

# V&V Reference Report

## L2 ASCDS Version : 10.5.2

Observation 17846 - L2 Version 1  
Chandra X-Ray Center

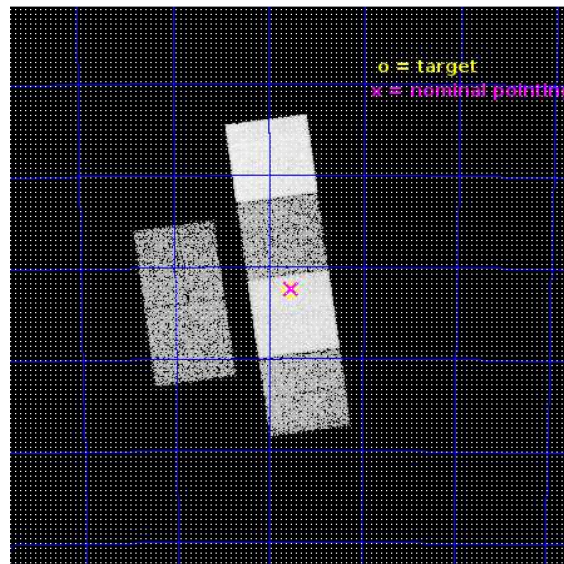
L2 Processing Date : Jan 4 2017

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# 1 Front

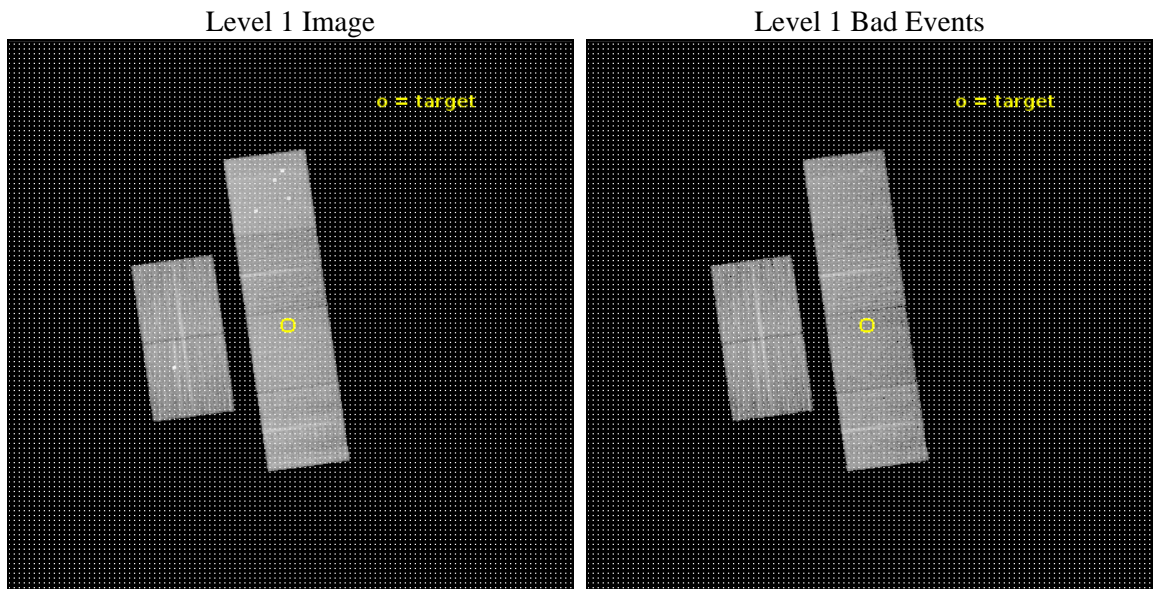
seq_num	401778	Sequence number
obs_id	17846	Observation id
title	The Black Hole Population in Galactic Globular Clusters	Proposal t
observer	Prof Laura Chomiuk	Principal investigator
object	NGC 4833	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	194.89125	Observer's specified target RA [deg]
dec_targ	-70.8765	Observer's specified target Dec [deg]
ra_nom	194.88191786975	Nominal RA [deg]
dec_nom	-70.873258496075	Nominal Dec [deg]
roll_nom	82.14781465926	Nominal Roll [deg]
revision	1	Processing version of data
ontime	11939.200177908	Sum of GTIs [s]
livetime	11788.018836332	Livetime [s]
ontime2	11939.200177908	Sum of GTIs [s]
ontime3	11939.200177908	Sum of GTIs [s]
ontime5	11939.200177908	Sum of GTIs [s]
ontime6	11939.200177908	Sum of GTIs [s]
ontime7	11939.200177908	Sum of GTIs [s]
ontime8	11939.200177908	Sum of GTIs [s]
l2events	136872	Number of level 2 events



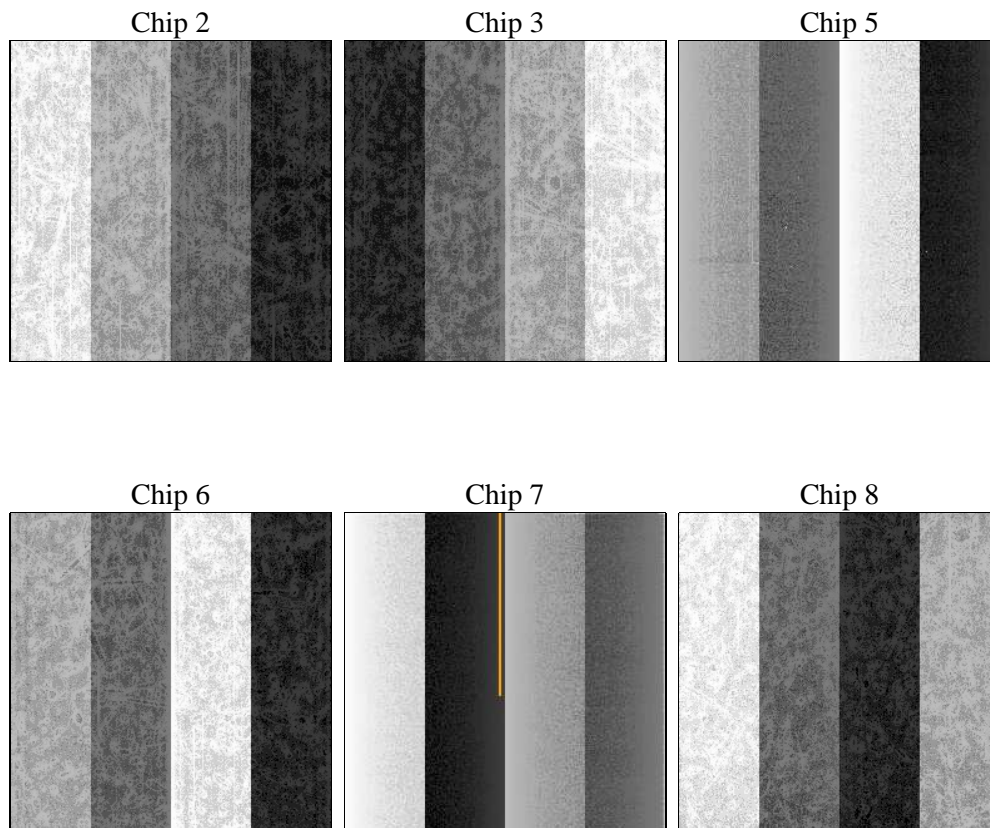
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	12000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	11939.200177908	Sum of GTIs [s]
caldbver	4.7.3	&#160	ontime2	11939.200177908	Sum of GTIs [s]
date	2017-01-04T18:43:22	Date and time of file creation	ontime3	11939.200177908	Sum of GTIs [s]
revision	1	Processing version of data	ontime5	11939.200177908	Sum of GTIs [s]
			ontime6	11939.200177908	Sum of GTIs [s]
			ontime7	11939.200177908	Sum of GTIs [s]
			ontime8	11939.200177908	Sum of GTIs [s]
			l1events	620297	Number of level 1 events

