

V&V Reference Report

L2 ASCDS Version : 8.4.3.1

Observation 14378 - L2 Version 2
Chandra X-Ray Center

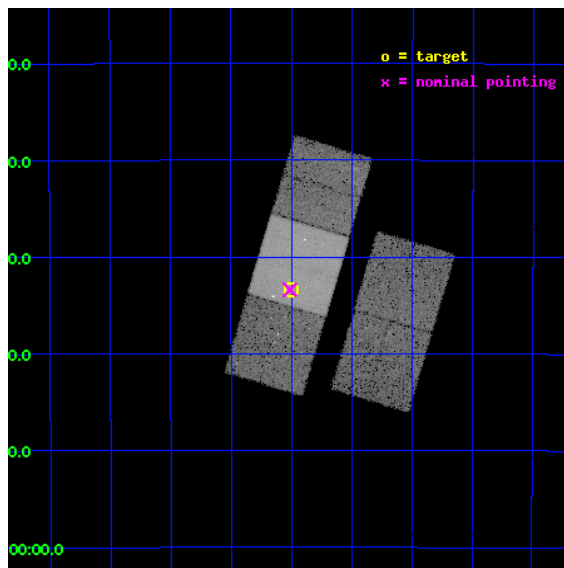
L2 Processing Date : Feb 29 2012

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1 Front

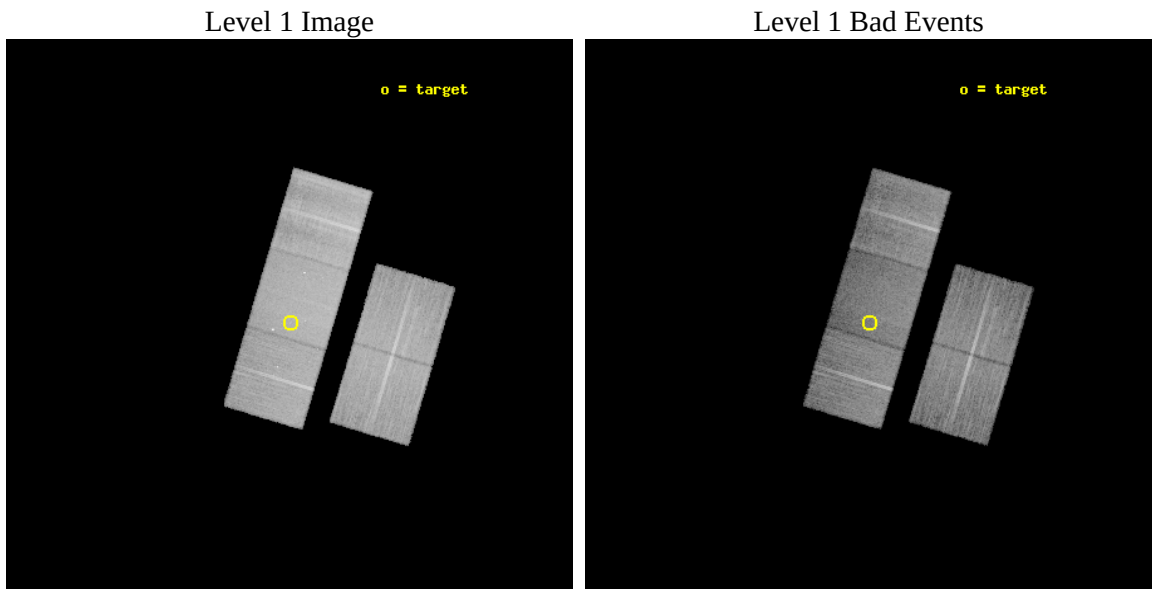
seq_num	401301	Sequence number
obs_id	14378	Observation id
title	Jets, hot spots and cocoon of the most powerful microquasar	Propos
observer	Dr Roberto Soria	Principal investigator
object	S26 in NGC 7793	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	359.499583	Observer's specified target RA [deg]
dec_targ	-32.555806	Observer's specified target Dec [deg]
ra_nom	359.50305242398	Nominal RA [deg]
dec_nom	-32.556620047782	Nominal Dec [deg]
roll_nom	286.65848673567	Nominal Roll [deg]
revision	2	Processing version of data
ontime	25037.775031388	Sum of GTIs [s]
livetime	24710.638068061	Livetime [s]
ontime2	25037.610871375	Sum of GTIs [s]
ontime3	25031.411020756	Sum of GTIs [s]
ontime6	25037.733991385	Sum of GTIs [s]
ontime7	25037.775031388	Sum of GTIs [s]
ontime8	25037.651911378	Sum of GTIs [s]
l2events	149096	Number of level 2 events



