

V&V Reference Report

L2 ASCDS Version : 10.3.3

Observation 17320 - L2 Version 1
Chandra X-Ray Center

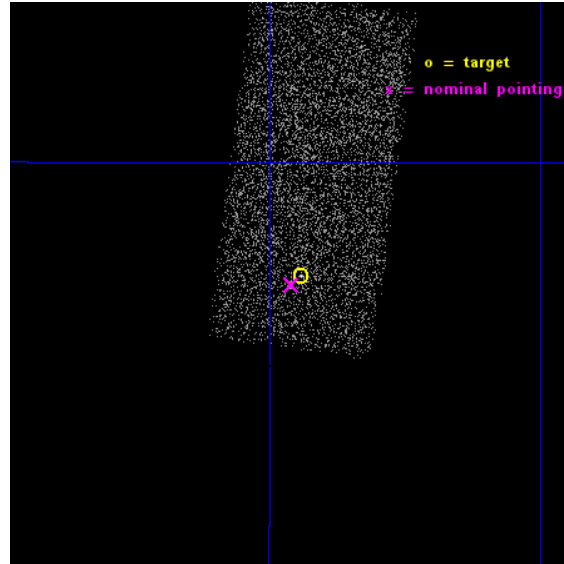
L2 Processing Date : Feb 28 2015

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1 Front

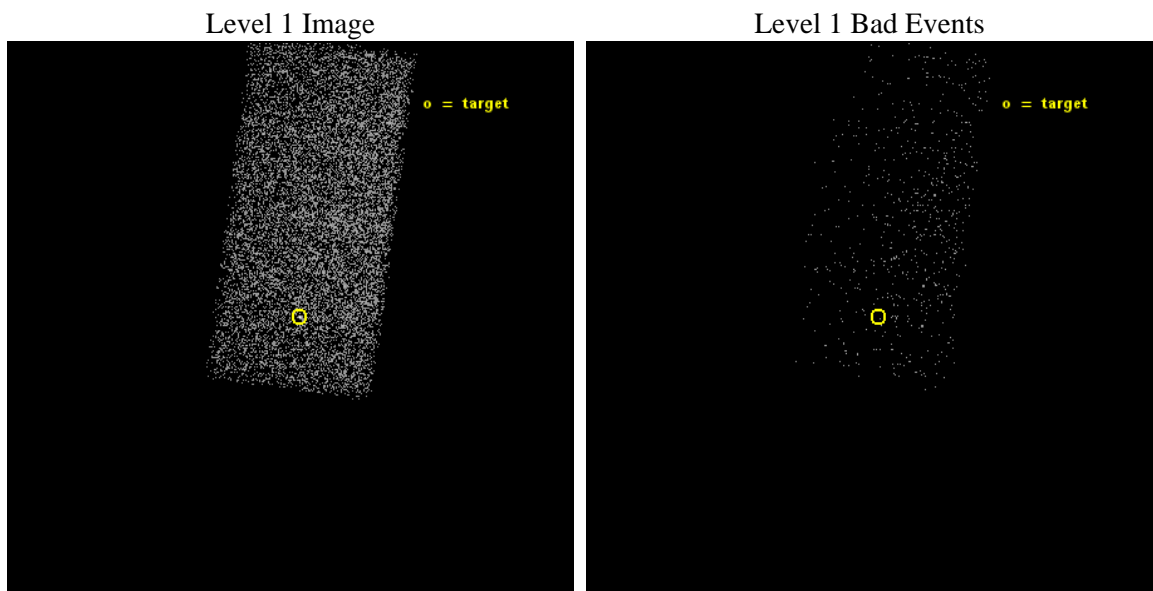
seq_num	201020	Sequence number
obs_id	17320	Observation id
title	The MUSCLES Treasury Survey: Measurements of the Ultraviolet Spectral Characteristics of Low-mass Exoplanetary Systems	Proposal title
observer	Dr. Kevin France	Principal investigator
object	GJ176	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	70.735417	Observer's specified target RA [deg]
dec_targ	18.953528	Observer's specified target Dec [deg]
ra_nom	70.739598373235	Nominal RA [deg]
dec_nom	18.949790703286	Nominal Dec [deg]
roll_nom	277.89535513709	Nominal Roll [deg]
revision	1	Processing version of data
ontime	9814.5	Sum of GTIs [s]
livetime	9553.1264600529	Livetime [s]
ontime7	9814.5	Sum of GTIs [s]
l2events	8382	Number of level 2 events



2 OBI

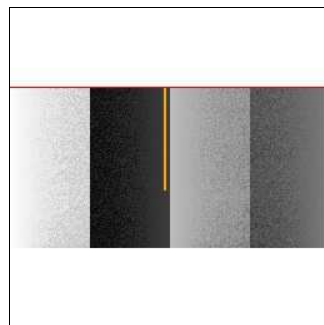
2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	9783.138000	[s] Scheduled observation exposure time
ascdsver	10.3.3	Processing system revision	ontime	9814.5	Sum of GTIs [s]
caldsver	4.6.7	 	ontime7	9814.5	Sum of GTIs [s]
date	2015-02-28T16:57:40	Date and time of file creation	l1events	15729	Number of level 1 events
revision	1	Processing version of data			

