

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 8069 - L2 Version 2  
Chandra X-Ray Center

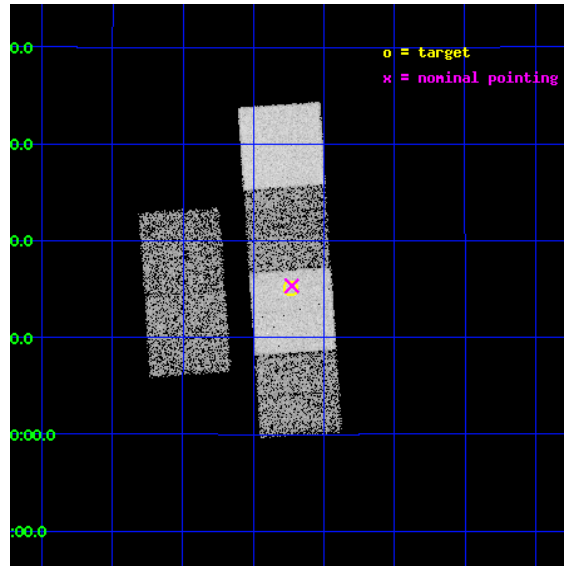
L2 Processing Date : May 10 2012

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# 1 Front

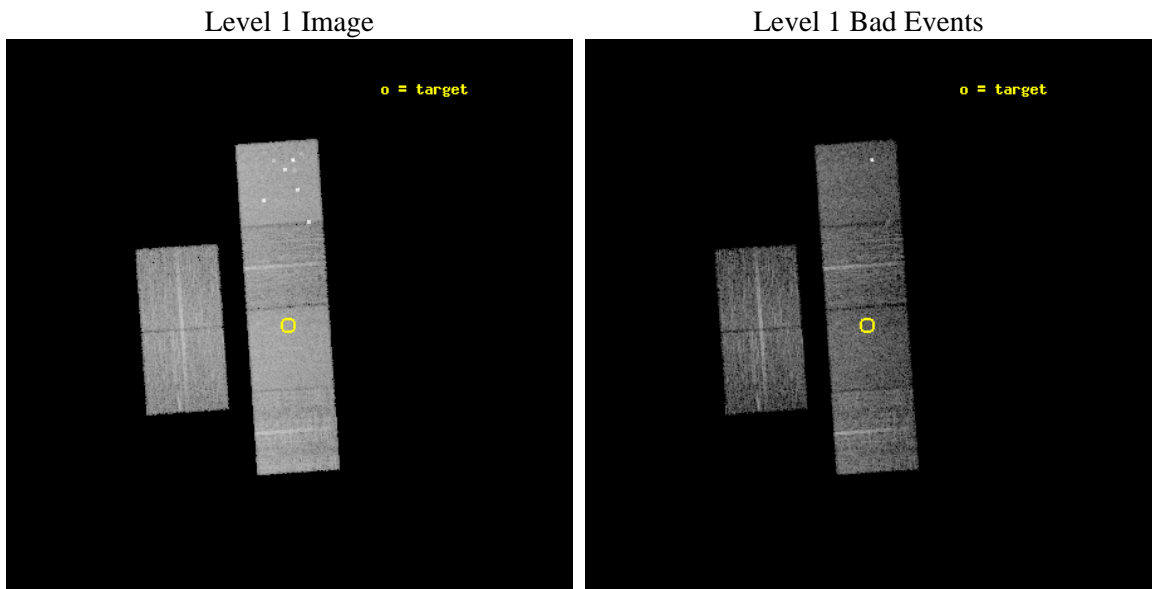
seq_num	900610	Sequence number
obs_id	8069	Observation id
title	The Duty Cycle of Supermassive Black Holes: X-raying Virgo	Proposa
observer	Prof Tommaso Treu	Principal investigator
object	1422	Source name
dtycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	188.059167	Observer's specified target RA [deg]
dec_targ	10.251389	Observer's specified target Dec [deg]
ra_nom	188.05685951188	Nominal RA [deg]
dec_nom	10.25580403796	Nominal Dec [deg]
roll_nom	86.045870667098	Nominal Roll [deg]
revision	2	Processing version of data
ontime	5157.0347316265	Sum of GTIs [s]
livetime	5091.7332526611	Livetime [s]
ontime2	5157.0757716298	Sum of GTIs [s]
ontime3	5156.9116116166	Sum of GTIs [s]
ontime5	5156.9936916232	Sum of GTIs [s]
ontime6	5156.9526516199	Sum of GTIs [s]
ontime7	5157.0347316265	Sum of GTIs [s]
ontime8	5153.6295217872	Sum of GTIs [s]
l2events	82324	Number of level 2 events



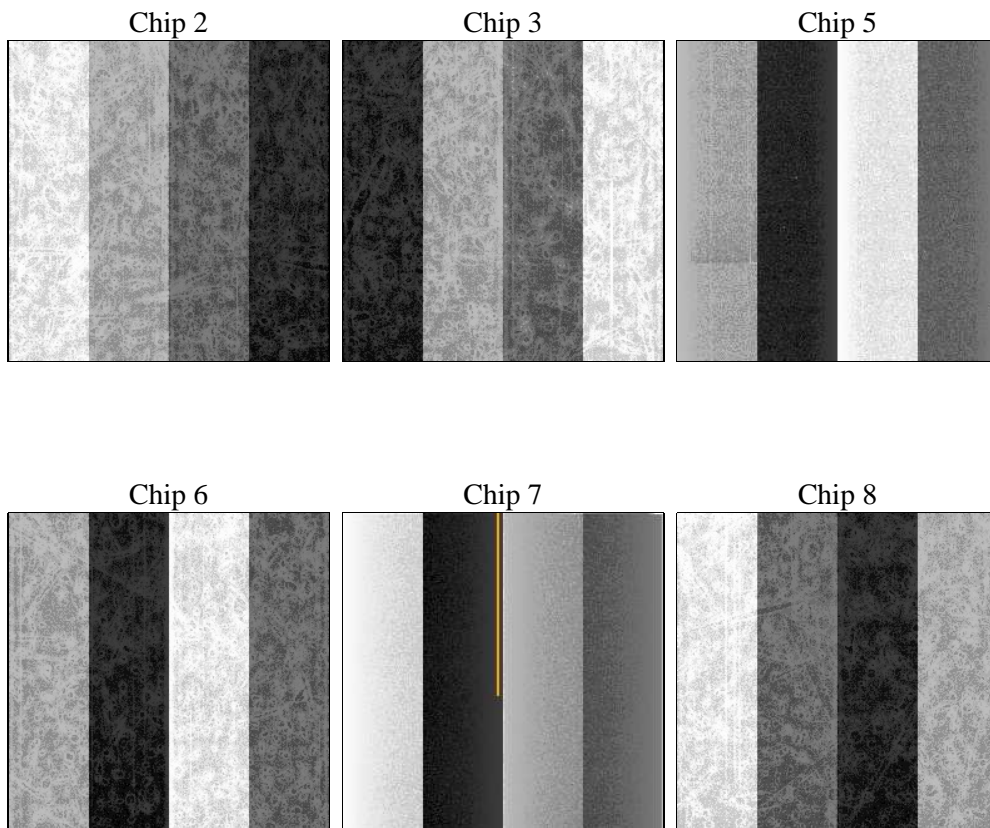
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	5400.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	5157.0347316265	Sum of GTIs [s]
caldsver	4.4.9	&#160	ontime2	5157.0757716298	Sum of GTIs [s]
date	2012-05-10T08:08:36	Date and time of file creation	ontime3	5156.9116116166	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	5156.9936916232	Sum of GTIs [s]
			ontime6	5156.9526516199	Sum of GTIs [s]
			ontime7	5157.0347316265	Sum of GTIs [s]
			ontime8	5153.6295217872	Sum of GTIs [s]
			l1events	370602	Number of level 1 events