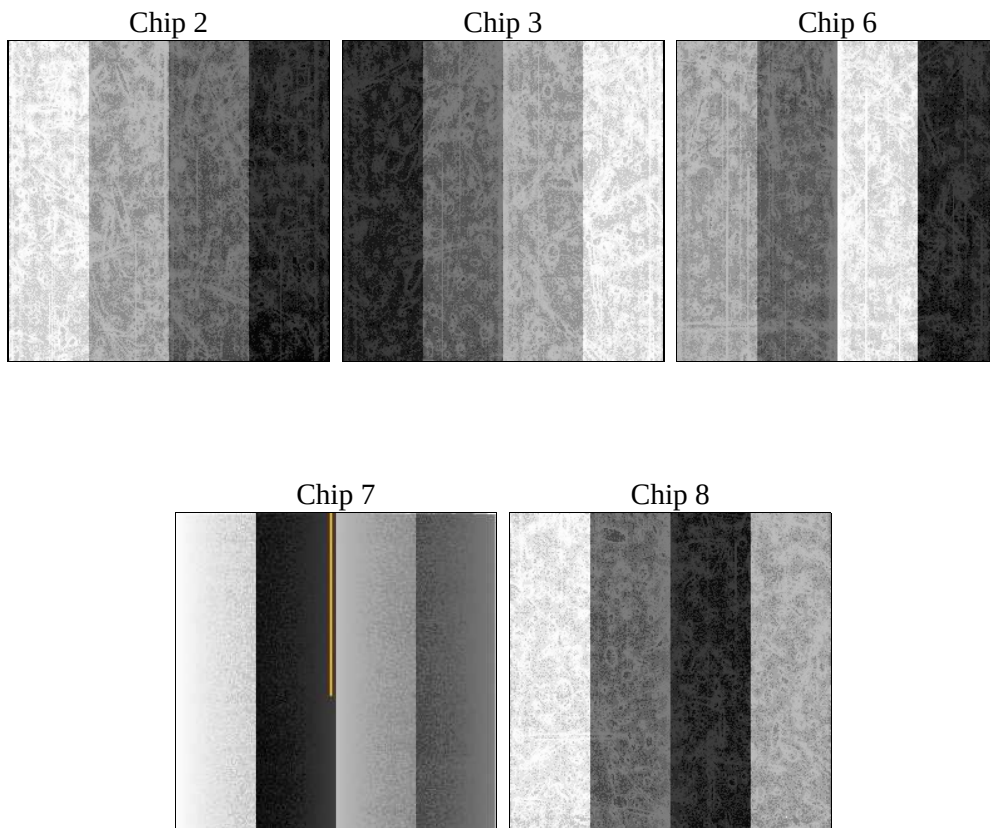
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	25037.775031388	Sum of GTIs [s]
caldsver	4.4.8	 	ontime2	25037.610871375	Sum of GTIs [s]
date	2012-02-29T15:15:12	Date and time of file creation	ontime3	25031.411020756	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	25037.733991385	Sum of GTIs [s]
			ontime7	25037.775031388	Sum of GTIs [s]
			ontime8	25037.651911378	Sum of GTIs [s]
			l1events	871556	Number of level 1 events

