

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 20774 - L2 Version 1
Chandra X-Ray Center

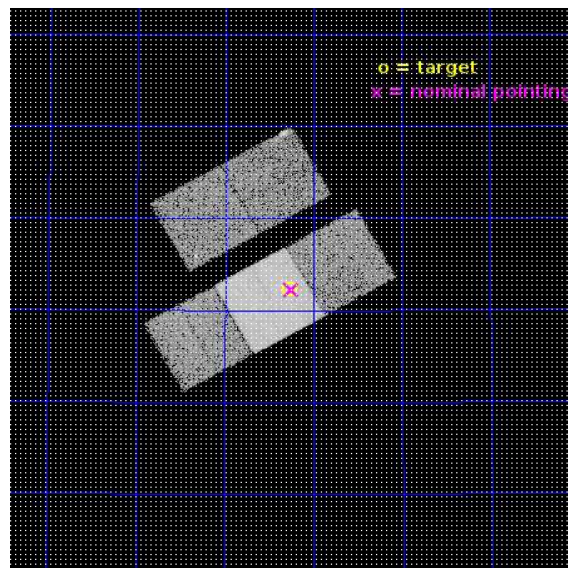
L2 Processing Date : Mar 19 2019

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1 Front

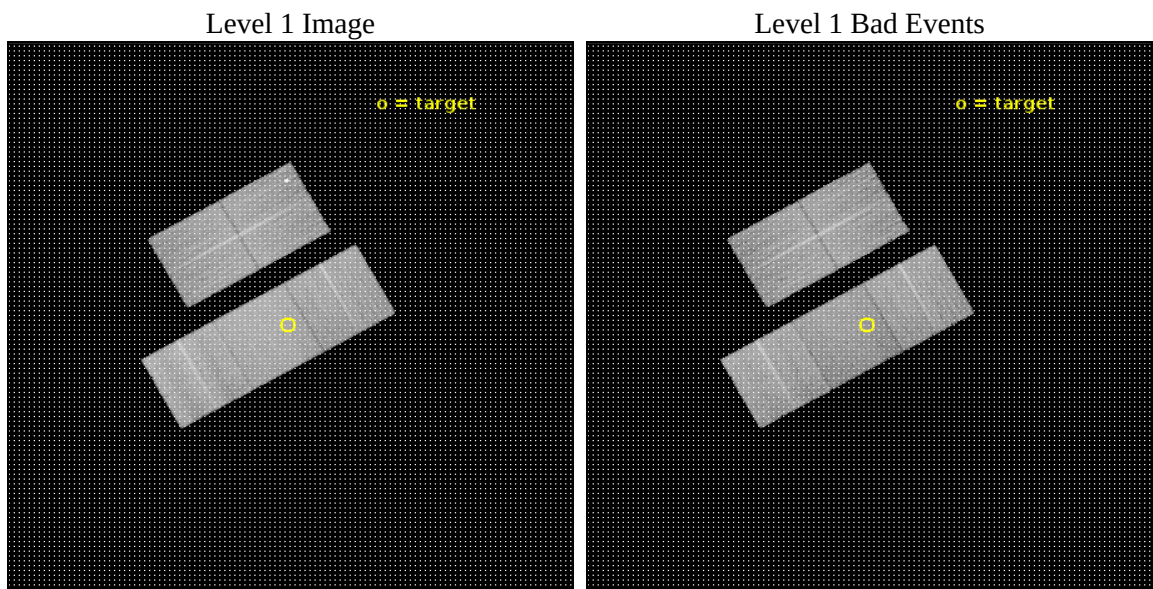
seq_num	703639	Sequence number
obs_id	20774	Observation id
title	A Chandra Survey of Nearby Optical AGN Candidates in Dwarf Galaxies	
observer	Ralph Kraft	Principal investigator
object	Mrk 1488	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	210.317083	Observer's specified target RA [deg]
dec_targ	51.873	Observer's specified target Dec [deg]
ra_nom	210.31278553725	Nominal RA [deg]
dec_nom	51.870780575173	Nominal Dec [deg]
roll_nom	150.73001162266	Nominal Roll [deg]
revision	1	Processing version of data
ontime	15044.300115824	Sum of GTIs [s]
livetime	14847.735259358	Livetime [s]
ontime2	15044.300115824	Sum of GTIs [s]
ontime3	15041.159035563	Sum of GTIs [s]
ontime6	15041.159045696	Sum of GTIs [s]
ontime7	15044.300115824	Sum of GTIs [s]
ontime8	15044.300115824	Sum of GTIs [s]
l2events	107869	Number of level 2 events



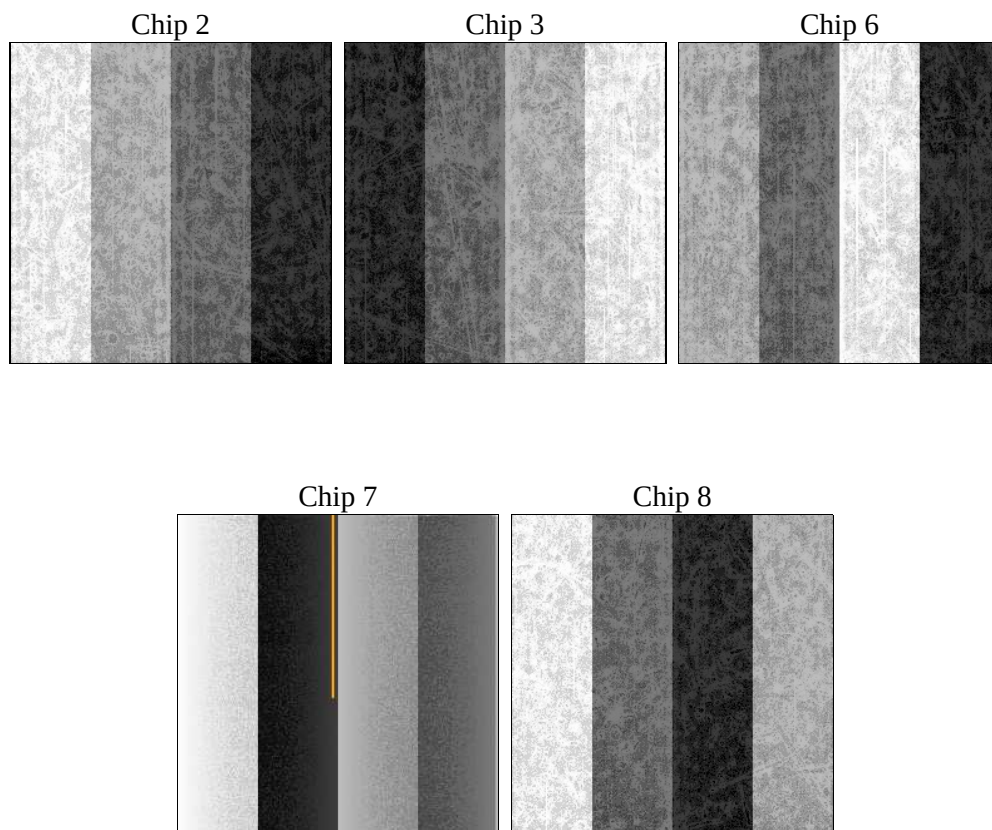
2 OBI

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	15044.300115824	Sum of GTIs [s]
caldsver	4.8.2	 	ontime2	15044.300115824	Sum of GTIs [s]
date	2019-03-19T15:08:20	Date and time of file creation	ontime3	15041.159035563	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	15041.159045696	Sum of GTIs [s]
			ontime7	15044.300115824	Sum of GTIs [s]
			ontime8	15044.300115824	Sum of GTIs [s]
			l1events	666239	Number of level 1 events

2.1.4 Events

	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	123985	117535	124340	150655	149724
rejected events	107497	105480	111401	86125	114504
rejected %	86%	89%	89%	57%	76%

