

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 20771 - L2 Version 1
Chandra X-Ray Center

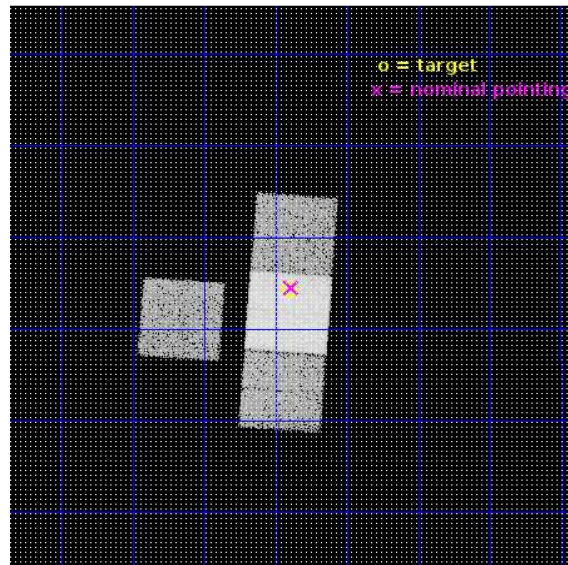
L2 Processing Date : Mar 8 2019

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
A	Summary	17
A.1	Status	17
A.2	Comments	17

1 Front

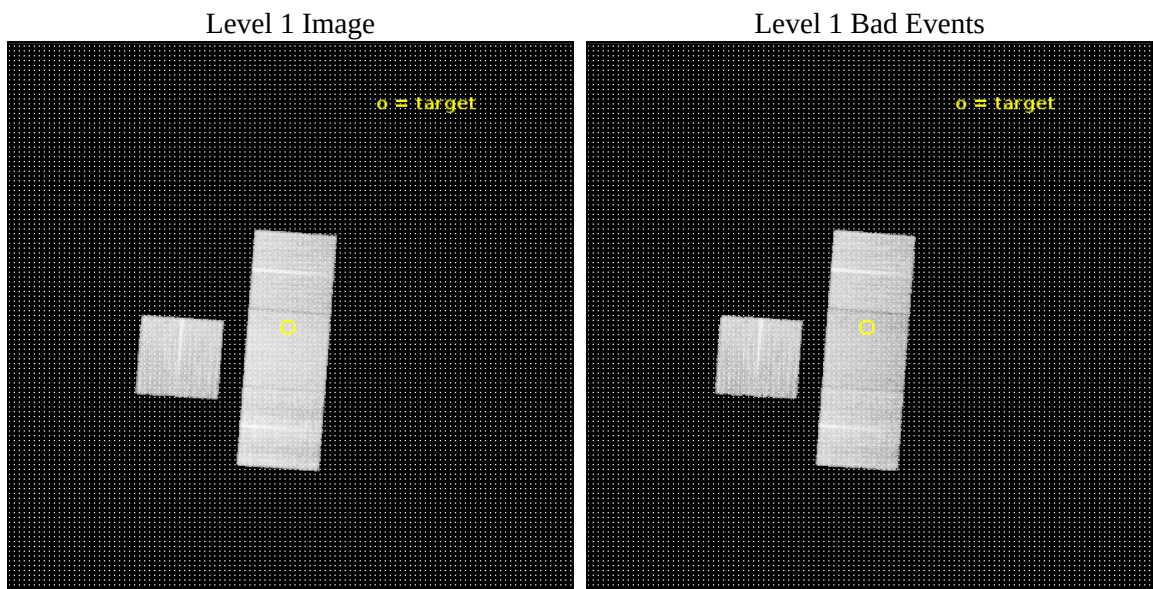
seq_num	703636	Sequence number
obs_id	20771	Observation id
title	A Chandra Survey of Nearby Optical AGN Candidates in Dwarf Galaxies	
observer	Ralph Kraft	Principal investigator
object	NGC 4282	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	185.10125	Observer's specified target RA [deg]
dec_targ	5.572833	Observer's specified target Dec [deg]
ra_nom	185.09724889649	Nominal RA [deg]
dec_nom	5.5750432443918	Nominal Dec [deg]
roll_nom	94.1570188691	Nominal Roll [deg]
revision	1	Processing version of data
ontime	15062.900115967	Sum of GTIs [s]
livetime	14866.092236806	Livetime [s]
ontime3	15056.6179353	Sum of GTIs [s]
ontime6	15059.759035826	Sum of GTIs [s]
ontime7	15062.900115967	Sum of GTIs [s]
ontime8	15059.759035826	Sum of GTIs [s]
l2events	98606	Number of level 2 events



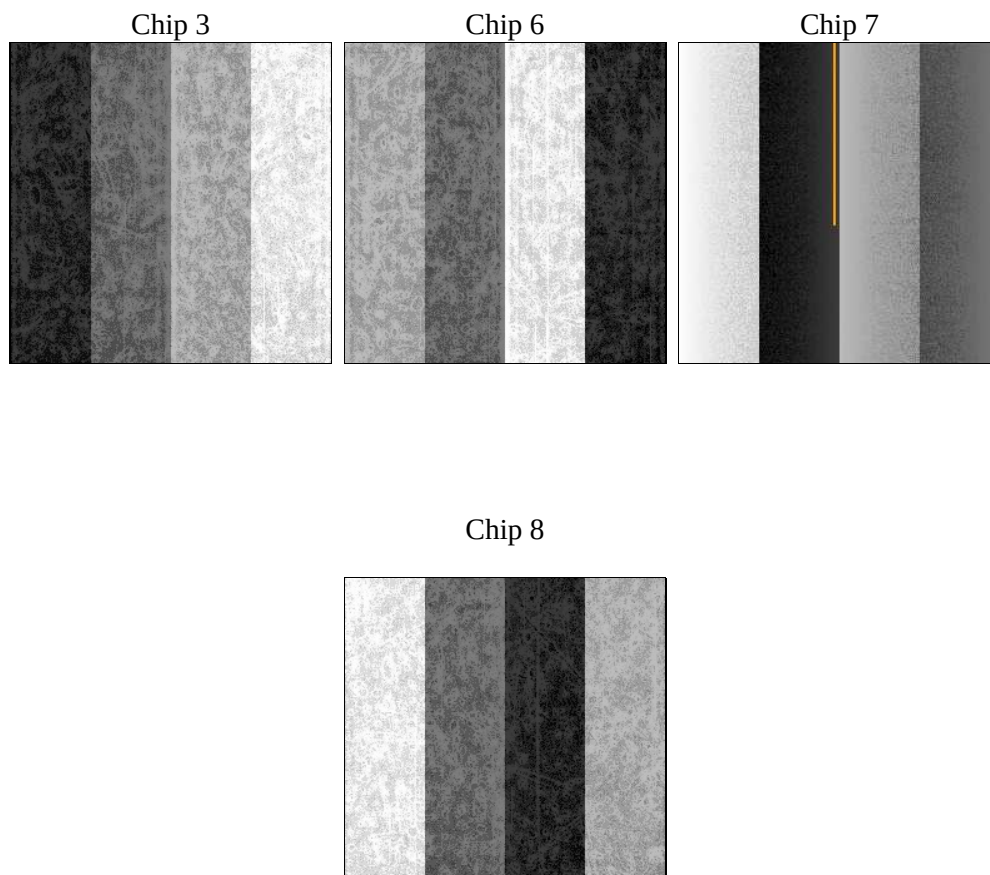
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	15062.900115967	Sum of GTIs [s]
caldsver	4.8.2	 	ontime3	15056.6179353	Sum of GTIs [s]
date	2019-03-08T16:57:46	Date and time of file creation	ontime6	15059.759035826	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	15062.900115967	Sum of GTIs [s]
			ontime8	15059.759035826	Sum of GTIs [s]
			l1events	544605	Number of level 1 events

