

V&V Reference Report

L2 ASCDS Version : 10.5

Observation 18889 - L2 Version 1
Chandra X-Ray Center

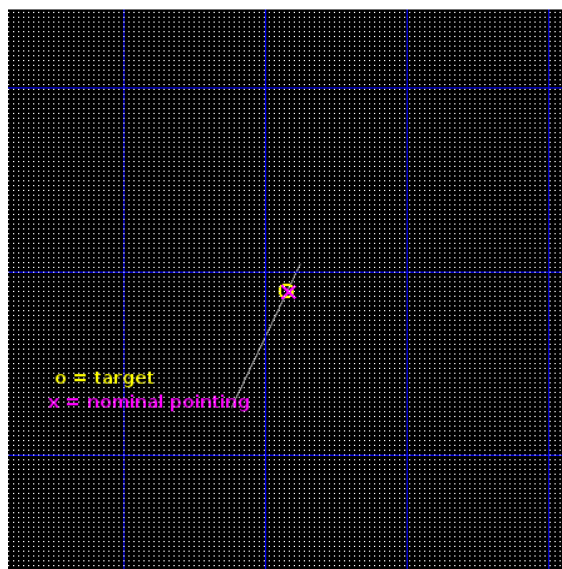
L2 Processing Date : Jul 26 2016

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1 Front

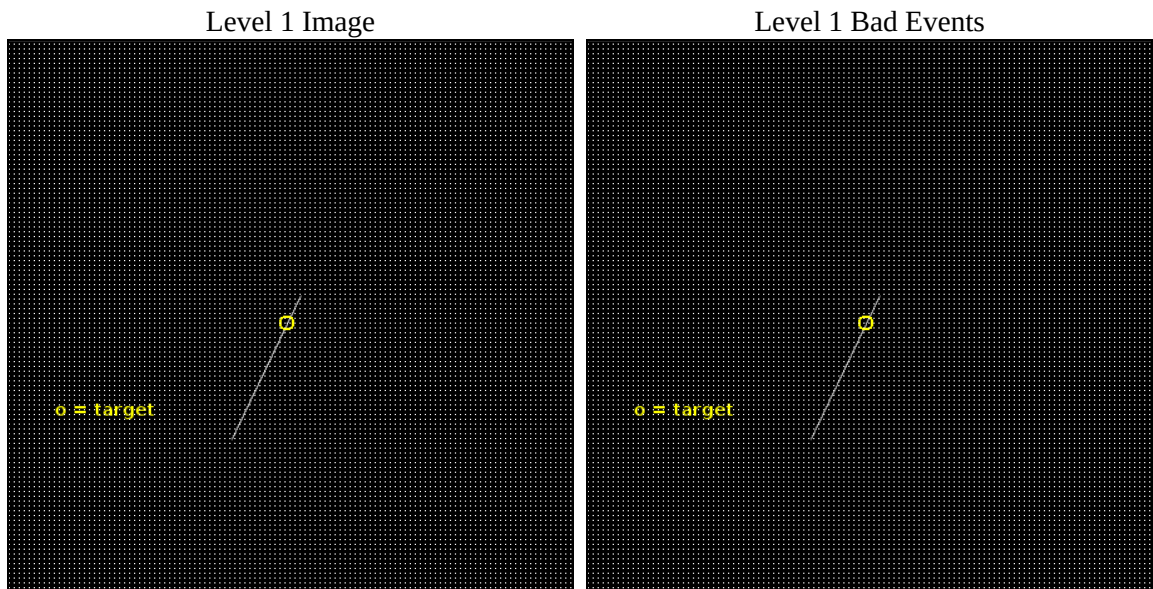
seq_num	300392	Sequence number
obs_id	18889	Observation id
title	Down with the King: FO Aqr in an Extended Low State	Proposal title
observer	Mark Kennedy	Principal investigator
object	FO Aqr	Source name
ra_targ	334.48075	Observer's specified target RA [deg]
dec_targ	-8.351083	Observer's specified target Dec [deg]
ra_nom	334.47832285459	Nominal RA [deg]
dec_nom	-8.3518086893664	Nominal Dec [deg]
roll_nom	114.7034998192	Nominal Roll [deg]
revision	1	Processing version of data
ontime	18027.75	Sum of GTIs [s]
livetime	17957.329101562	Livetime [s]
ontime7	18027.75	Sum of GTIs [s]
l2events	88846	Number of level 2 events



2 OBI

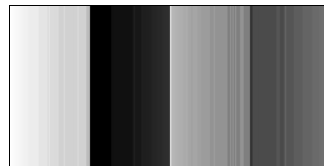
2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	18000.000000	[s] Scheduled observation exposure time
ascdsver	10.5	Processing system revision	ontime	18027.75	Sum of GTIs [s]
caldbver	4.7.2	 	ontime7	18027.75	Sum of GTIs [s]
date	2016-07-27T02:52:56	Date and time of file creation	l1events	255322	Number of level 1 events
revision	1	Processing version of data			

