

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 21188 - L2 Version 1
Chandra X-Ray Center

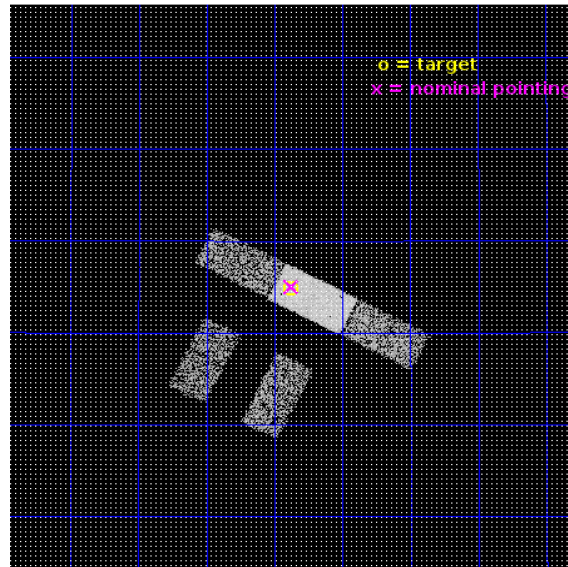
L2 Processing Date : Dec 21 2018

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1 Front

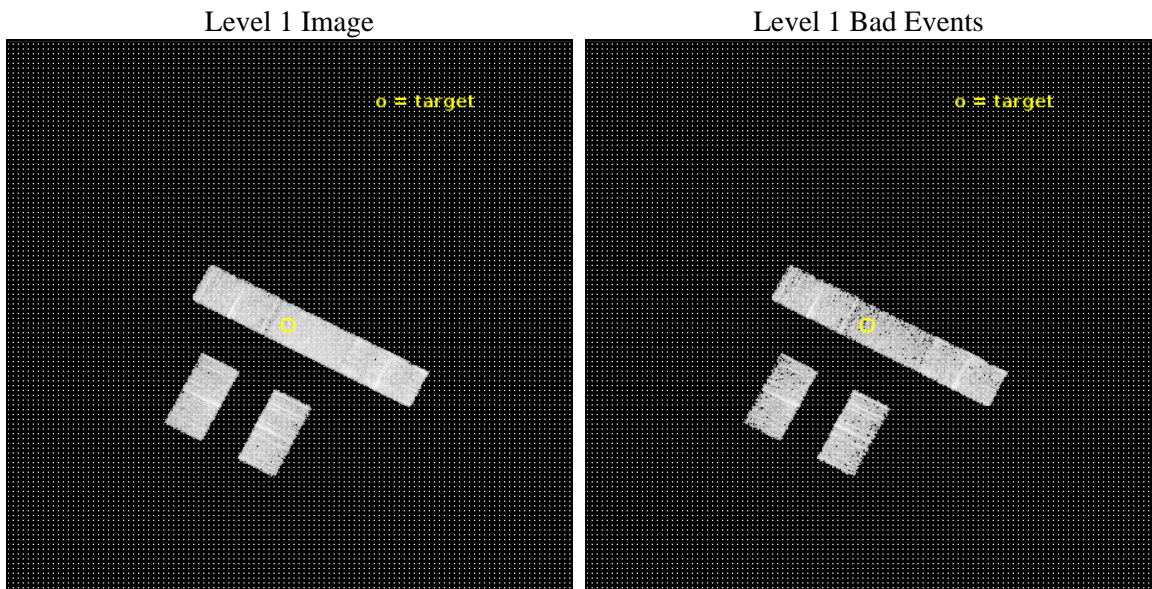
seq_num	201242	Sequence number
obs_id	21188	Observation id
title	Testing X-ray activity as an age indicator	Proposal title
observer	Christian Schneider	Principal investigator
object	BD+18 3182	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	247.219583	Observer's specified target RA [deg]
dec_targ	18.414056	Observer's specified target Dec [deg]
ra_nom	247.21878218765	Nominal RA [deg]
dec_nom	18.416983952306	Nominal Dec [deg]
roll_nom	27.295689036373	Nominal Roll [deg]
revision	1	Processing version of data
ontime	5020.10014081	Sum of GTIs [s]
livetime	4901.7657488495	Livetime [s]
ontime2	5020.10014081	Sum of GTIs [s]
ontime3	5020.10014081	Sum of GTIs [s]
ontime6	5020.10014081	Sum of GTIs [s]
ontime7	5020.10014081	Sum of GTIs [s]
ontime8	5020.10014081	Sum of GTIs [s]
l2events	18767	Number of level 2 events



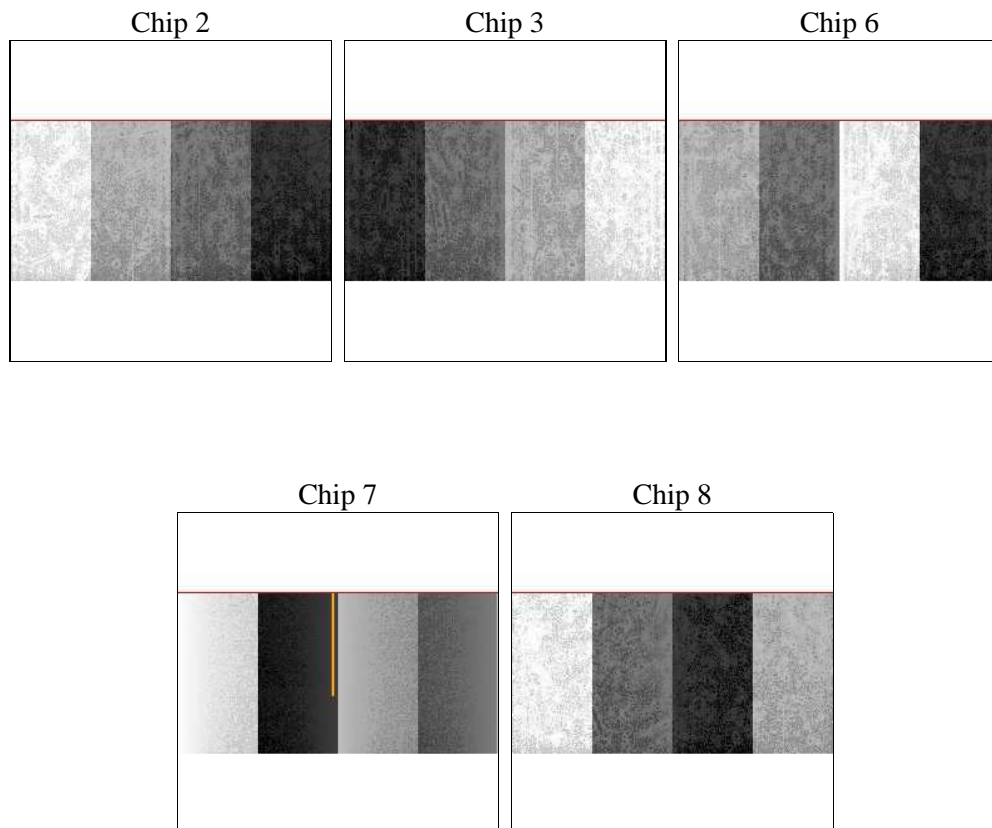
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	5020.10014081	Sum of GTIs [s]
caldsver	4.8.2	 	ontime2	5020.10014081	Sum of GTIs [s]
date	2018-12-21T21:16:33	Date and time of file creation	ontime3	5020.10014081	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	5020.10014081	Sum of GTIs [s]
			ontime7	5020.10014081	Sum of GTIs [s]
			ontime8	5020.10014081	Sum of GTIs [s]
			l1events	116589	Number of level 1 events