2.1.4 Events

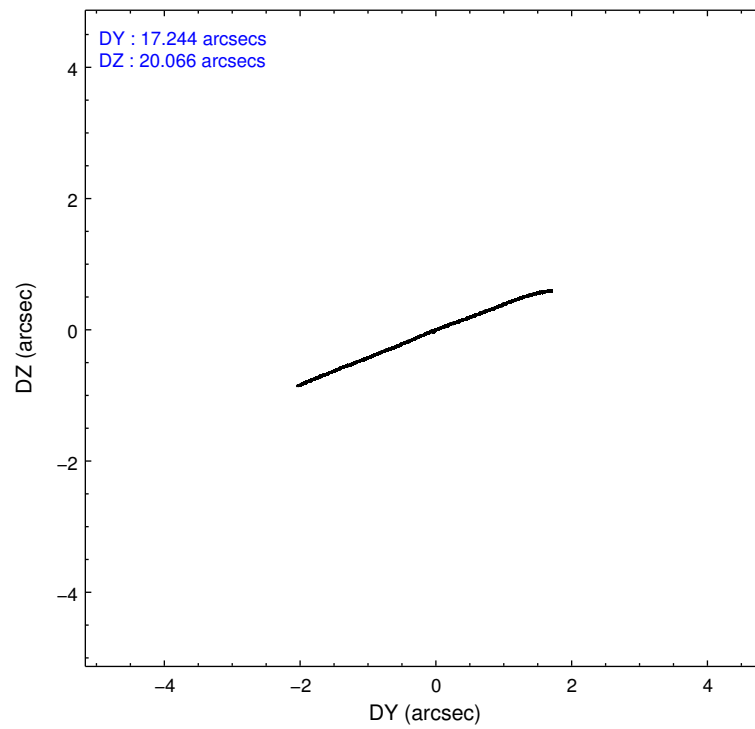
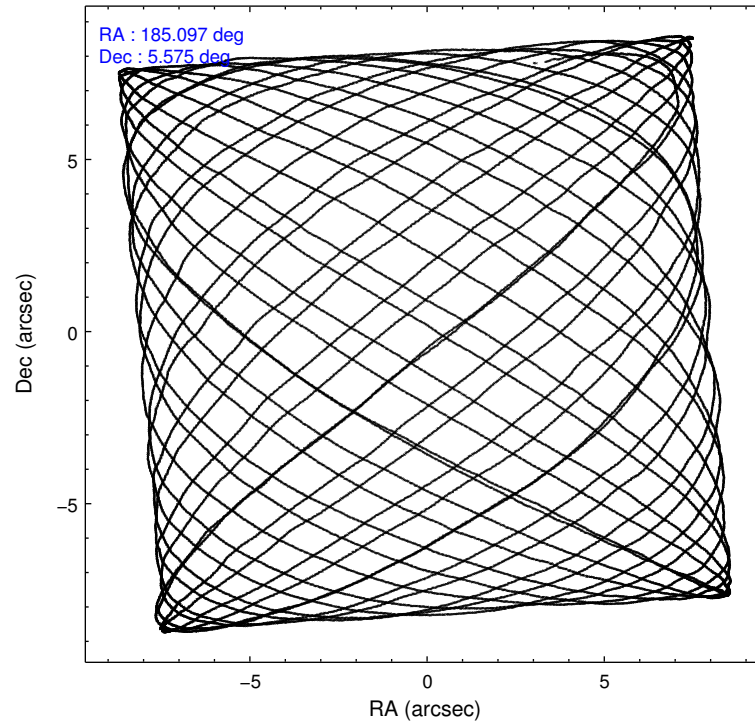
	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	115714	125701	151078	152112
rejected events	103999	112377	86331	113950
rejected %	89%	89%	57%	74%

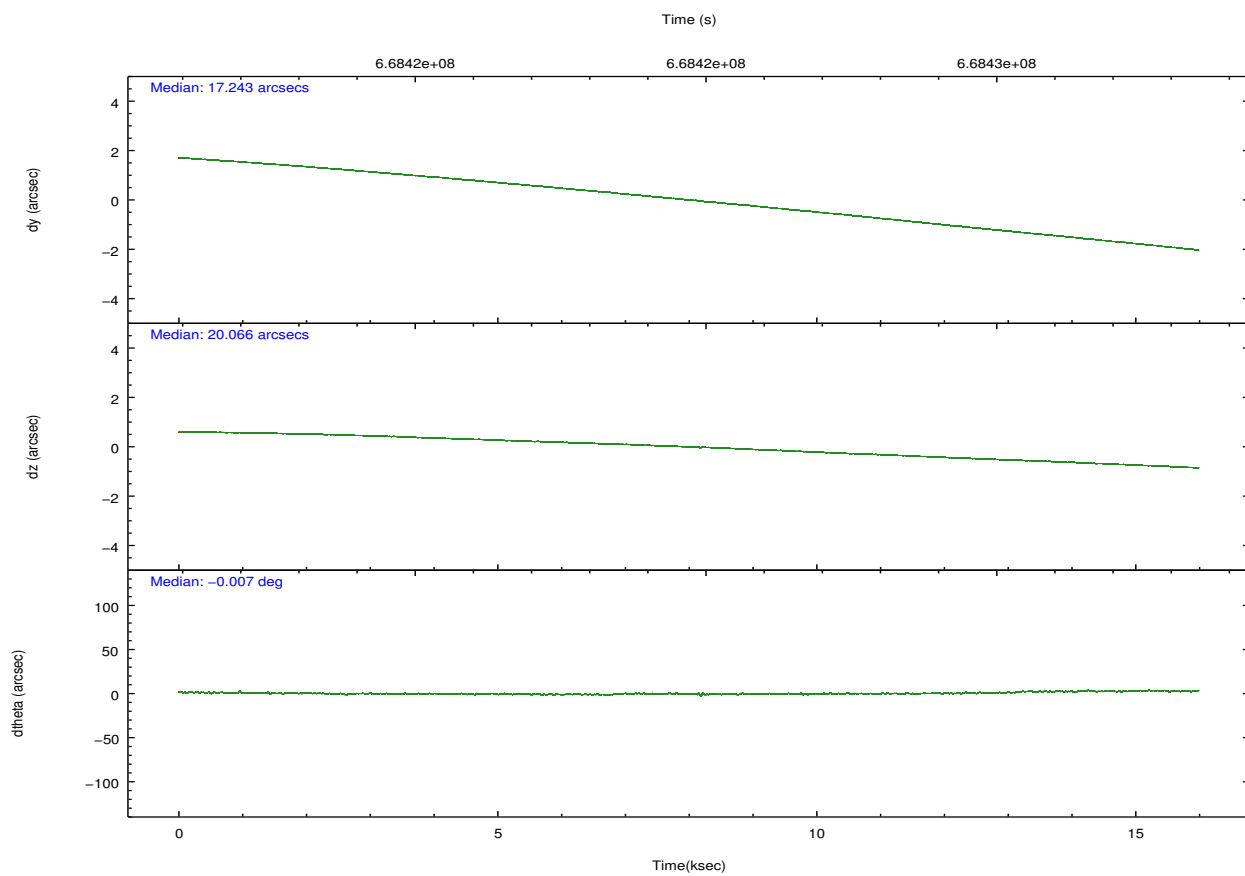
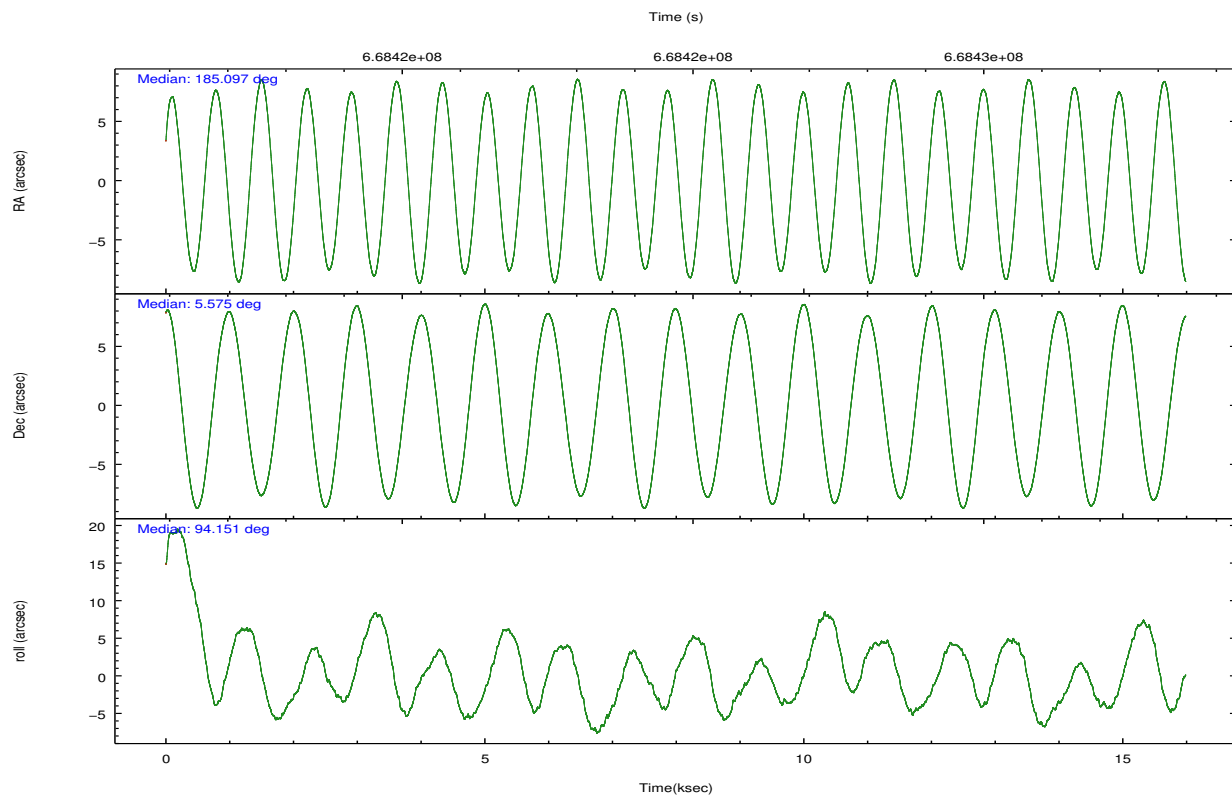
	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	4051	3902	5311	10218
	3%	3%	3%	6%
grade 1 events	53	55	224	113
	0%	0%	0%	0%
grade 2 events	2605	3756	13450	9843
	2%	2%	8%	6%
grade 3 events	1150	1070	5079	3556
	0%	0%	3%	2%
grade 4 events	1177	1064	5193	3426
	1%	0%	3%	2%
grade 5 events	5121	4857	14638	7751
	4%	3%	9%	5%
grade 6 events	2734	3534	35732	11123
	2%	2%	23%	7%
grade 7 events	98823	107463	71451	106082
	85%	85%	47%	69%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-3678	ACIS-3678	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	185.113019	185.0972488964929	CCD I2 on	O1	N
[deg] Pointing Dec	5.552542	5.575043244391833	CCD I3 on	Y	Y
[deg] Pointing Roll	93.998857	94.15701886910004	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	Y	Y
[s] Observation start time (MET)	668417696.184000	668416422.92937	CCD S5 on	N	N
Observation start date	2019-03-08T07:33:47	2019-03-08T07:13:42	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	668432696.184000	668433487.64289	On-chip summing requested	N	N
Observation end date	2019-03-08T11:43:47	2019-03-08T11:58:07	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