2.1.4 Events

	ccd 7
level 1 events	15729
rejected events	7018
rejected %	44%

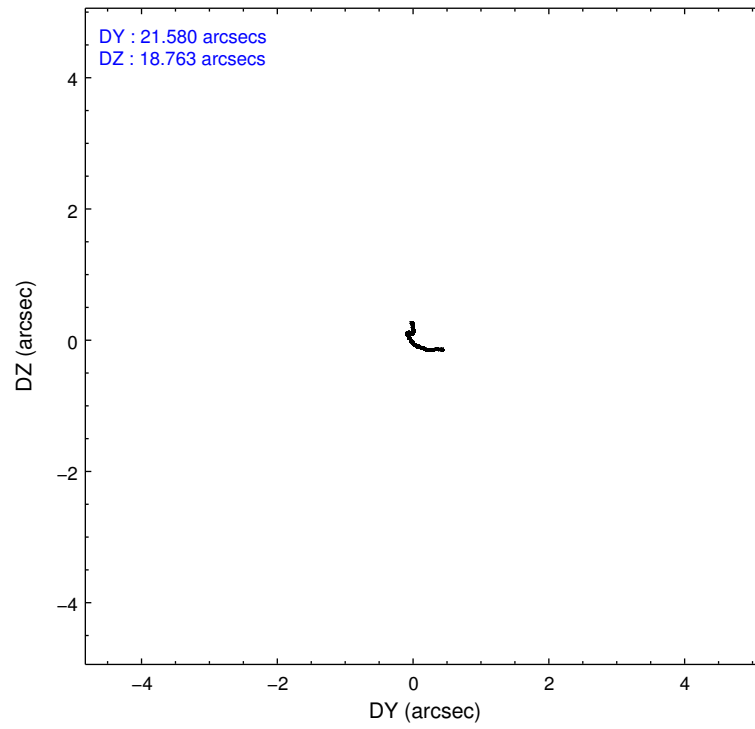
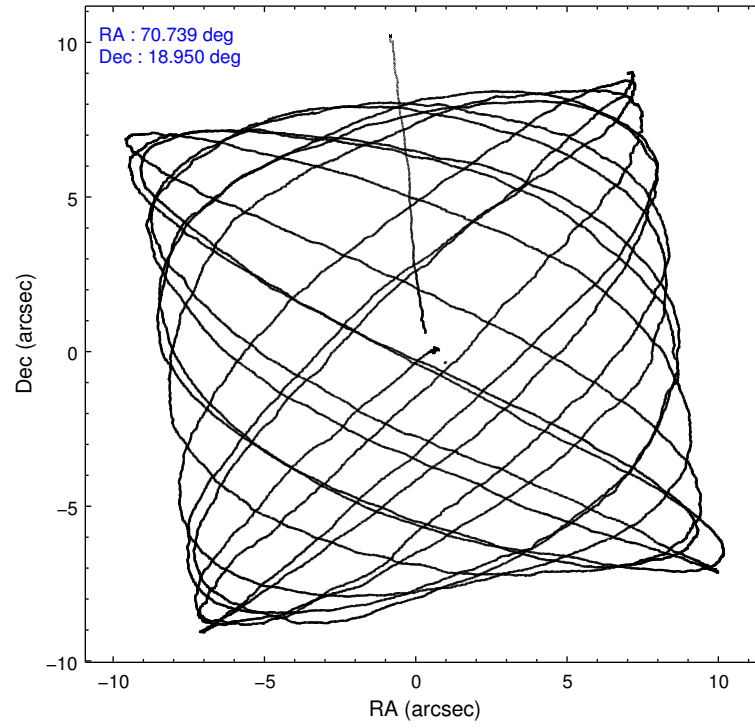
	ccd 7
grade 0 events	1189
	7%
grade 1 events	39
	0%
grade 2 events	2195
	13%
grade 3 events	1041
	6%
grade 4 events	922
	5%
grade 5 events	1599
	10%
grade 6 events	3838
	24%
grade 7 events	4906
	31%

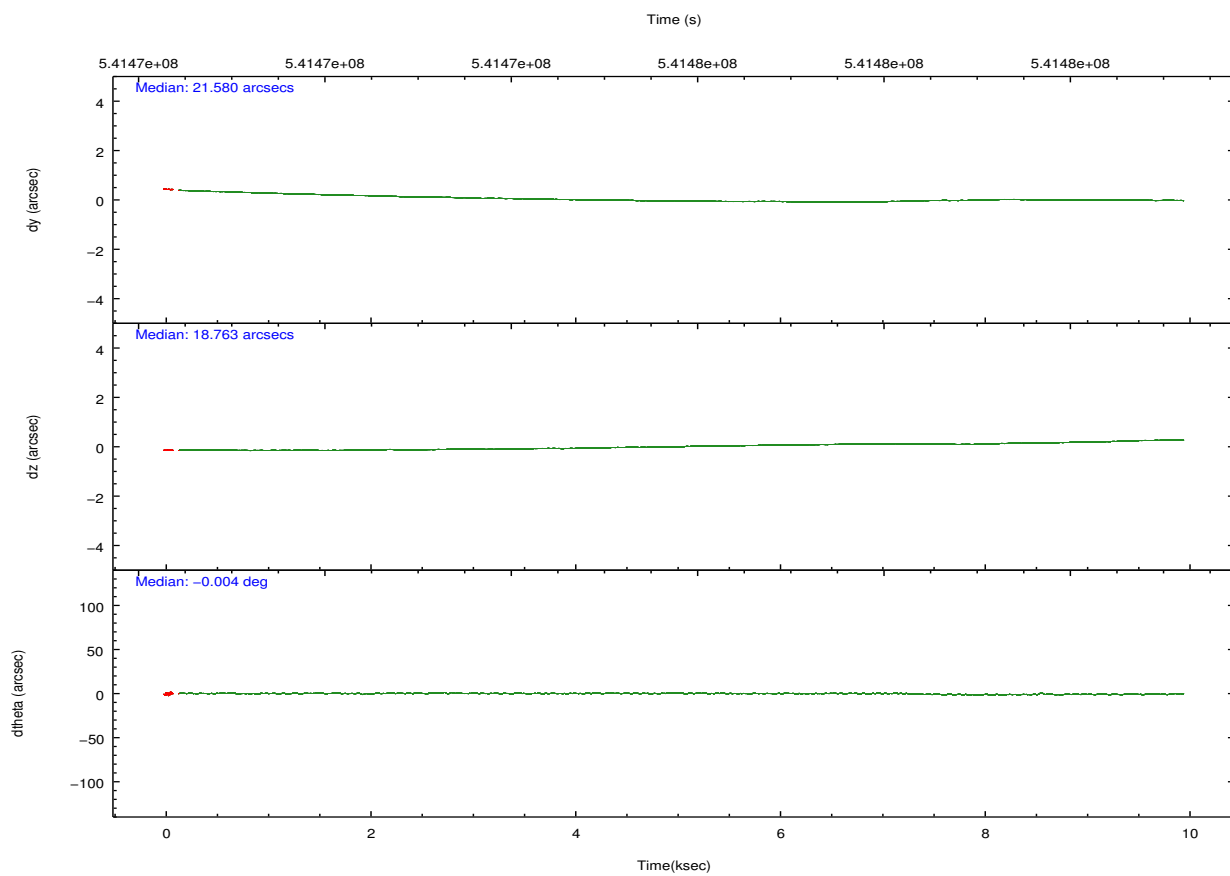
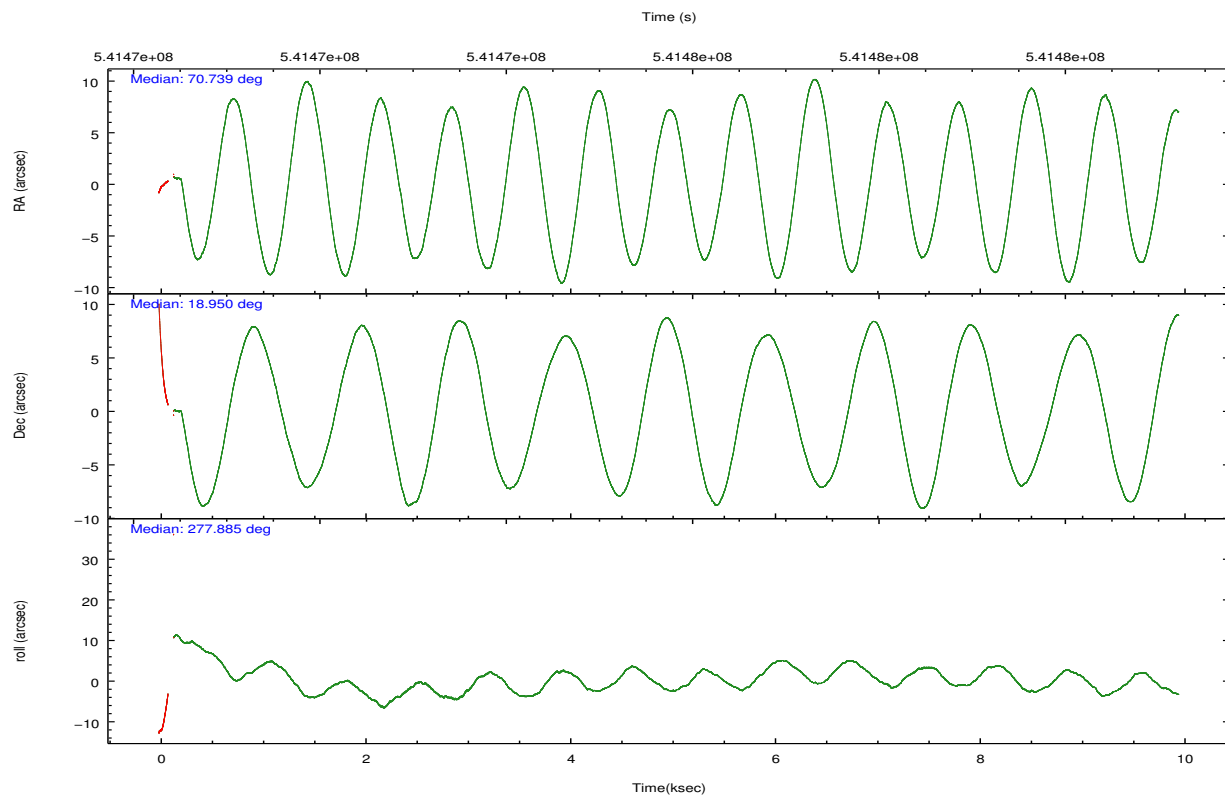
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	70.721490	70.7395983732351
[deg] Pointing Dec	18.971247	18.94979070328571
[deg] Pointing Roll	277.744622	277.8953551370915
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.145094680475
[mm] SIM translation stage offset	0	0.01257209746719923
[s] Observation start time (MET)	541470940.184000	541469654.83191
Observation start date	2015-02-28T00:34:33	2015-02-28T00:14:14
[s] Observation end time (MET)	541480723.184000	541480949.3075401
Observation end date	2015-02-28T03:17:36	2015-02-28T03:22:29
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/2
Subarray start row	257	257
Subarray row count	512	512
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	1.5

