

# V&V Reference Report

## L2 ASCDS Version : 10

Observation 14491 - L2 Version 2  
Chandra X-Ray Center

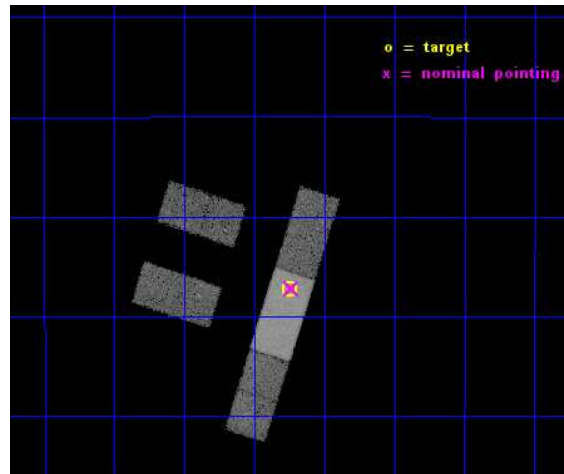
L2 Processing Date : Dec 5 2014

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# 1 Front

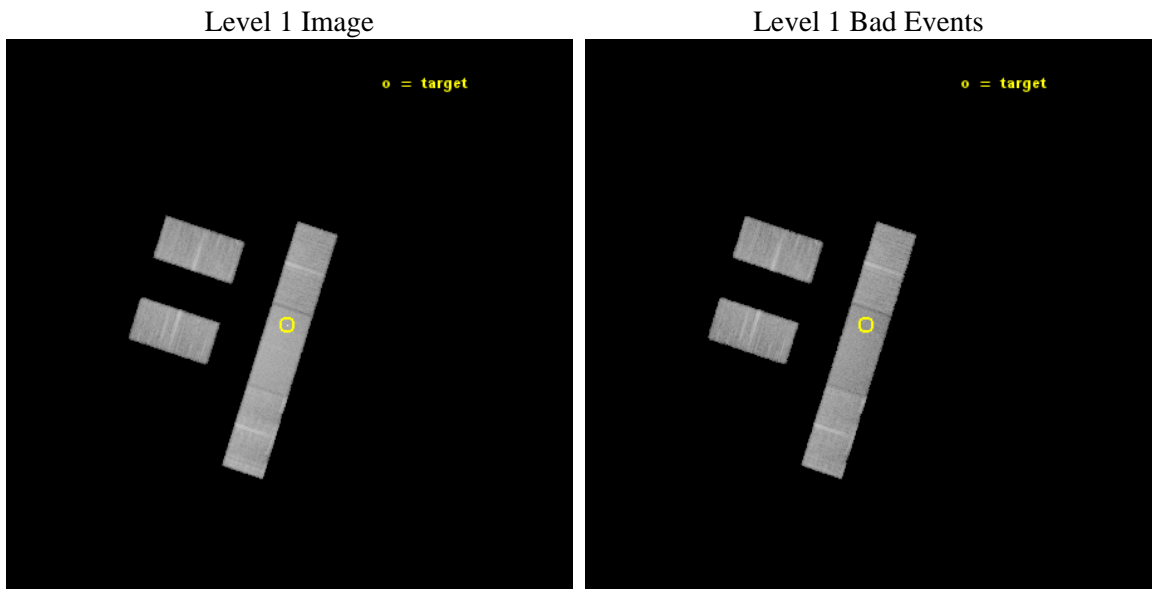
seq_num	702728	Sequence number
obs_id	14491	Observation id
title	ENERGY DEPENDENT X-RAY MICROLENSING AND THE STRUCTURE OF QUASARS	P
observer	Prof. Christopher Kochanek	Principal investigator
object	HE0435-1223	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	69.562083	Observer's specified target RA [deg]
dec_targ	-12.287333	Observer's specified target Dec [deg]
ra_nom	69.559089051804	Nominal RA [deg]
dec_nom	-12.286549869147	Nominal Dec [deg]
roll_nom	107.86799875336	Nominal Roll [deg]
revision	2	Processing version of data
ontime	37063.39974016	Sum of GTIs [s]
livetime	36189.736914873	Livetime [s]
ontime2	37058.176699698	Sum of GTIs [s]
ontime3	37061.658720076	Sum of GTIs [s]
ontime6	37063.39974016	Sum of GTIs [s]
ontime7	37063.39974016	Sum of GTIs [s]
ontime8	37061.658700168	Sum of GTIs [s]
l2events	97292	Number of level 2 events



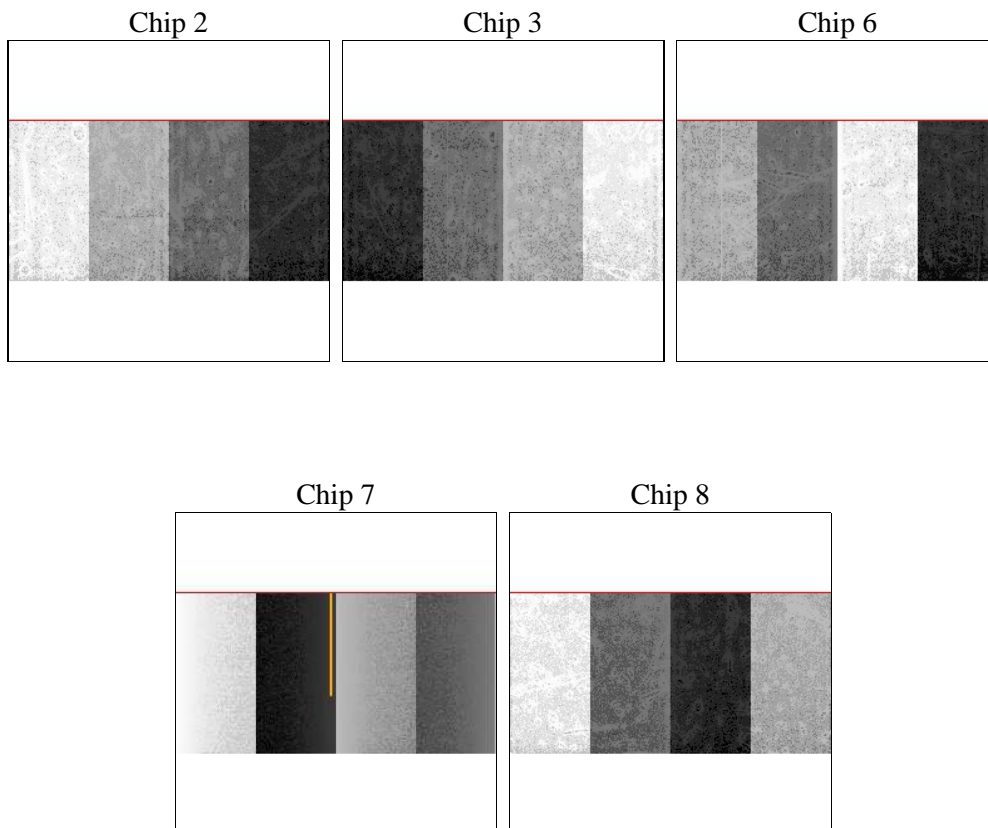
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	37063.39974016	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	37058.176699698	Sum of GTIs [s]
date	2014-12-06T03:42:53	Date and time of file creation	ontime3	37061.658720076	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	37063.39974016	Sum of GTIs [s]
			ontime7	37063.39974016	Sum of GTIs [s]
			ontime8	37061.658700168	Sum of GTIs [s]
			l1events	548814	Number of level 1 events

