

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 20604 - L2 Version 1
Chandra X-Ray Center

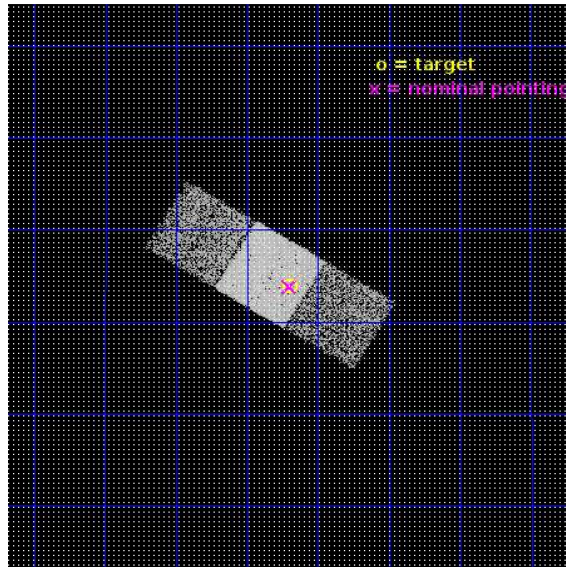
L2 Processing Date : Apr 30 2019

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1 Front

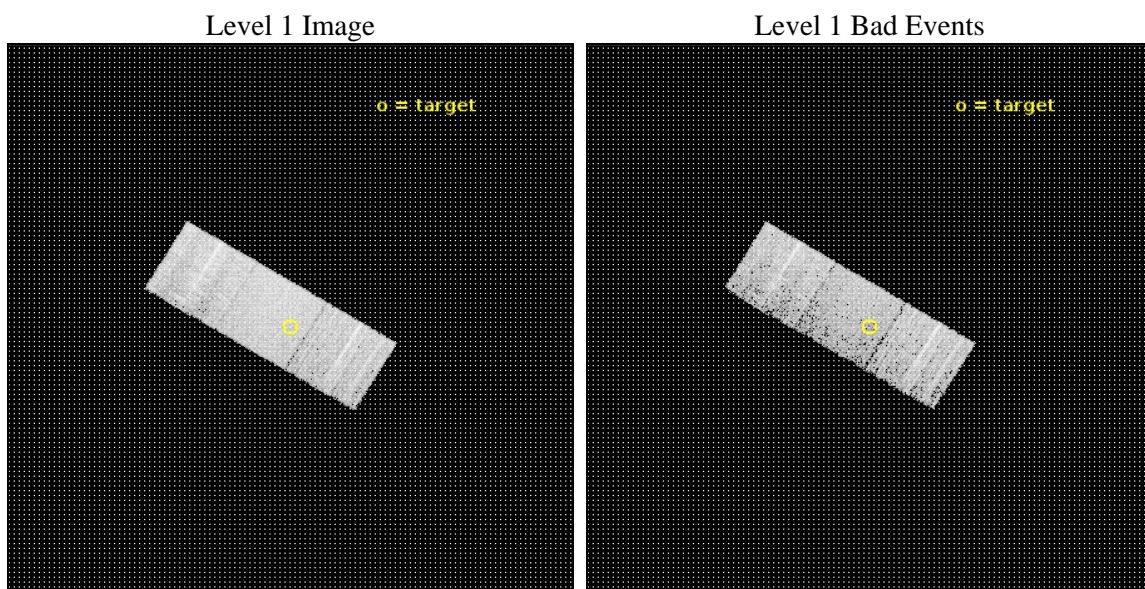
seq_num	703605	Sequence number
obs_id	20604	Observation id
title	Exploratory X-ray Monitoring of z>4 Radio-Quiet Quasars	Proposal t
observer	Ohad Shemmer	Principal investigator
object	PSS 1326+0743	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	201.549167	Observer's specified target RA [deg]
dec_targ	7.732639	Observer's specified target Dec [deg]
ra_nom	201.55057895592	Nominal RA [deg]
dec_nom	7.7304019300154	Nominal Dec [deg]
roll_nom	211.15630729995	Nominal Roll [deg]
revision	1	Processing version of data
ontime	5071.6000391245	Sum of GTIs [s]
livetime	5005.3358509557	Livetime [s]
ontime6	5071.6000391245	Sum of GTIs [s]
ontime7	5071.6000391245	Sum of GTIs [s]
ontime8	5071.6000391245	Sum of GTIs [s]
l2events	29645	Number of level 2 events



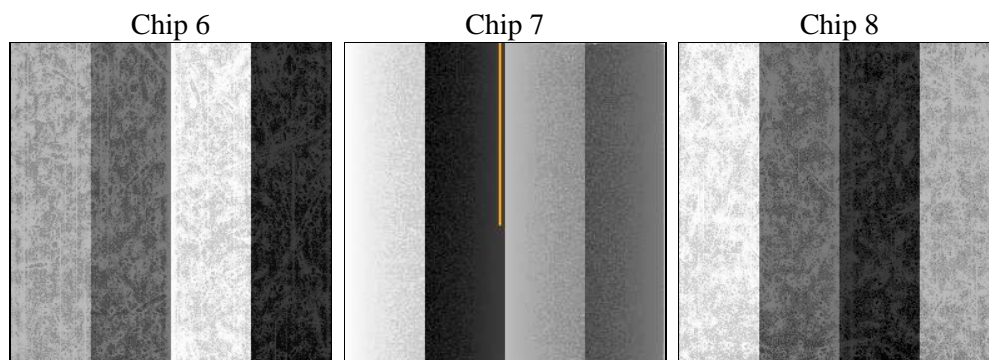
2 OBI

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	5071.6000391245	Sum of GTIs [s]
caldsver	4.8.2	 	ontime6	5071.6000391245	Sum of GTIs [s]
date	2019-04-30T16:40:03	Date and time of file creation	ontime7	5071.6000391245	Sum of GTIs [s]
revision	1	Processing version of data	ontime8	5071.6000391245	Sum of GTIs [s]
			l1events	142442	Number of level 1 events

2.1.4 Events

	ccd 6	ccd 7	ccd 8
level 1 events	41416	50909	50117
rejected events	36944	28987	36923
rejected %	89%	56%	73%