2.3 Aspect



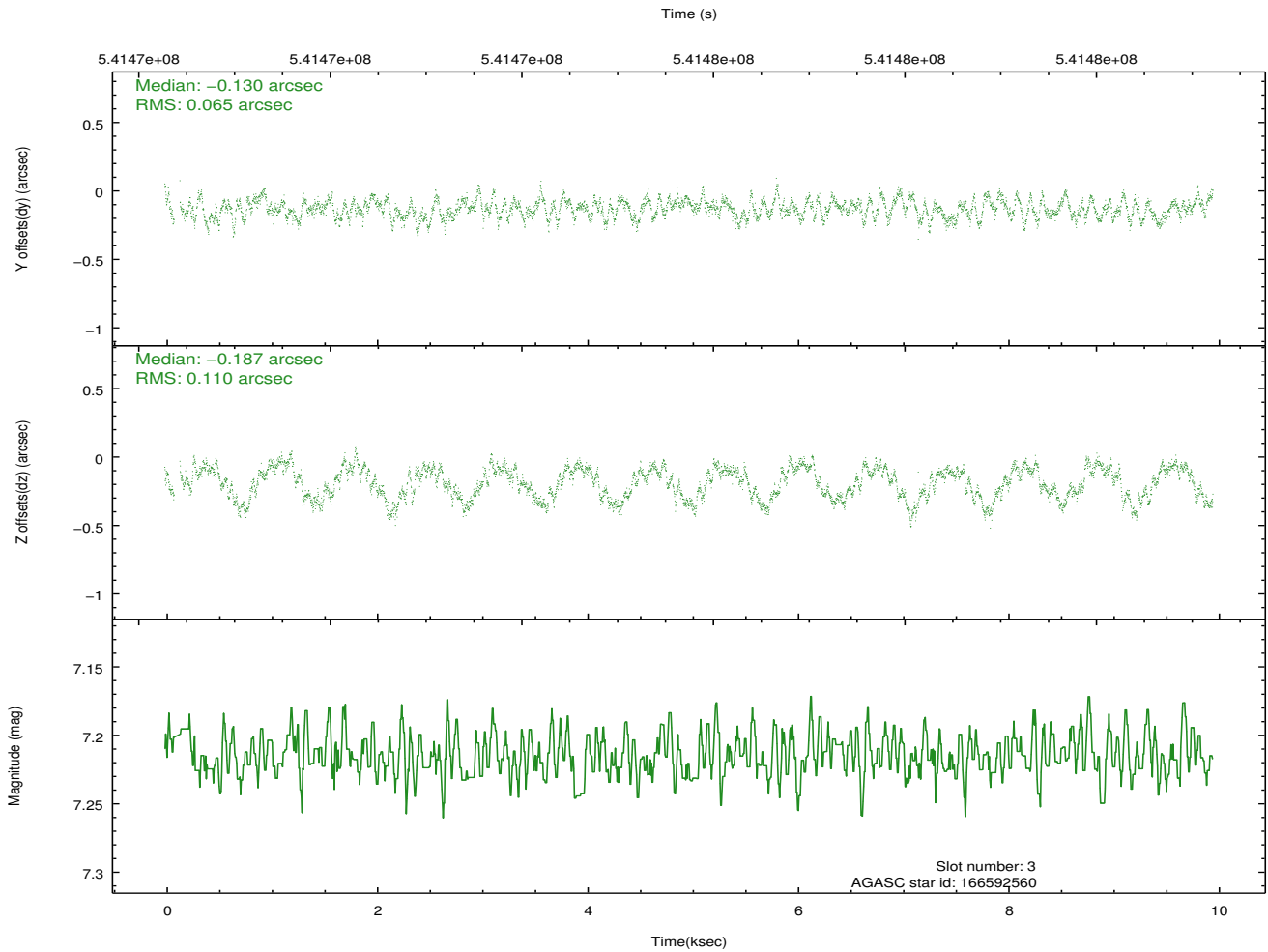
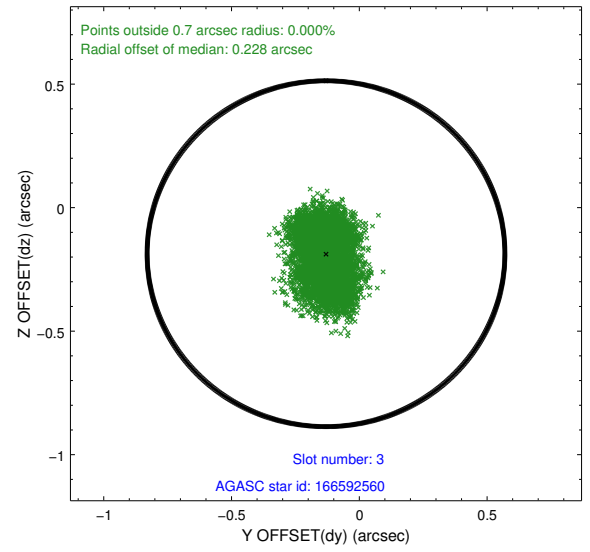
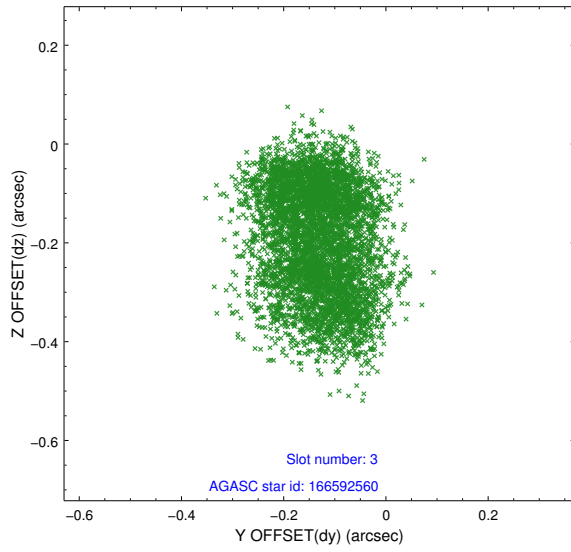


