

# V&V Reference Report

## L2 ASCDS Version : 10.5.2

Observation 19993 - L2 Version 2  
Chandra X-Ray Center

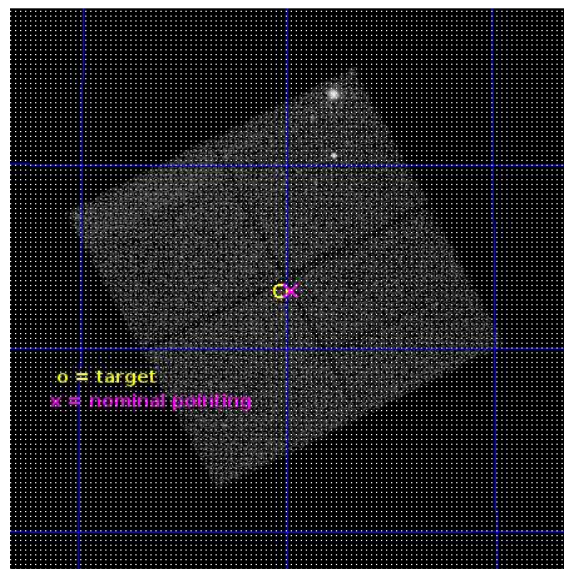
L2 Processing Date : Feb 3 2017

## 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 7 . . . . .	12
2.5	FID Slots . . . . .	13
2.5.1	Slot 0 . . . . .	13
2.5.2	Slot 1 . . . . .	14
2.5.3	Slot 2 . . . . .	15
<b>A</b>	<b>Summary</b>	<b>16</b>
A.1	Status . . . . .	16
A.2	Comments . . . . .	16

# 1 Front

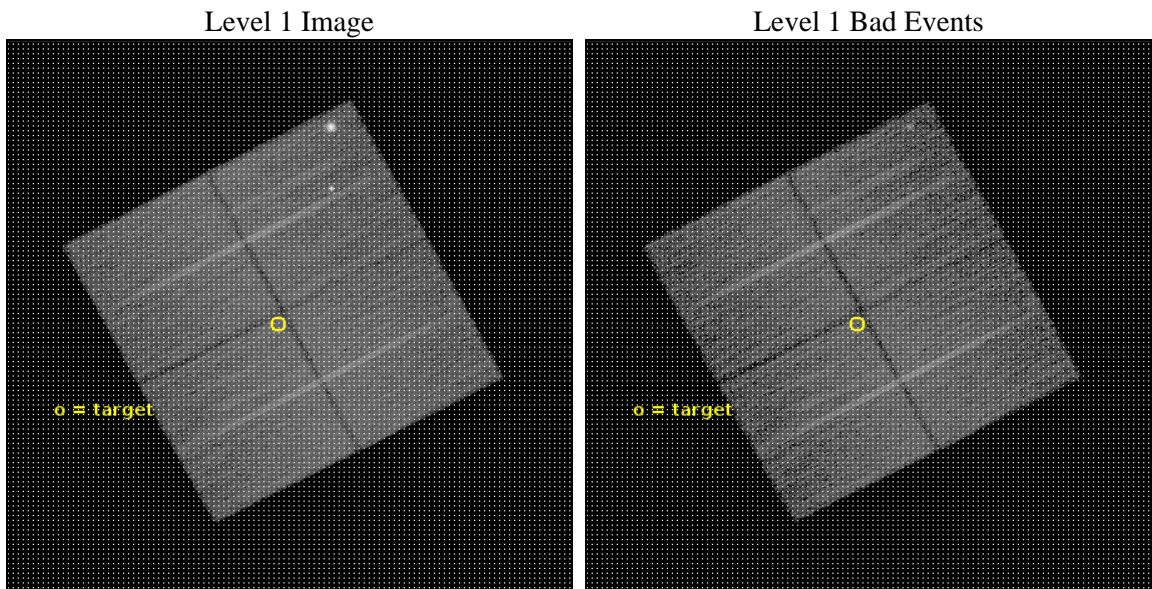
seq_num	601235	Sequence number
obs_id	19993	Observation id
title	To the Edge and Beyond: A Legacy Survey of the Grand Design Spiral M81	Proposal title
observer	Douglas Swartz	Principal investigator
object	M81 S	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	149.015833	Observer's specified target RA [deg]
dec_targ	68.885694	Observer's specified target Dec [deg]
ra_nom	148.98981935593	Nominal RA [deg]
dec_nom	68.886395052223	Nominal Dec [deg]
roll_nom	152.23291215827	Nominal Roll [deg]
revision	2	Processing version of data
ontime	25078.270727038	Sum of GTIs [s]
livetime	24750.604657635	Livetime [s]
ontime0	25078.147627234	Sum of GTIs [s]
ontime1	25081.329677343	Sum of GTIs [s]
ontime2	25078.229687214	Sum of GTIs [s]
ontime3	25078.270727038	Sum of GTIs [s]
l2events	84057	Number of level 2 events



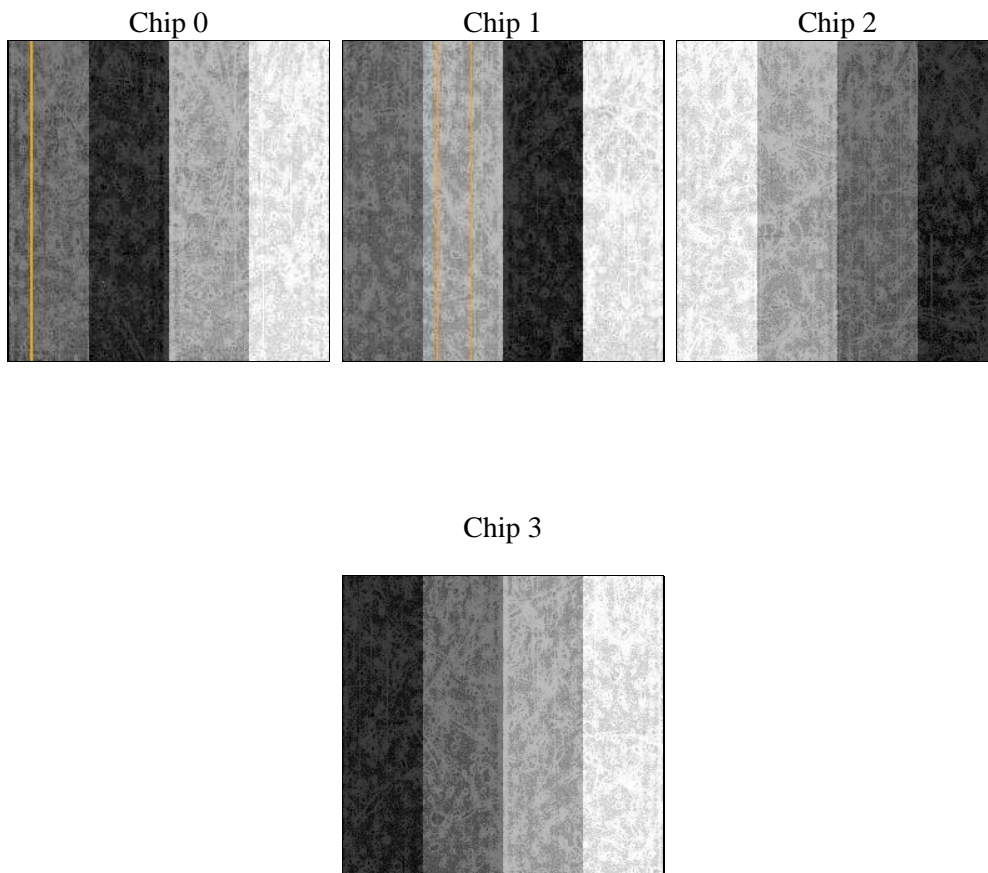
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	25078.270727038	Sum of GTIs [s]
caldsver	4.7.3	&#160	ontime0	25078.147627234	Sum of GTIs [s]
date	2017-02-03T15:40:30	Date and time of file creation	ontime1	25081.329677343	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	25078.229687214	Sum of GTIs [s]
			ontime3	25078.270727038	Sum of GTIs [s]
			l1events	683068	Number of level 1 events