### 2.1.4 Events

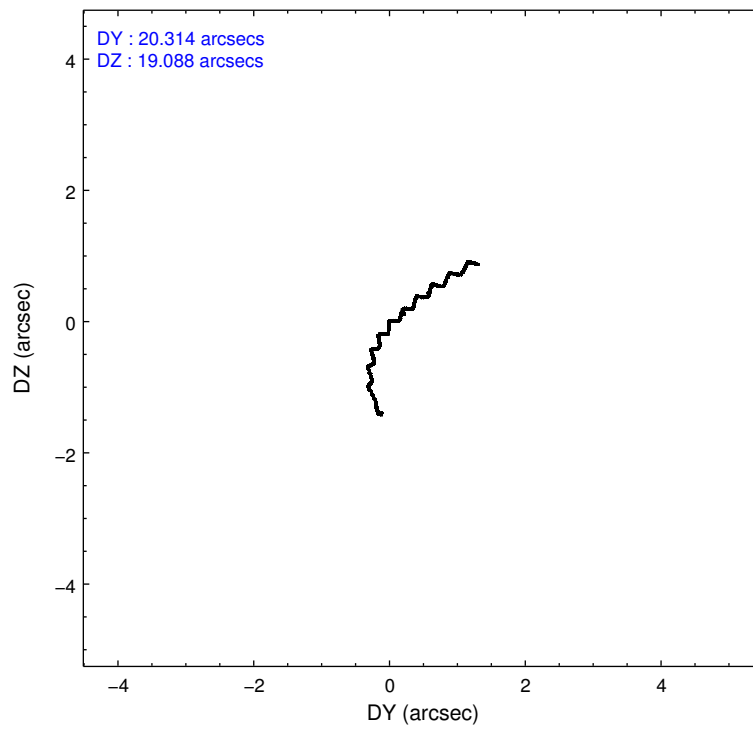
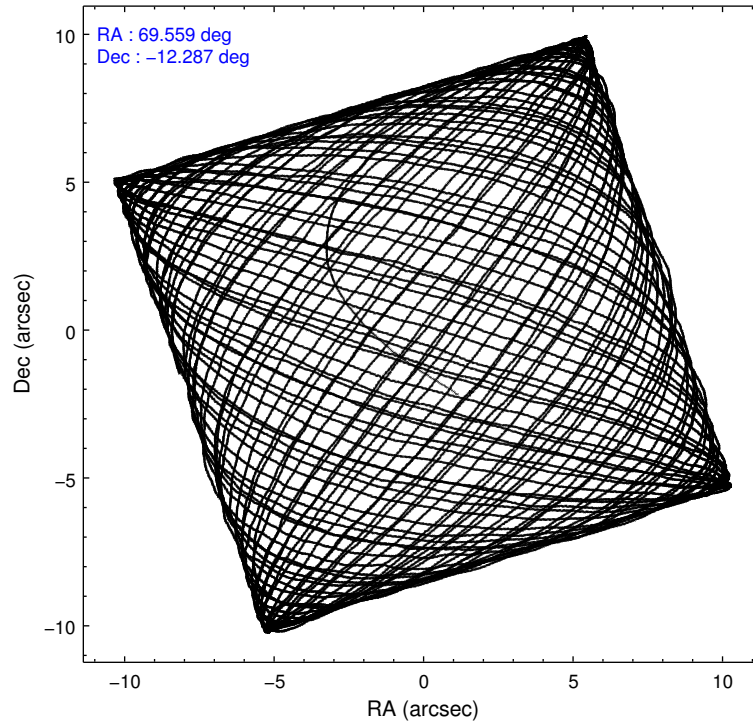
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	92623	93397	100488	129121	133185
rejected events	81789	82647	88460	70626	99278
rejected %	88%	88%	88%	54%	74%

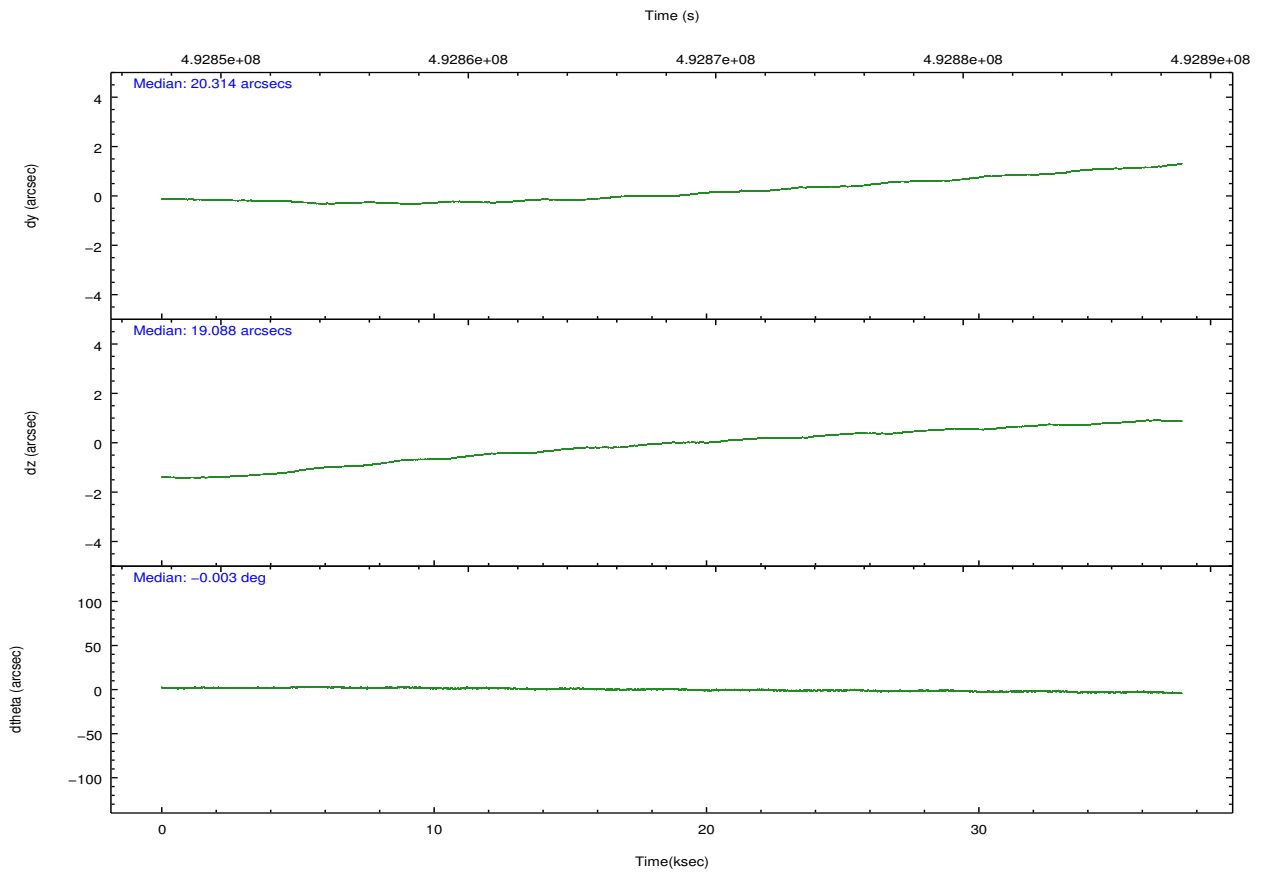
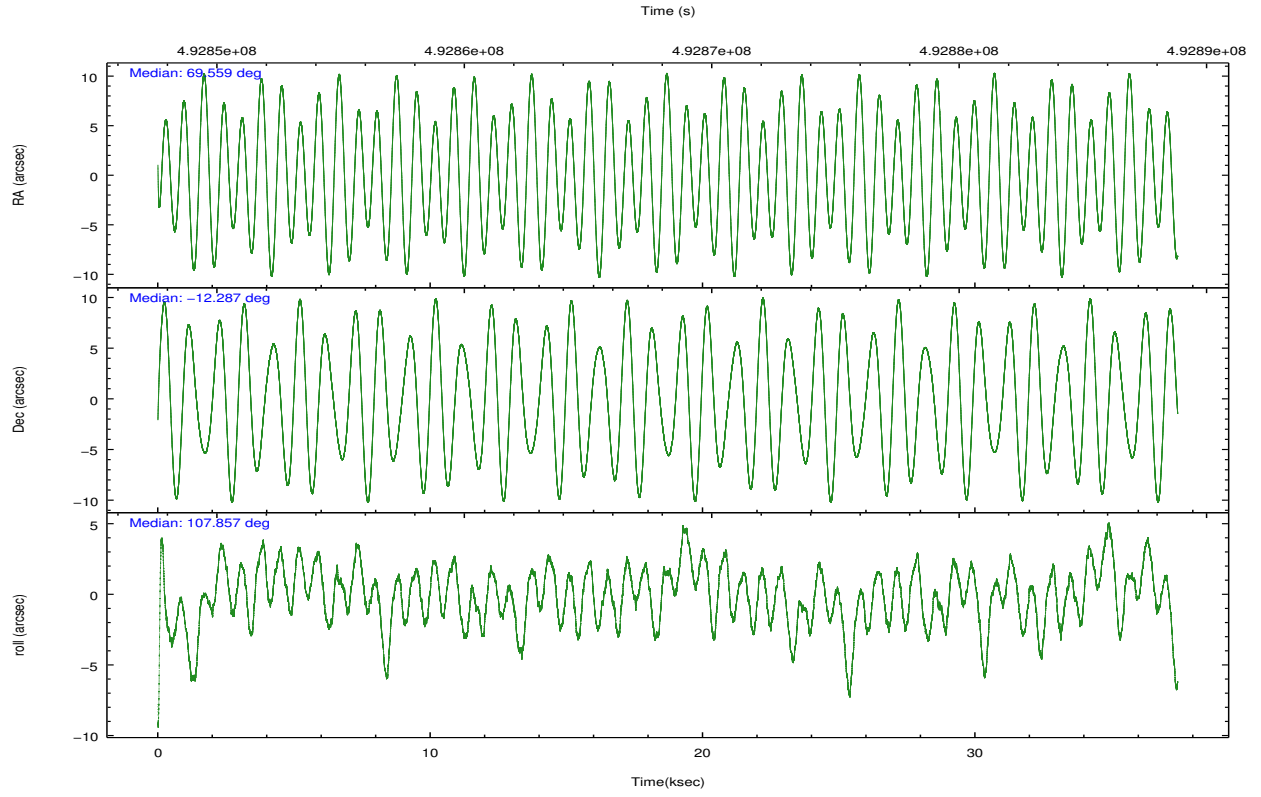
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	3537	3519	3918	5856	9804
	3%	3%	3%	4%	7%
grade 1 events	32	43	31	158	74
	0%	0%	0%	0%	0%
grade 2 events	2566	2377	2588	12050	7885
	2%	2%	2%	9%	5%
grade 3 events	1351	1378	1439	5714	3512
	1%	1%	1%	4%	2%
grade 4 events	1318	1246	1434	5686	3322
	1%	1%	1%	4%	2%
grade 5 events	4024	4899	4926	13547	7029
	4%	5%	4%	10%	5%
grade 6 events	2063	2231	2650	29194	9385
	2%	2%	2%	22%	7%
grade 7 events	77732	77704	83502	56916	92174
	83%	83%	83%	44%	69%