2.1.4 Events

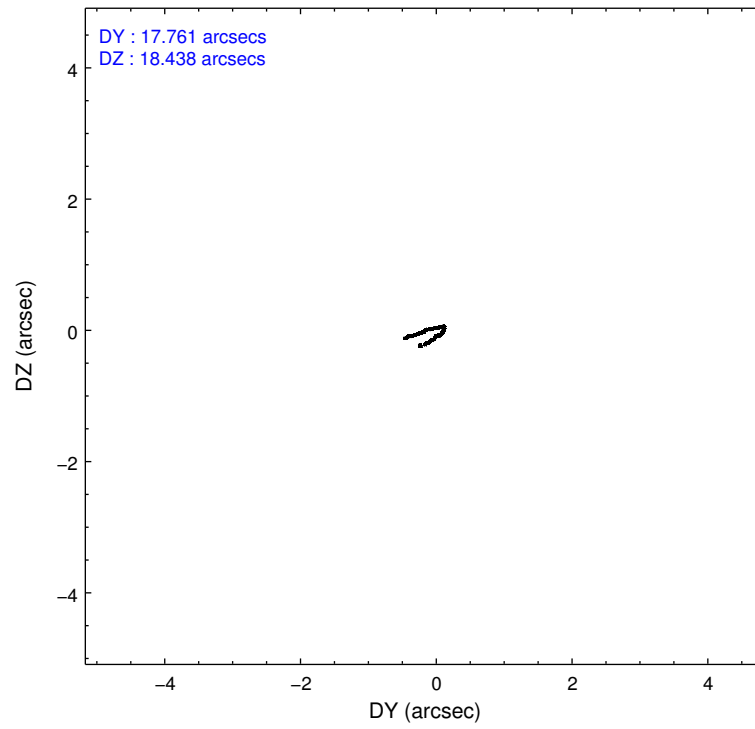
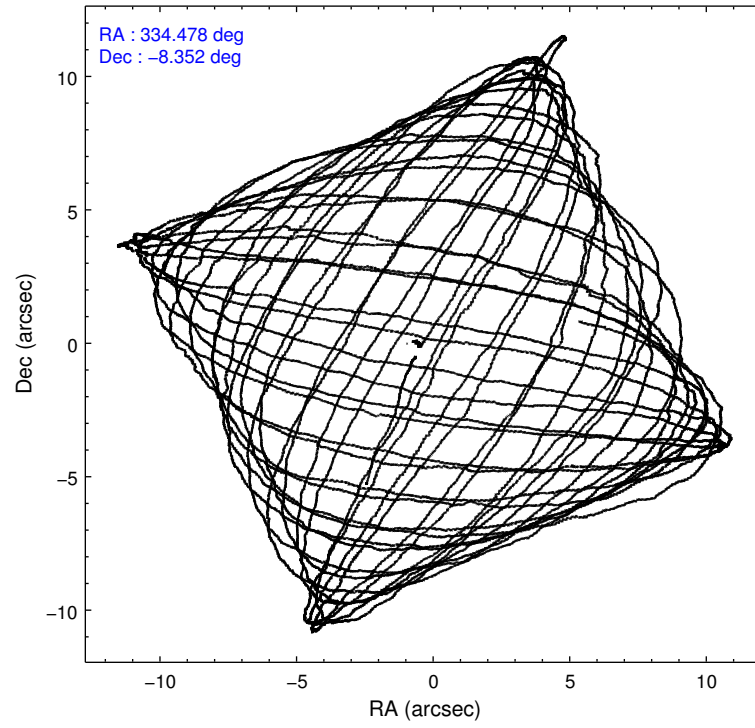
	ccd 7
level 1 events	255322
rejected events	163463
rejected %	64%

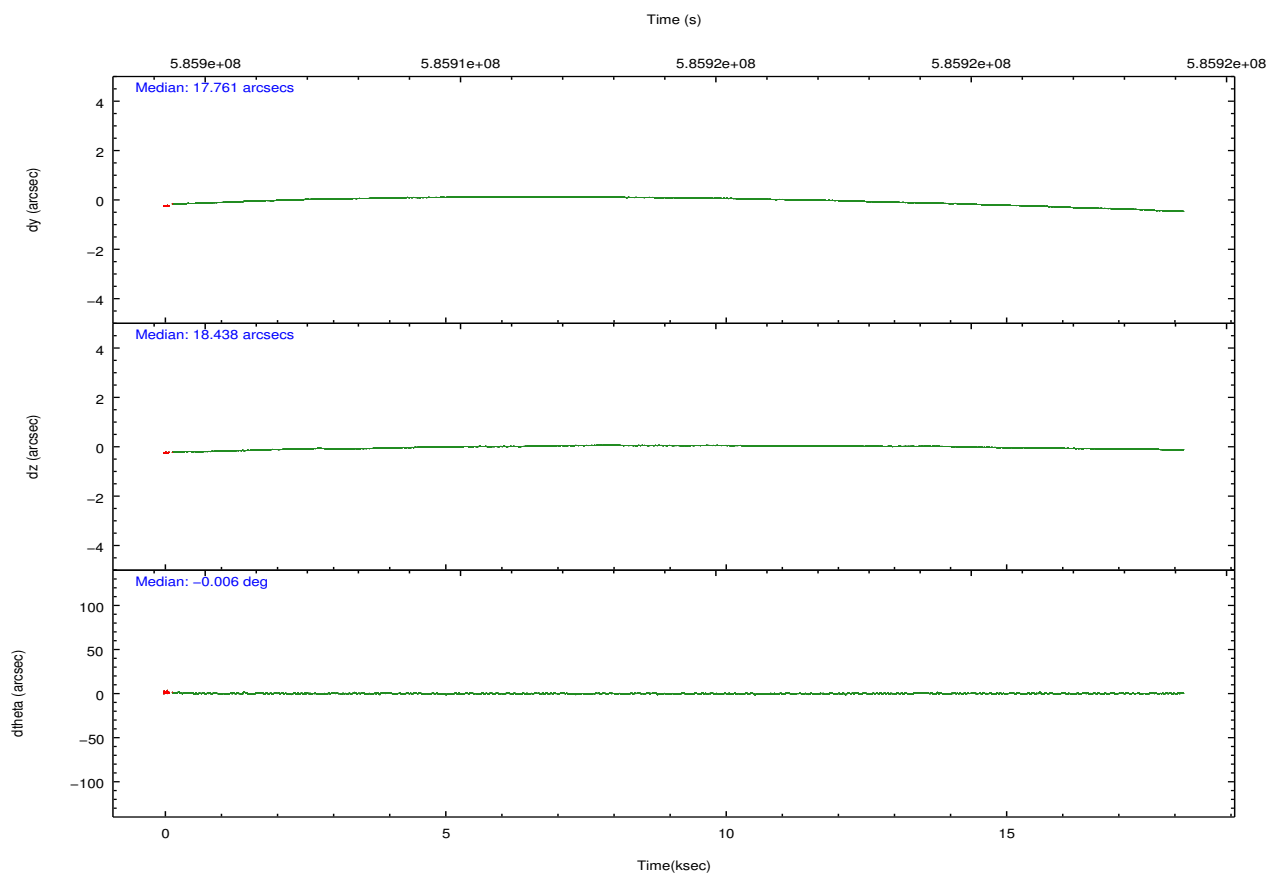
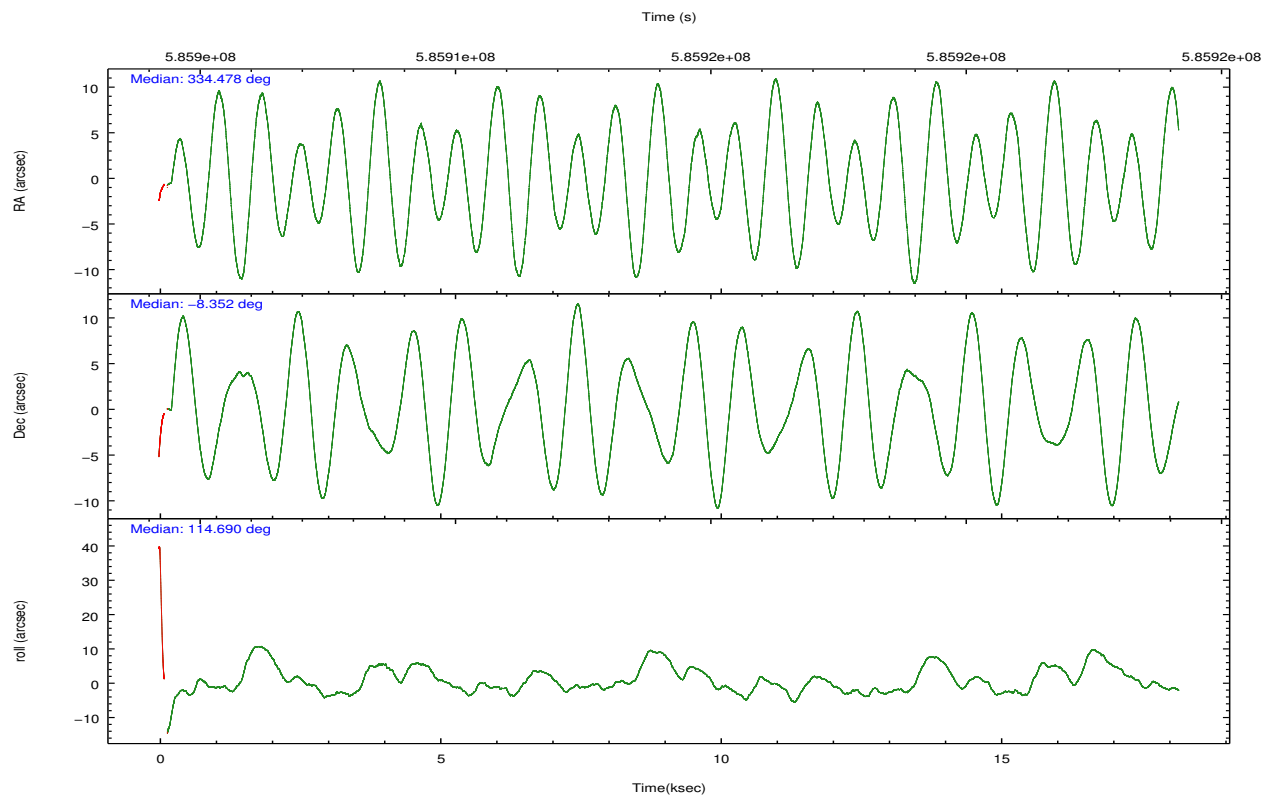
	ccd 7
grade 0 events	9357
	3%
grade 1 events	244
	0%
grade 2 events	26853
	10%
grade 3 events	5421
	2%
grade 4 events	5447
	2%
grade 5 events	14971
	5%
grade 6 events	48455
	18%
grade 7 events	144574
	56%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	CC33_FAINT	CC33_FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	334.501162	334.4783228545898	Subarray requested	NONE	NONE
[deg] Pointing Dec	-8.367376	-8.35180868936644	Alternating exposures requested	N	N
[deg] Pointing Roll	114.550150	114.703499819198	[s] Primary exposure time	0.000000	0
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	585905245.184000	585903493.6605901			
Observation start date	2016-07-26T07:26:17	2016-07-26T06:58:13			
[s] Observation end time (MET)	585923245.184000	585924298.59929			
Observation end date	2016-07-26T12:26:17	2016-07-26T12:44:58			
Read mode	CONTINUOUS	CONTINUOUS			