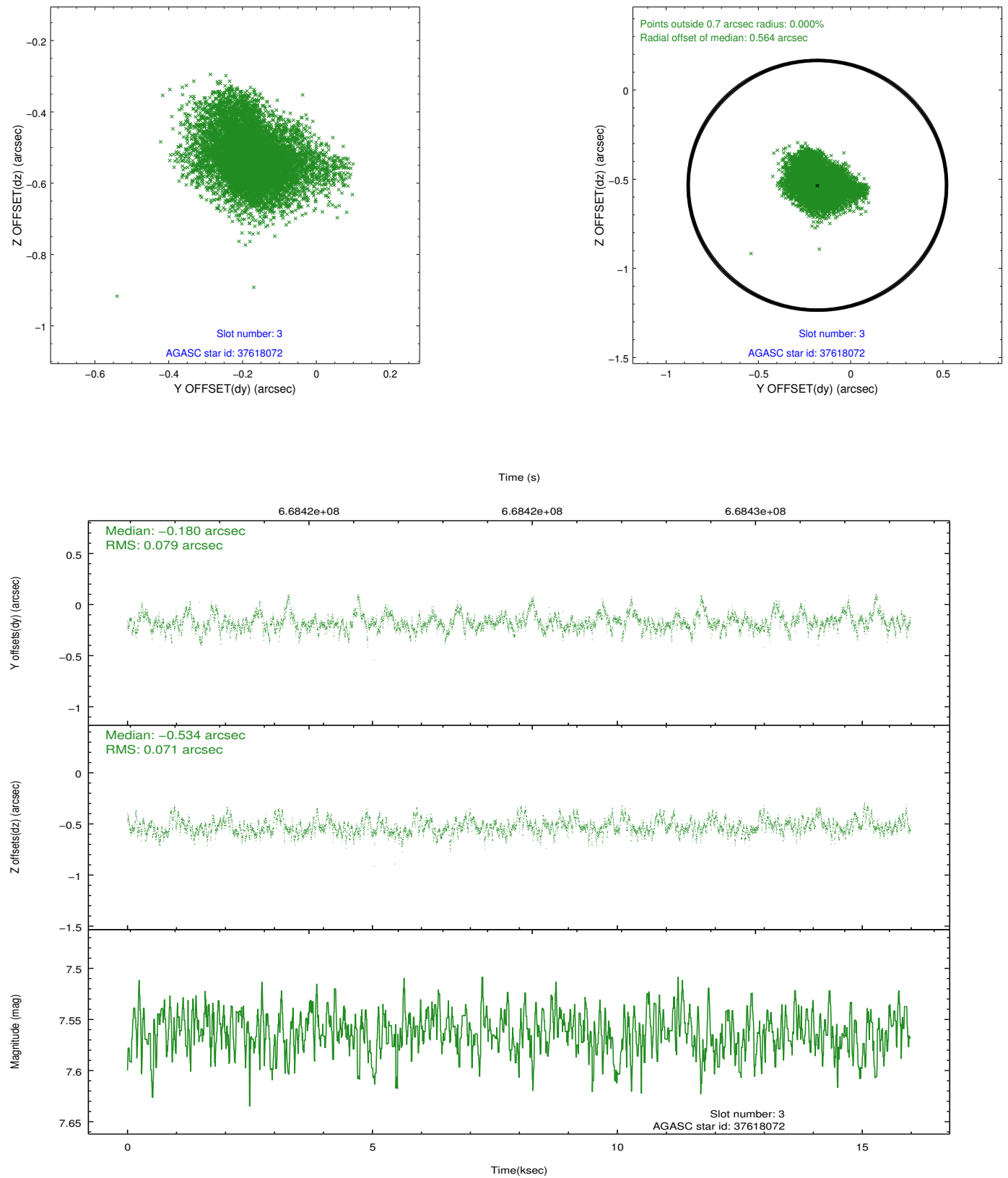


Slot Statistics

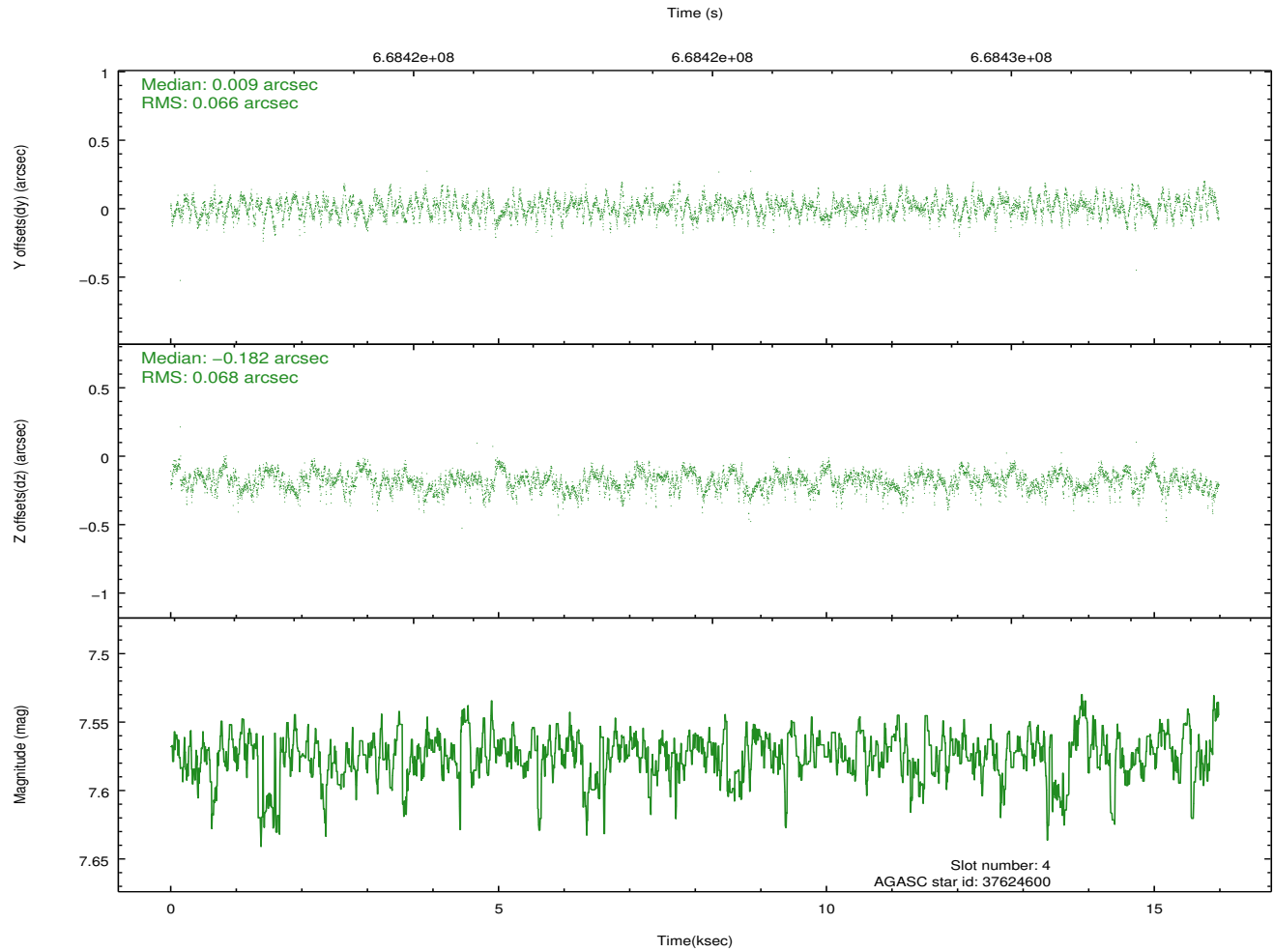
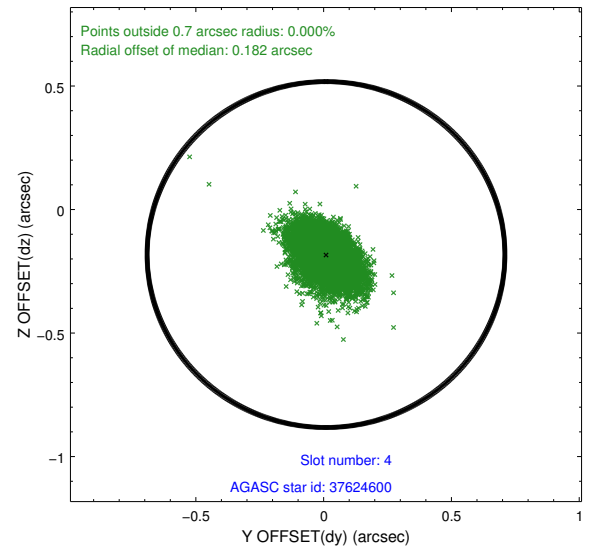
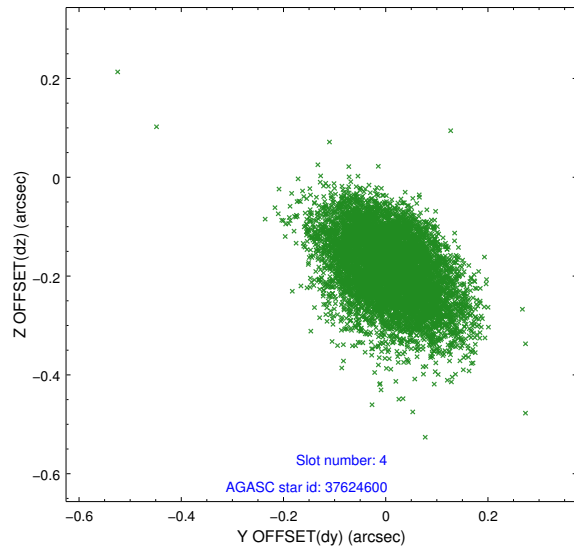
id	status	used	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.13	3900	1.000	-0.370	-0.242	0.014	0.028	0.000000	0.000000	-770.51 -1741
1	FID		ACIS-S-4	7.25	3900	1.000	0.849	0.242	0.013	0.022	0.000000	0.000000	2143.77 167
2	FID		ACIS-S-5	7.22	3900	1.000	-0.508	0.008	0.012	0.020	0.000000	0.000000	-1823.23 160
3	GUIDE	used	37618072	7.56	7798	1.000	-0.180	-0.534	0.112	0.188	184.947395	6.041175	1795.97 468
4	GUIDE	used	37624600	7.57	7794	1.000	0.009	-0.182	0.099	0.166	184.980551	5.671633	461.37 445
5	GUIDE	used	37625704	8.99	7794	1.000	0.016	0.069	0.127	0.227	184.538810	5.094234	-1501.58 2169
6	GUIDE	used	37755672	8.53	7789	1.000	0.127	0.254	0.159	0.283	185.670973	5.914938	1163.06 -2083
7	GUIDE	used	37757584	7.99	7798	1.000	0.038	0.372	0.110	0.195	185.728149	5.920720	1170.01 -2288