### 2.1.4 Events

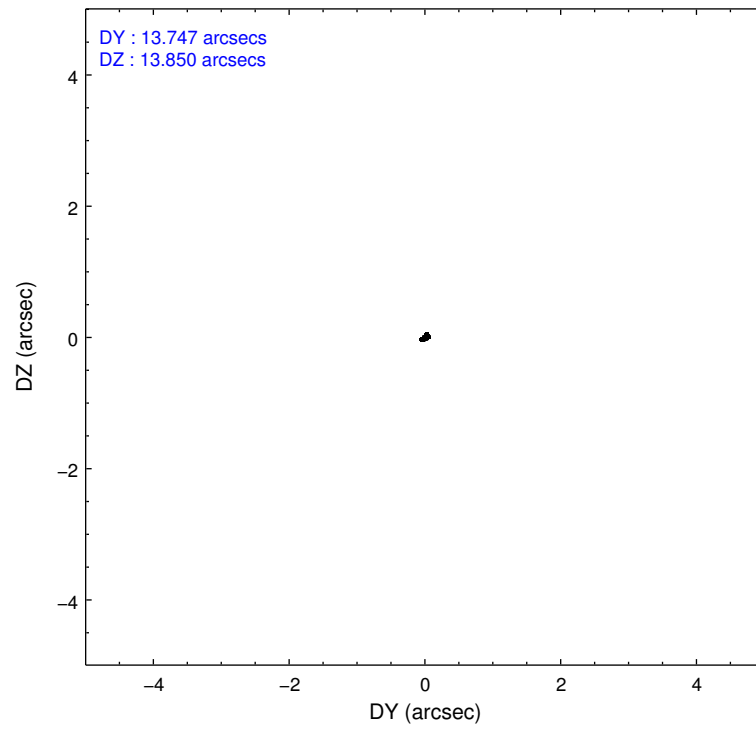
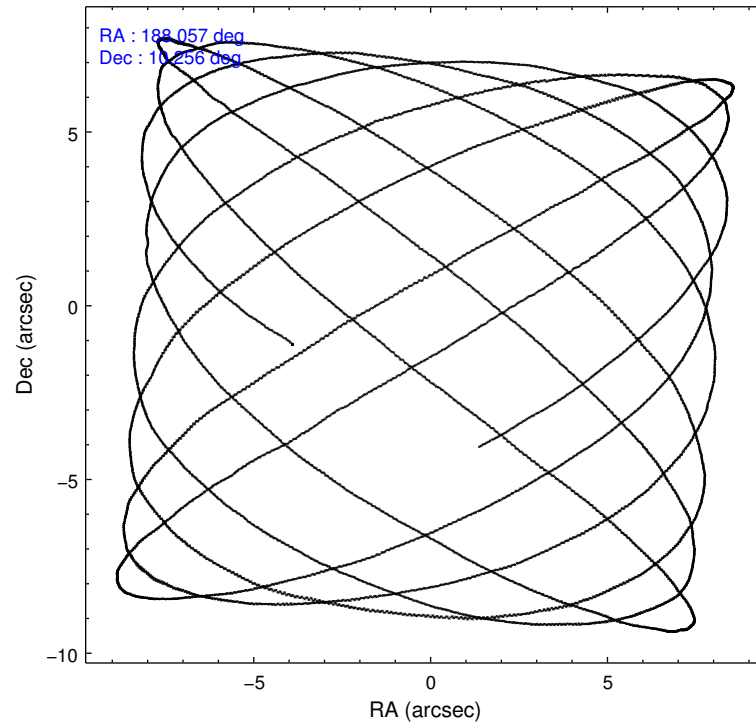
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	50859	49546	83945	50066	69421	66765	grade 0 events	2588	2618	6826	2475	2482	4482
rejected events	44858	43616	43501	43860	40873	52586		5%	5%	8%	4%	3%	6%
rejected %	88%	88%	51%	87%	58%	78%	grade 1 events	32	24	130	17	69	59
								0%	0%	0%	0%	0%	0%
							grade 2 events	1349	1175	10990	1408	5828	3213
								2%	2%	13%	2%	8%	4%
							grade 3 events	534	570	1202	505	2362	1492
								1%	1%	1%	1%	3%	2%
							grade 4 events	523	553	1129	554	2323	1323
								1%	1%	1%	1%	3%	1%
							grade 5 events	1985	2253	5049	2361	6408	3132
								3%	4%	6%	4%	9%	4%
							grade 6 events	1018	1020	20356	1269	15587	3681
								2%	2%	24%	2%	22%	5%
							grade 7 events	42830	41333	38263	41477	34362	49383
								84%	83%	45%	82%	49%	73%