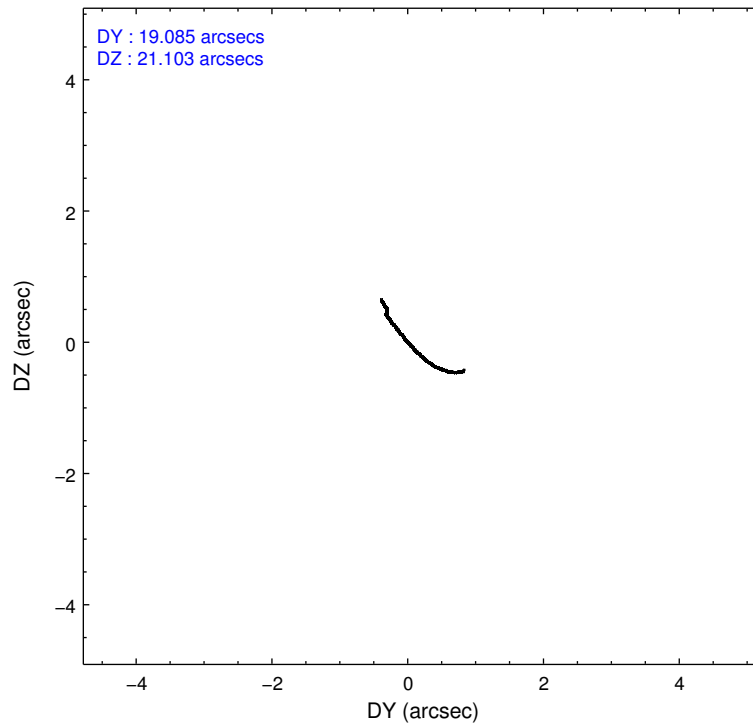
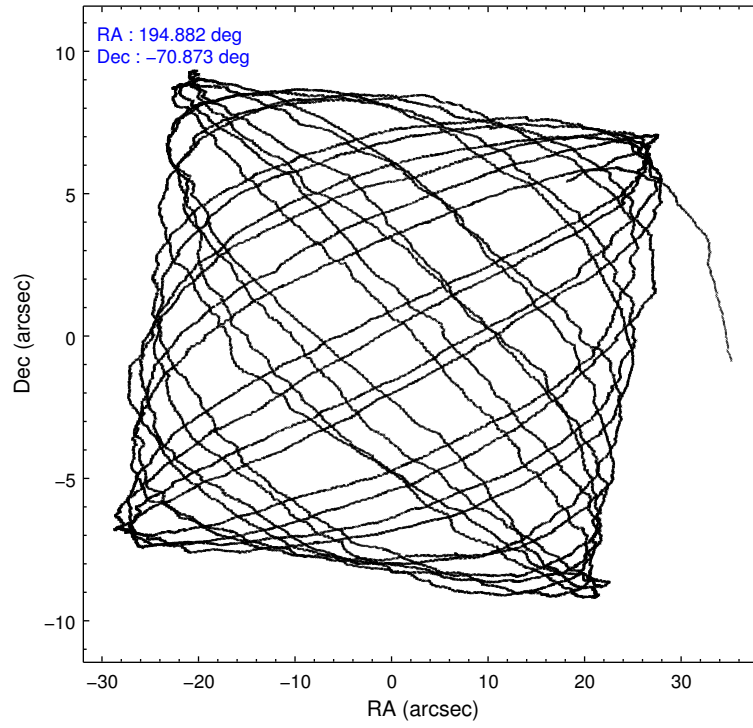
### 2.1.4 Events

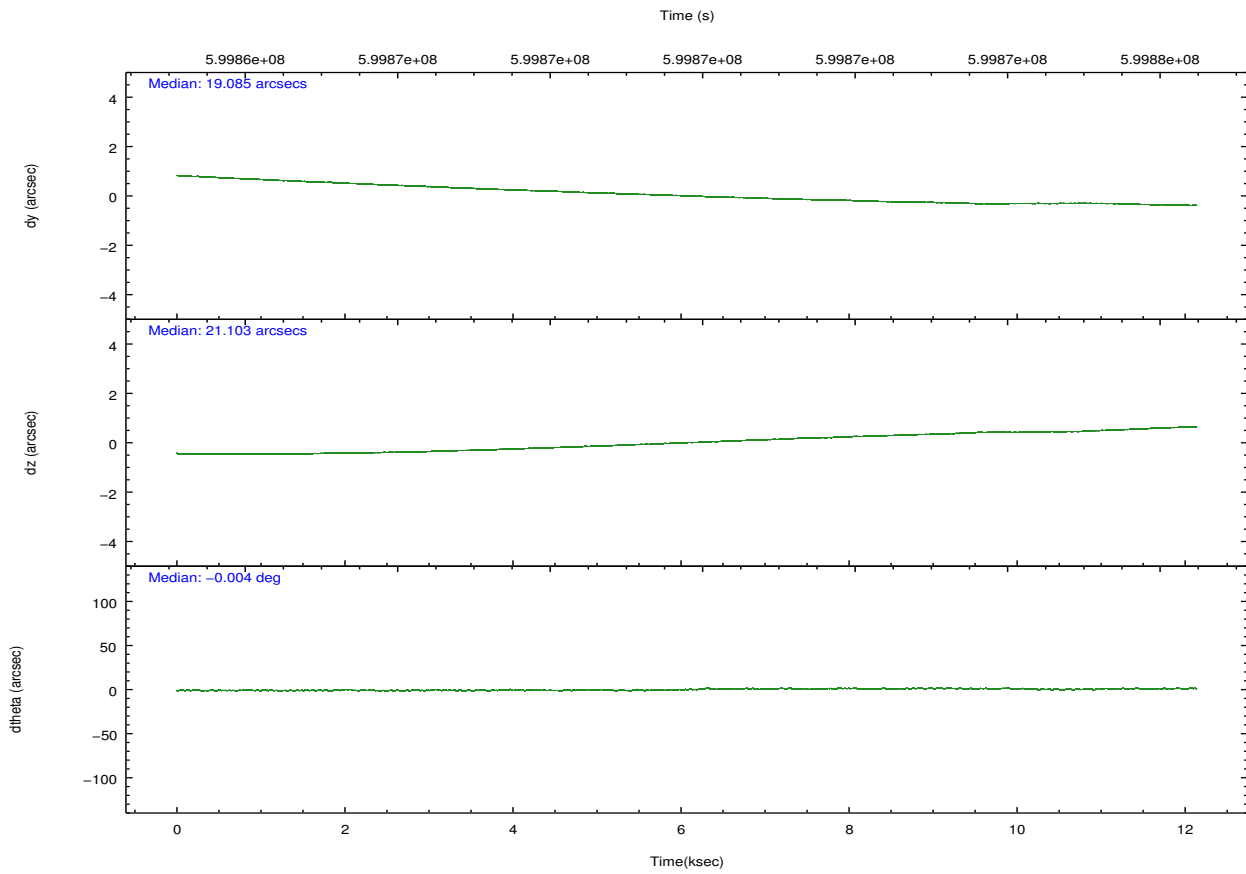
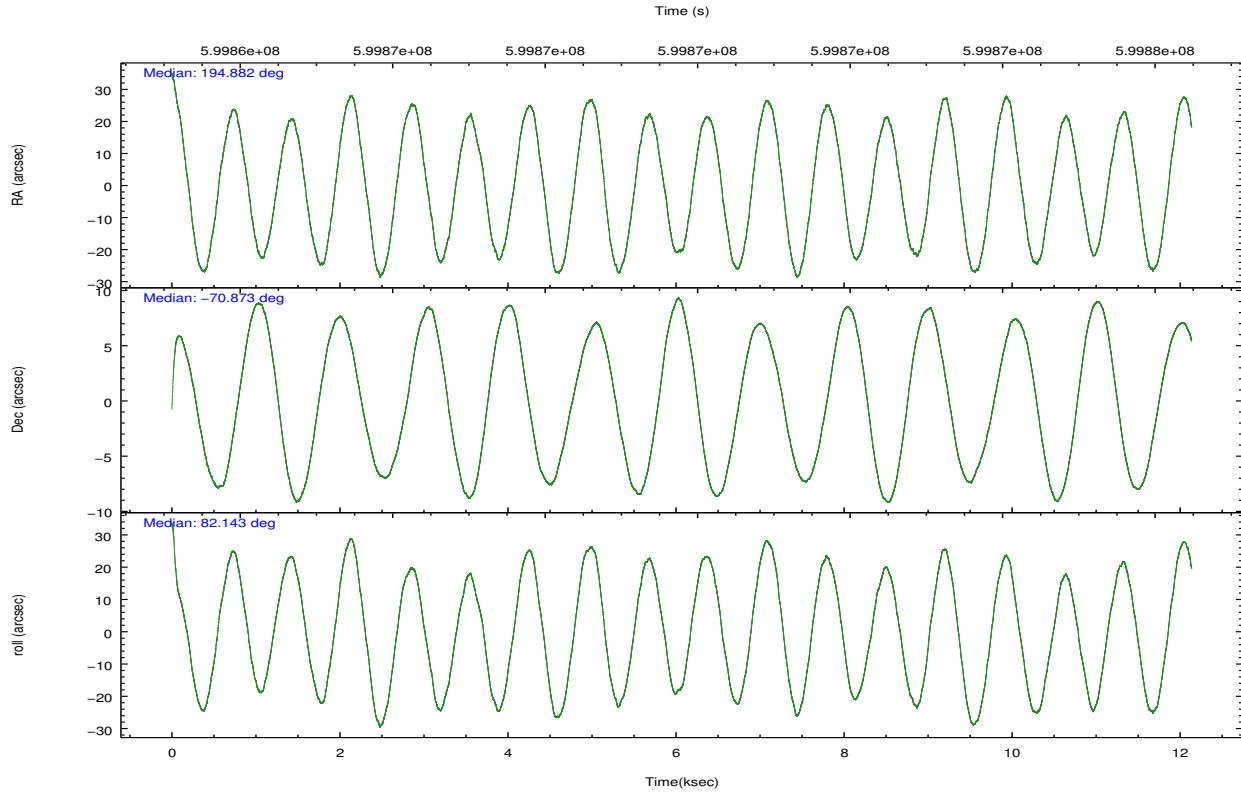
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	88944	87512	139457	86643	107213	110528	grade 0 events	3134	6388	10385	2941	3610	8276
rejected events	80223	75569	69385	77218	61680	81405		3%	7%	7%	3%	3%	7%
rejected %	90%	86%	49%	89%	57%	73%	grade 1 events	57	66	753	33	142	95
								0%	0%	0%	0%	0%	0%
							grade 2 events	2041	1840	20876	2286	9848	7146
								2%	2%	14%	2%	9%	6%
							grade 3 events	882	986	1858	897	3374	3152
								0%	1%	1%	1%	3%	2%
							grade 4 events	872	875	1800	864	3336	2791
								0%	0%	1%	0%	3%	2%
							grade 5 events	3304	3917	8682	3683	10242	5824
								3%	4%	6%	4%	9%	5%
							grade 6 events	1794	1855	35167	2440	25384	7774
								2%	2%	25%	2%	23%	7%
							grade 7 events	76860	71585	59936	73499	51277	75470
								86%	81%	42%	84%	47%	68%

