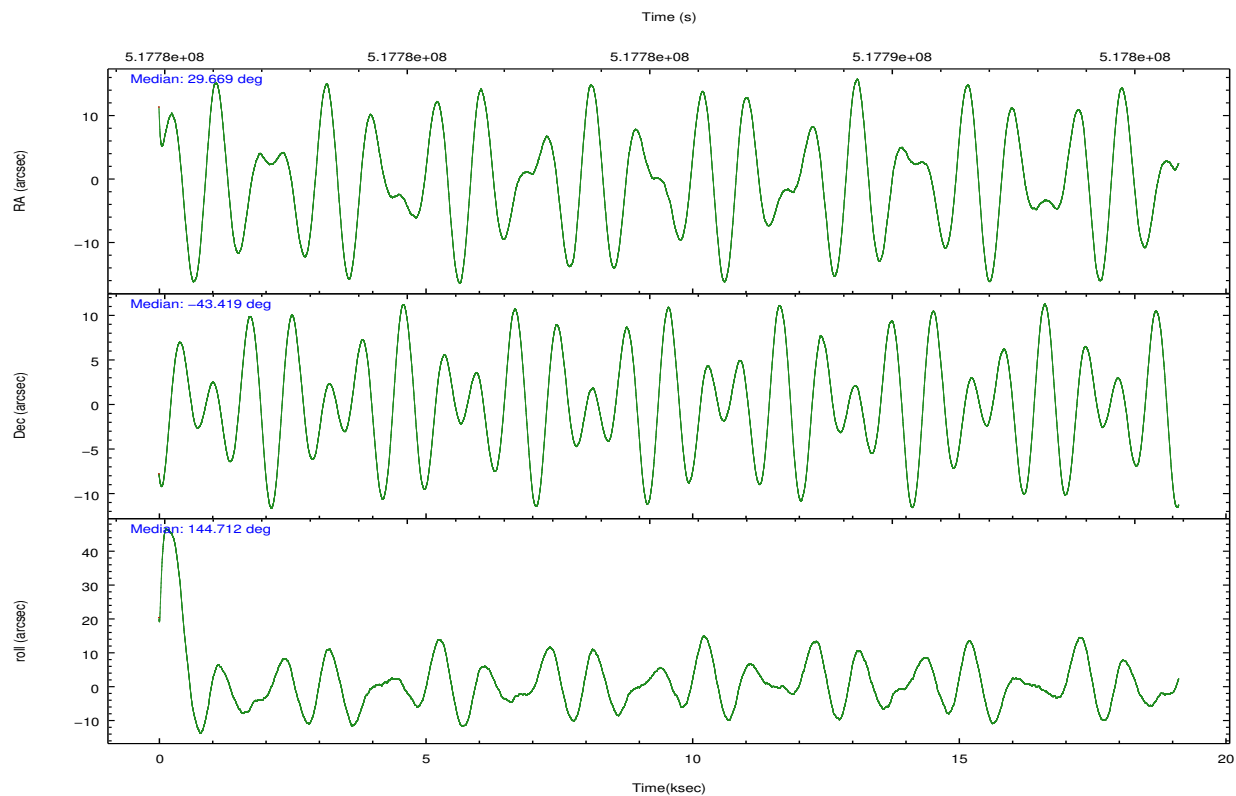
	<b>ccd 2</b>	<b>ccd 3</b>	<b>ccd 6</b>	<b>ccd 7</b>	<b>ccd 8</b>
grade 0 events	1826	1596	2034	2986	4781
	3%	3%	4%	4%	7%
grade 1 events	13	17	17	69	33
	0%	0%	0%	0%	0%
grade 2 events	1285	1167	1294	6078	3793
	2%	2%	2%	9%	5%
grade 3 events	673	660	725	2826	1768
	1%	1%	1%	4%	2%
grade 4 events	673	677	693	2843	1694
	1%	1%	1%	4%	2%
grade 5 events	1986	2422	2424	6741	3565
	4%	5%	4%	10%	5%
grade 6 events	1054	1129	1337	14802	4261
	2%	2%	2%	22%	6%
grade 7 events	39907	39726	40123	29676	45434
	84%	83%	82%	44%	69%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	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	29.706174	29.66866285711103	CCD I2 on	O4	Y
[deg] Pointing Dec	-43.421121	-43.41898286288476	CCD I3 on	O3	Y
[deg] Pointing Roll	144.590917	144.7217363639736	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O1	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	O2	Y
[s] Observation start time (MET)	517775954.184000	517774710.5772	CCD S5 on	N	N
Observation start date	2014-05-29T18:38:07	2014-05-29T18:18:30	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	517794954.184000	517795556.51585	On-chip summing requested	N	N
Observation end date	2014-05-29T23:54:47	2014-05-30T00:05:56	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	257	257
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

