

# V&V Reference Report

## L2 ASCDS Version : 10.3.1

Observation 17033 - L2 Version 2  
Chandra X-Ray Center

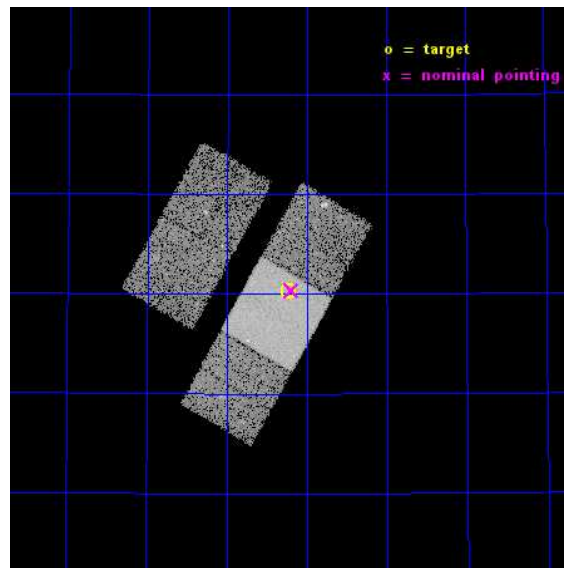
L2 Processing Date : Jan 2 2015

## 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 6 . . . . .	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	703037	Sequence number
obs_id	17033	Observation id
title	Probing the Growth of Massive Black Holes in Dwarf Galaxies with Chandra and HST	Proposal title
observer	Dr. Amy Reines	Principal investigator
object	J090613.75+561015.5	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	136.5575	Observer's specified target RA [deg]
dec_targ	56.170972	Observer's specified target Dec [deg]
ra_nom	136.54835193063	Nominal RA [deg]
dec_nom	56.172931915687	Nominal Dec [deg]
roll_nom	119.73158052739	Nominal Roll [deg]
revision	2	Processing version of data
ontime	16035.086328387	Sum of GTIs [s]
livetime	15825.576120648	Livetime [s]
ontime2	16034.922168374	Sum of GTIs [s]
ontime3	16035.004248381	Sum of GTIs [s]
ontime6	16035.045288384	Sum of GTIs [s]
ontime7	16035.086328387	Sum of GTIs [s]
ontime8	16034.963208377	Sum of GTIs [s]
l2events	78731	Number of level 2 events

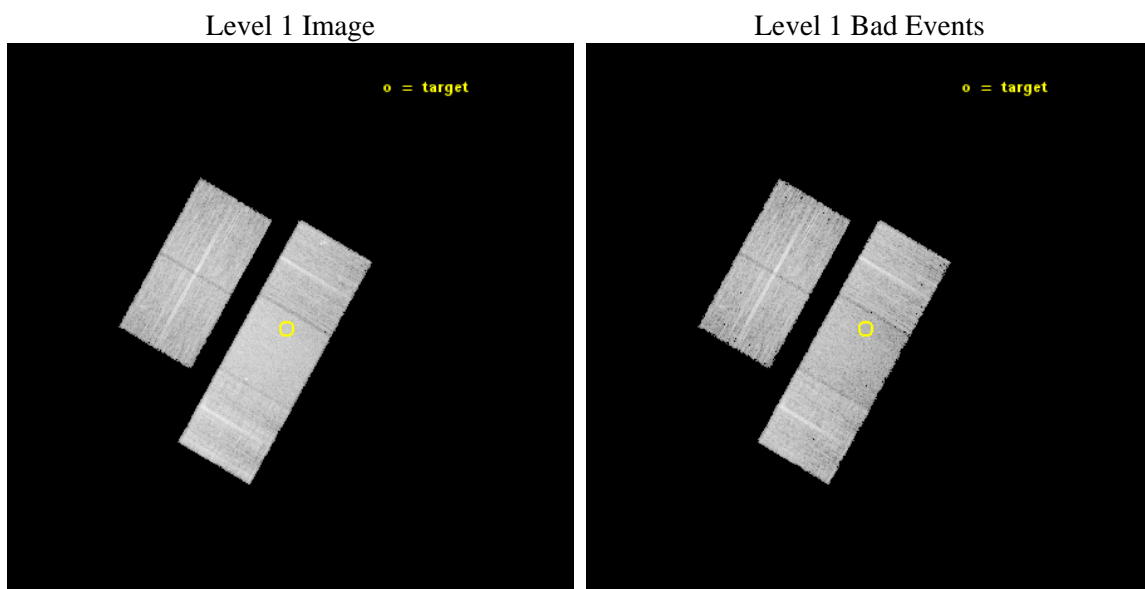




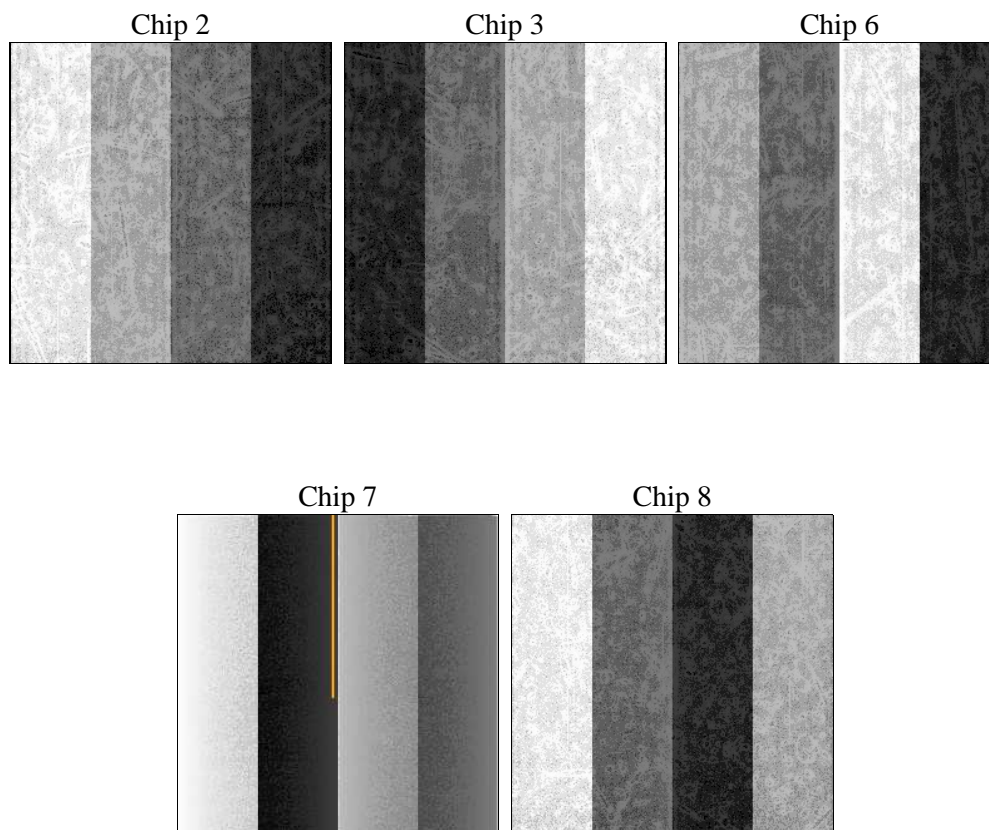
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	15966.875000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	16035.086328387	Sum of GTIs [s]
caldsver	4.6.5	&#160	ontime2	16034.922168374	Sum of GTIs [s]
date	2015-01-02T19:42:29	Date and time of file creation	ontime3	16035.004248381	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	16035.045288384	Sum of GTIs [s]
			ontime7	16035.086328387	Sum of GTIs [s]
			ontime8	16034.963208377	Sum of GTIs [s]
			l1events	423250	Number of level 1 events