## 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	194.914484	194.8819178697516	CCD I2 on	O1	Y
[deg] Pointing Dec	-70.898565	-70.87325849607542	CCD I3 on	O2	Y
[deg] Pointing Roll	82.021954	82.14781465925989	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O3	Y
[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	O4	Y
[s] Observation start time (MET)	599863860.184000	599862694.7651401	CCD S5 on	N	N
Observation start date	2017-01-03T20:49:51	2017-01-03T20:31:34	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	599875860.184000	599876432.84094	On-chip summing requested	N	N
Observation end date	2017-01-04T00:09:51	2017-01-04T00:20:32	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



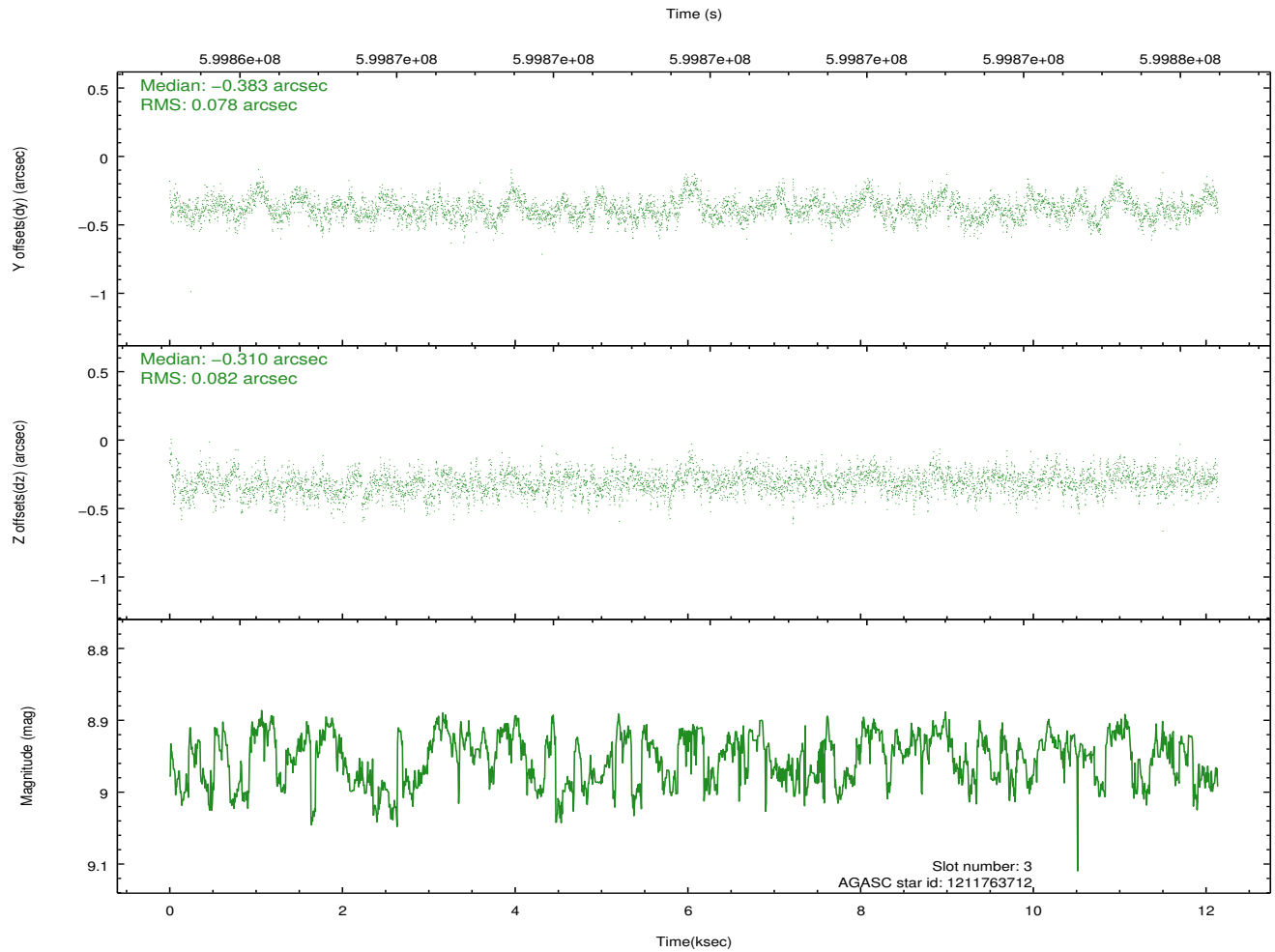
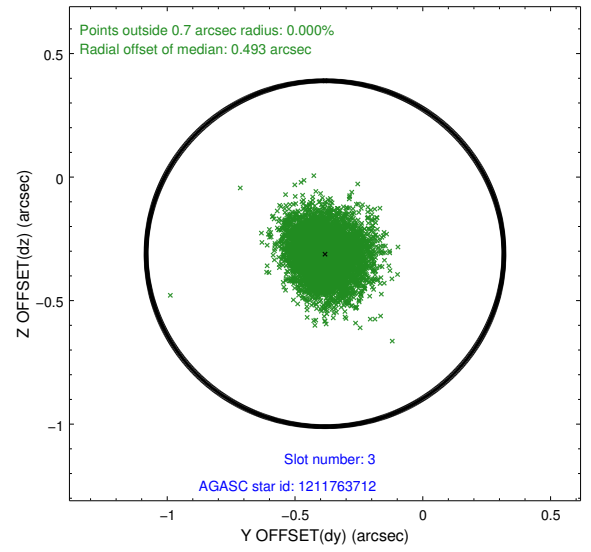
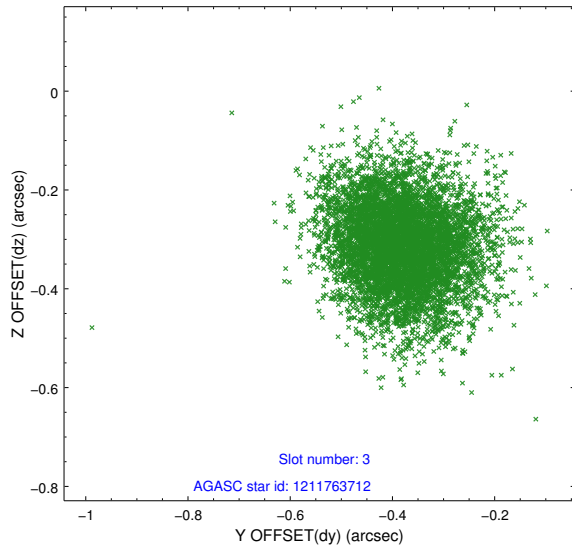