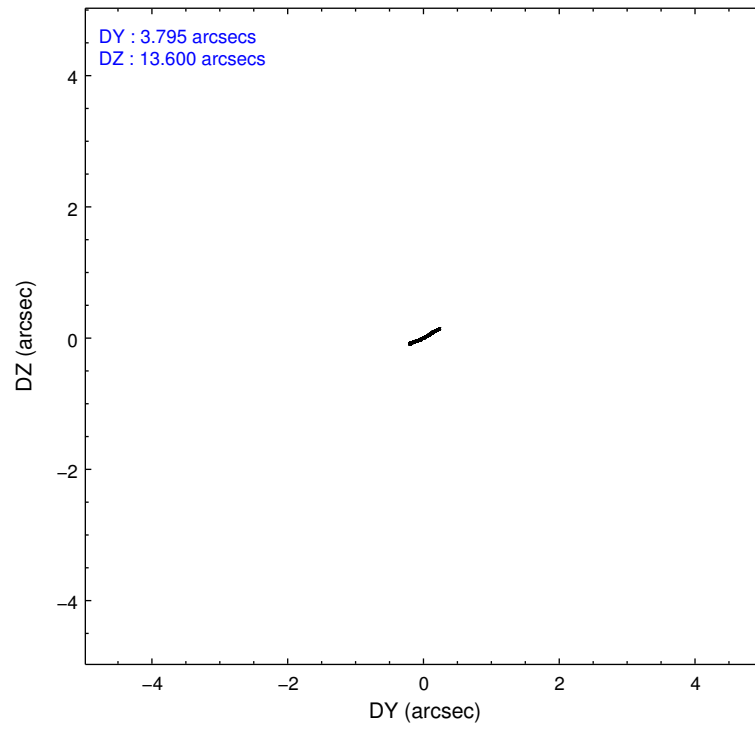
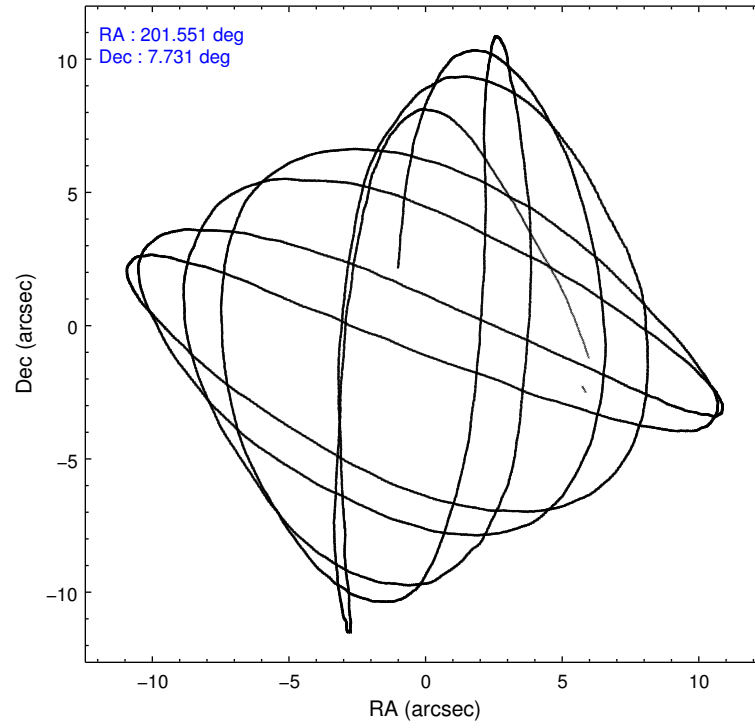
	ccd 6	ccd 7	ccd 8
grade 0 events	1172	1747	3576
	2%	3%	7%
grade 1 events	23	95	32
	0%	0%	0%
grade 2 events	1307	4504	3418
	3%	8%	6%
grade 3 events	325	1709	1223
	0%	3%	2%
grade 4 events	355	1632	1094
	0%	3%	2%
grade 5 events	1574	4785	2512
	3%	9%	5%
grade 6 events	1316	12337	3886
	3%	24%	7%
grade 7 events	35344	24100	34376
	85%	47%	68%

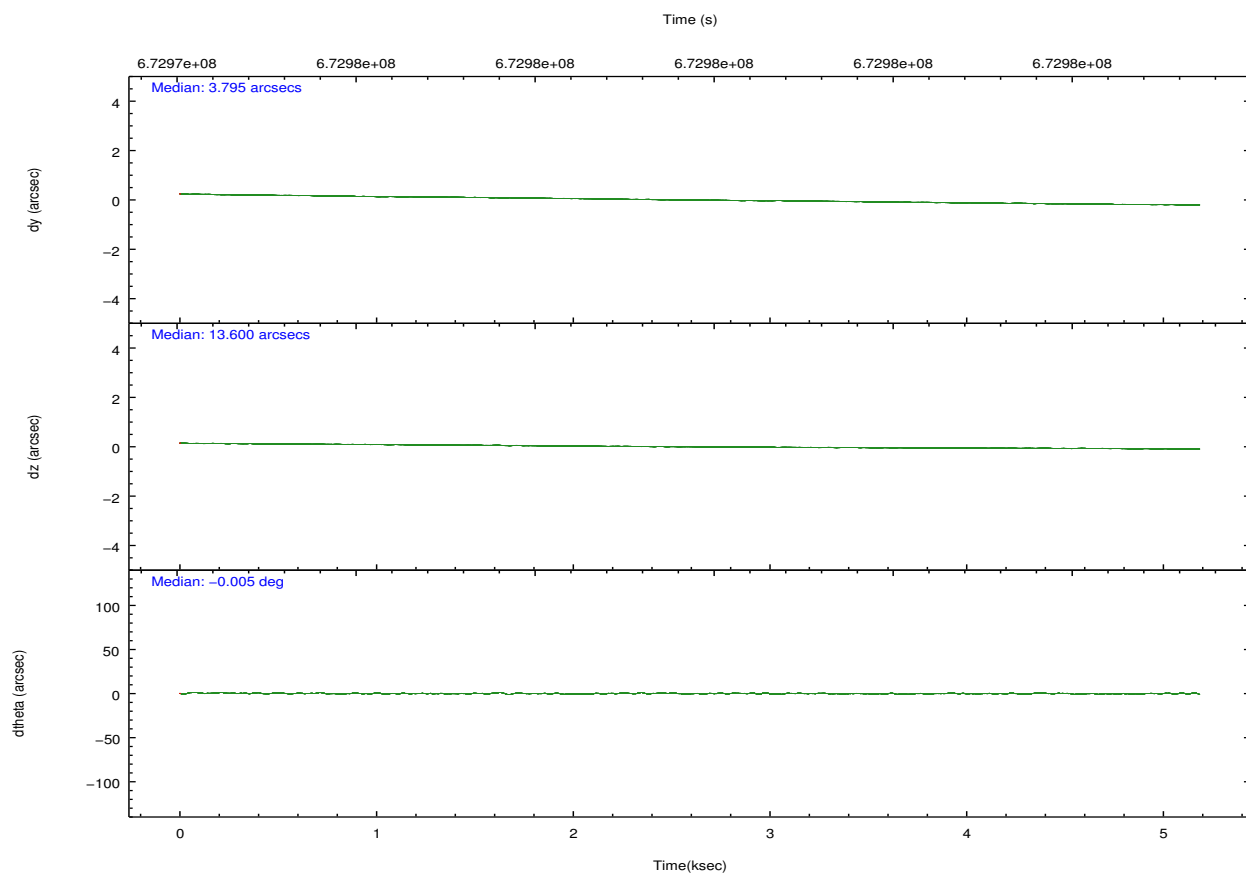
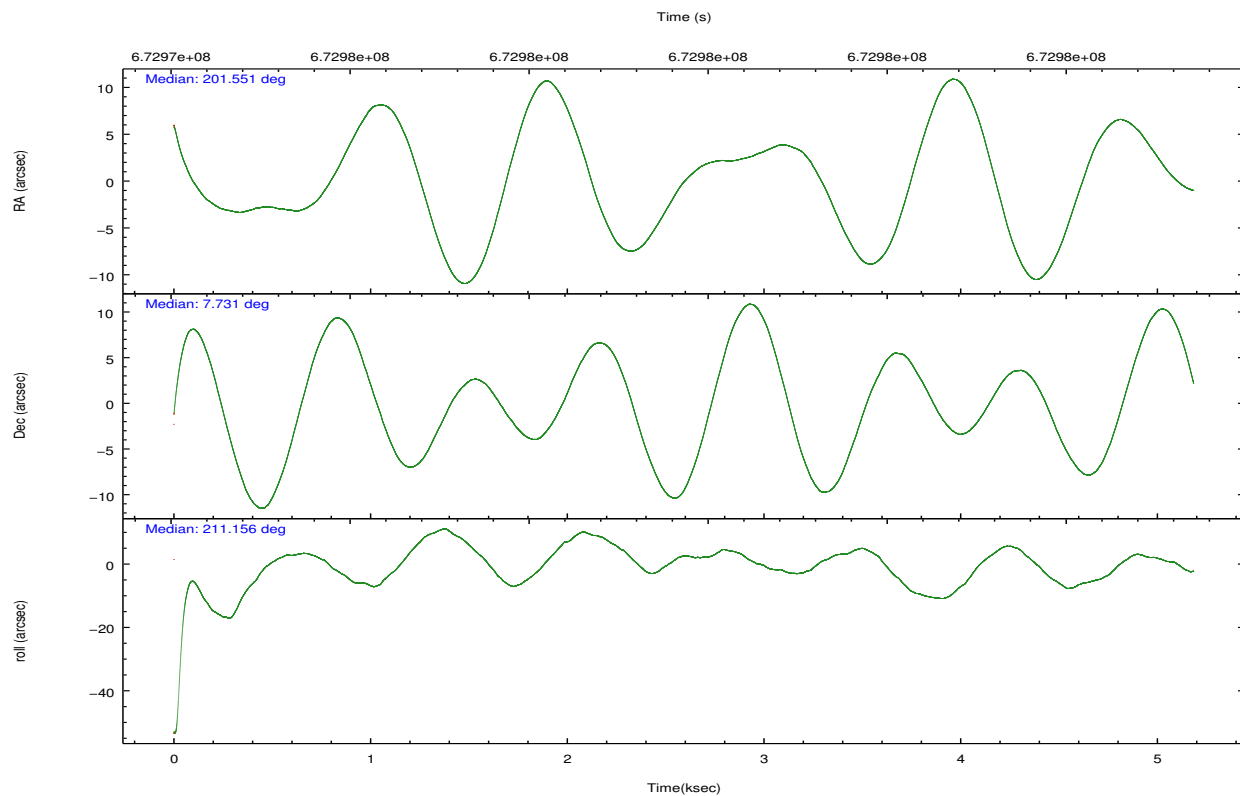
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	201.563600	201.5505789559232
[deg] Pointing Dec	7.754565	7.730401930015367
[deg] Pointing Roll	210.998052	211.1563072999535
[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)	672974472.184000	672973385.11456
Observation start date	2019-04-30T01:20:03	2019-04-30T01:03:05
[s] Observation end time (MET)	672979472.184000	672980595.4774899
Observation end date	2019-04-30T02:43:23	2019-04-30T03:03:15
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	O2	N
CCD I3 on	O3	N
CCD S0 on	N	N
CCD S1 on	O1	N
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	3	3
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect



