

# V&V Reference Report

## L2 ASCDS Version : 10.7.1

Observation 21984 - L2 Version 1  
Chandra X-Ray Center

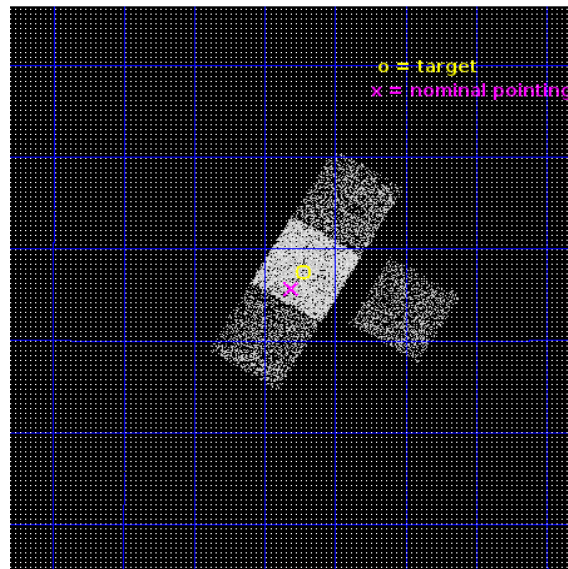
L2 Processing Date : Dec 13 2018

## 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

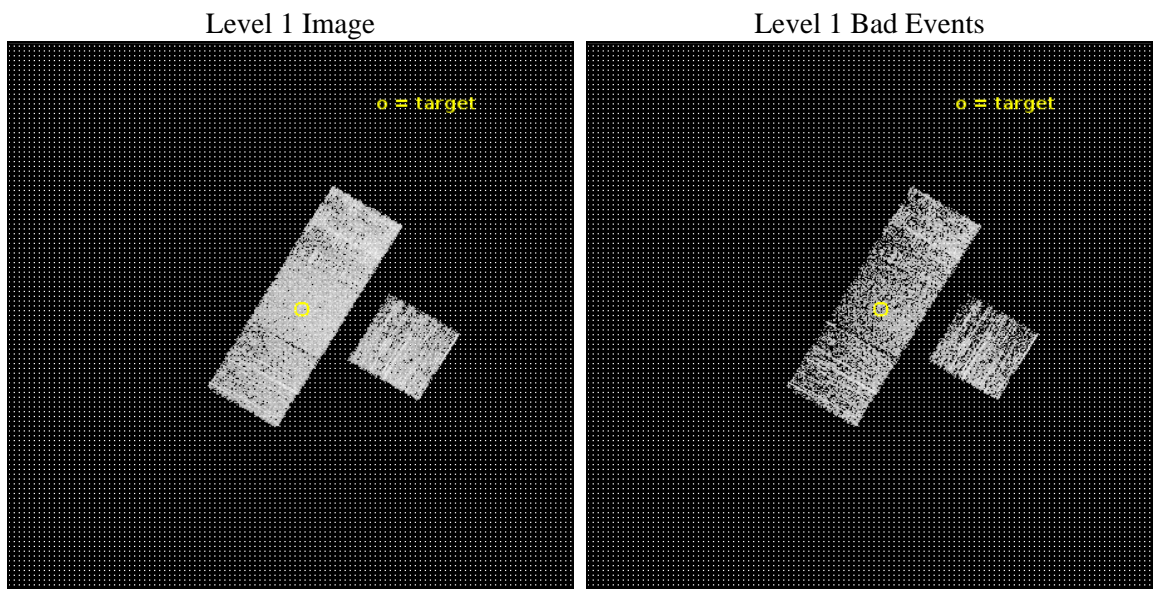
seq_num	100169	Sequence number
obs_id	21984	Observation id
title	Close encounter with comet 46P/Wirtanen: X-ray tomography of the coma	Proposal title
observer	Dennis Bodewits	Principal investigator
object	46P/Wirtanen	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	54.181233	Observer's specified target RA [deg]
dec_targ	10.289474	Observer's specified target Dec [deg]
ra_nom	54.202616195819	Nominal RA [deg]
dec_nom	10.260966725865	Nominal Dec [deg]
roll_nom	300.85854907737	Nominal Roll [deg]
revision	1	Processing version of data
ontime	2185.5000169277	Sum of GTIs [s]
livetime	2156.9448502649	Livetime [s]
ontime3	2185.5000169277	Sum of GTIs [s]
ontime6	2185.5000169277	Sum of GTIs [s]
ontime7	2185.5000169277	Sum of GTIs [s]
ontime8	2185.5000169277	Sum of GTIs [s]
l2events	13648	Number of level 2 events



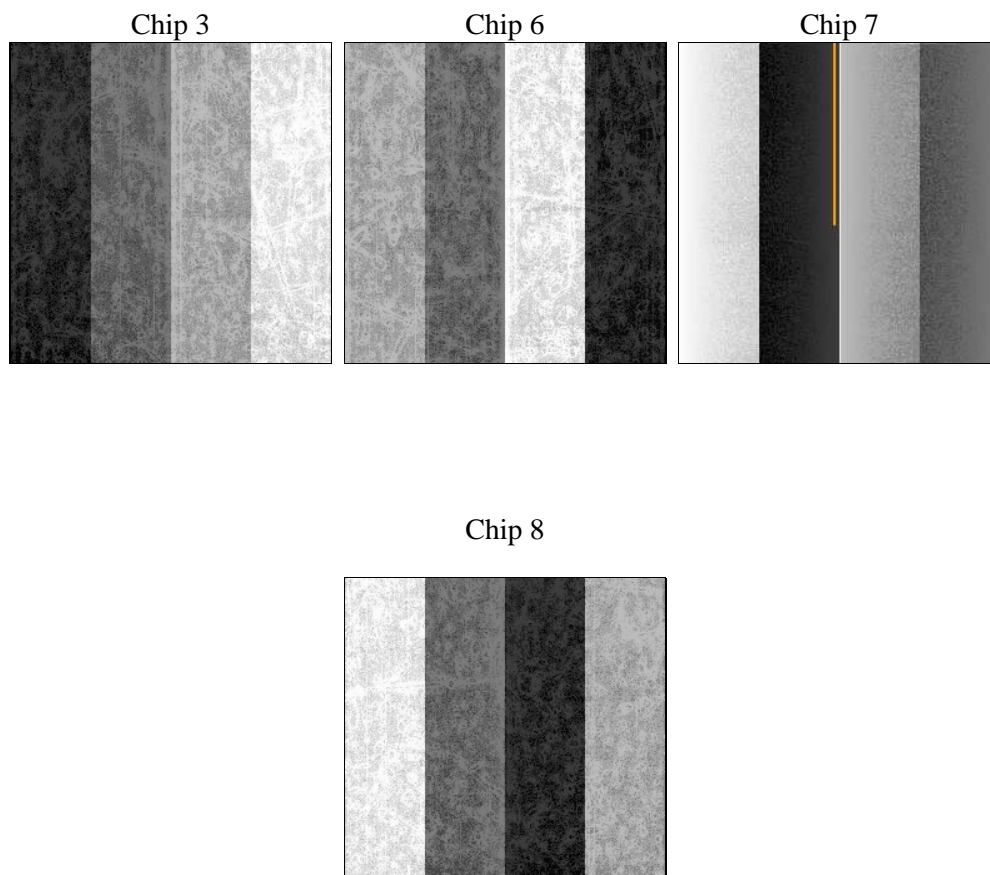
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	2000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	2185.5000169277	Sum of GTIs [s]
caldbver	4.8.2	&#160	ontime3	2185.5000169277	Sum of GTIs [s]
date	2018-12-14T00:49:58	Date and time of file creation	ontime6	2185.5000169277	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	2185.5000169277	Sum of GTIs [s]
			ontime8	2185.5000169277	Sum of GTIs [s]
			l1events	92038	Number of level 1 events