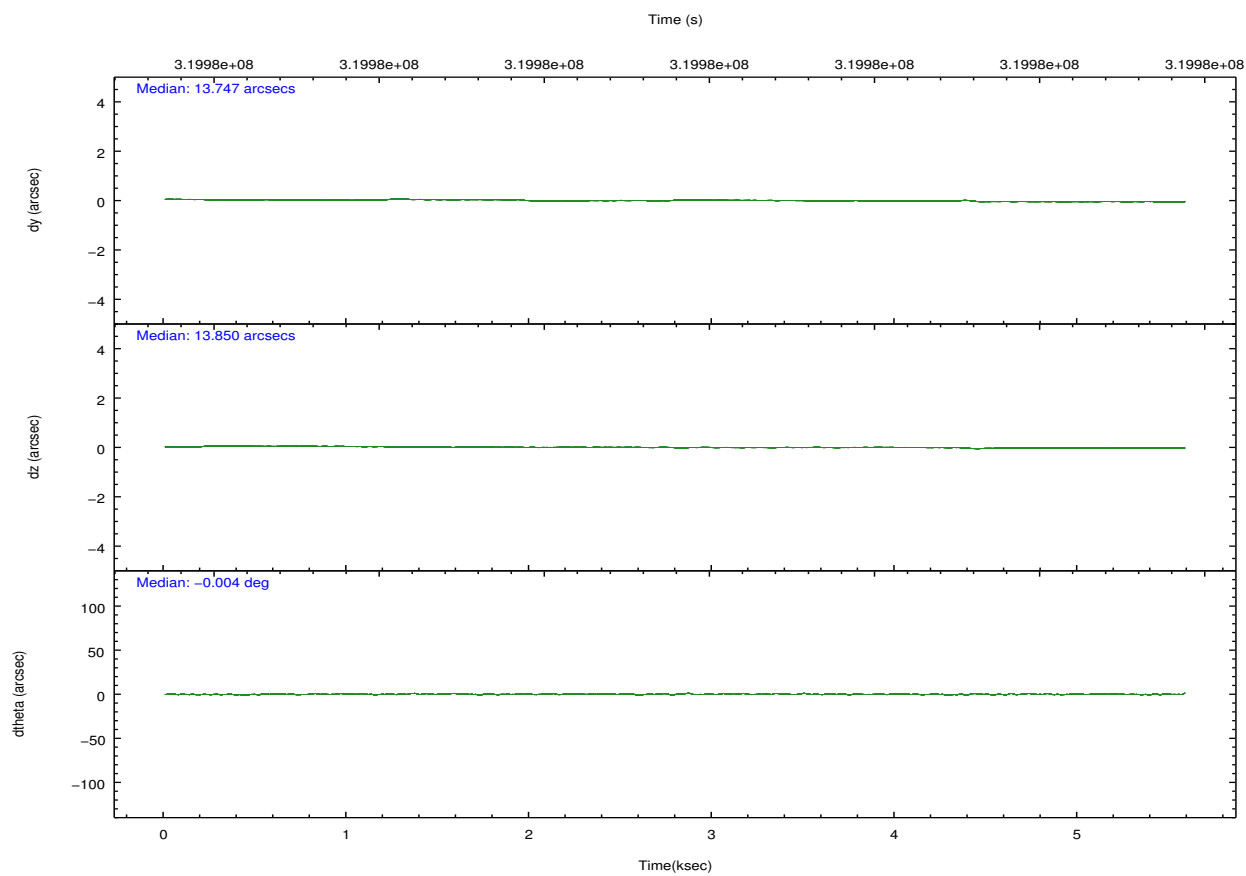
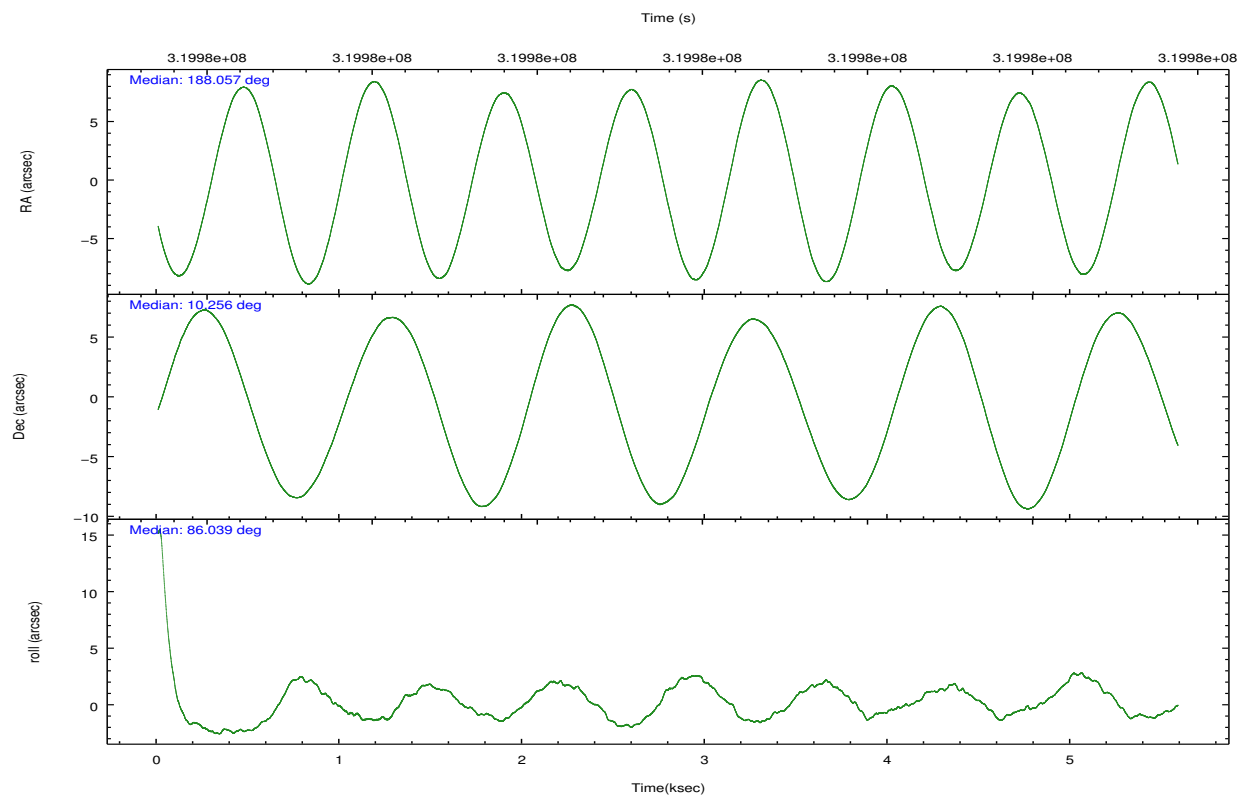


## 2.2 Compared Parameters

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	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	188.069411	188.0568595118815	CCD I2 on	O1	Y
[deg] Pointing Dec	10.231280	10.25580403796045	CCD I3 on	O2	Y
[deg] Pointing Roll	85.887004	86.04587066709824	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)	319977184.184000	319976751.89337	CCD S5 on	N	N
Observation start date	2008-02-21T10:31:59	2008-02-21T10:25:51	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	319982584.184000	319982825.53117	On-chip summing requested	N	N
Observation end date	2008-02-21T12:01:59	2008-02-21T12:07:05	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