## 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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	69.580094	69.55908905180405	CCD I2 on	O4	Y
[deg] Pointing Dec	-12.304630	-12.28654986914747	CCD I3 on	O3	Y
[deg] Pointing Roll	107.715839	107.8679987533641	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	O1	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	O2	Y
[s] Observation start time (MET)	492849949.184000	492848544.98332	CCD S5 on	N	N
Observation start date	2013-08-14T06:44:42	2013-08-14T06:22:24	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	492886949.184000	492887685.63546	On-chip summing requested	N	N
Observation end date	2013-08-14T17:01:22	2013-08-14T17:14:45	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	257	257
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

## 2.3 Aspect





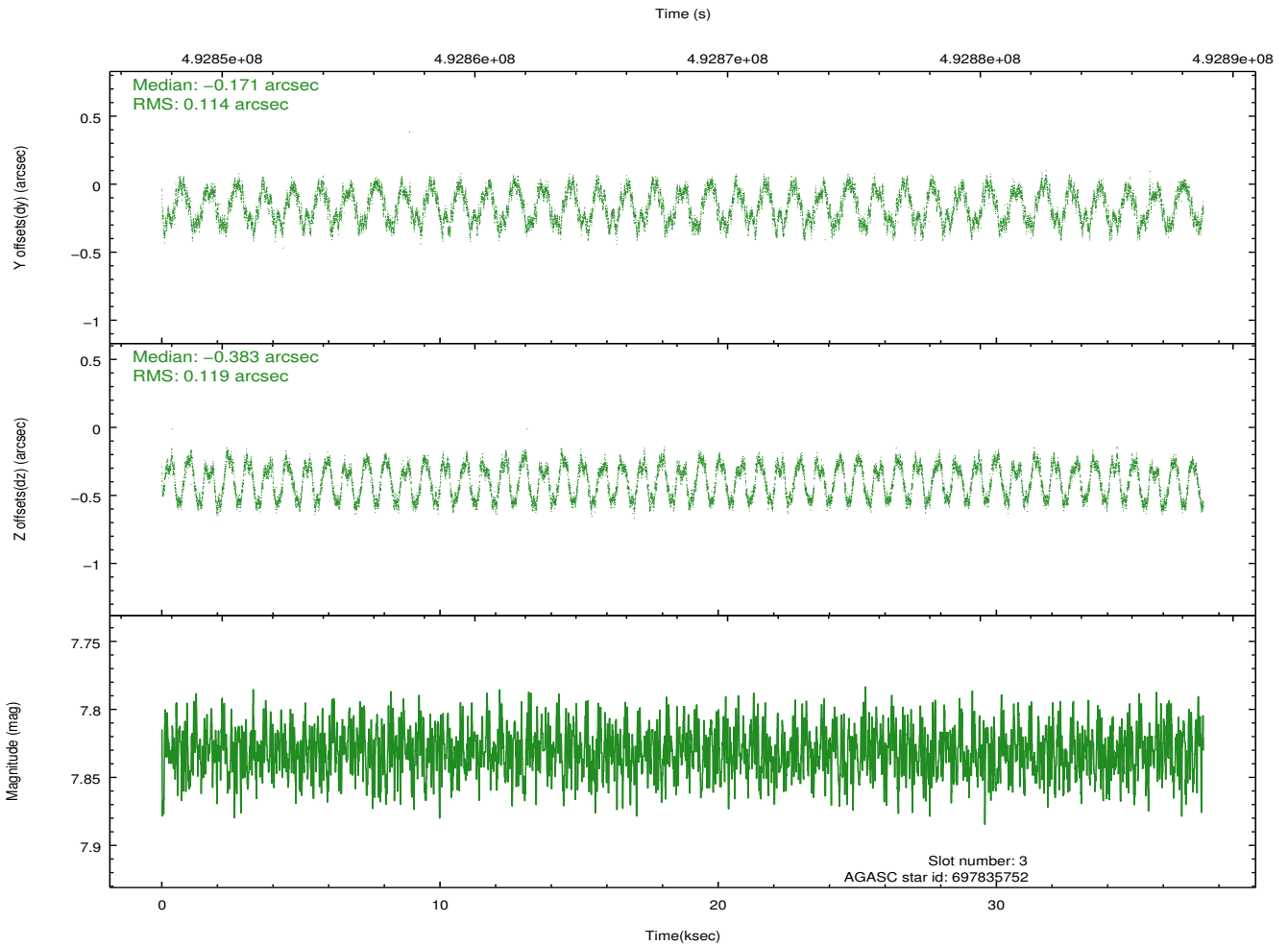
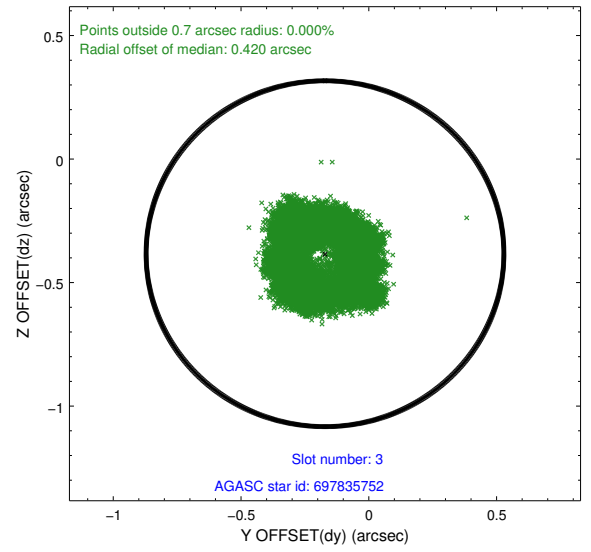
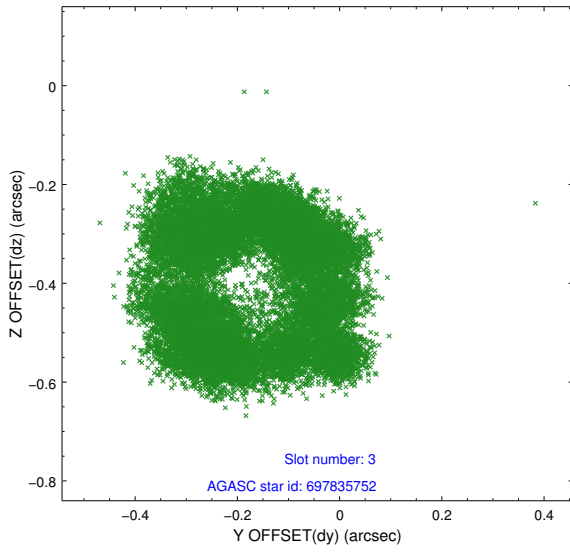
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.93	9132	-0.122	-0.036	0.014	0.026	0.000000	0.000000	-773.78	-1740.46
1	FID		ACIS-S-4	7.01	9132	0.249	0.068	0.008	0.016	0.000000	0.000000	2139.86	168.06
2	FID		ACIS-S-5	7.04	9131	-0.159	-0.025	0.015	0.024	0.000000	0.000000	-1826.61	161.71
3	GUIDE	used	697835752	7.83	18260	-0.171	-0.383	0.180	0.237	69.312835	-12.164170	767.24	741.48
4	GUIDE	used	697837912	9.34	18192	-0.001	0.109	0.123	0.206	70.091872	-12.106315	130.92	-1932.38
5	GUIDE	used	698220616	7.52	18263	-0.029	-0.202	0.067	0.104	69.313891	-12.560296	-592.62	1170.99
6	GUIDE	used	698221568	8.61	18255	0.253	0.279	0.081	0.127	69.849031	-12.529974	-1060.18	-652.14
7	GUIDE	used	697835968	9.04	18181	-0.051	0.221	0.135	0.205	70.113917	-11.772123	1252.31	-2374.60