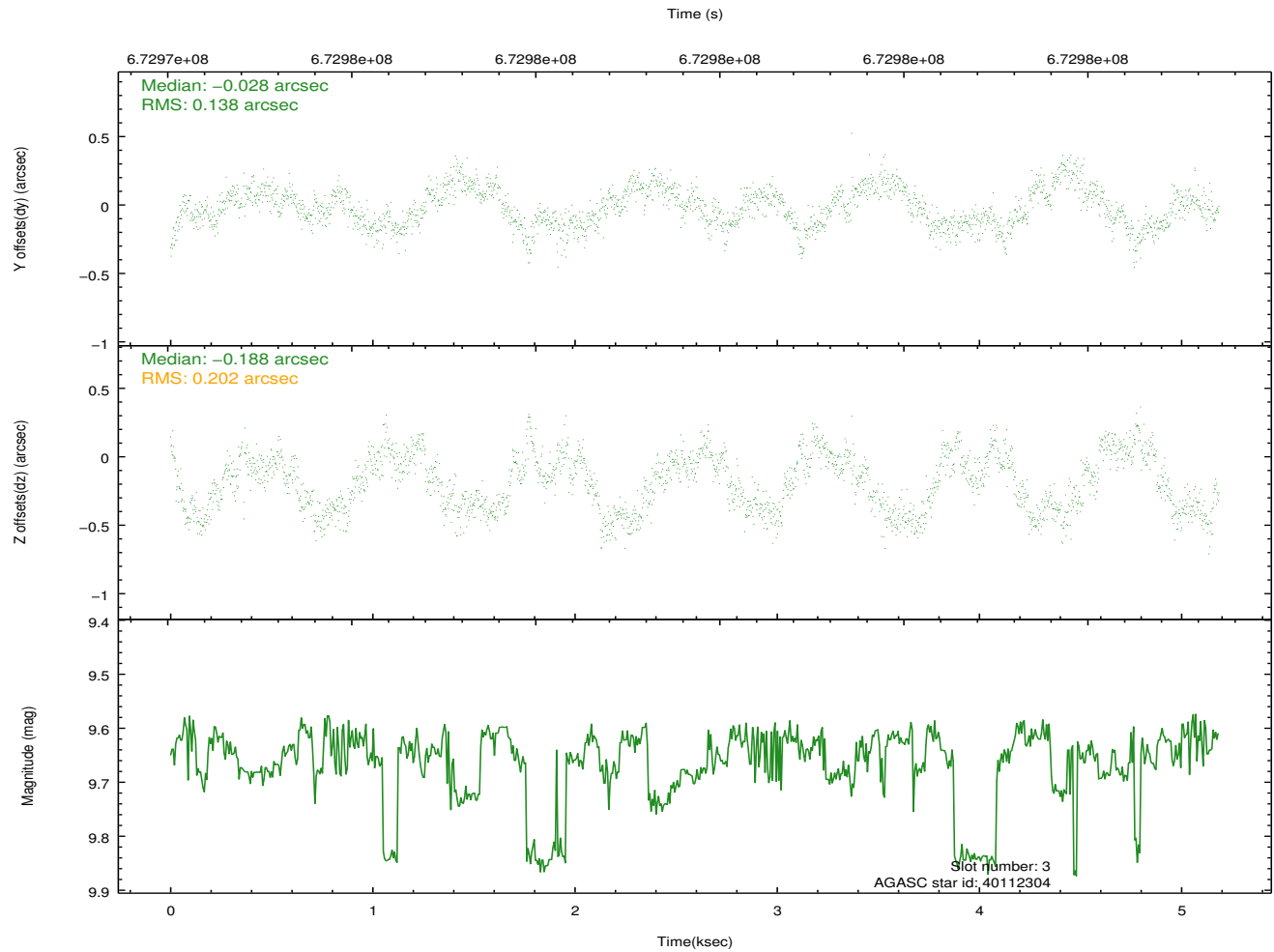
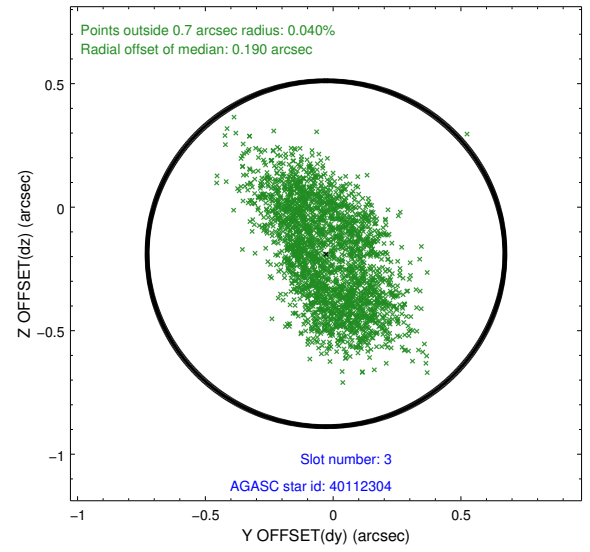
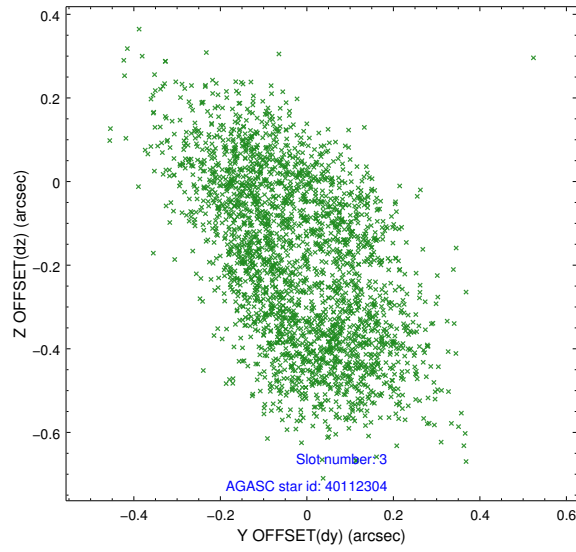