2.4 Star Slots

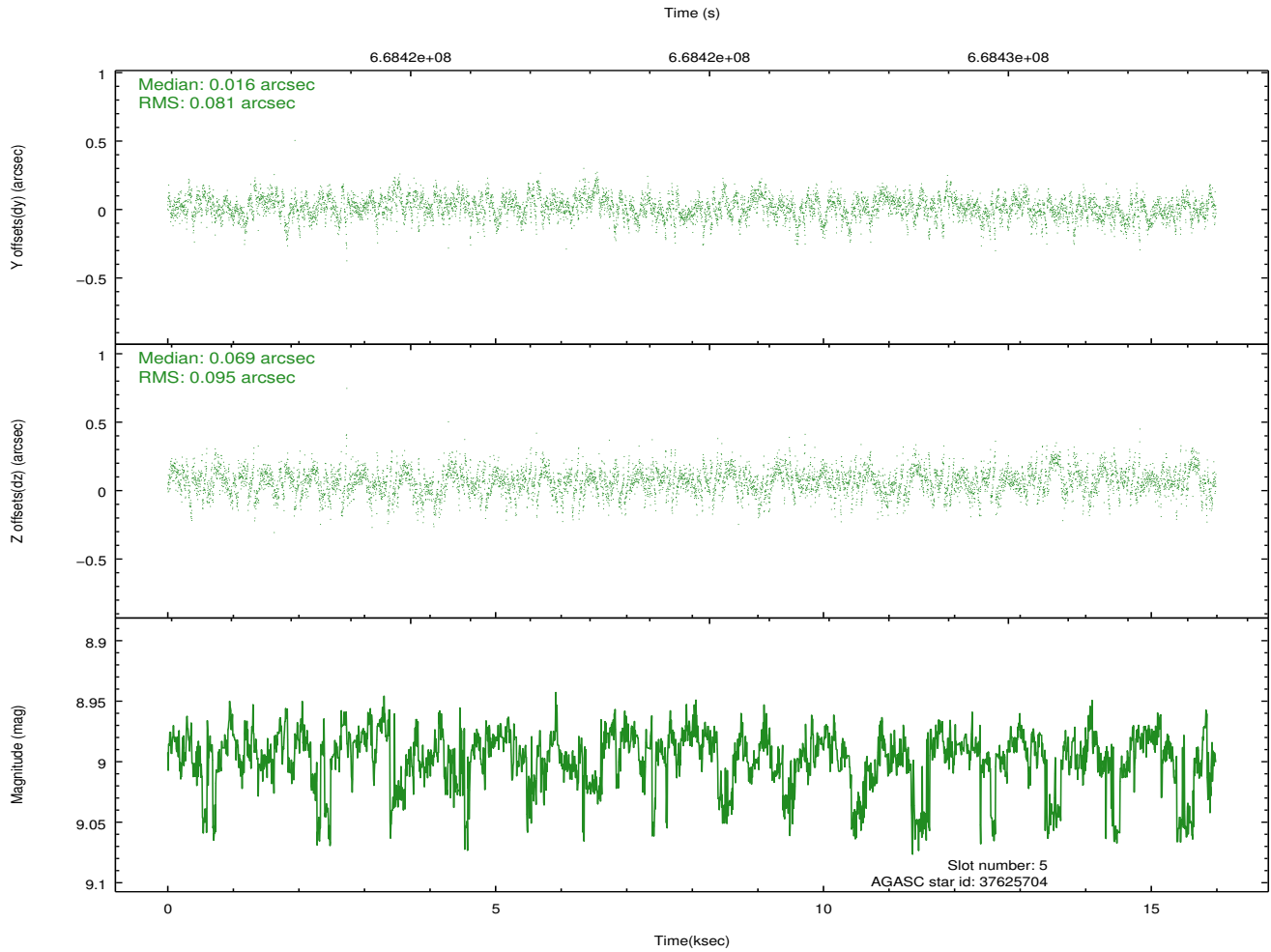
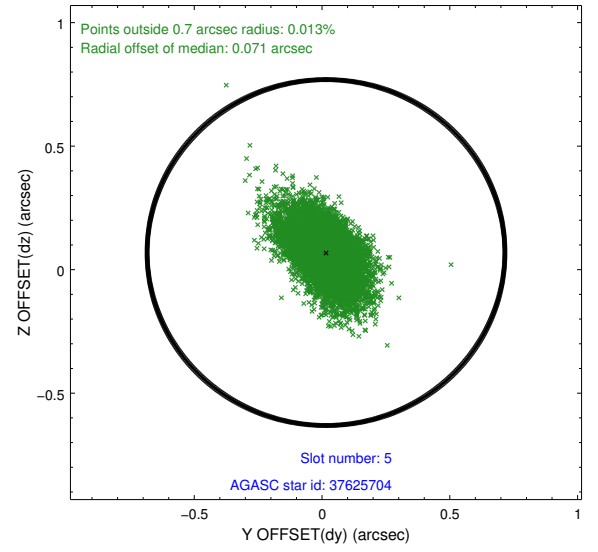
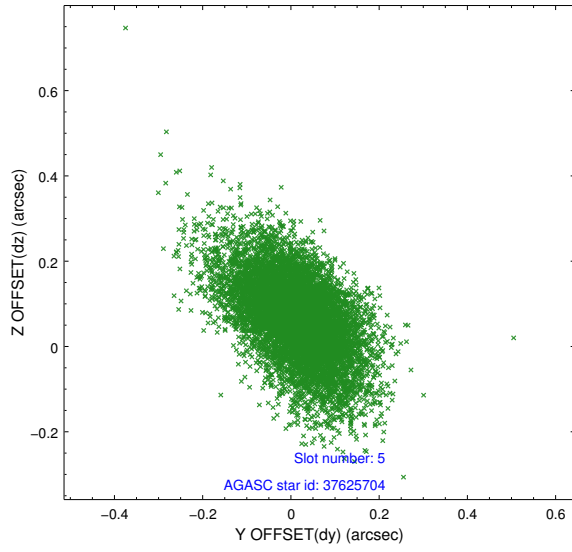
2.4.1 Slot 3