### 2.1.4 Events

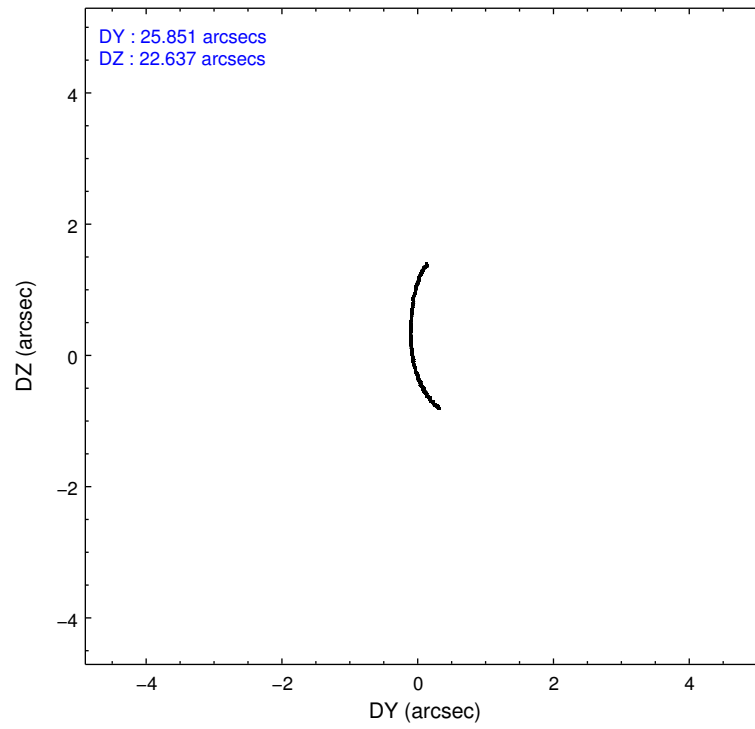
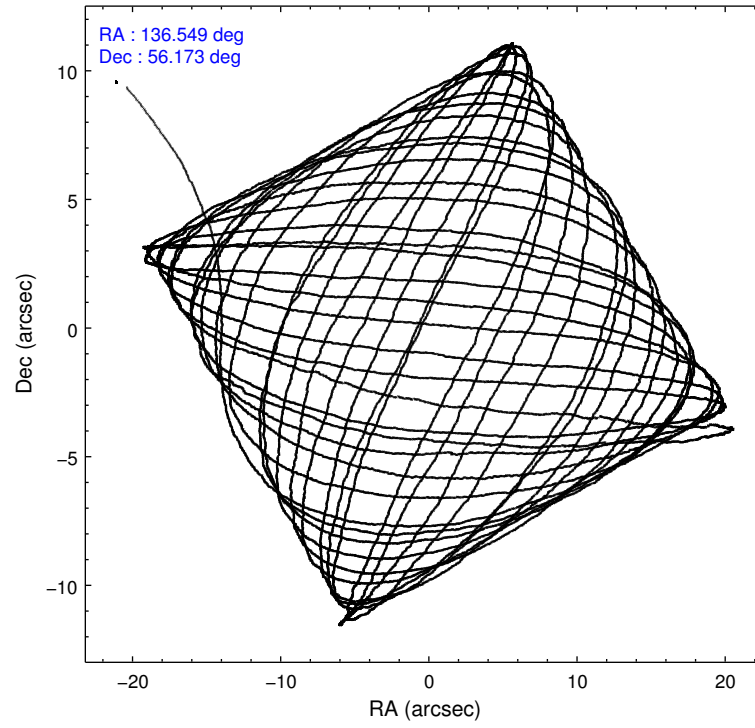
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	70938	70204	76057	102838	103213
rejected events	61884	61535	66095	56982	75364
rejected %	87%	87%	86%	55%	73%

