

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 21397 - L2 Version 1
Chandra X-Ray Center

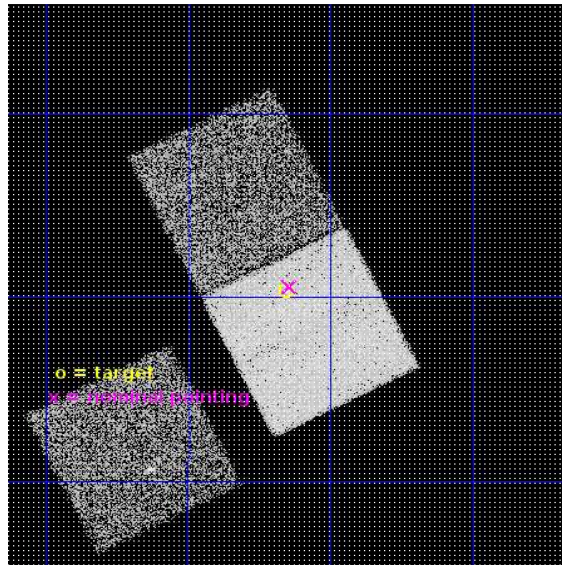
L2 Processing Date : Feb 13 2019

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1 Front

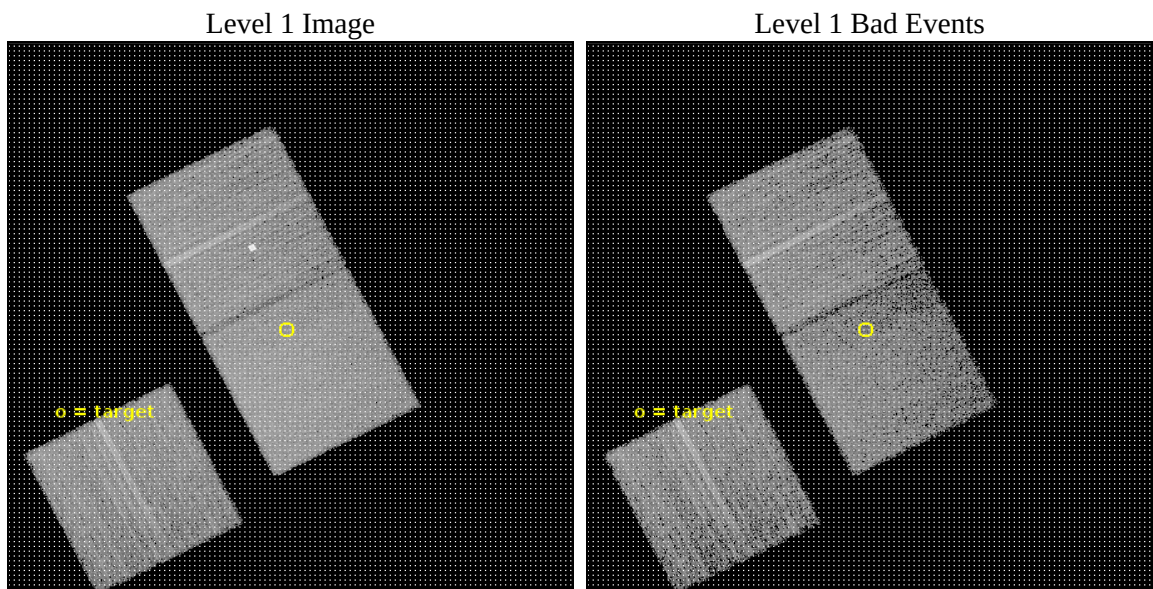
seq_num	703695	Sequence number
obs_id	21397	Observation id
title	COMPLETING THE CHANDRA EXTRAGALACTIC 3CR SURVEY	Proposal title
observer	Fr Massaro	Principal investigator
object	3CR 257.0	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.788333	Observer's specified target RA [deg]
dec_targ	5.505389	Observer's specified target Dec [deg]
ra_nom	170.786043583	Nominal RA [deg]
dec_nom	5.5094979460526	Nominal Dec [deg]
roll_nom	63.156810103569	Nominal Roll [deg]
revision	1	Processing version of data
ontime	17561.024753213	Sum of GTIs [s]
livetime	17331.577036574	Livetime [s]
ontime3	17560.942673206	Sum of GTIs [s]
ontime6	17560.983713269	Sum of GTIs [s]
ontime7	17561.024753213	Sum of GTIs [s]
l2events	97331	Number of level 2 events



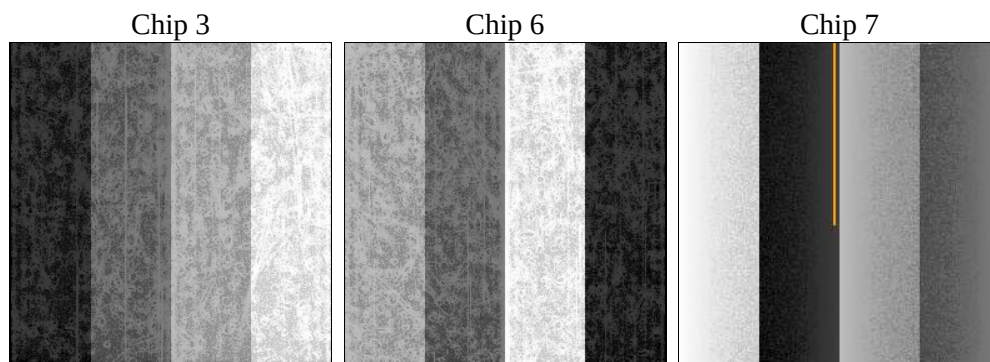
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	17448.016000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	17561.024753213	Sum of GTIs [s]
caldbver	4.8.2	 	ontime3	17560.942673206	Sum of GTIs [s]
date	2019-02-13T21:55:45	Date and time of file creation	ontime6	17560.983713269	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	17561.024753213	Sum of GTIs [s]
			l1events	454708	Number of level 1 events