2.3 Aspect



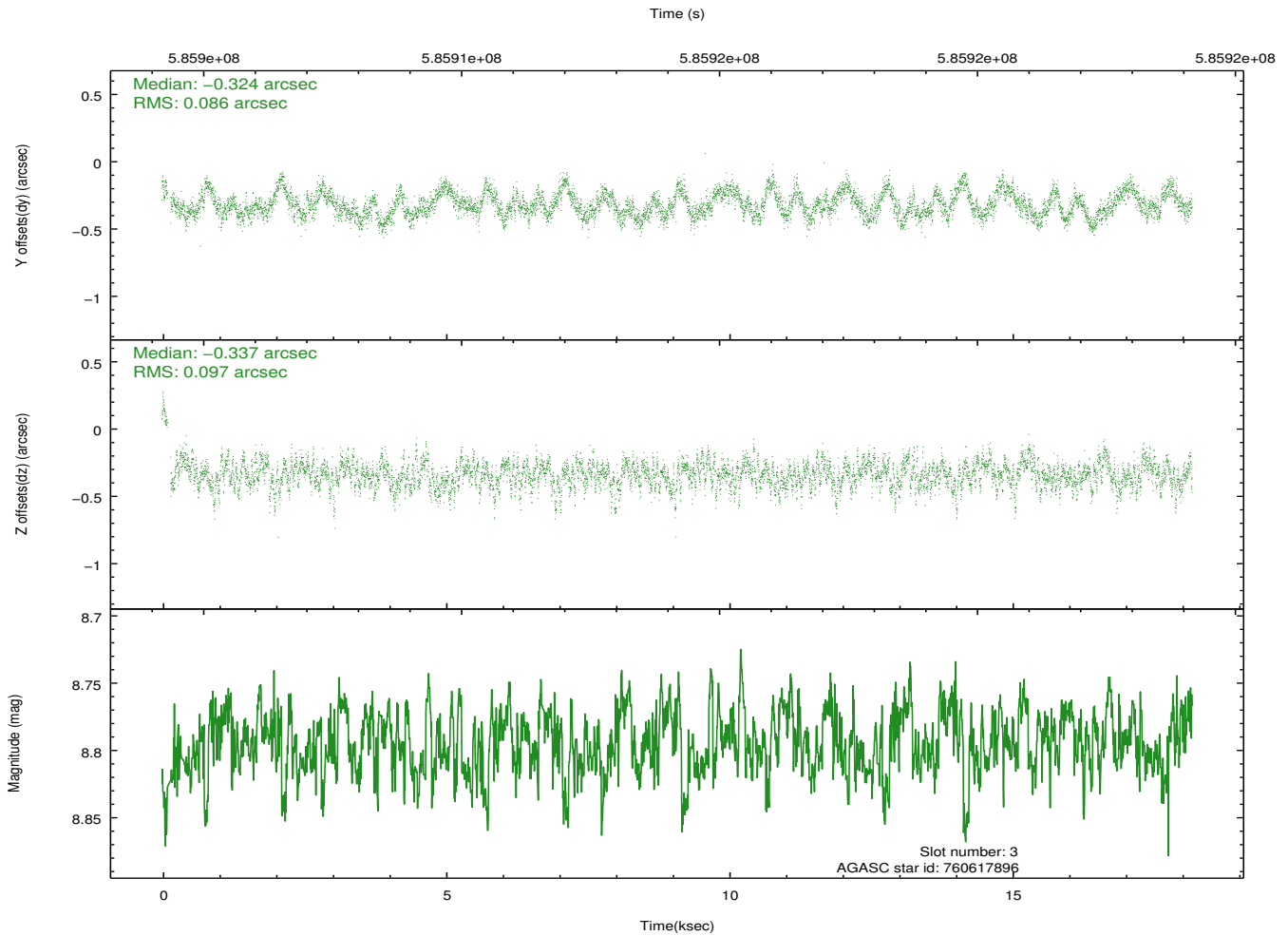
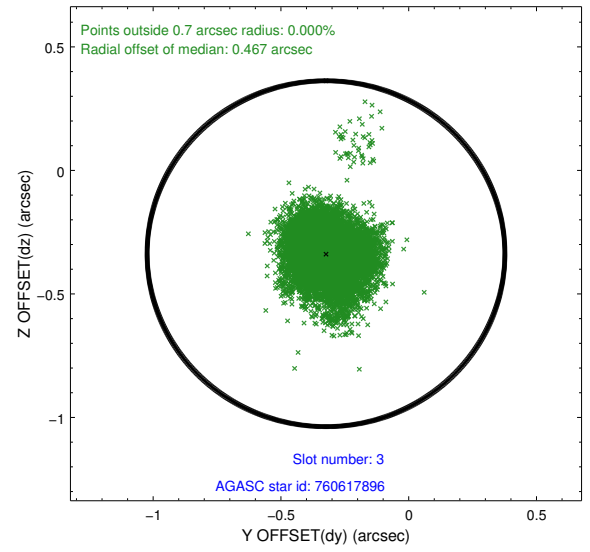
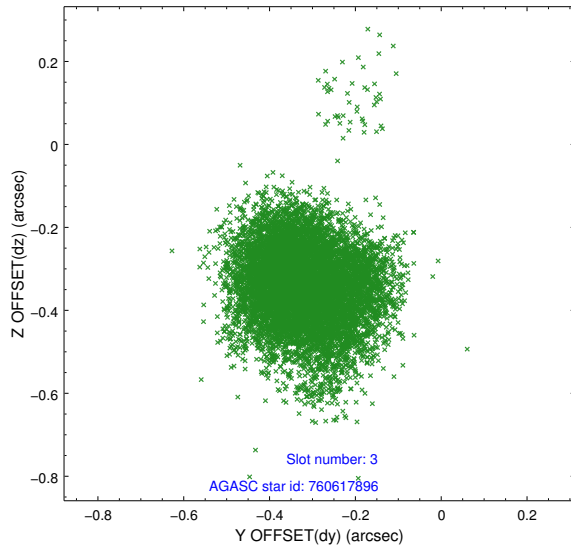