2.1.4 Events

	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	19408	21197	21740	25376	28868
rejected events	17385	19111	19430	14130	21621
rejected %	89%	90%	89%	55%	74%

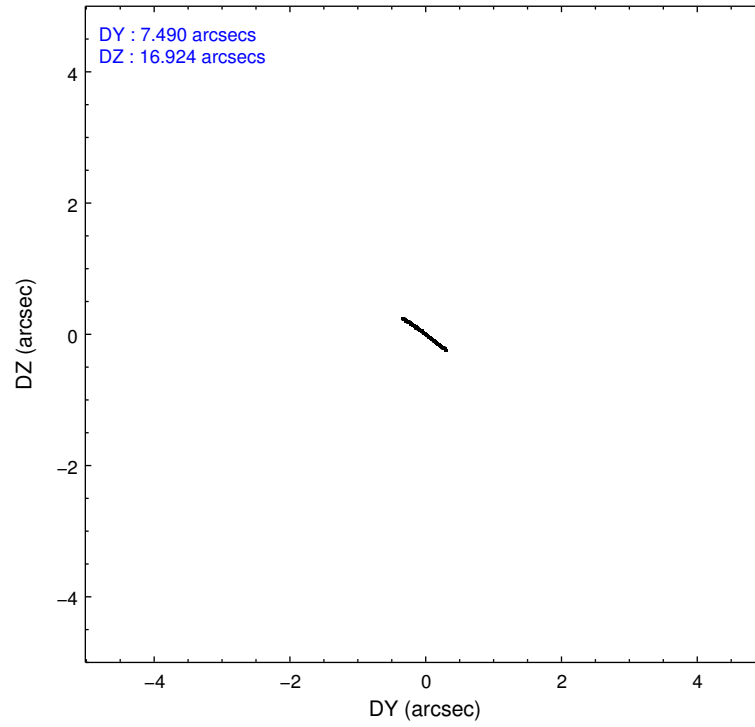
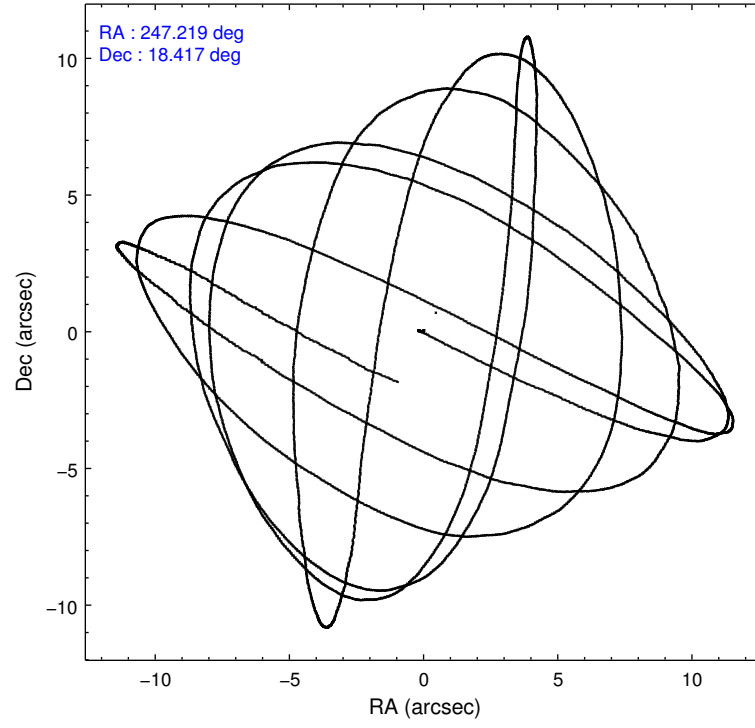
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	712	658	690	1057	1872
	3%	3%	3%	4%	6%
grade 1 events	8	14	6	37	17
	0%	0%	0%	0%	0%
grade 2 events	447	426	554	2366	1812
	2%	2%	2%	9%	6%
grade 3 events	246	269	246	1018	708
	1%	1%	1%	4%	2%
grade 4 events	249	295	268	1006	687
	1%	1%	1%	3%	2%
grade 5 events	710	901	841	2558	1387
	3%	4%	3%	10%	4%
grade 6 events	392	475	578	5946	2212
	2%	2%	2%	23%	7%
grade 7 events	16644	18159	18557	11388	20173
	85%	85%	85%	44%	69%