2.1.4 Events

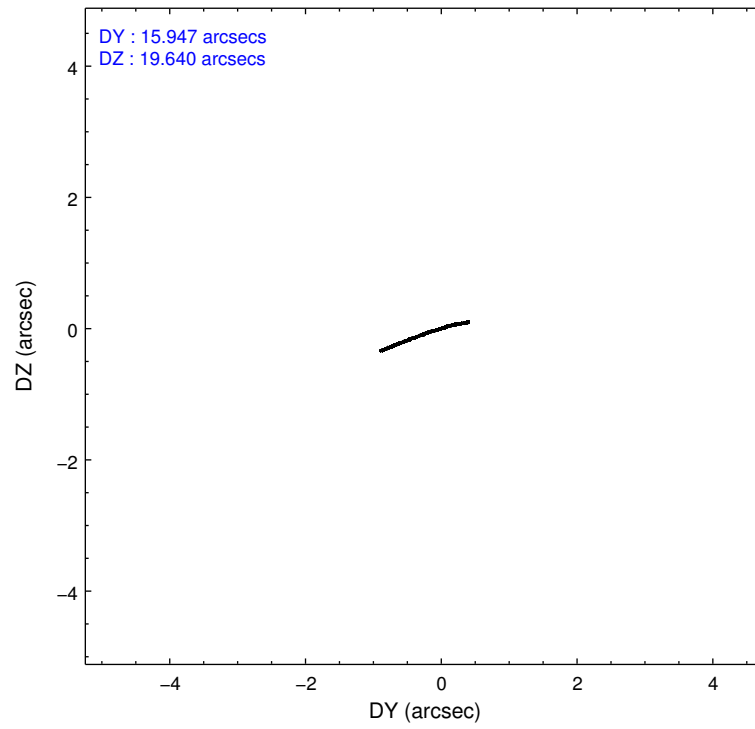
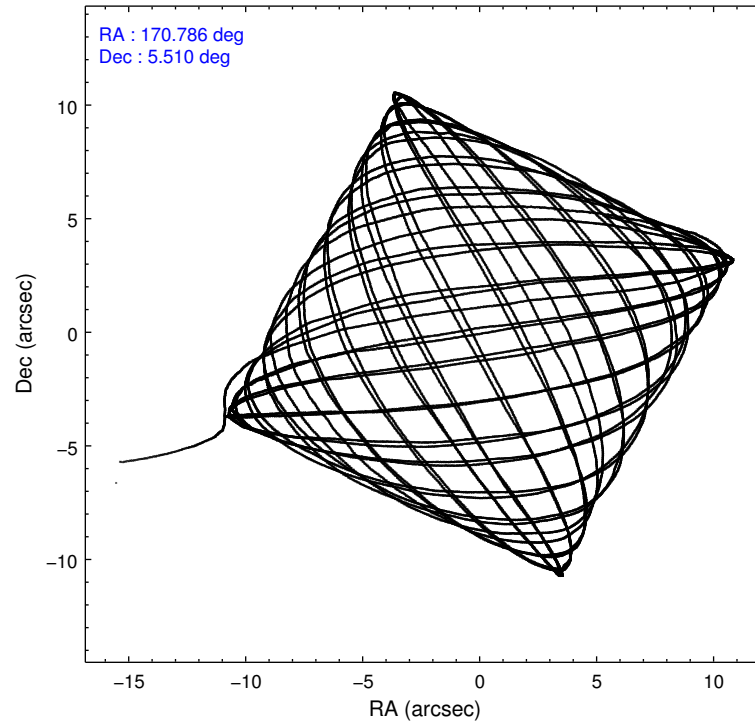
	ccd 3	ccd 6	ccd 7
level 1 events	131871	151403	171434
rejected events	118401	131312	97522
rejected %	89%	86%	56%

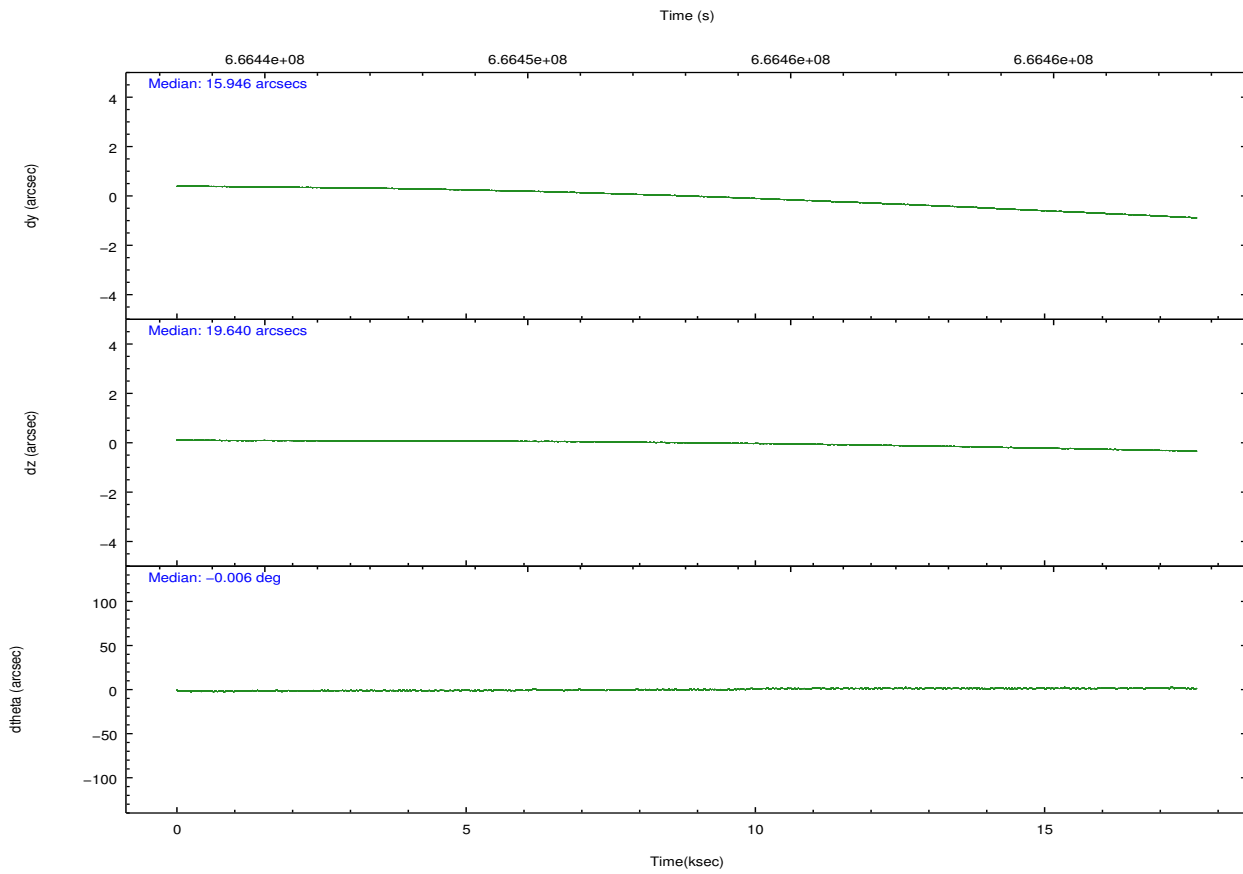
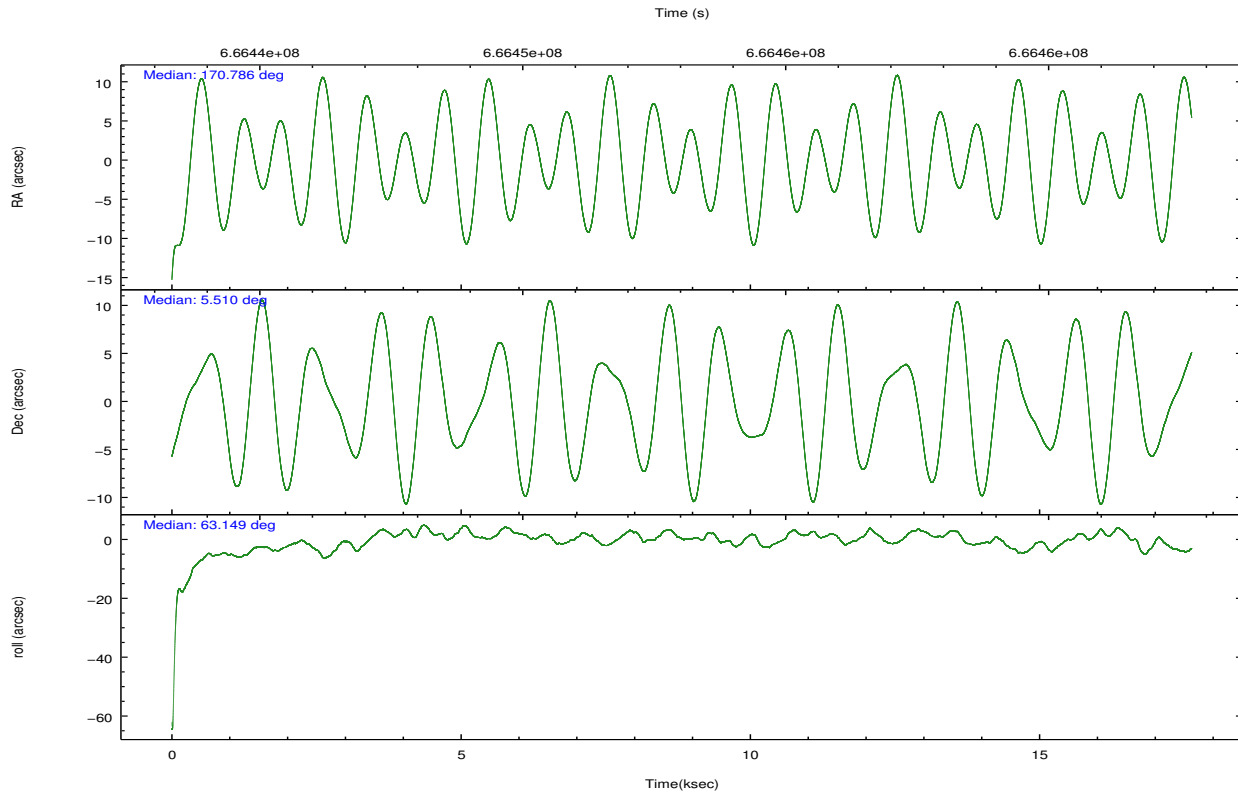
	ccd 3	ccd 6	ccd 7
grade 0 events	4569	9195	6040
	3%	6%	3%
grade 1 events	66	76	253
	0%	0%	0%
grade 2 events	2988	4252	15135
	2%	2%	8%
grade 3 events	1460	1172	5835
	1%	0%	3%
grade 4 events	1286	1127	5461
	0%	0%	3%
grade 5 events	5472	5268	16470
	4%	3%	9%
grade 6 events	3168	4347	41450
	2%	2%	24%
grade 7 events	112862	125966	80790
	85%	83%	47%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-367	ACIS-367	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	170.787936	170.786043582995	CCD I2 on	O1	N
[deg] Pointing Dec	5.482111	5.509497946052559	CCD I3 on	O2	Y
[deg] Pointing Roll	63.000036	63.15681010356869	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	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	N	N
[s] Observation start time (MET)	666444365.184000	666443210.68642	CCD S5 on	N	N
Observation start date	2019-02-13T11:24:56	2019-02-13T11:06:50	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	666461813.184000	666462529.37507	On-chip summing requested	N	N
Observation end date	2019-02-13T16:15:44	2019-02-13T16:28:49	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