### 2.1.4 Events

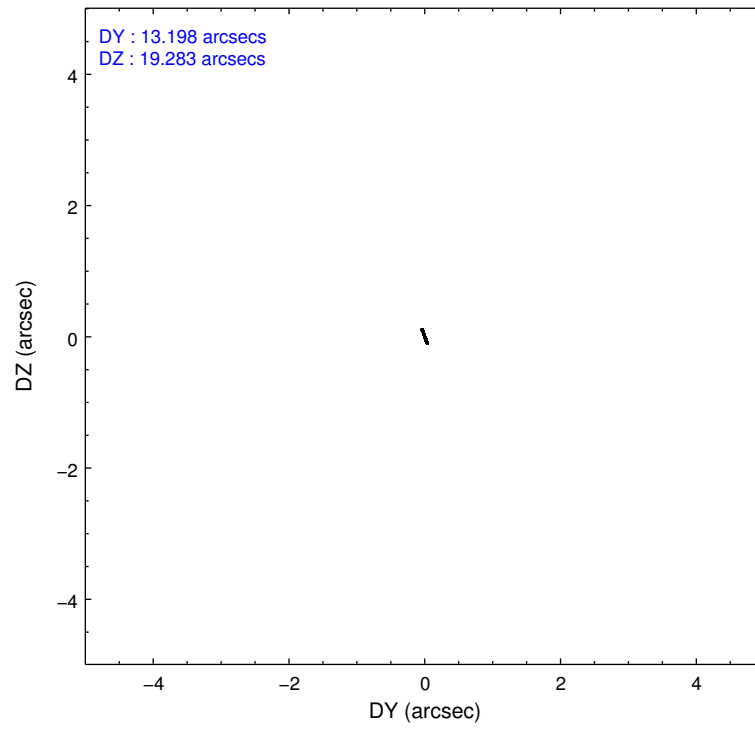
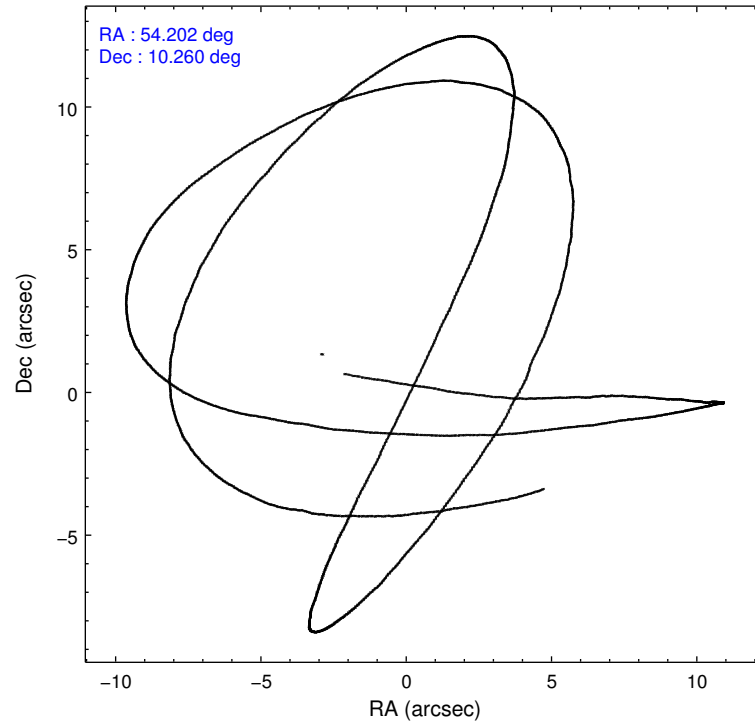
	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	20357	19159	25801	26721
rejected events	18742	17294	16891	20644
rejected %	92%	90%	65%	77%