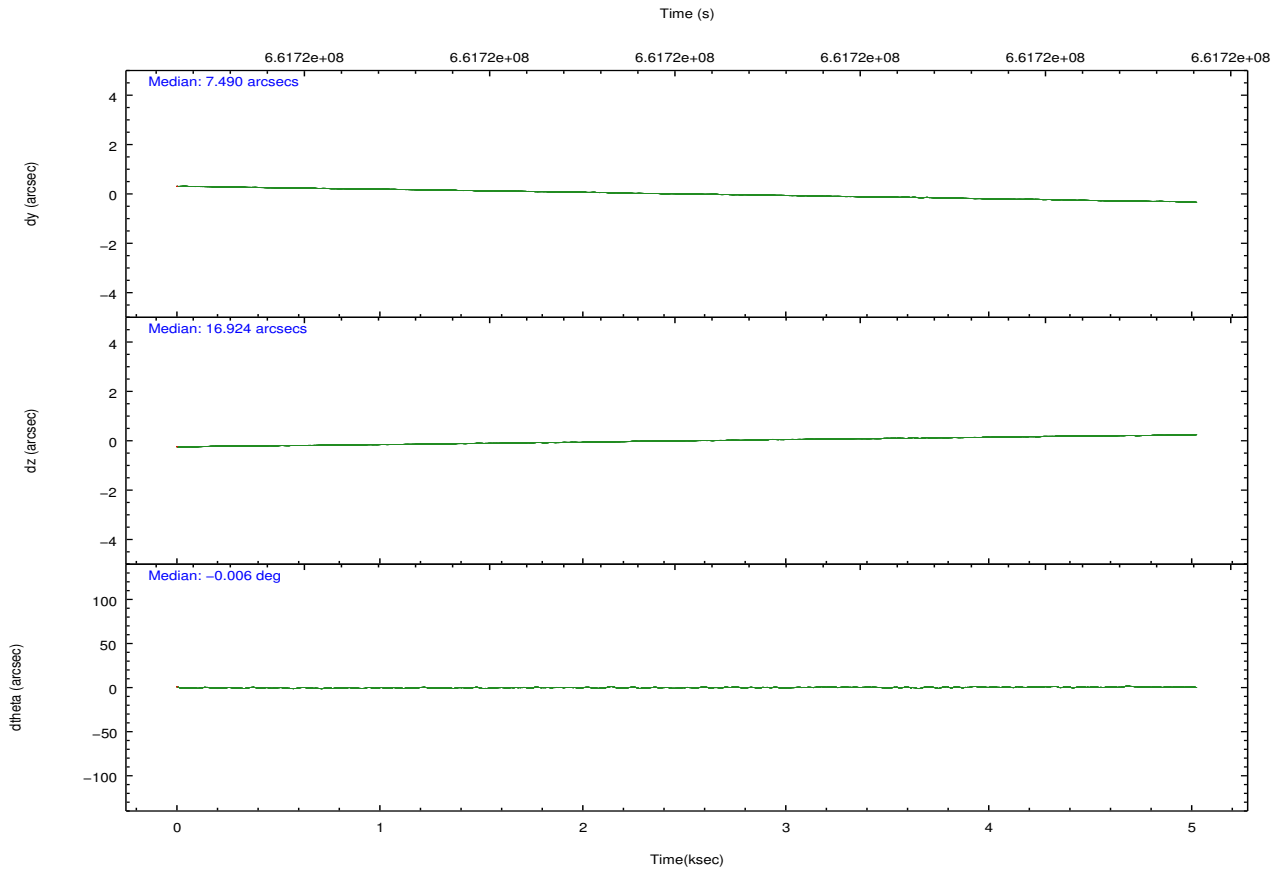
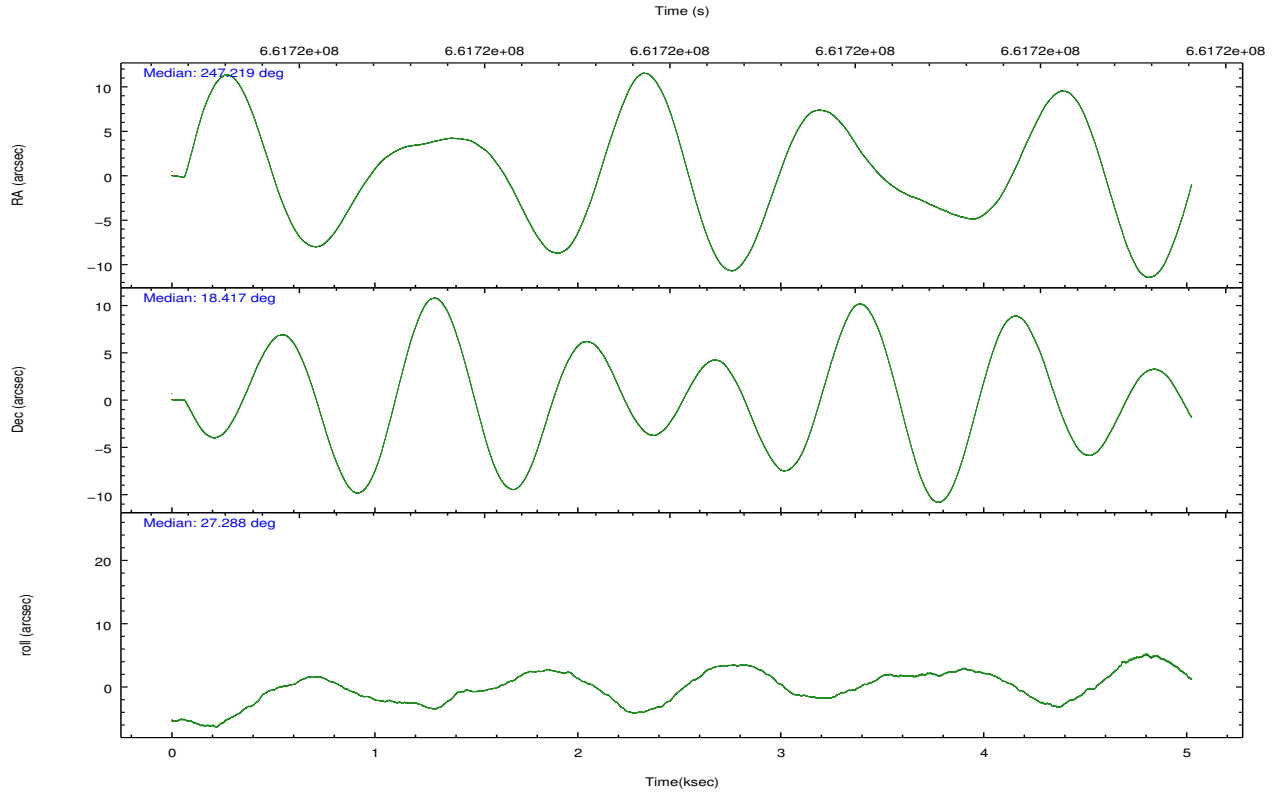
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23678	ACIS-23678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	247.203477	247.2187821876523
[deg] Pointing Dec	18.393690	18.41698395230636
[deg] Pointing Roll	27.143906	27.29568903637319
SIM focus pos (mm)	-0.68282252473119	-0.68282252473119
[mm] SIM defocus	0.001444942264670734	0.001444942264670734
SIM translation stage pos (mm)	-190.1400660499	-190.1400660499
[mm] SIM translation stage offset	0.007542945932812017	0.007542945932812017
[s] Observation start time (MET)	661717479.6792560816	661717479.6792561
Observation start date	2018-12-20T18:25:33	2018-12-20T18:24:39
[s] Observation end time (MET)	661723285.2796023488	661723285.2796023
Observation end date	2018-12-20T19:48:20	2018-12-20T20:01:25
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	OVERRIDE	OVERRIDE
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	CUSTOM
Subarray start row	257	257
Subarray row count	512	512
Alternating exposures requested	N	N
[s] Primary exposure time	1.7	1.7