Slot Statistics

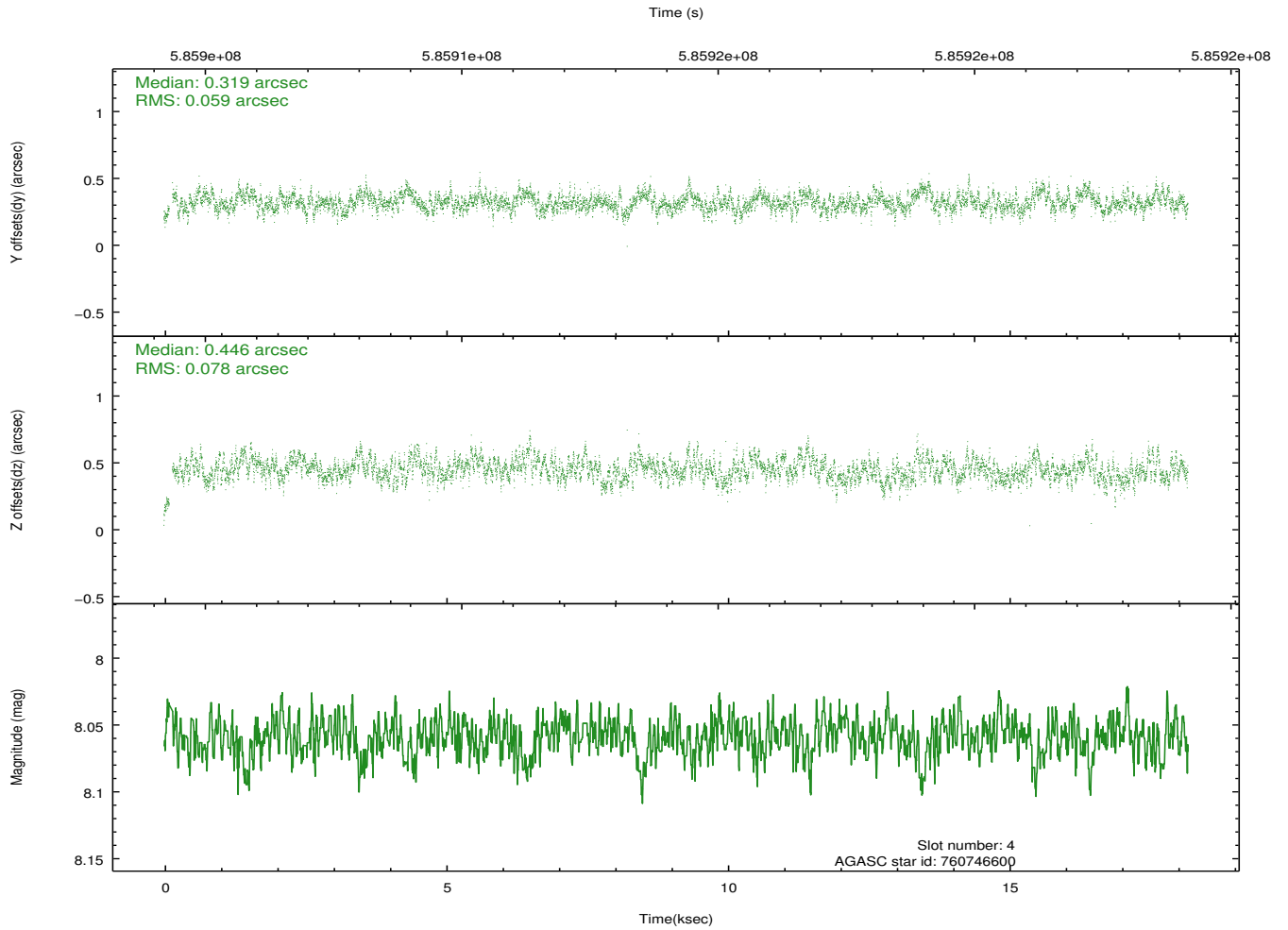
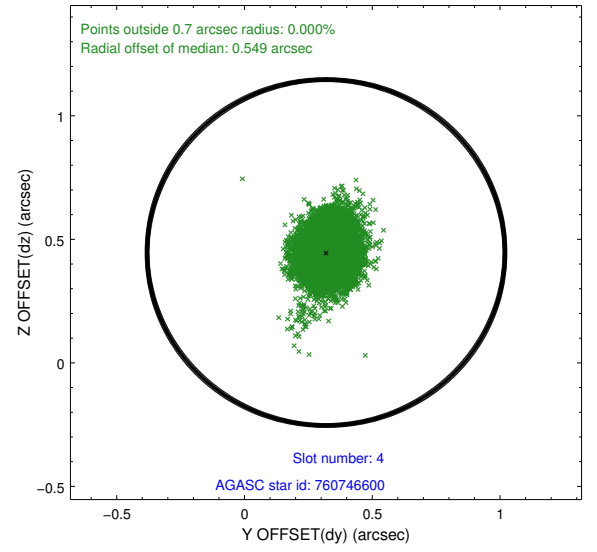
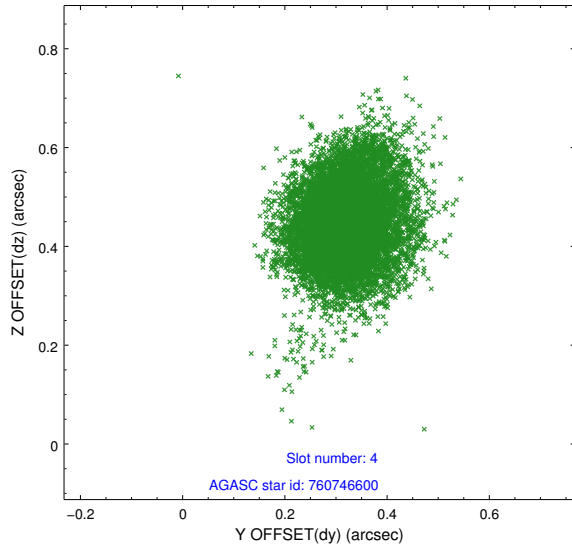
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-4	7.13	4421	0.387	0.017	0.007	0.012	0.000000	0.000000	2142.98	168.89
1	FID		ACIS-S-5	7.14	4421	-0.446	0.003	0.008	0.016	0.000000	0.000000	-1823.76	162.29
2	FID		ACIS-S-6	7.27	4421	0.029	-0.006	0.008	0.013	0.000000	0.000000	390.62	806.07
3	GUIDE	used	760617896	8.79	8838	-0.324	-0.337	0.136	0.218	333.891891	-8.397838	799.73	2019.98
4	GUIDE	used	760746600	8.06	8842	0.319	0.446	0.103	0.167	334.858363	-8.506102	-982.55	-947.68
5	GUIDE	used	760751744	8.88	8835	0.088	-0.050	0.127	0.205	334.788454	-7.798164	1437.88	-1783.79
6	GUIDE	used	760749520	8.74	8838	-0.087	-0.064	0.129	0.219	334.934119	-7.681846	1603.15	-2429.87
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