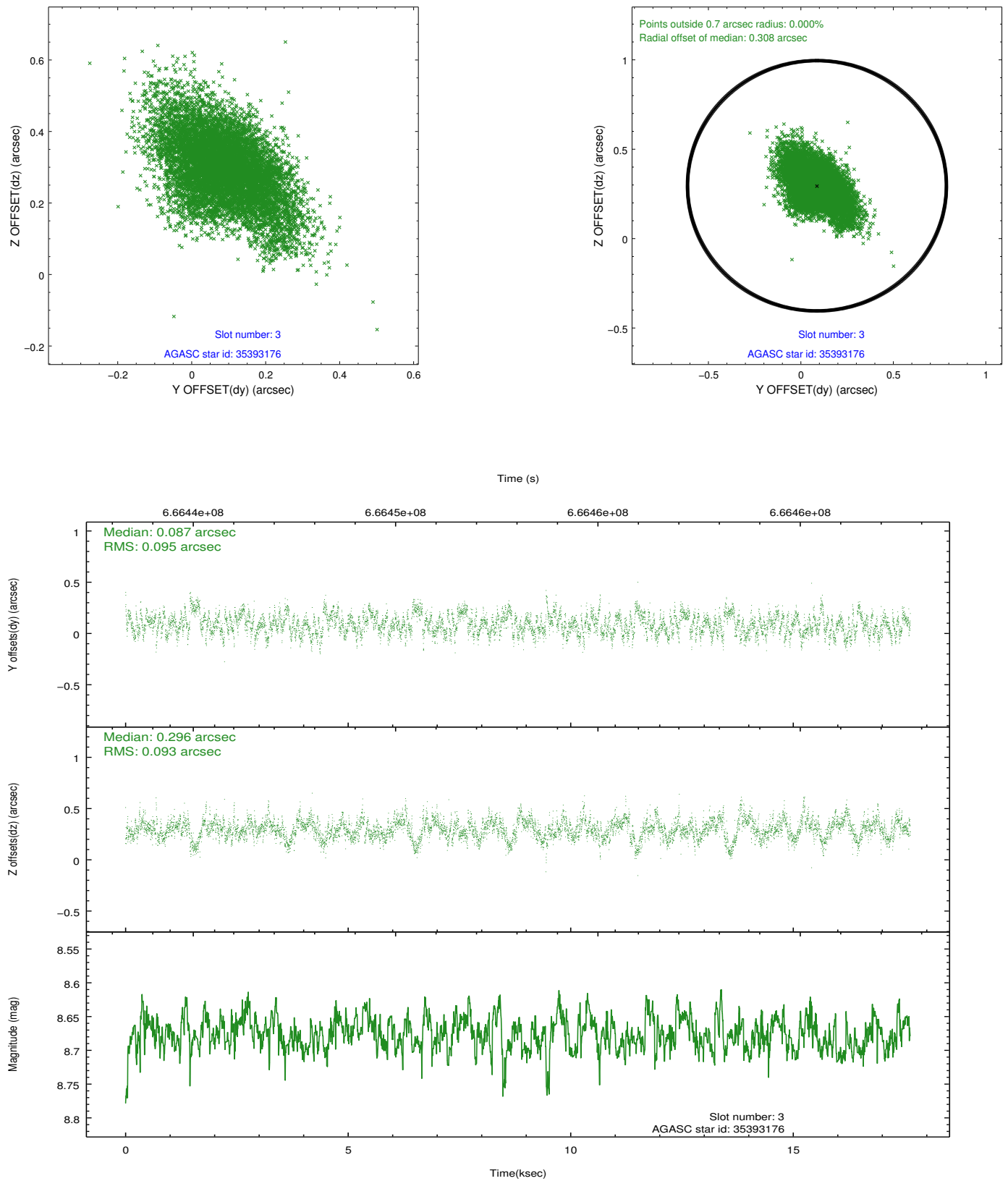


Slot Statistics

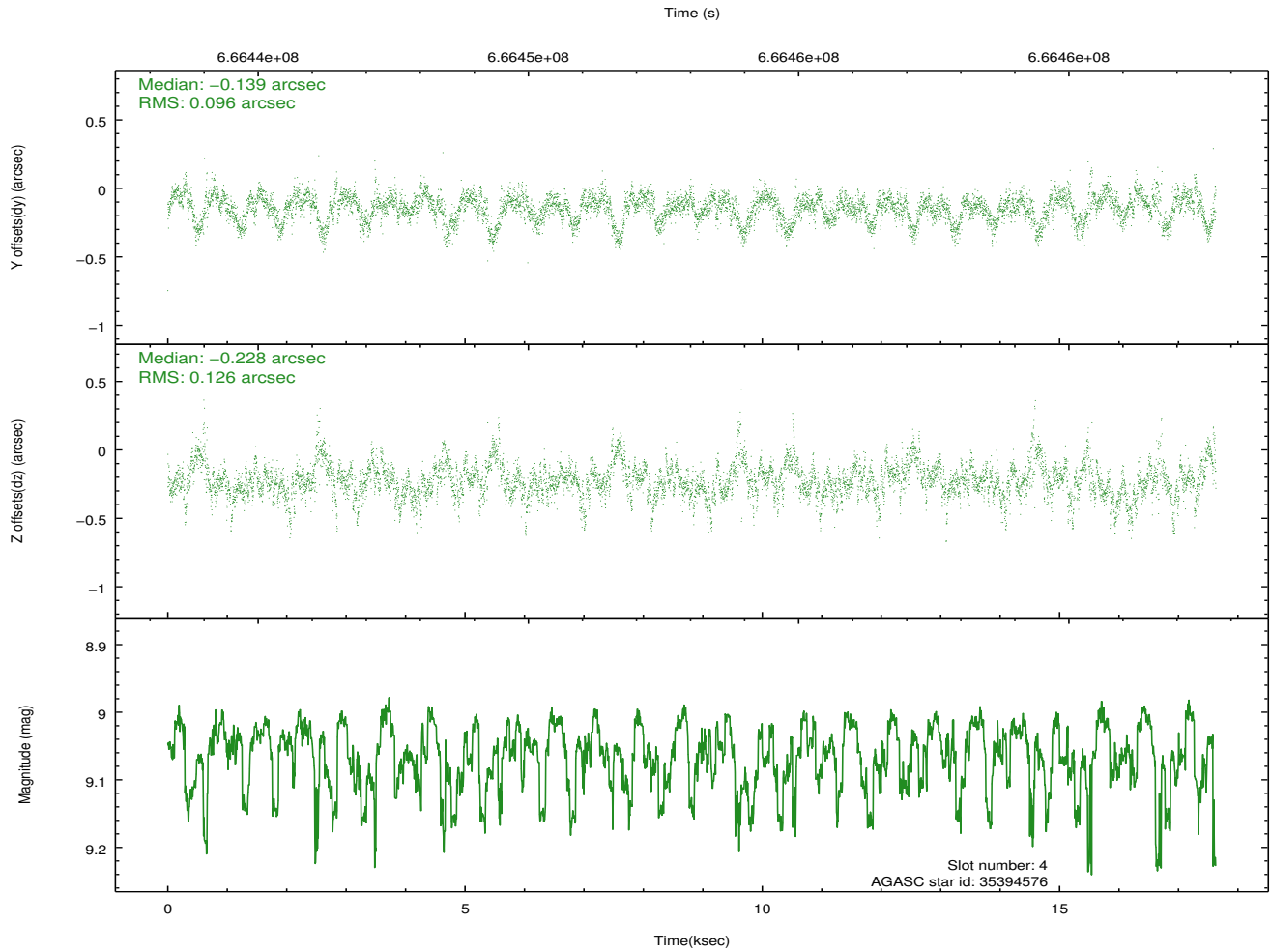
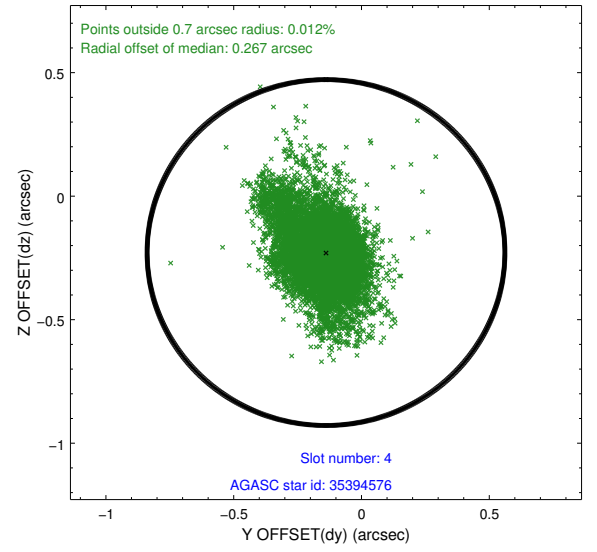
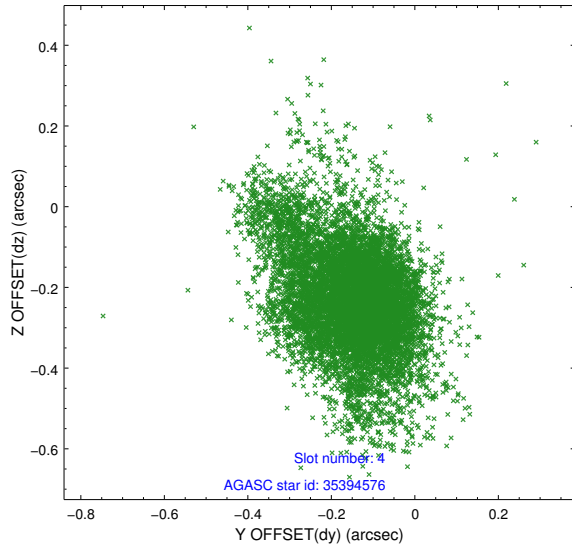
id	status	used	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.18	4300	1.000	-0.360	-0.235	0.011	0.017	0.000000	0.000000	-769.14 -1741
1	FID		ACIS-S-4	7.31	4299	1.000	0.855	0.237	0.011	0.020	0.000000	0.000000	2145.17 167
2	FID		ACIS-S-5	7.27	4299	1.000	-0.524	0.006	0.015	0.022	0.000000	0.000000	-1821.92 161
3	GUIDE	used	35393176	8.68	8595	1.000	0.087	0.296	0.136	0.243	171.428935	5.747893	1895.89 -1612
4	GUIDE	used	35394576	9.06	8573	1.000	-0.139	-0.228	0.155	0.305	170.322132	5.741979	73.64 1911
5	GUIDE	used	35395040	6.95	8601	1.000	-0.105	0.296	0.112	0.173	171.296761	5.739460	1652.80 -1202
6	GUIDE	used	35395752	8.70	8598	1.000	-0.237	-0.392	0.122	0.197	170.864352	6.133201	2211.87 820
7	GUIDE	used	35396784	9.23	8589	1.000	0.407	0.031	0.195	0.293	170.369032	5.631894	-200.64 1582