Slot Statistics

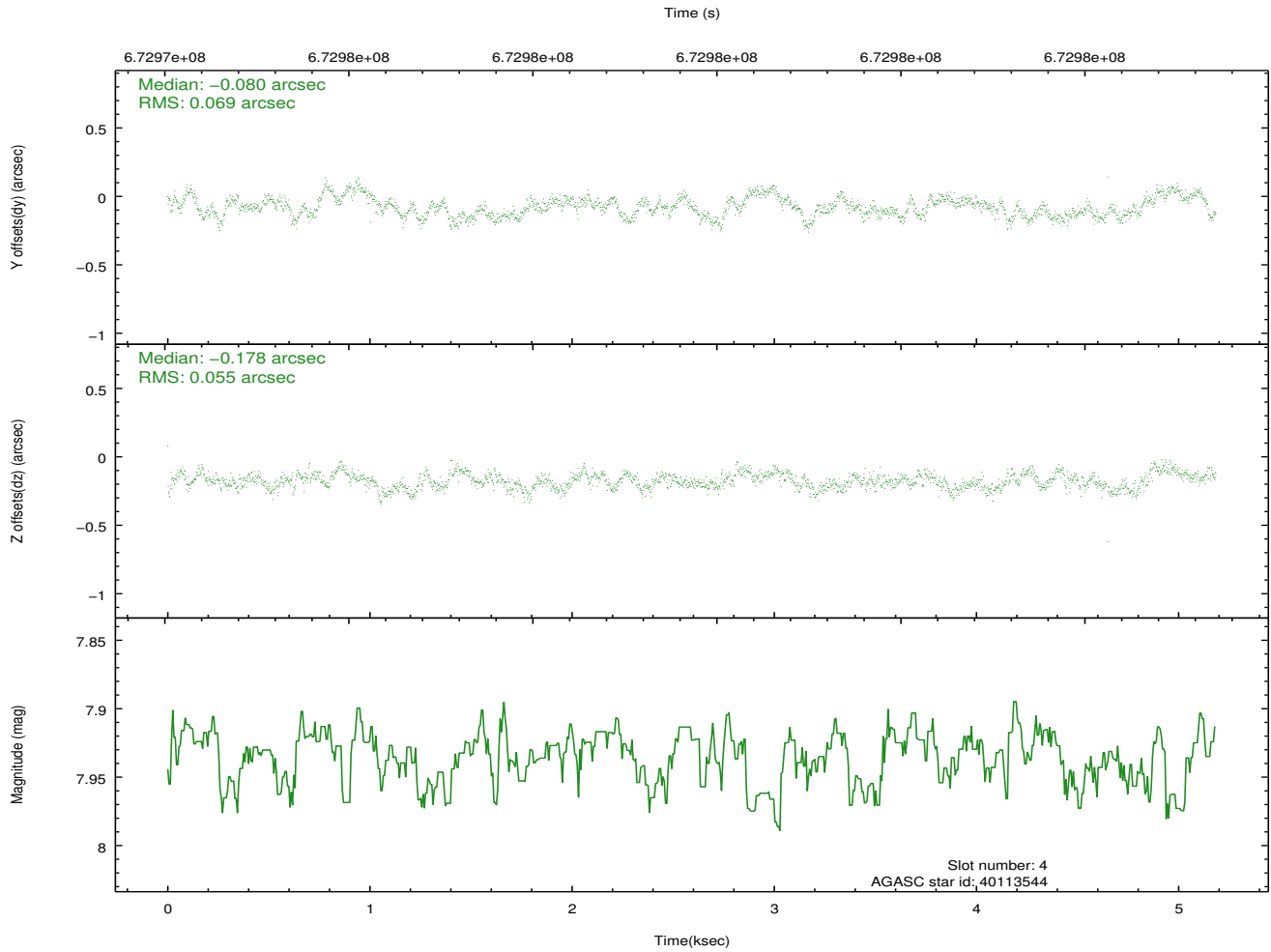
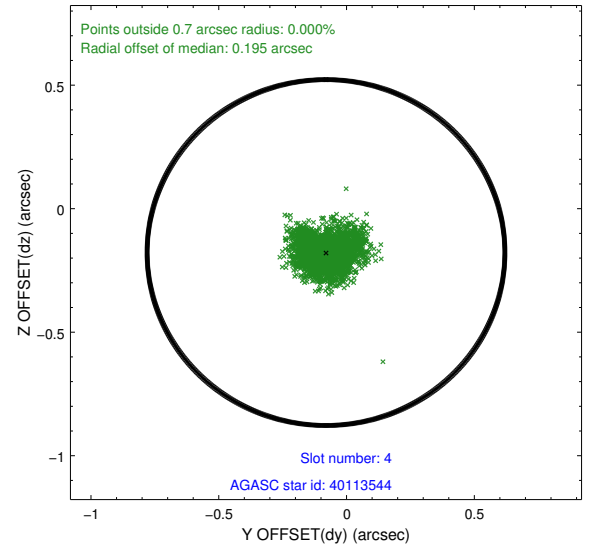
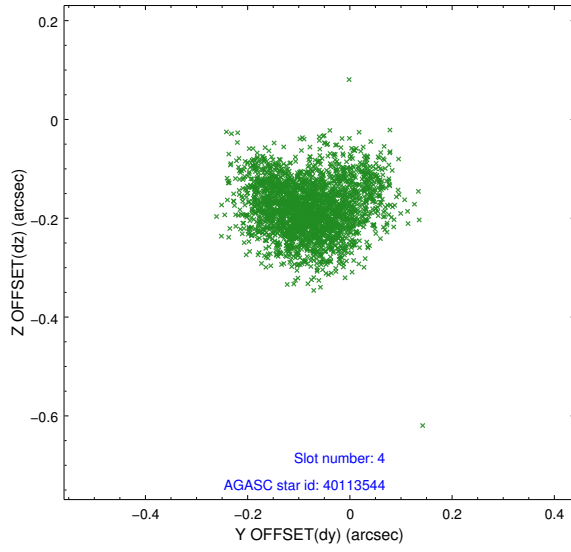
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.12	1265	1.000	-0.235	-0.162	0.009	0.014	0.000000	0.000000	-756.66	-1735
1	FID		ACIS-S-4	7.24	1265	1.000	0.571	0.156	0.009	0.017	0.000000	0.000000	2156.85	172
2	FID		ACIS-S-5	7.24	1265	1.000	-0.368	0.015	0.007	0.012	0.000000	0.000000	-1808.17	167
3	GUIDE	used	40112304	9.65	2514	1.000	-0.028	-0.188	0.264	0.402	202.225576	7.441058	-1444.45	2182
4	GUIDE	used	40113544	7.93	2527	1.000	-0.080	-0.178	0.095	0.148	201.675538	7.453262	217.03	1135
5	GUIDE	used	40114416	9.70	2526	1.000	-0.166	0.063	0.189	0.286	201.610541	7.400035	514.12	1180
6	GUIDE	used	116791824	9.15	2528	1.000	0.119	0.064	0.121	0.201	201.287828	7.911044	553.37	-988
7	GUIDE	used	116923528	9.73	2506	1.000	0.143	0.246	0.241	0.367	202.304546	7.771186	-2297.80	1309