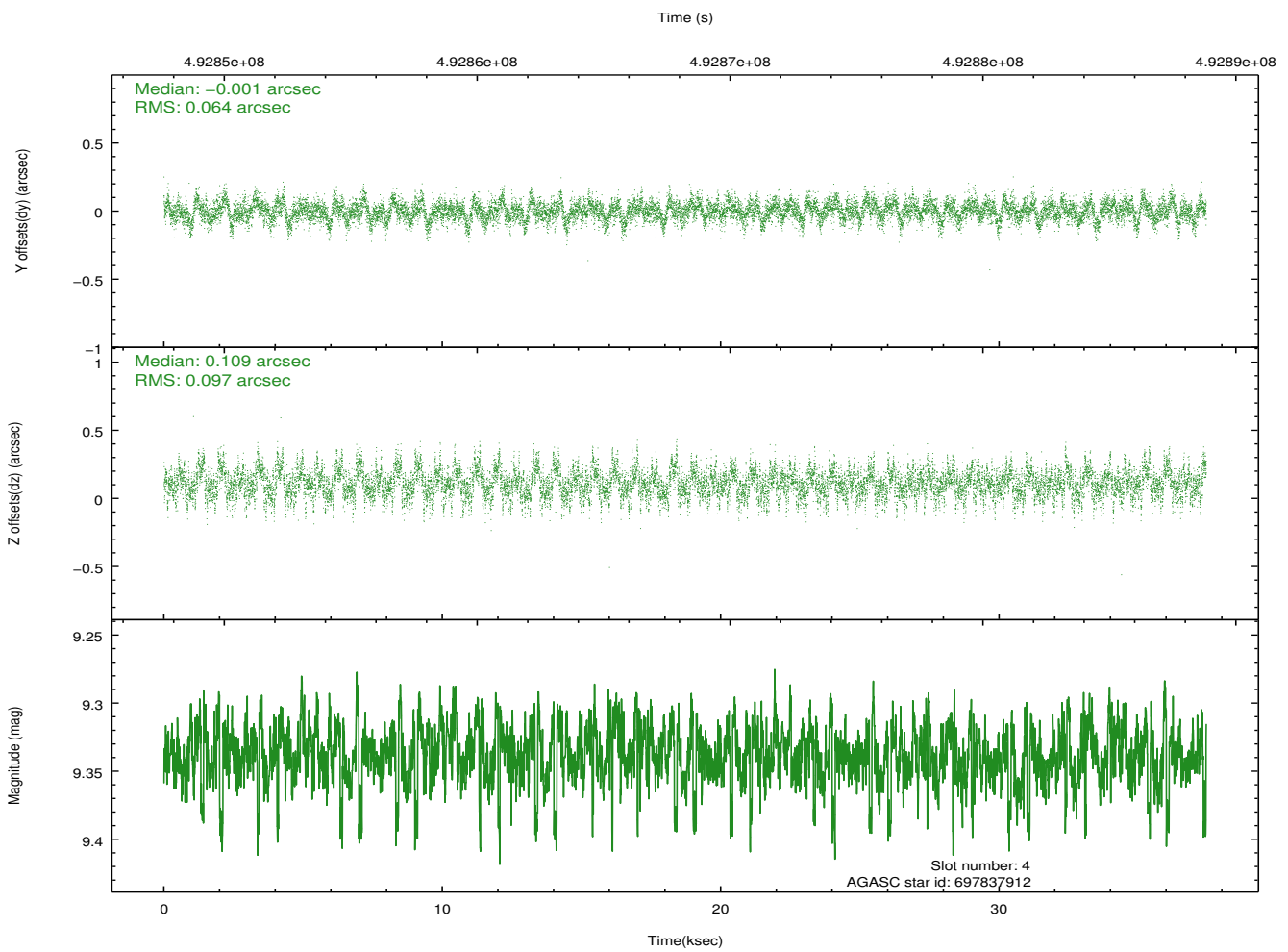
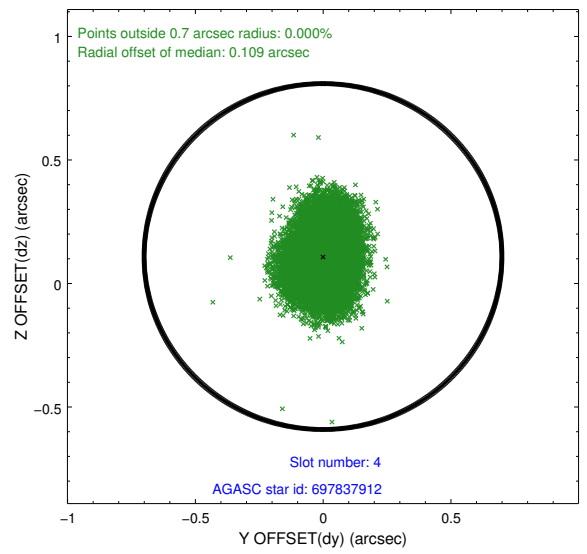
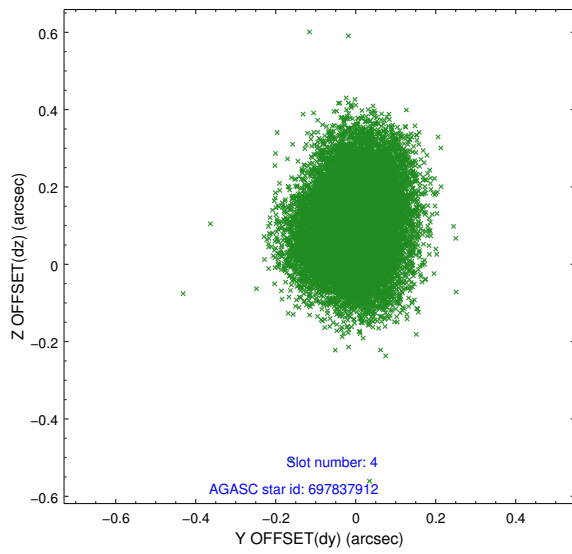
∞