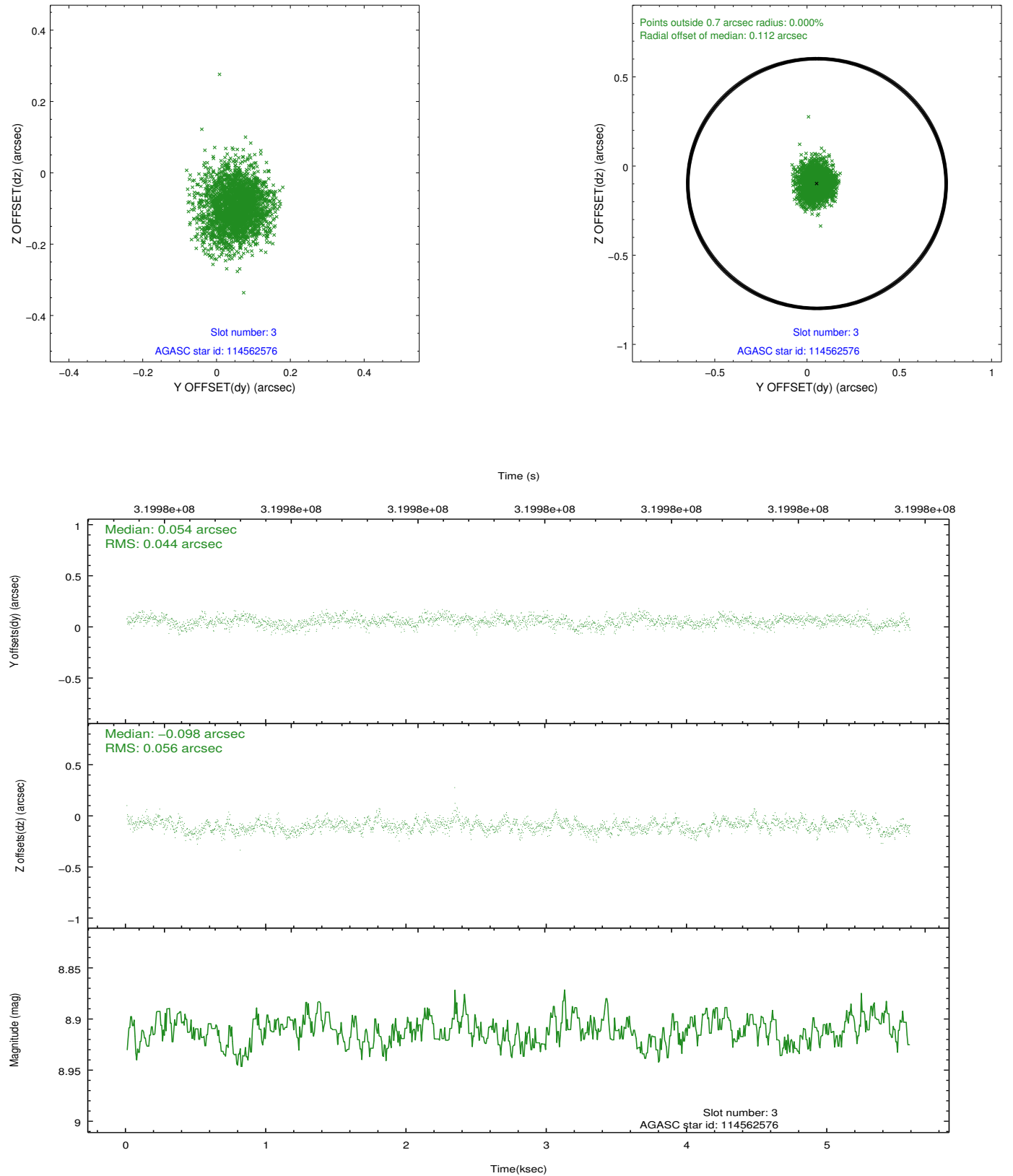


### Slot Statistics

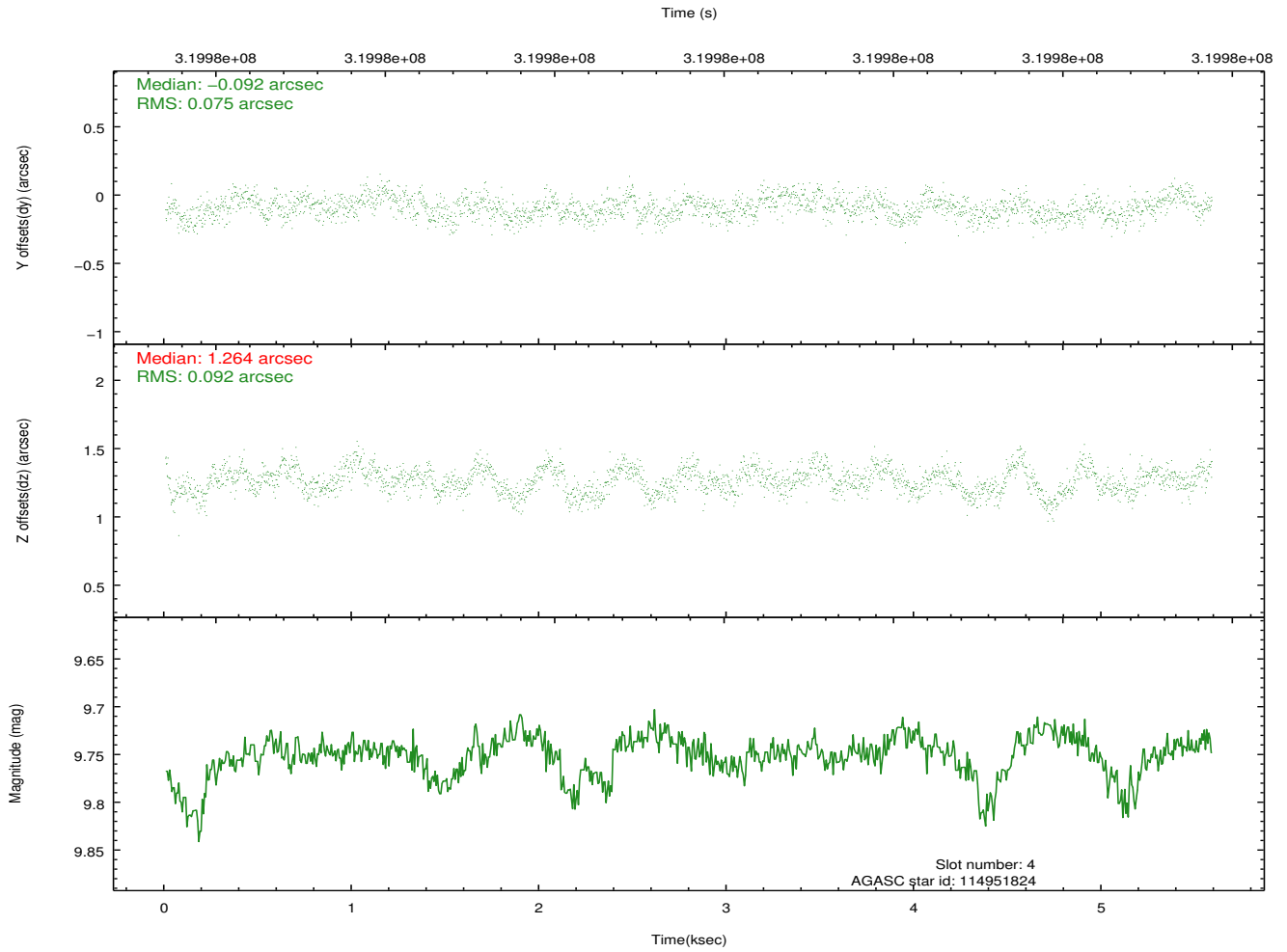
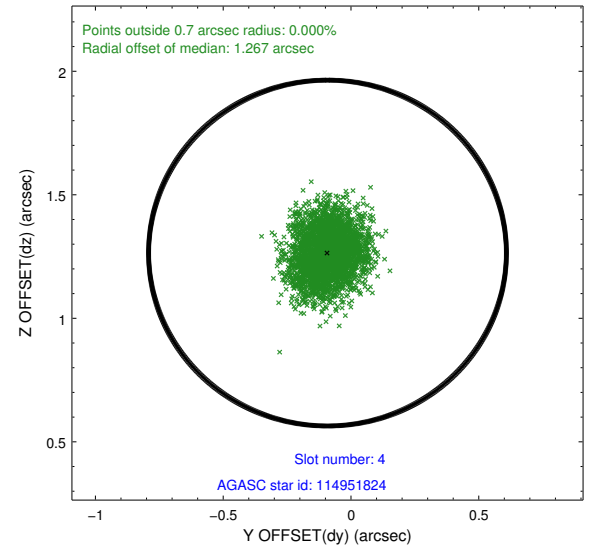
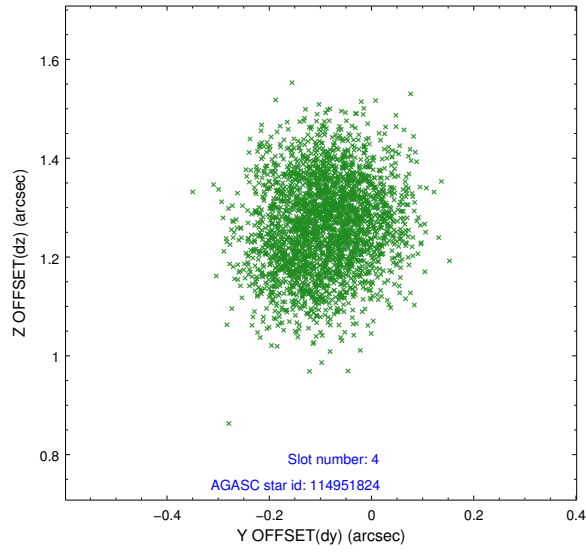
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	1362	-0.051	-0.060	0.007	0.011	0.000000	0.000000	-766.74	-1735.21
1	FID	ACIS-S-4	7.19	1362	0.182	0.041	0.006	0.011	0.000000	0.000000	2146.28	172.26
2	FID	ACIS-S-5	7.23	1361	-0.162	0.028	0.006	0.011	0.000000	0.000000	-1818.31	167.14
3	GUIDE	114562576	8.91	2724	0.054	-0.098	0.076	0.124	188.579291	9.672237	-1876.16	-1948.88
4	GUIDE	114951824	9.75	2719	-0.092	1.264	0.127	0.201	187.810084	10.327889	280.38	942.10
5	GUIDE	114953680	8.57	2724	-0.028	-0.502	0.071	0.111	187.904378	10.267361	86.73	594.21
6	GUIDE	114956456	8.21	2724	0.093	-0.335	0.090	0.146	188.716512	10.836292	2338.96	-2125.17
7	GUIDE	114957816	6.24	2723	-0.022	-0.322	0.072	0.123	188.261994	10.295673	281.14	-663.94