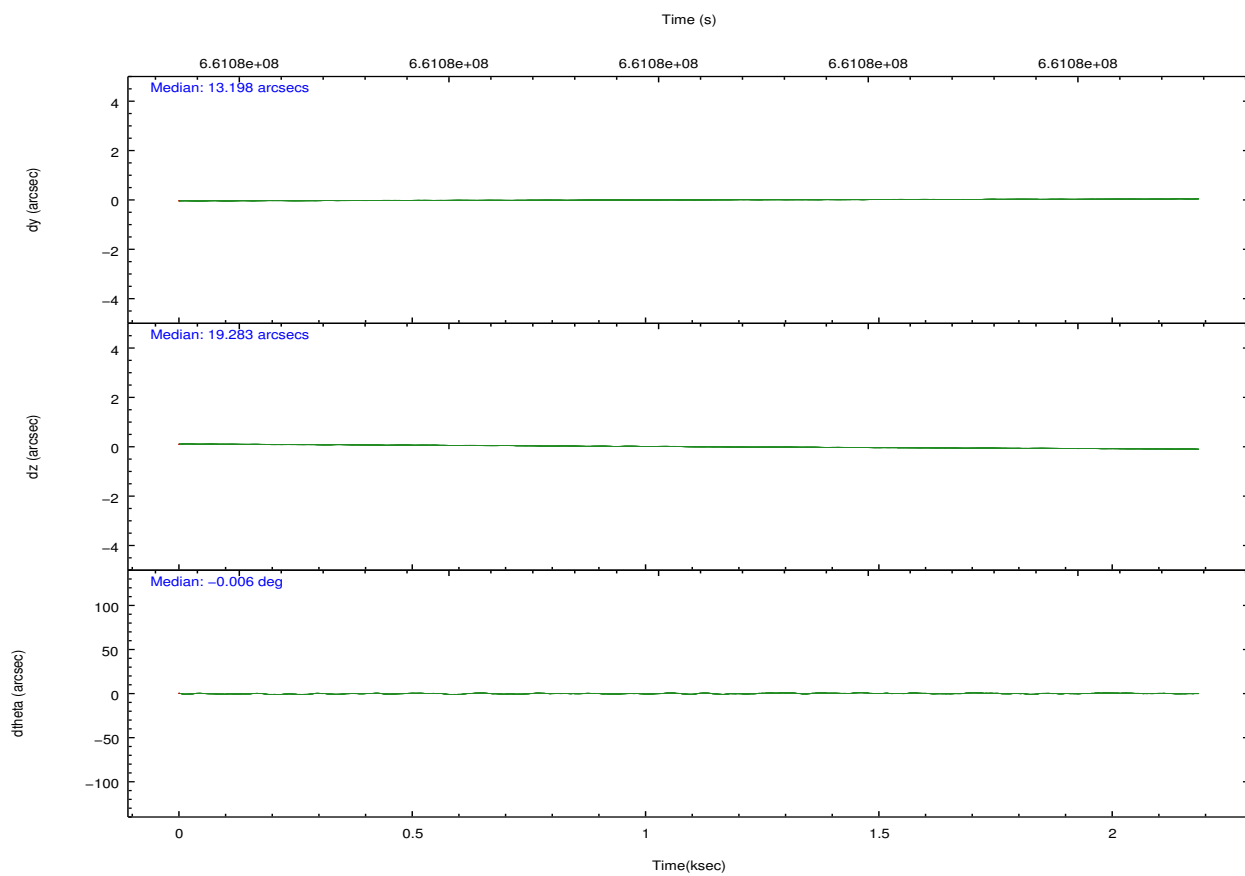
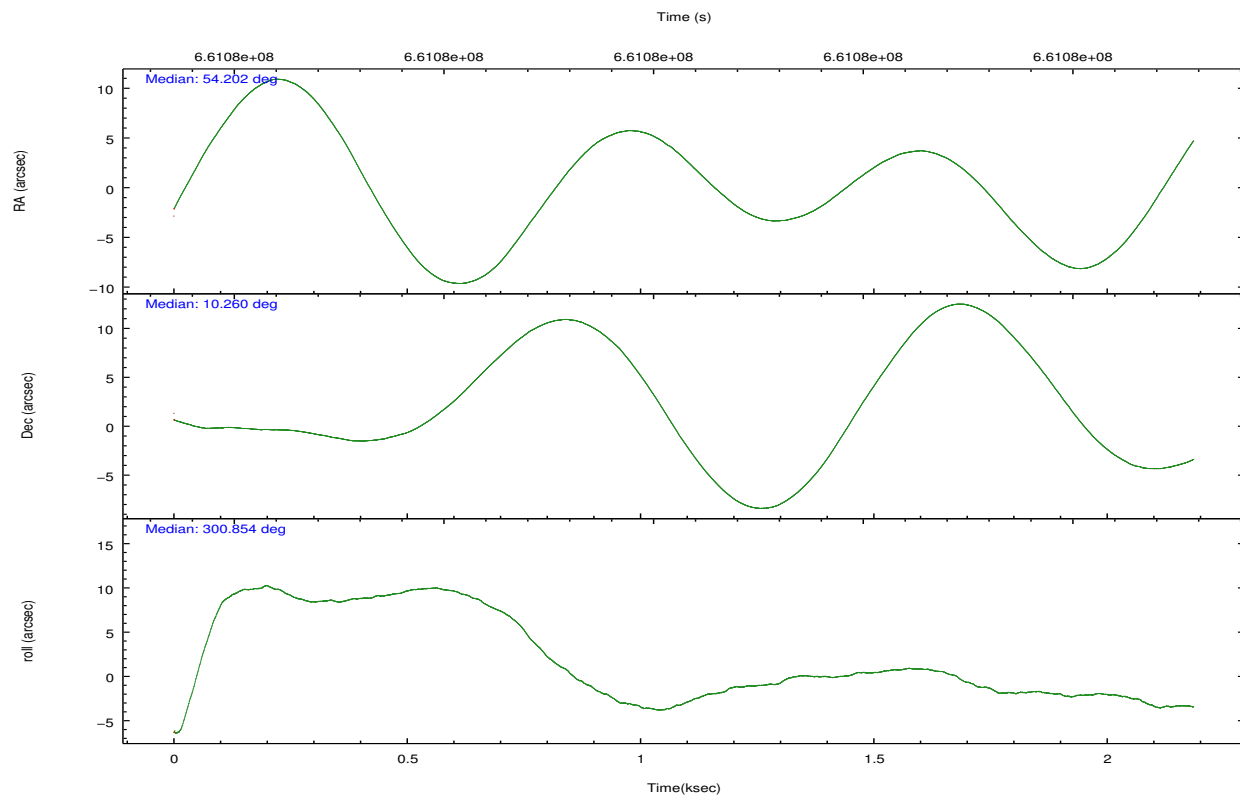
	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	661	784	884	2202
	3%	4%	3%	8%
grade 1 events	7	10	42	17
	0%	0%	0%	0%
grade 2 events	455	516	2379	1782
	2%	2%	9%	6%
grade 3 events	212	212	839	856
	1%	1%	3%	3%
grade 4 events	209	219	863	824
	1%	1%	3%	3%
grade 5 events	950	941	2562	1419
	4%	4%	9%	5%
grade 6 events	445	558	6128	1927
	2%	2%	23%	7%
grade 7 events	17418	15919	12104	17694
	85%	83%	46%	66%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-3678	ACIS-3678	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	54.177974	54.2026161958187	CCD I2 on	O2	N
[deg] Pointing Dec	10.274081	10.26096672586506	CCD I3 on	Y	Y
[deg] Pointing Roll	300.706352	300.8585490773731	CCD S0 on	N	N
[s] Window start time (MET)	660009669.184000	660009669.184000	CCD S1 on	O1	N
[s] Window stop time (MET)	660355269.184000	660355269.184000	CCD S2 on	Y	Y
[s] Window start time (MET)	660009669.184000	660009669.184000	CCD S3 on	Y	Y
[s] Window stop time (MET)	660355269.184000	660355269.184000	CCD S4 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S5 on	N	N
[mm] SIM defocus	0	0.001444936568705701	Number of optional ACIS chips dropped	2	2
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	On-chip summing requested	N	N
[mm] SIM translation stage offset	0	0.00754346686406393	Subarray requested	NONE	NONE
[s] Observation start time (MET)	661082167.184000	661081791.5538501	Alternating exposures requested	N	N
Observation start date	2018-12-13T09:54:58	2018-12-13T09:49:51	[s] Primary exposure time	0.000000	3.1
[s] Observation end time (MET)	661084167.184000	661084491.91652			
Observation end date	2018-12-13T10:28:18	2018-12-13T10:34:51			
Read mode	TIMED	TIMED			