2.3 Aspect



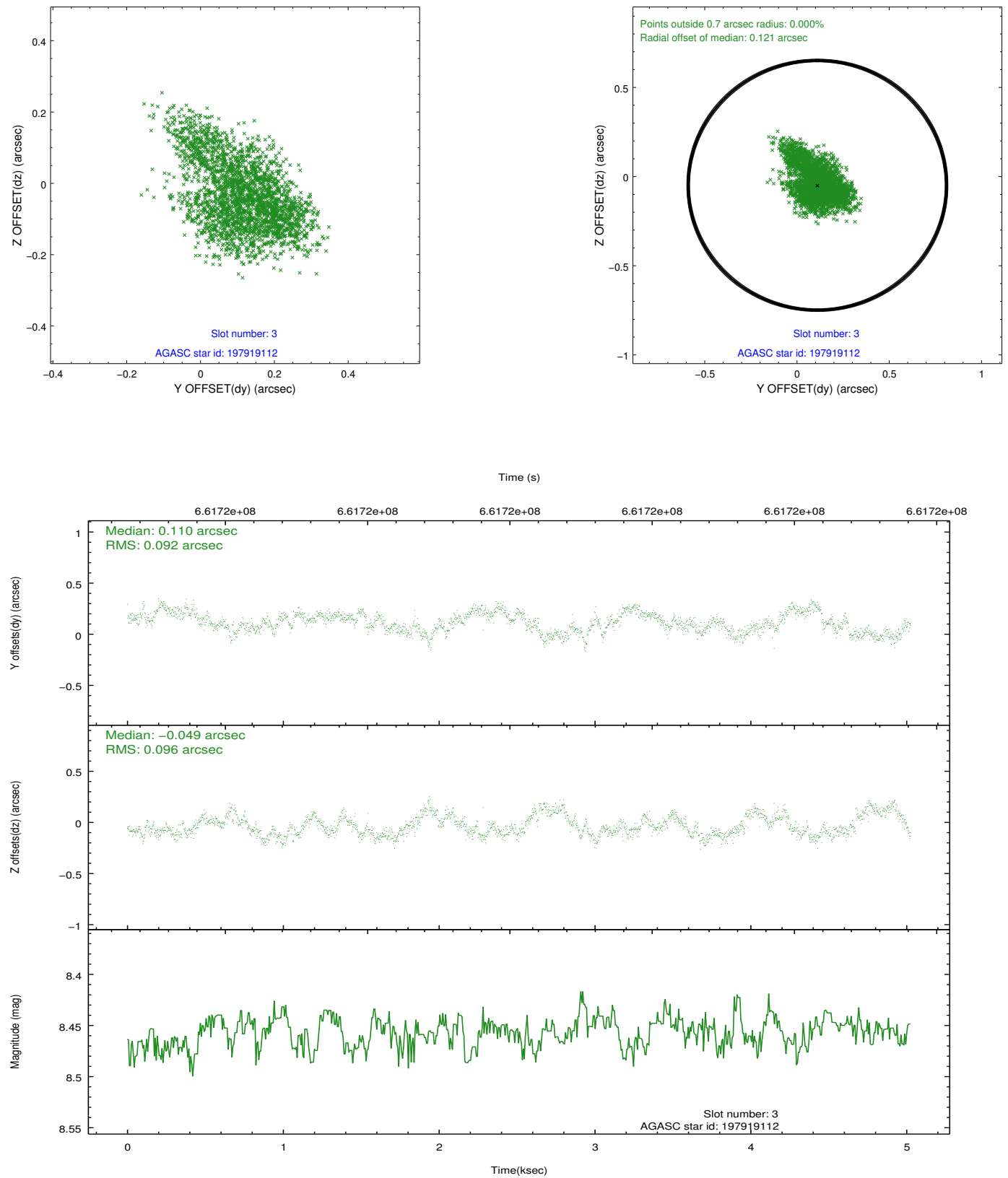


Slot Statistics

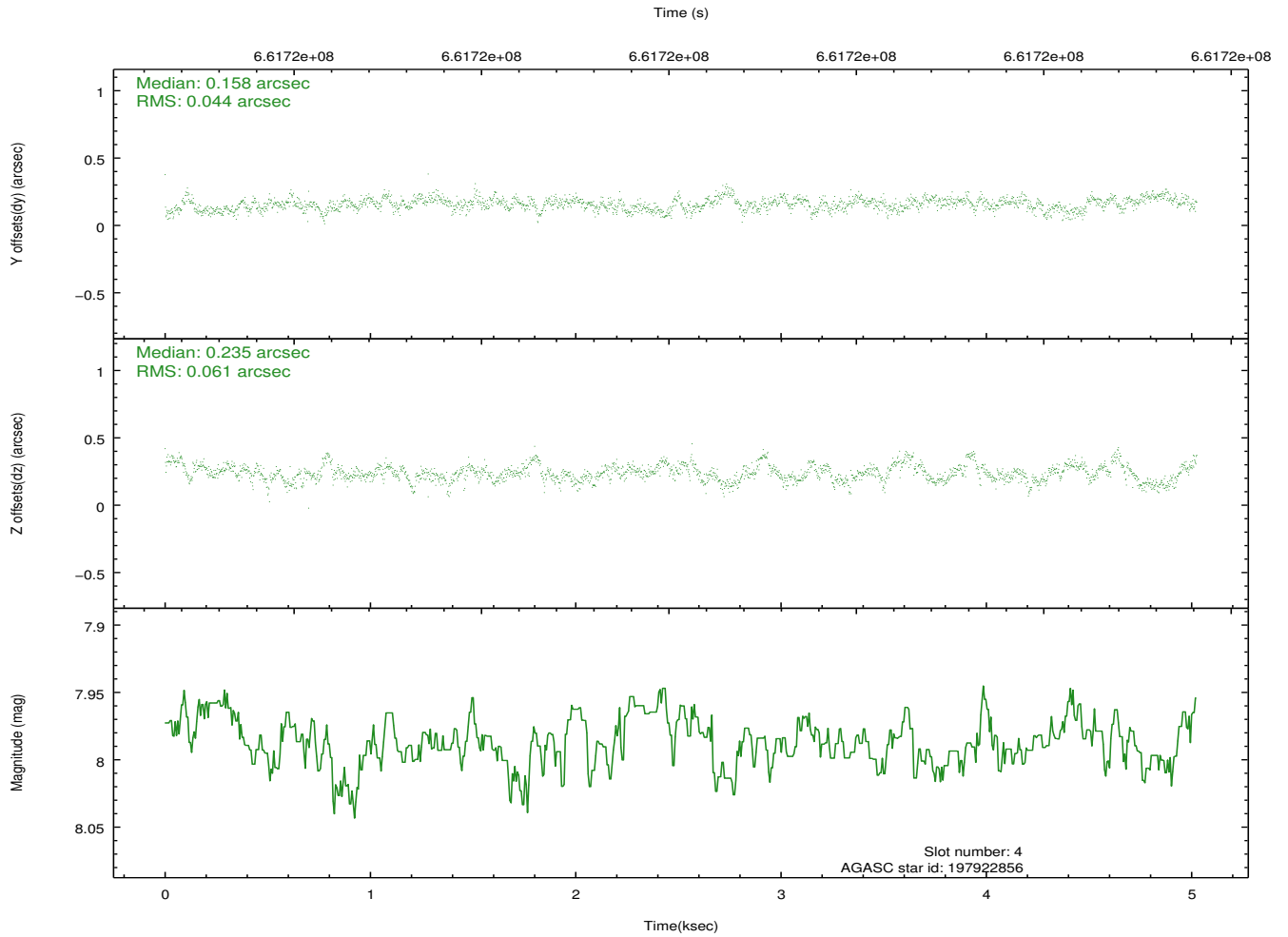
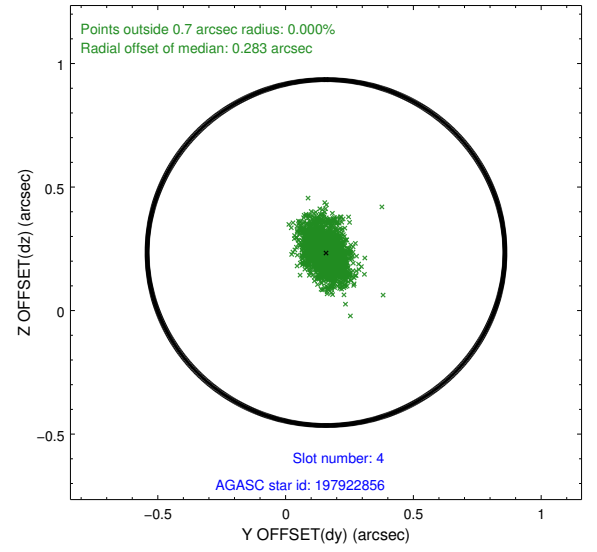
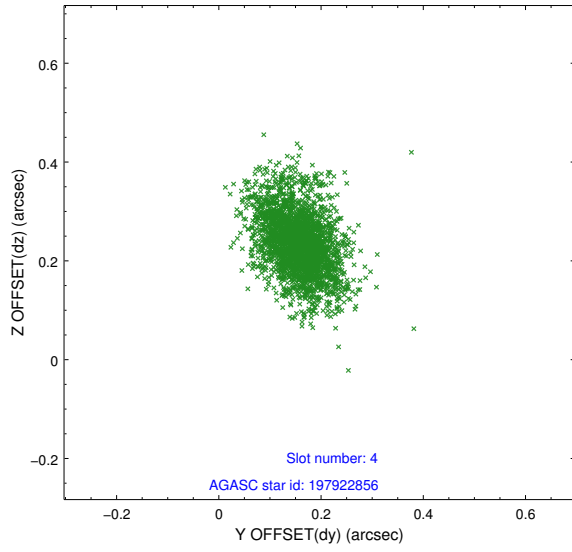
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.03	1226	1.000	-0.261	-0.155	0.008	0.012	0.000000	0.000000	-760.46	-1738
1	FID		ACIS-S-4	7.16	1226	1.000	0.589	0.167	0.012	0.018	0.000000	0.000000	2153.06	169
2	FID		ACIS-S-5	7.14	1226	1.000	-0.360	-0.003	0.014	0.022	0.000000	0.000000	-1811.90	163
3	GUIDE	used	197919112	8.46	2452	1.000	0.110	-0.049	0.141	0.230	246.626100	18.410368	-1726.22	956
4	GUIDE	used	197922856	7.99	2452	1.000	0.158	0.235	0.077	0.137	247.216723	17.999004	-607.75	-1284
5	GUIDE	used	197923408	8.54	2452	1.000	0.178	0.487	0.076	0.122	247.105341	17.763756	-1333.57	-1864
6	GUIDE	used	198452320	7.15	2452	1.000	-0.445	-0.696	0.109	0.164	247.157871	19.018628	887.80	2071
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