### Slot Statistics

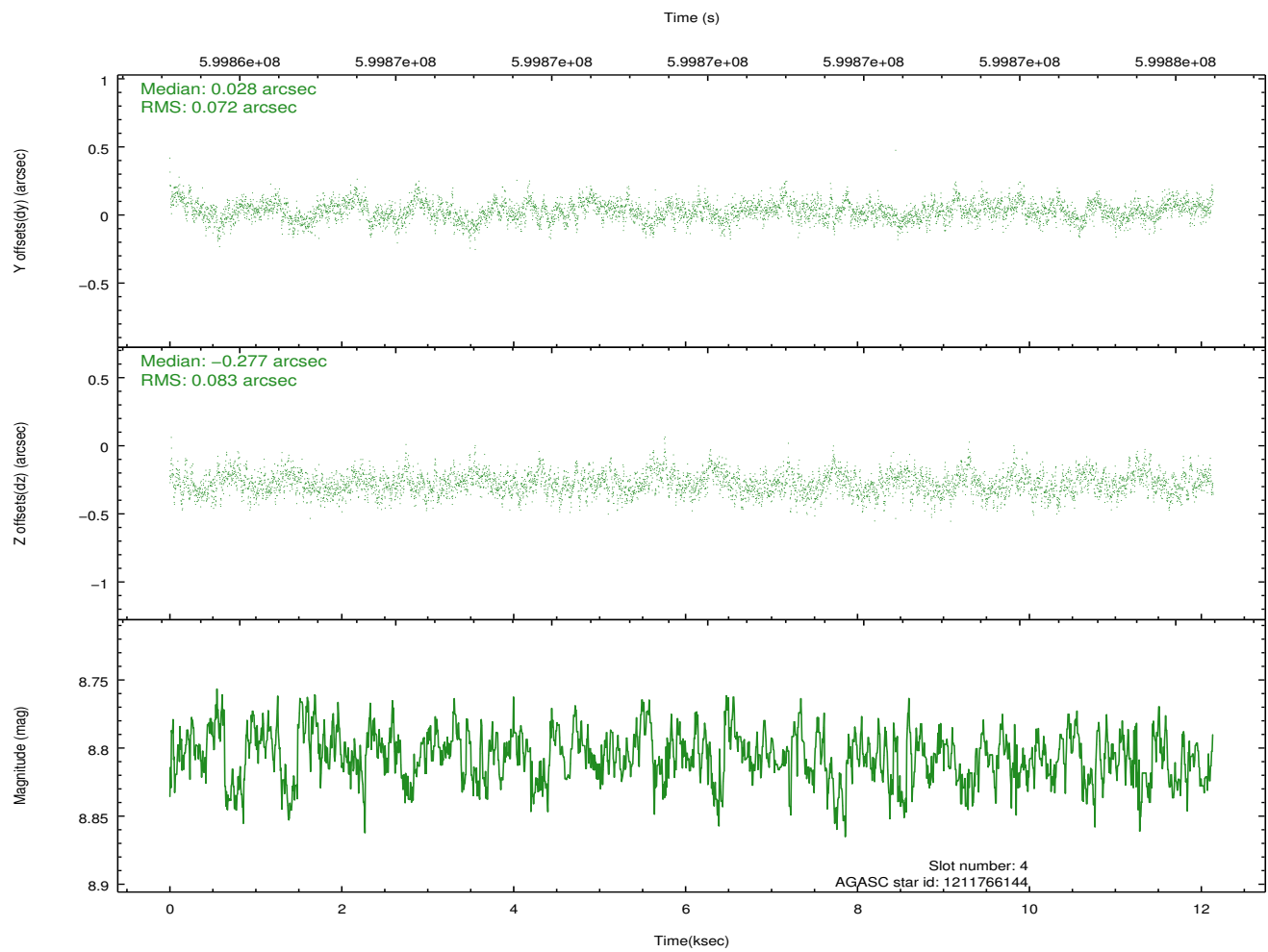
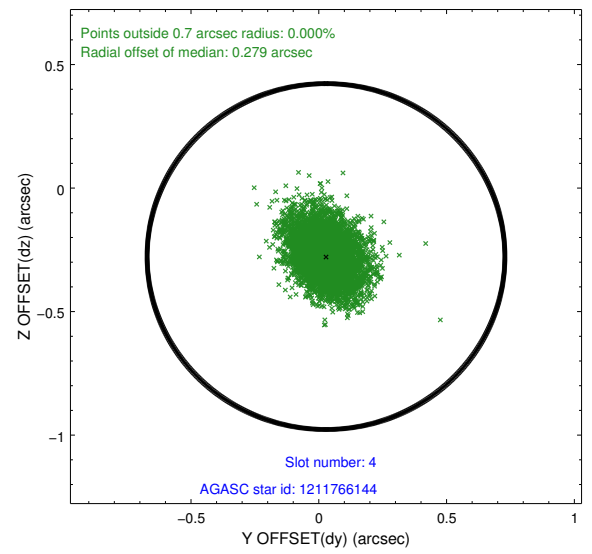
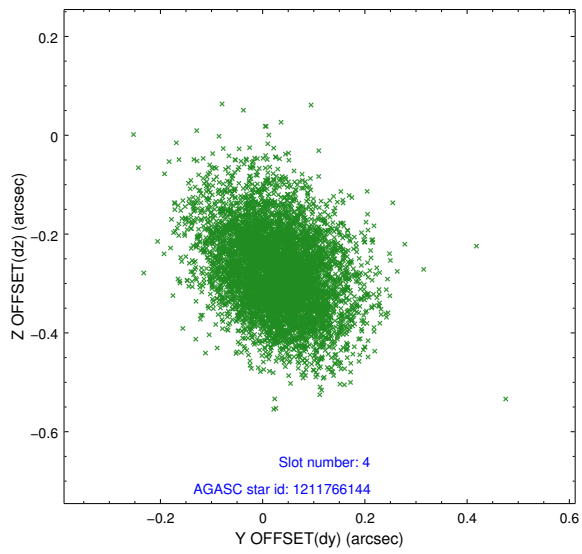
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.07	2961	-0.243	-0.142	0.024	0.032	0.000000	0.000000	-772.48	-1742.75
1	FID		ACIS-S-4	7.19	2961	0.537	0.156	0.021	0.038	0.000000	0.000000	2141.38	165.60
2	FID		ACIS-S-5	7.18	2961	-0.322	-0.003	0.017	0.024	0.000000	0.000000	-1824.88	159.58
3	GUIDE	used	1211763712	8.95	5921	-0.383	-0.310	0.119	0.198	193.865236	-70.519429	1165.88	1435.51
4	GUIDE	used	1211766144	8.81	5917	0.028	-0.277	0.115	0.195	194.954604	-70.685819	765.61	59.37
5	GUIDE	used	1212302584	7.55	5921	0.082	-0.360	0.108	0.181	193.415639	-71.273508	-1598.31	1525.60
6	GUIDE	used	1212302784	8.44	5918	-0.091	0.727	0.104	0.188	193.204853	-71.376372	-2003.95	1704.83
7	GUIDE	used	1211764152	8.93	5912	0.357	0.221	0.146	0.263	195.973112	-70.268429	2414.27	-959.49