2.4 Star Slots

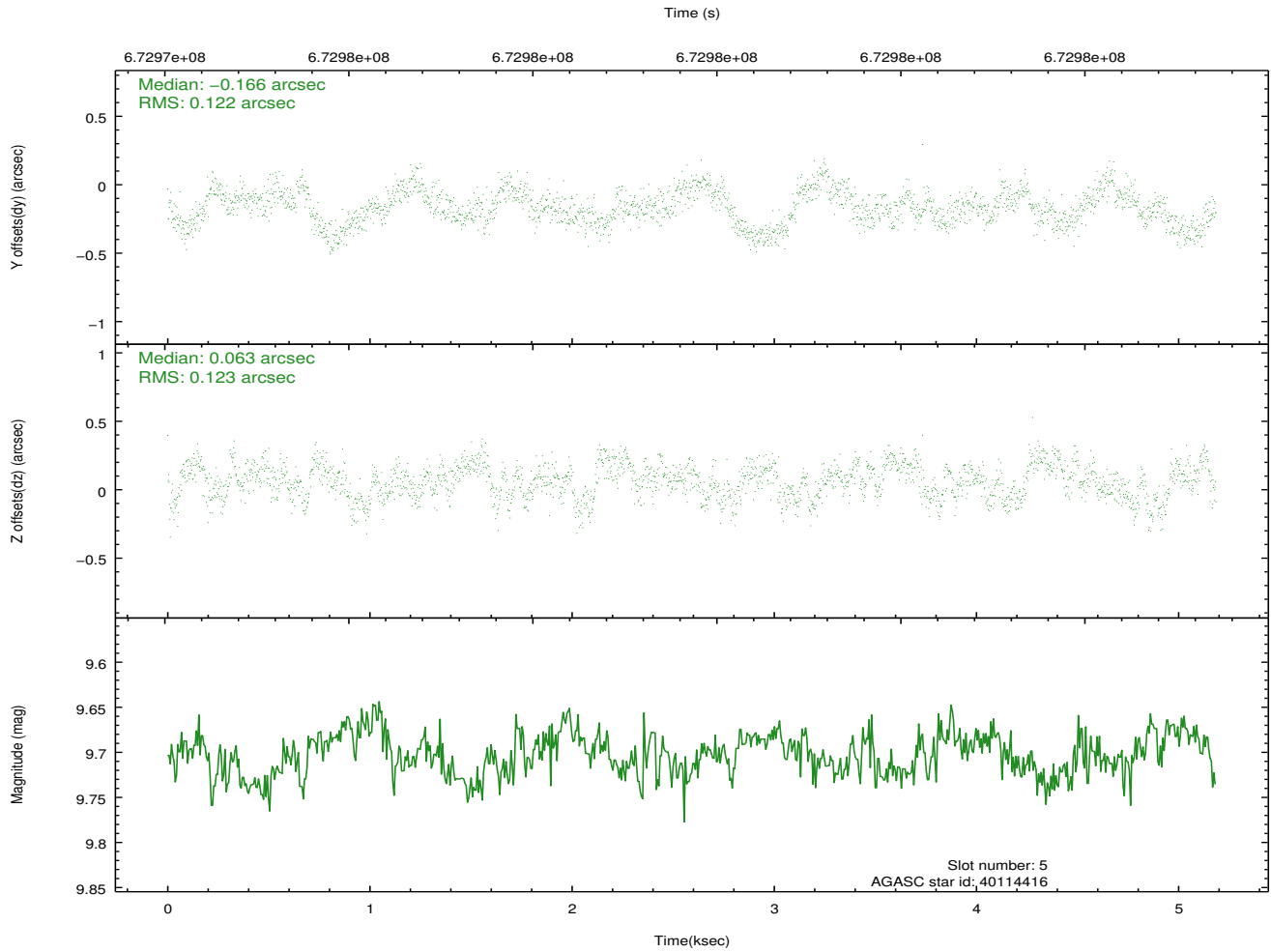
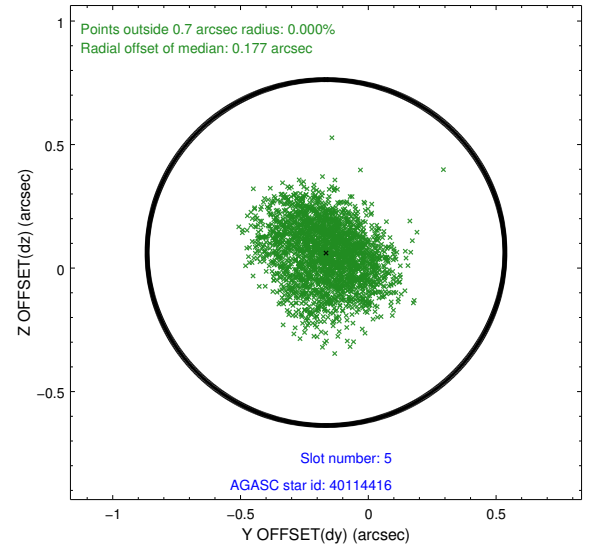
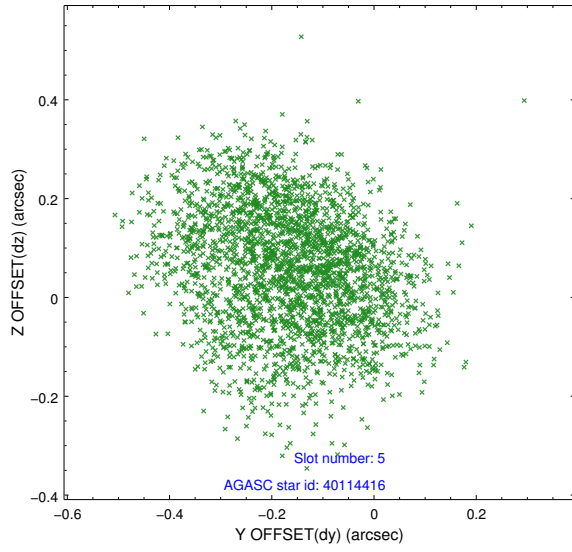
2.4.1 Slot 3