## 2.3 Aspect



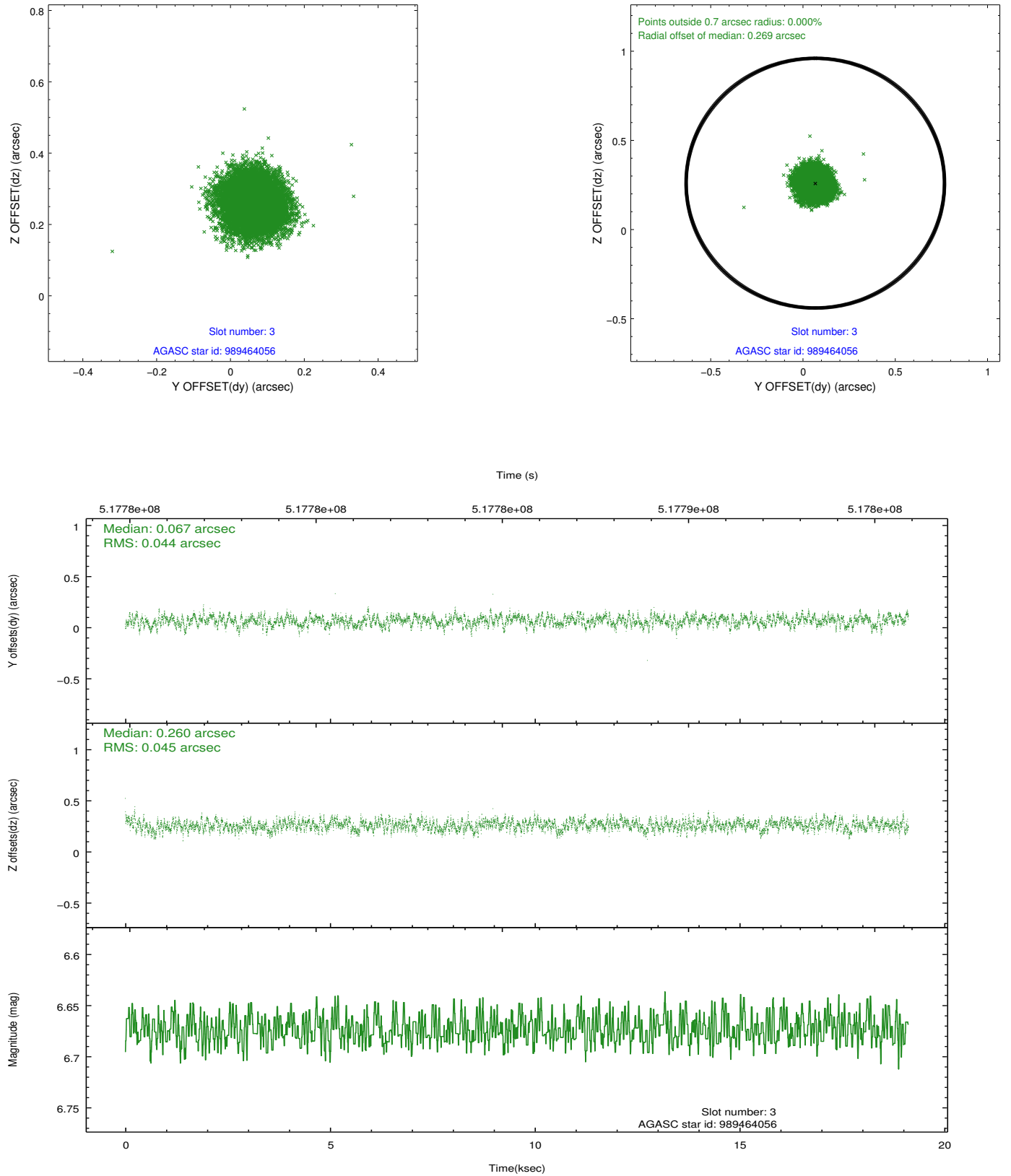


### Slot Statistics

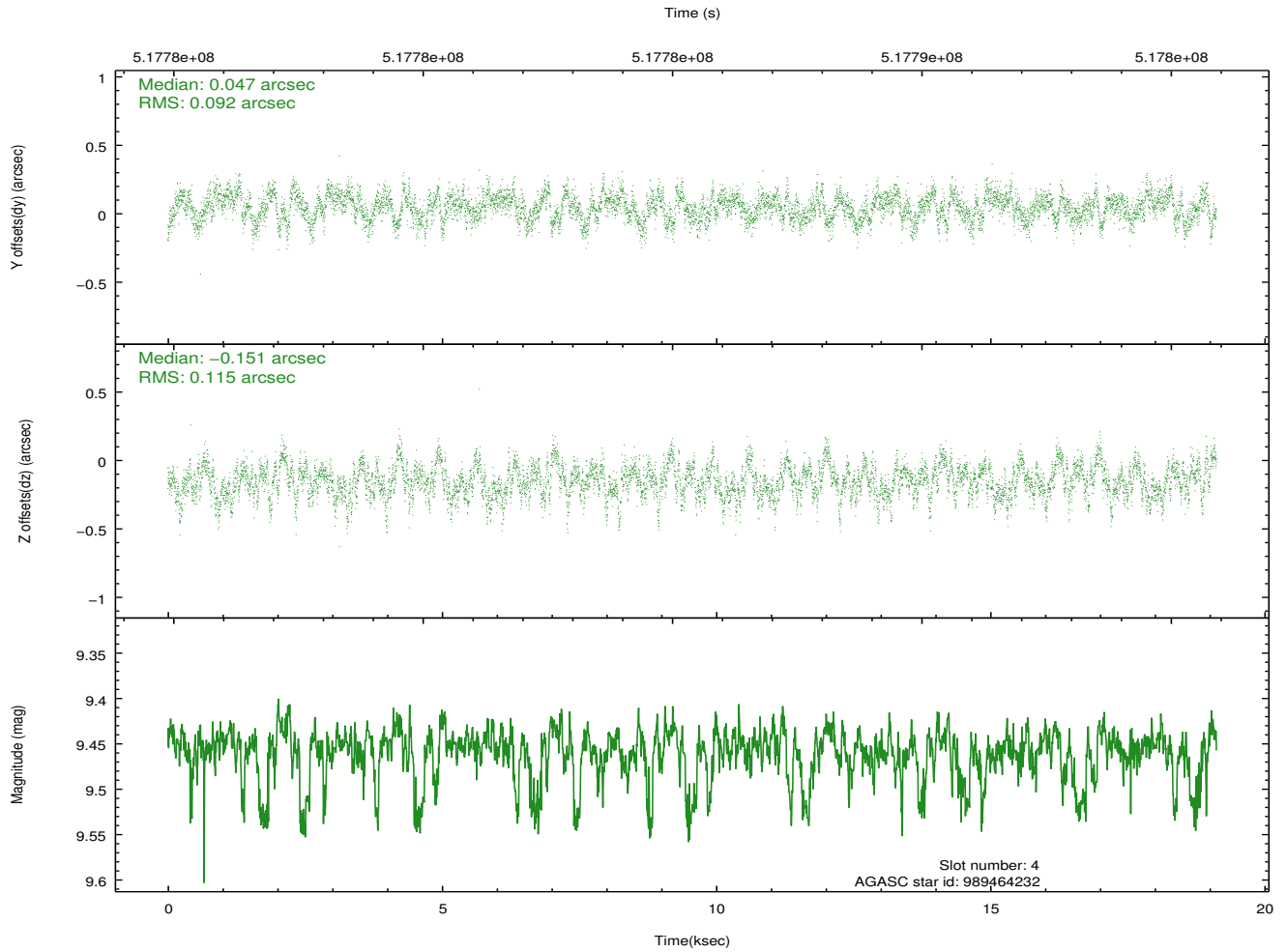
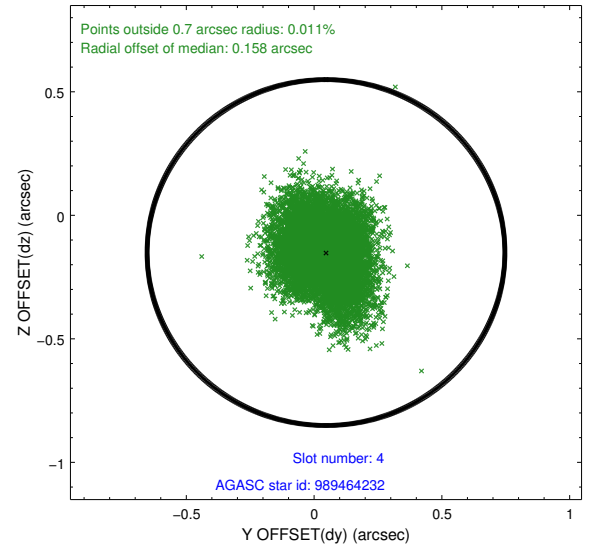
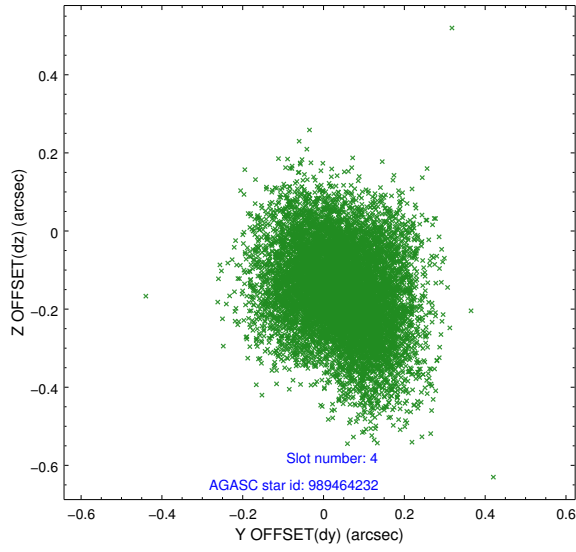
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.10	4665	0.093	-0.075	0.026	0.036	0.000000	0.000000	927.64	-1734.07
1	FID		ACIS-S-5	7.14	4663	-0.154	0.058	0.009	0.014	0.000000	0.000000	-1821.50	163.40
2	FID		ACIS-S-6	7.24	4665	0.039	0.029	0.033	0.045	0.000000	0.000000	392.91	807.56
3	GUIDE	used	989464056	6.67	9329	0.067	0.260	0.067	0.107	29.735893	-42.949136	921.17	-1429.45
4	GUIDE	used	989464232	9.46	9302	0.047	-0.151	0.157	0.257	29.286358	-43.452579	827.90	731.23
5	GUIDE	used	989467528	8.18	9329	-0.027	-0.127	0.077	0.121	29.209436	-43.178151	1567.05	46.10
6	GUIDE	used	989470432	9.27	9325	-0.056	0.021	0.118	0.185	29.550844	-43.446971	276.96	311.70
7	GUIDE	used	989464976	9.21	9322	-0.025	-0.002	0.118	0.203	28.960994	-43.047006	2373.50	45.92