Slot Statistics

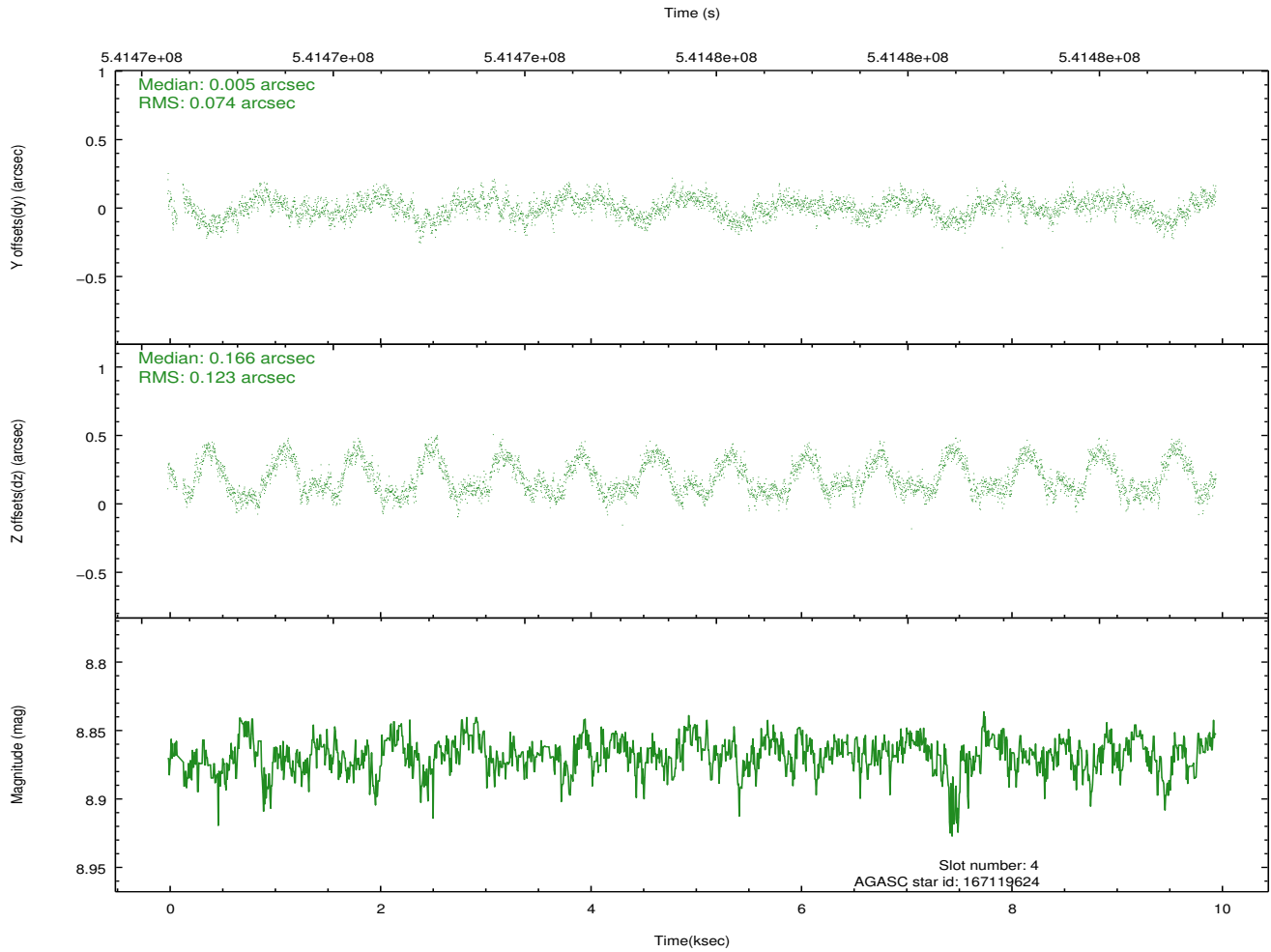
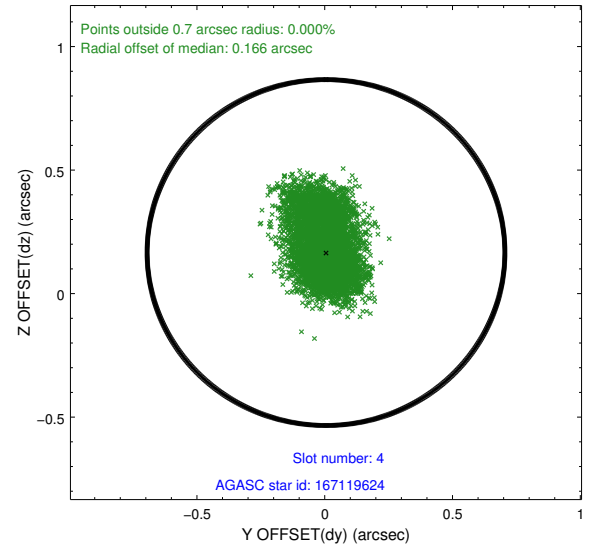
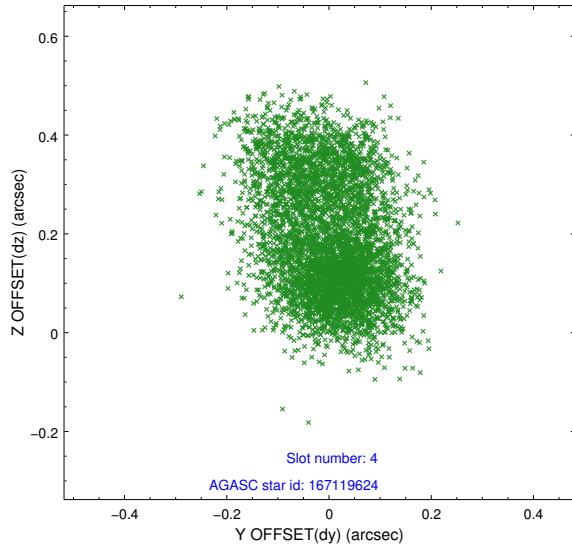
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.12	2417	-0.149	-0.119	0.009	0.015	0.000000	0.000000	-774.94	-1740.26
1	FID		ACIS-S-4	7.23	2416	0.375	0.103	0.005	0.010	0.000000	0.000000	2138.62	167.87
2	FID		ACIS-S-5	7.23	2417	-0.257	0.025	0.009	0.016	0.000000	0.000000	-1827.20	162.09
3	GUIDE	used	166592560	7.22	4834	-0.130	-0.187	0.138	0.209	70.715443	18.720435	893.57	-140.34
4	GUIDE	used	167119624	8.87	4834	0.005	0.166	0.153	0.251	71.128044	19.593356	-2034.93	1668.59
5	GUIDE	used	167126616	9.02	4832	0.196	0.112	0.189	0.264	70.032978	19.091113	-747.45	-2261.44
6	GUIDE	used	167117272	9.18	4833	-0.057	-0.080	0.340	0.478	71.365906	19.348872	-1054.48	2354.08
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