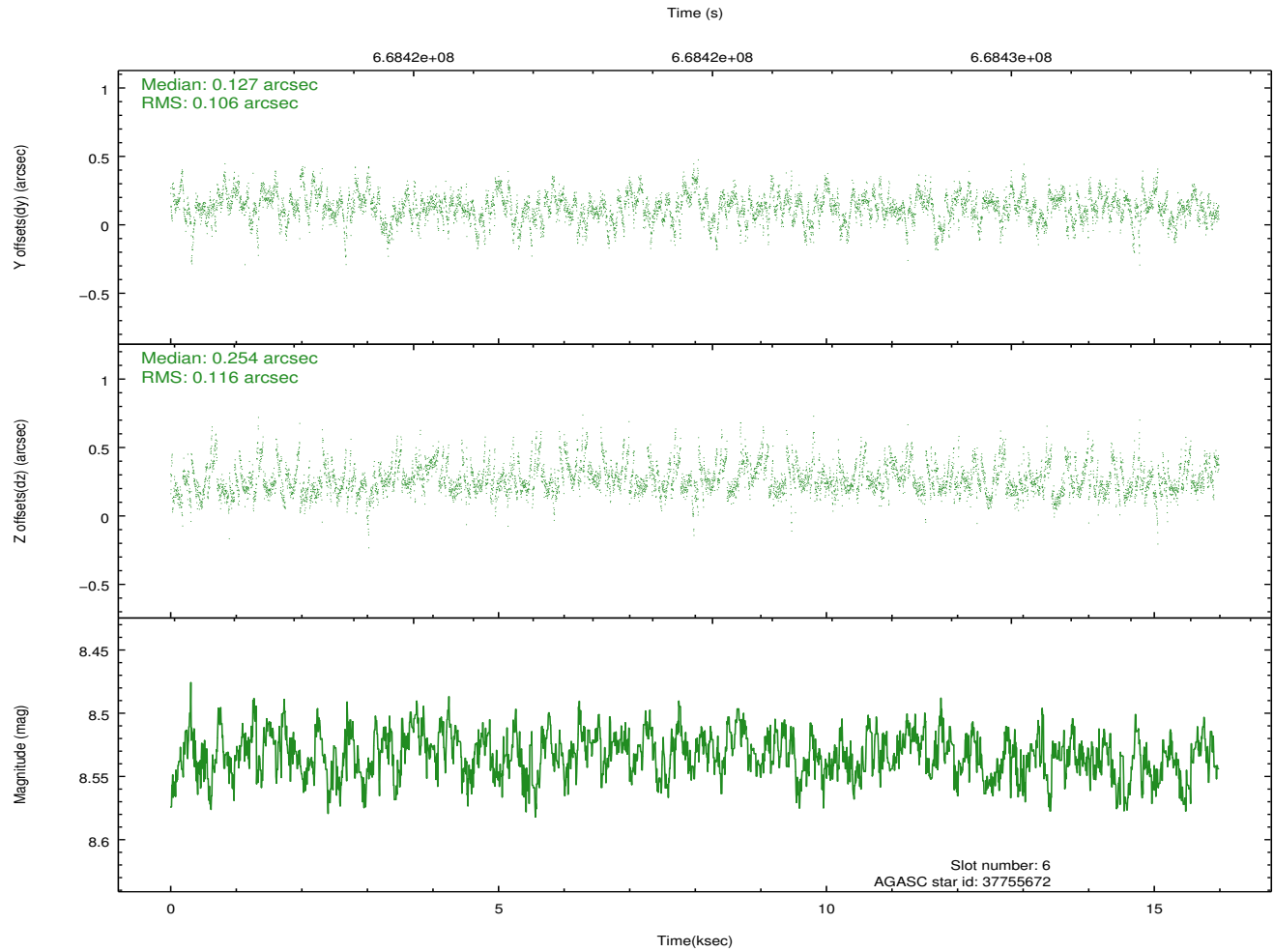
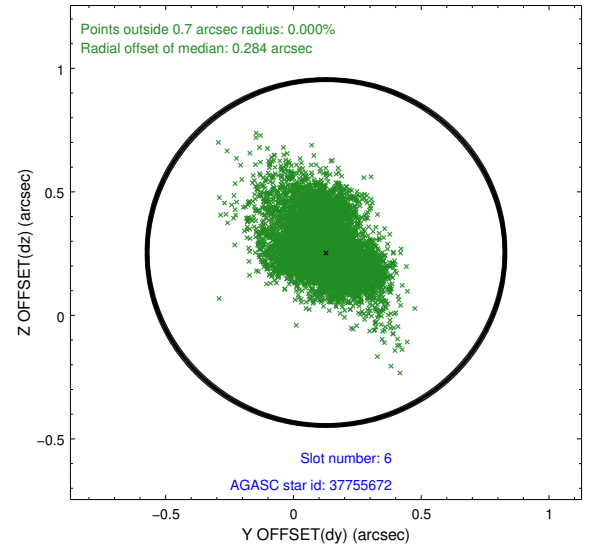
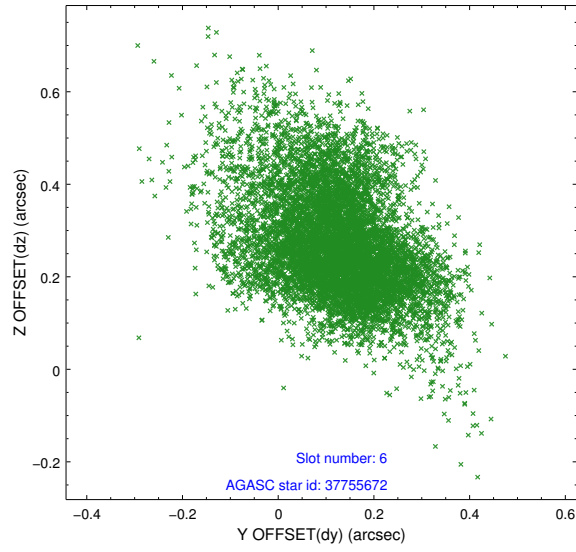
2.4.2 Slot 4