## 2.4 Star Slots

### 2.4.1 Slot 3

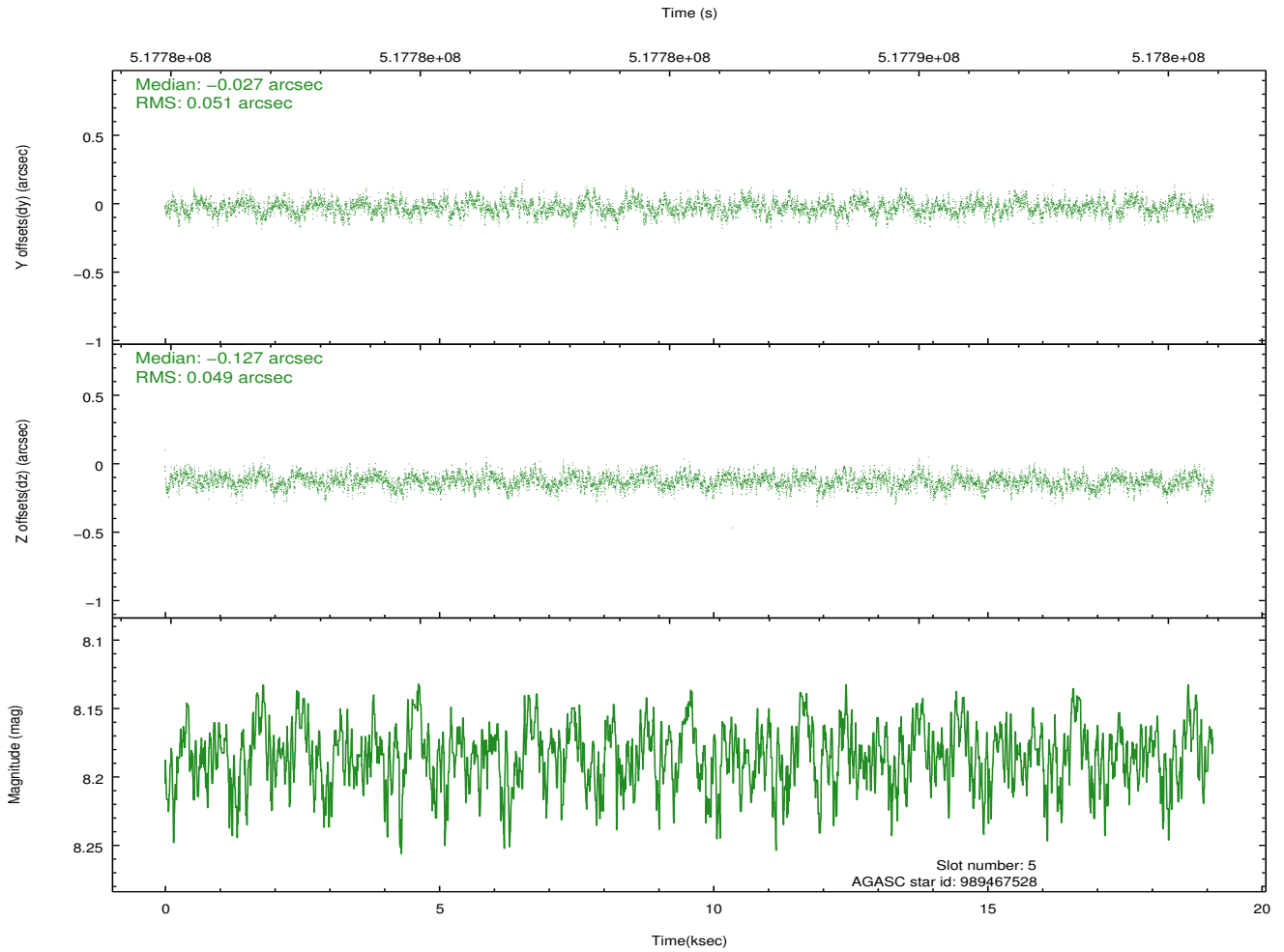
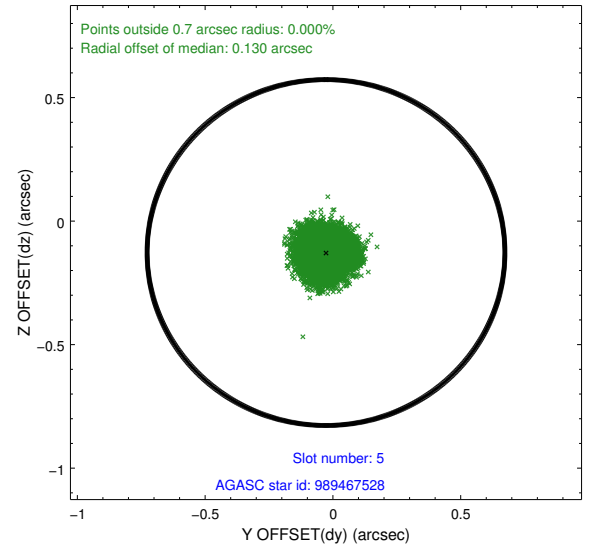
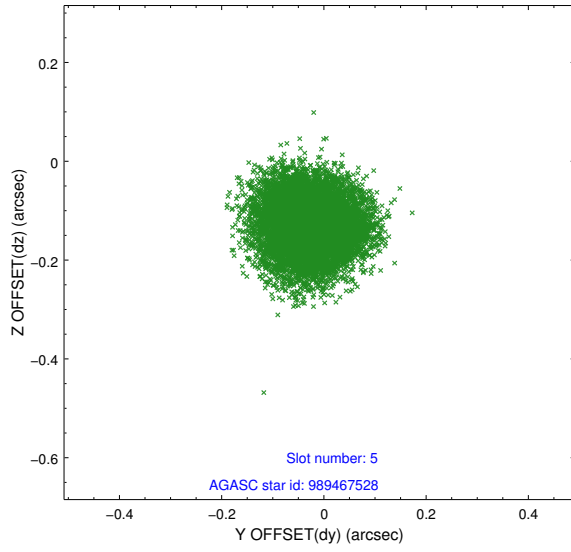