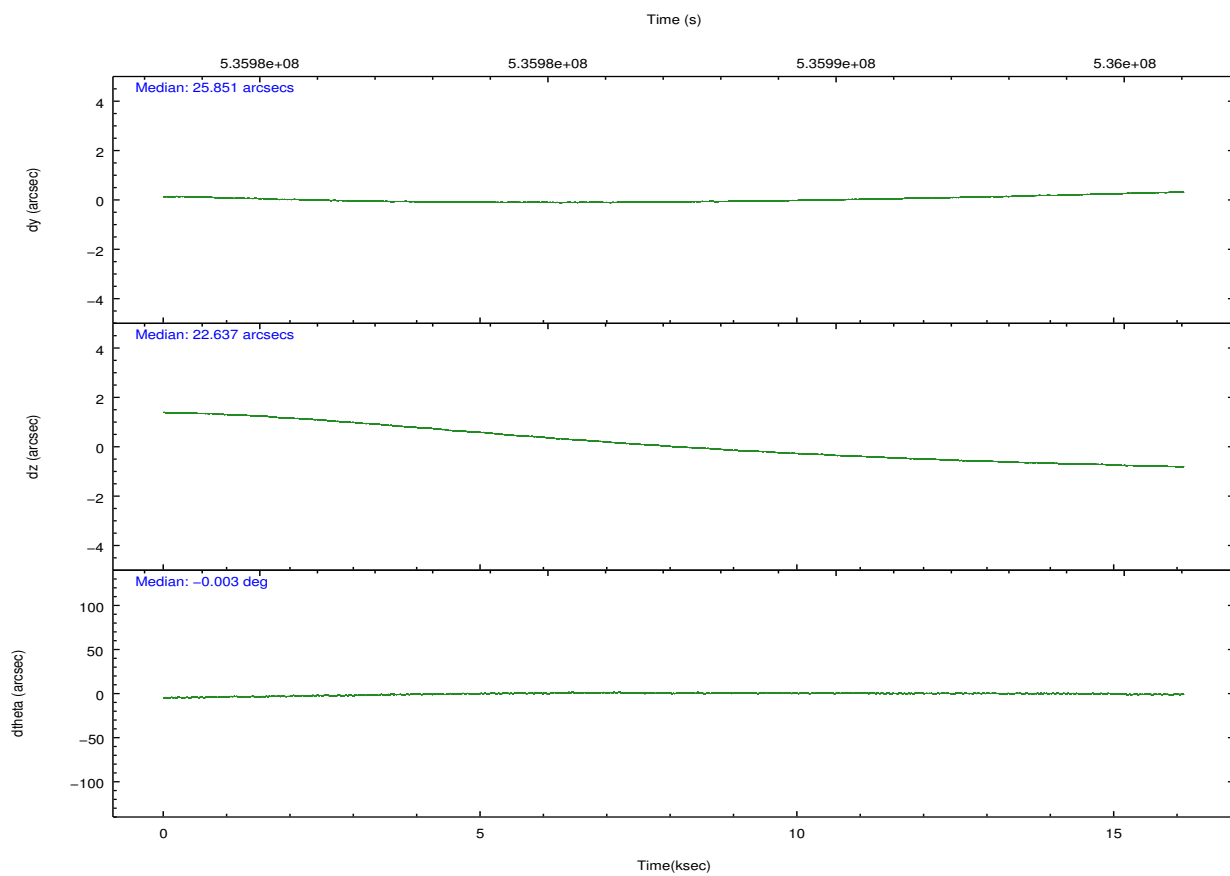
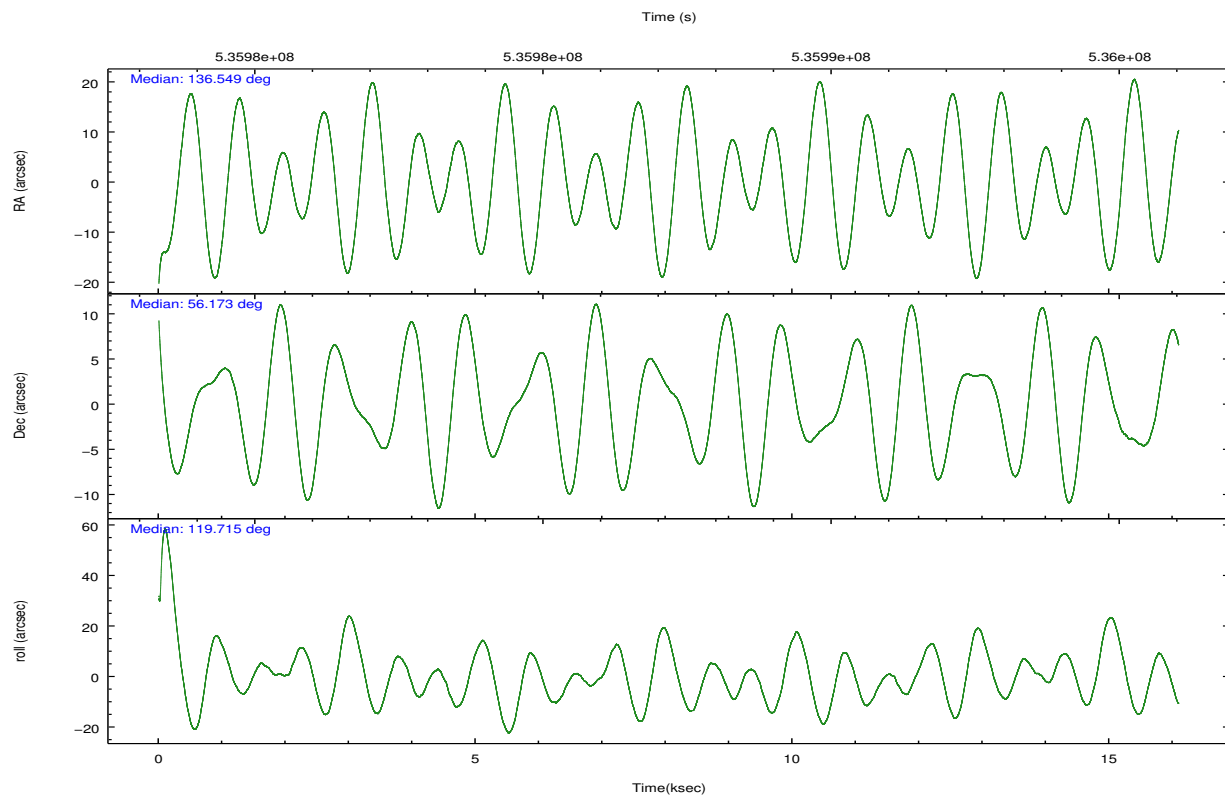
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	3310	3080	3604	4103	8497
	4%	4%	4%	3%	8%
grade 1 events	27	52	36	118	68
	0%	0%	0%	0%	0%
grade 2 events	2177	1906	2270	9556	6256
	3%	2%	2%	9%	6%
grade 3 events	910	922	954	3887	3038
	1%	1%	1%	3%	2%
grade 4 events	903	877	925	3853	2915
	1%	1%	1%	3%	2%
grade 5 events	3259	3877	3910	10447	5588
	4%	5%	5%	10%	5%
grade 6 events	1760	1891	2210	24473	7150
	2%	2%	2%	23%	6%
grade 7 events	58592	57599	62148	46401	69701
	82%	82%	81%	45%	67%

## 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	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	136.591301	136.5483519306287	CCD I2 on	Y	Y
[deg] Pointing Dec	56.159415	56.17293191568692	CCD I3 on	Y	Y
[deg] Pointing Roll	119.539303	119.7315805273877	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	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	O1	Y
[s] Observation start time (MET)	535979274.184000	535978137.58773	CCD S5 on	N	N
Observation start date	2014-12-26T11:06:47	2014-12-26T10:48:57	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	535995241.184000	535995467.2637	On-chip summing requested	N	N
Observation end date	2014-12-26T15:32:54	2014-12-26T15:37:47	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