2.4 Star Slots

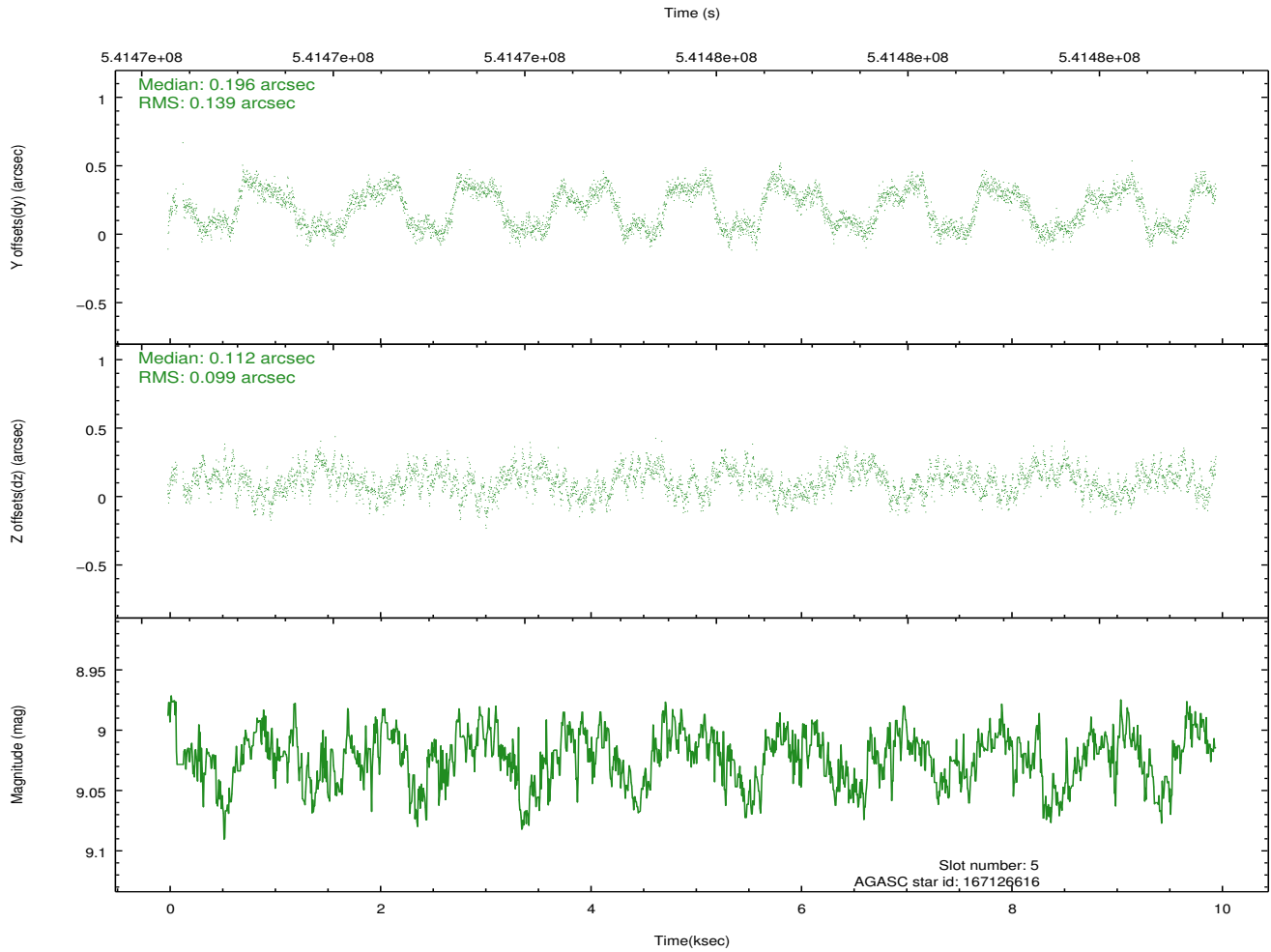
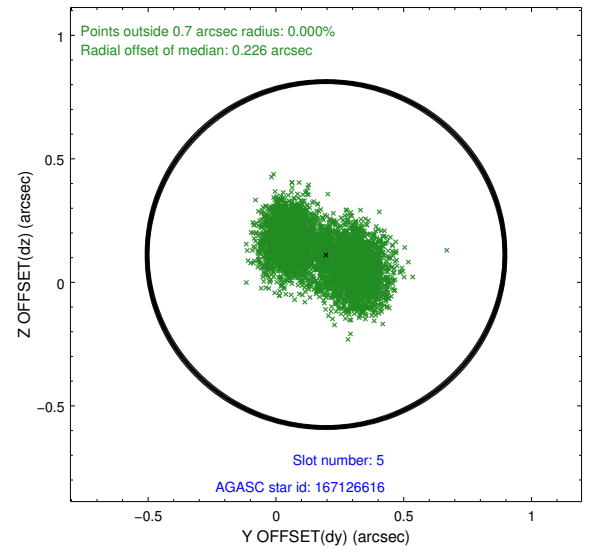
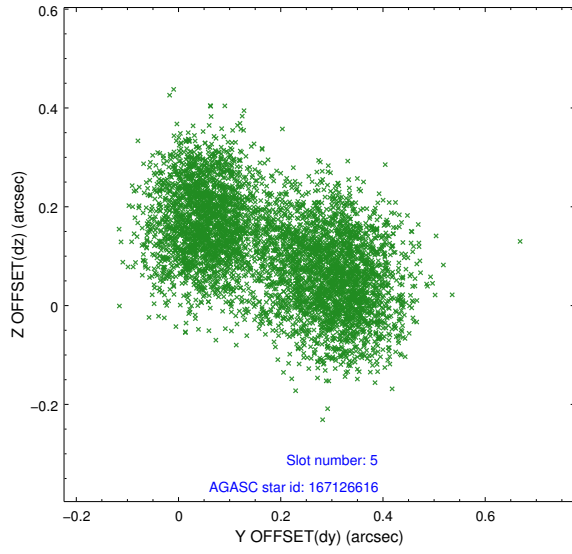
2.4.1 Slot 3