### 2.1.4 Events

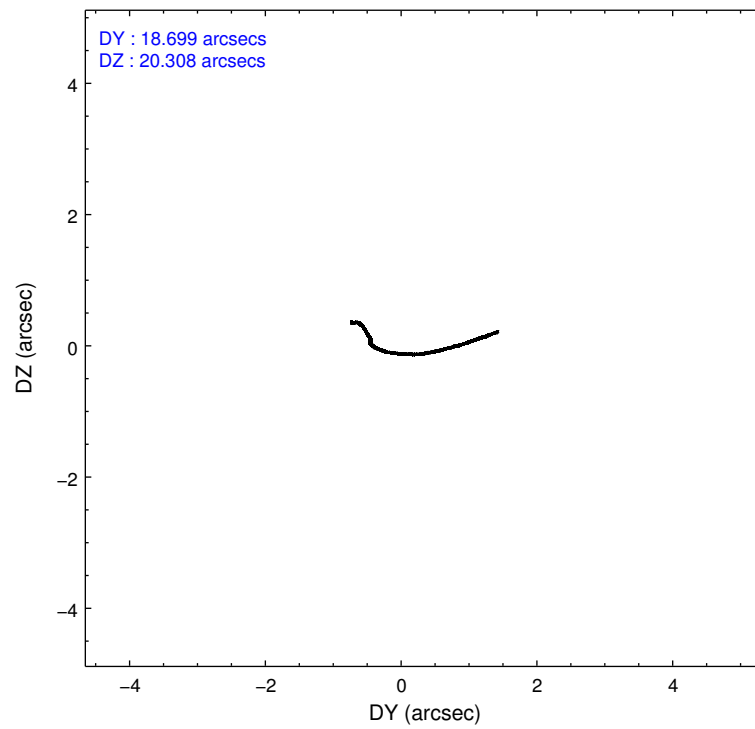
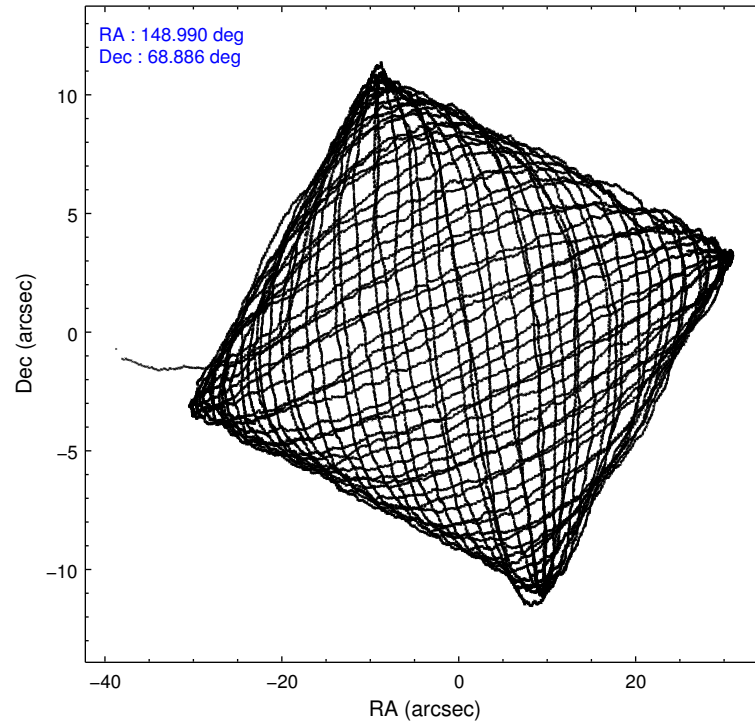
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	181817	161704	171178	168369
rejected events	139494	140047	152395	150321
rejected %	76%	86%	89%	89%