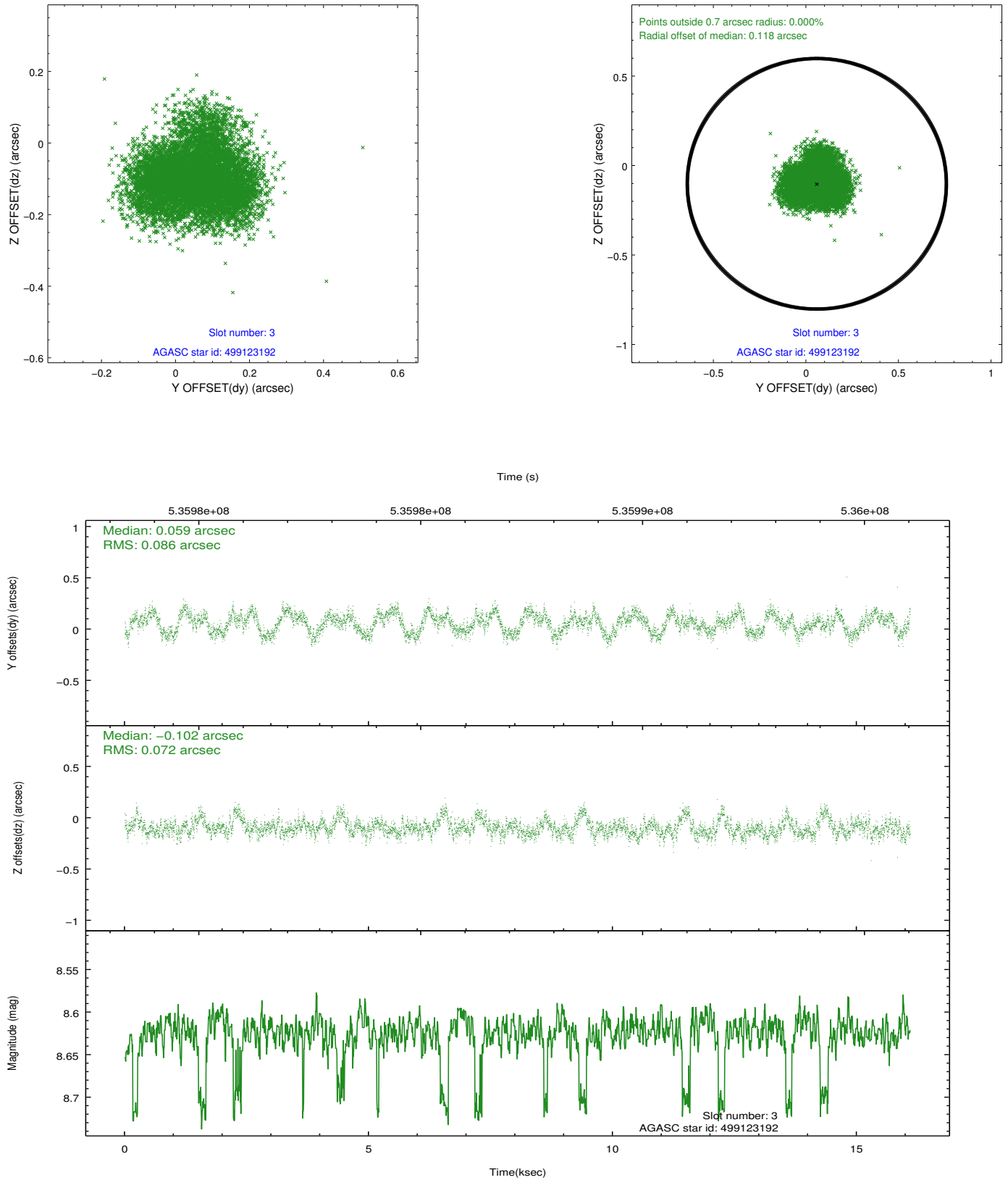


### Slot Statistics

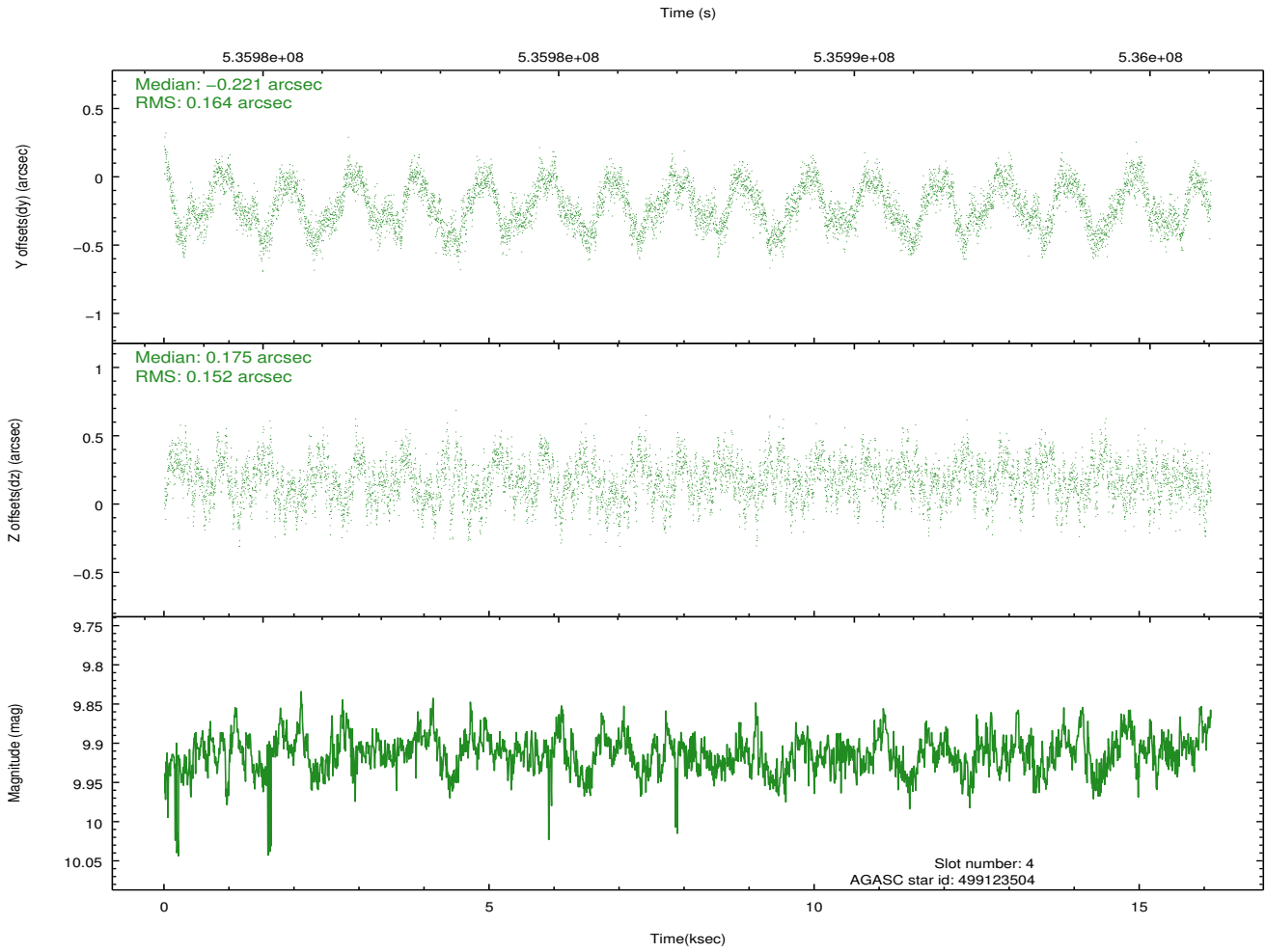
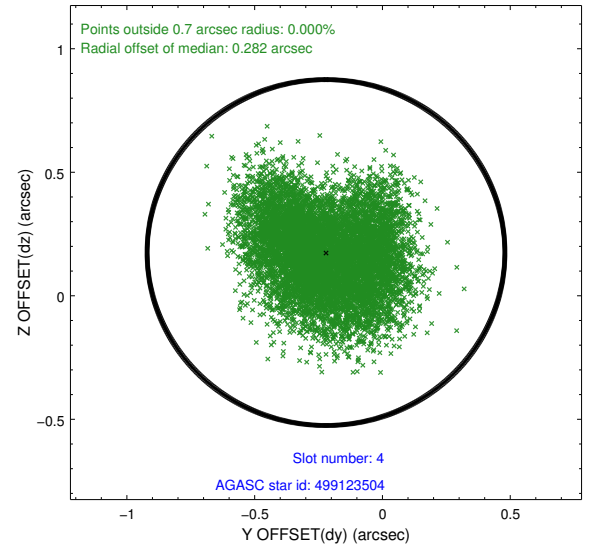
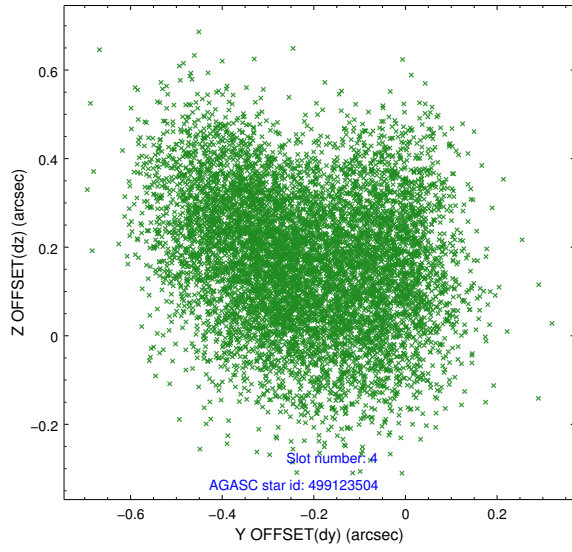
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.94	3926	-0.160	-0.049	0.015	0.021	0.000000	0.000000	-779.34	-1744.35
1	FID		ACIS-S-4	7.03	3925	0.298	0.092	0.010	0.019	0.000000	0.000000	2134.31	163.93
2	FID		ACIS-S-5	7.05	3926	-0.169	-0.033	0.012	0.018	0.000000	0.000000	-1831.81	157.87
3	GUIDE	used	499123192	8.62	7849	0.059	-0.102	0.124	0.185	136.890145	56.101389	-476.22	-419.48
4	GUIDE	used	499123504	9.91	7811	-0.221	0.175	0.244	0.369	137.618410	56.380734	-302.44	-2180.93
5	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
6	GUIDE	used	499261200	9.79	7842	0.112	0.297	0.204	0.342	137.793147	55.973313	-1757.57	-1786.25
7	GUIDE	used	499122616	7.99	7849	0.052	-0.368	0.124	0.190	136.484776	55.389682	-2304.19	1555.45