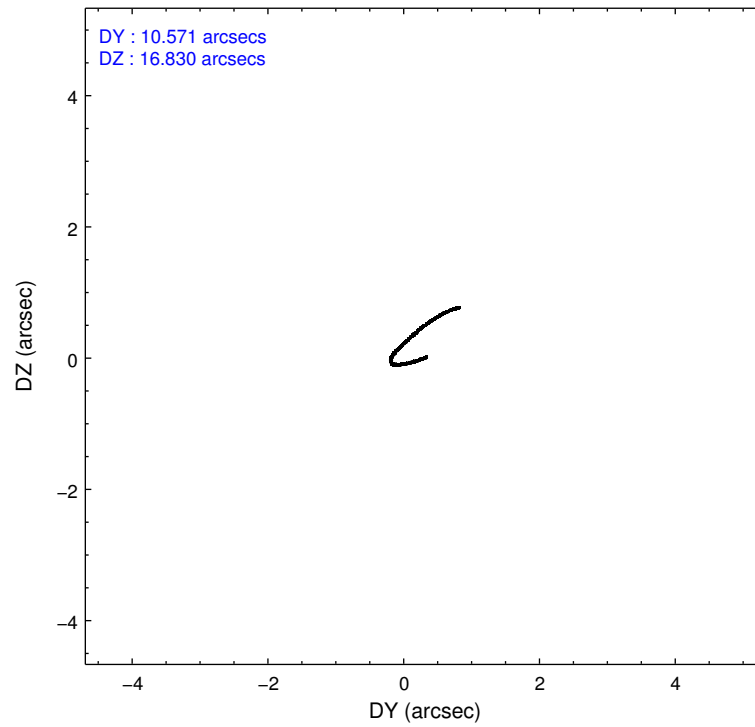
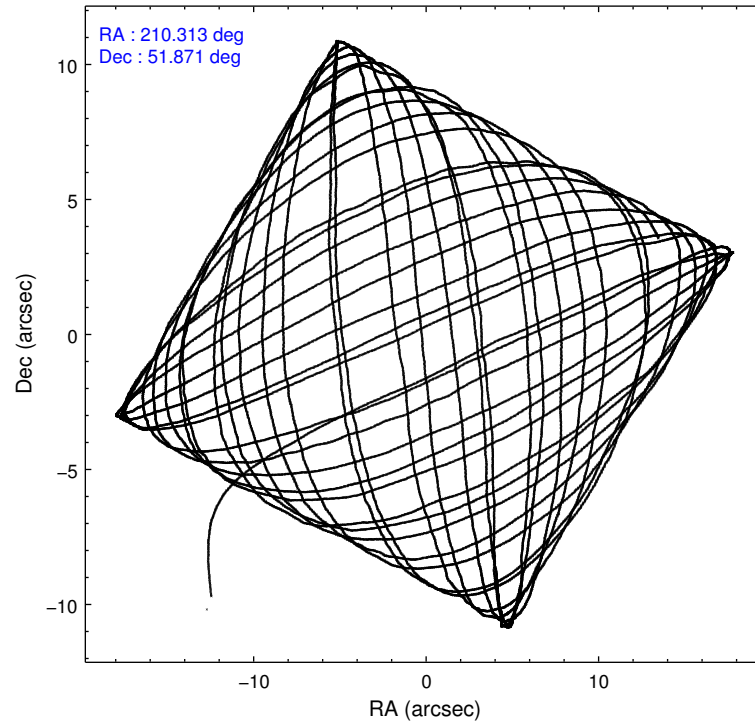
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	8805	4194	3482	5449	9562
	7%	3%	2%	3%	6%
grade 1 events	97	61	54	196	101
	0%	0%	0%	0%	0%
grade 2 events	2740	2701	3758	13326	9007
	2%	2%	3%	8%	6%
grade 3 events	1193	1230	999	4929	3271
	0%	1%	0%	3%	2%
grade 4 events	1160	1222	1012	4924	3143
	0%	1%	0%	3%	2%
grade 5 events	4054	4892	4813	14292	7525
	3%	4%	3%	9%	5%
grade 6 events	2593	2712	3691	35911	10241
	2%	2%	2%	23%	6%
grade 7 events	103343	100523	106531	71628	106874
	83%	85%	85%	47%	71%

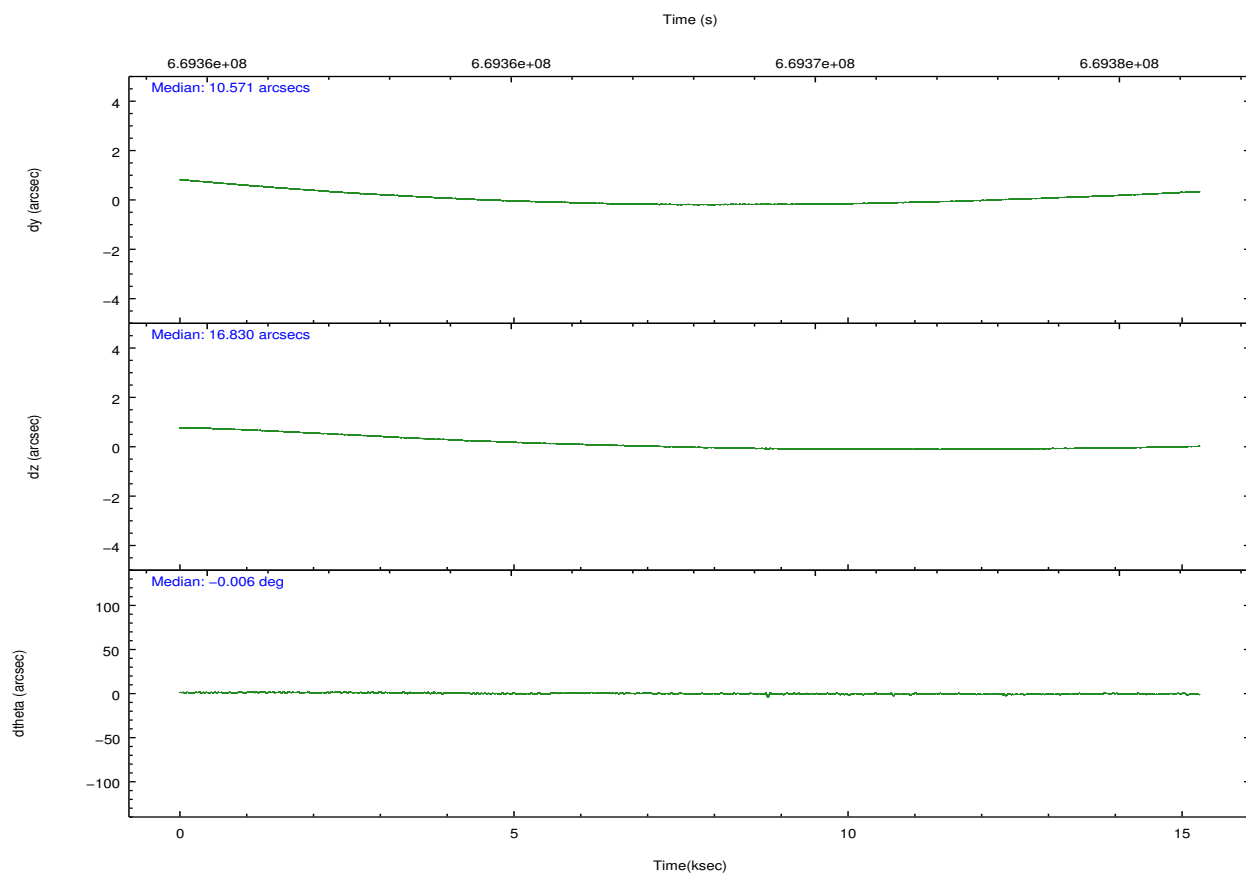
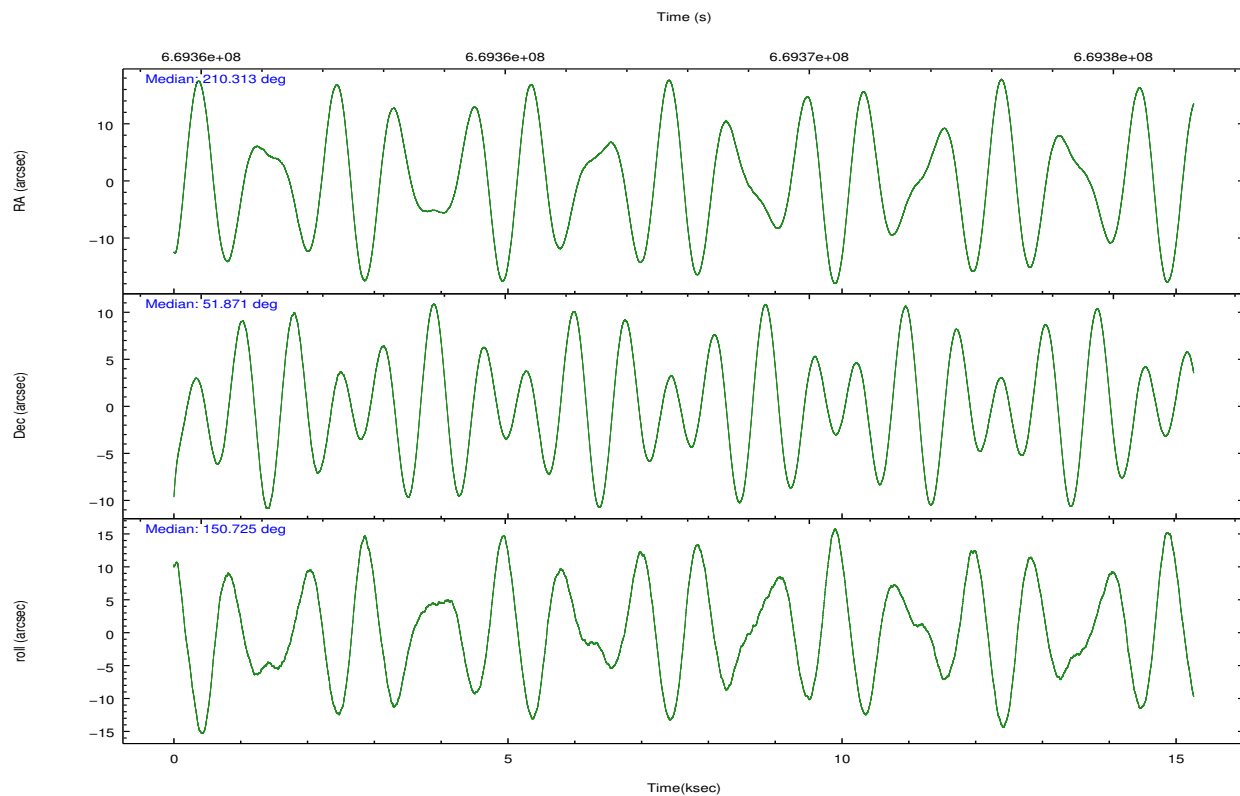
2.2 Compared Parameters