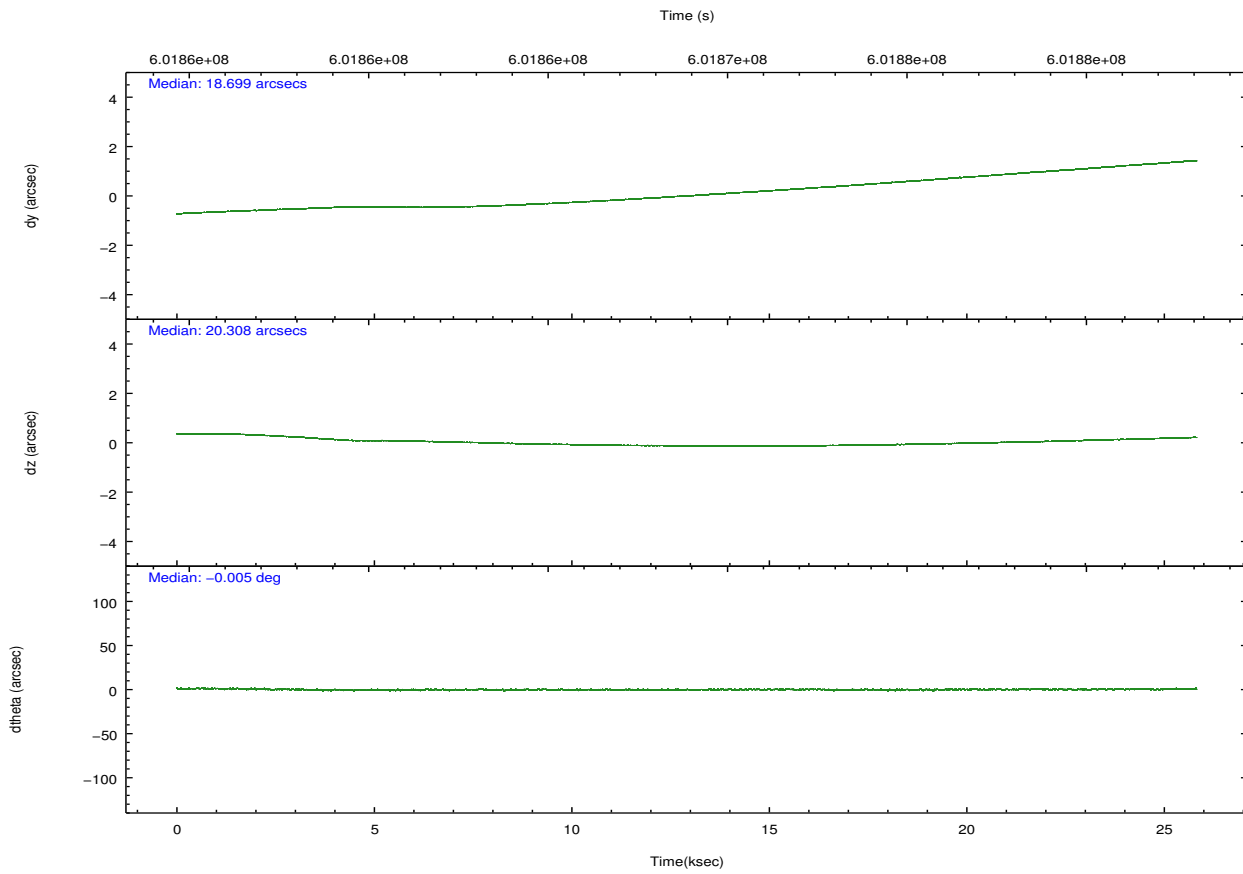
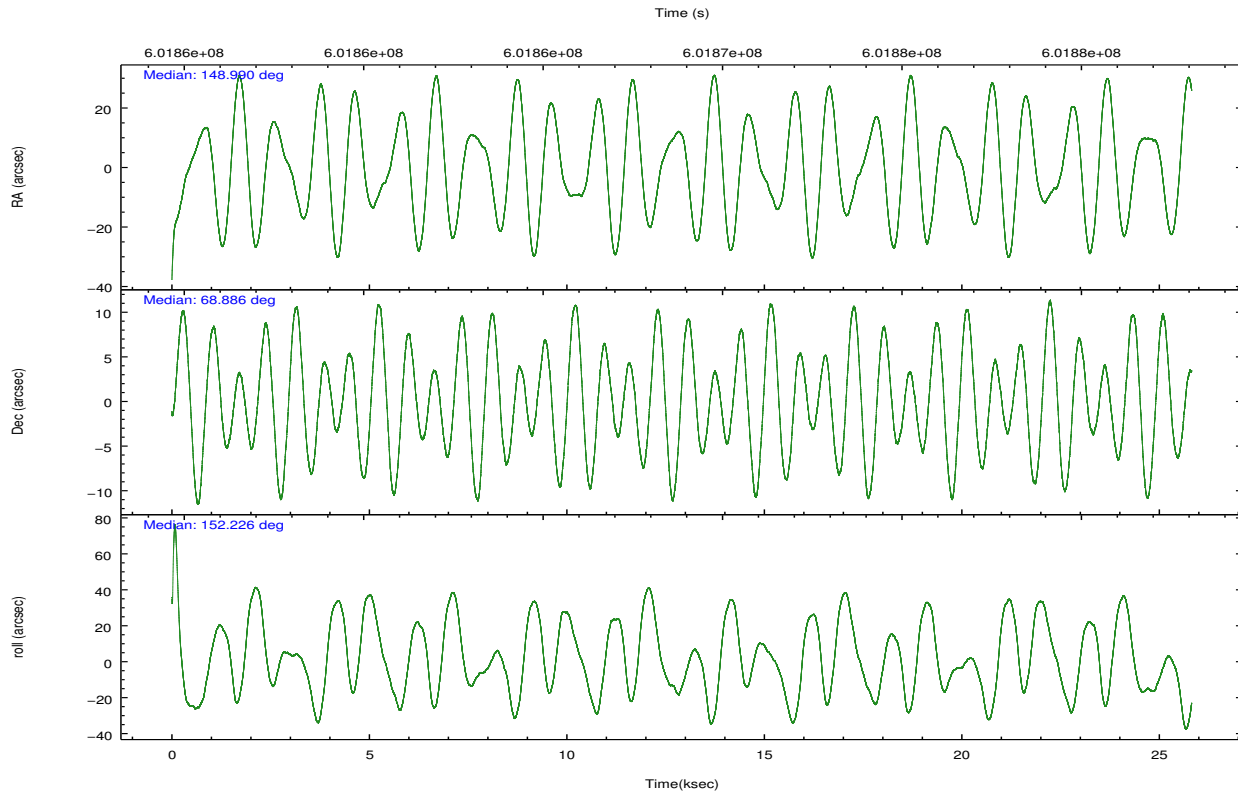
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	24285	7411	6732	6326
	13%	4%	3%	3%
grade 1 events	274	97	91	92
	0%	0%	0%	0%
grade 2 events	7543	5479	4633	4185
	4%	3%	2%	2%
grade 3 events	2840	2073	1896	1888
	1%	1%	1%	1%
grade 4 events	2769	2091	1831	1859
	1%	1%	1%	1%
grade 5 events	7386	7713	6980	8323
	4%	4%	4%	4%
grade 6 events	4898	4610	3696	3792
	2%	2%	2%	2%
grade 7 events	131822	132230	145319	141904
	72%	81%	84%	84%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	149.066389	148.9898193559289	CCD I2 on	Y	Y
[deg] Pointing Dec	68.887553	68.88639505222339	CCD I3 on	Y	Y
[deg] Pointing Roll	151.952841	152.2329121582703	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	N	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	601856760.184000	601854733.18048	CCD S5 on	N	N
Observation start date	2017-01-26T22:24:51	2017-01-26T21:52:13	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	601881760.184000	601882720.8071001	On-chip summing requested	N	N
Observation end date	2017-01-27T05:21:31	2017-01-27T05:38:40	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





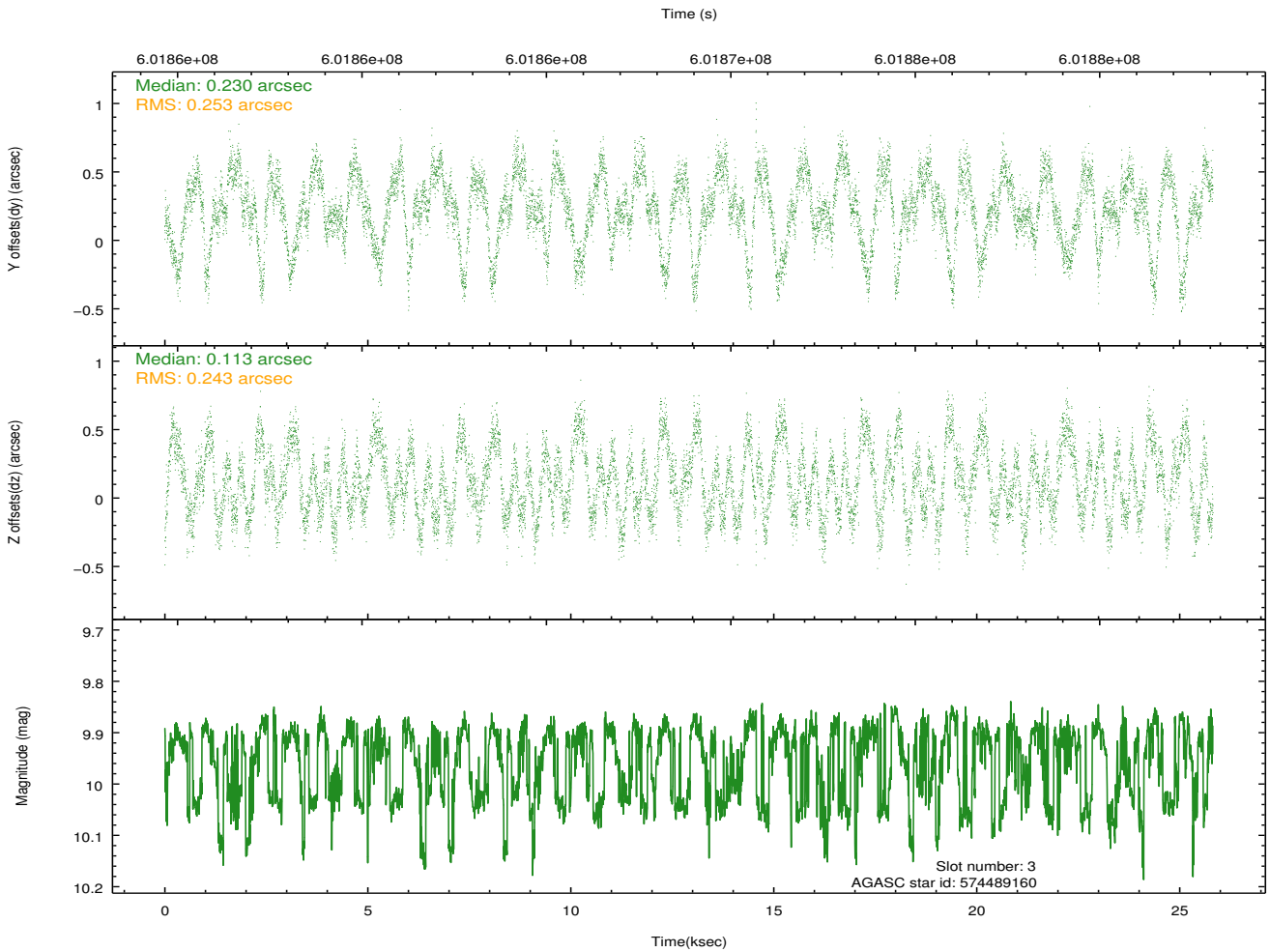
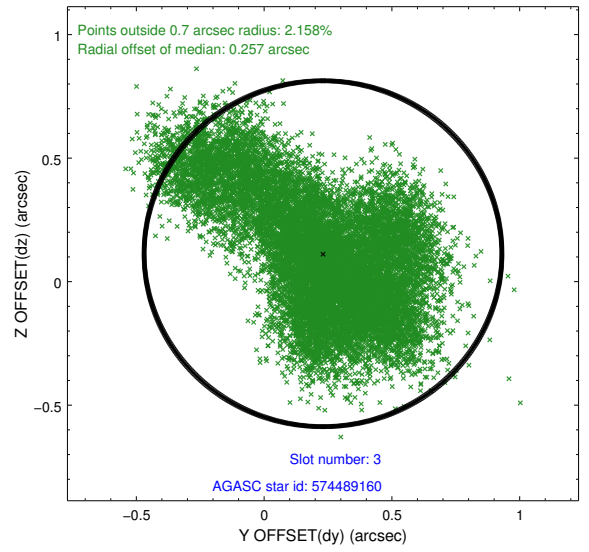
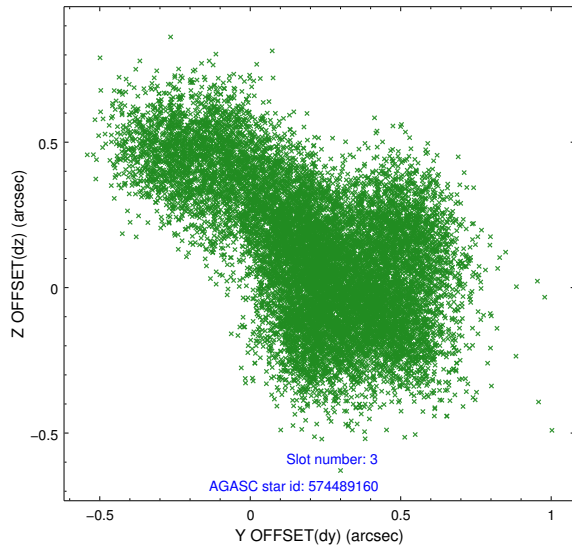
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.05	6298	0.055	-0.034	0.013	0.023	0.000000	0.000000	920.61	-844.07
1	FID		ACIS-I-5	7.05	6298	-0.358	0.013	0.011	0.017	0.000000	0.000000	-1827.95	1053.27
2	FID		ACIS-I-6	7.07	6298	0.213	0.092	0.011	0.022	0.000000	0.000000	386.06	1698.09
3	GUIDE	used	574489160	9.95	12559	0.230	0.113	0.369	0.626	149.677320	68.172146	-1931.23	1884.81
4	GUIDE	used	574490960	9.70	12569	0.188	-0.062	0.200	0.336	148.185918	69.658768	2281.92	-1938.47
5	GUIDE	used	574491280	9.27	12575	-0.042	-0.001	0.307	0.445	148.611567	69.450135	1461.88	-1516.72
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	GUIDE	used	574500920	9.99	12573	-0.396	-0.103	0.346	0.580	147.014605	68.742334	2137.86	1680.85