2.4 Star Slots

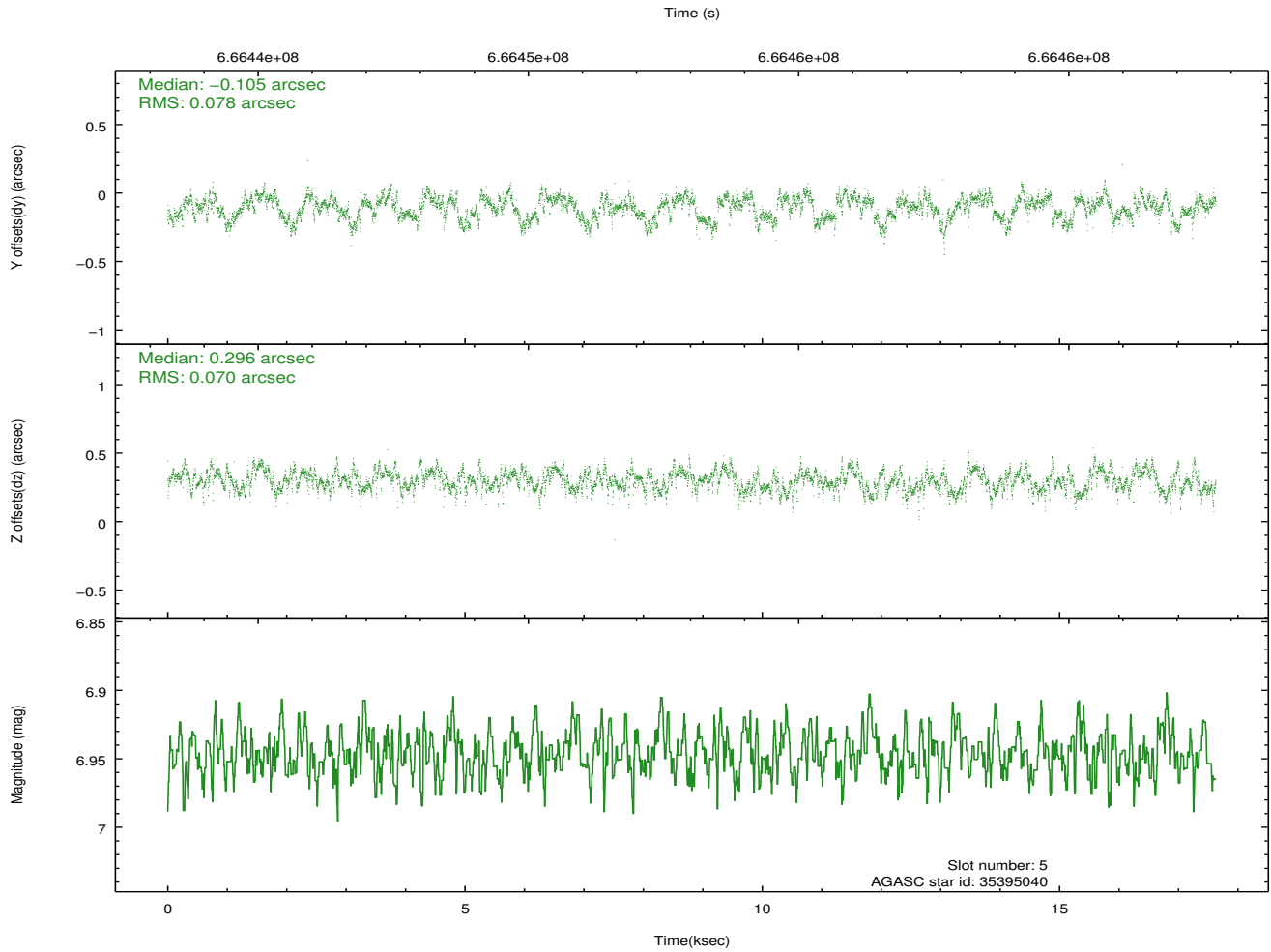
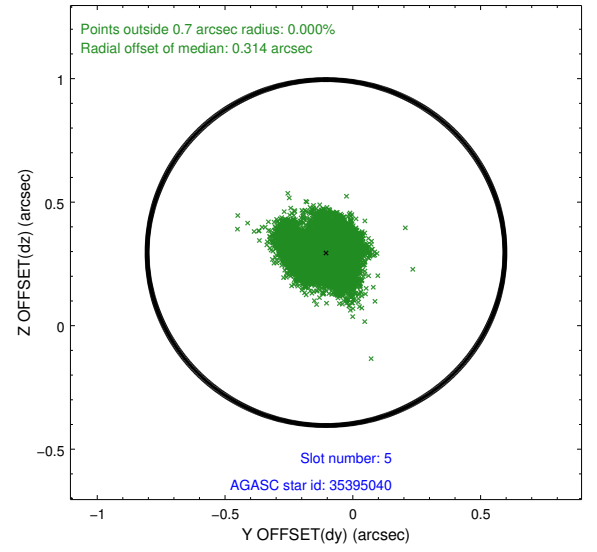
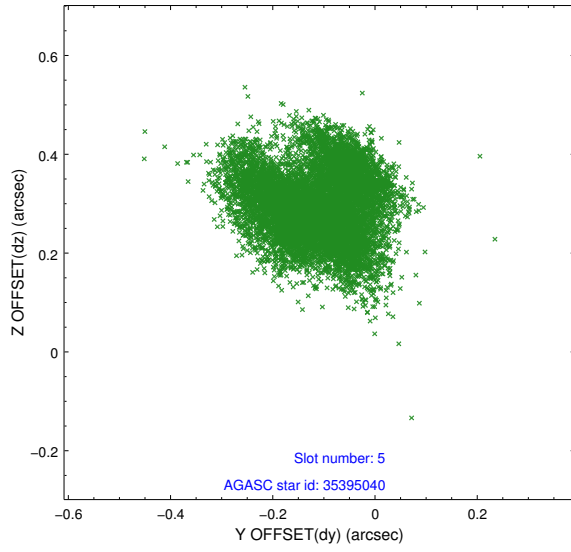