## 2.3 Aspect





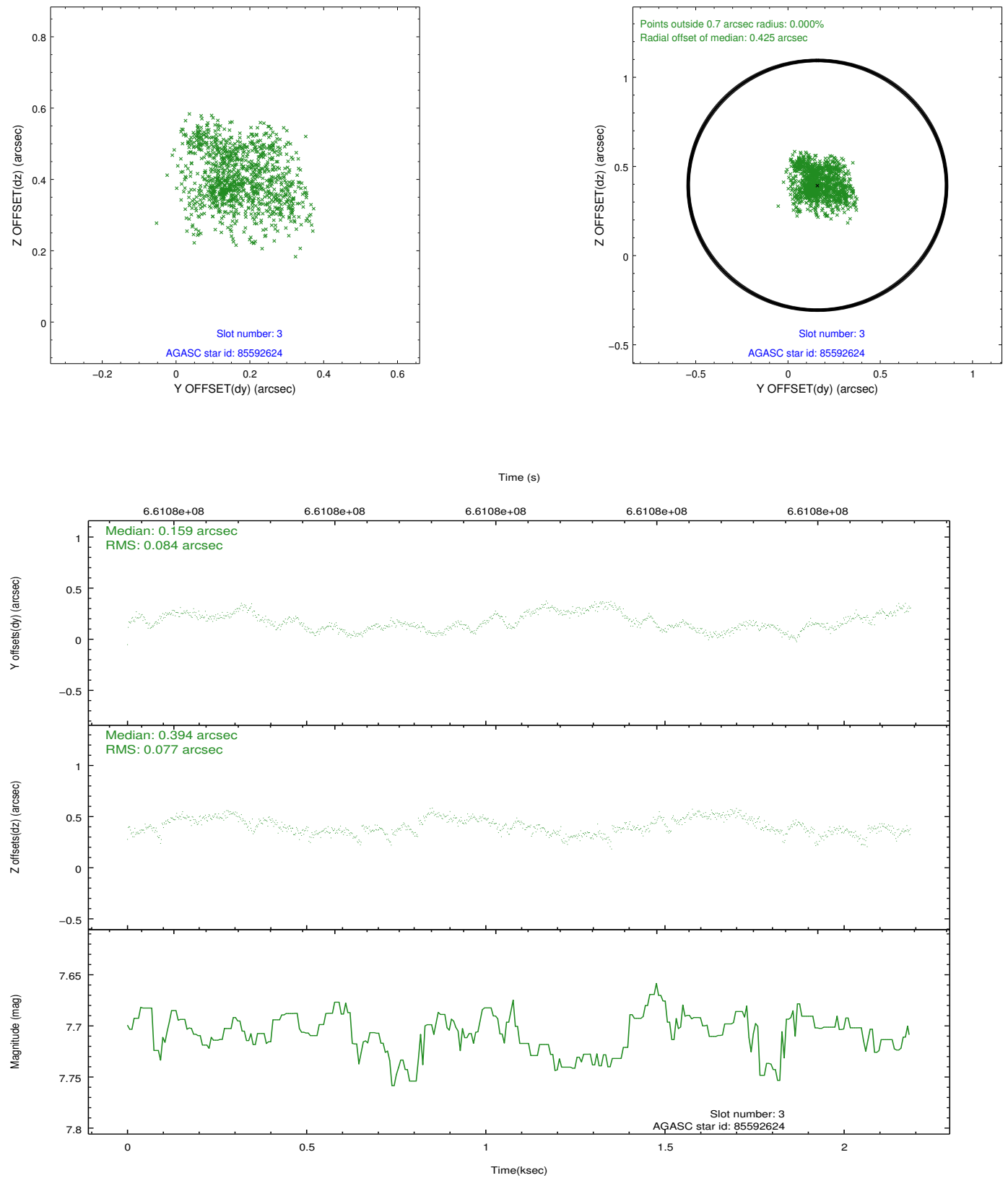
Slot Statistics

pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	6.99	534	1.000	-0.266	-0.167	0.008	0.014	0.000000	0.000000	-766.31	-1740
1	FID		ACIS-S-4	7.12	534	1.000	0.717	0.173	0.005	0.012	0.000000	0.000000	2146.51	164
2	FID		ACIS-S-5	7.10	534	1.000	-0.483	0.003	0.008	0.014	0.000000	0.000000	-1815.63	161
3	GUIDE	used	85592624	7.71	1067	1.000	0.159	0.394	0.130	0.185	53.453940	10.233788	-1187.30	-2277
4	GUIDE	used	86115264	8.66	1065	1.000	0.206	-0.050	0.106	0.169	54.191764	9.800176	1490.54	-830
5	GUIDE	used	86116984	7.01	1067	1.000	-0.353	-0.470	0.082	0.138	54.479042	9.932832	1602.24	290
6	GUIDE	used	86512984	9.05	1066	1.000	-0.130	-0.056	0.134	0.198	54.433894	10.707148	-876.71	1575
7	GUIDE	used	86114760	9.38	1064	1.000	0.122	0.176	0.195	0.310	53.682793	9.762726	683.99	-2447

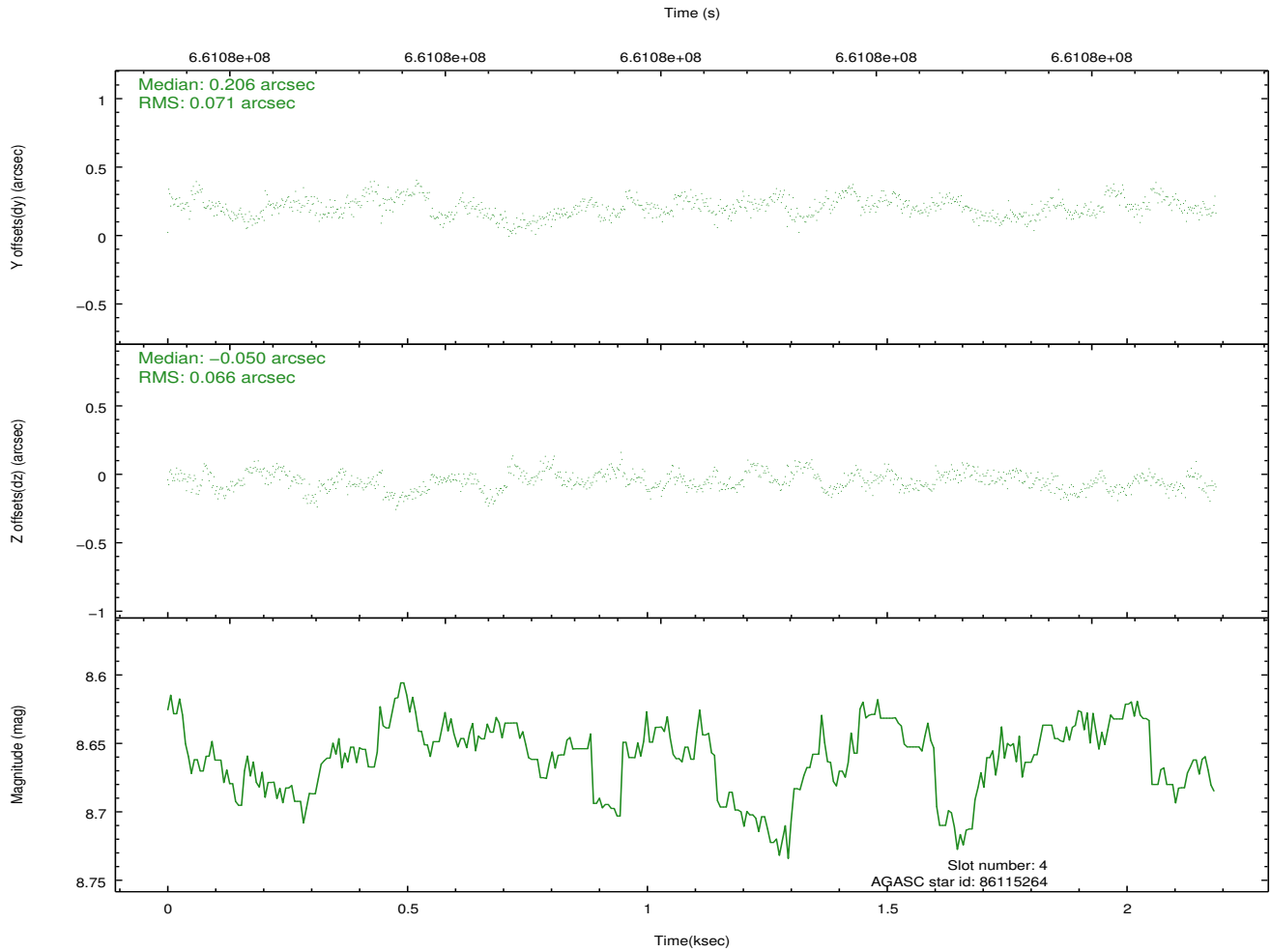
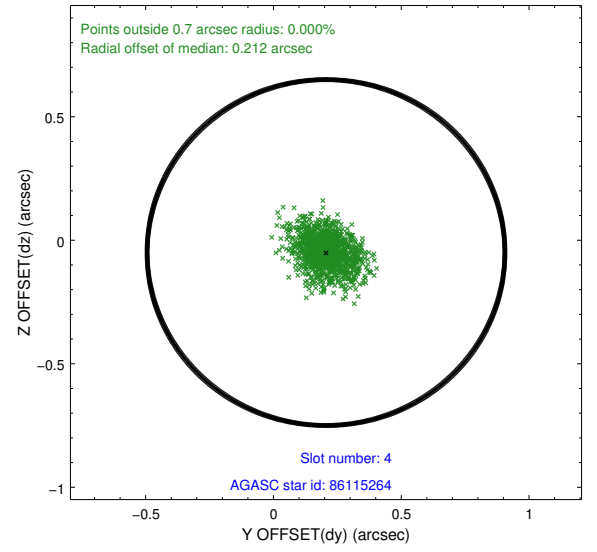
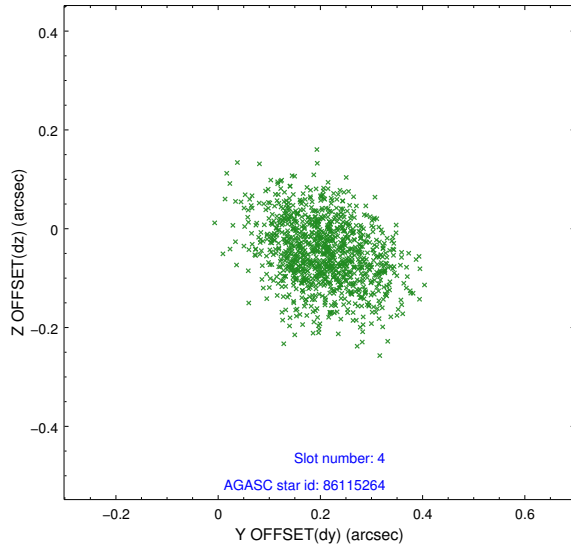