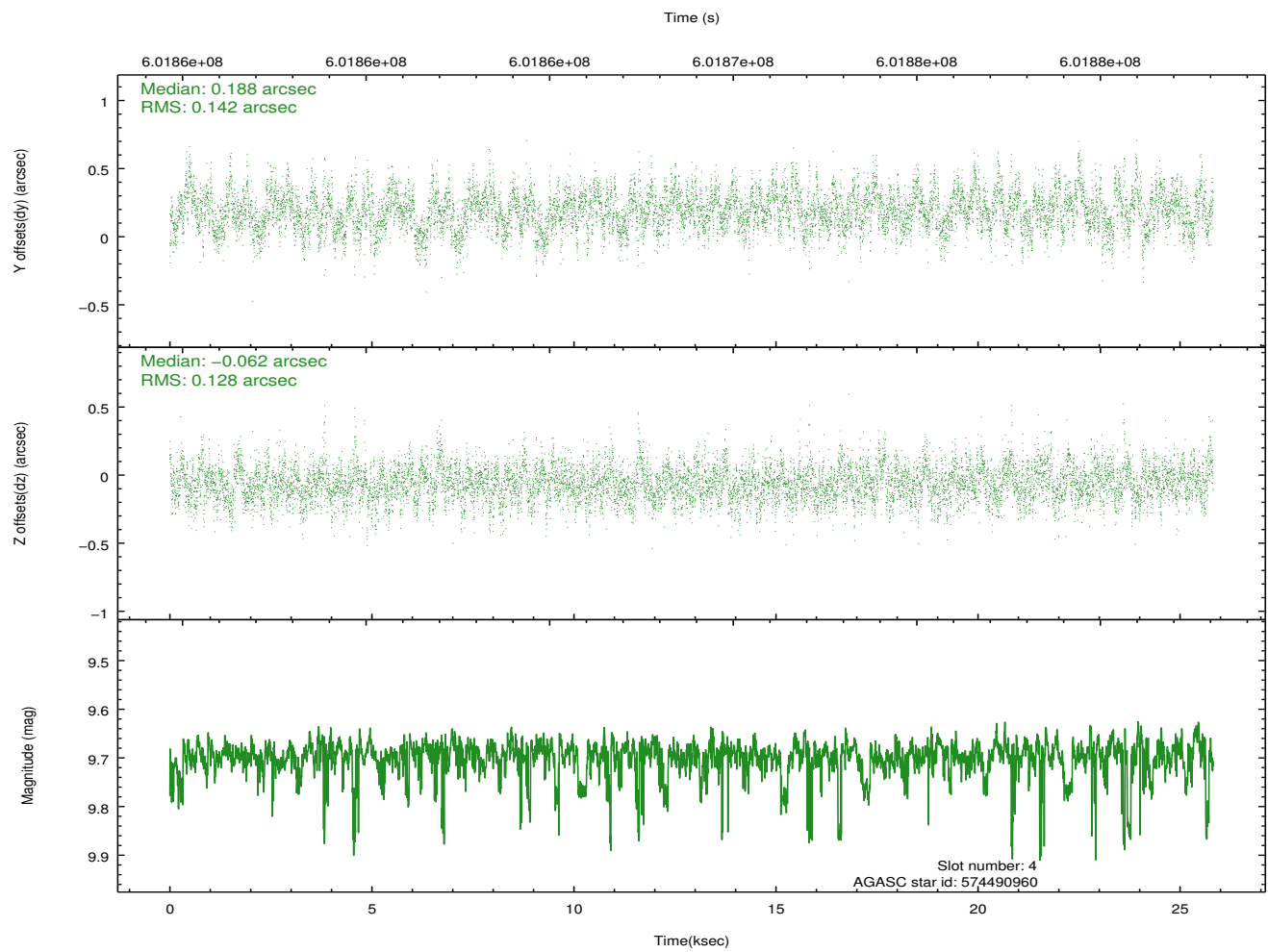
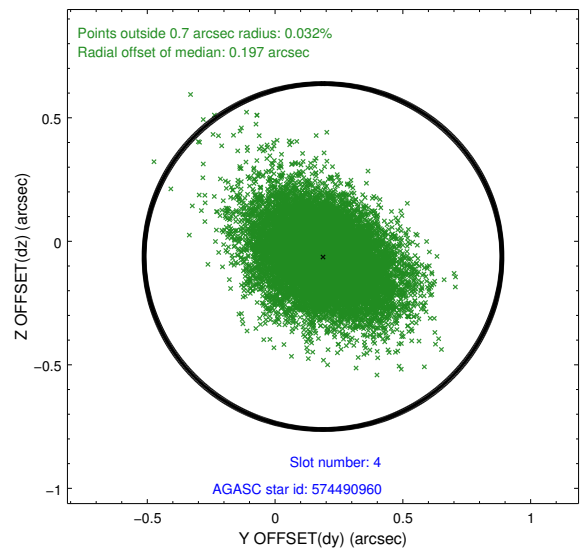
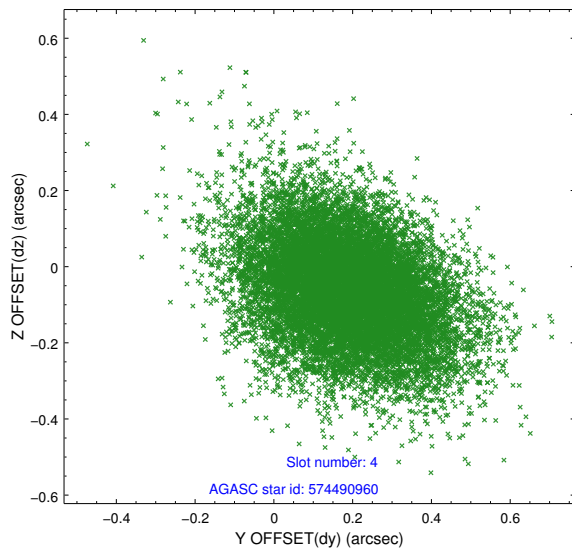
∞