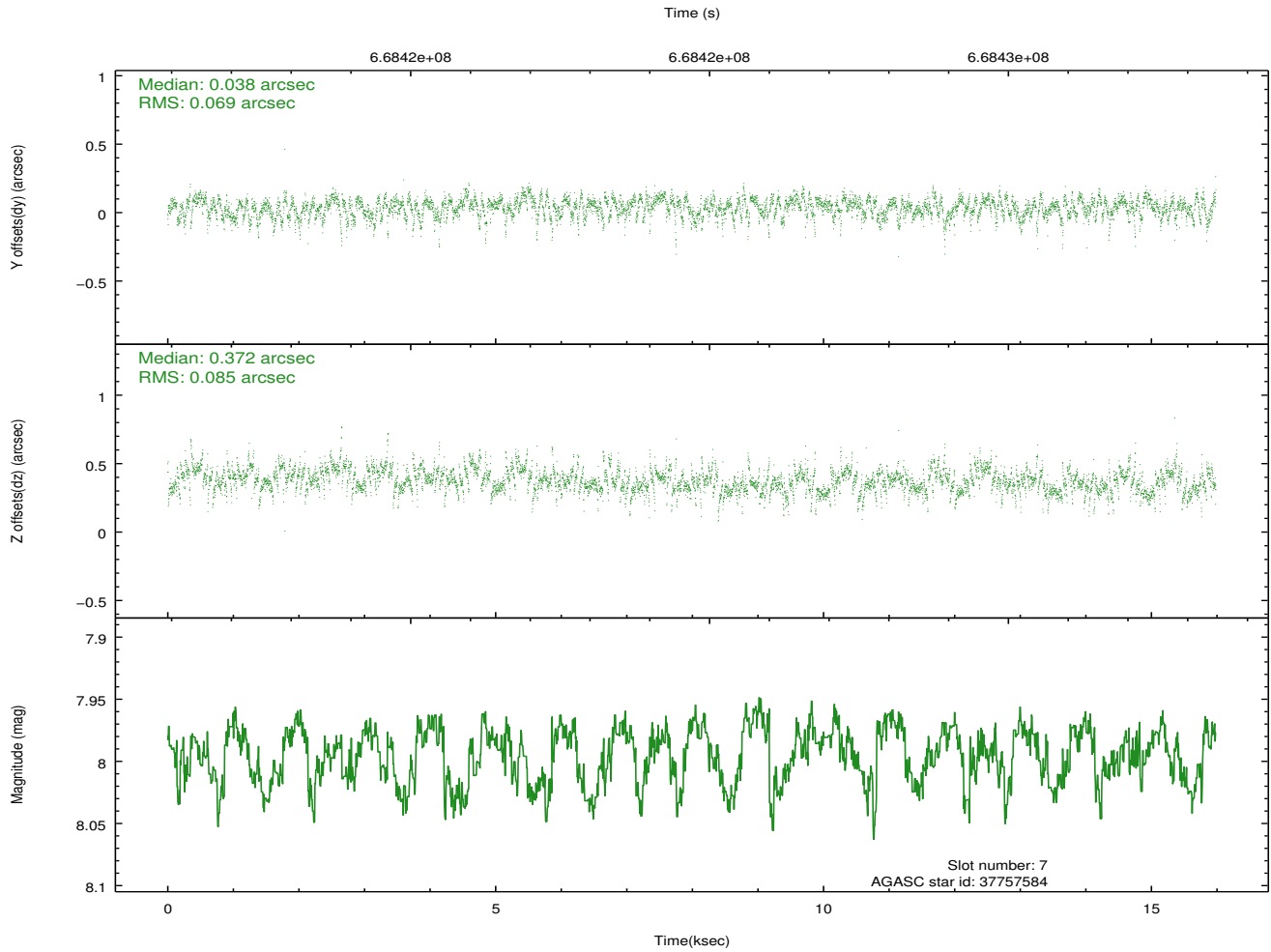
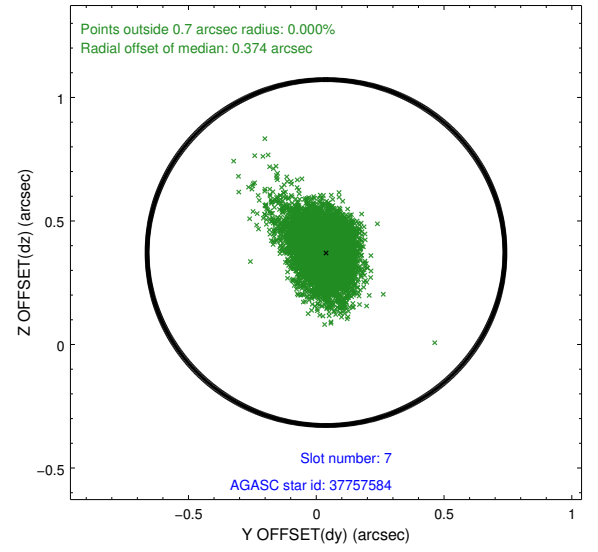
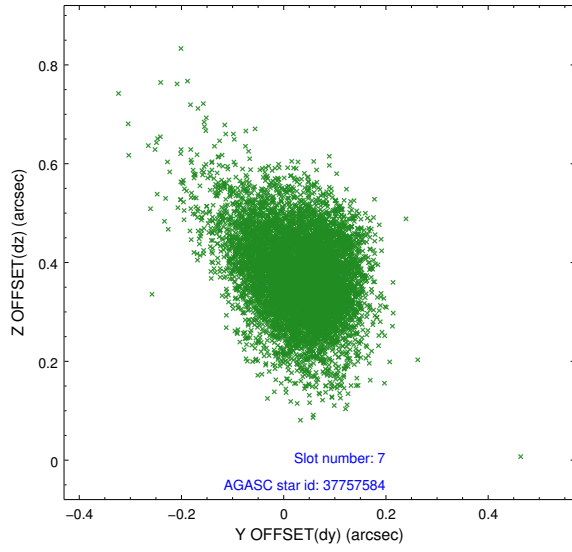
2.4.3 Slot 5