2.4.1 Slot 3



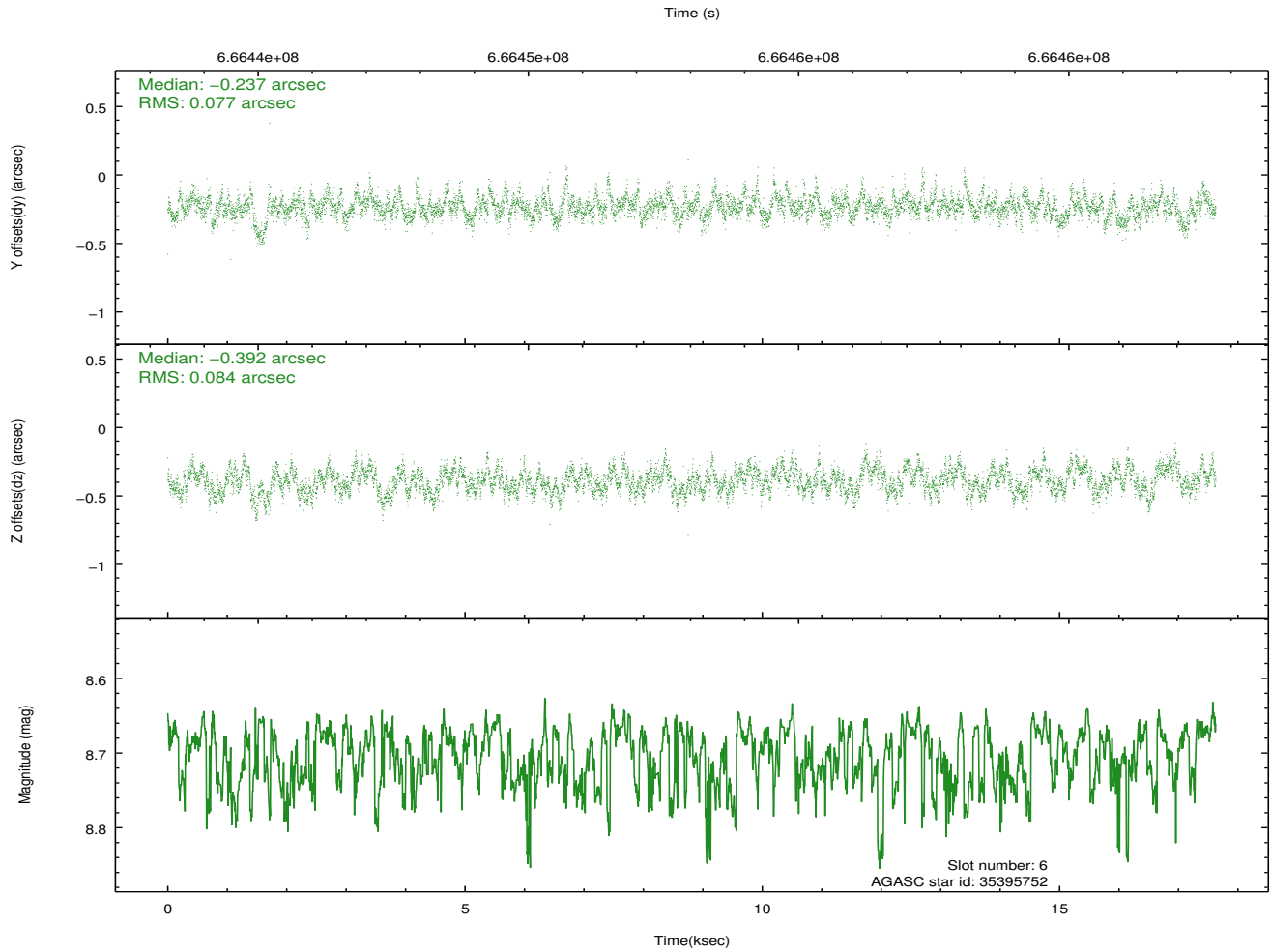
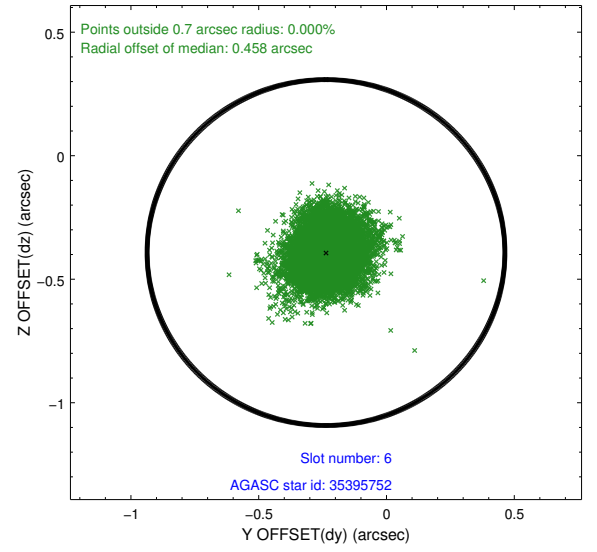
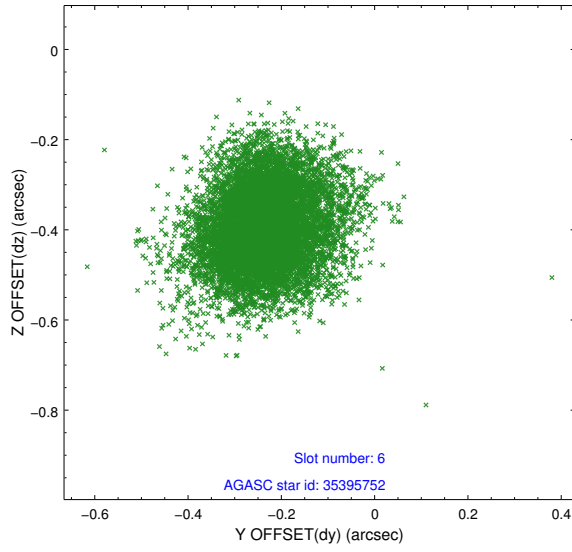
2.4.2 Slot 4