## 2.4 Star Slots

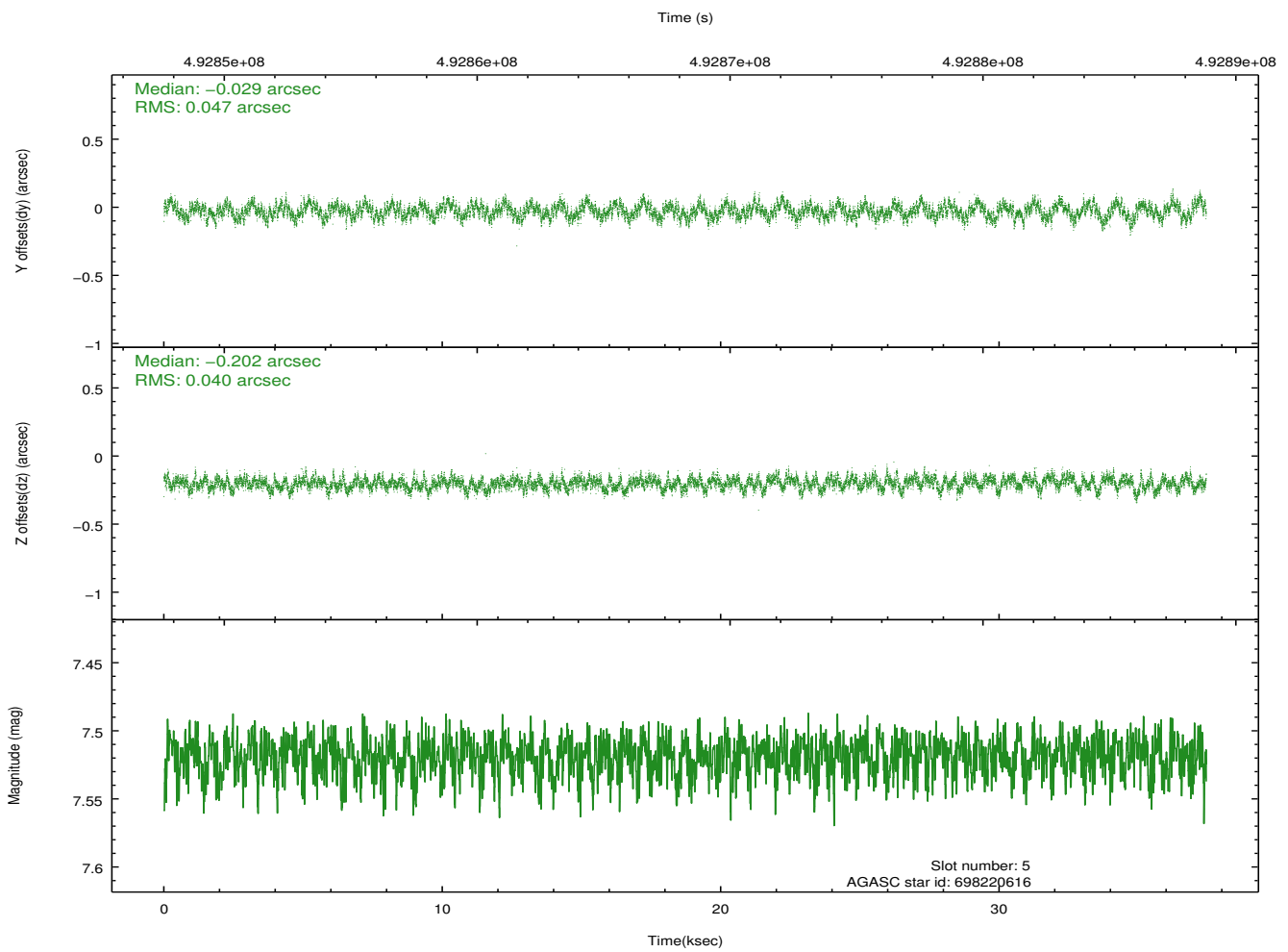
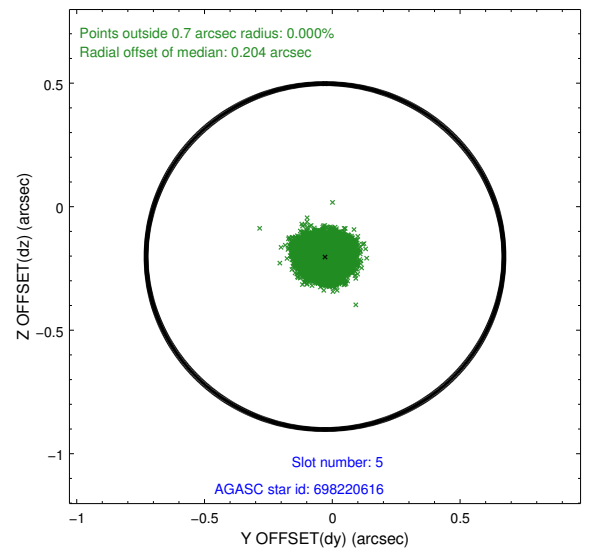
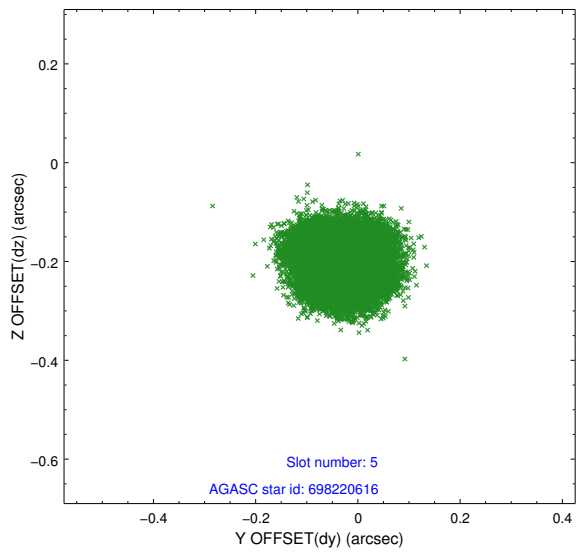
### 2.4.1 Slot 3



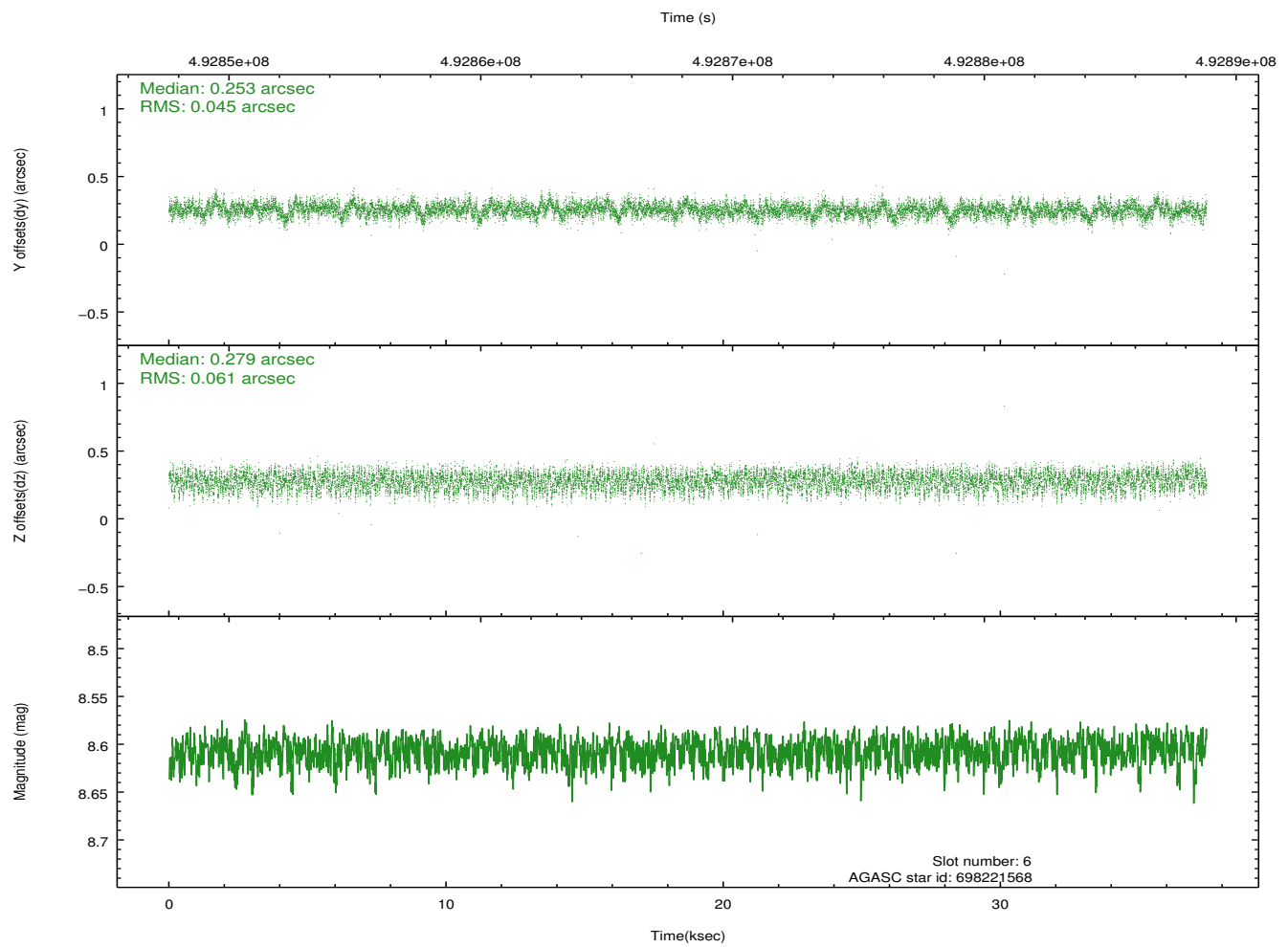
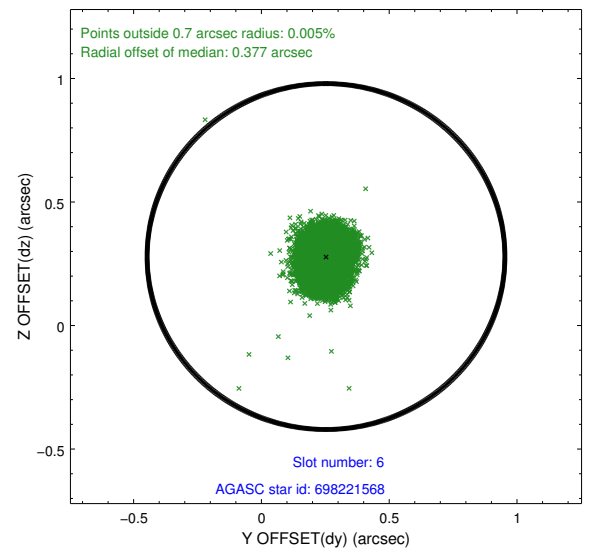
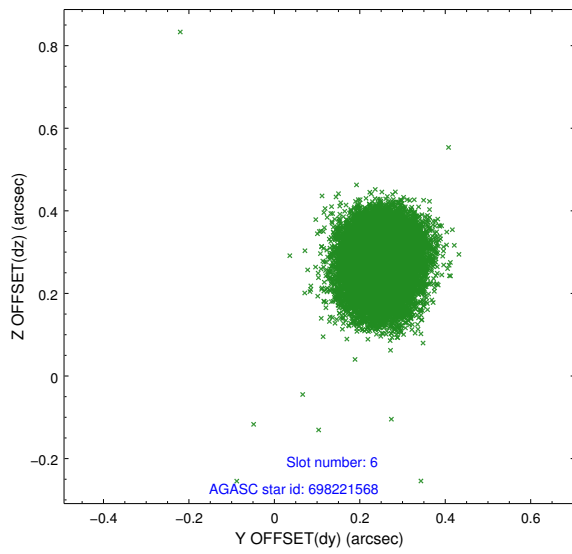
## 2.4.2 Slot 4