## 2.4 Star Slots

### 2.4.1 Slot 3

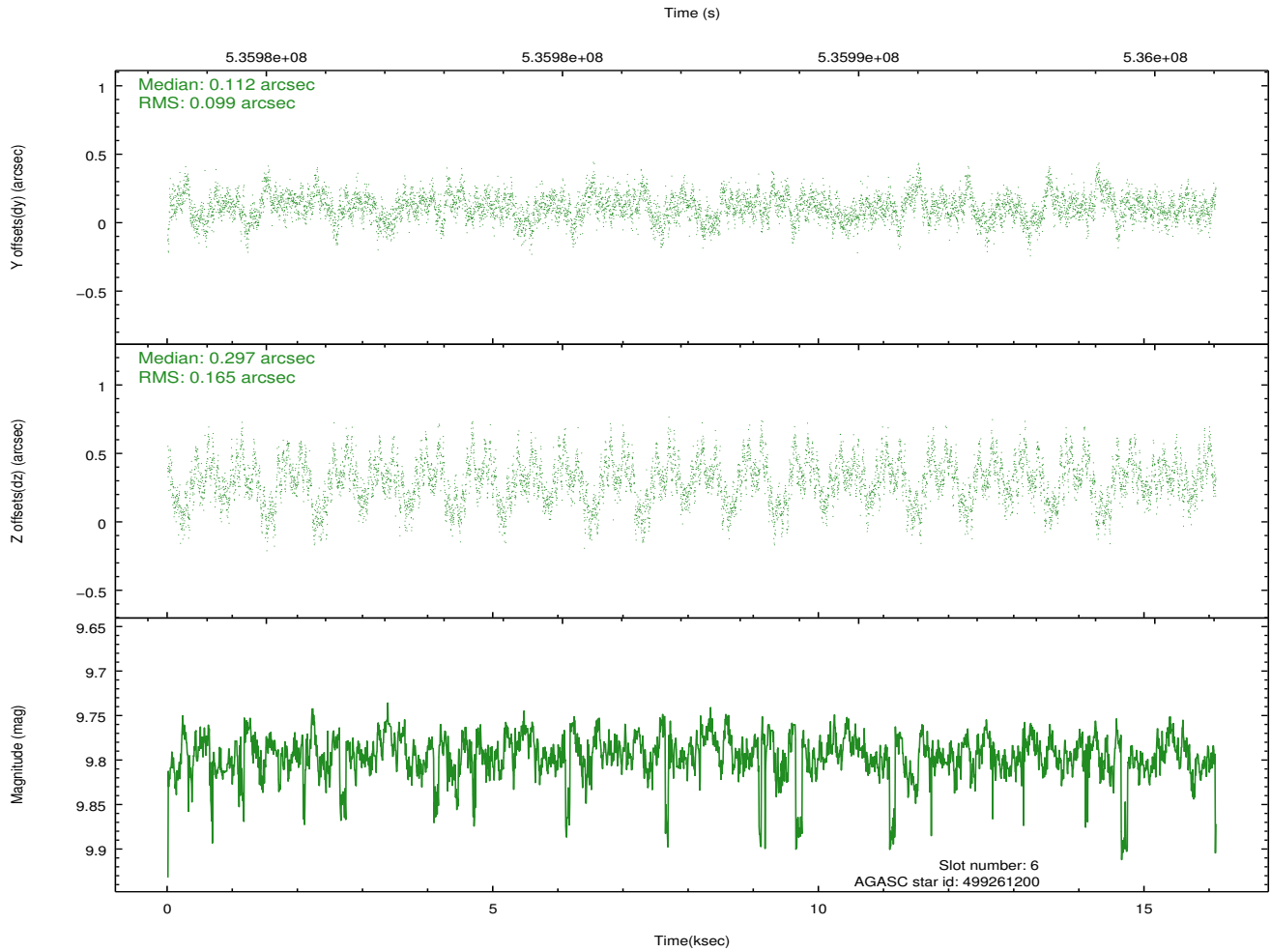
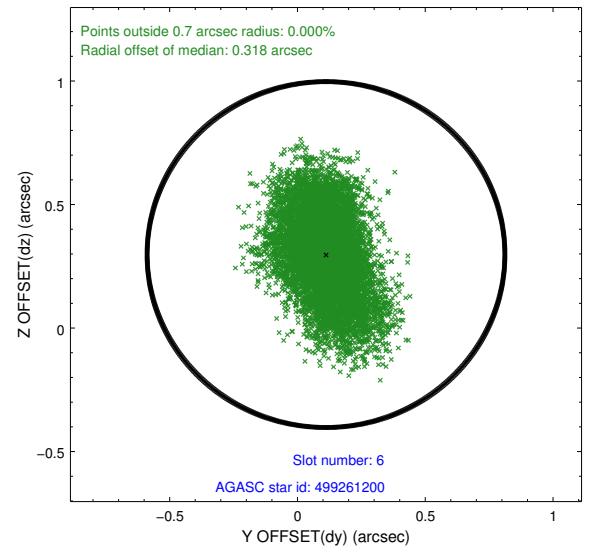
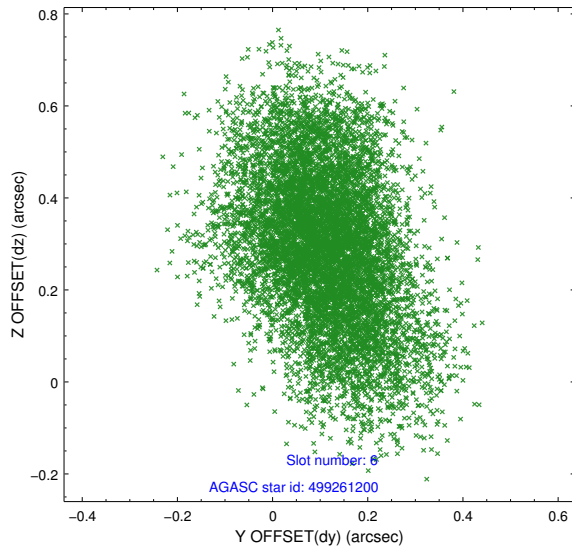