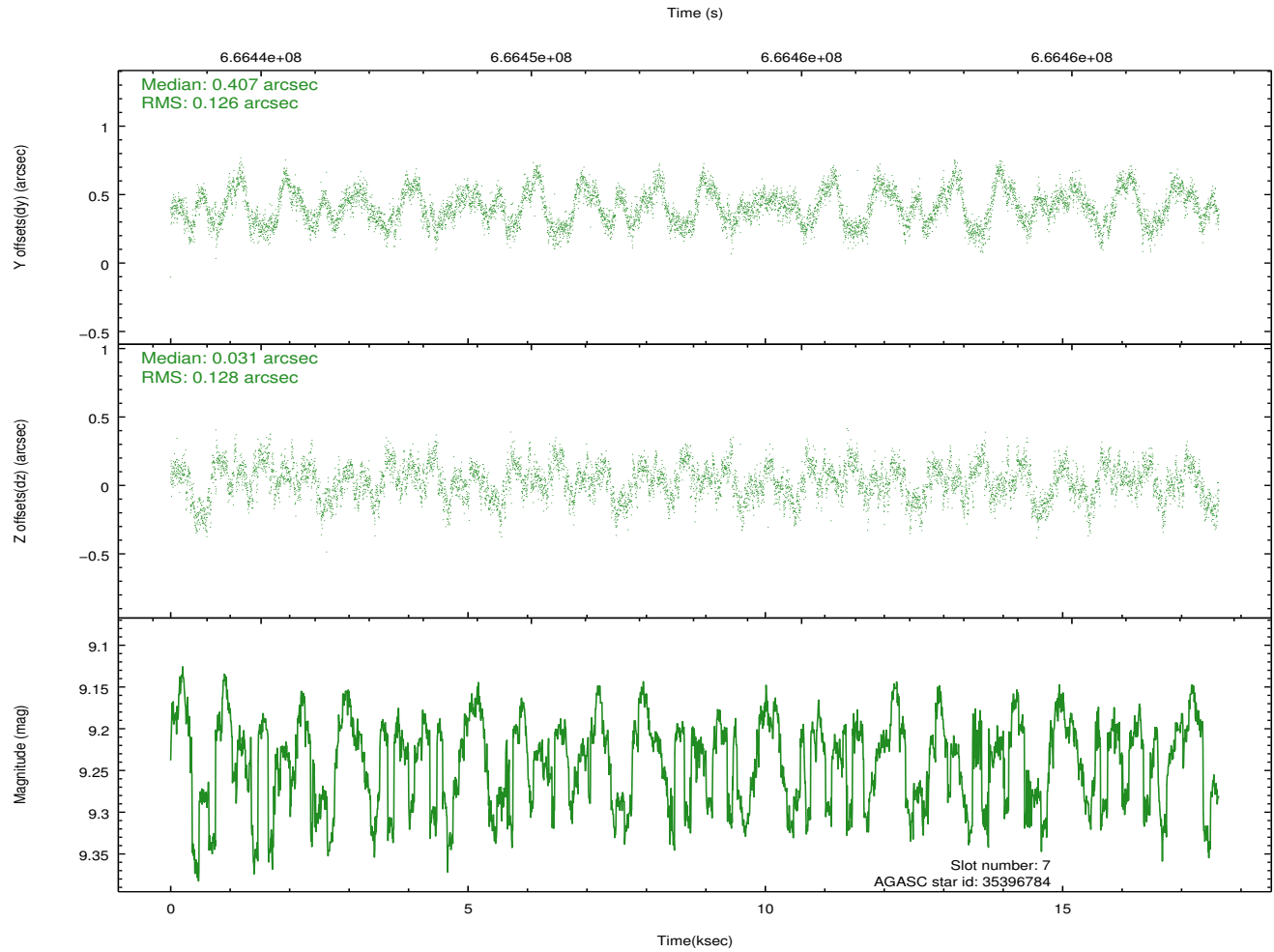
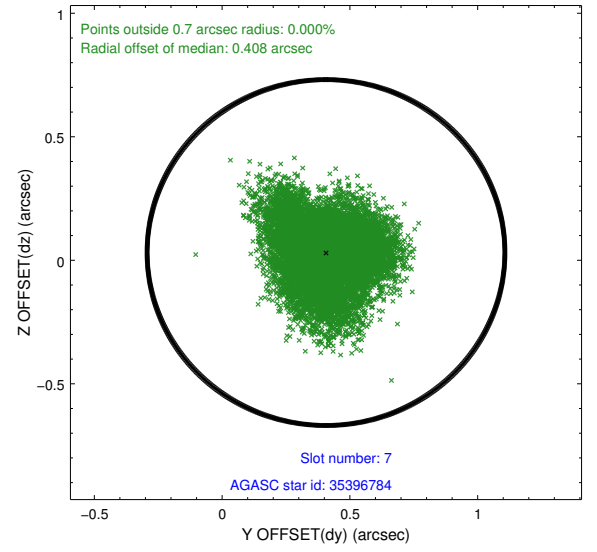
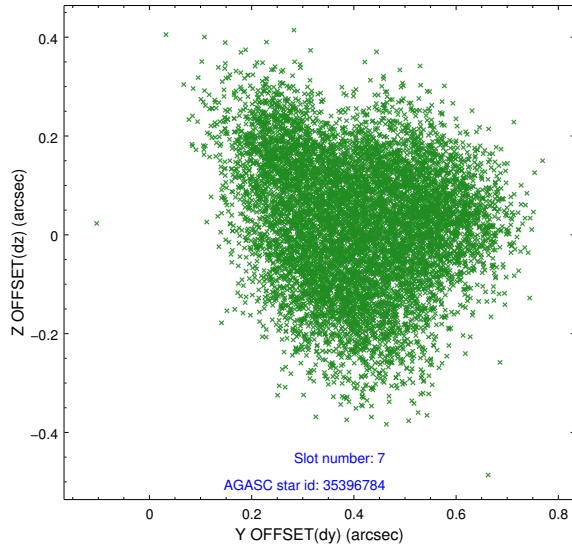
2.4.3 Slot 5