2.4 Star Slots

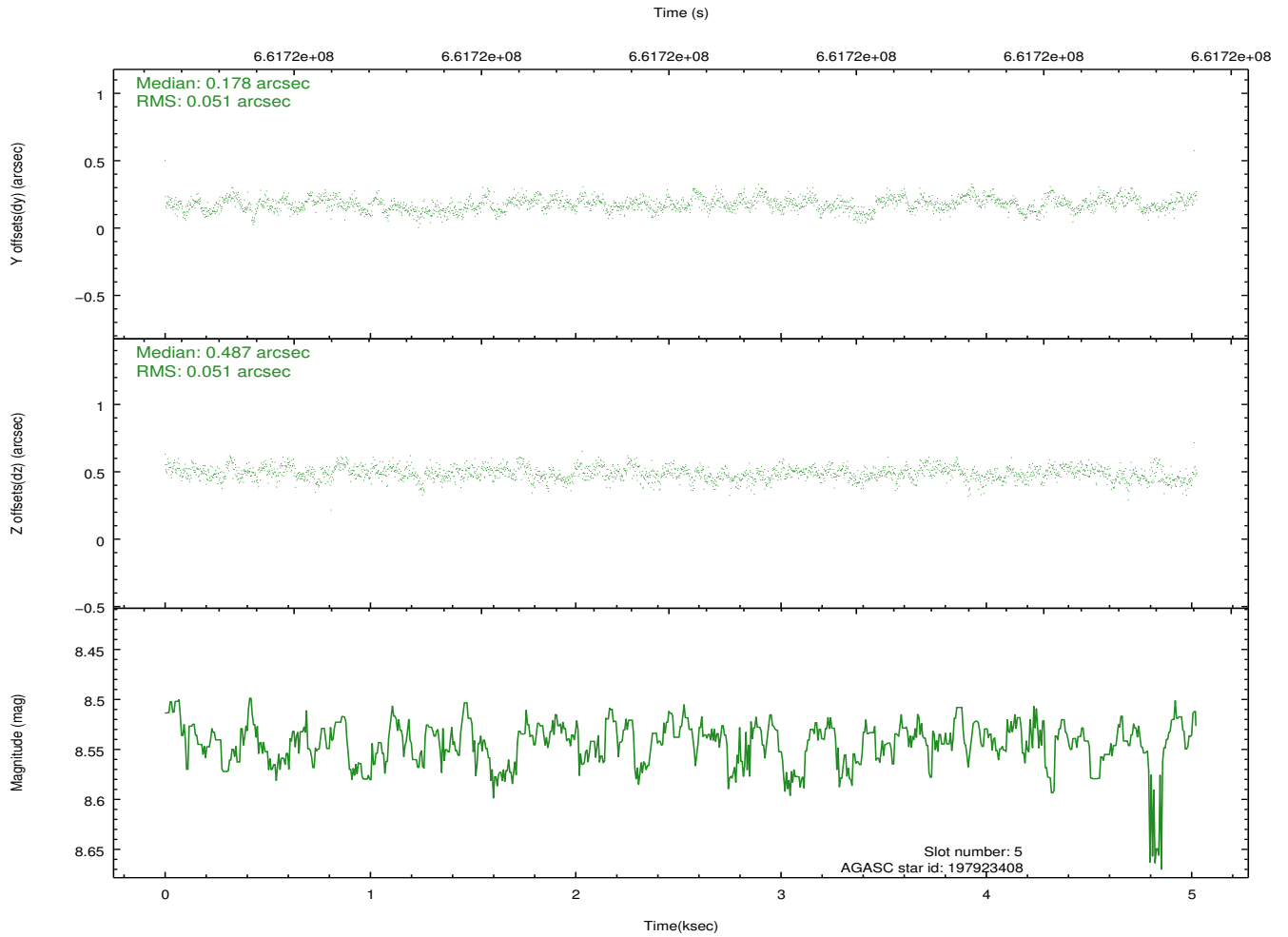
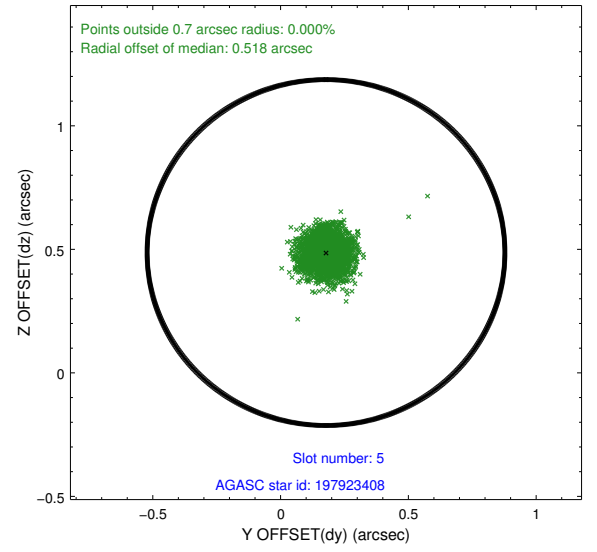
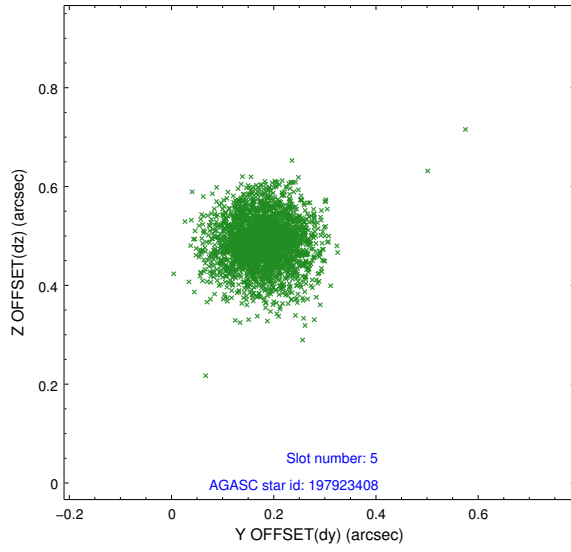
2.4.1 Slot 3