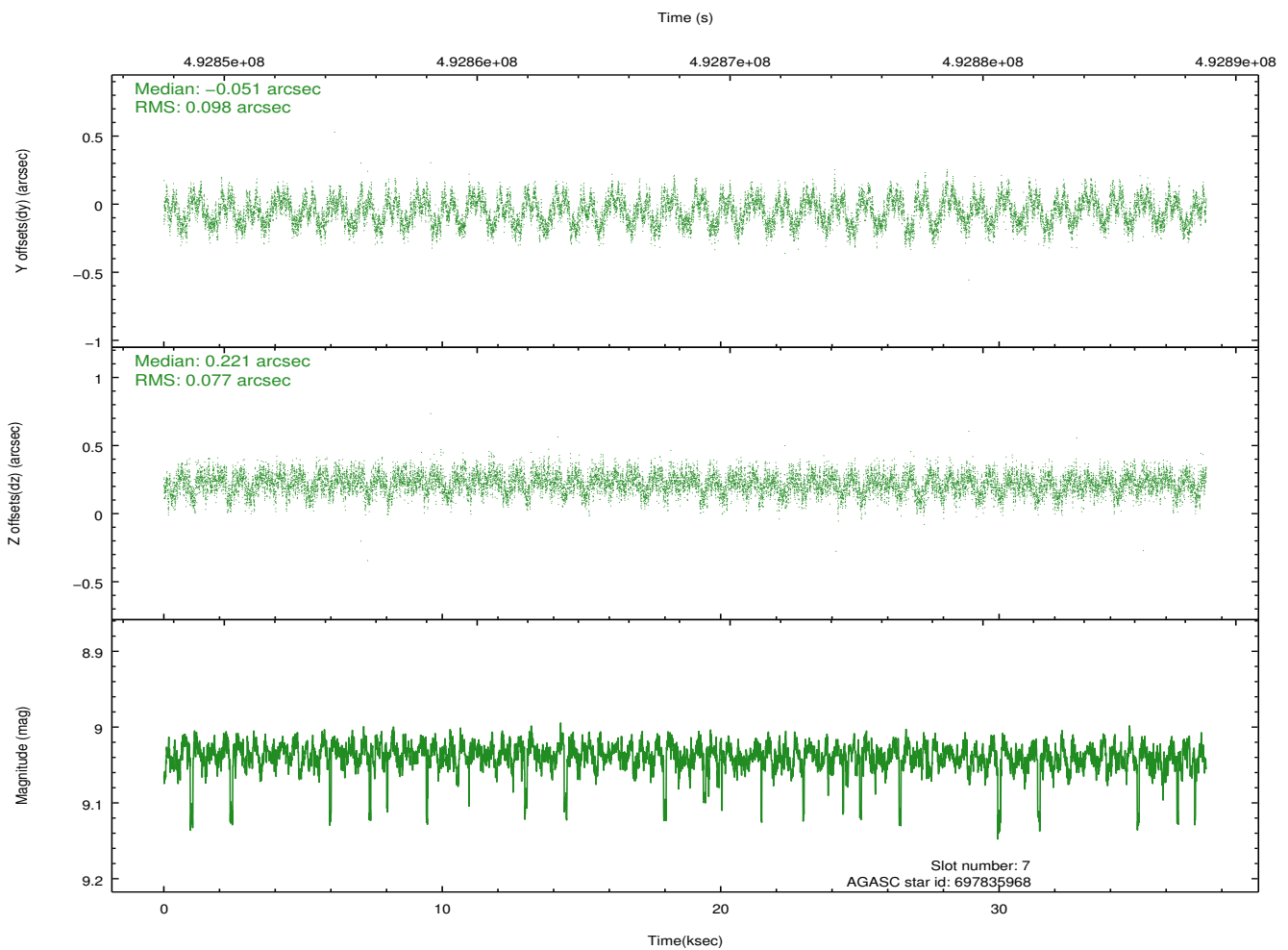
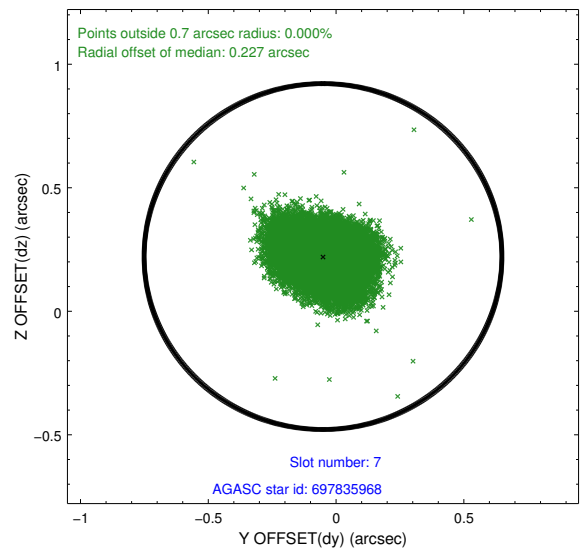
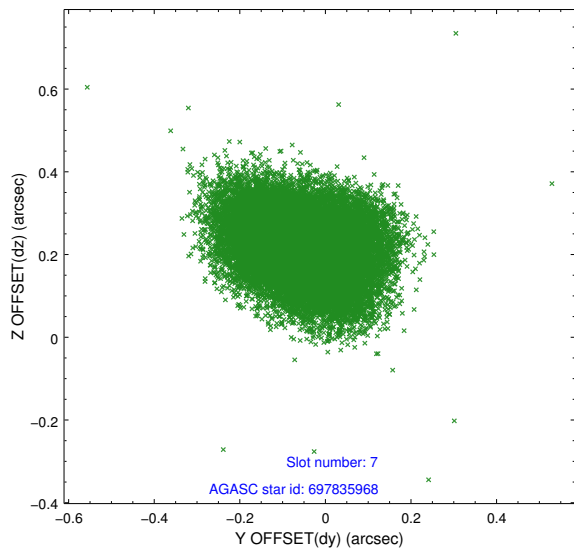
### 2.4.3 Slot 5