## 2.4 Star Slots

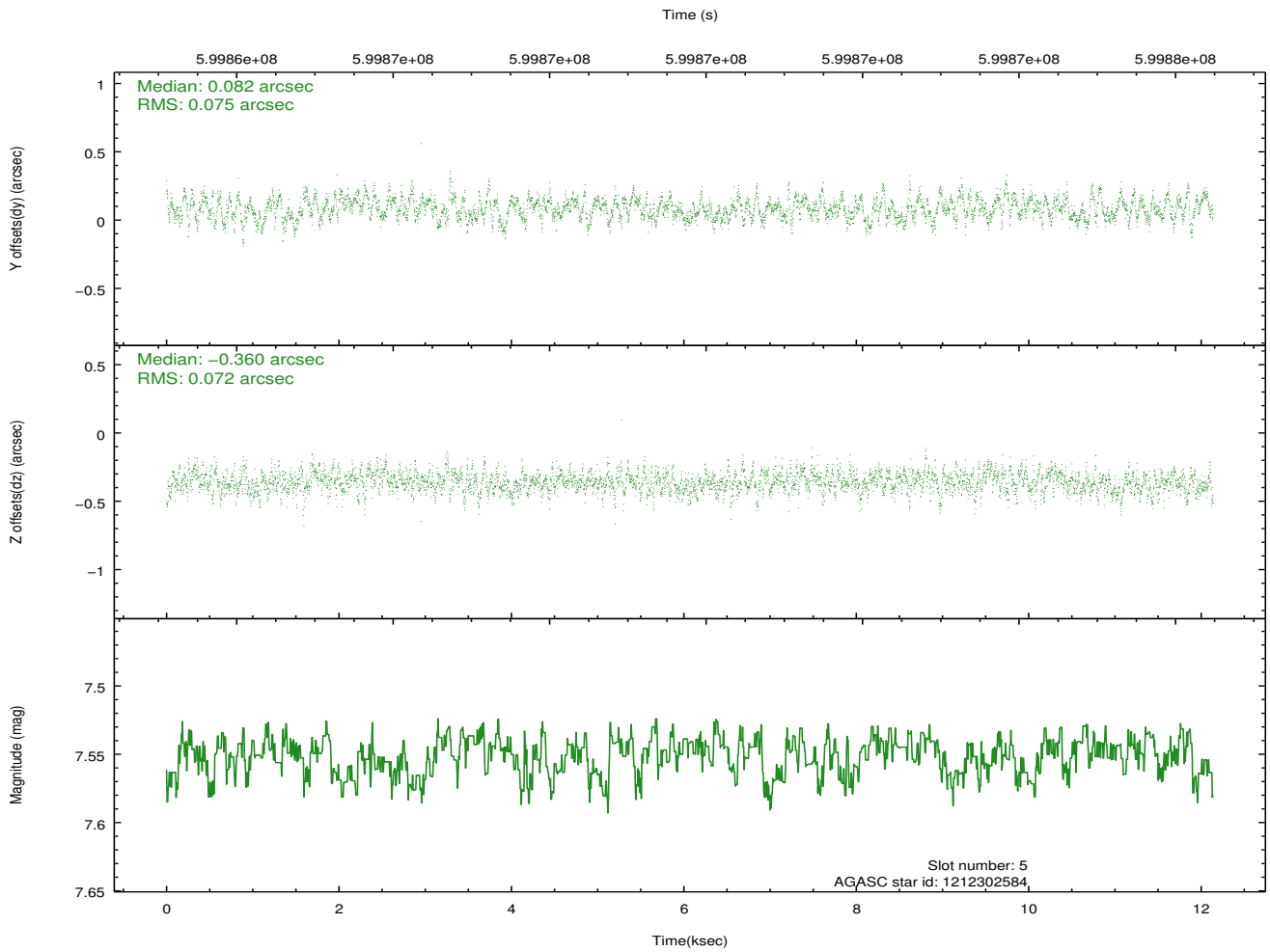
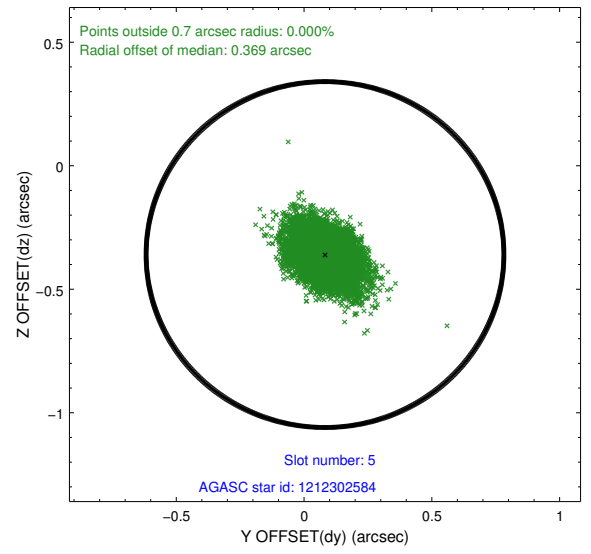
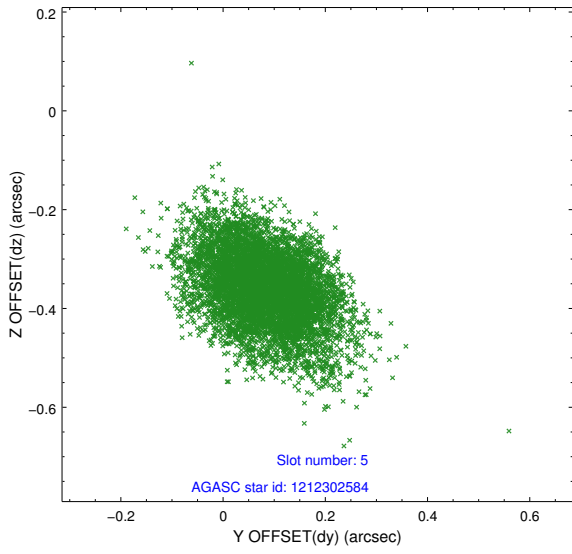
### 2.4.1 Slot 3