## 2.4.2 Slot 4

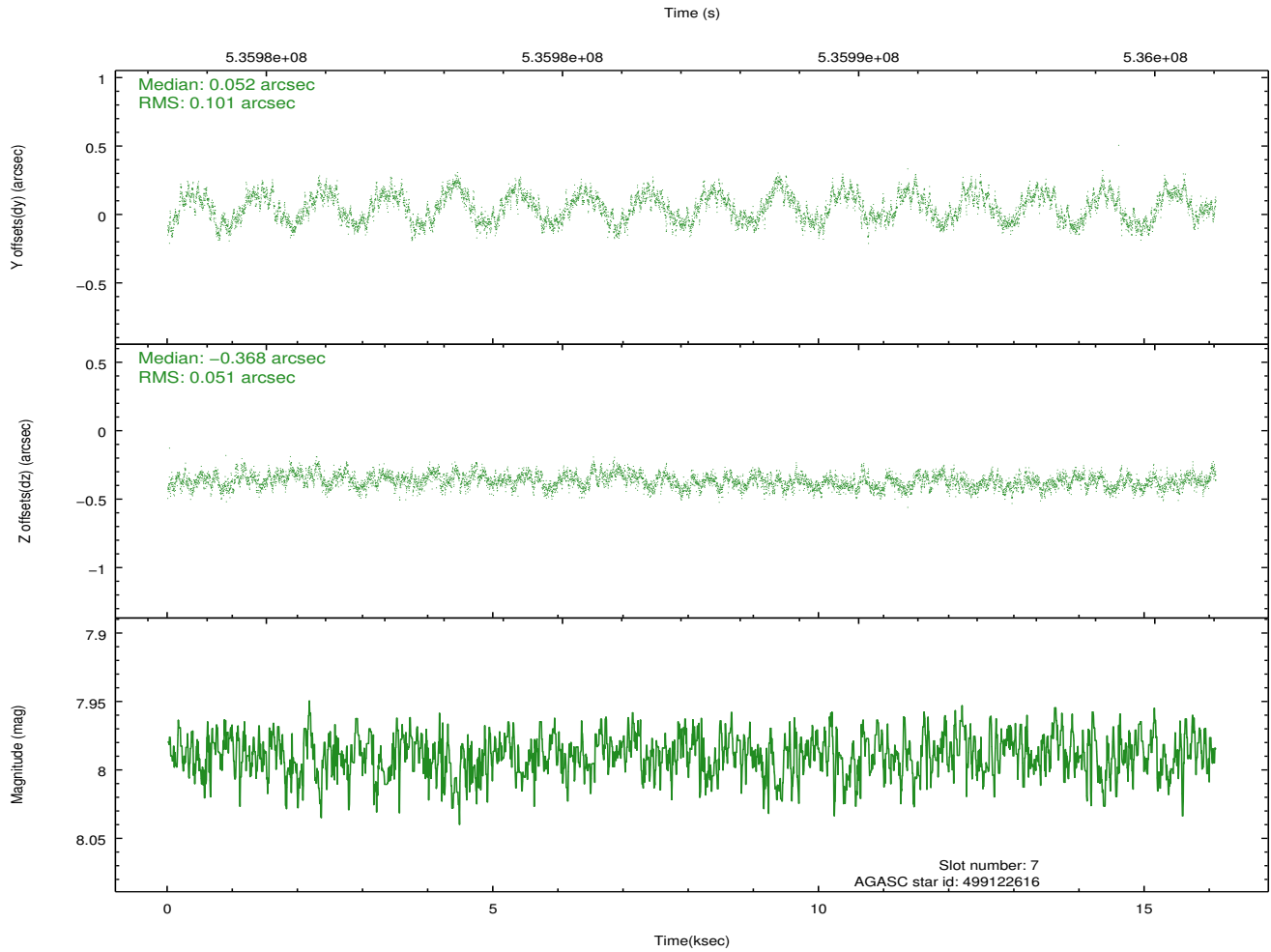
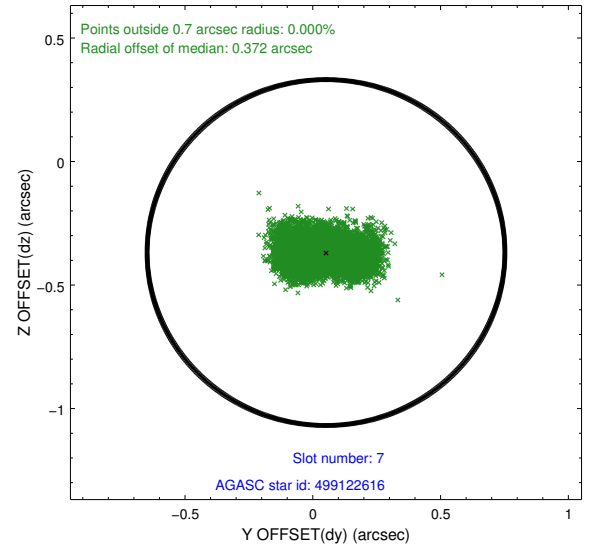
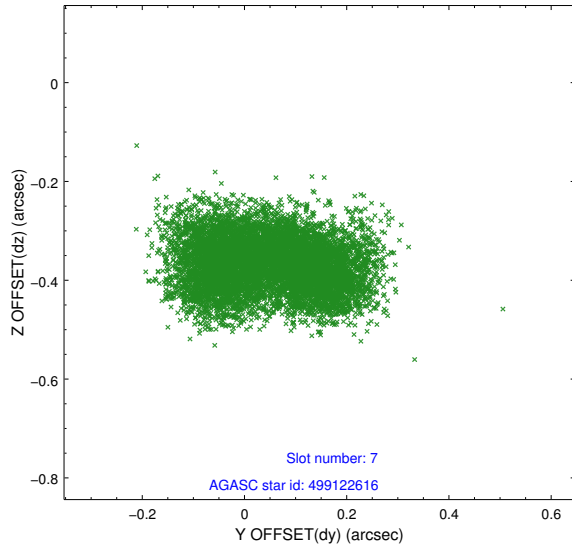