## 2.4 Star Slots

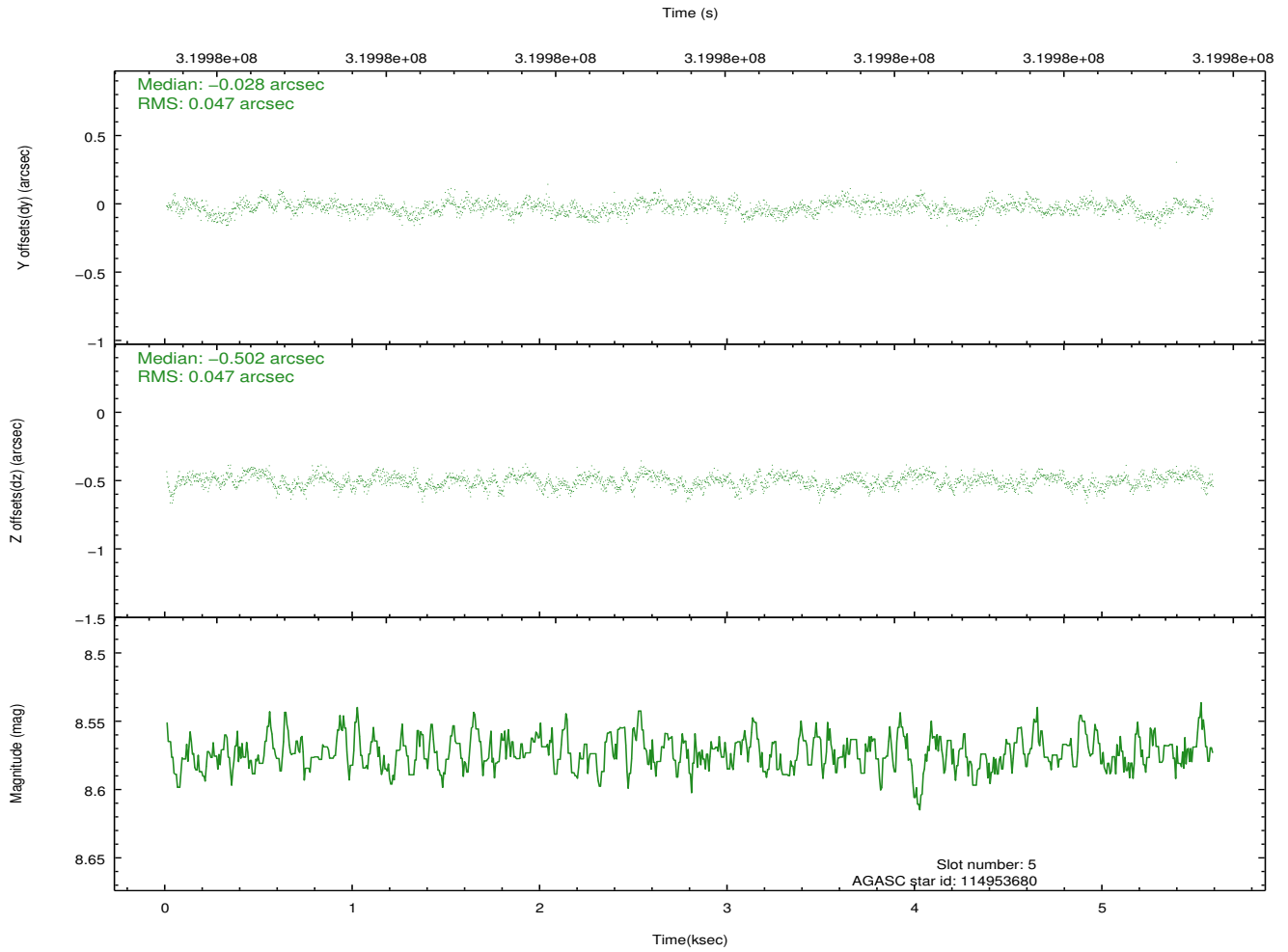
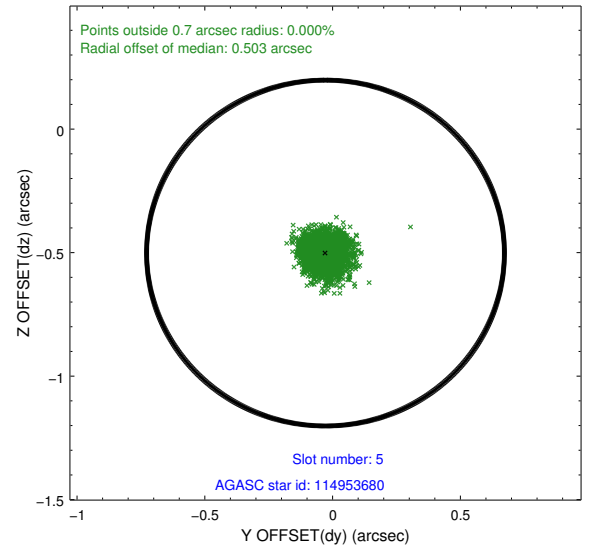
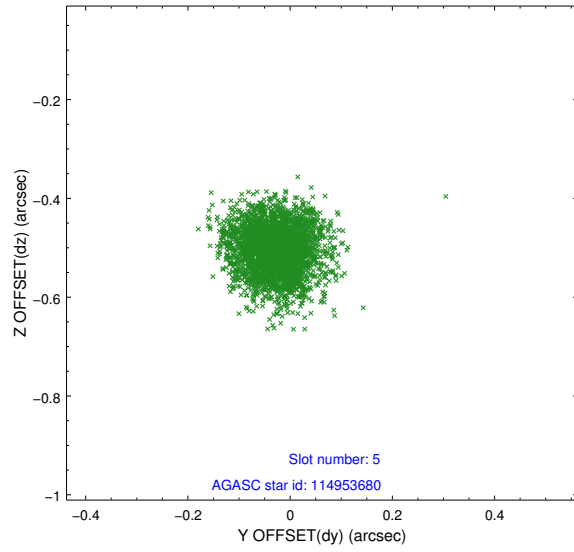
### 2.4.1 Slot 3