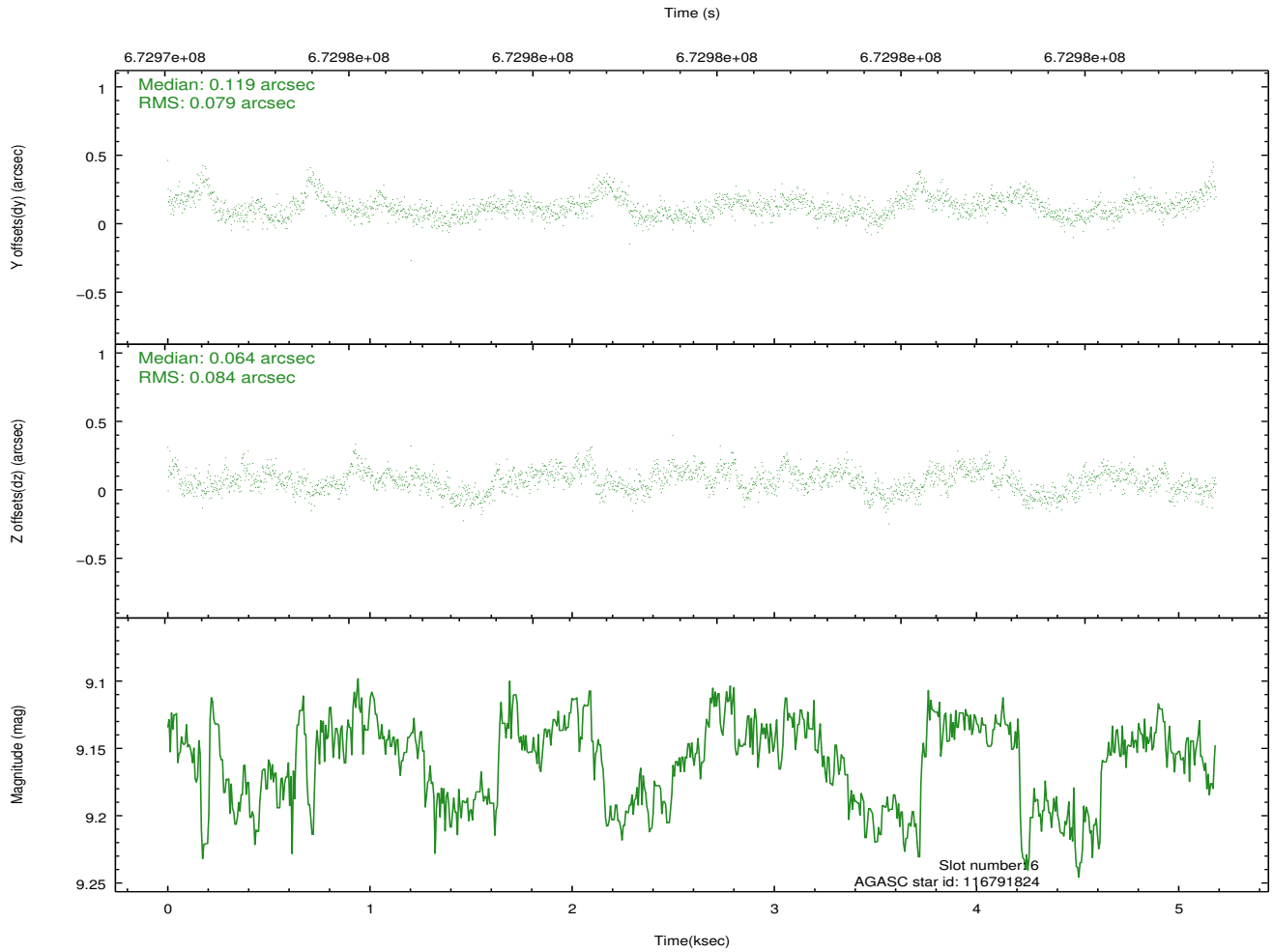
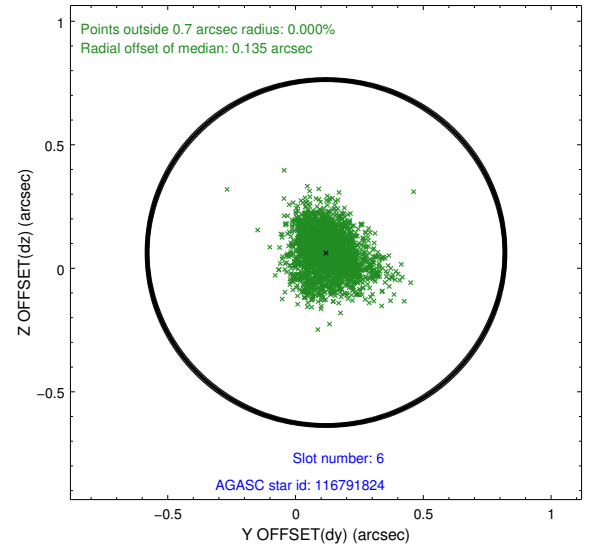
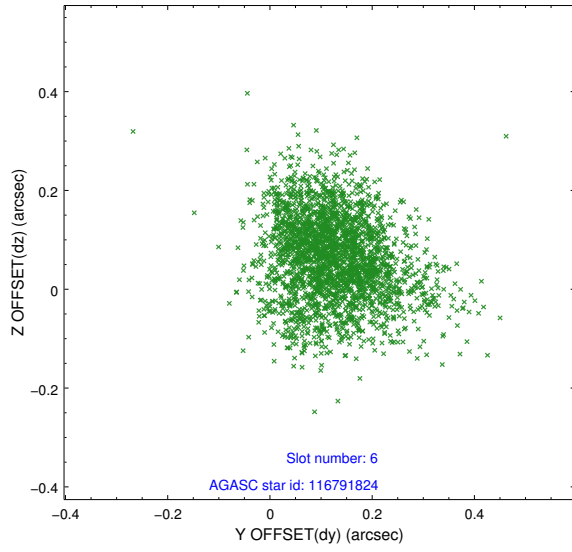
2.4.2 Slot 4



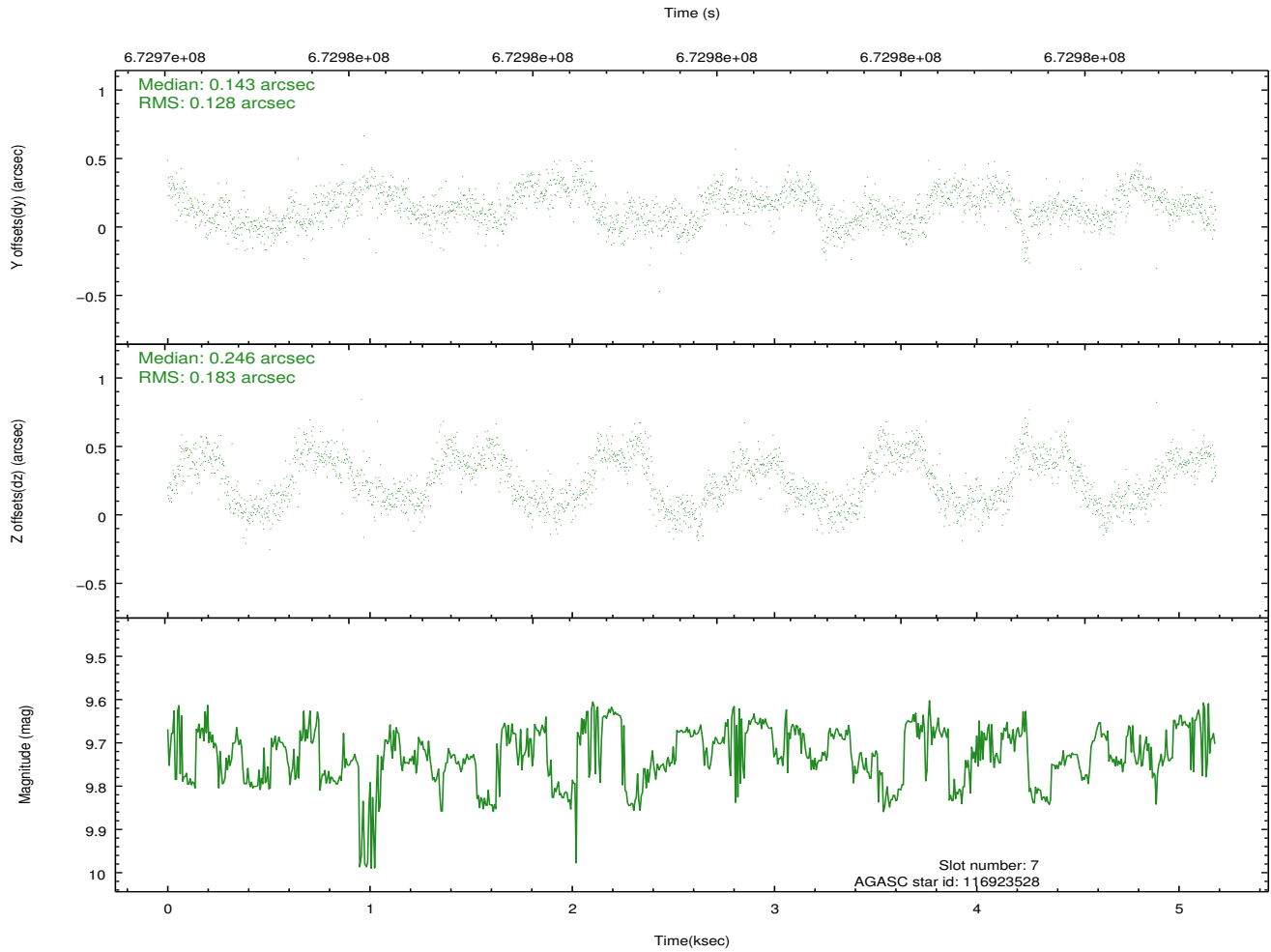
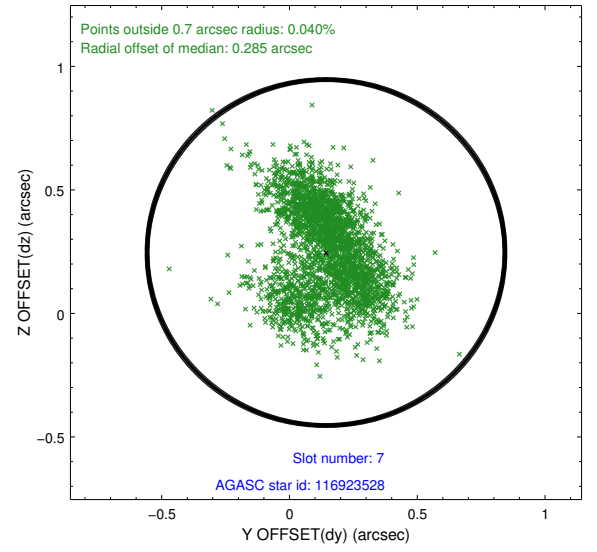
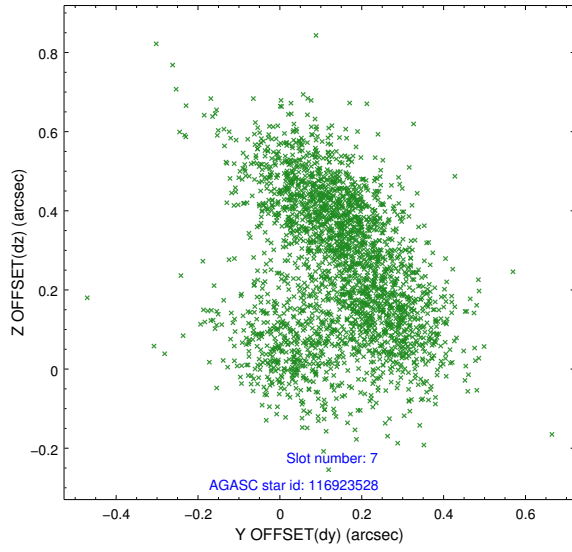
2.4.3 Slot 5