### 2.4.3 Slot 6

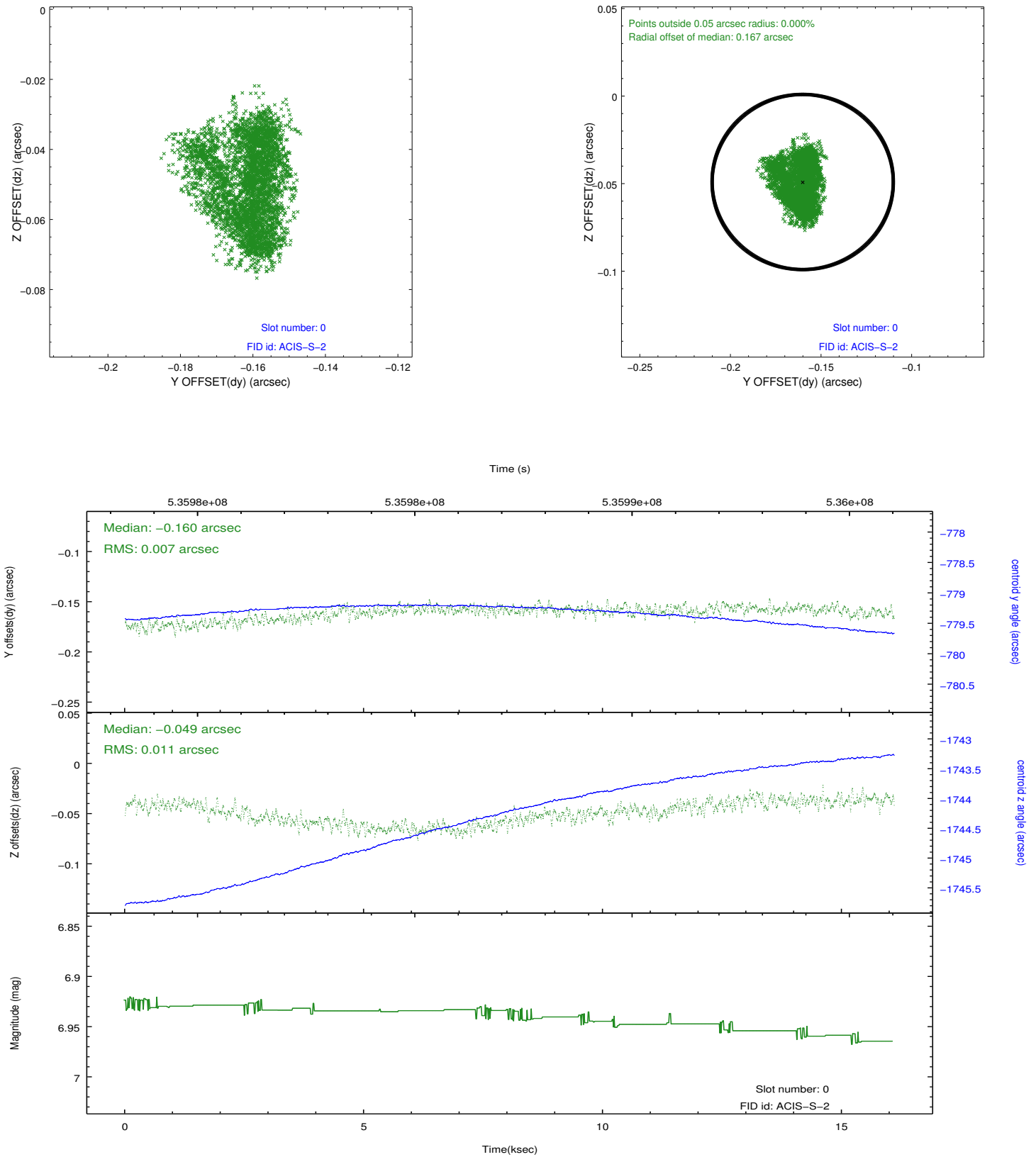


## 2.4.4 Slot 7

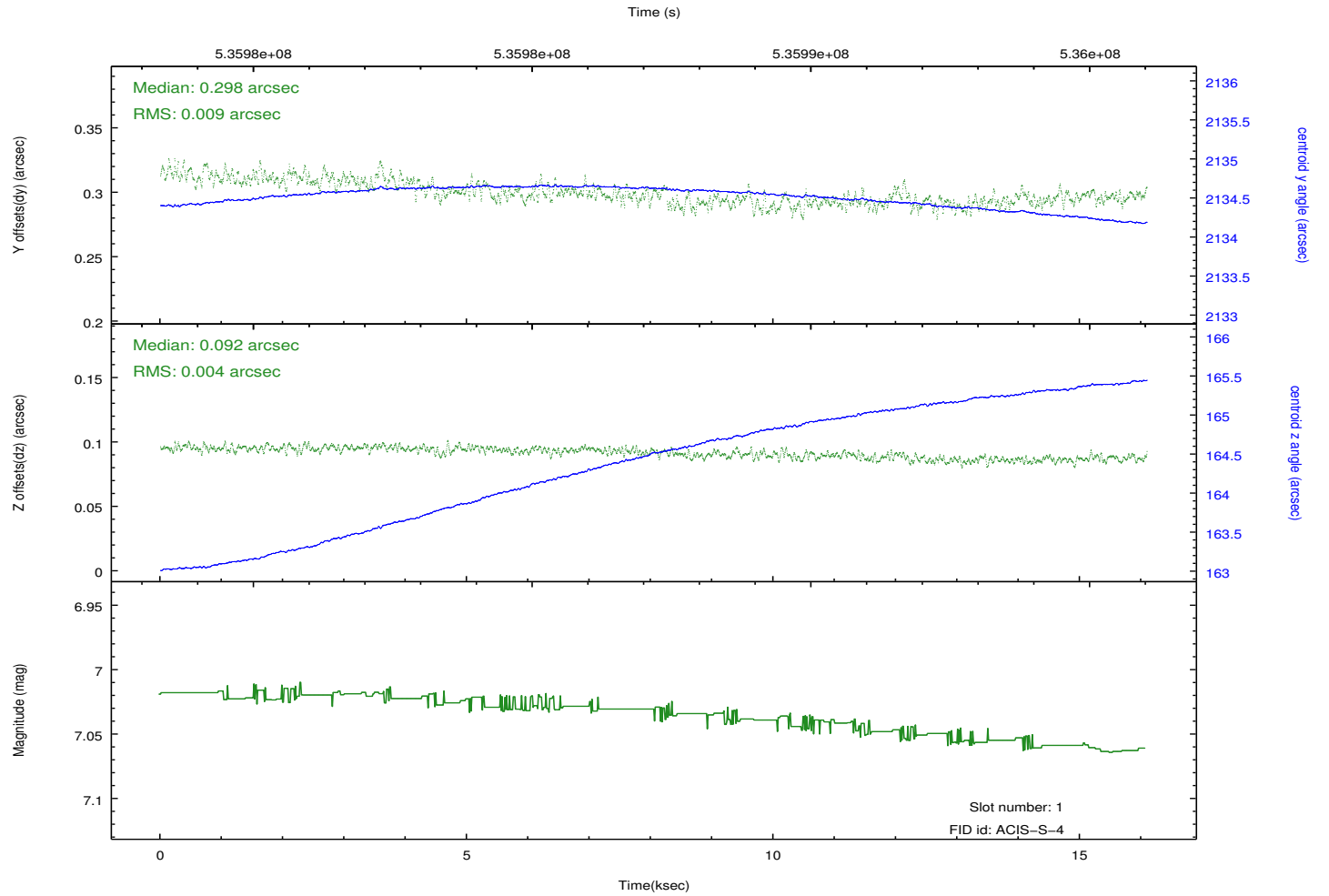
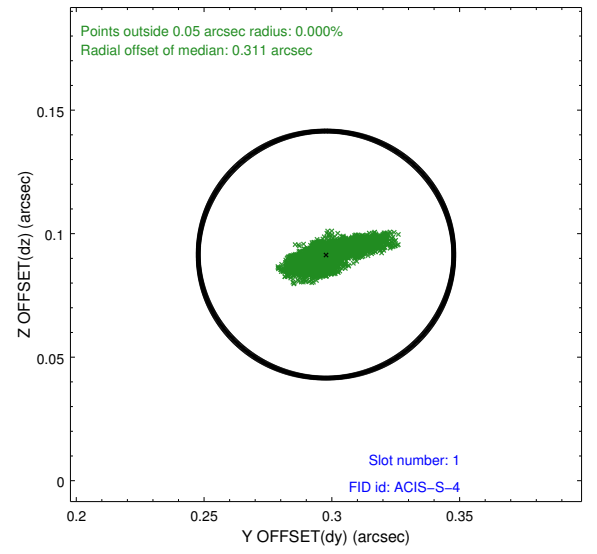
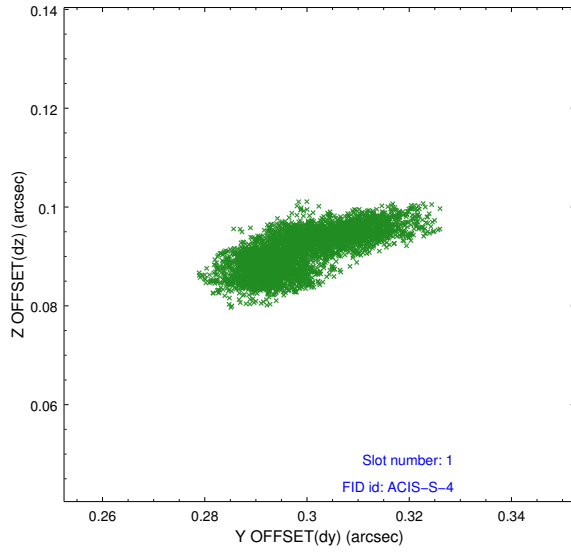


## 2.5 FID Slots

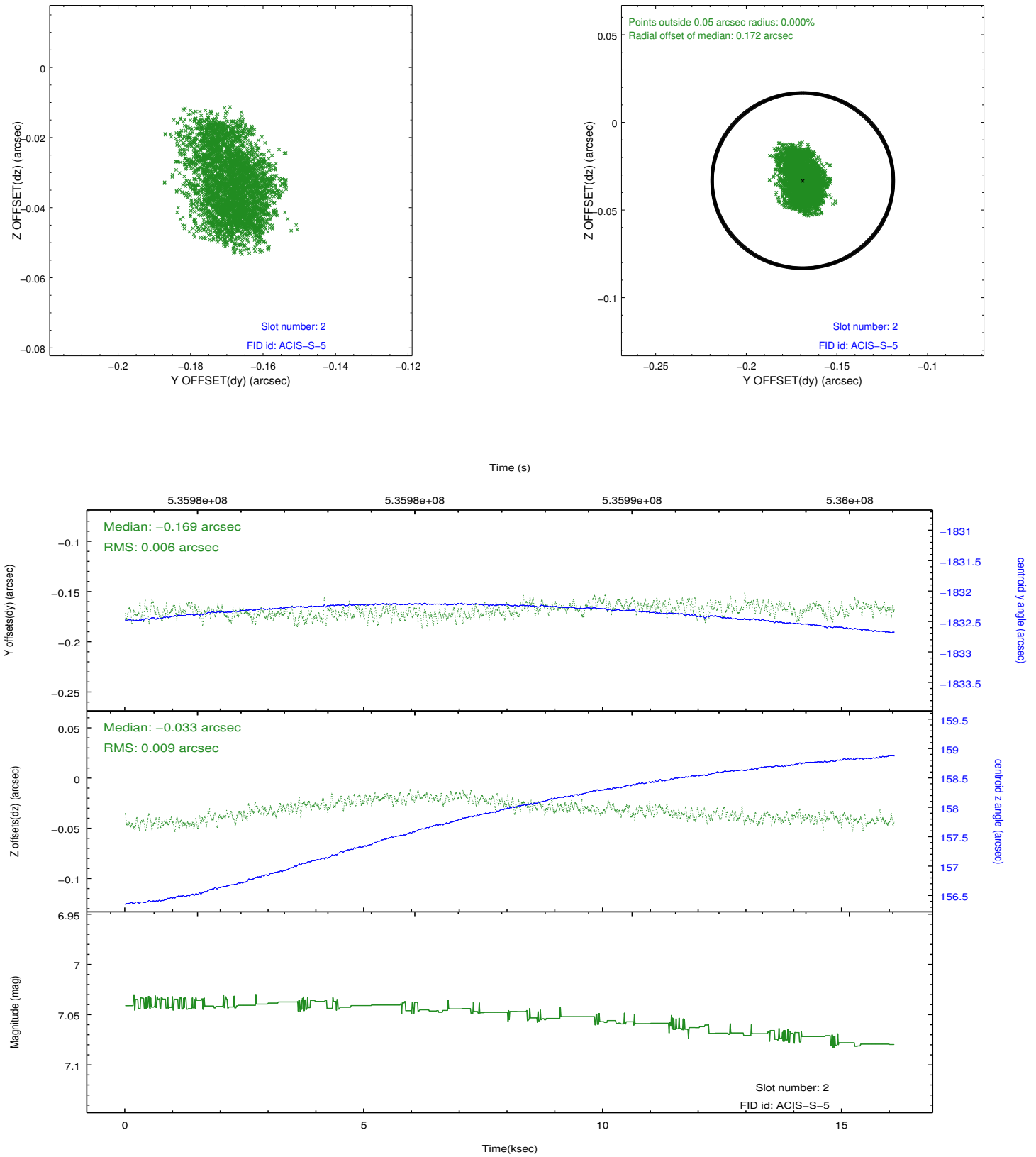
### 2.5.1 Slot 0



## 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)	2015.01.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	16.035086328387

## A.2 Comments

Joint proposal with HST.

The guide star in slot 5 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this star from the solution.