## 2.4.4 Slot 6

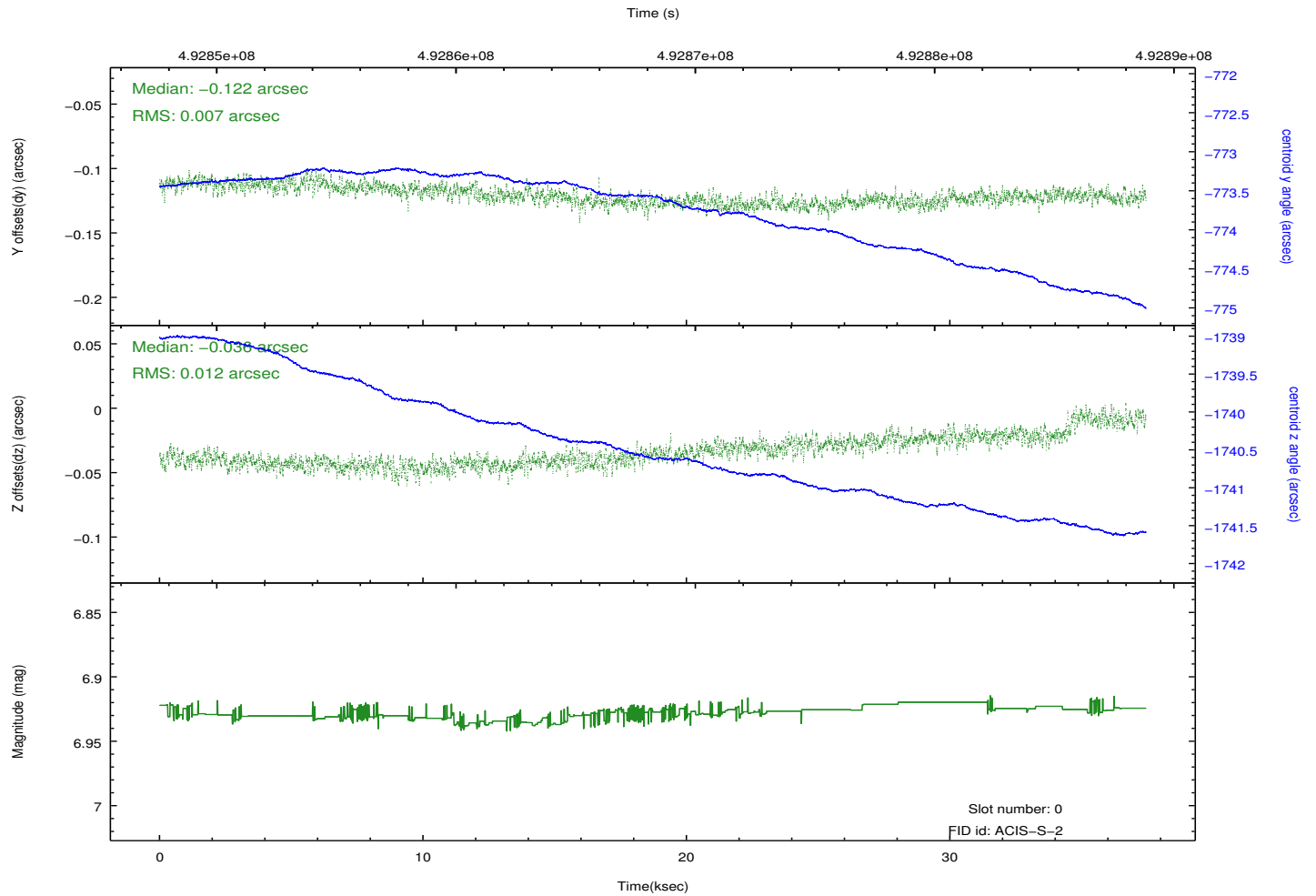
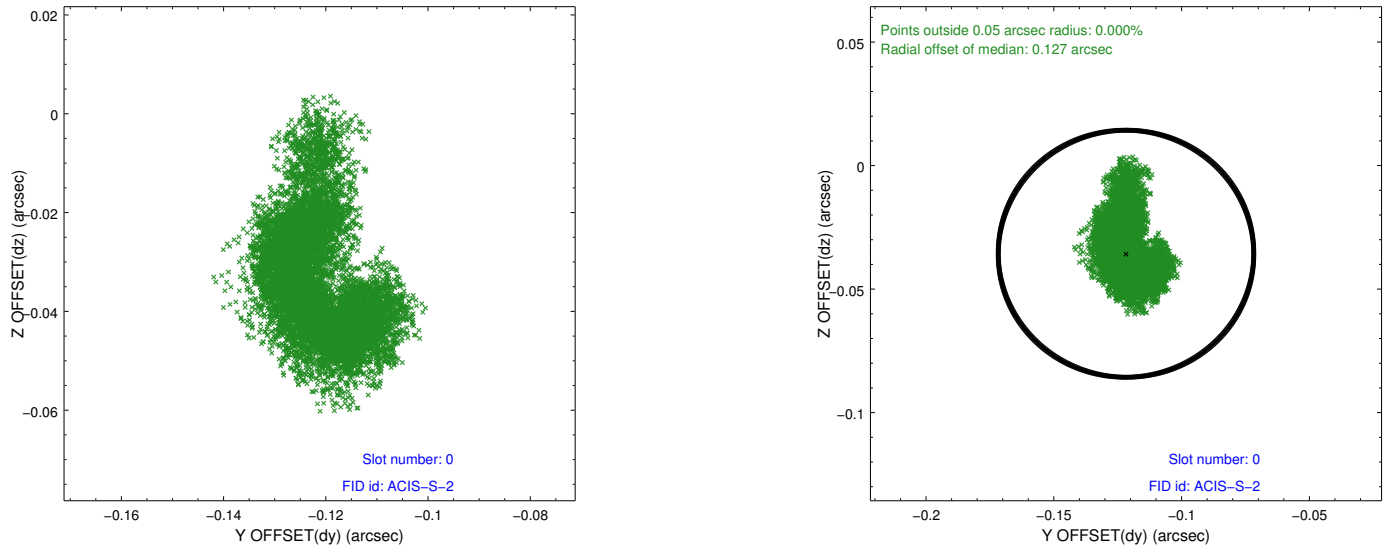


## 2.4.5 Slot 7

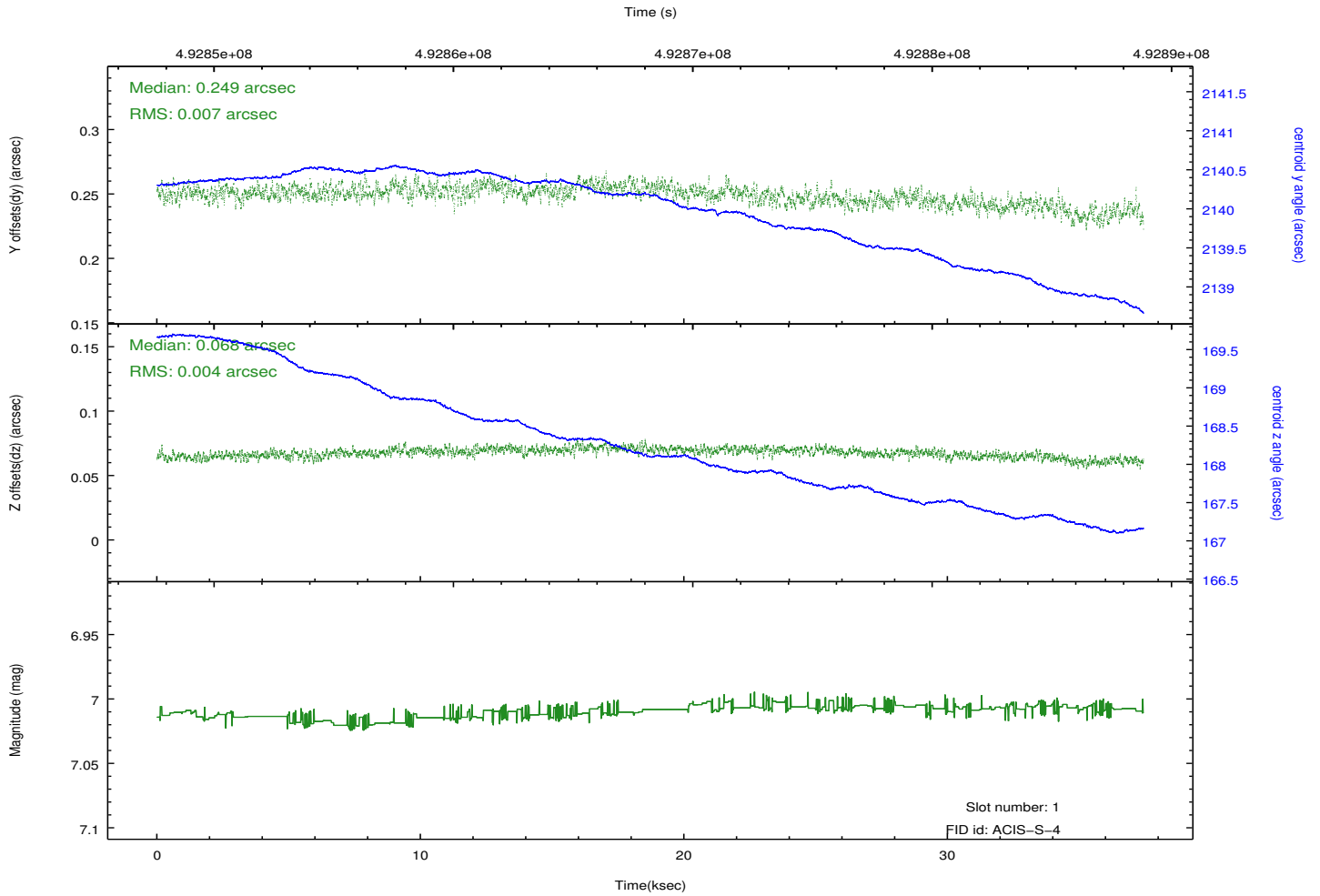
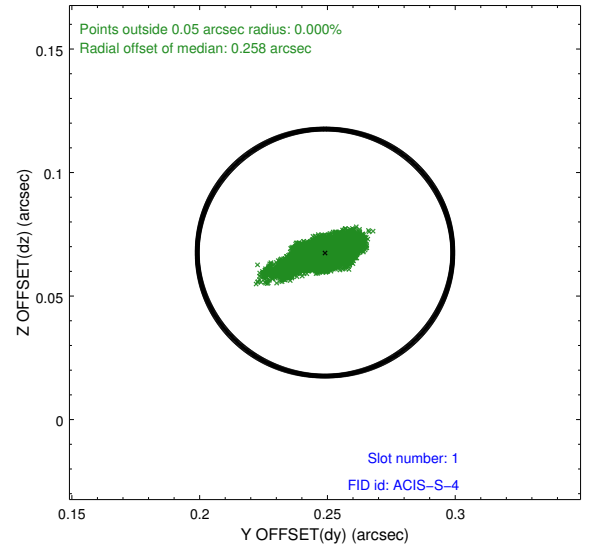
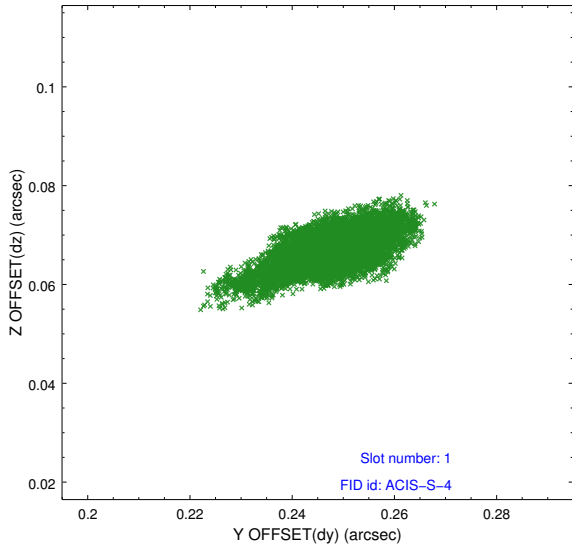