## 2.4 Star Slots

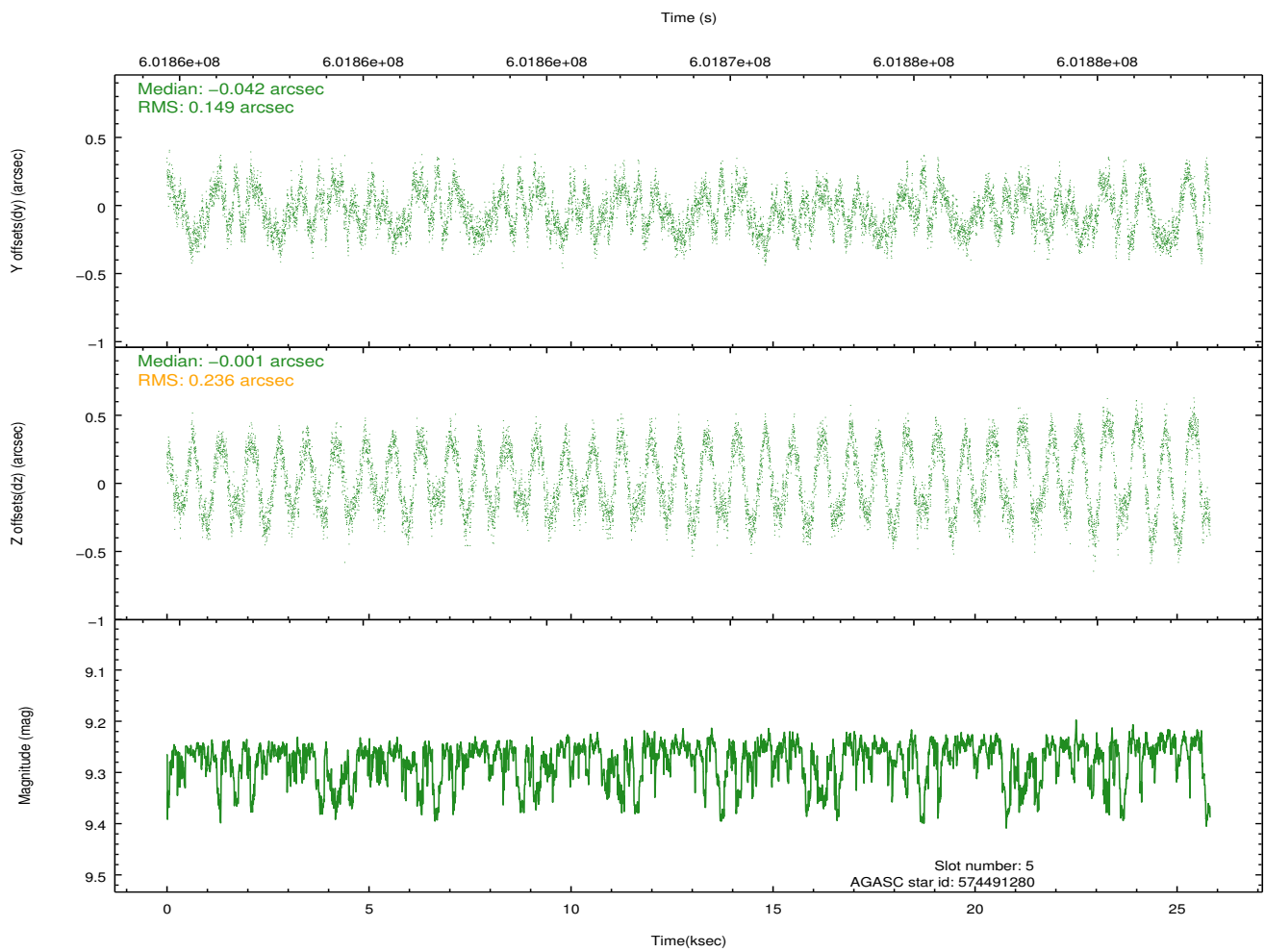
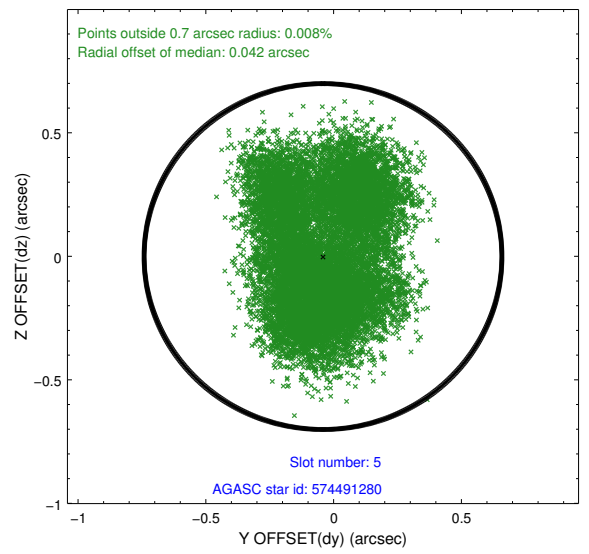
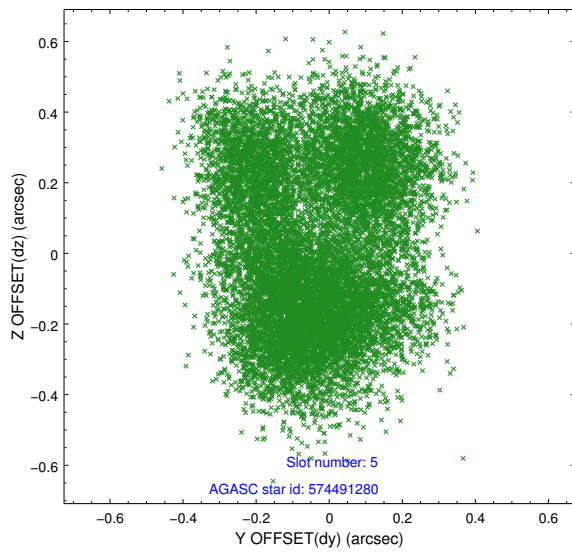
### 2.4.1 Slot 3