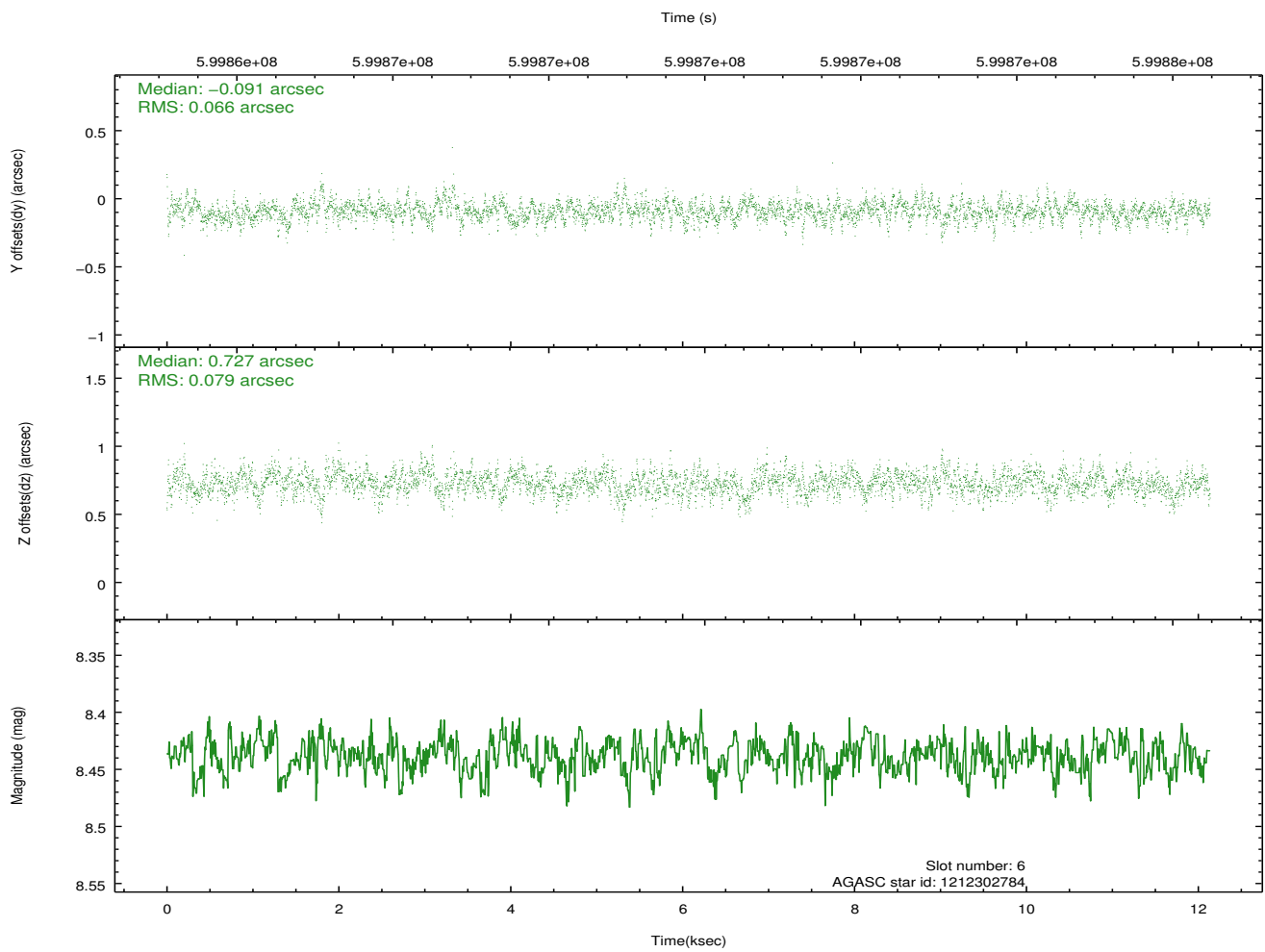
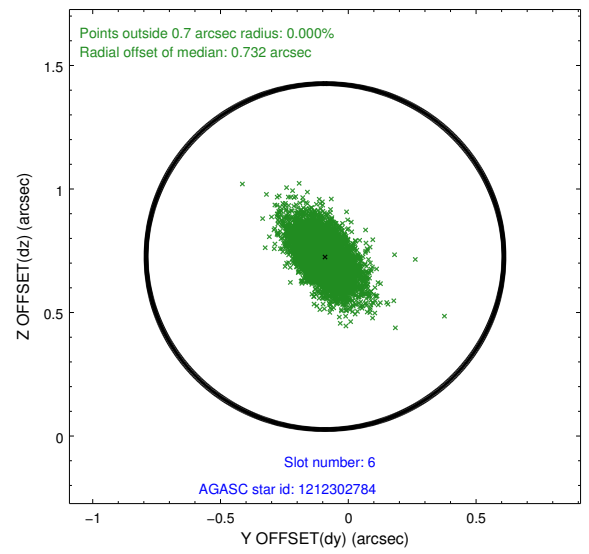
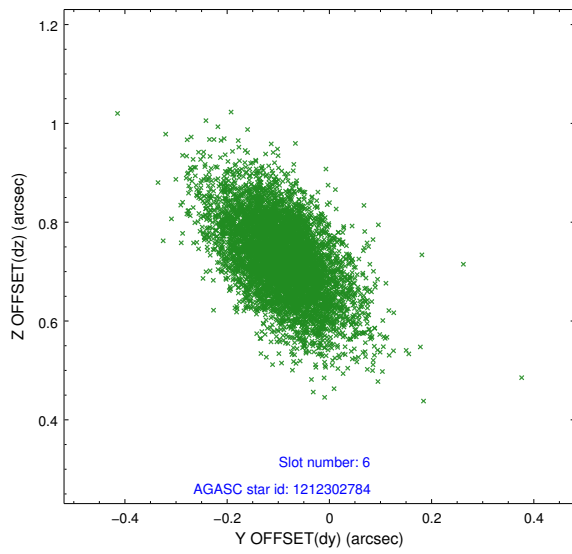
## 2.4.2 Slot 4



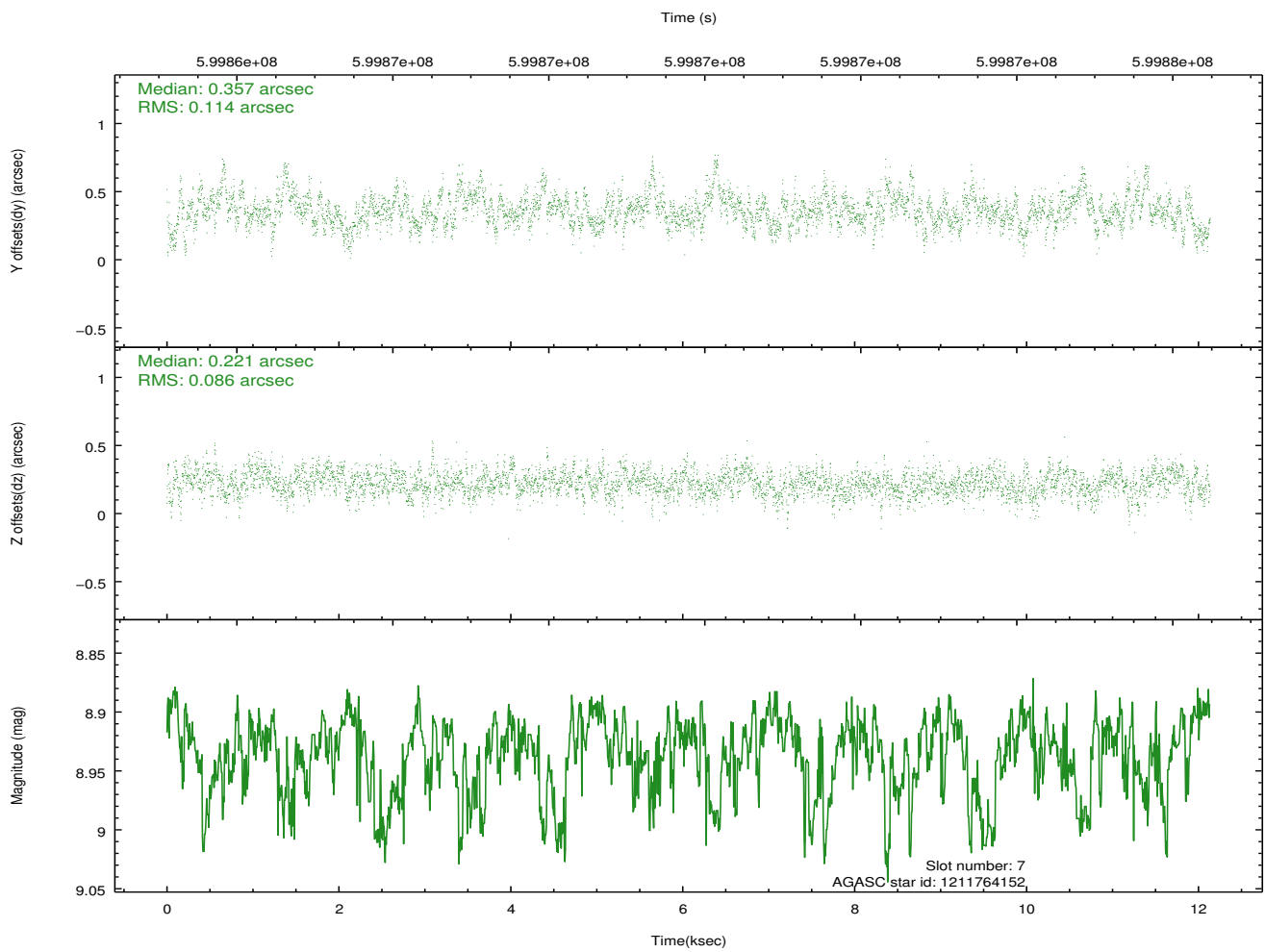
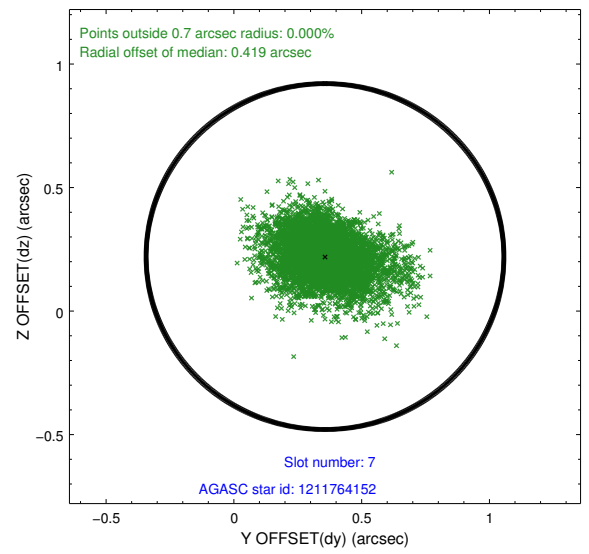
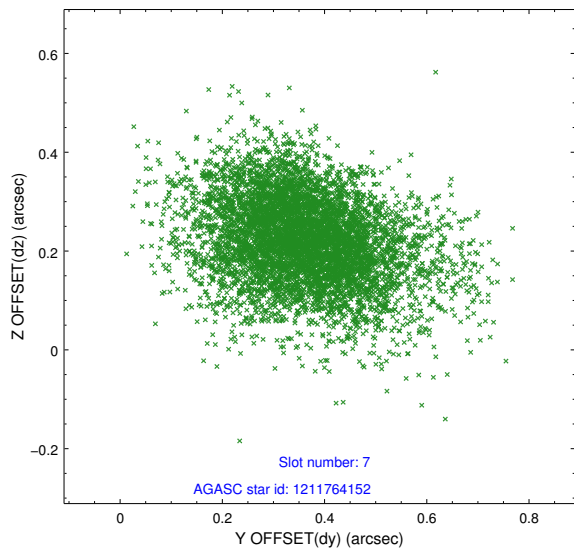
### 2.4.3 Slot 5