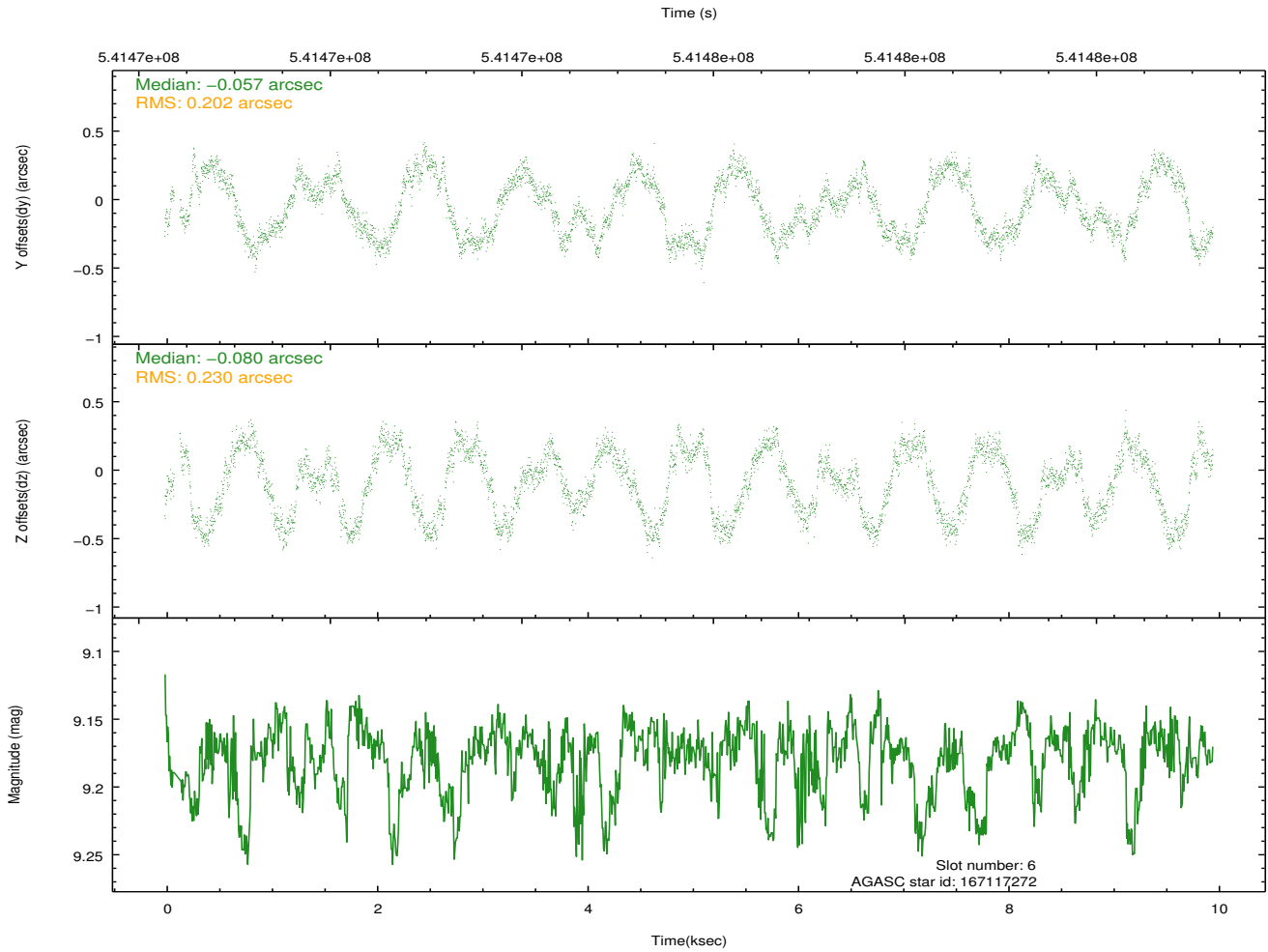
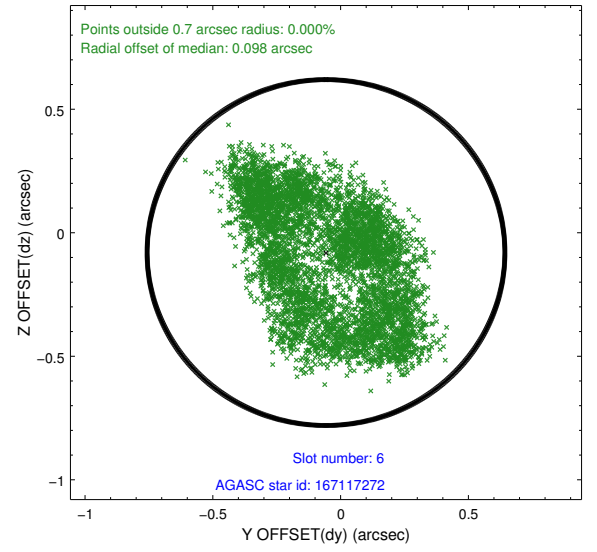
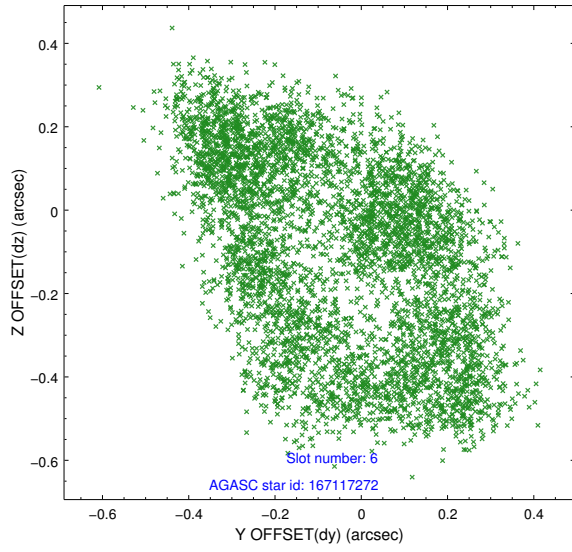
2.4.2 Slot 4