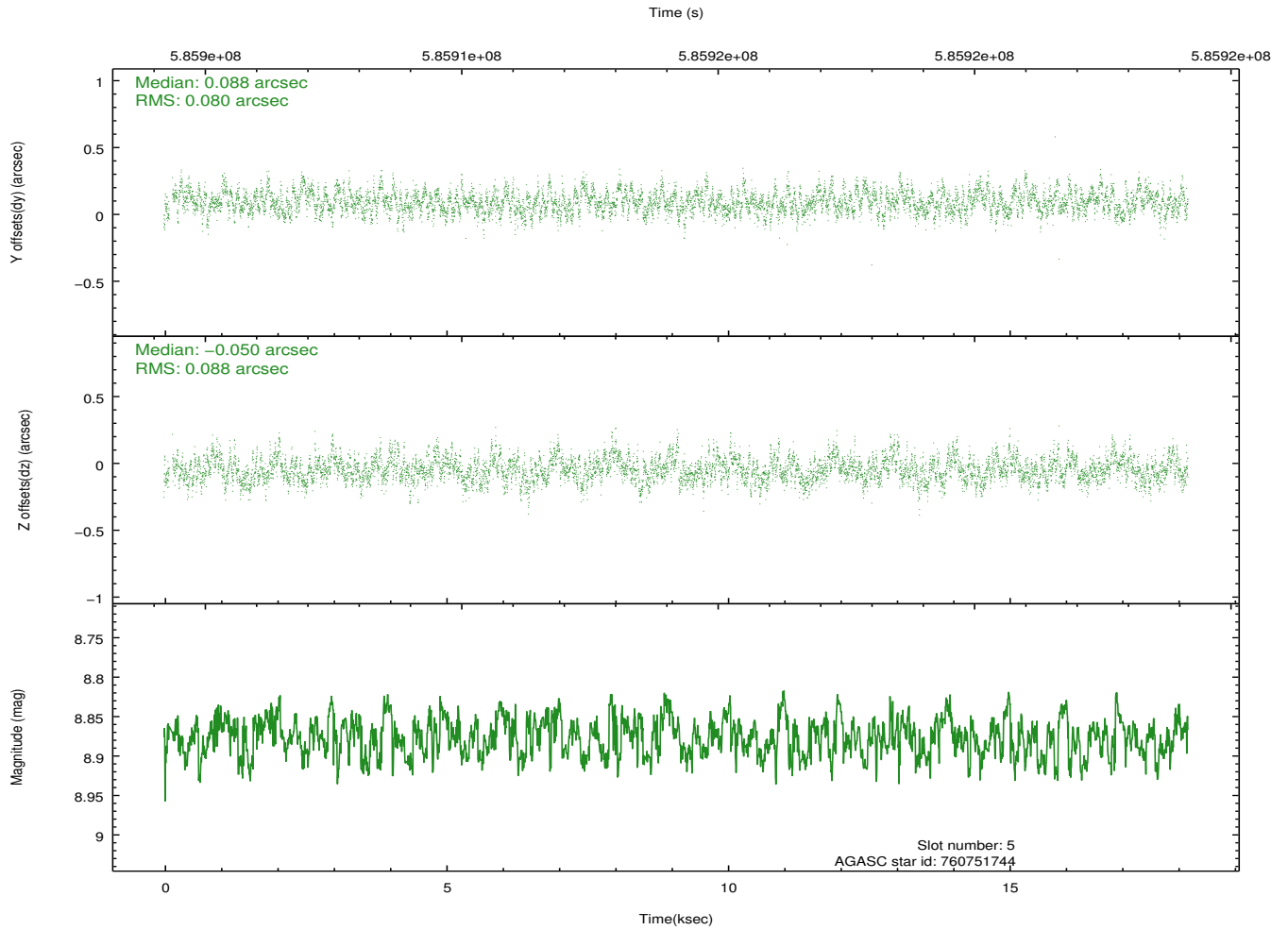
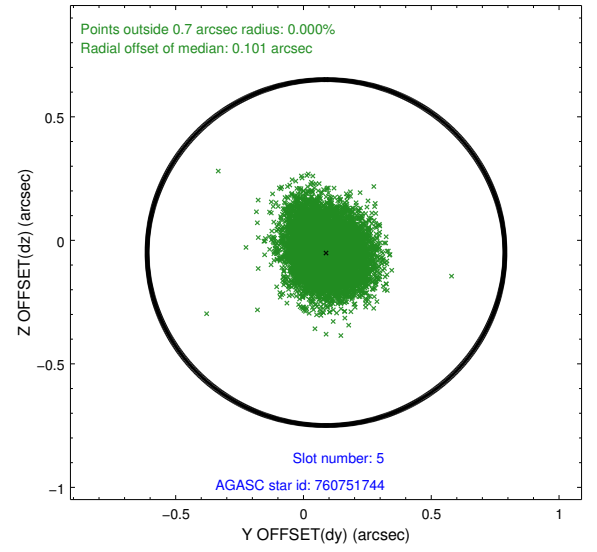
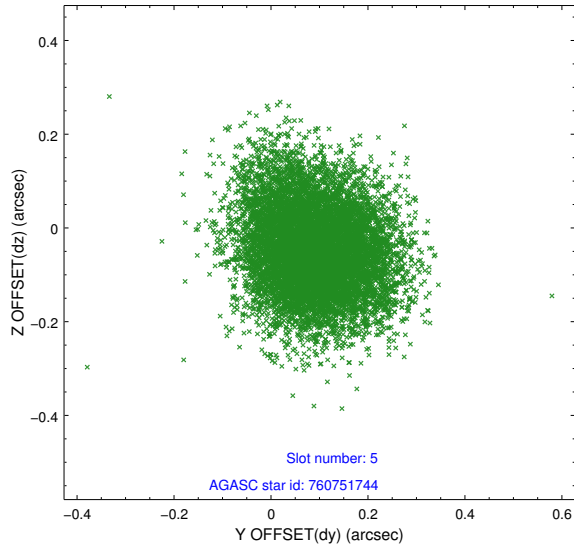
2.4.1 Slot 3