## 2.4.2 Slot 4

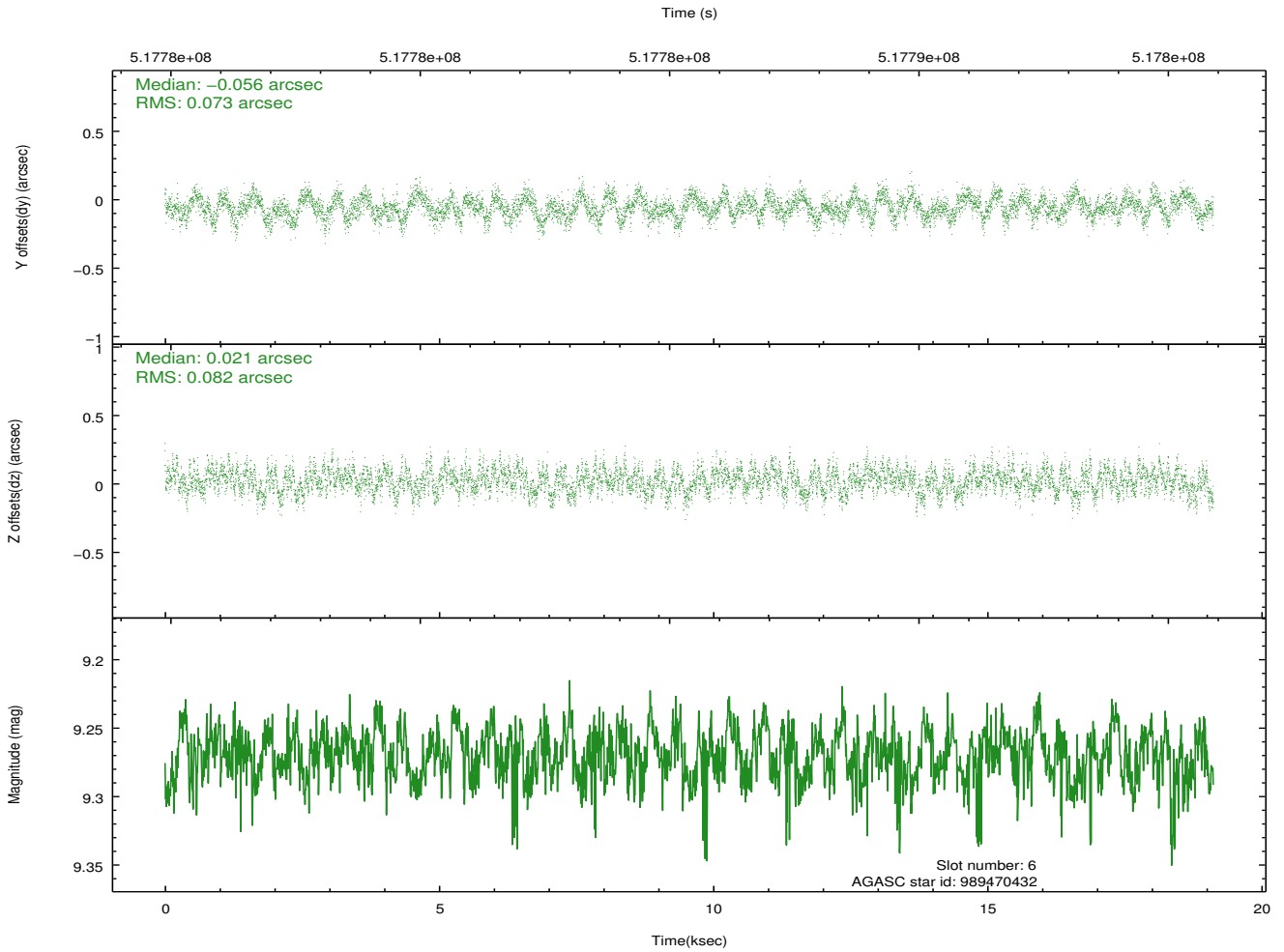
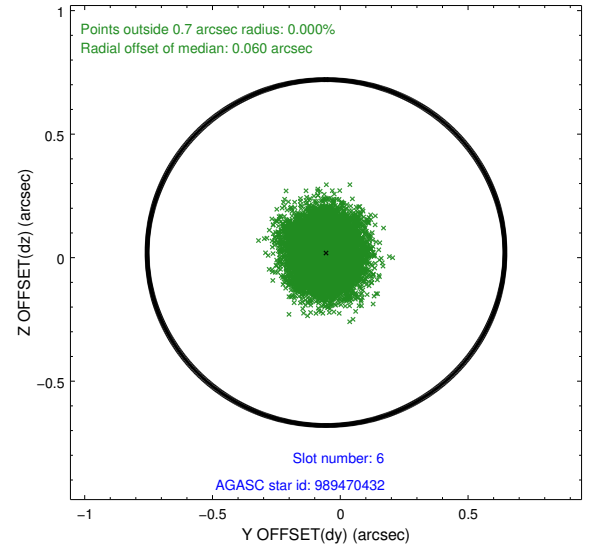
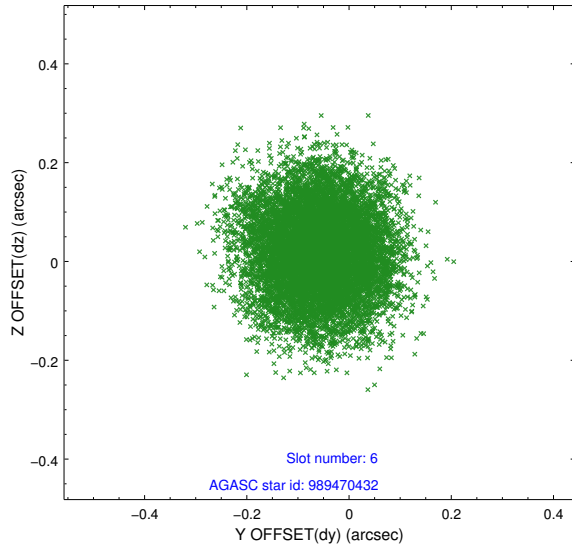