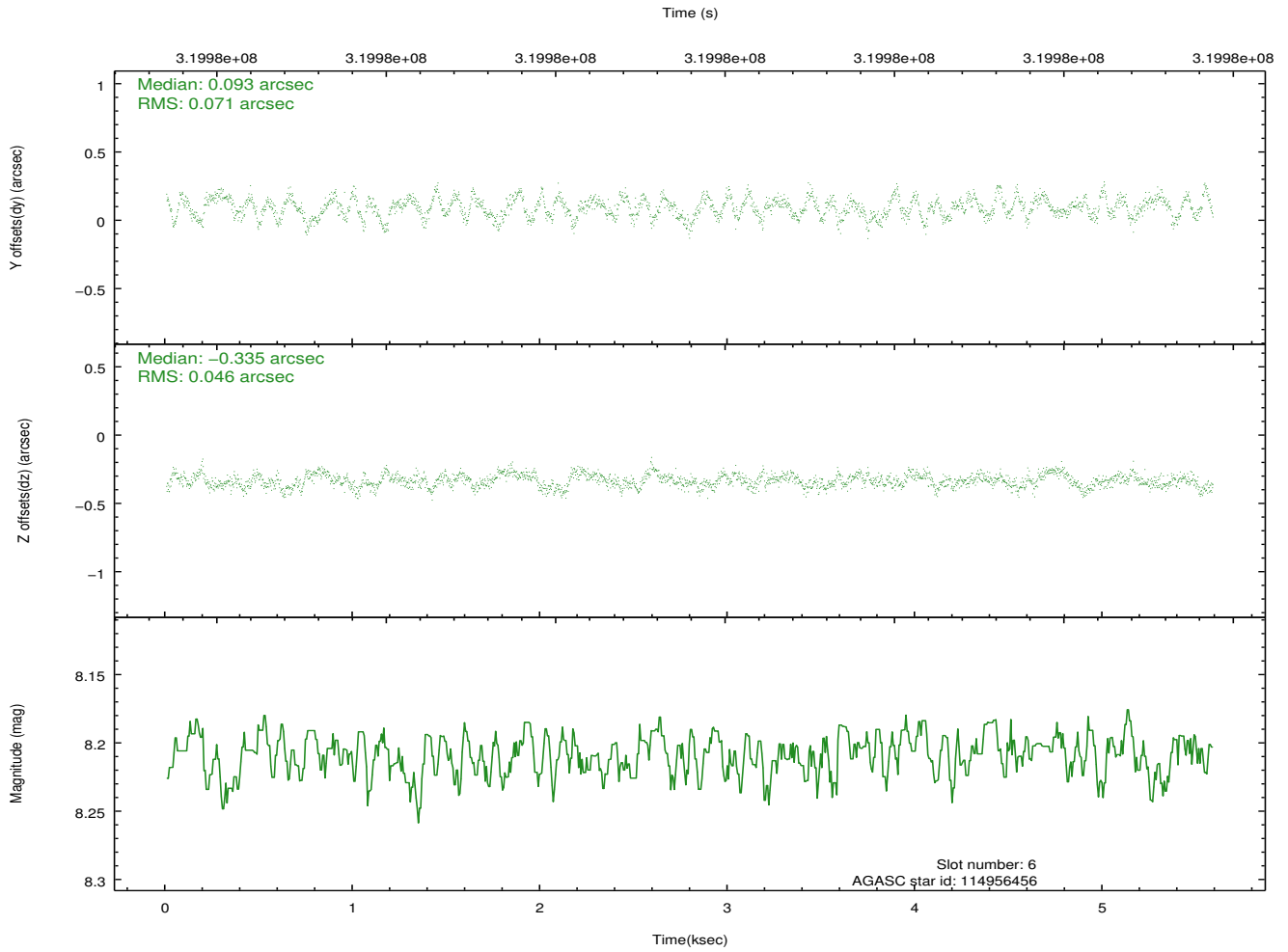
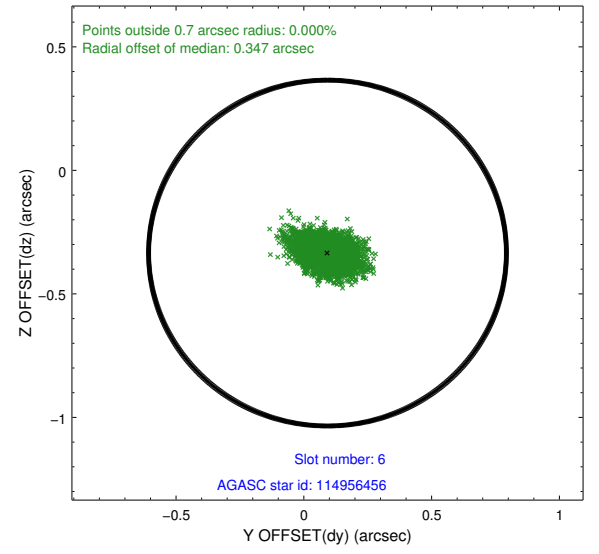
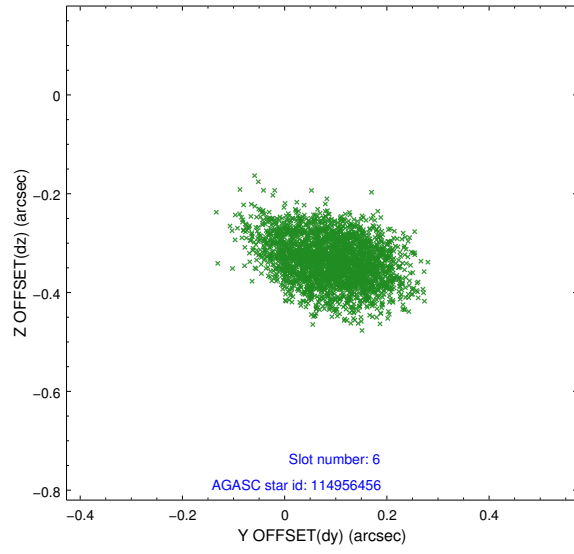
## 2.4.2 Slot 4