## 2.4.4 Slot 6

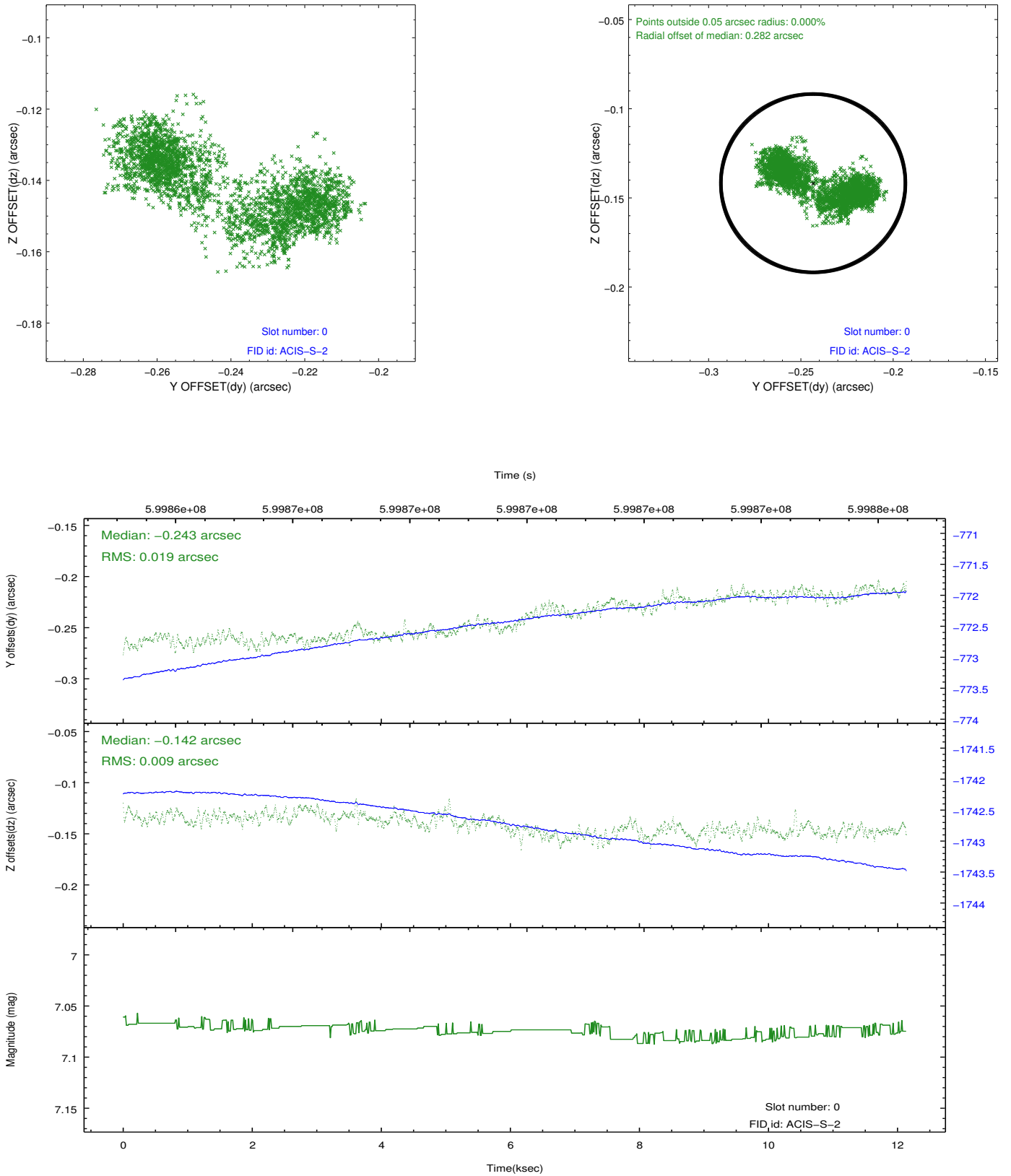


## 2.4.5 Slot 7

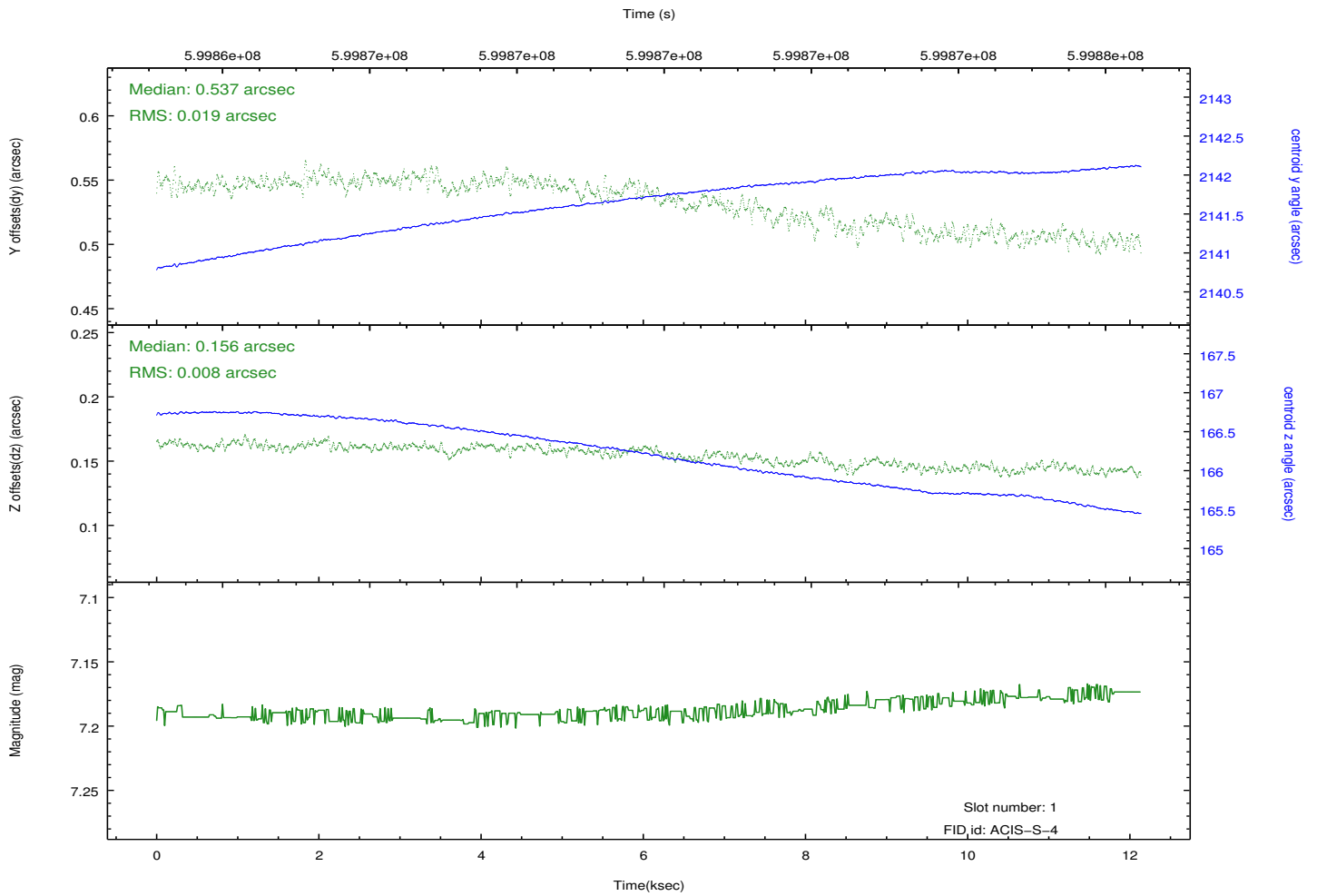
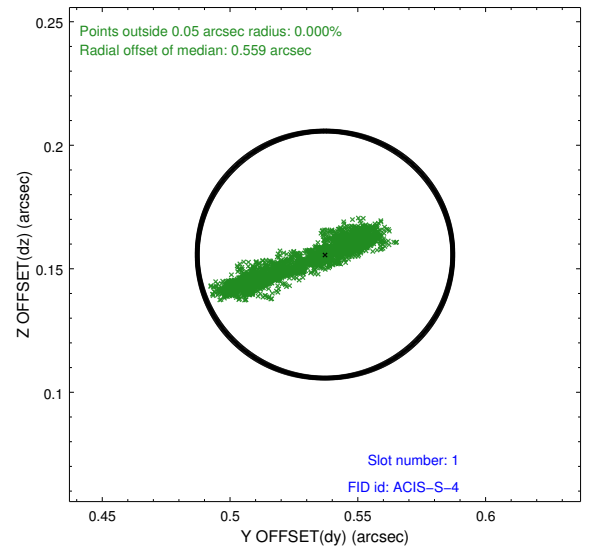
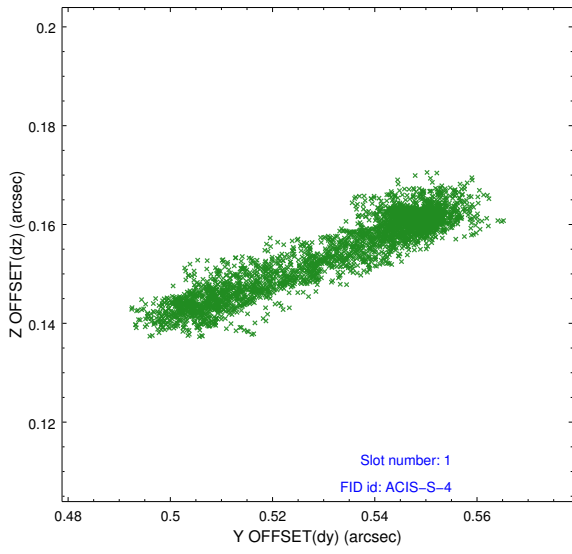