## 2.4 Star Slots

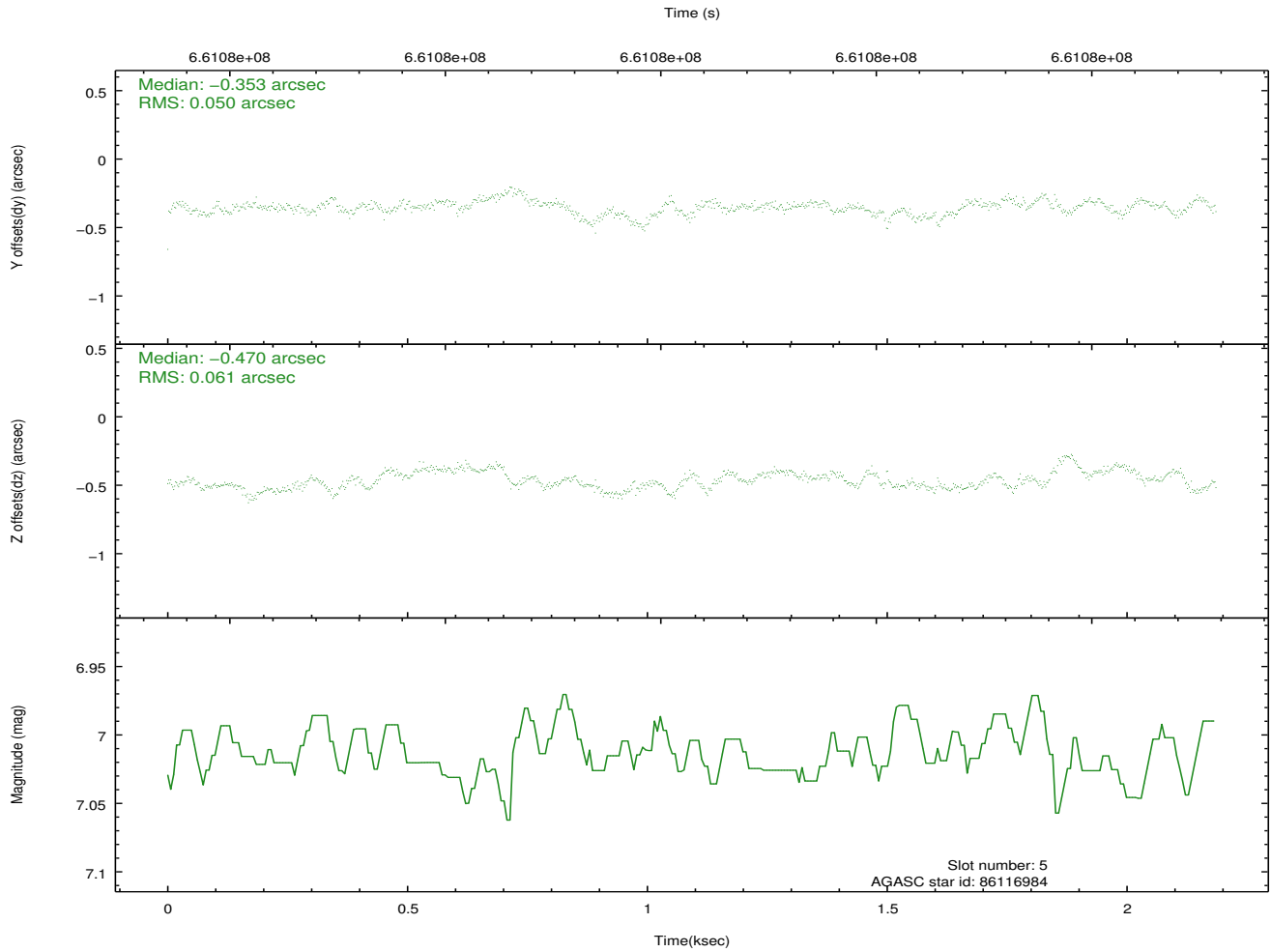
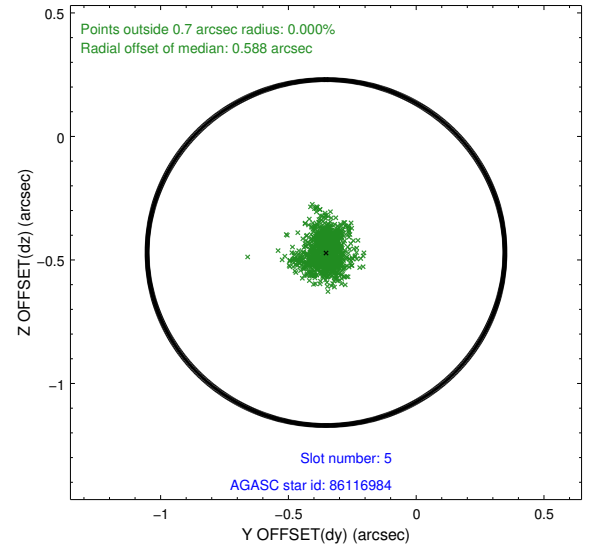
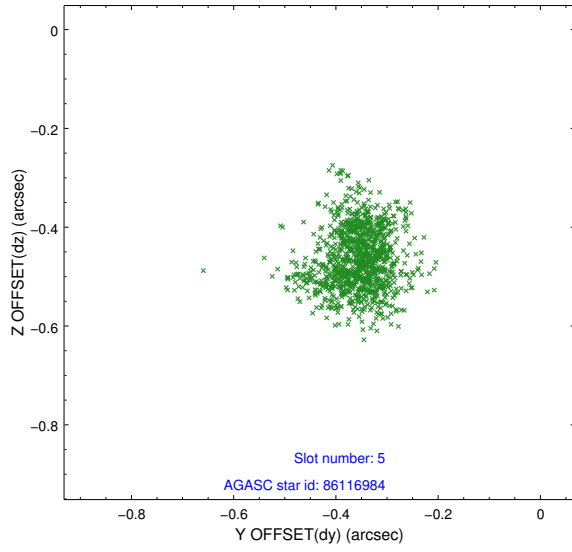
### 2.4.1 Slot 3