### 2.4.3 Slot 5

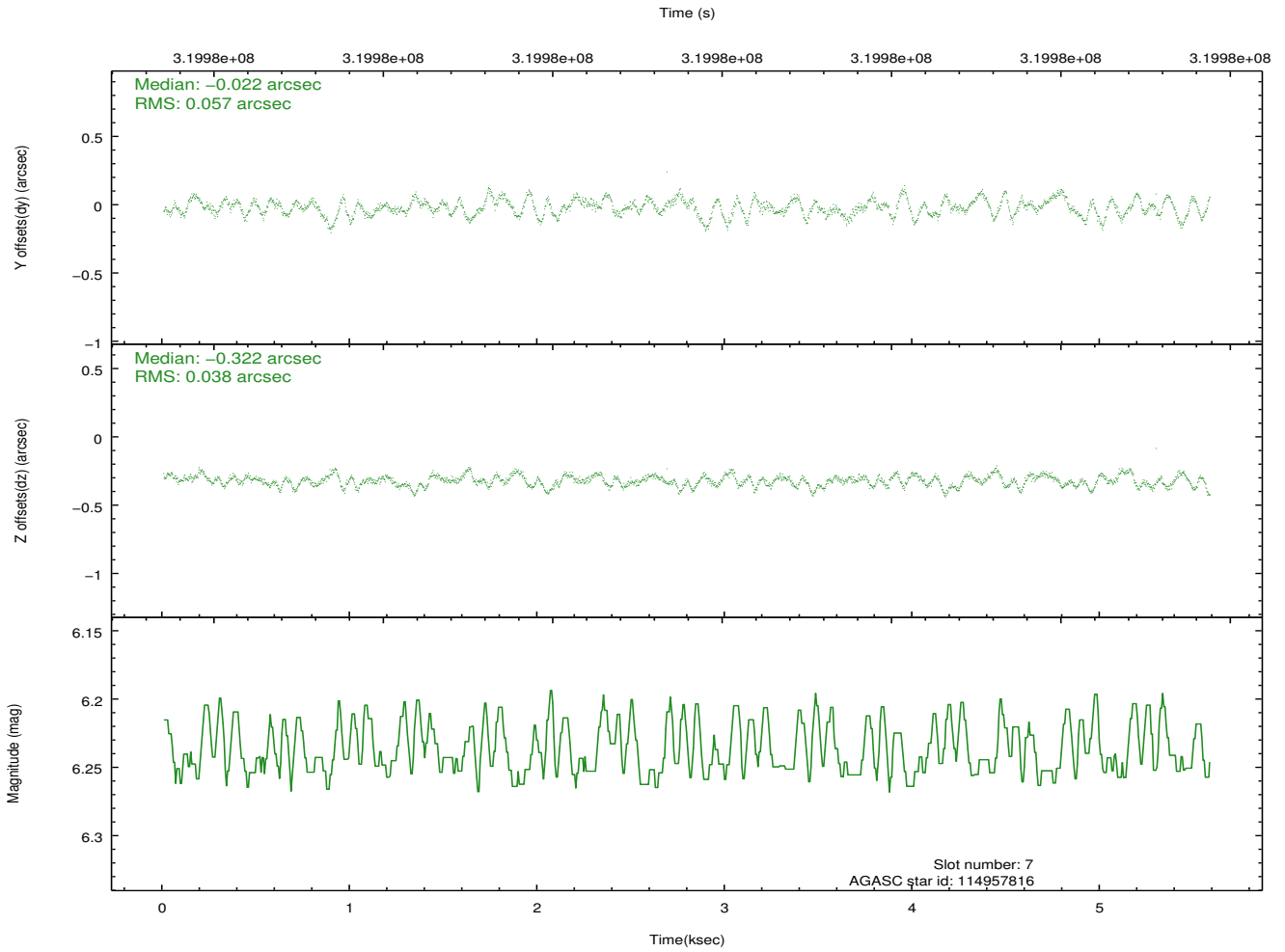
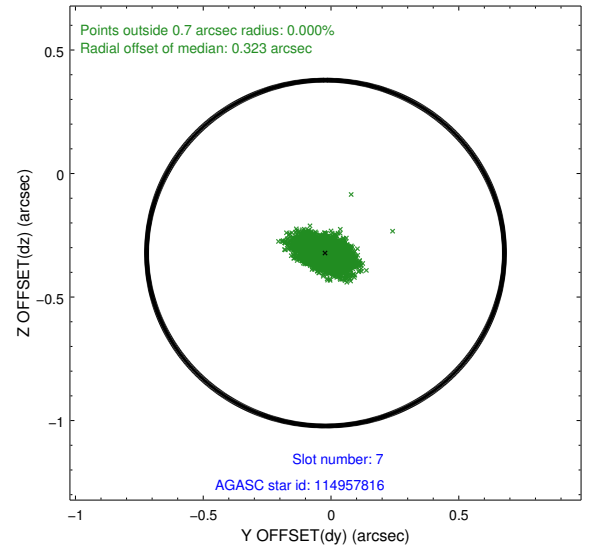
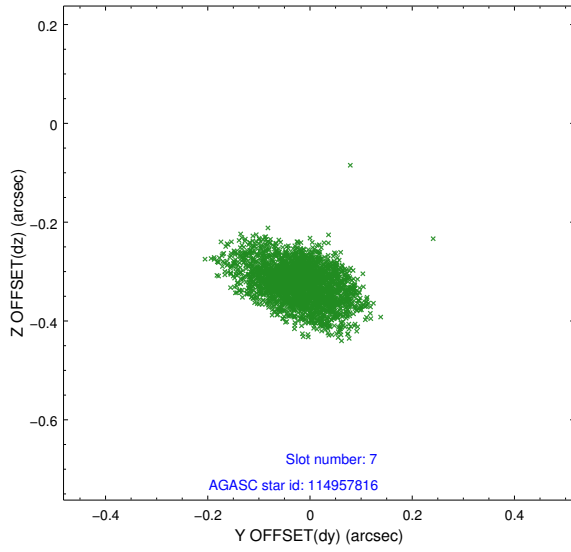