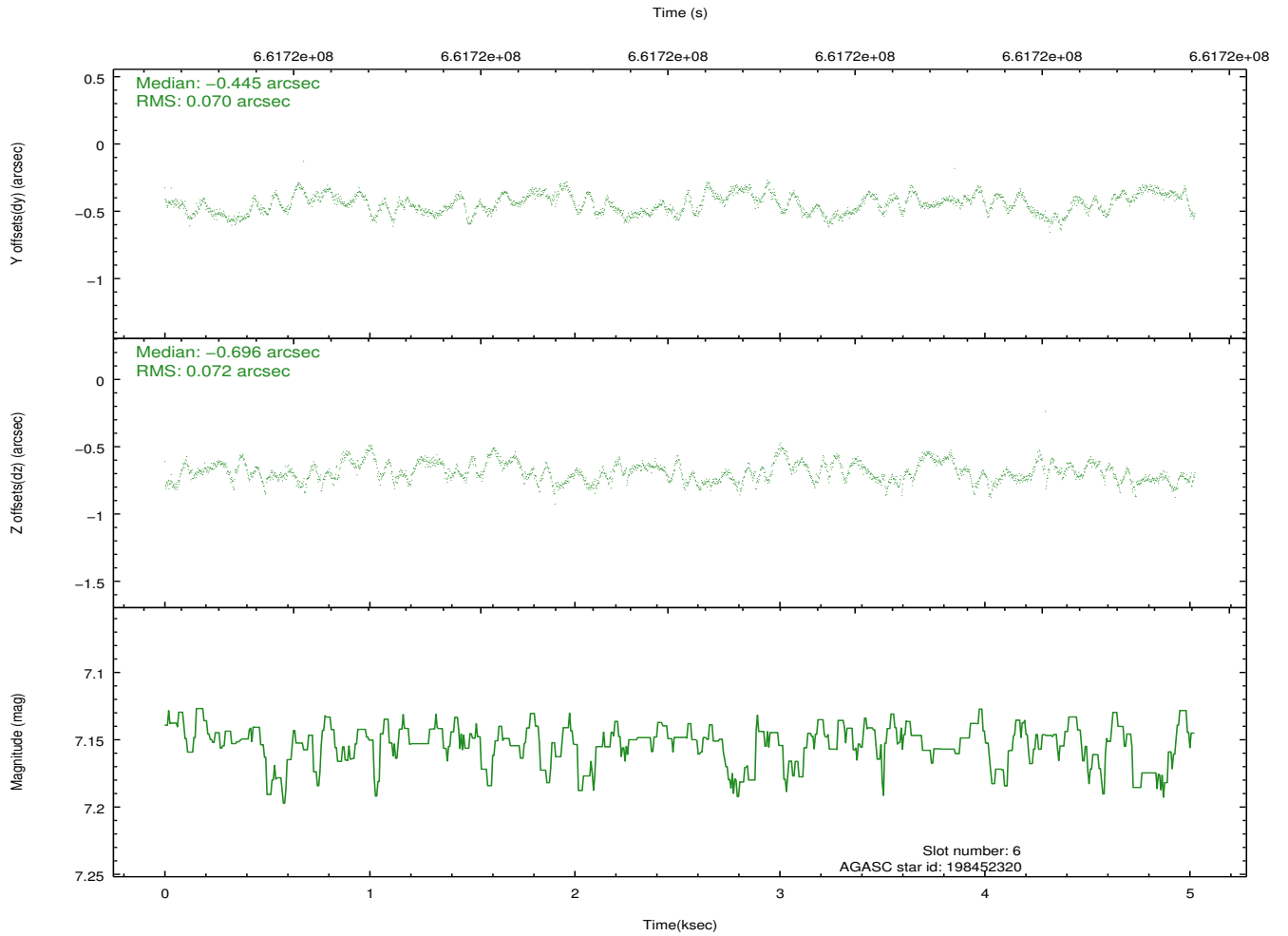
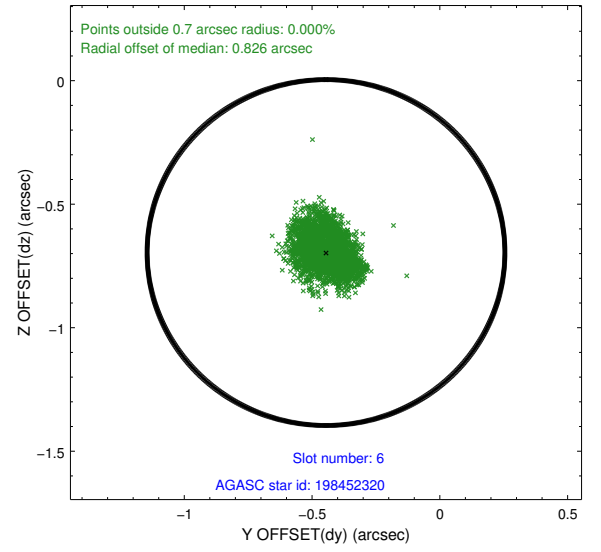
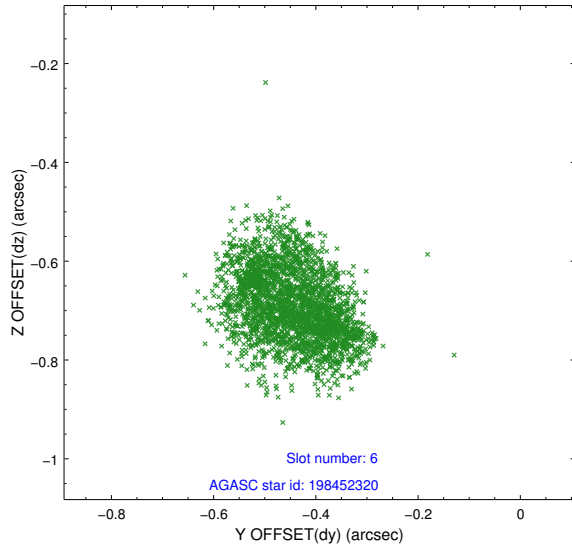
2.4.2 Slot 4