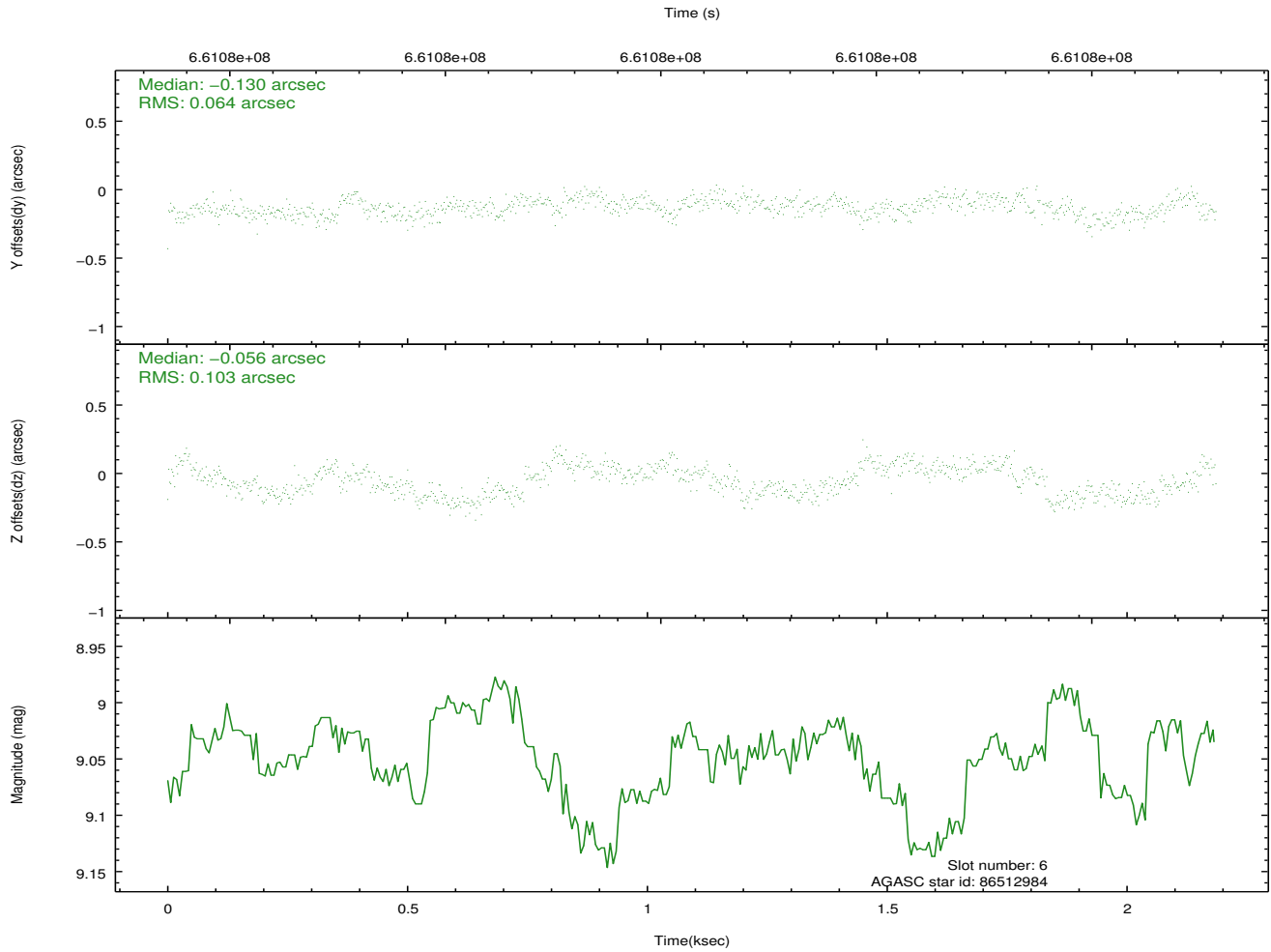
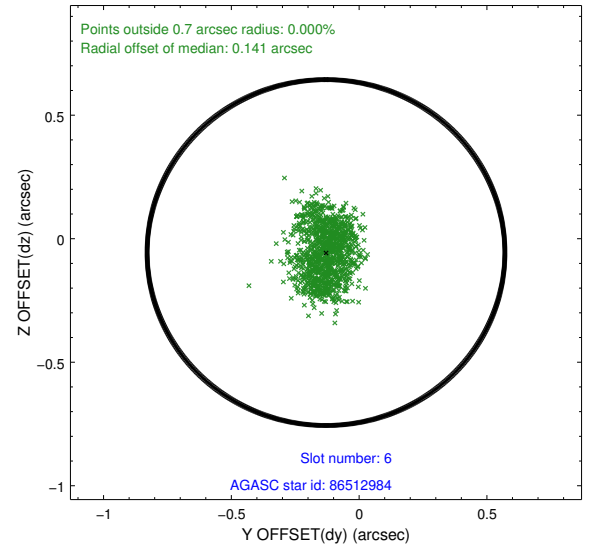
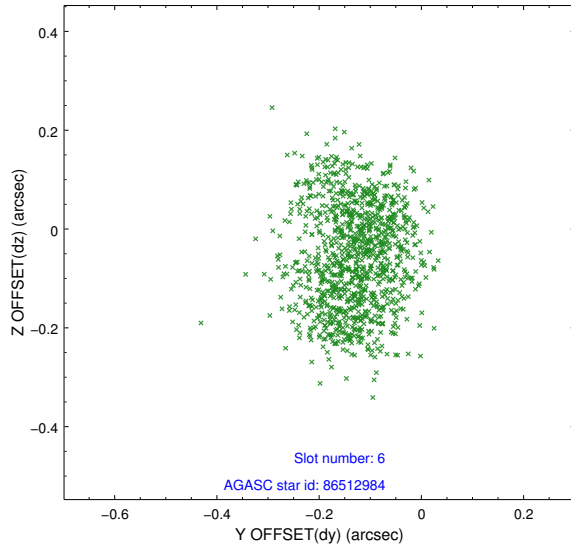
## 2.4.2 Slot 4



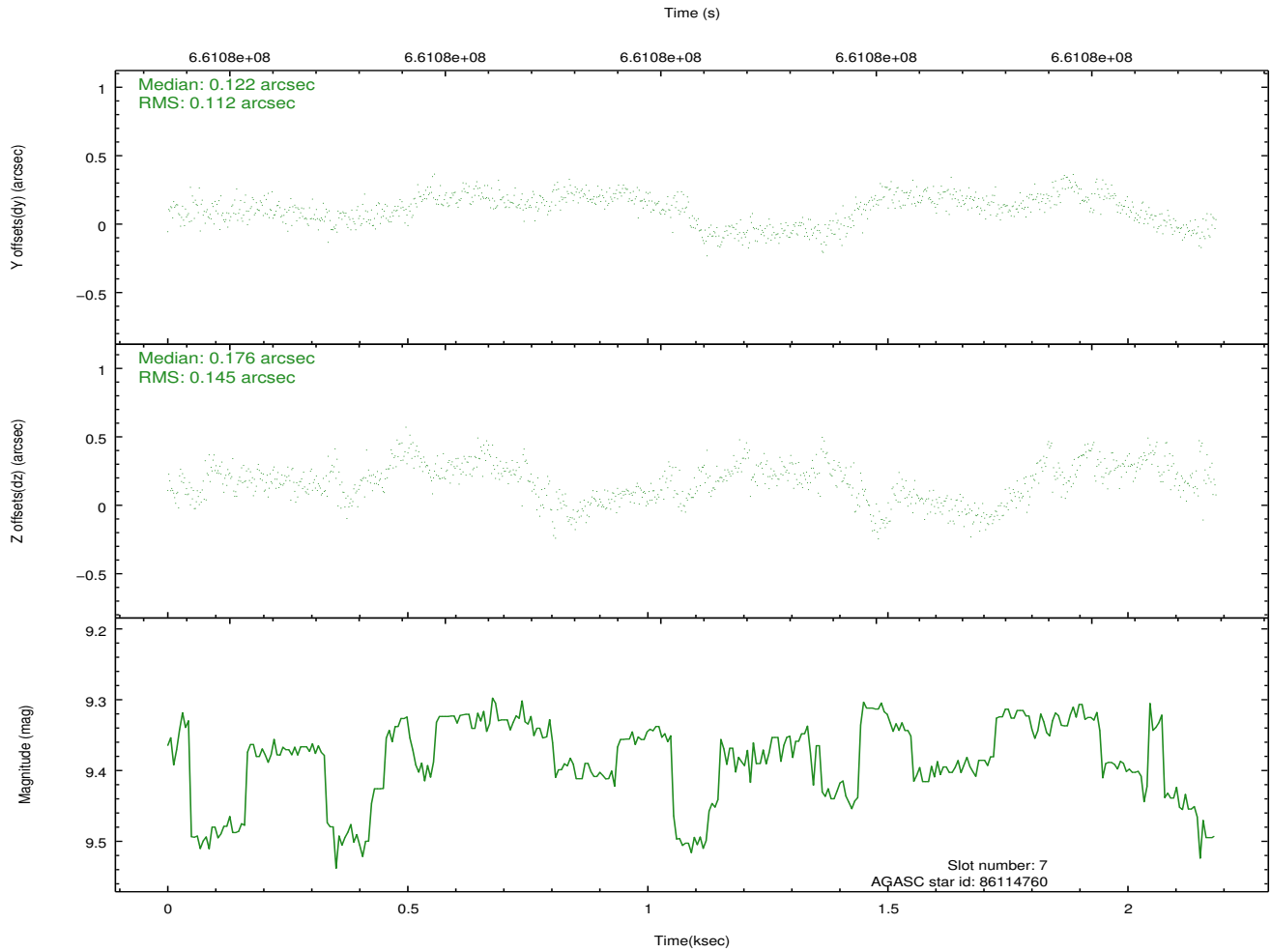
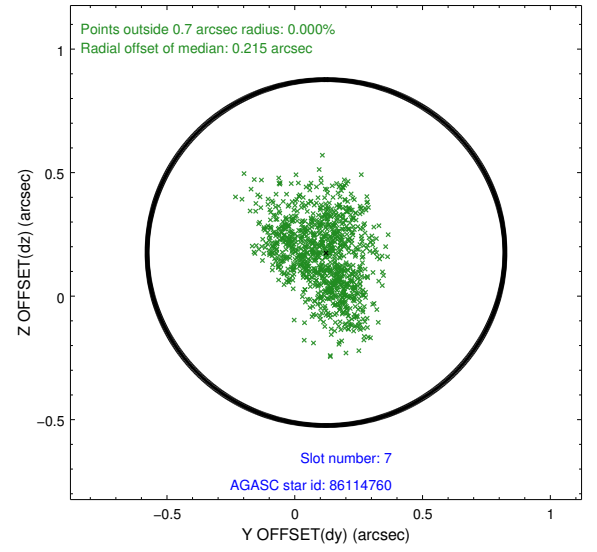
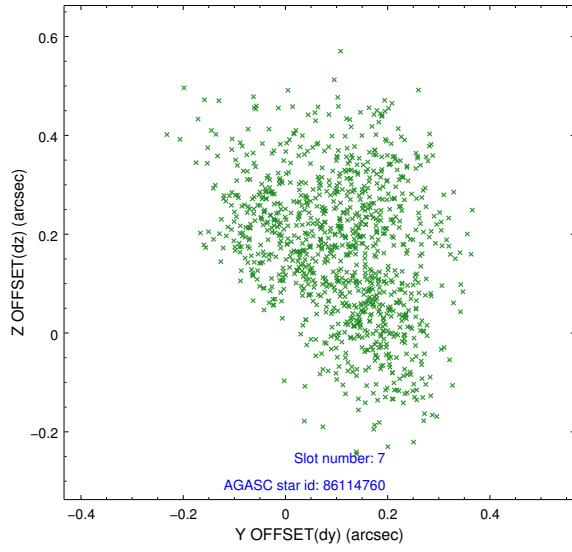
### 2.4.3 Slot 5