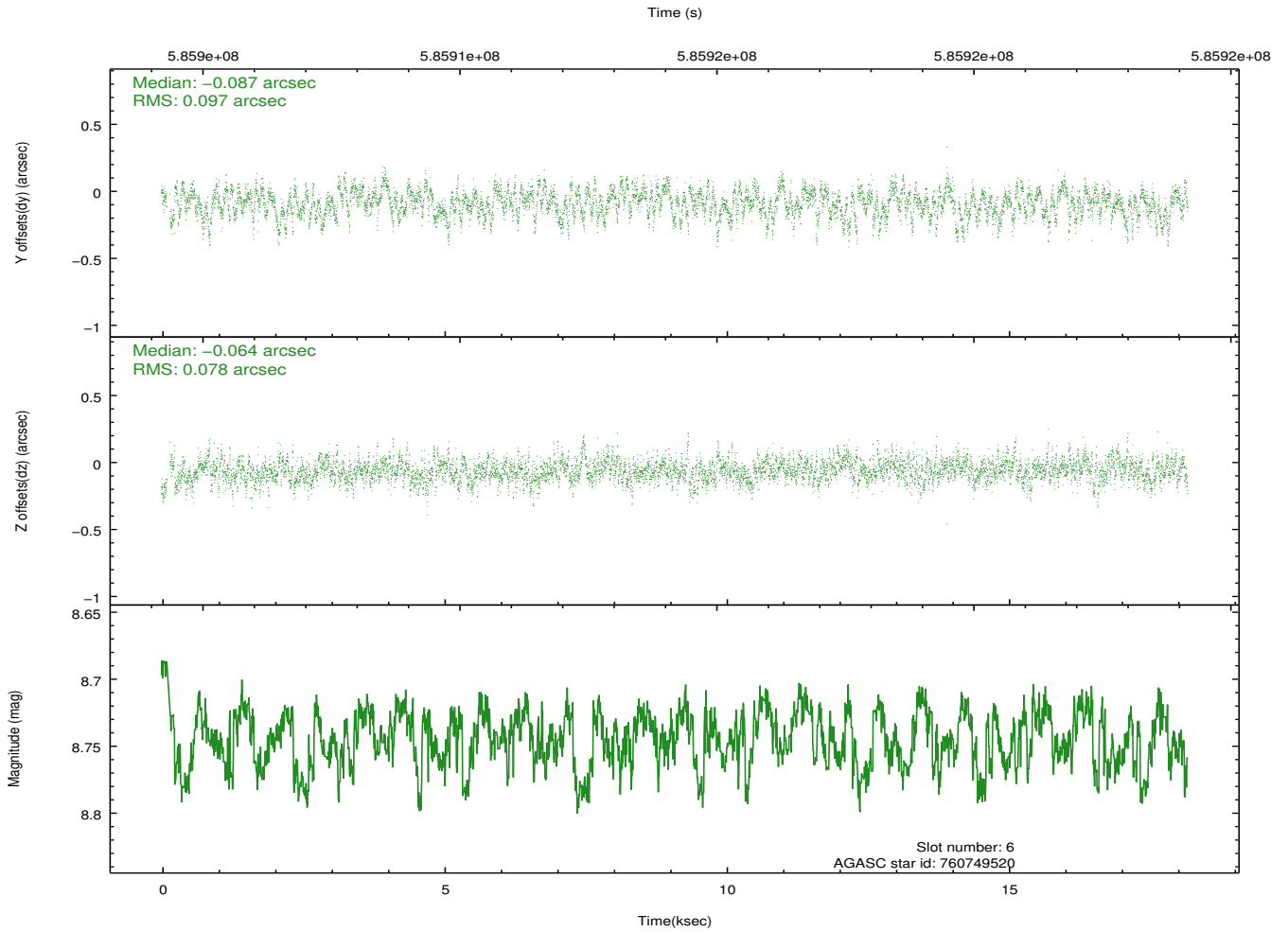
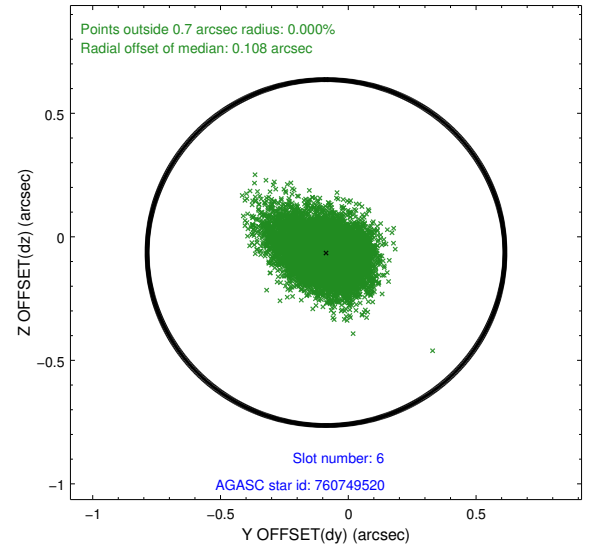
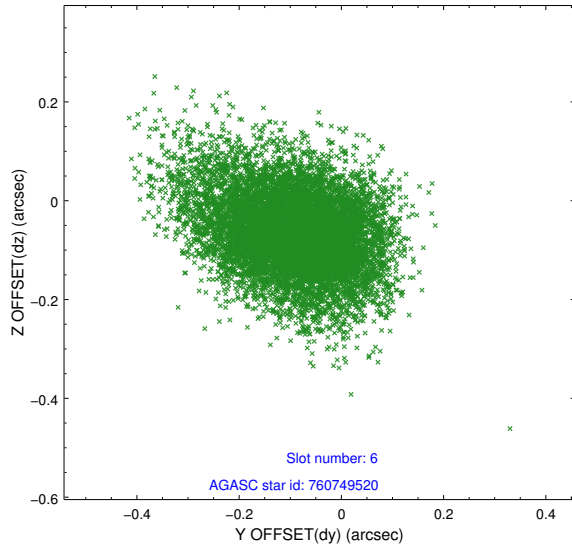
2.4.2 Slot 4