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	210.357220	210.3127855372485
[deg] Pointing Dec	51.871480	51.87078057517324
[deg] Pointing Roll	150.538433	150.7300116226578
[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)	669360565.184000	669359584.42327
Observation start date	2019-03-19T05:28:16	2019-03-19T05:13:04
[s] Observation end time (MET)	669375565.184000	669377101.1618201
Observation end date	2019-03-19T09:38:16	2019-03-19T10:05:01
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	O1	Y
CCD I3 on	Y	Y
CCD S0 on	N	N
CCD S1 on	N	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	0	0
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



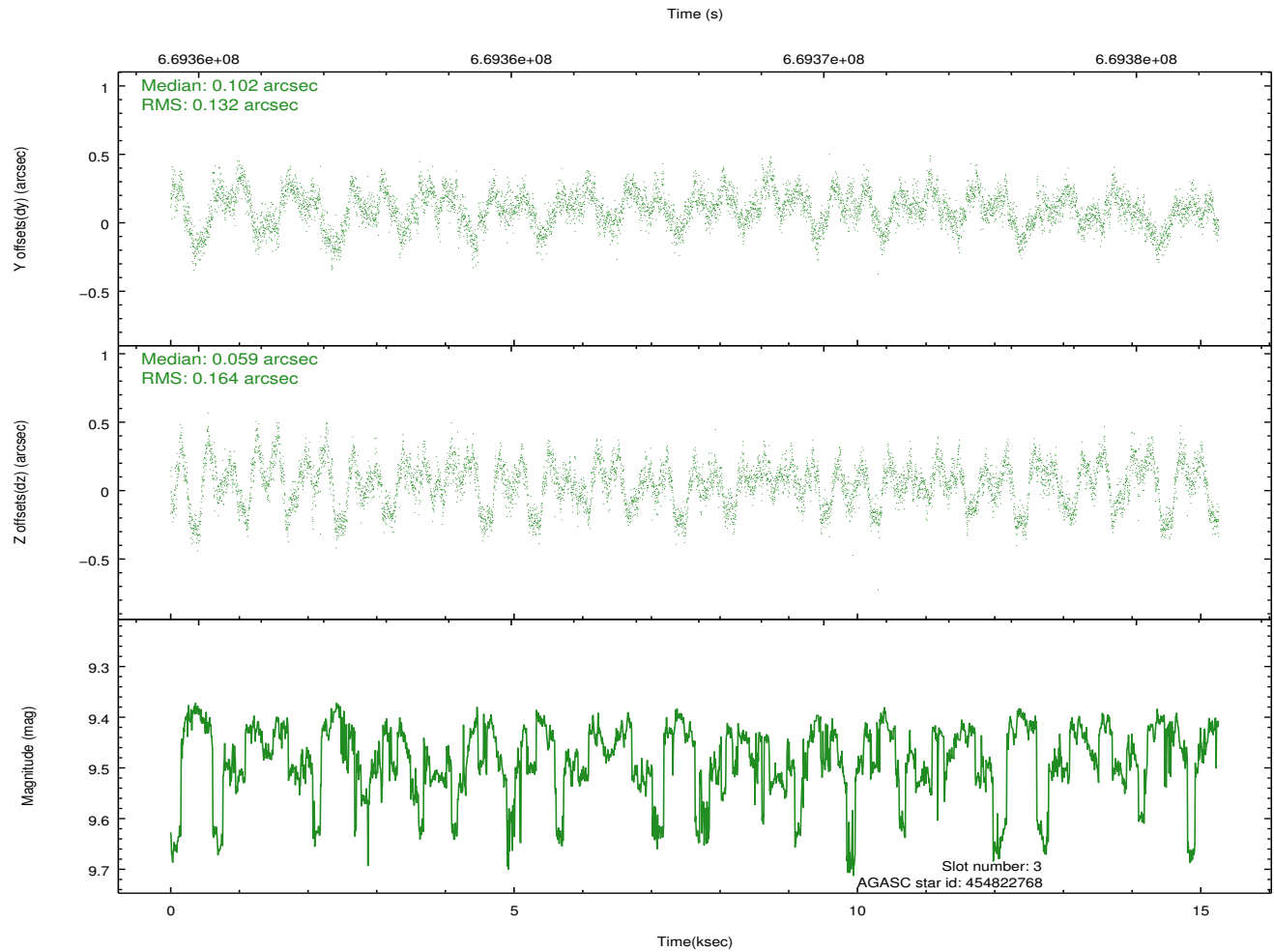
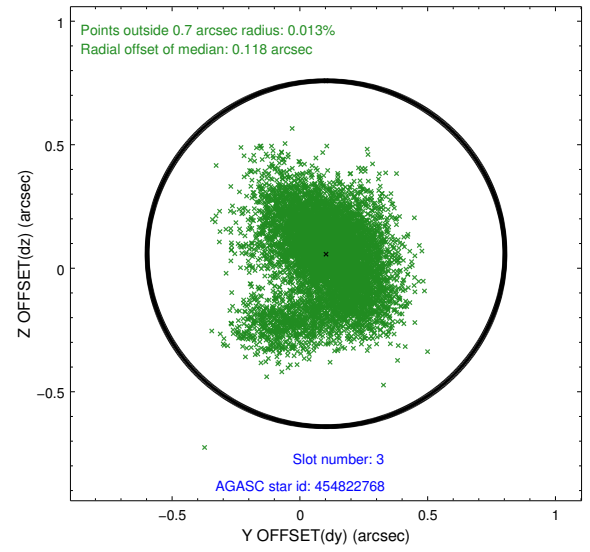
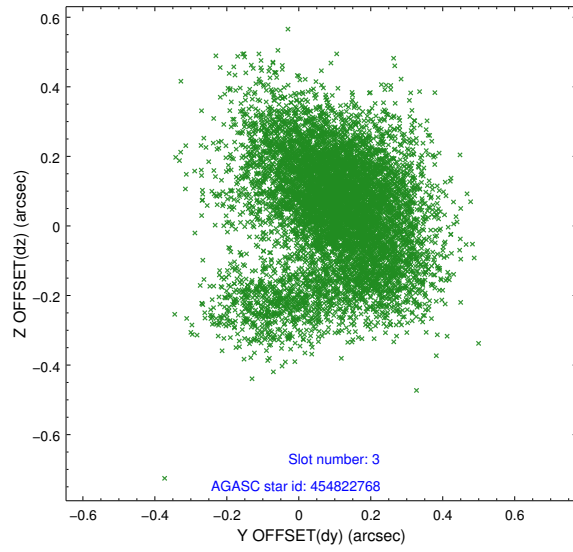