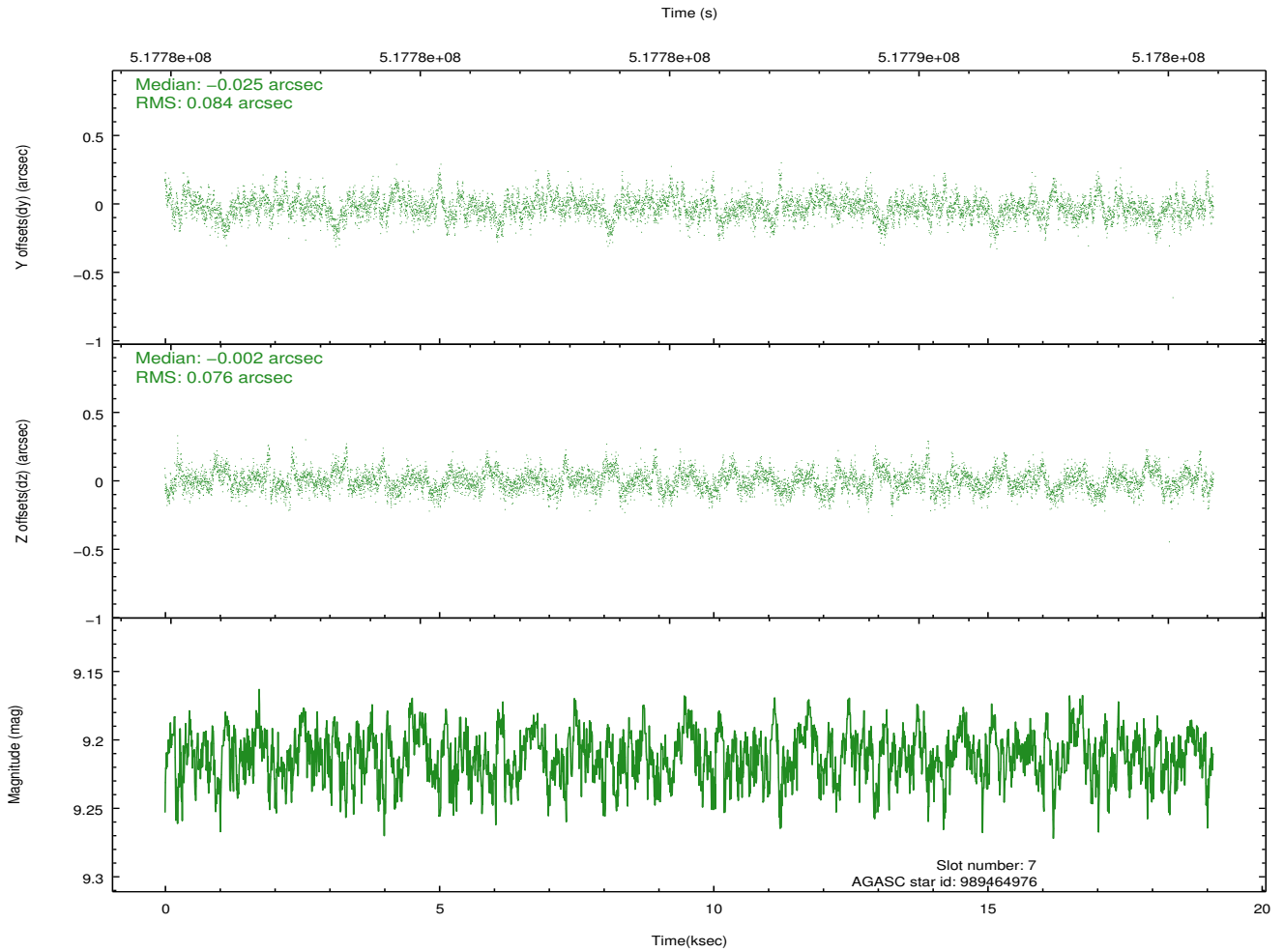
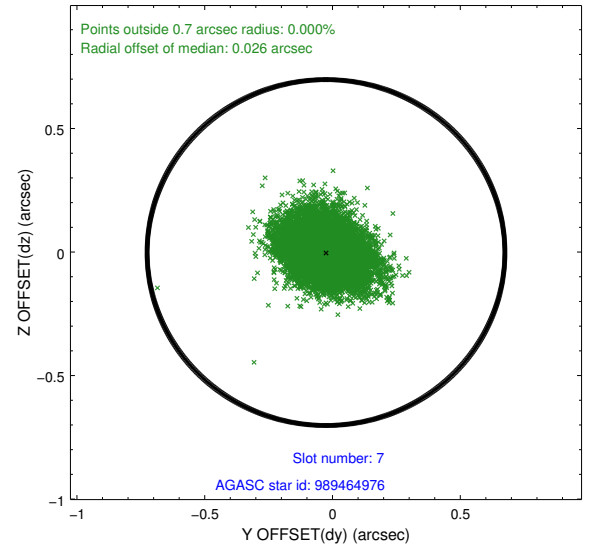
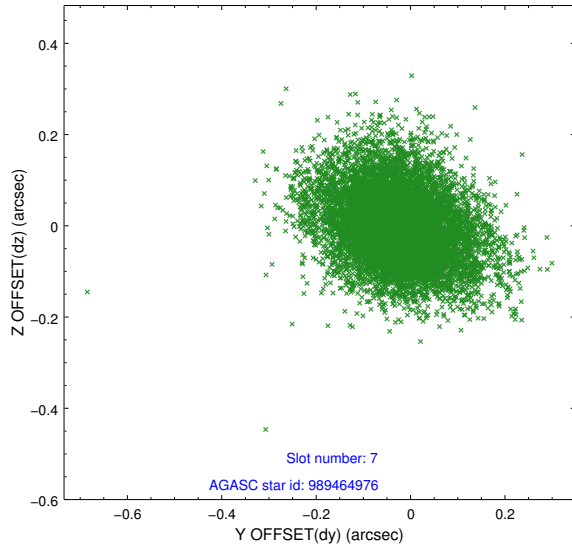
### 2.4.3 Slot 5