2.4.4 Slot 6

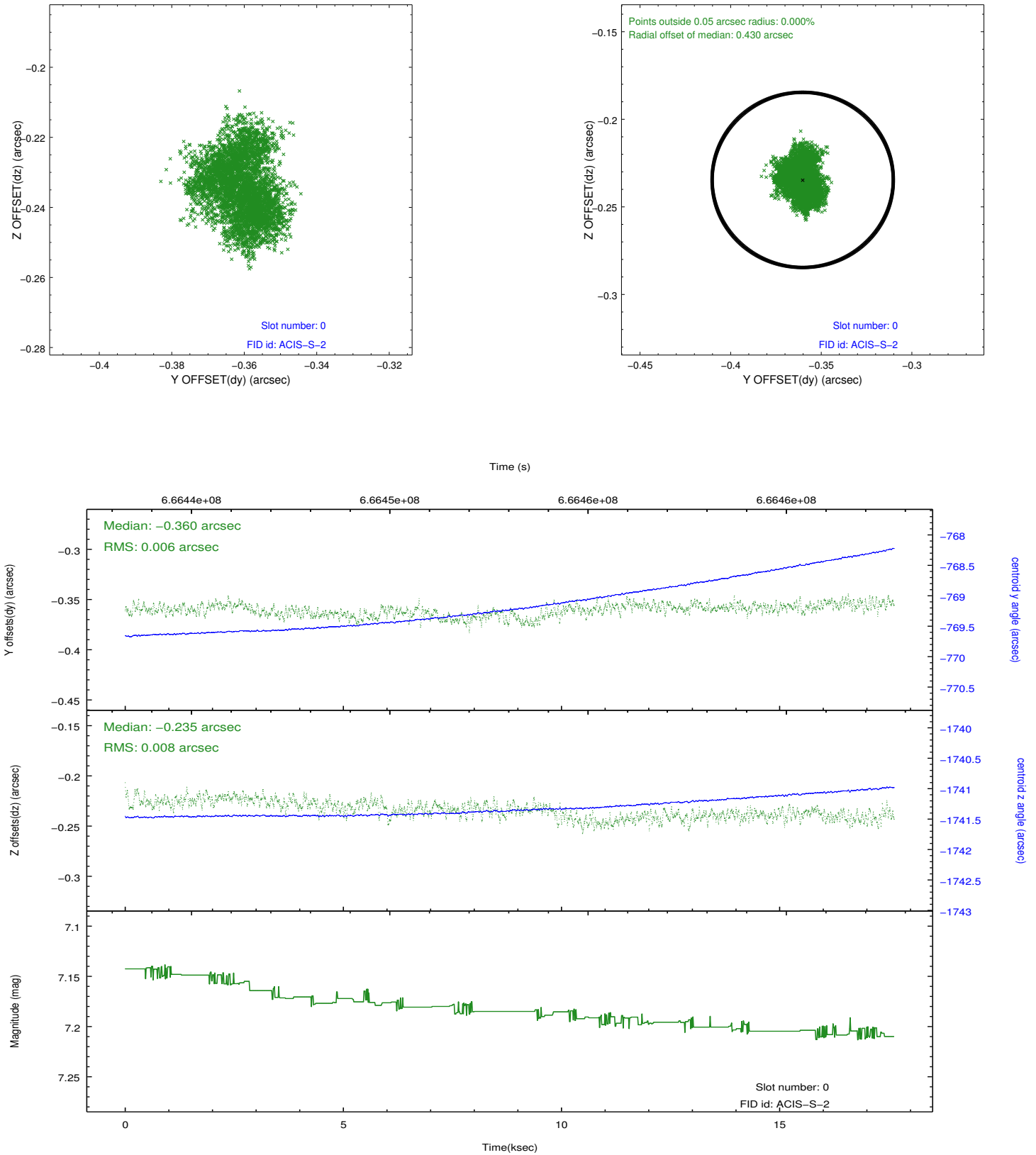


2.4.5 Slot 7

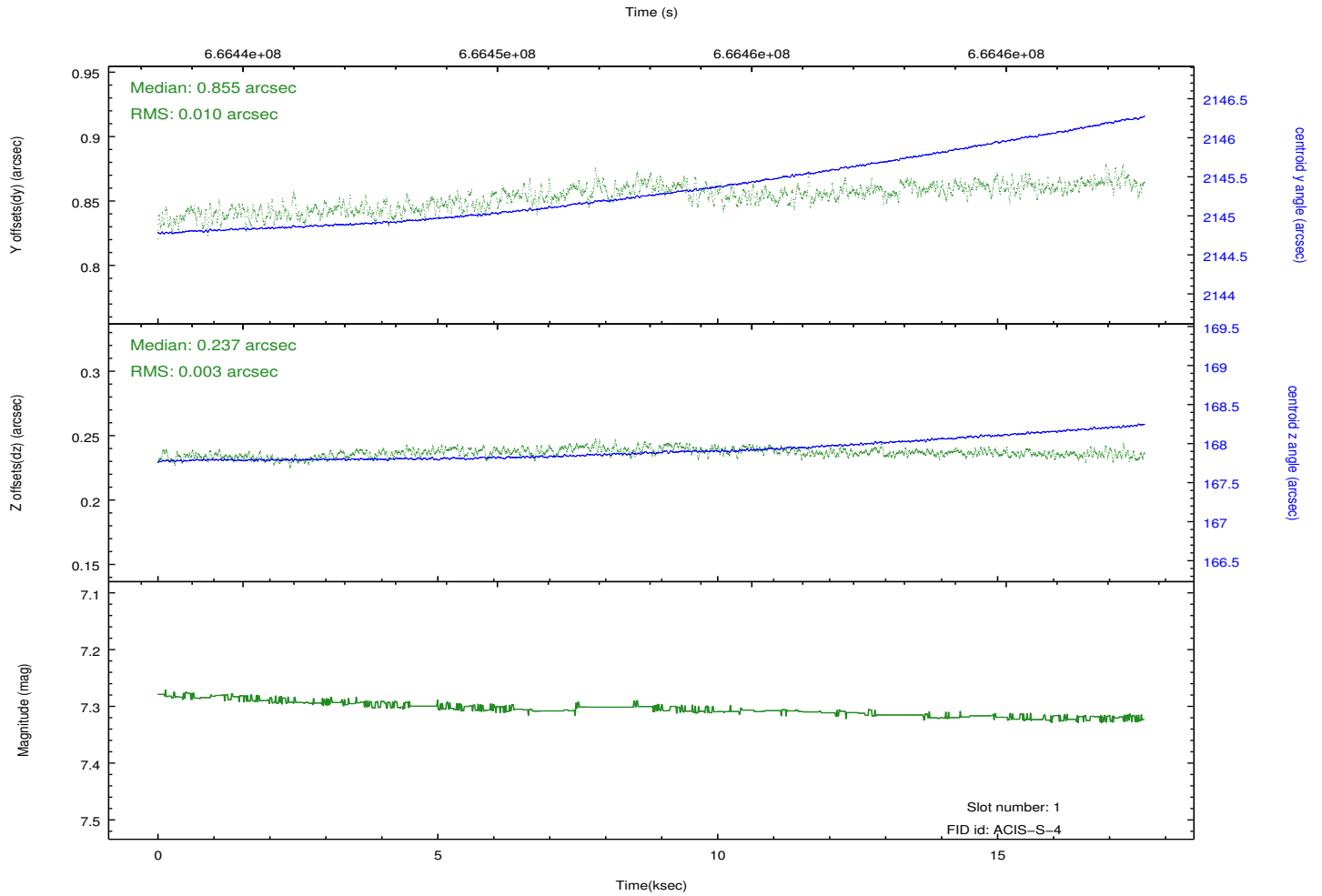
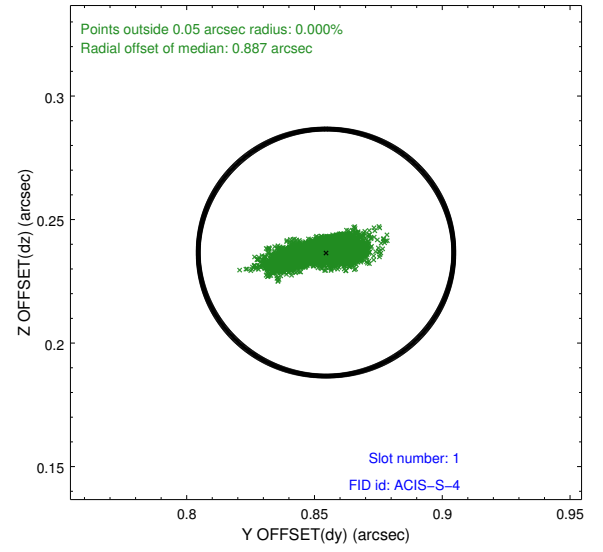
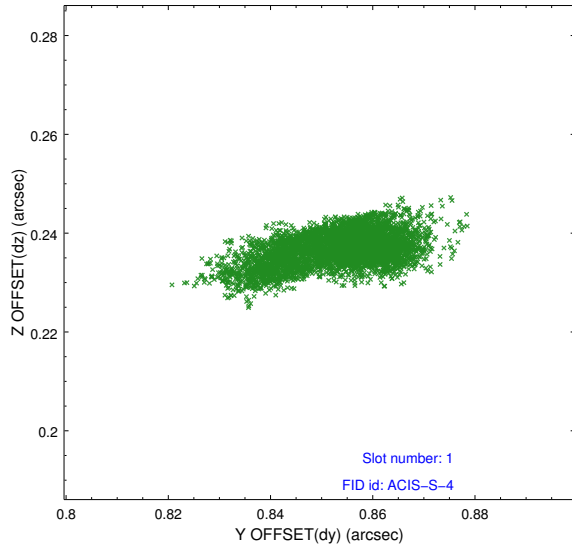