Slot Statistics

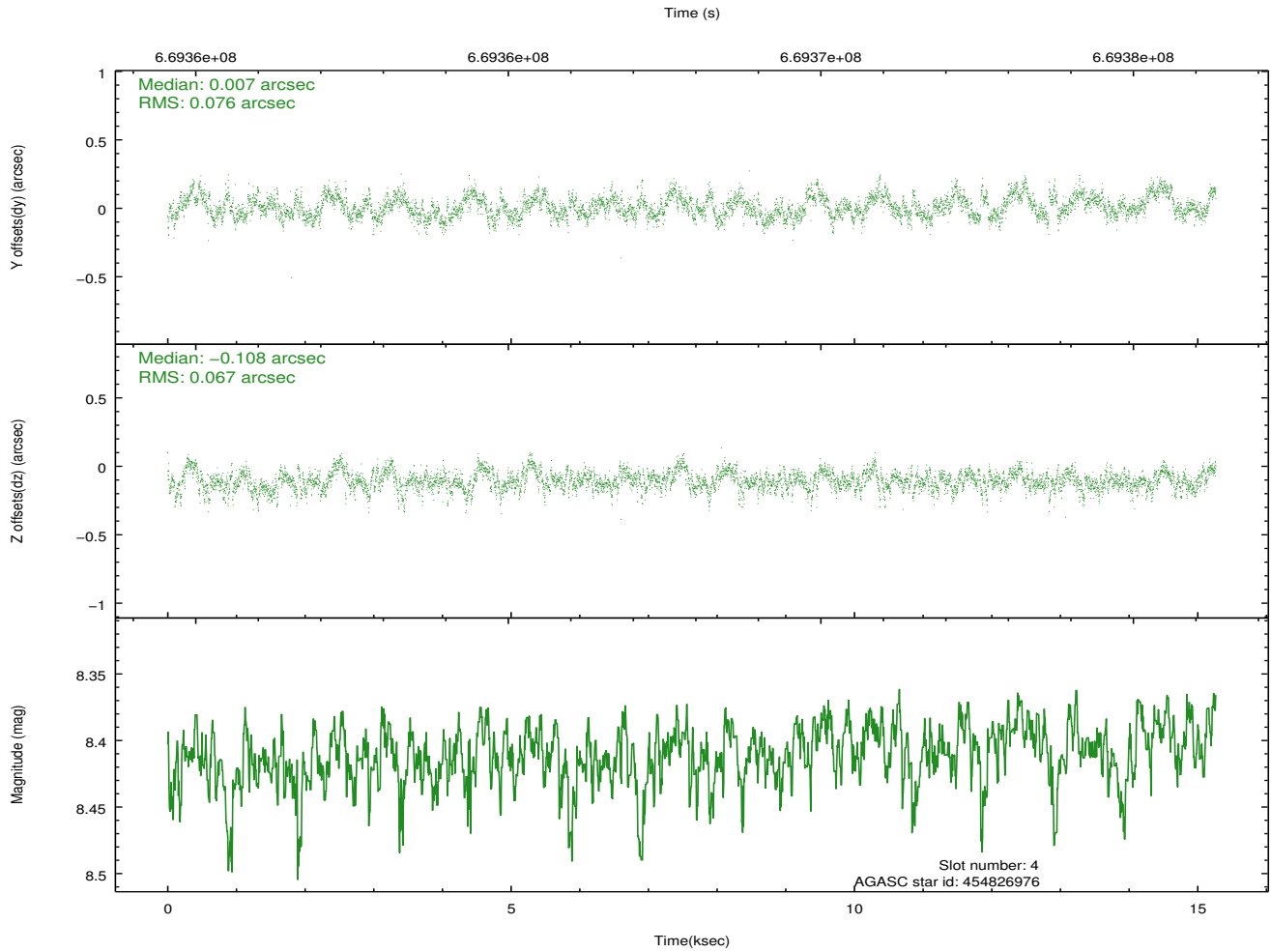
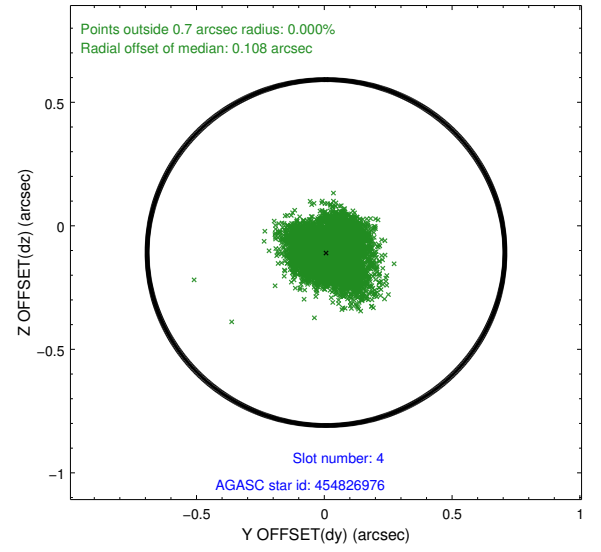
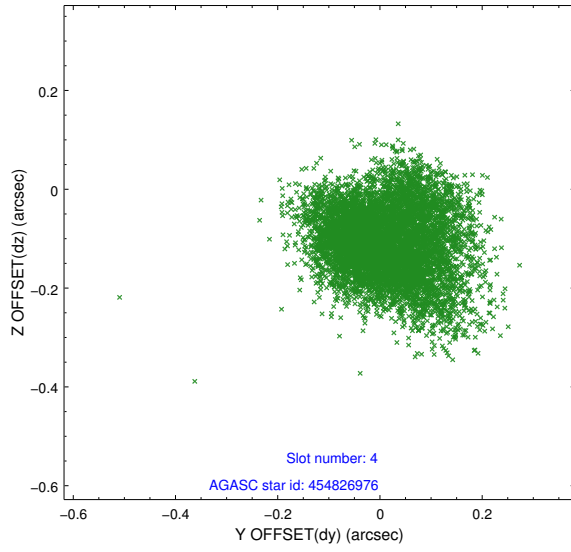
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.15	3723	1.000	-0.284	-0.183	0.013	0.025	0.000000	0.000000	-763.73	-1738
1	FID		ACIS-S-4	7.30	3722	1.000	0.716	0.186	0.009	0.017	0.000000	0.000000	2150.36	170
2	FID		ACIS-S-5	7.27	3723	1.000	-0.462	0.006	0.012	0.029	0.000000	0.000000	-1816.43	163
3	GUIDE	used	454822768	9.48	7434	1.000	0.102	0.059	0.226	0.373	209.963588	52.183295	1310.25	-551
4	GUIDE	used	454826976	8.41	7443	1.000	0.007	-0.108	0.107	0.177	209.920862	52.158321	1349.75	-427
5	GUIDE	used	454827896	8.22	7445	1.000	0.026	-0.114	0.097	0.171	209.997351	52.465333	1740.50	-1474
6	GUIDE	used	454953544	7.65	7445	1.000	0.125	0.176	0.108	0.181	211.072608	51.455127	-2129.69	509
7	GUIDE	used	454960928	6.66	7444	1.000	-0.253	-0.009	0.132	0.314	210.748993	50.971811	-2365.50	2381