## 2.4.4 Slot 6

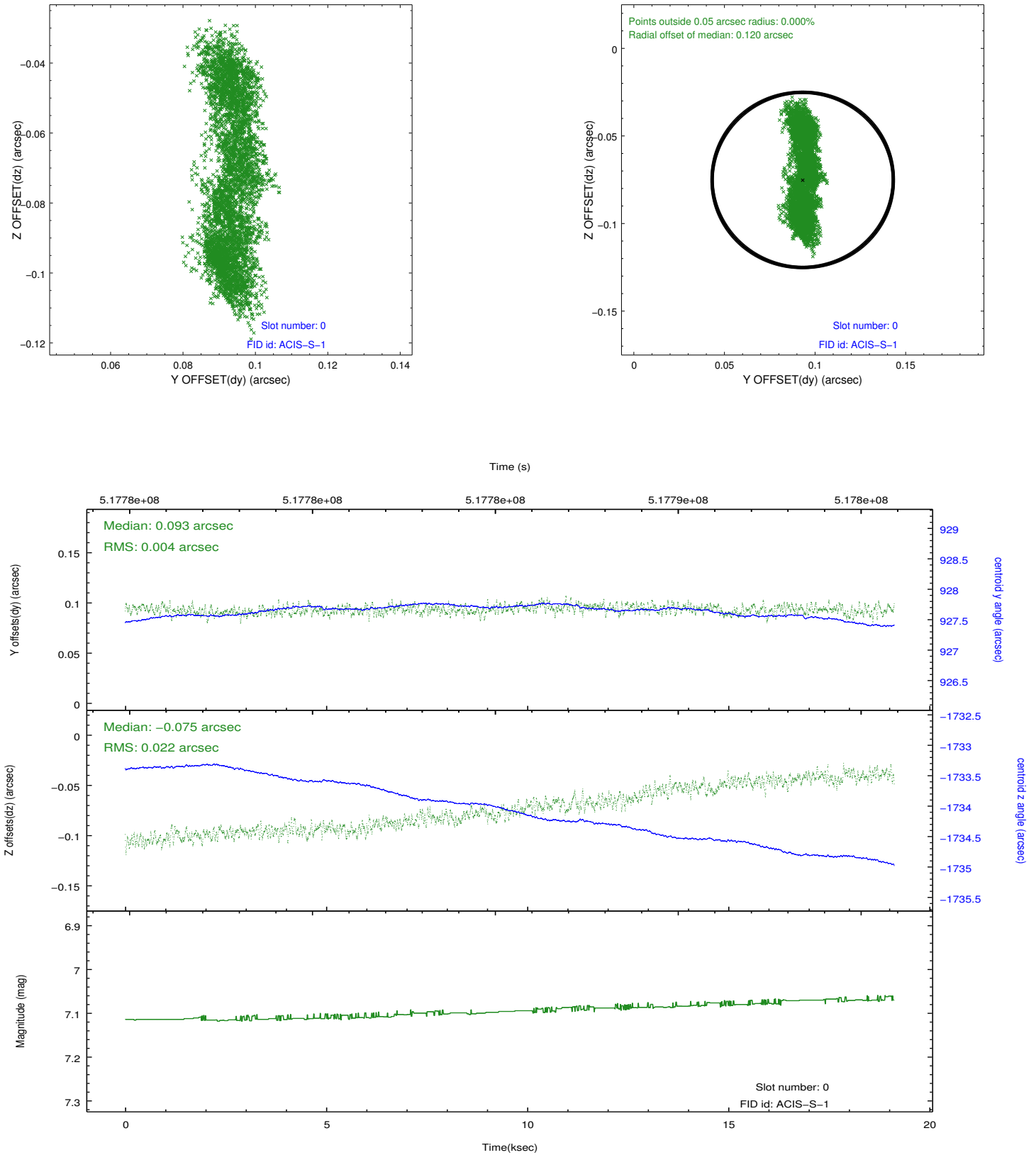


## 2.4.5 Slot 7

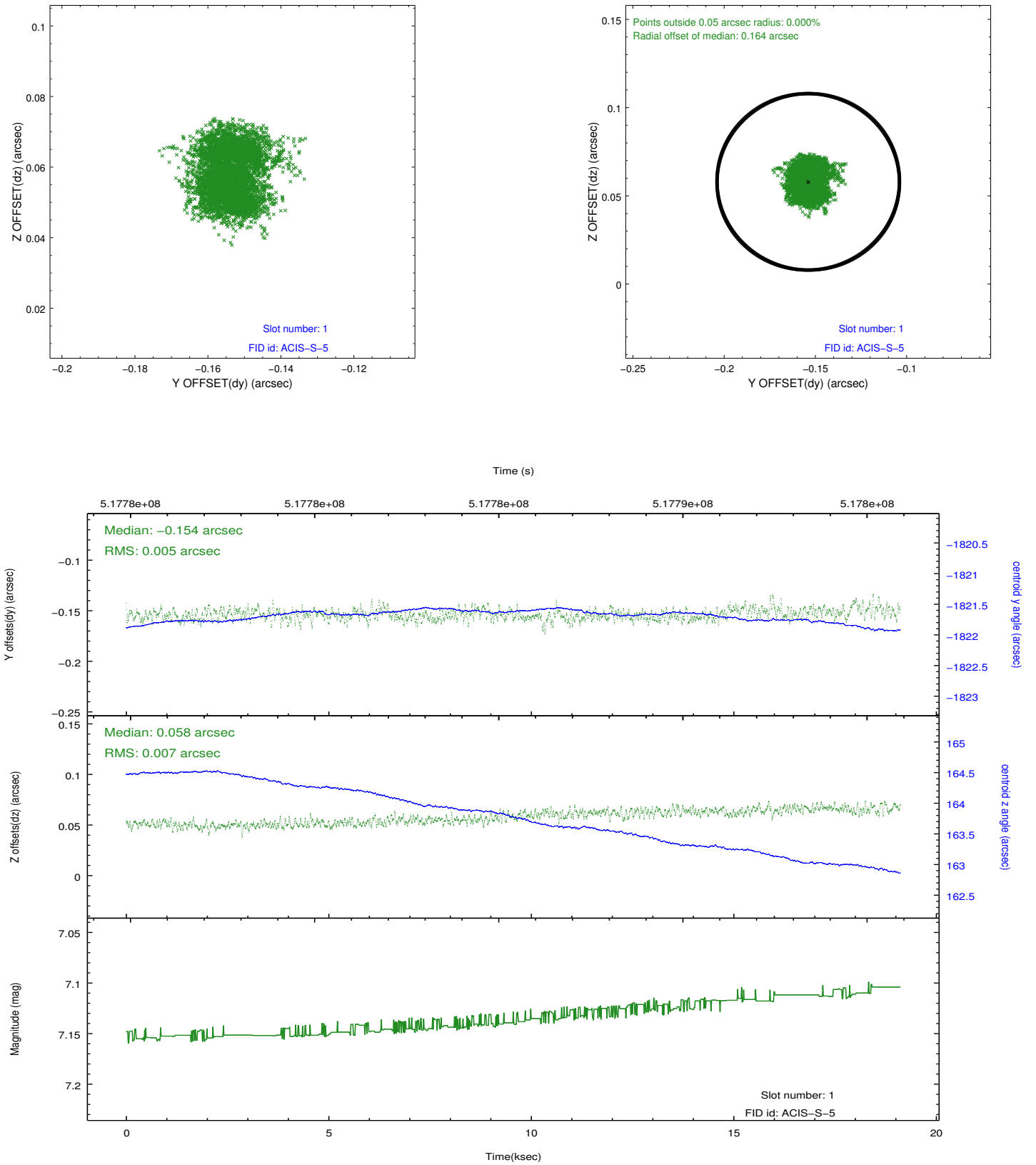


## 2.5 FID Slots

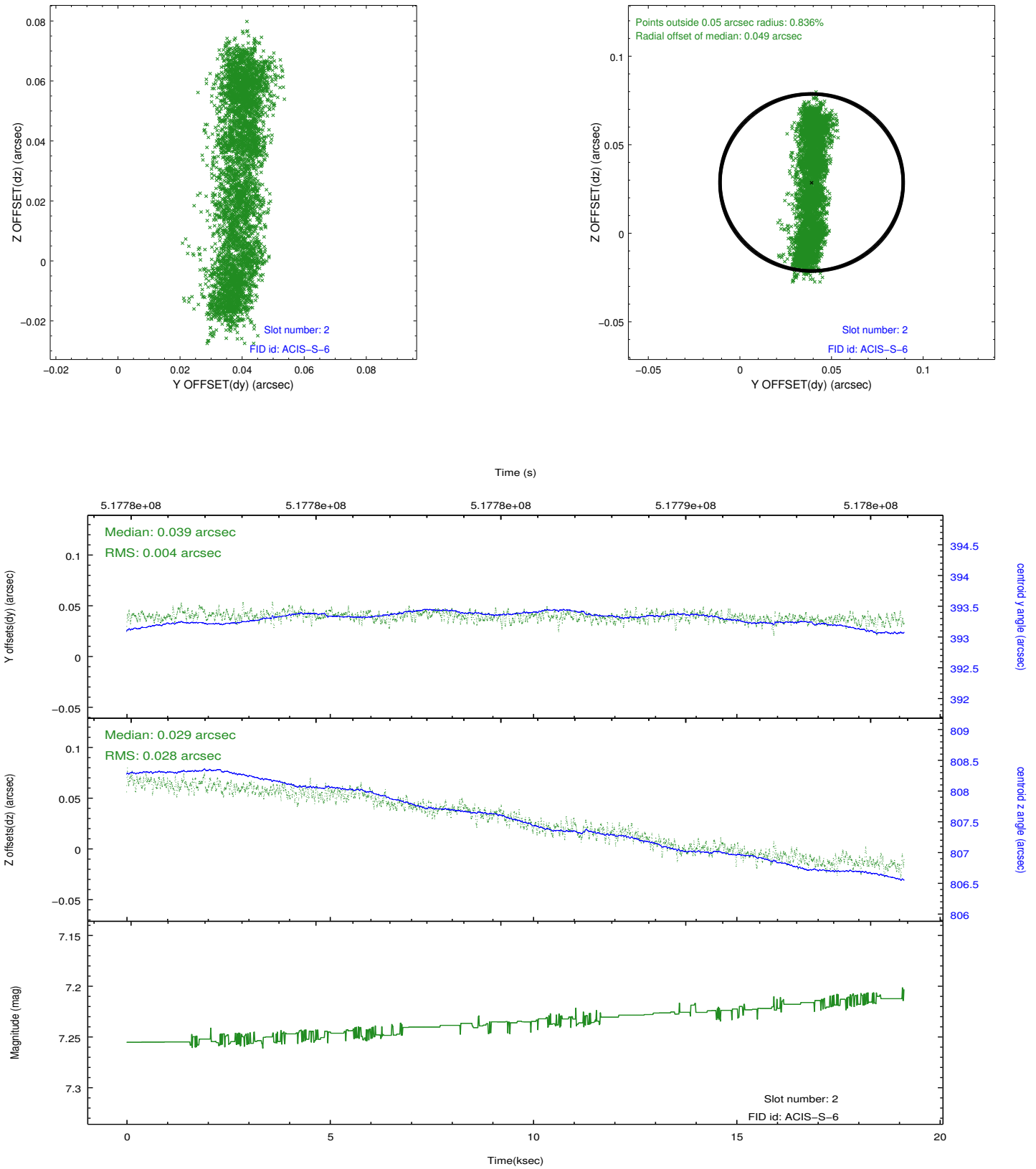
### 2.5.1 Slot 0



## 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)	2014.12.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.065499866366

## A.2 Comments

Joint proposal with HST.

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.