## 2.5 FID Slots

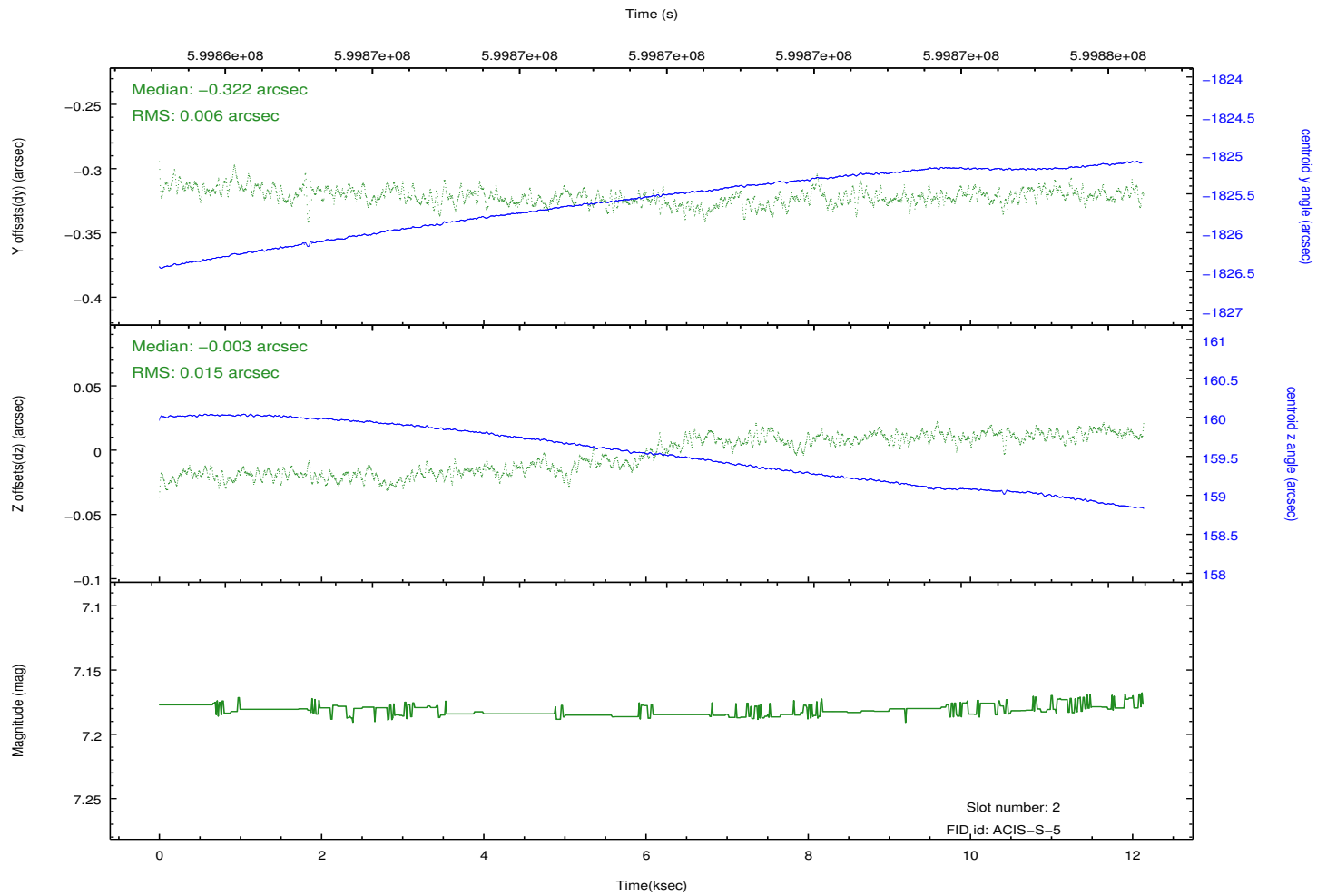
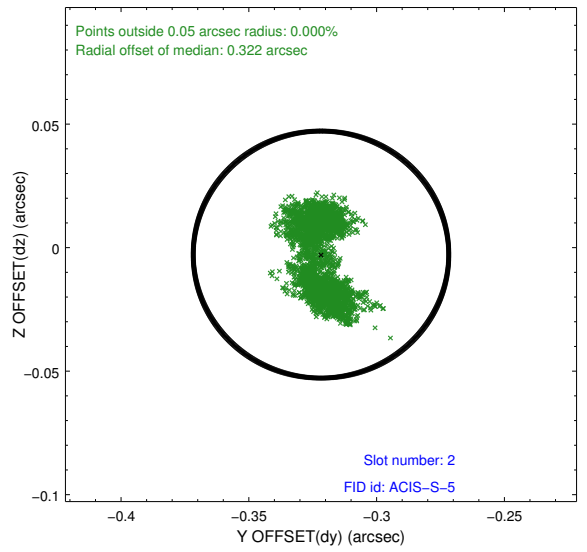
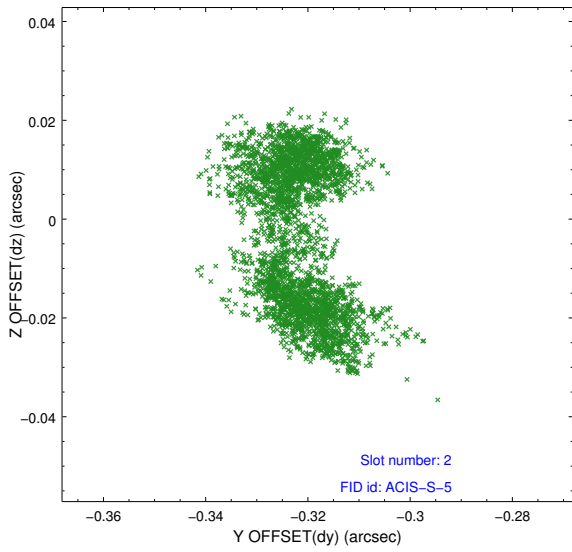
### 2.5.1 Slot 0



## 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)	2017.01.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	11.939200177908

## A.2 Comments

Joint proposal with HST.