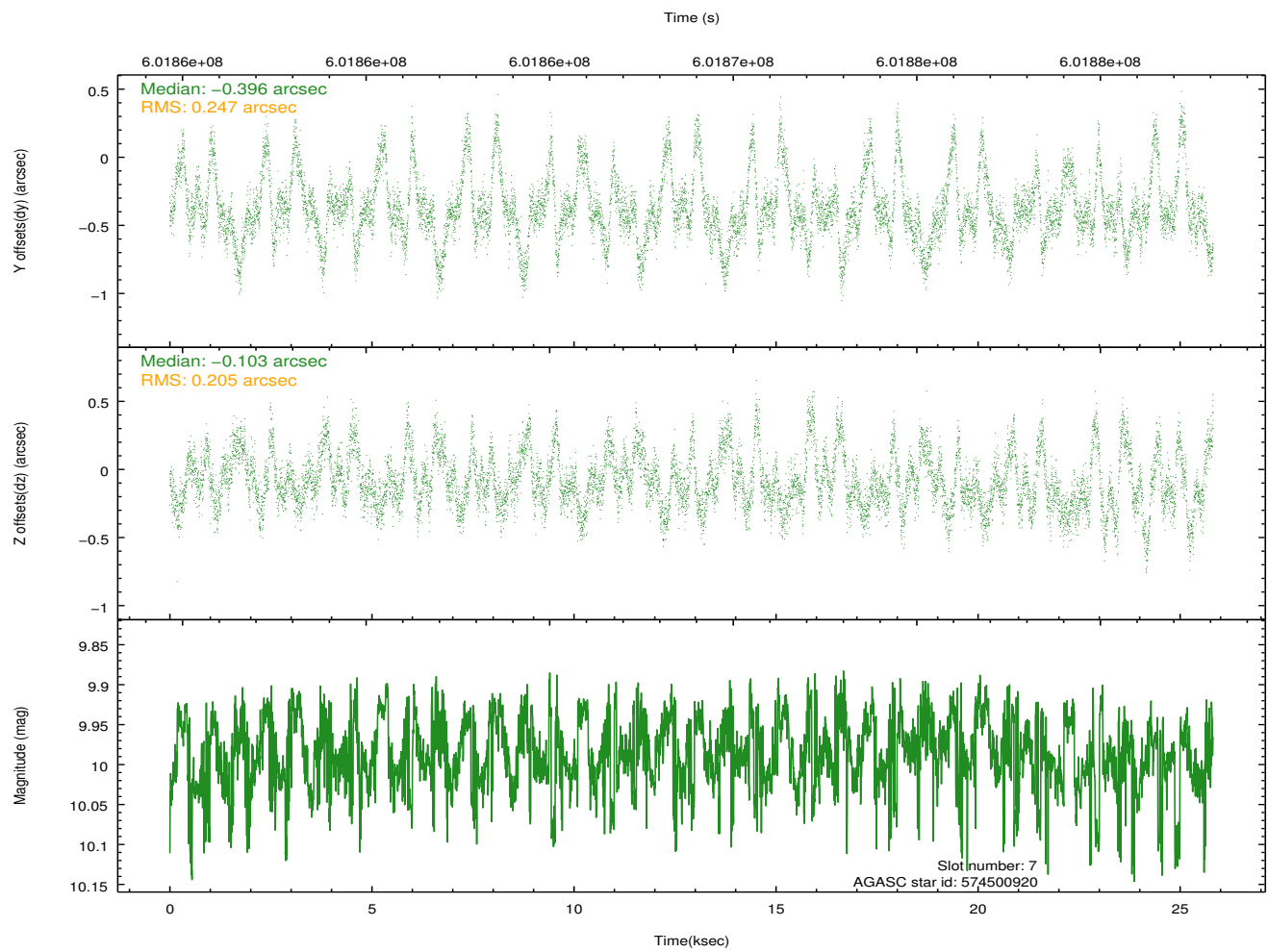
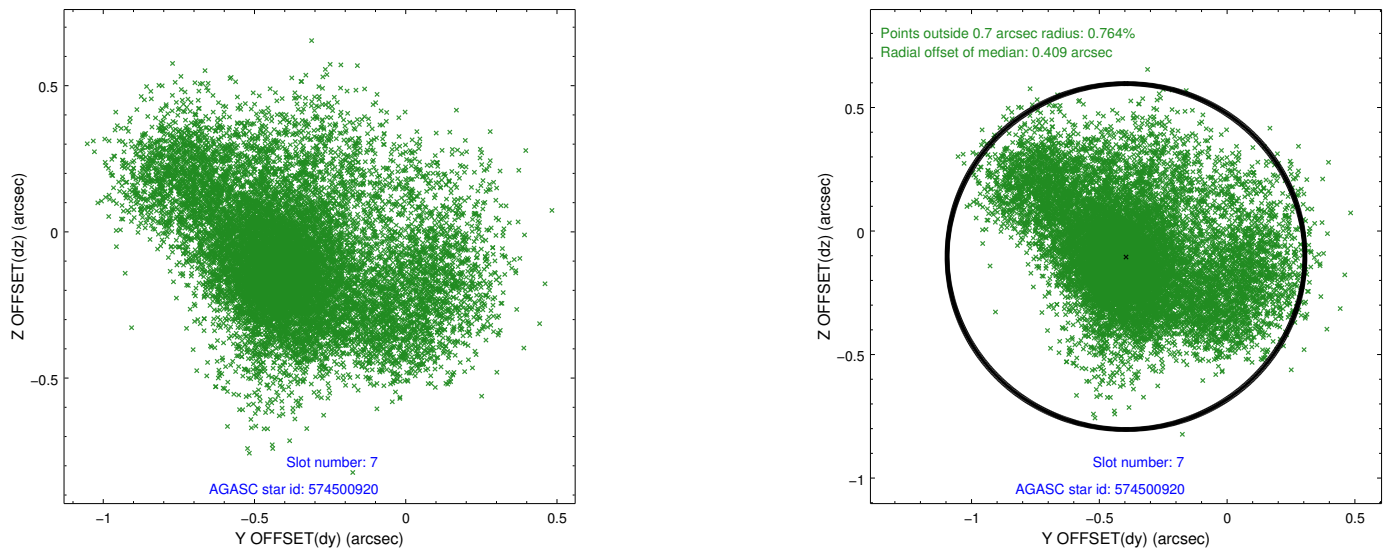
## 2.4.2 Slot 4