2.5 FID Slots

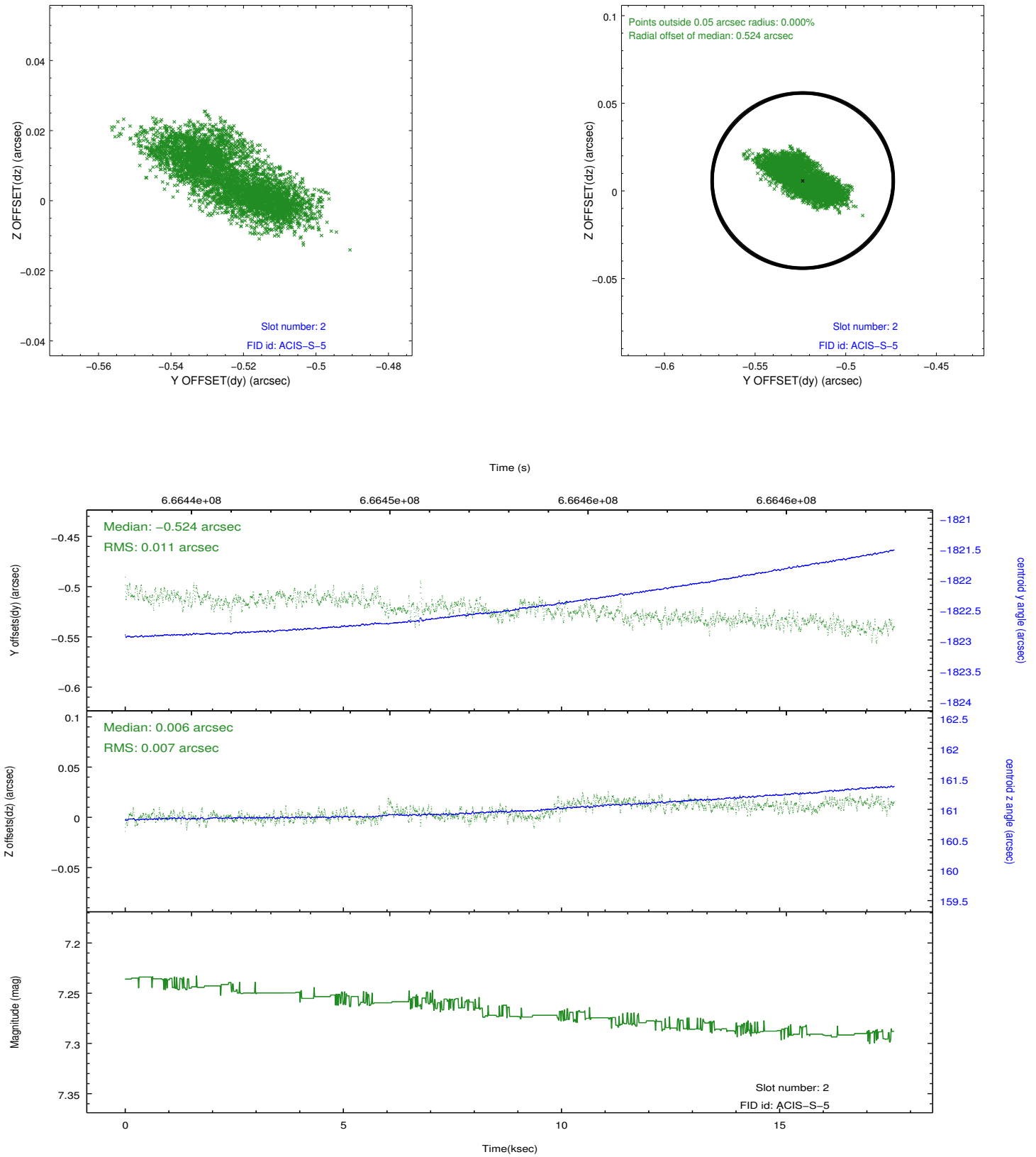
2.5.1 Slot 0



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)	2019.02.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	17.561024753213

A.2 Comments

One optional chip was dropped.

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The focal plane temperature during part of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -114.0 C for ACIS-I and -112.0 C for ACIS-S).

The Chandra calibration team calibrates the ACIS gain and spectral resolution using data from the external calibration source (ECS). ECS data show that the frontside-illuminated (FI) CCDs are more temperature sensitive than the backside-illuminated (BI) CCDs.

A summary of the current calibration status of the ACIS gain and spectral resolution can be found at:

http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/ACIS_response_summary.html

The main points are:

- 1) The gain on BI chips remains within 0.3% (i.e., the systematic uncertainty in the ACIS gain quoted on the Chandra Calibration Status Summary web page) at all measured temperatures.
 - 2) The gain on FI chips remains within 0.3% below row 600 at all measured temperatures.
 - 3) The gain on FI chips above row 600 can be underestimated by as much as 1% for focal plane temperatures exceeding -116 C.
 - 4) The spectral resolution (i.e., FWHM) on BI chips is insensitive to the focal plane temperature.
 - 5) Warmer focal plane temperatures increase the FWHM on FI chips by up to 30 eV near row 512 and by up to 70 eV near the top of the chips.
- In summary, the user should be cautious in the spectral analysis of high S/N emission lines detected on the top half of FI chips in this observation. Default processing with the current version of the CALDB will underestimate photon energies by up to 1% and broaden emission lines by up to 70 eV.