2.4.3 Slot 5

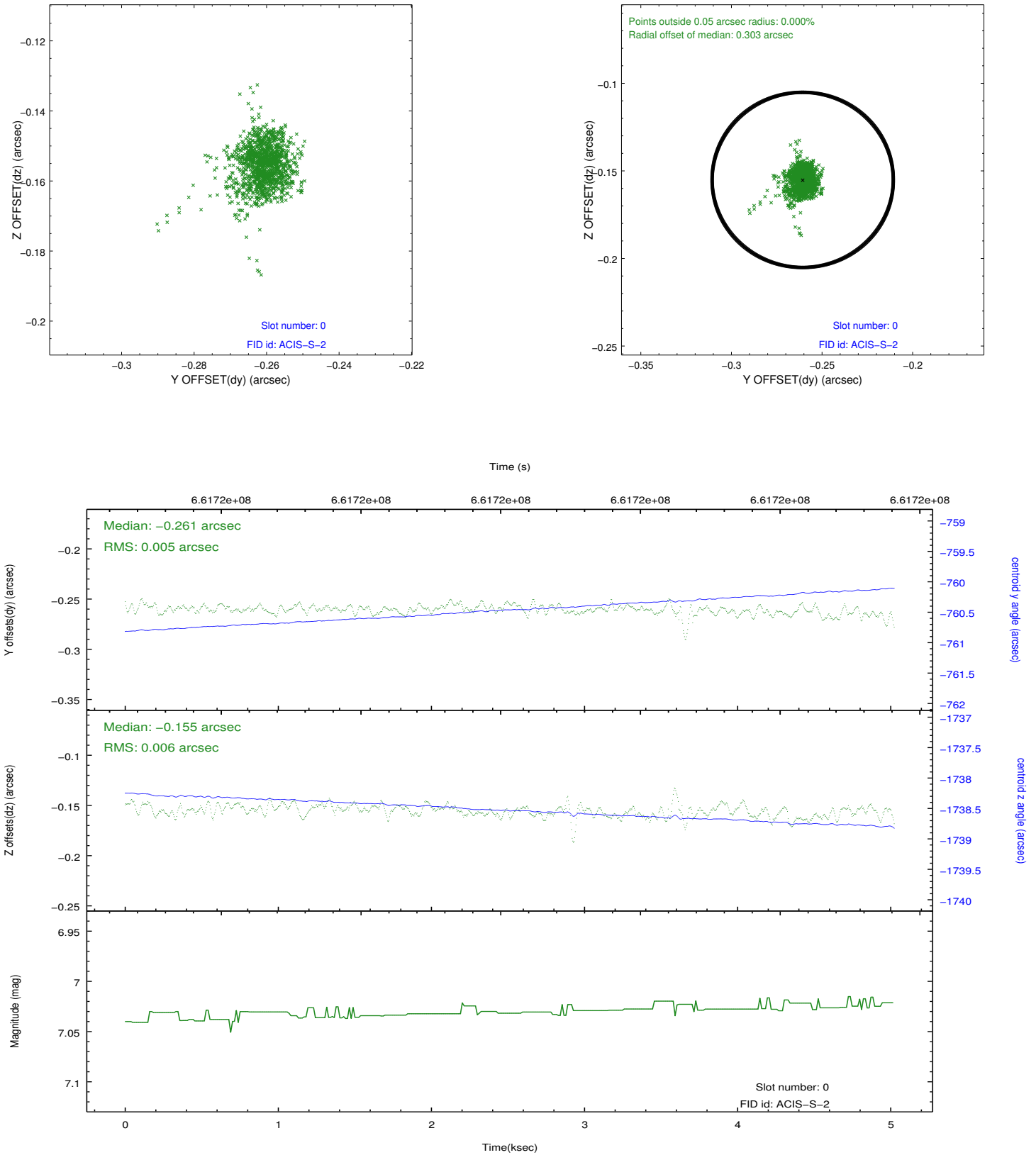


2.4.4 Slot 6

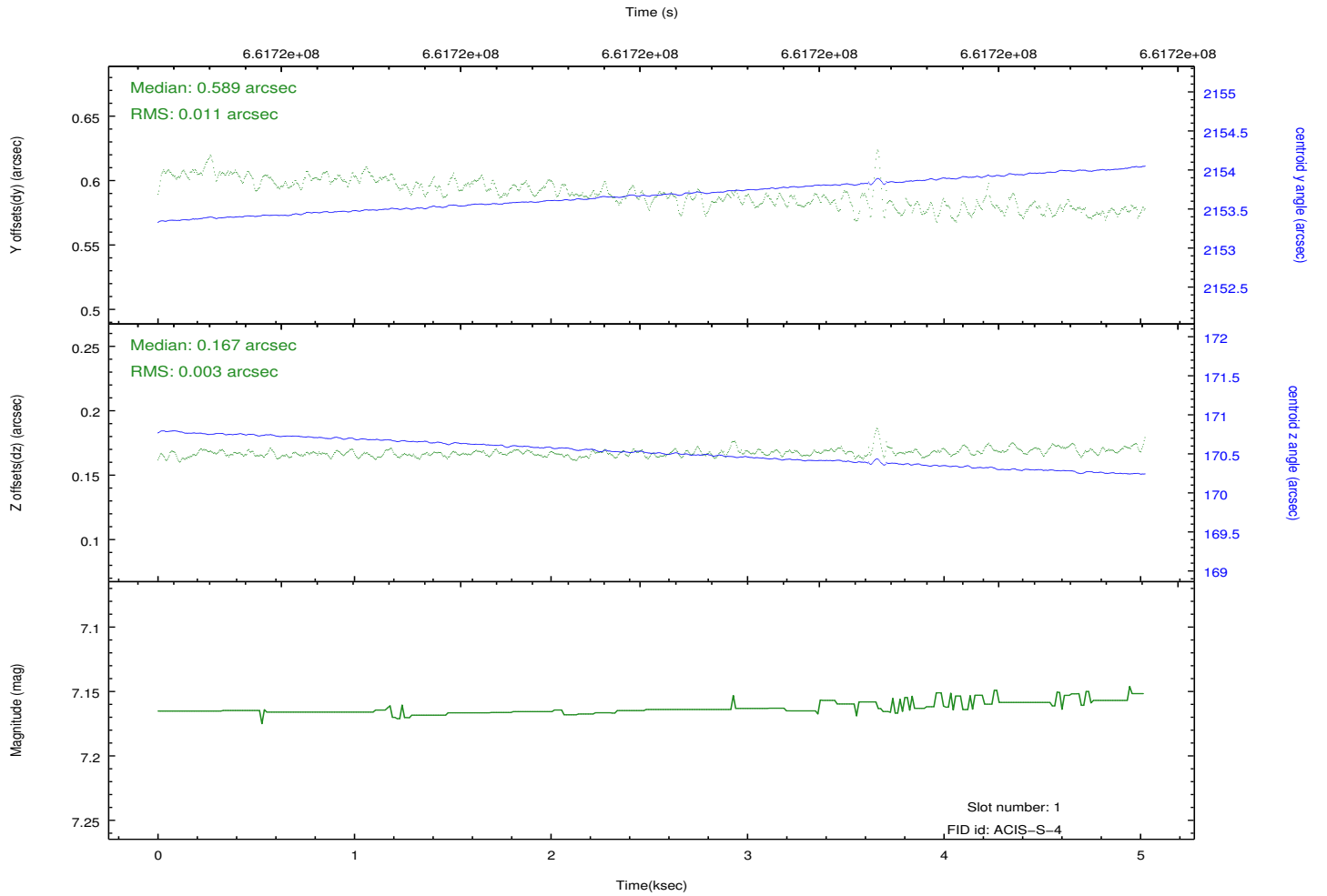
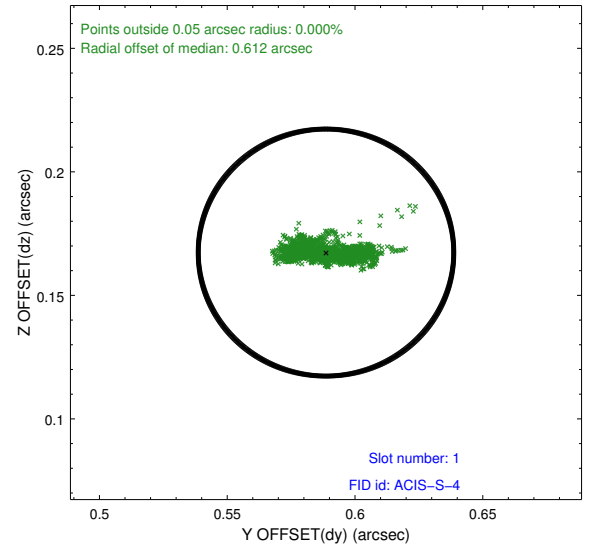
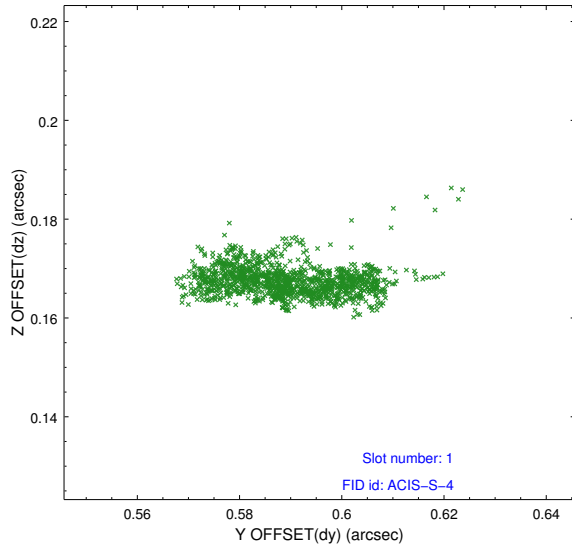


2.5 FID Slots