2.4 Star Slots

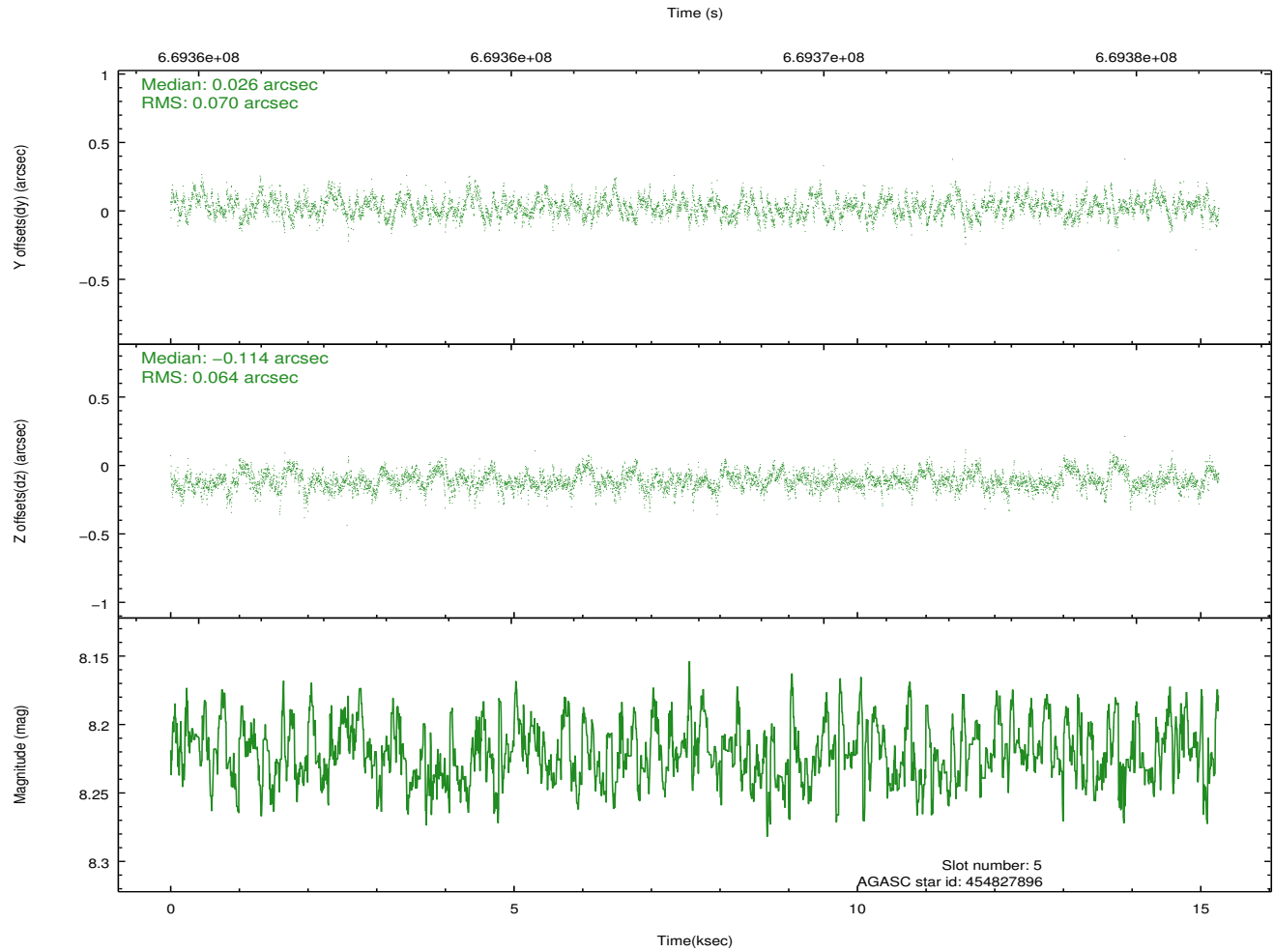
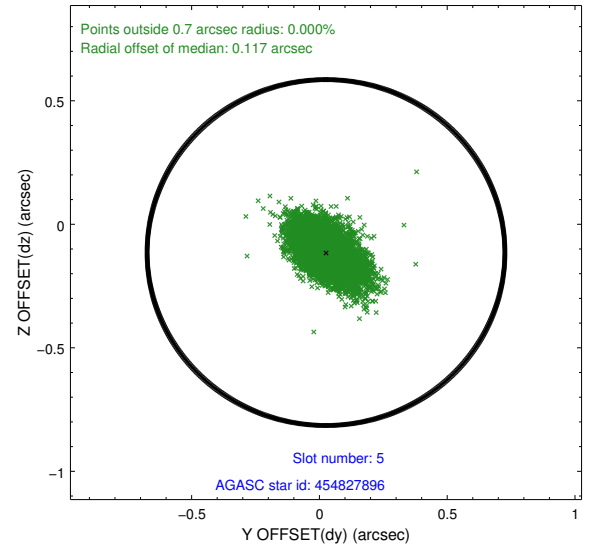
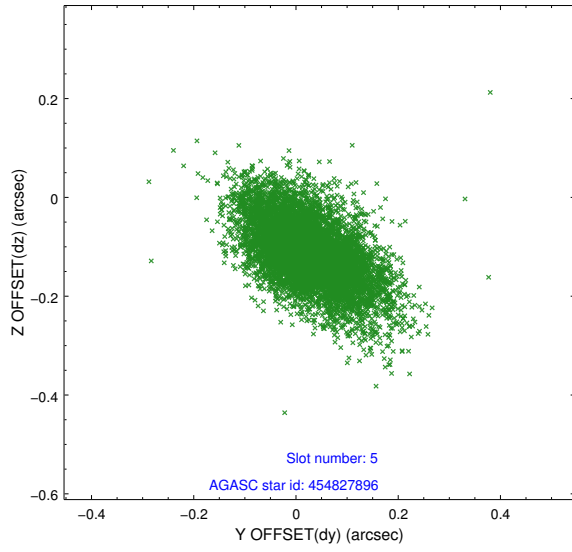
2.4.1 Slot 3