2.4.3 Slot 5

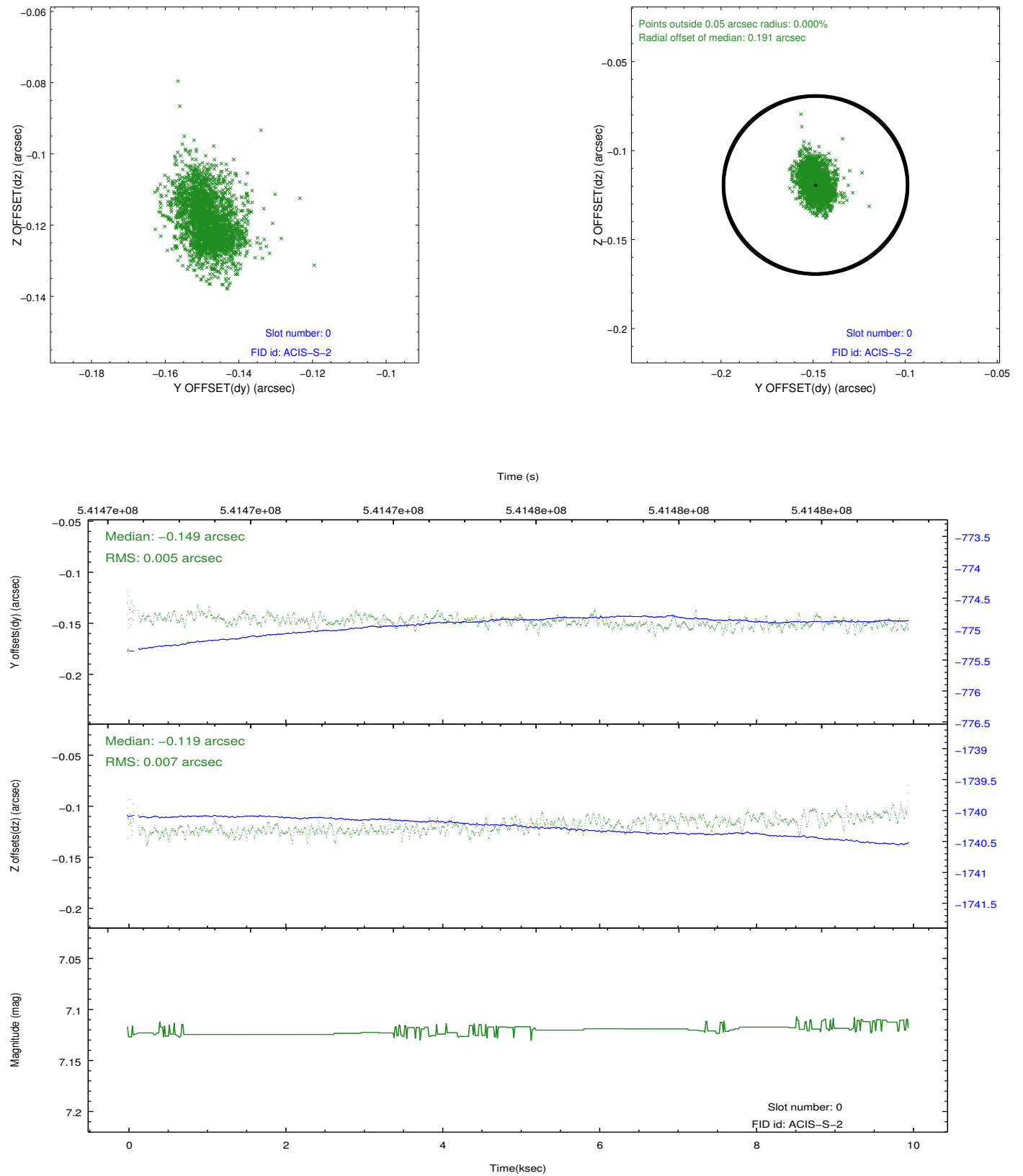


2.4.4 Slot 6

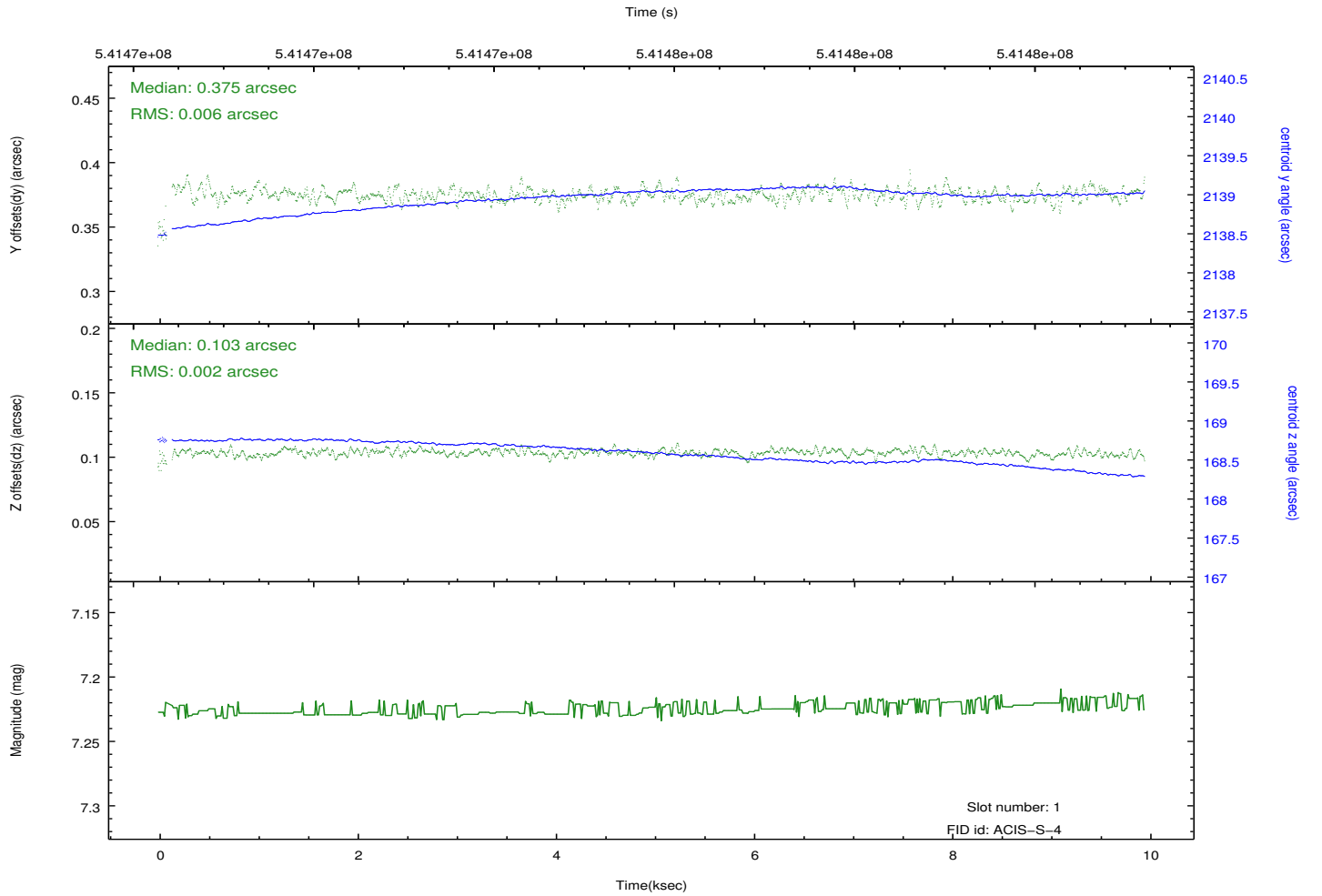
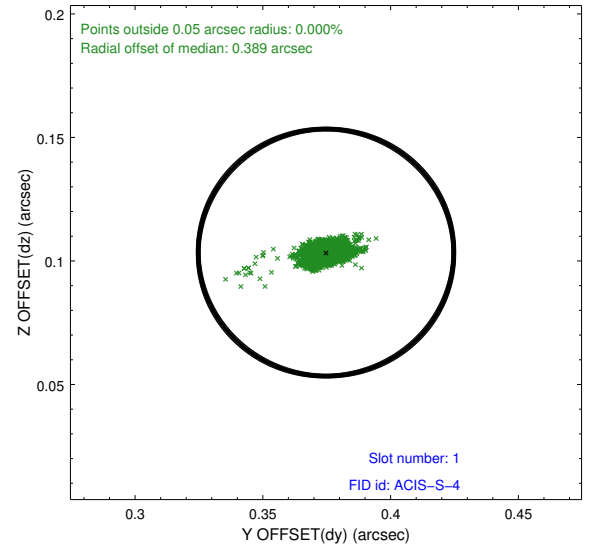
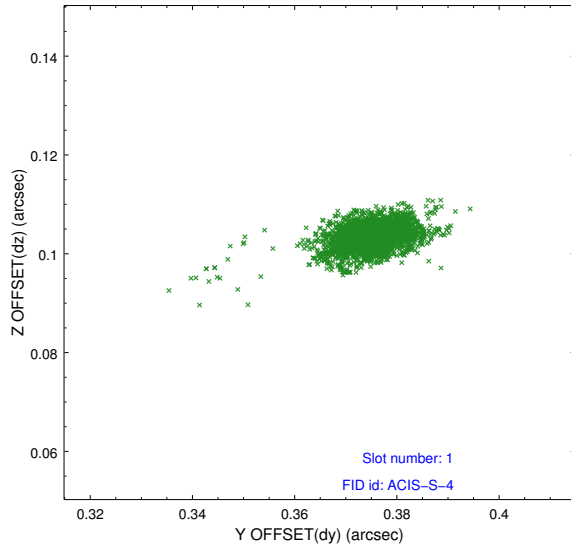