## 2.5 FID Slots

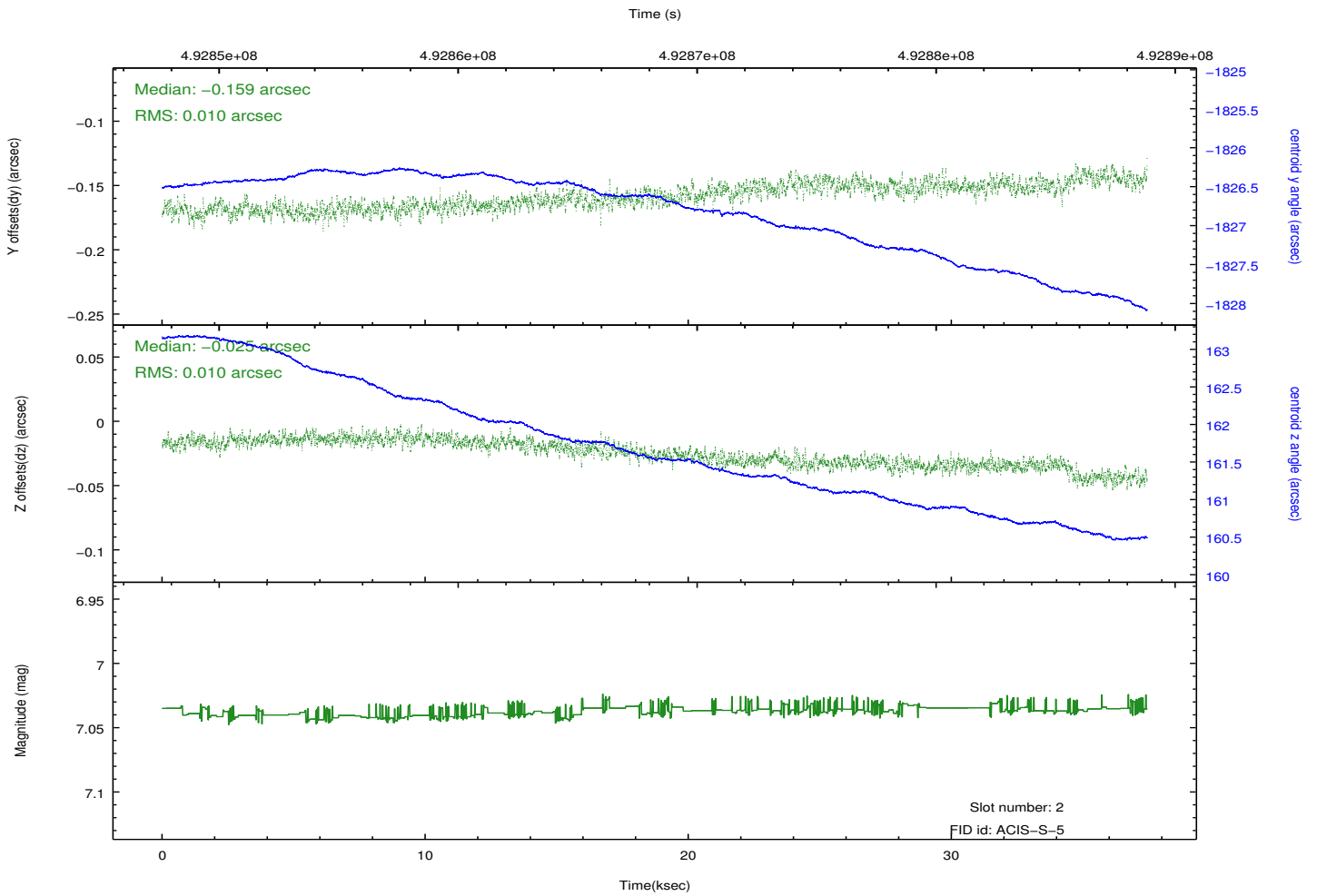
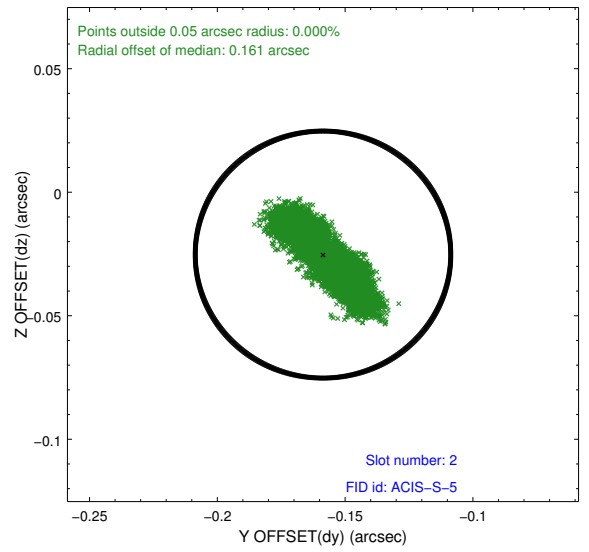
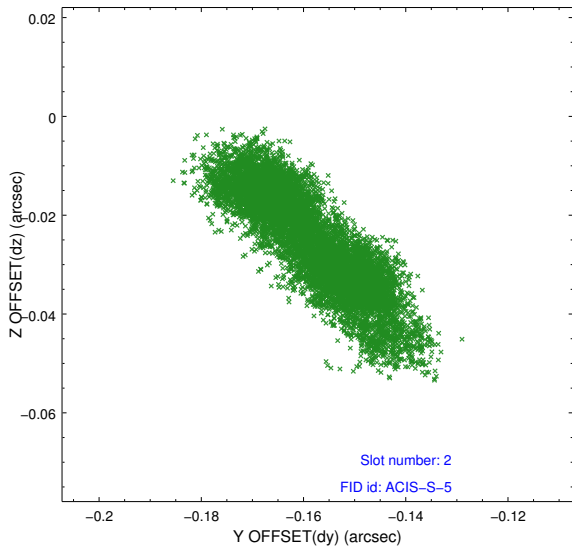
### 2.5.1 Slot 0



## 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)	2014.12.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.06339974016

## A.2 Comments

Joint proposal with HST.

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.