## 2.4.4 Slot 6

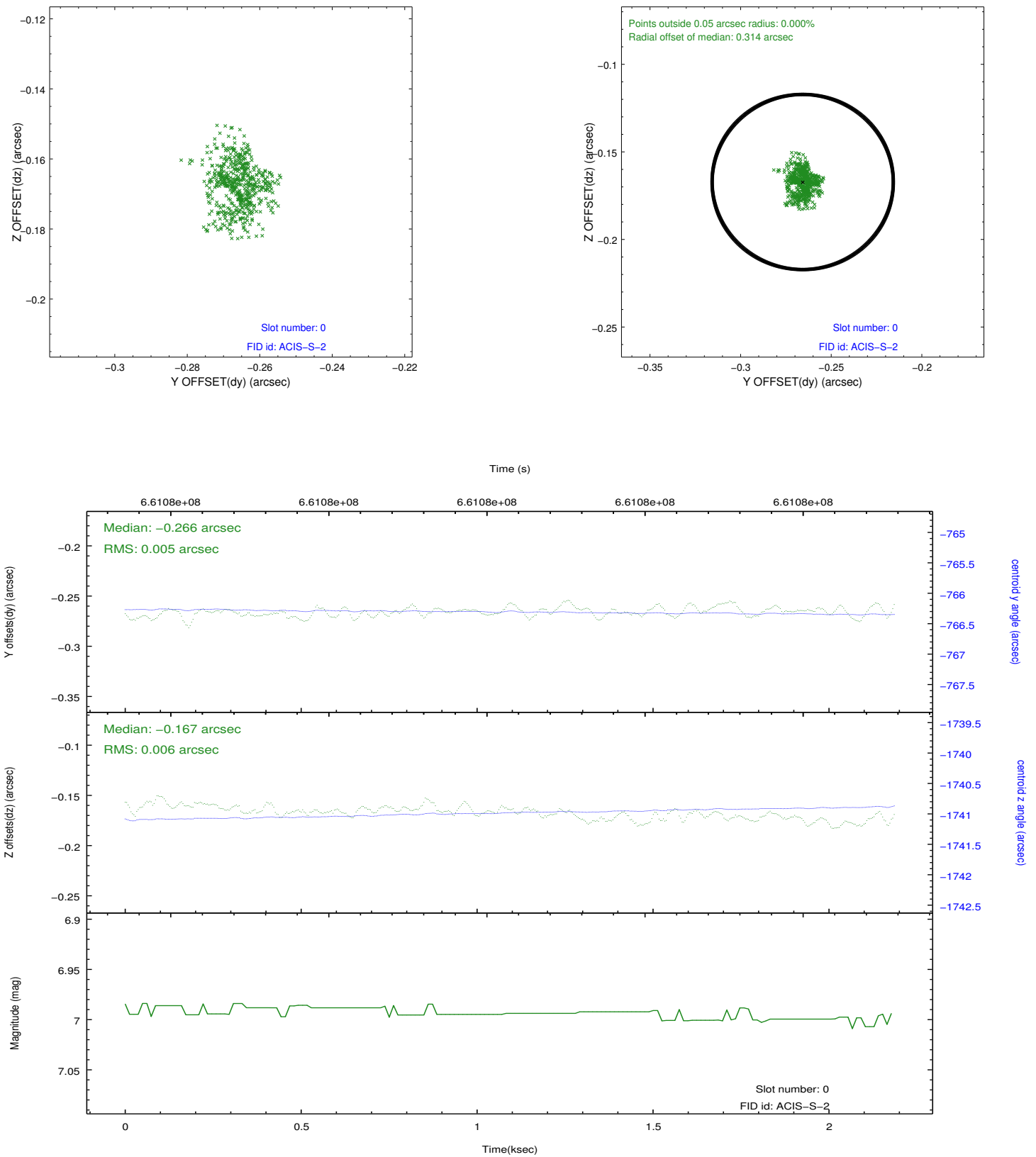


## 2.4.5 Slot 7

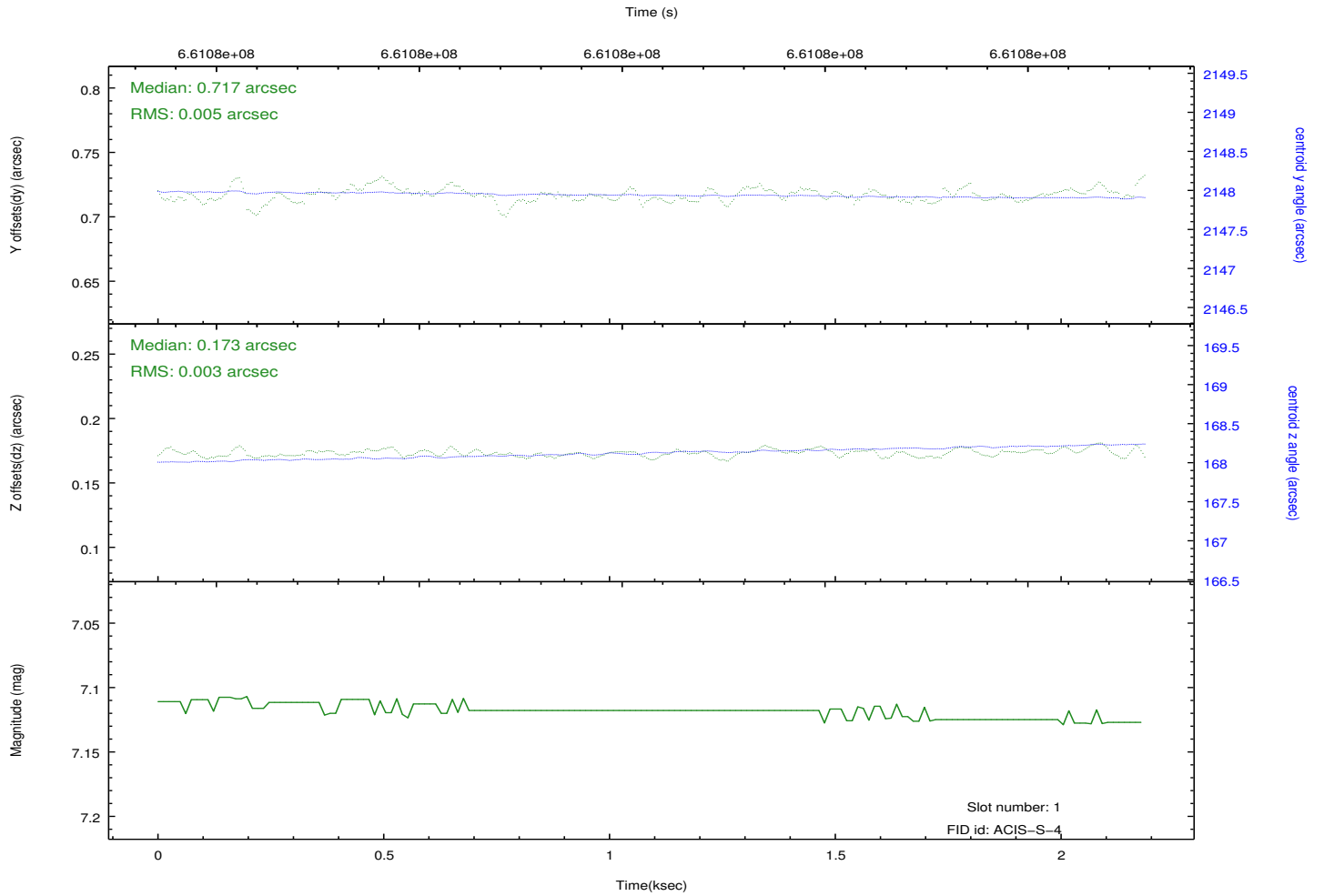
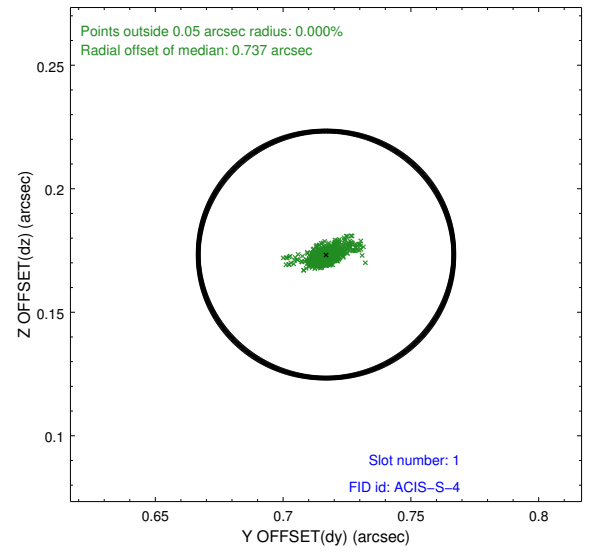
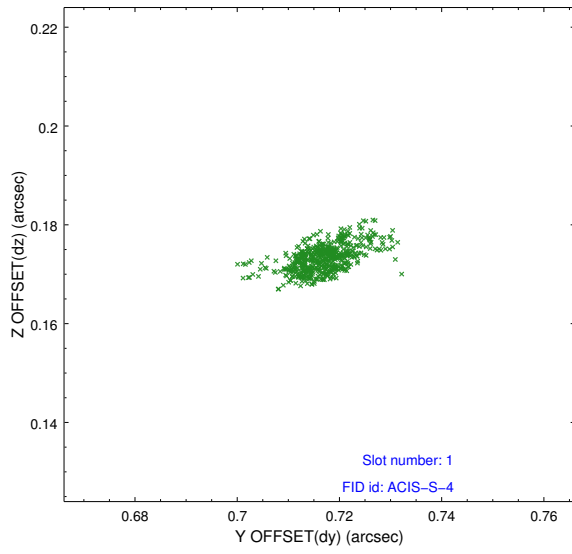


## 2.5 FID Slots

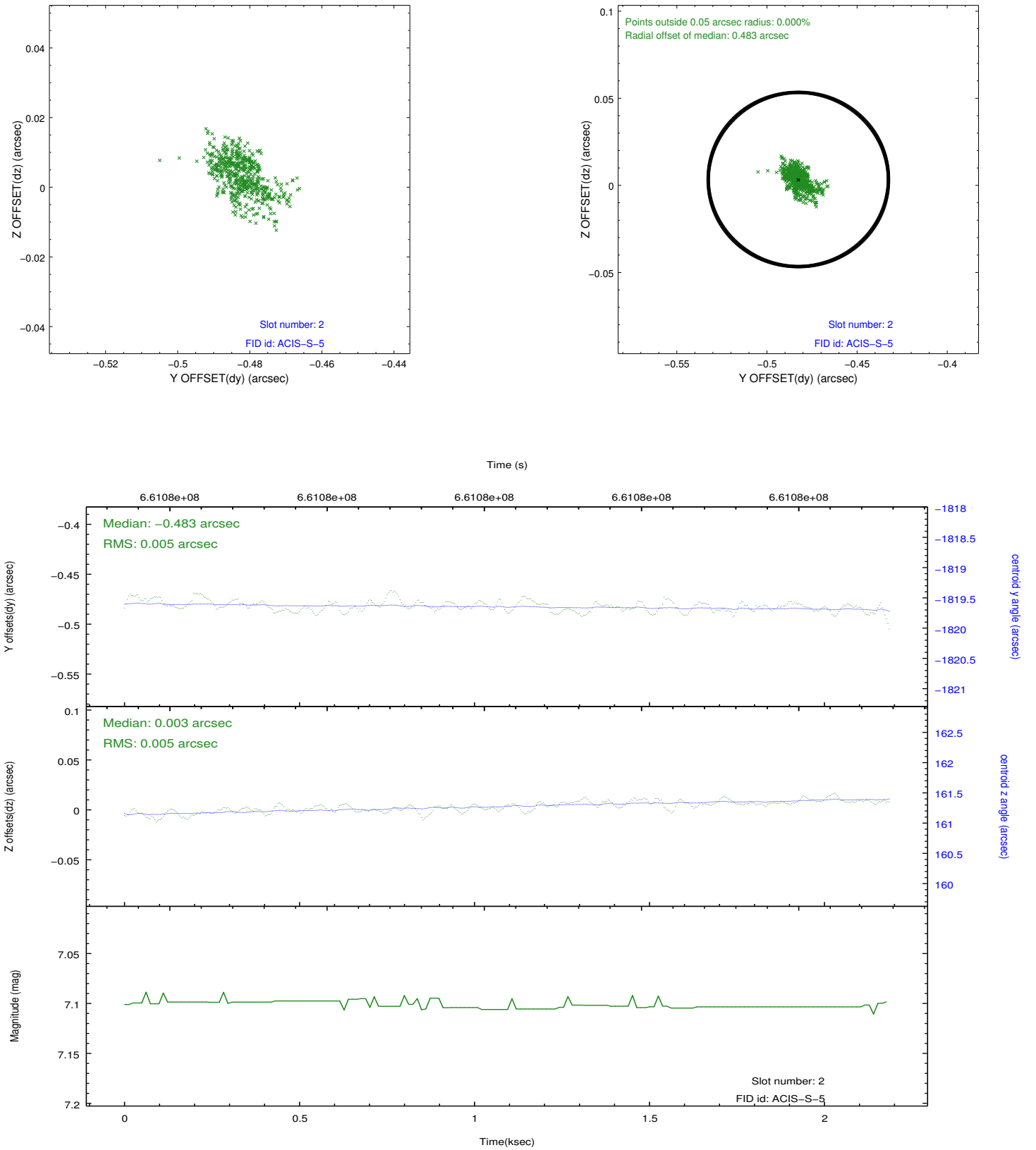
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.12.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.1855000169277

## A.2 Comments

This is a moving target. Users will need to run `sso_freeze` or similar software to position the events in the reference frame of the target.