### 2.4.3 Slot 5

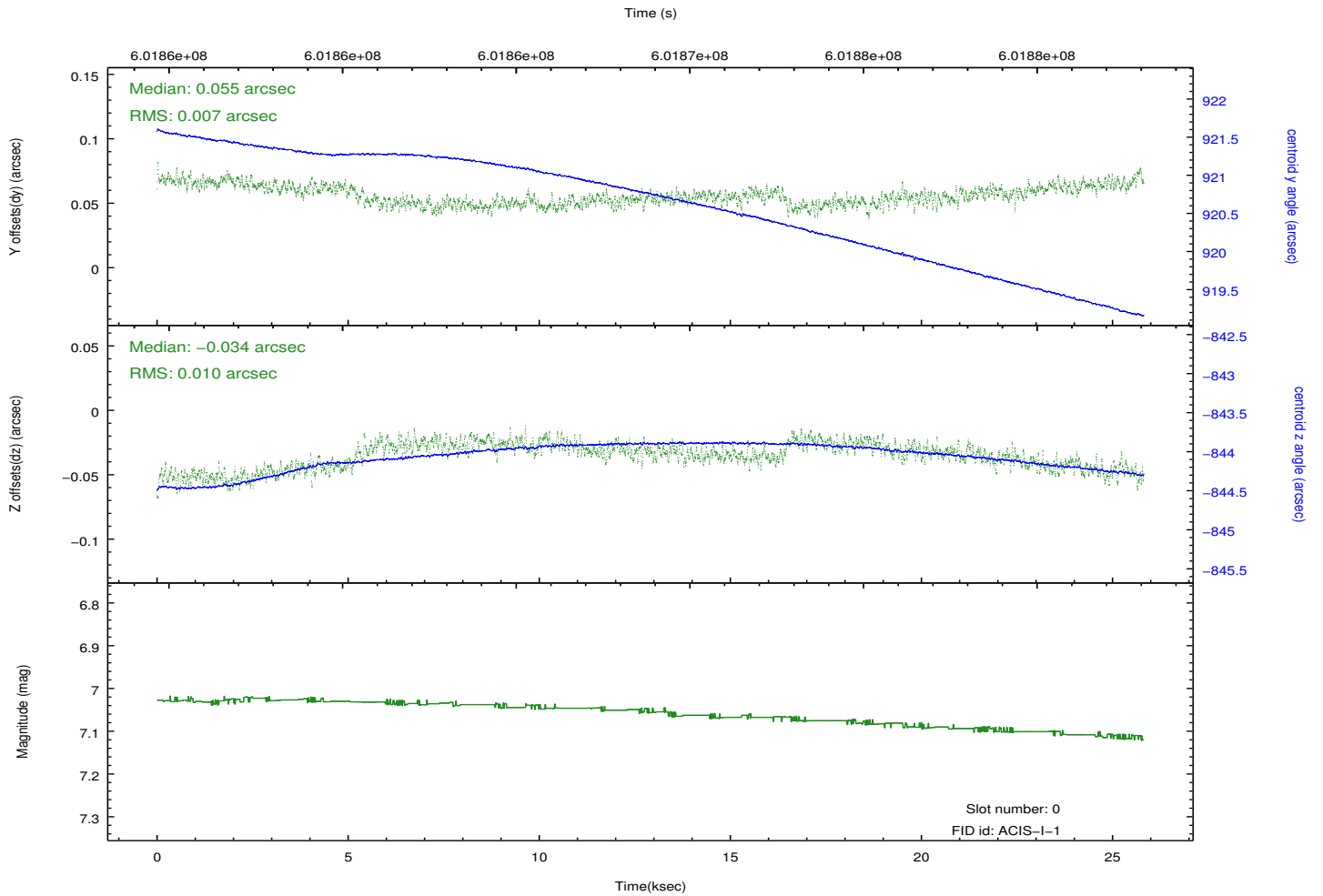
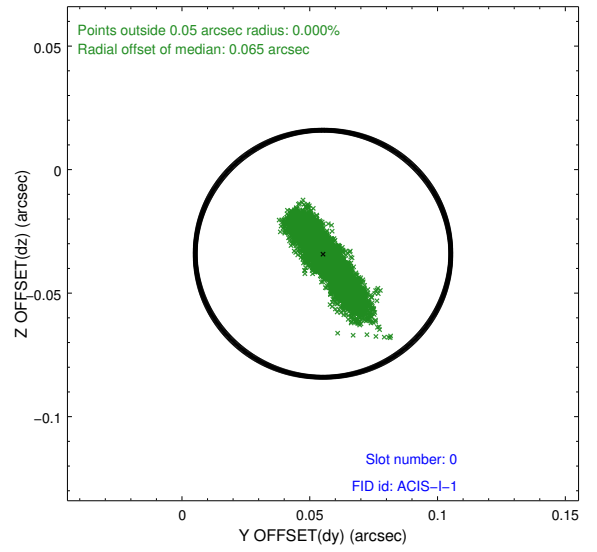
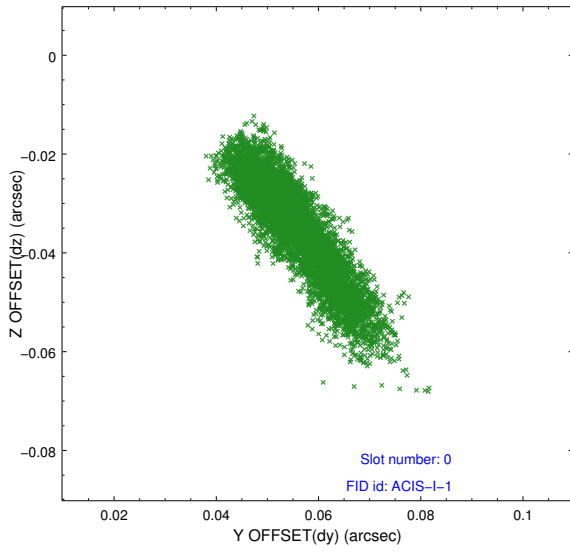


## 2.4.4 Slot 7

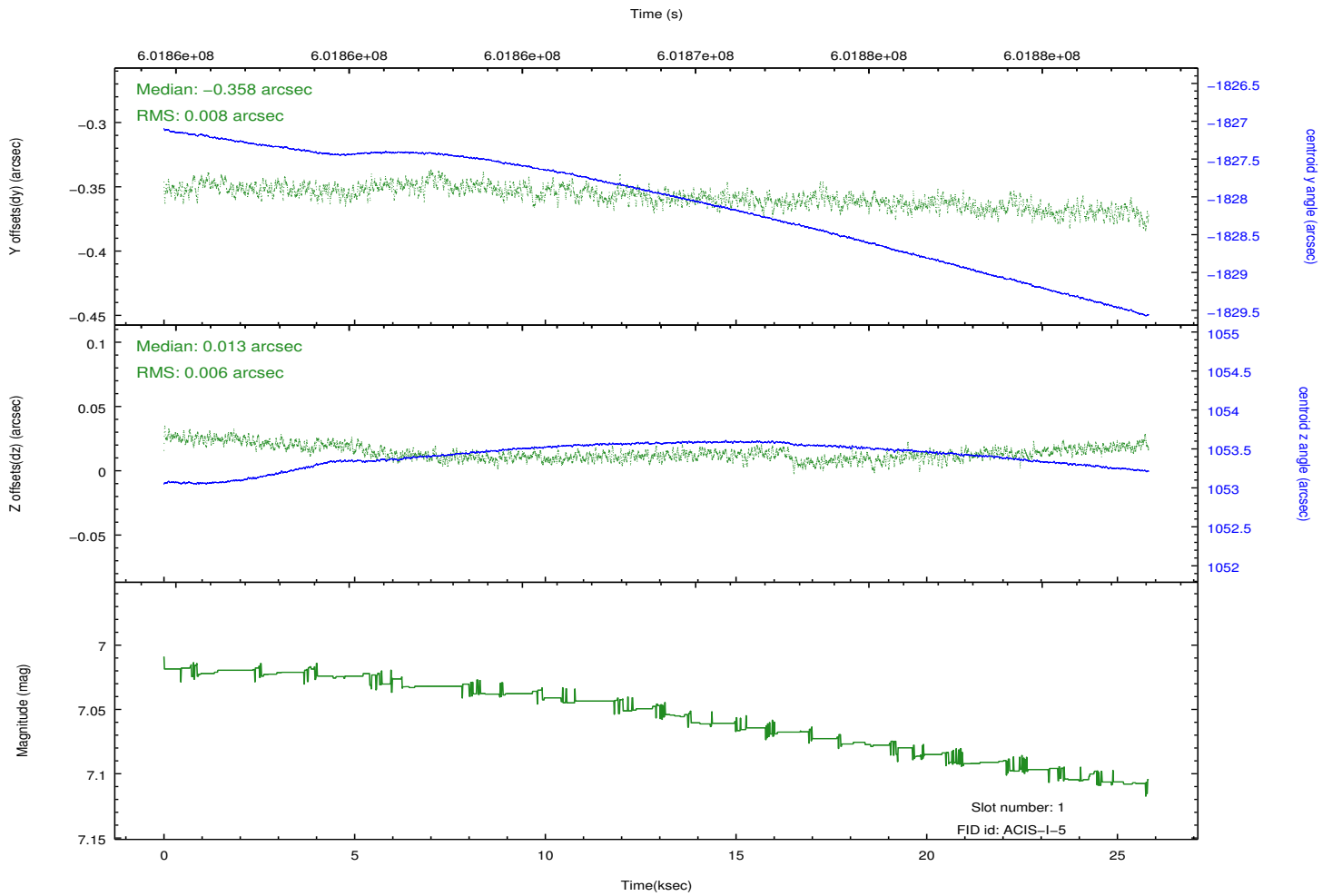
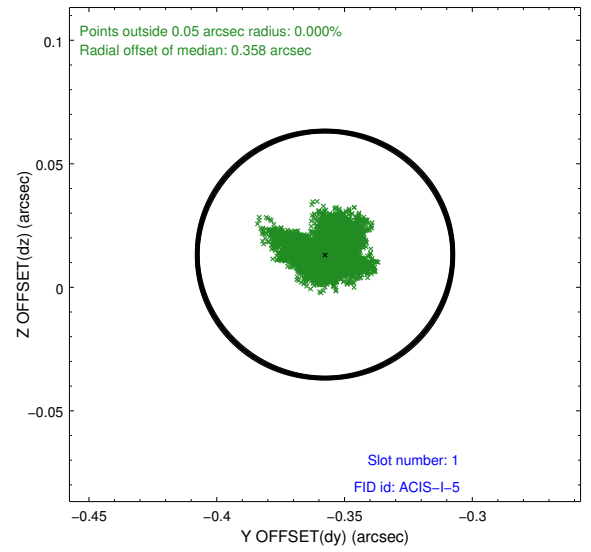
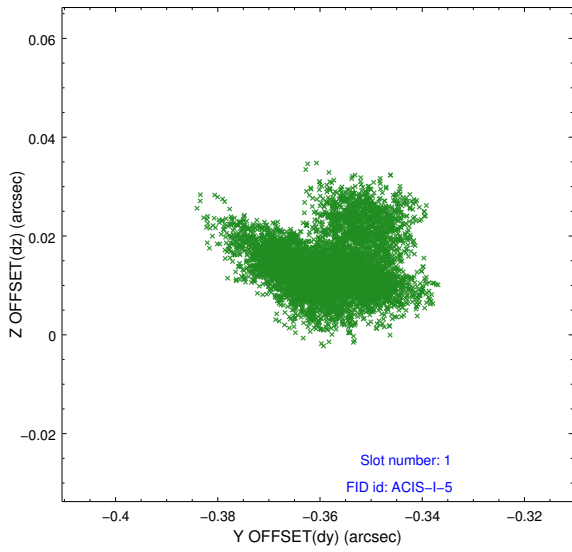