2.4.4 Slot 6

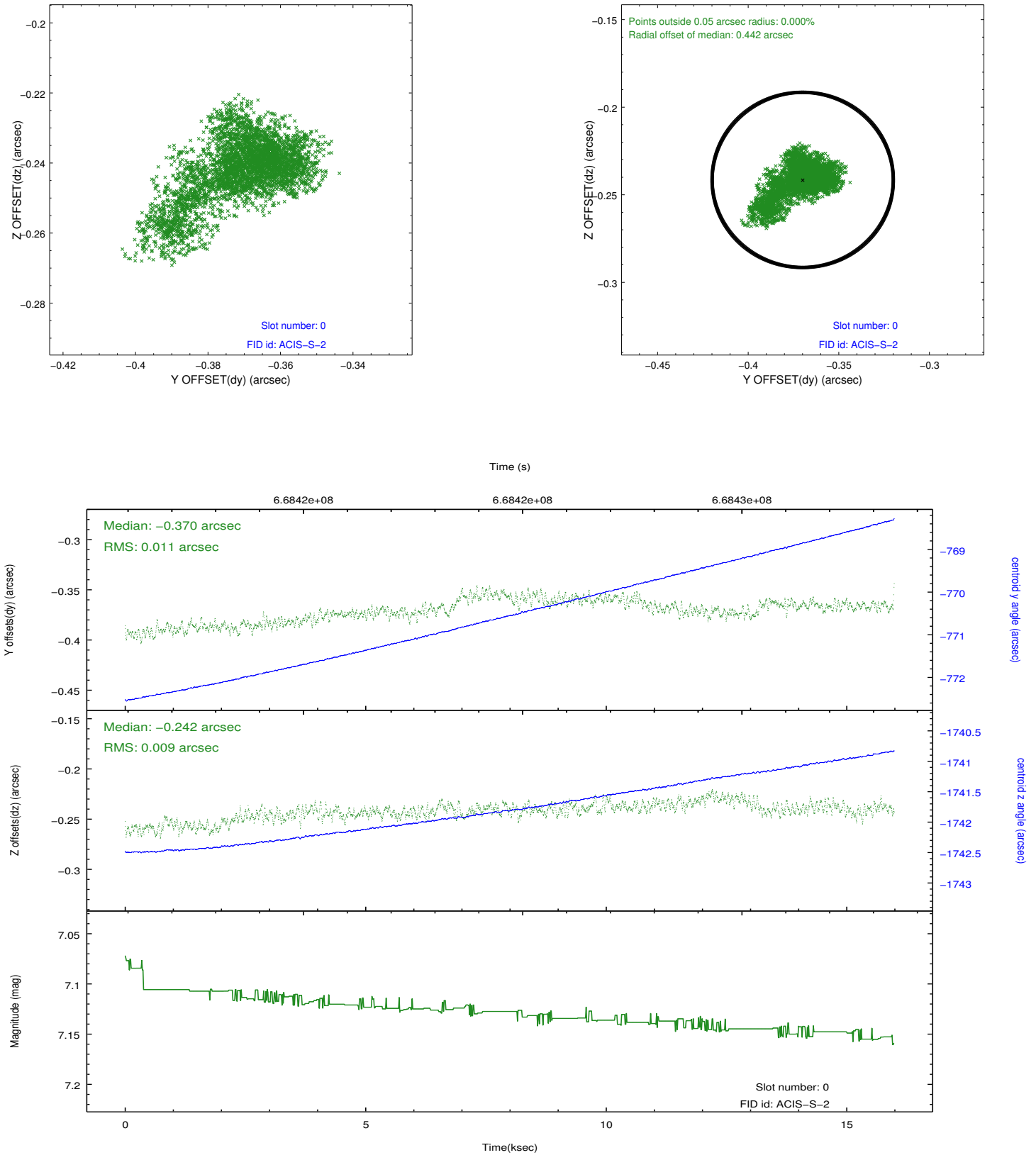


2.4.5 Slot 7

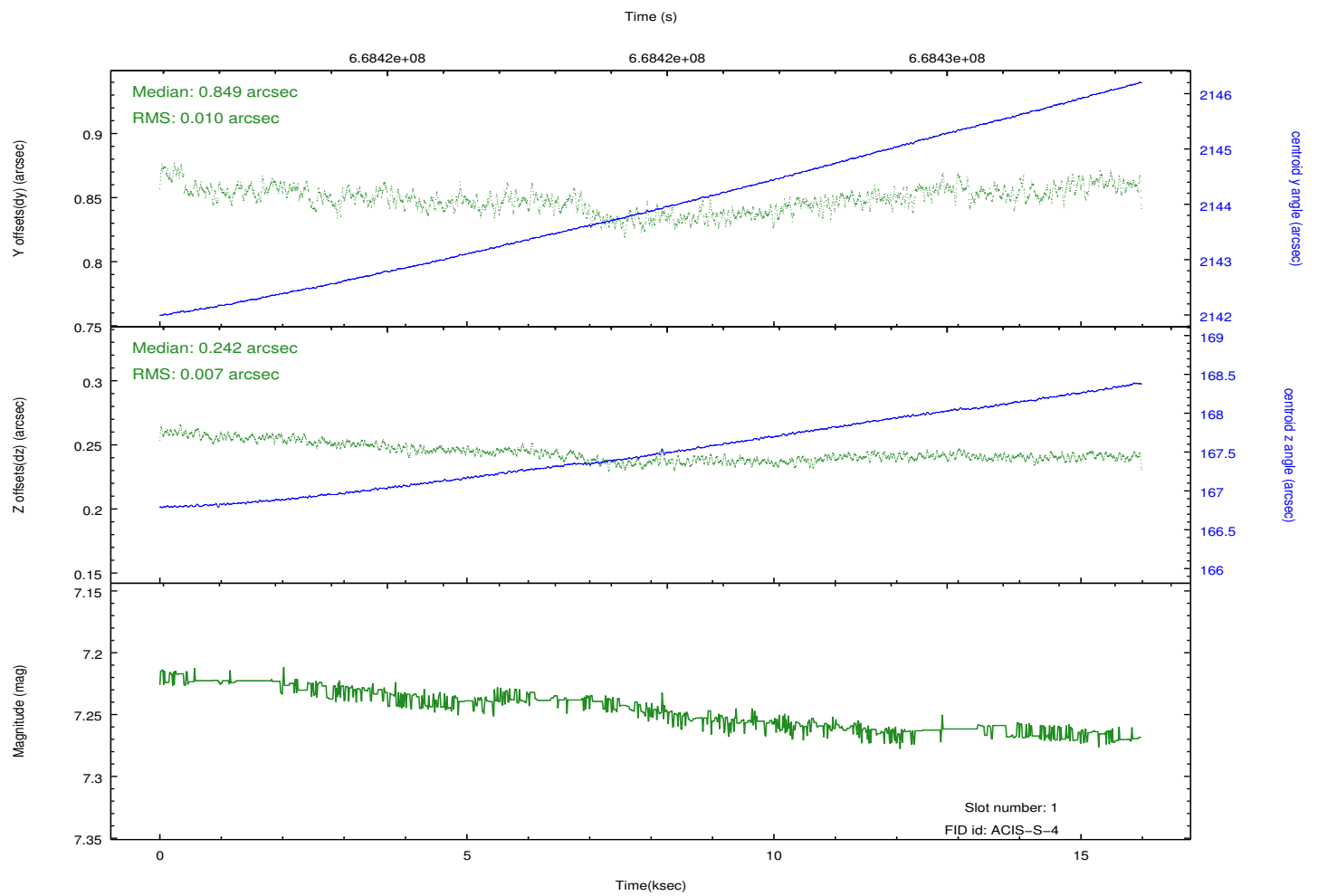
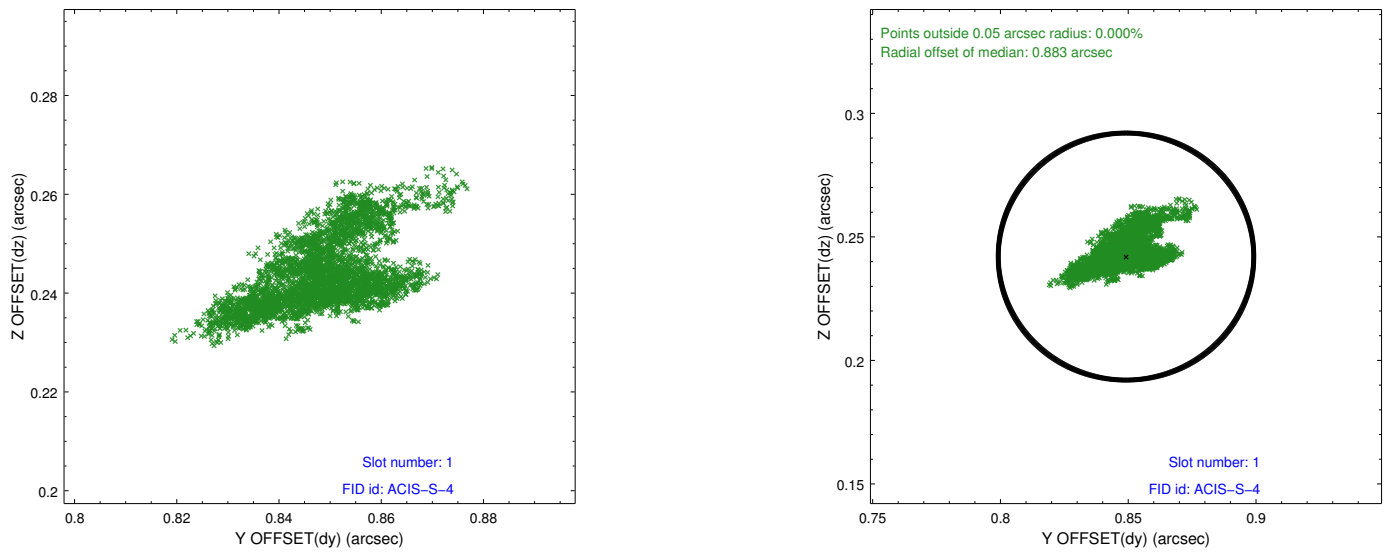


2.5 FID Slots

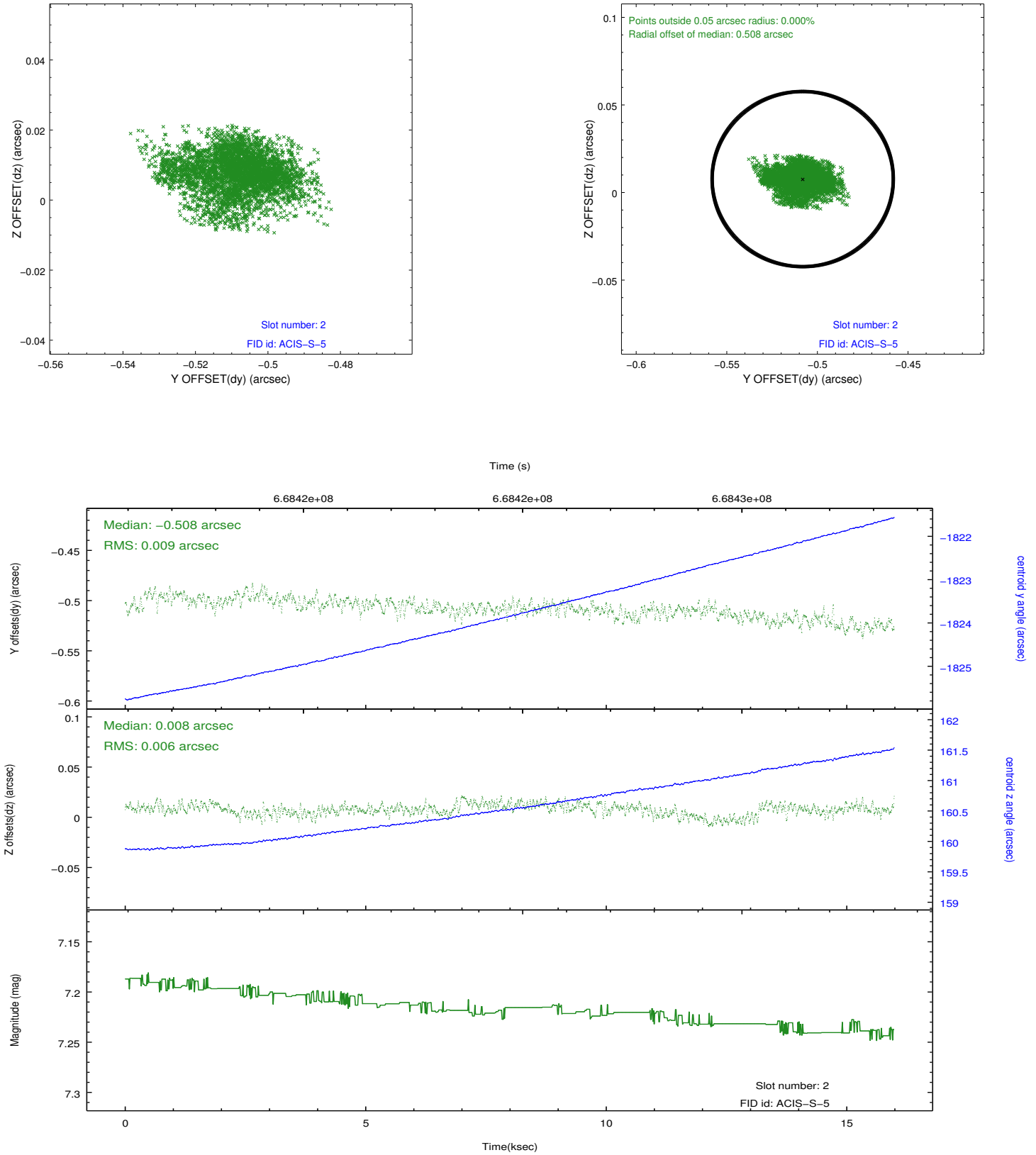
2.5.1 Slot 0



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)	2019.03.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.062900115967

A.2 Comments

Optional chip I2 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.