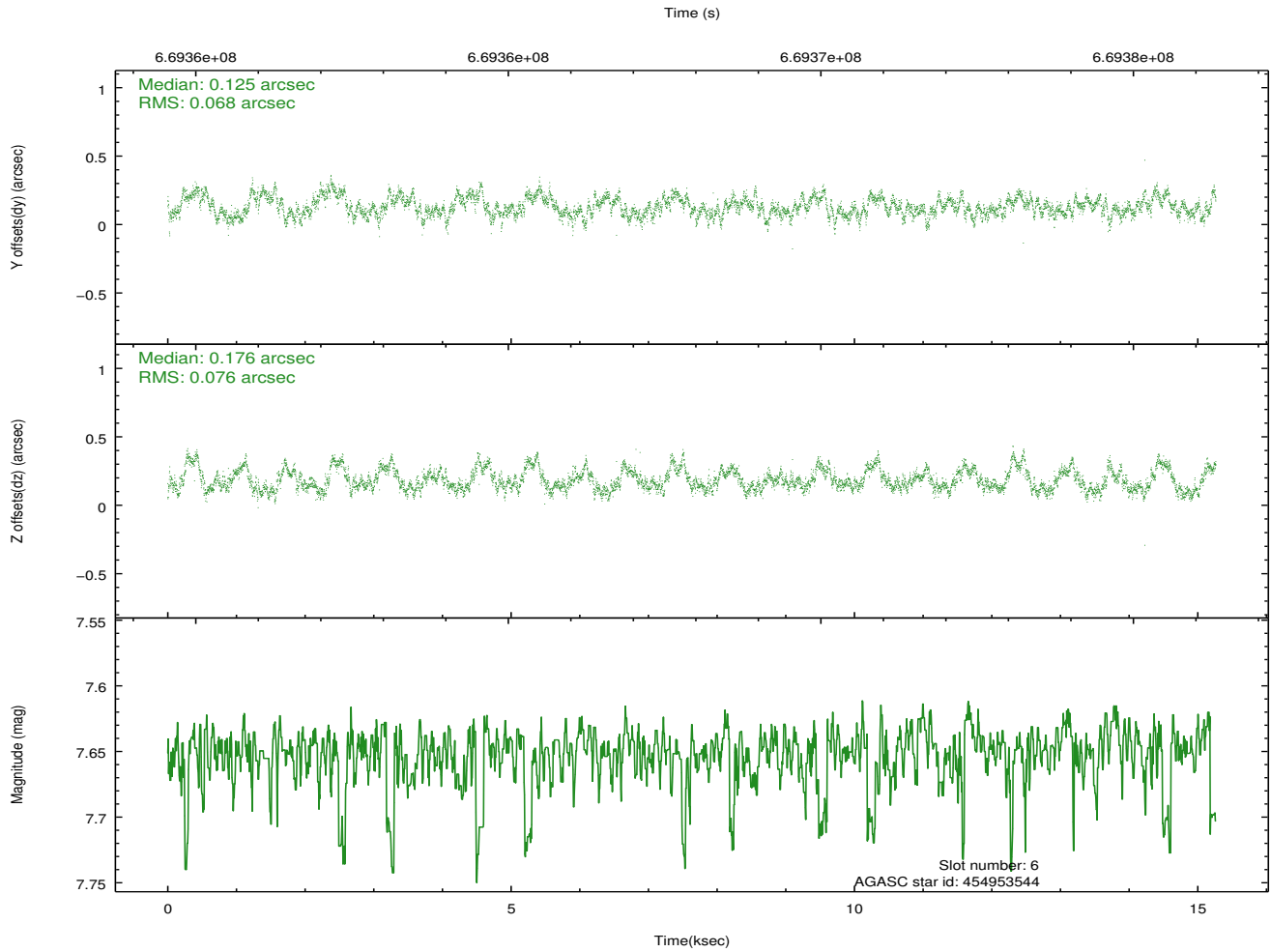
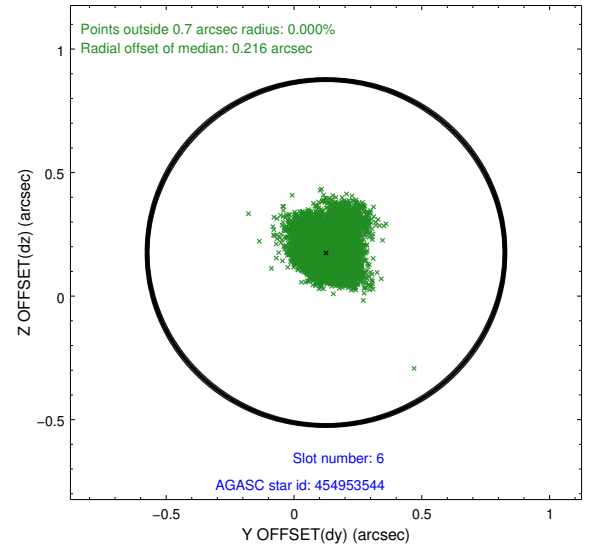
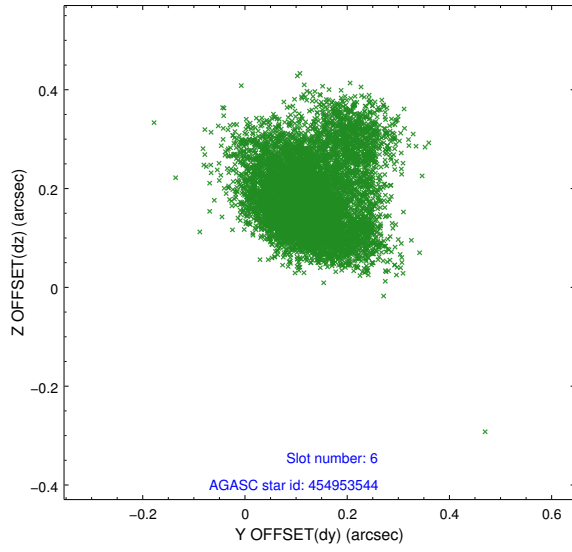
2.4.2 Slot 4



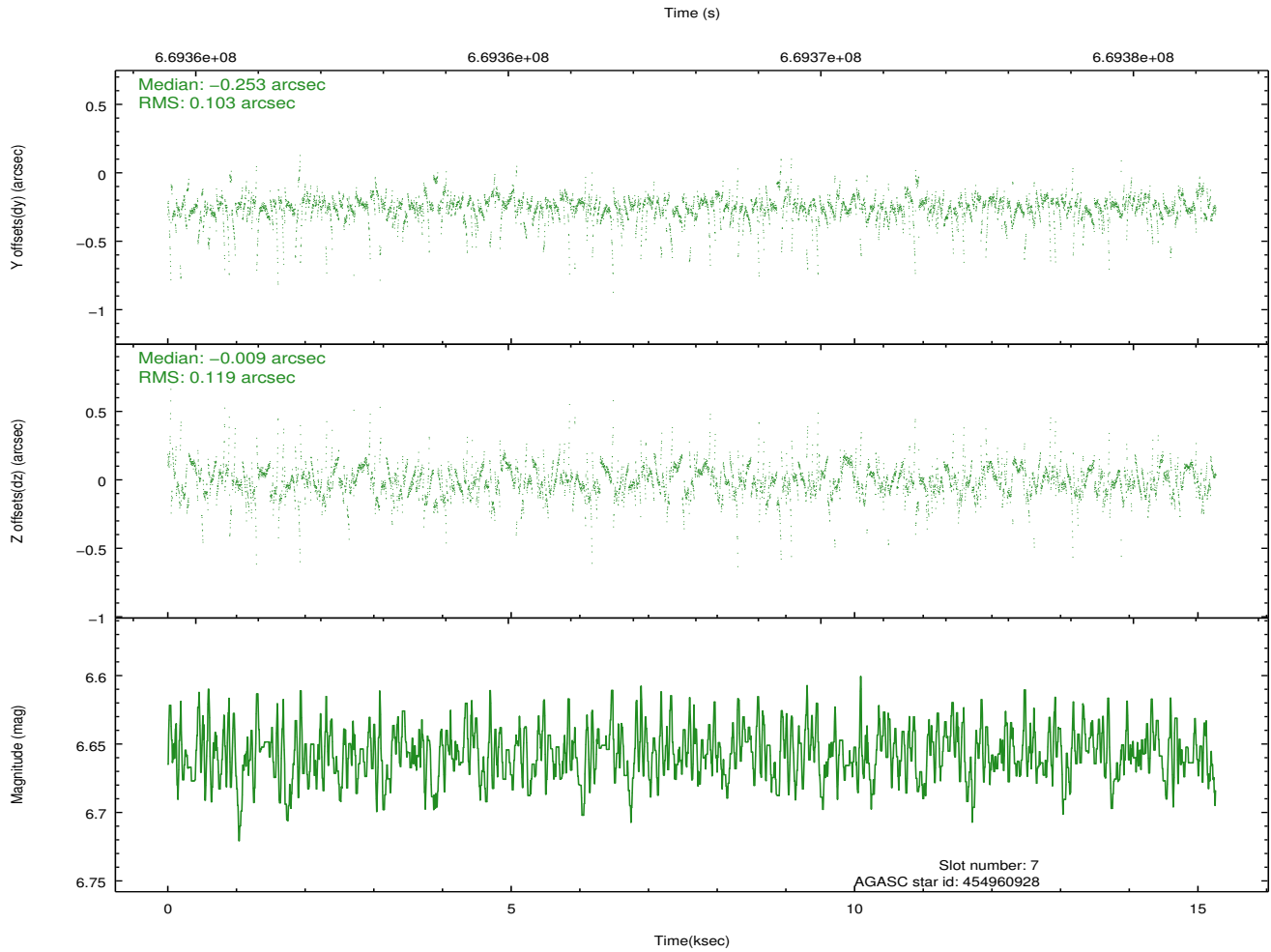
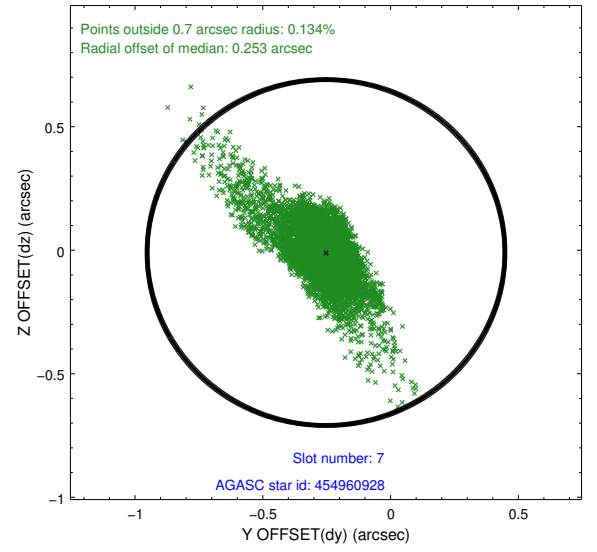
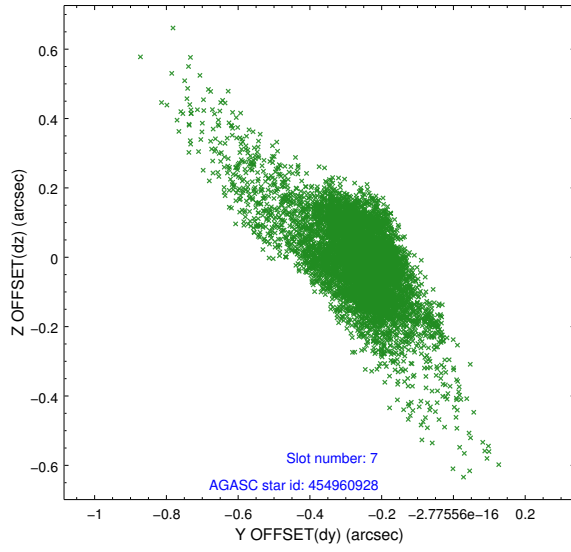
2.4.3 Slot 5