2.4.3 Slot 5

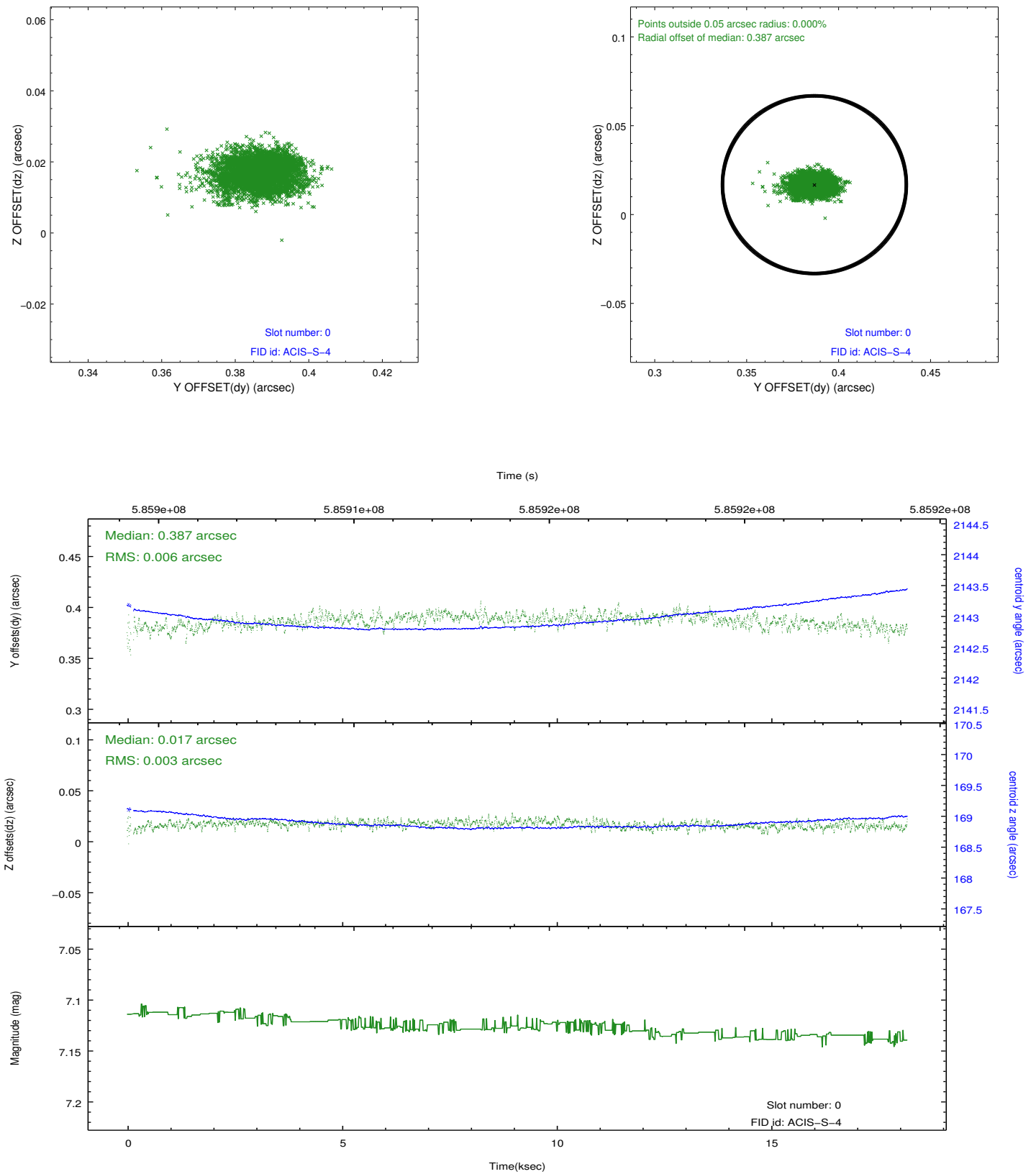


2.4.4 Slot 6

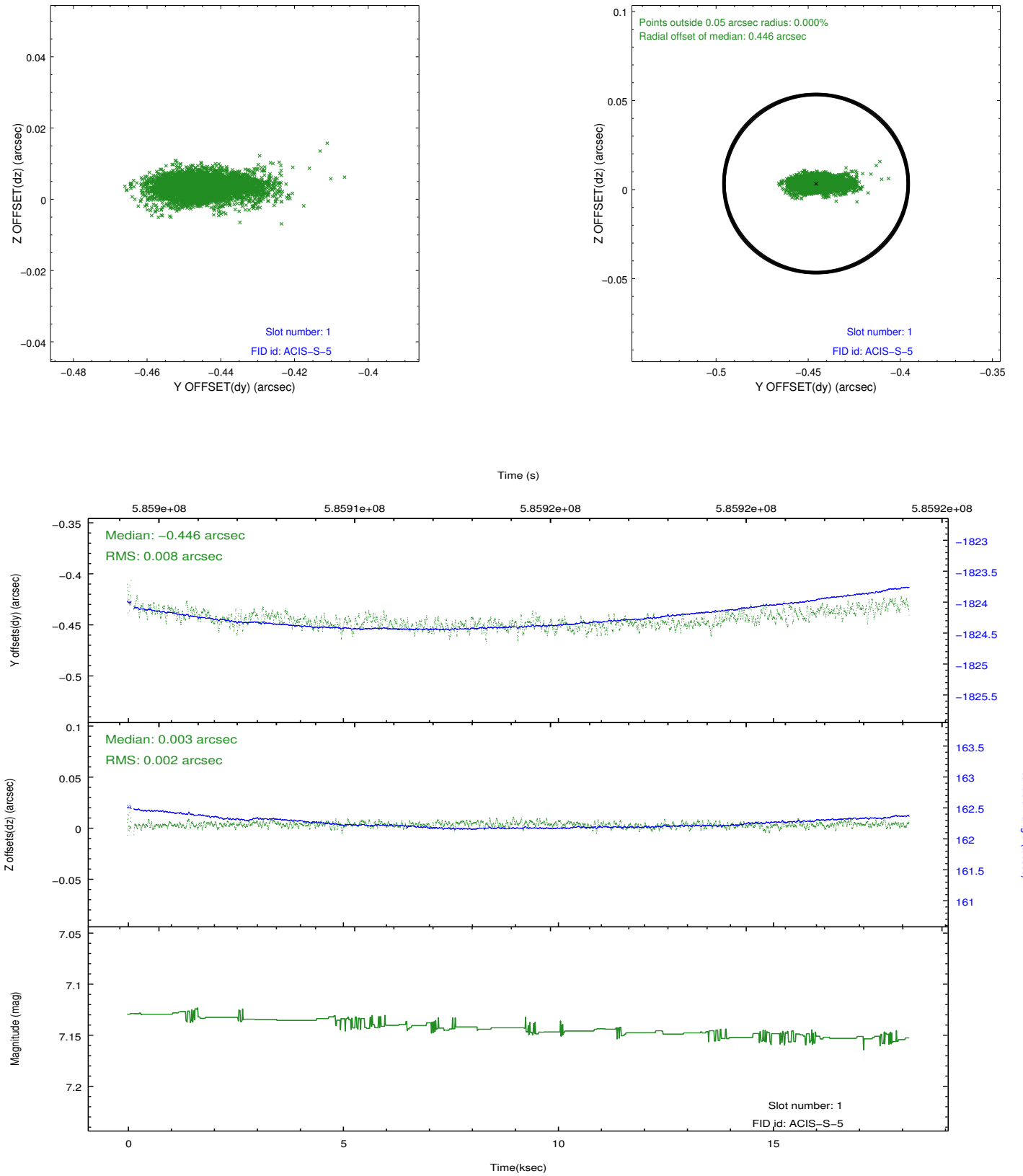


2.5 FID Slots

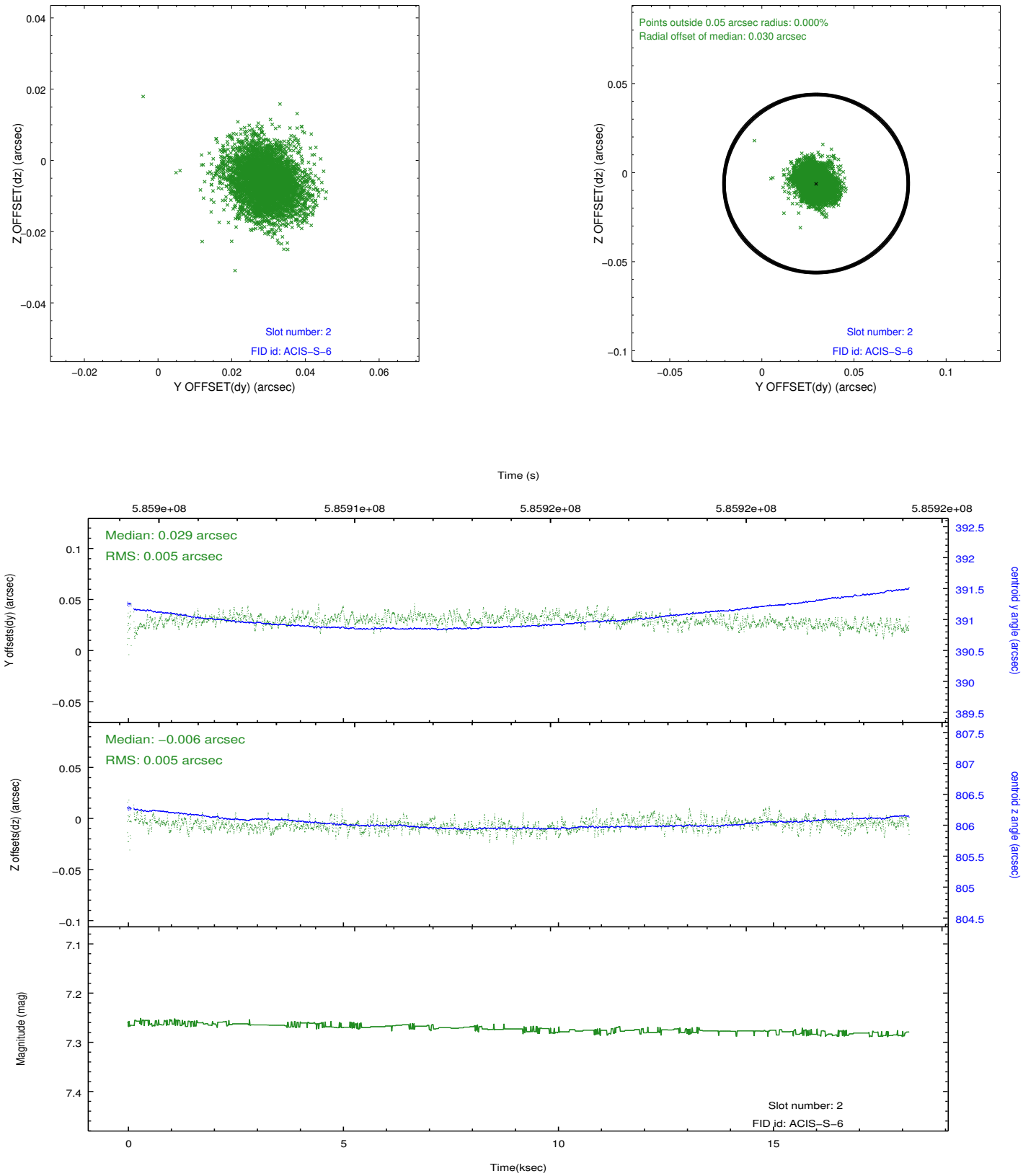
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.07.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	18.02775

A.2 Comments

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.