2.5 FID Slots

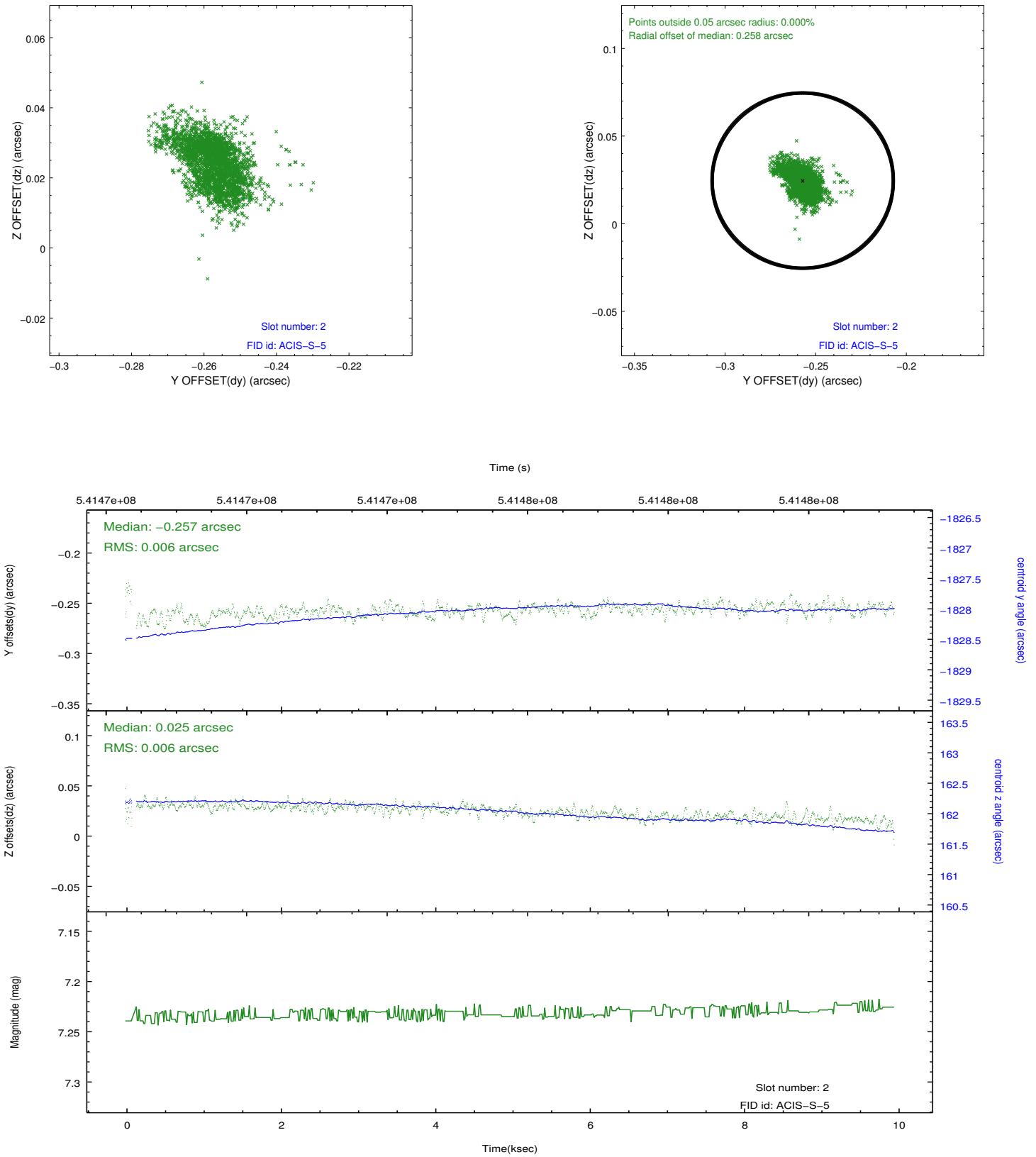
2.5.1 Slot 0



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)	2015.03.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.8145

A.2 Comments

Joint proposal with HST.

Observation coordinated with HST.

The ACA has the capability to devote one or more of the eight image slots to 'monitor' particular sky locations. This allows simultaneous optical photometry of one or more targets in the ACA field of view. These optical sources can be slightly fainter than the ACA guide star limit of $m_{ACA} = 10.2$ mag. The bright-end limit for monitor star photometry is $m_{ACA} = 6.2$ mag. However, since there are a fixed number of image slots, devoting a slot to photometry instead of tracking a guide star results in a degradation of the image reconstruction and celestial location accuracy (Section 5.4). Using one monitor slot represents a 15 - 25% increase in the aspect image reconstruction RMS diameter, depending on the particular guide star configuration. Two monitor slots would increase the diameter by about 50 - 60%, but this configuration is not operationally allowed under normal circumstances. The photometric accuracy which can be achieved depends primarily on the star magnitude, integration time, CCD dark current, CCD read noise, sky background, and the CCD dark current uncertainty.