2.1.4 Events

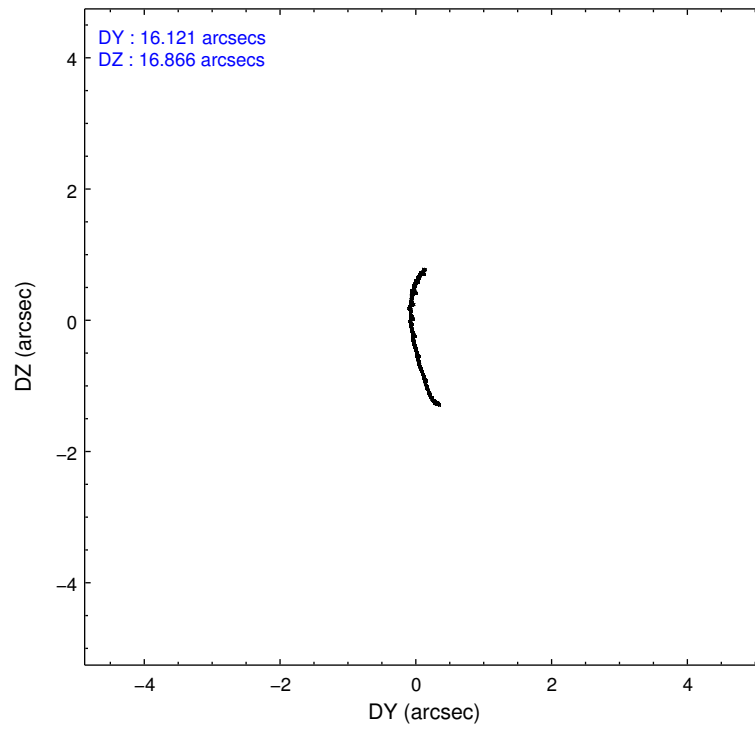
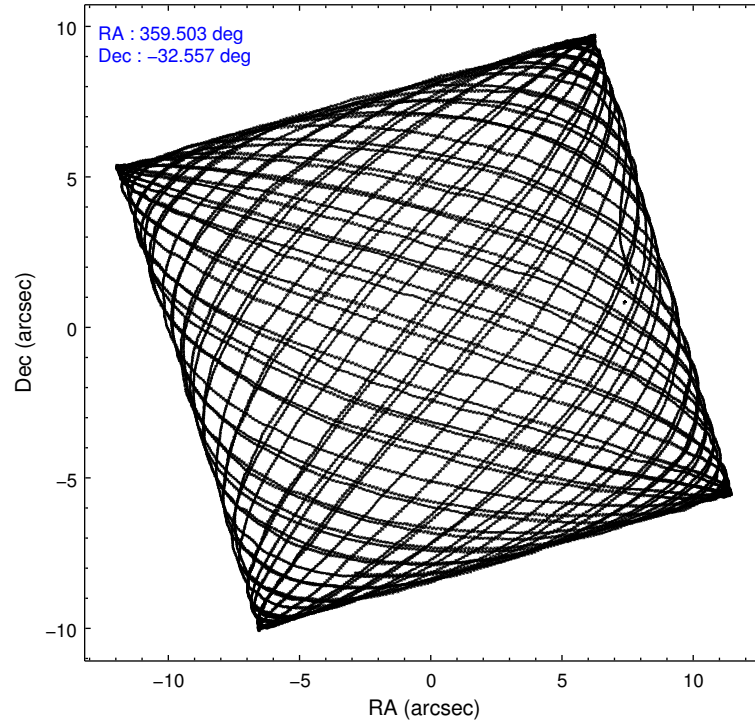
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	155978	152935	157669	198800	206174
rejected events	139306	136730	139110	110024	149775
rejected %	89%	89%	88%	55%	72%