2.4.4 Slot 6

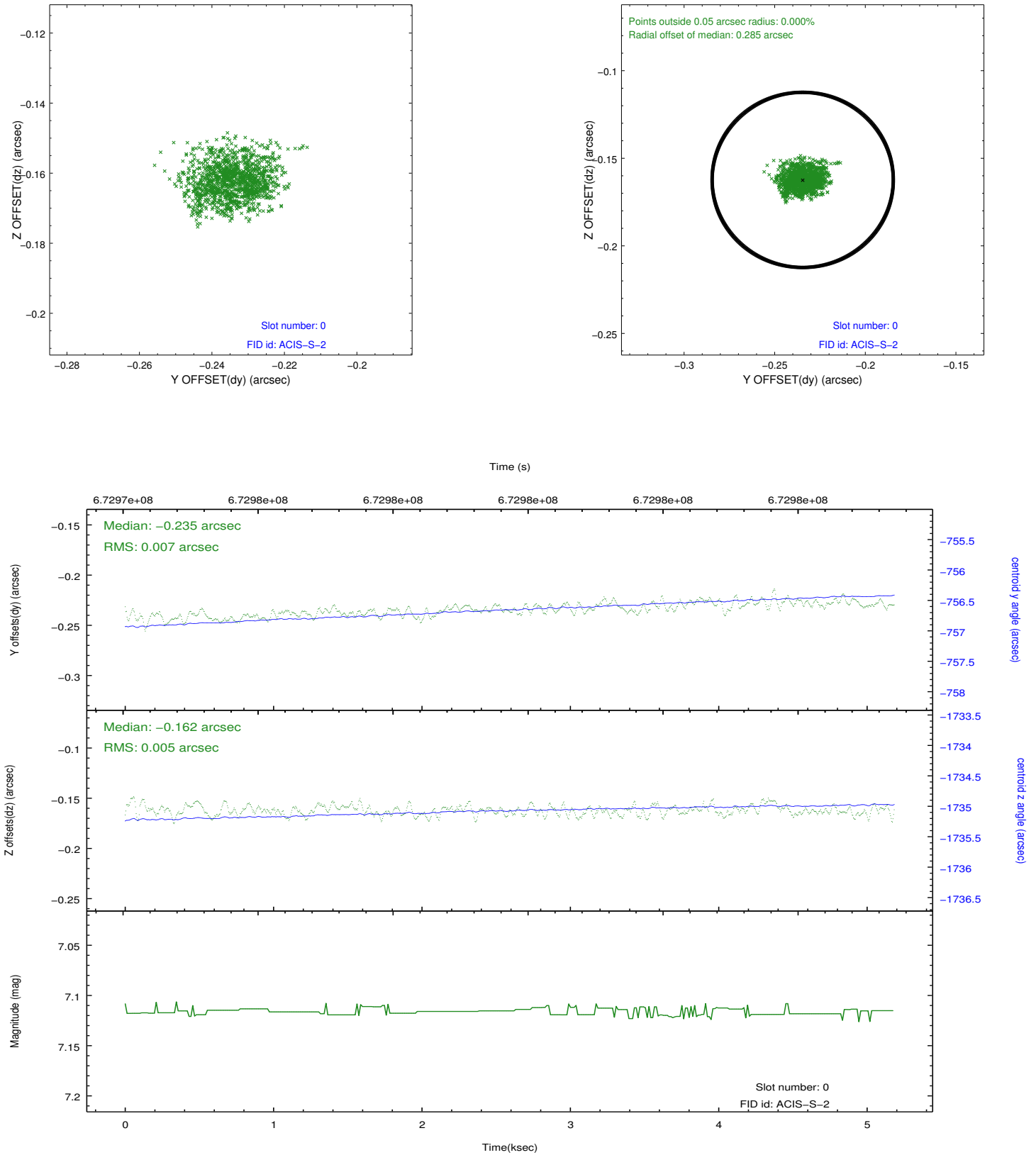


2.4.5 Slot 7

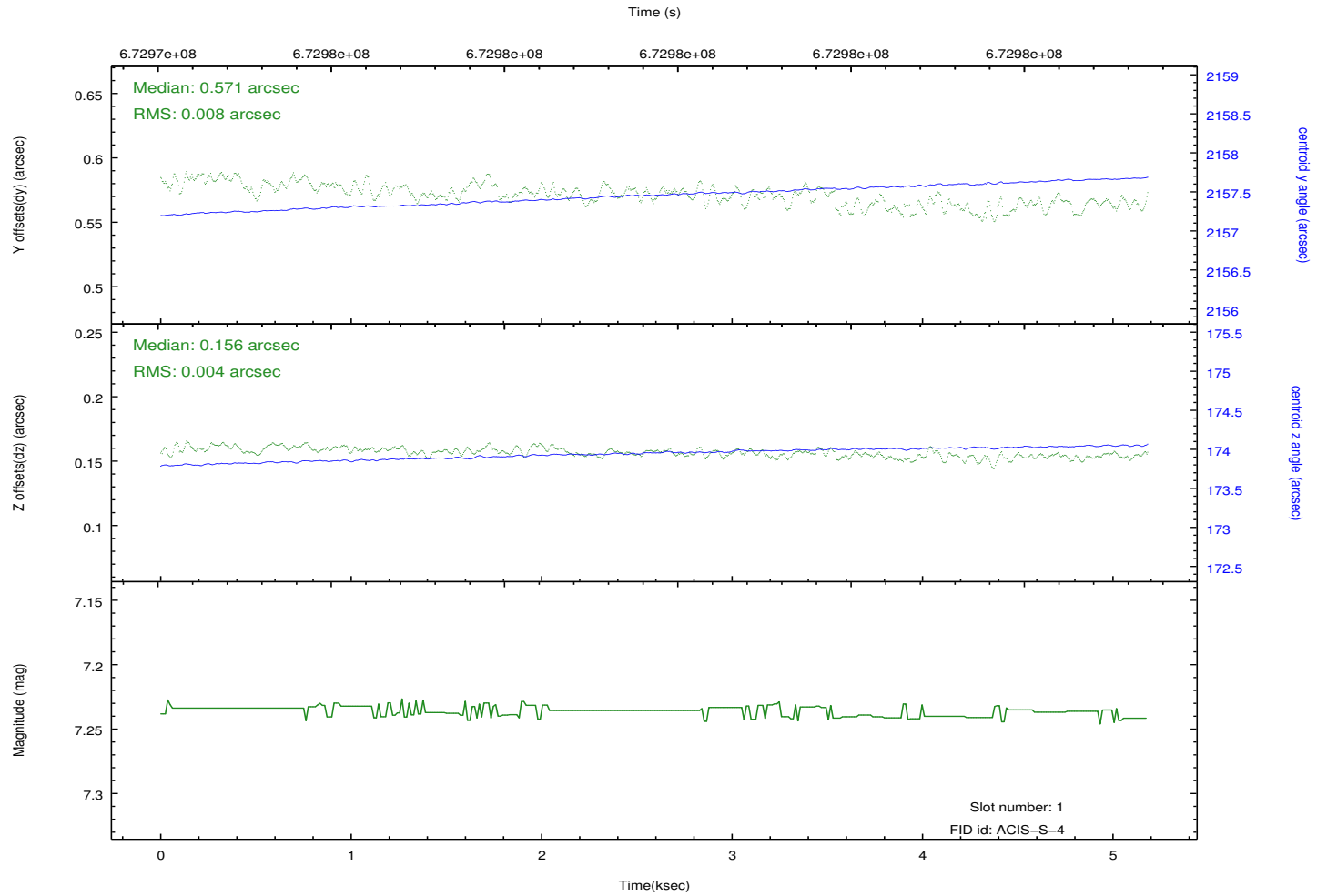
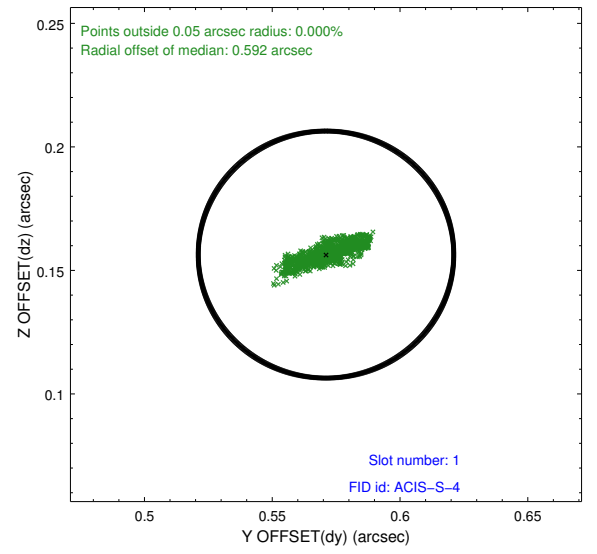
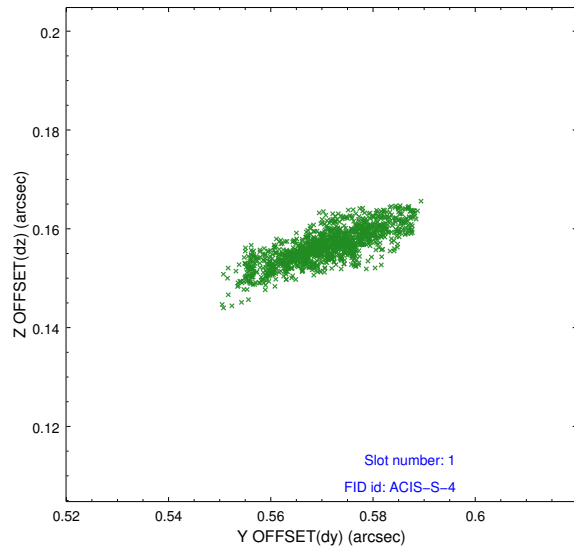


2.5 FID Slots

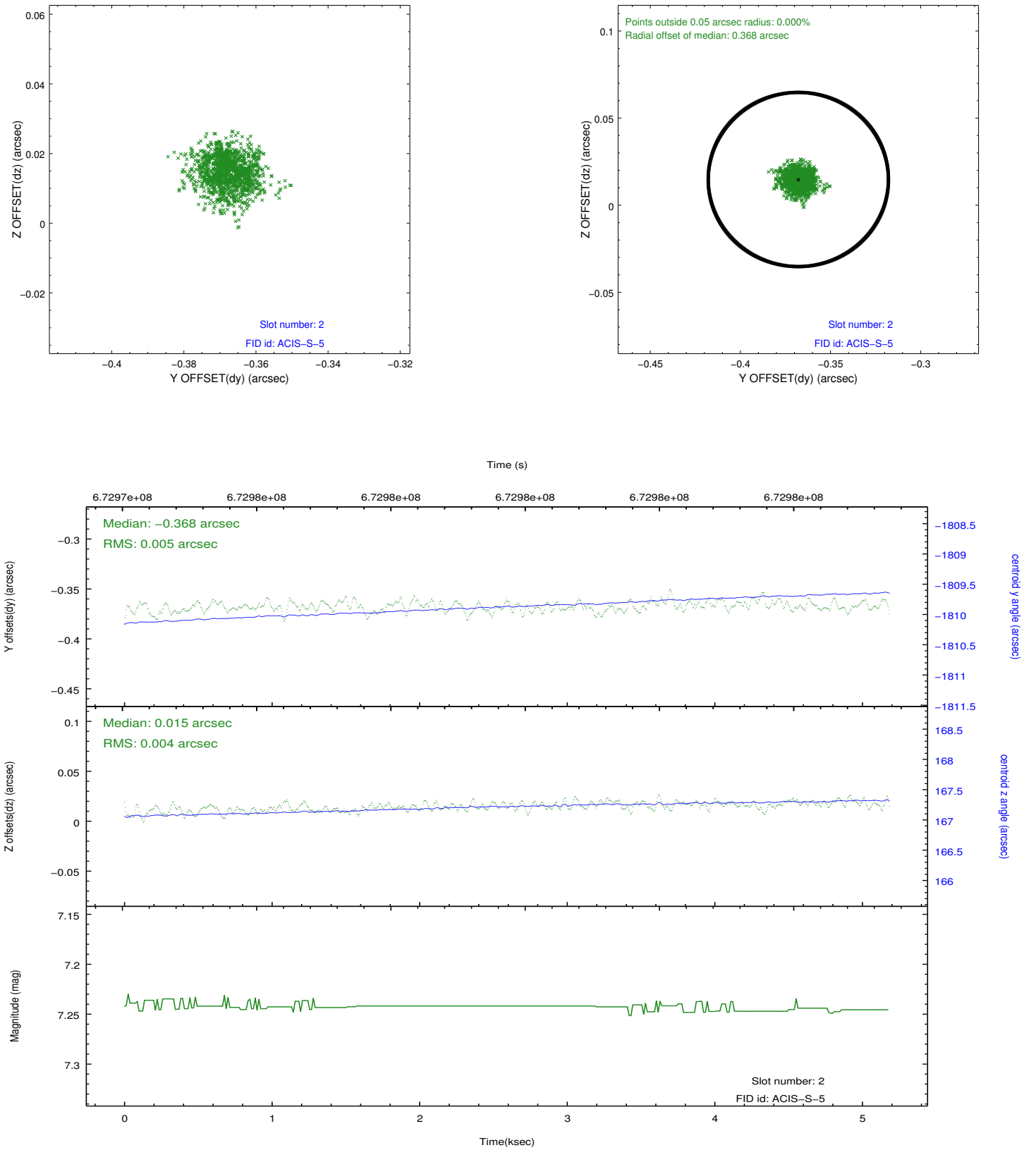
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2019.04.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.0716000391245

A.2 Comments

Monitor constraint met. Optional chips S1, I2, and I3 not included.

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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/A_CIS_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.