## 2.5 FID Slots

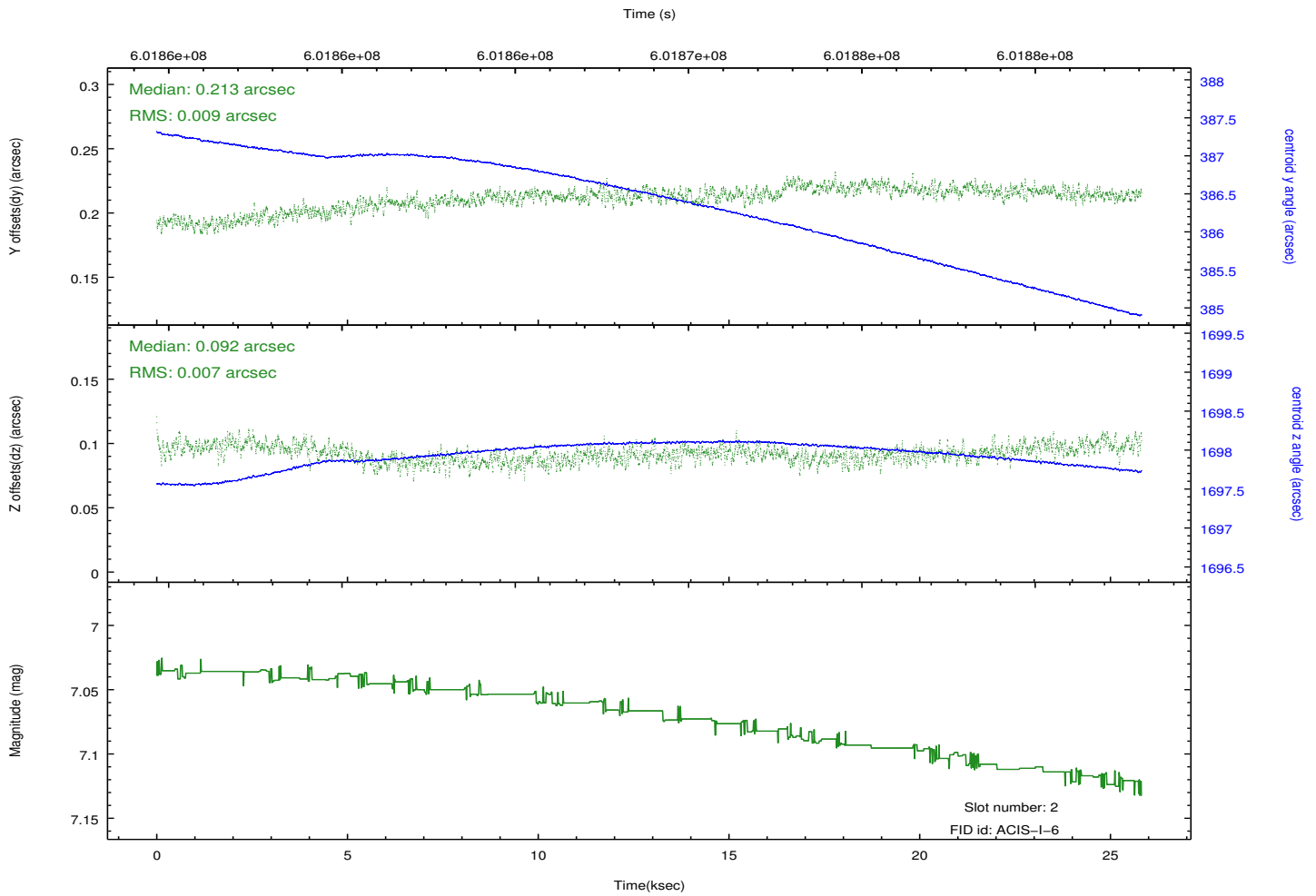
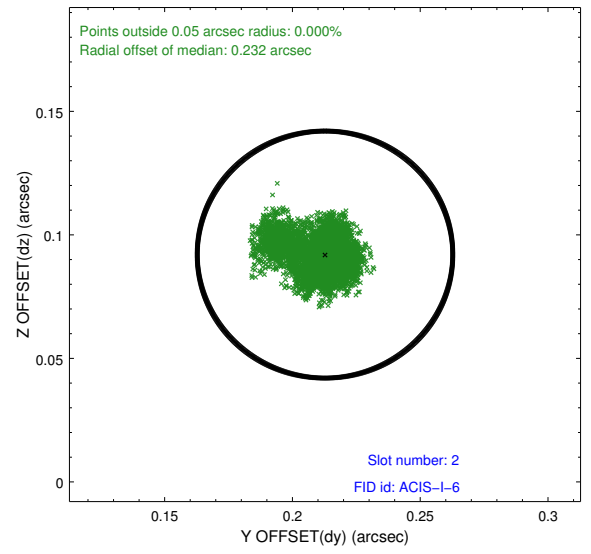
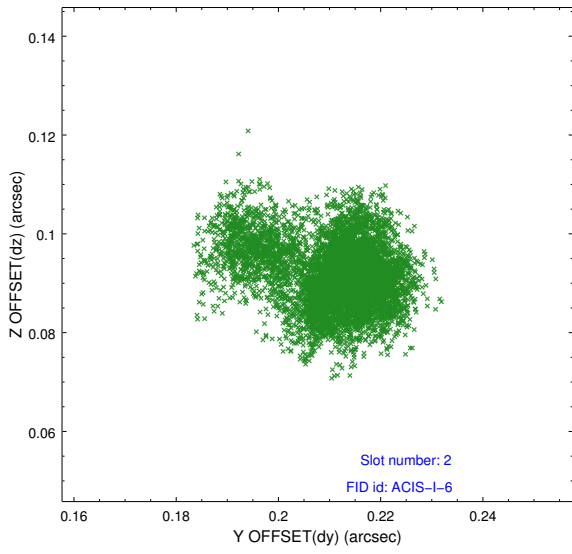
### 2.5.1 Slot 0



## 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)	2017.02.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.078270727038

## A.2 Comments

One optional chip was dropped.

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this slot from the solution.