## 2.4.4 Slot 6



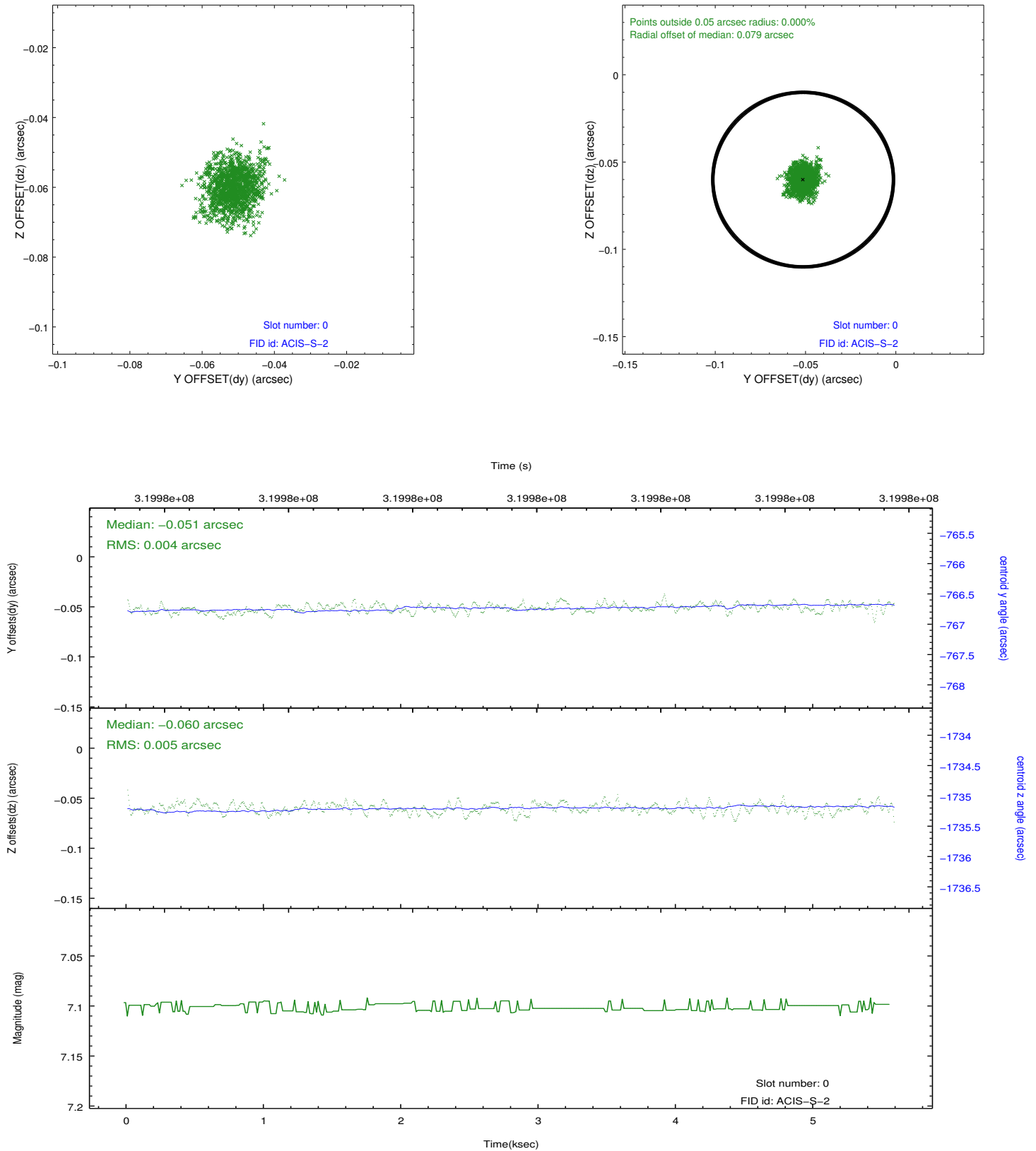


## 2.4.5 Slot 7

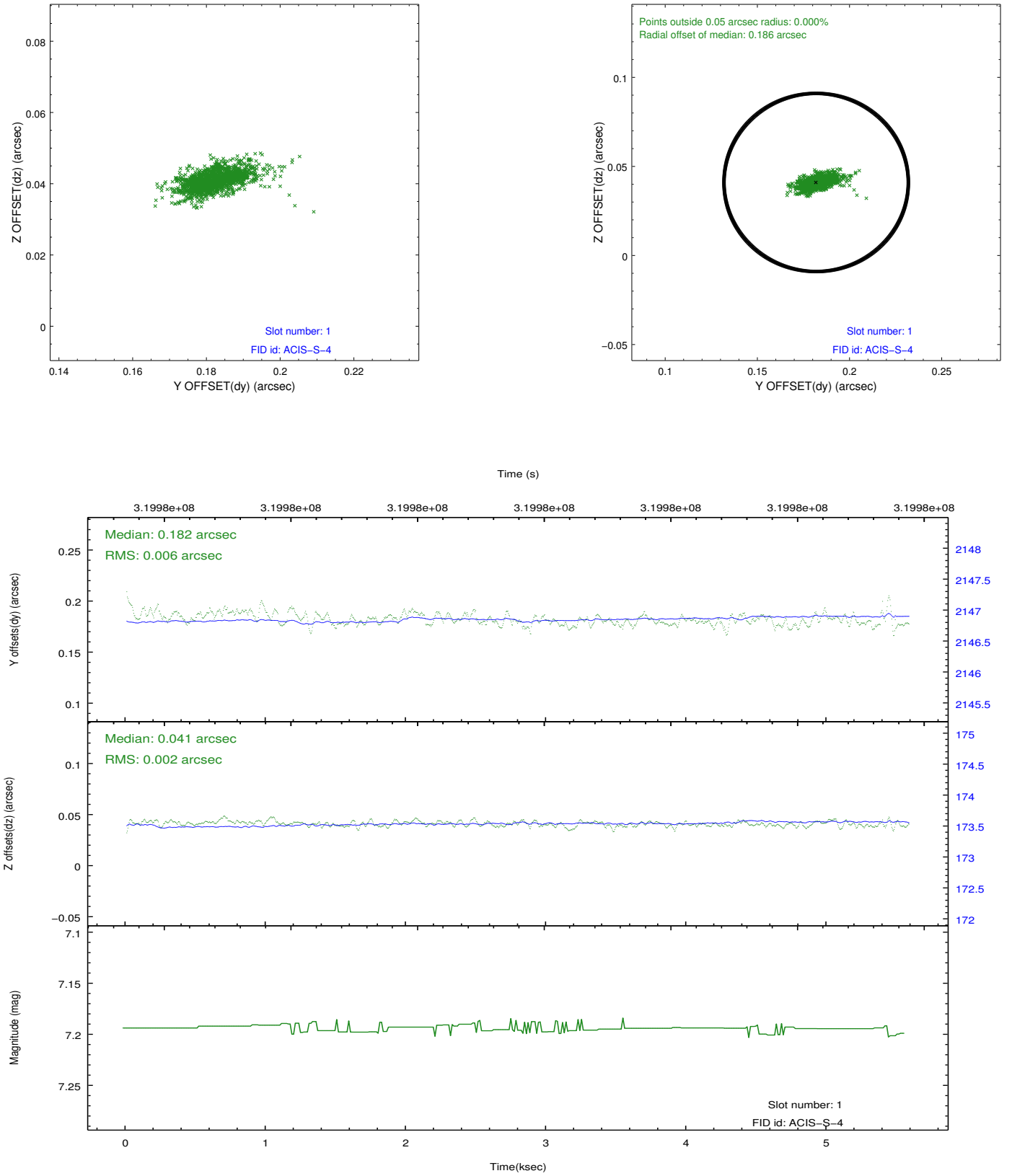


## 2.5 FID Slots

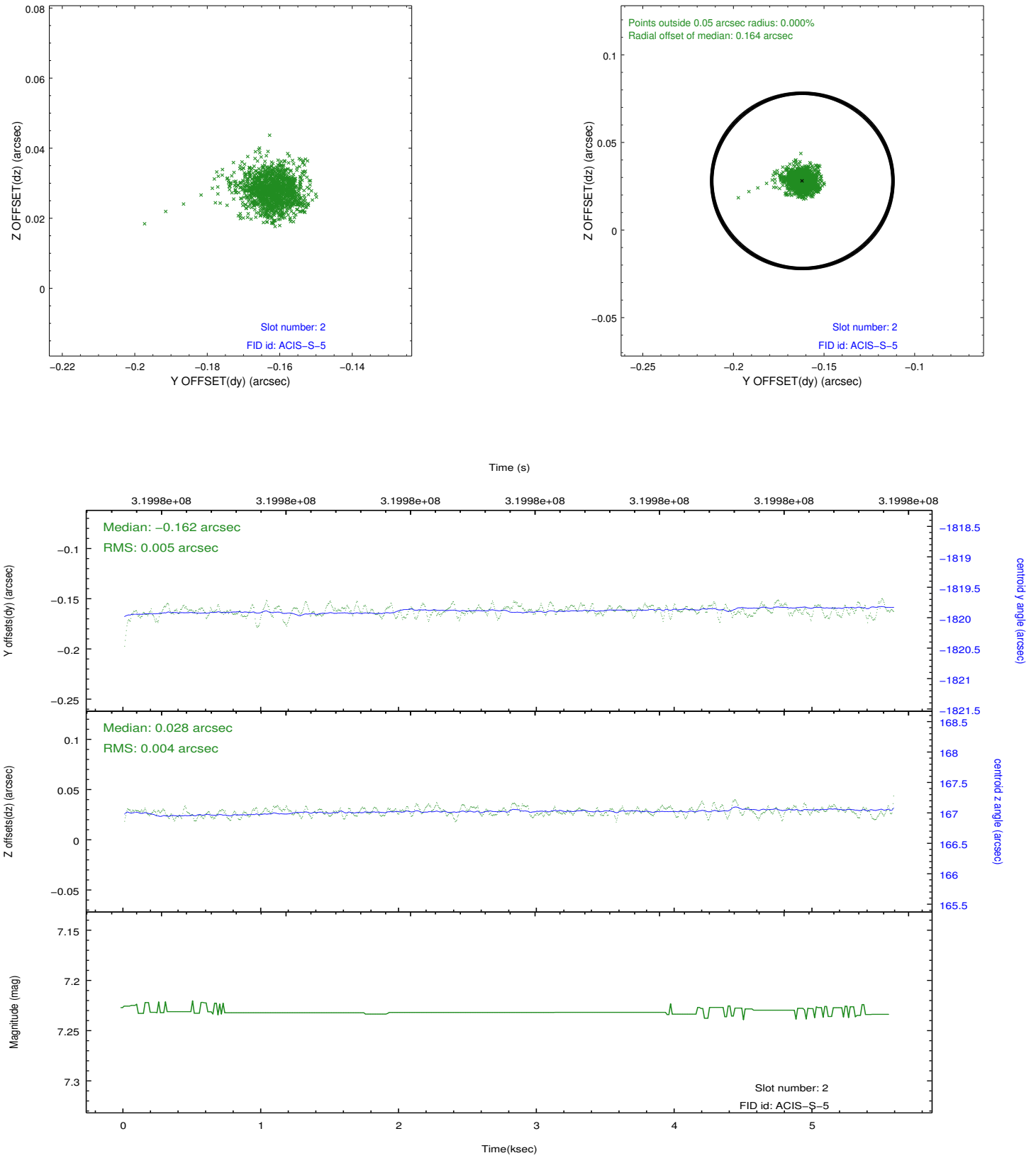
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## A Summary

### A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.05.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.15839998

### A.2 Comments

Joint Proposal: Spitzer