2.4.4 Slot 6

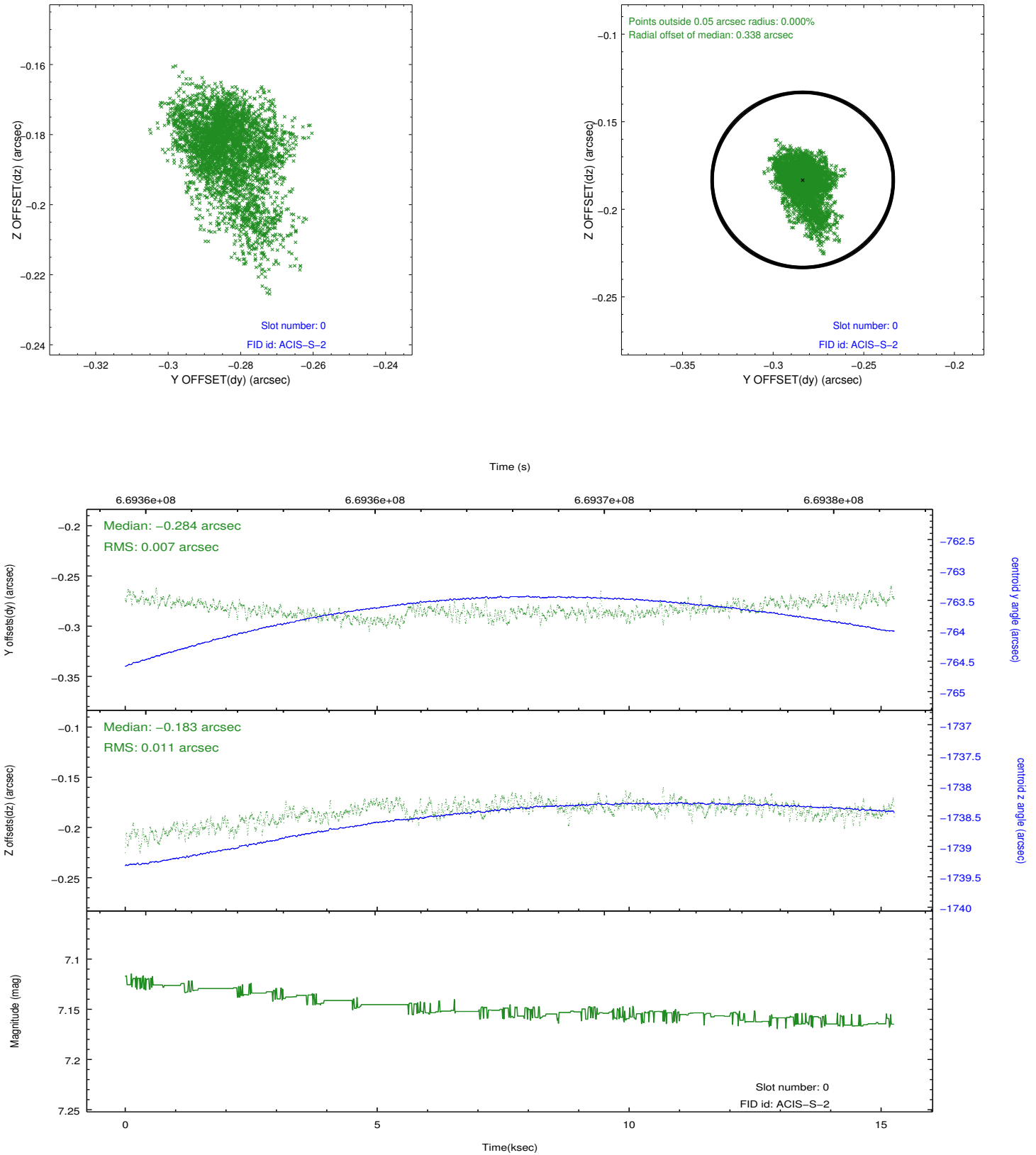


2.4.5 Slot 7

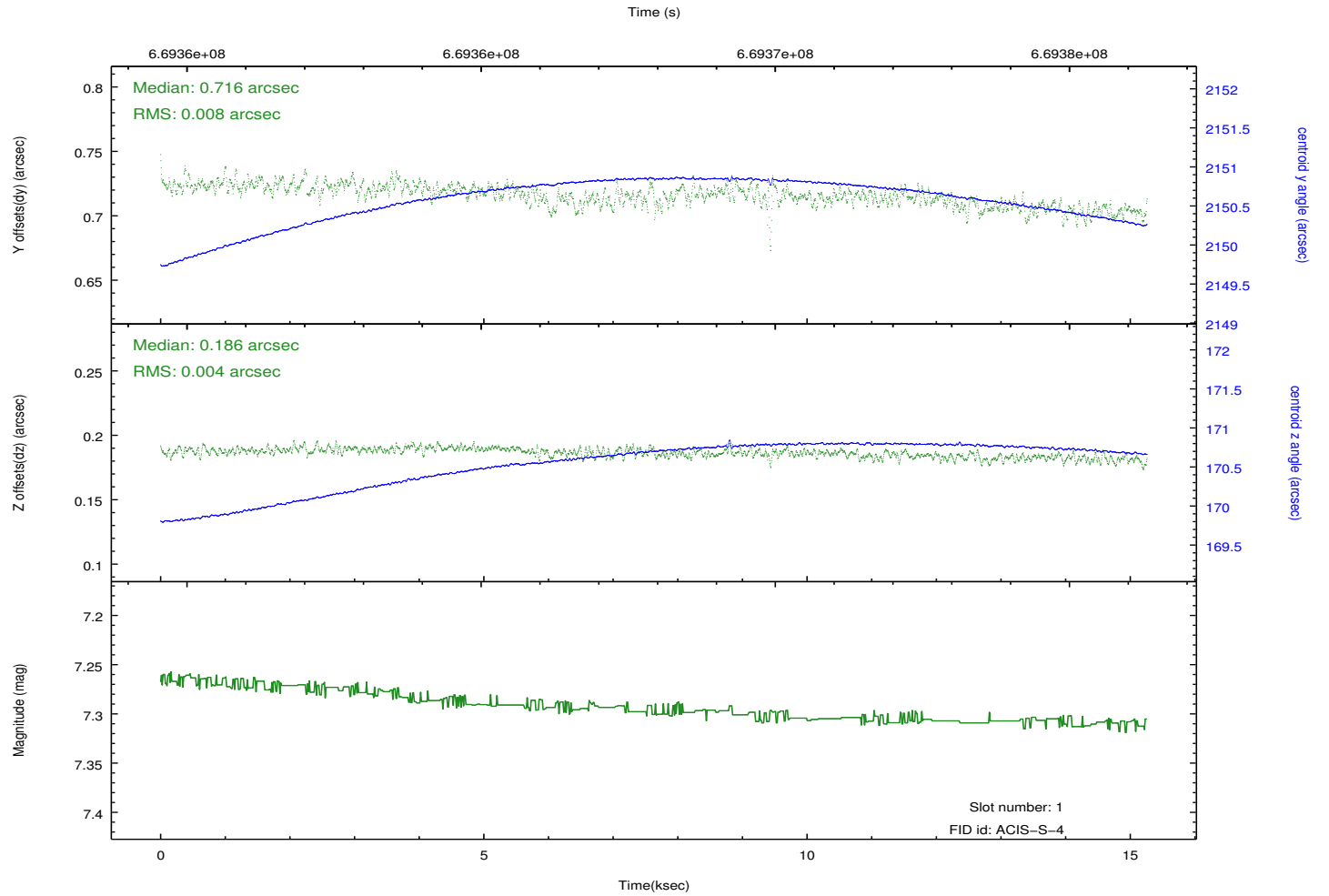
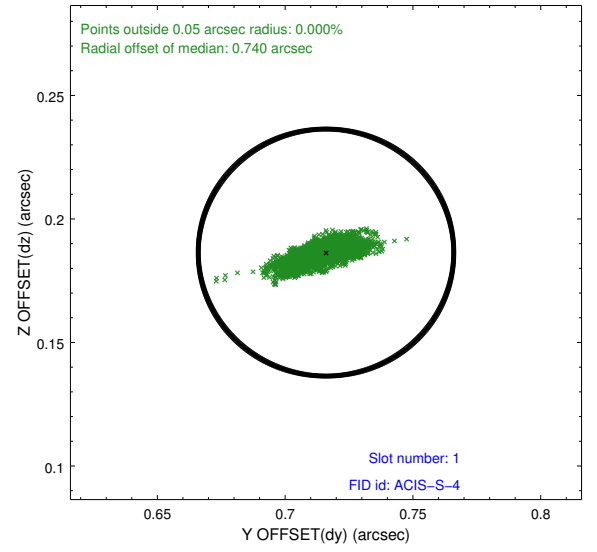
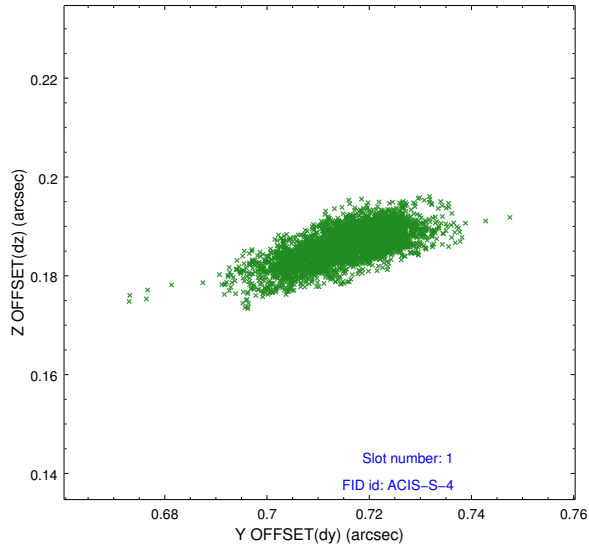


2.5 FID Slots

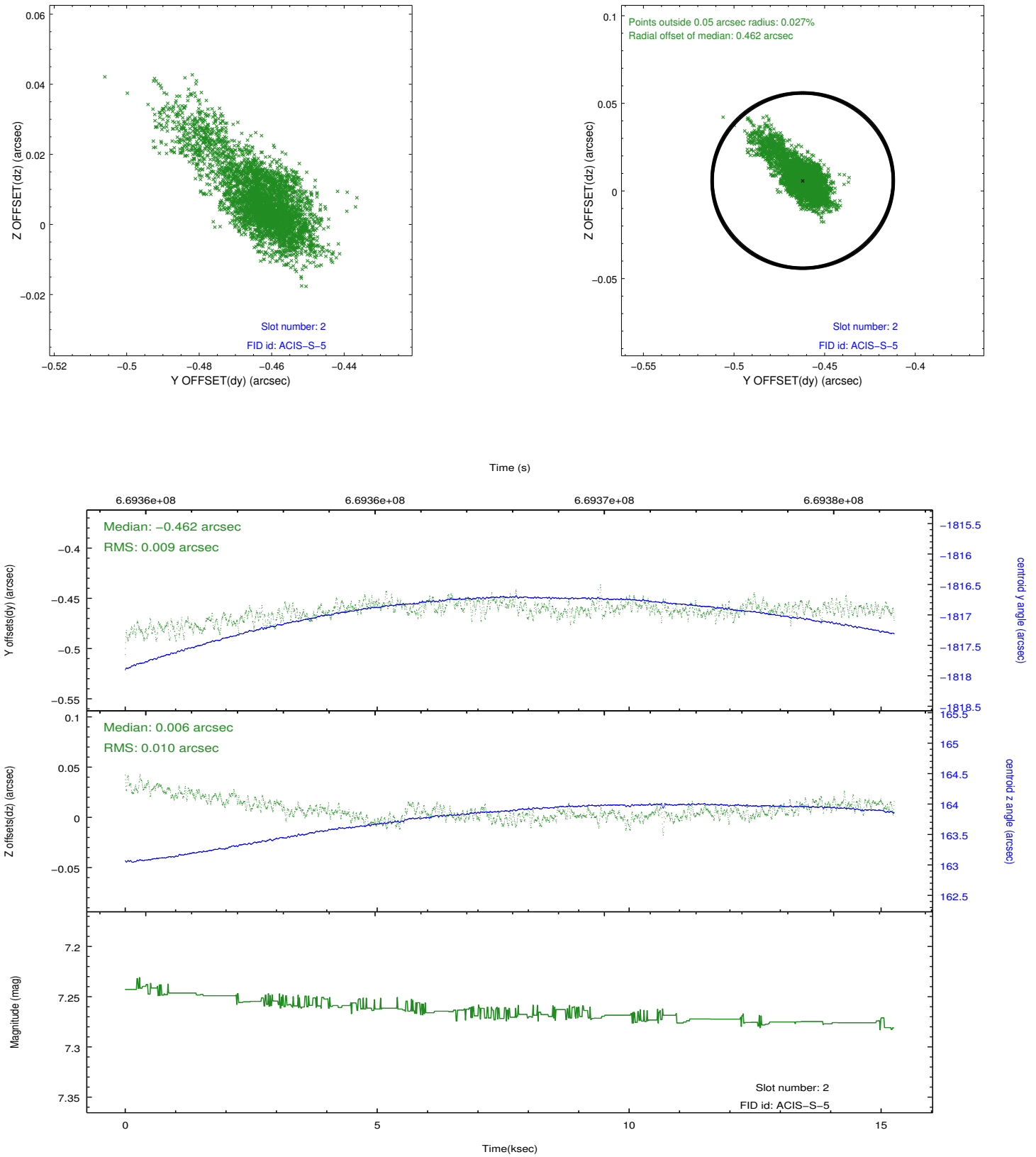
2.5.1 Slot 0



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)	2019.03.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.044300115824

A.2 Comments

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.