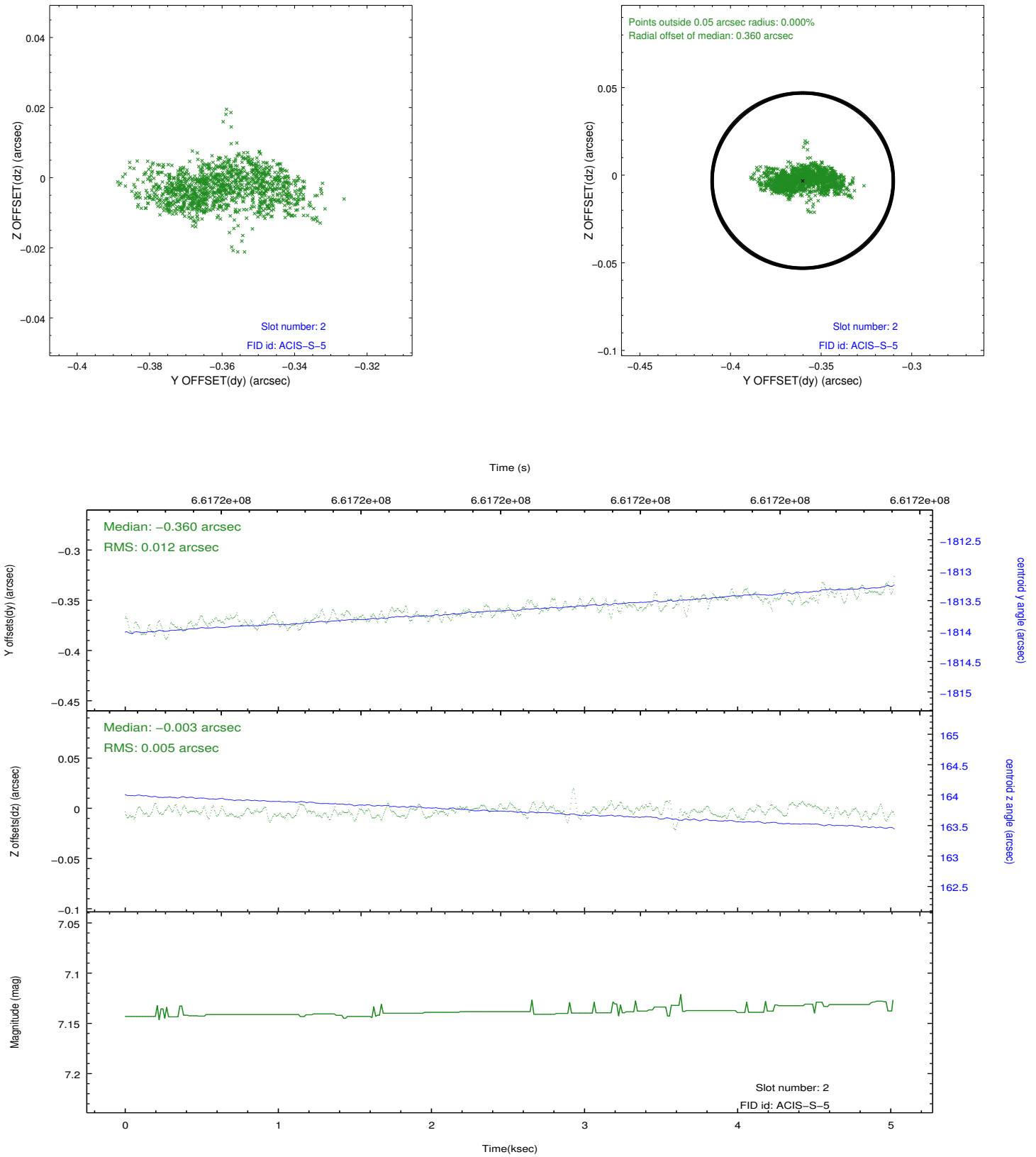
2.5.1 Slot 0



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)	2018.12.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.02010014081

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.