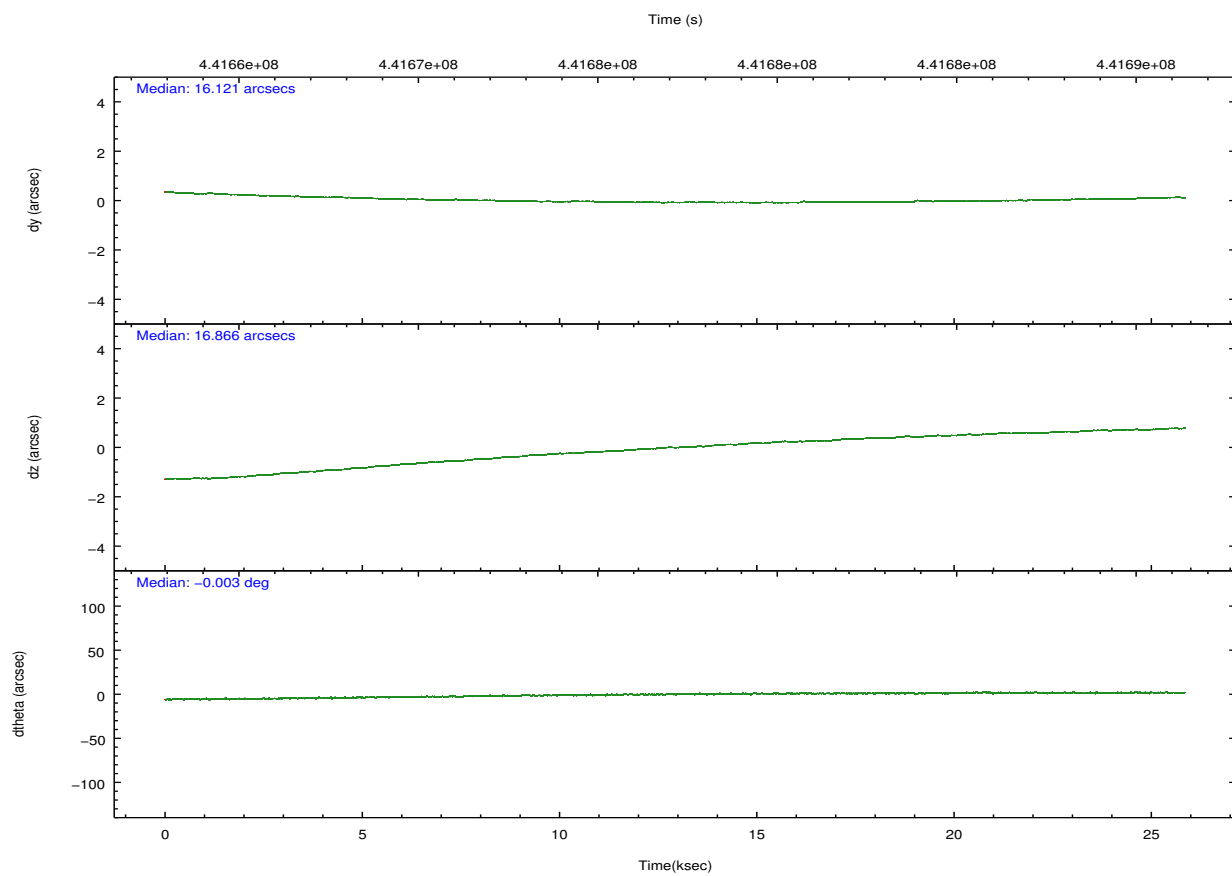
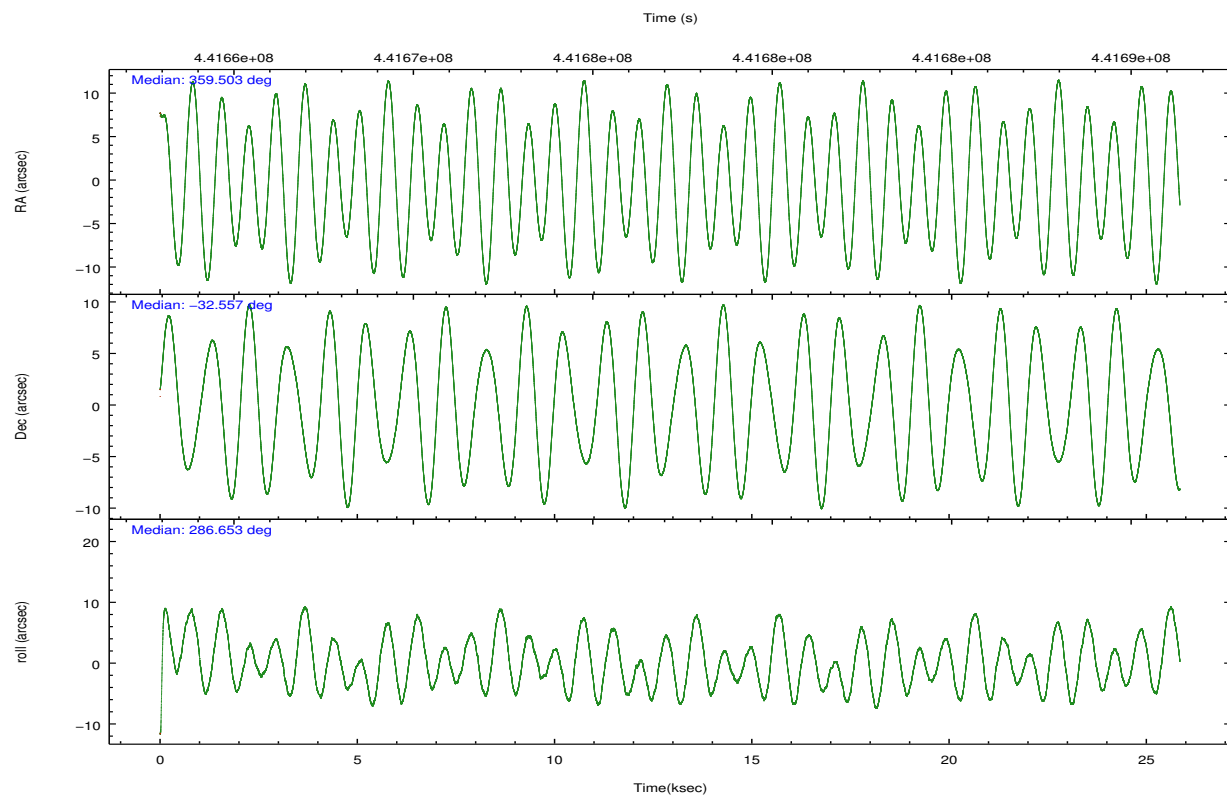
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	6217	5549	6623	8336	16772
	3%	3%	4%	4%	8%
grade 1 events	83	90	68	219	179
	0%	0%	0%	0%	0%
grade 2 events	3858	3522	4266	18252	12930
	2%	2%	2%	9%	6%
grade 3 events	1729	1806	1786	7602	6220
	1%	1%	1%	3%	3%
grade 4 events	1795	1814	1676	7440	5777
	1%	1%	1%	3%	2%
grade 5 events	6060	7453	7137	19833	10405
	3%	4%	4%	9%	5%
grade 6 events	3077	3517	4213	47169	14712
	1%	2%	2%	23%	7%
grade 7 events	133159	129184	131900	89949	139179
	85%	84%	83%	45%	67%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	359.479144	359.5030524239785	Subarray requested	NONE	NONE
[deg] Pointing Dec	-32.538141	-32.55662004778246	Alternating exposures requested	N	N
[deg] Pointing Roll	286.489012	286.6584867356656	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	441665076.184000	441663247.41554			
Observation start date	2011-12-30T20:43:30	2011-12-30T20:14:07			
[s] Observation end time (MET)	441690076.184000	441690640.54199			
Observation end date	2011-12-31T03:40:10	2011-12-31T03:50:40			
Read mode	TIMED	TIMED			

2.3 Aspect



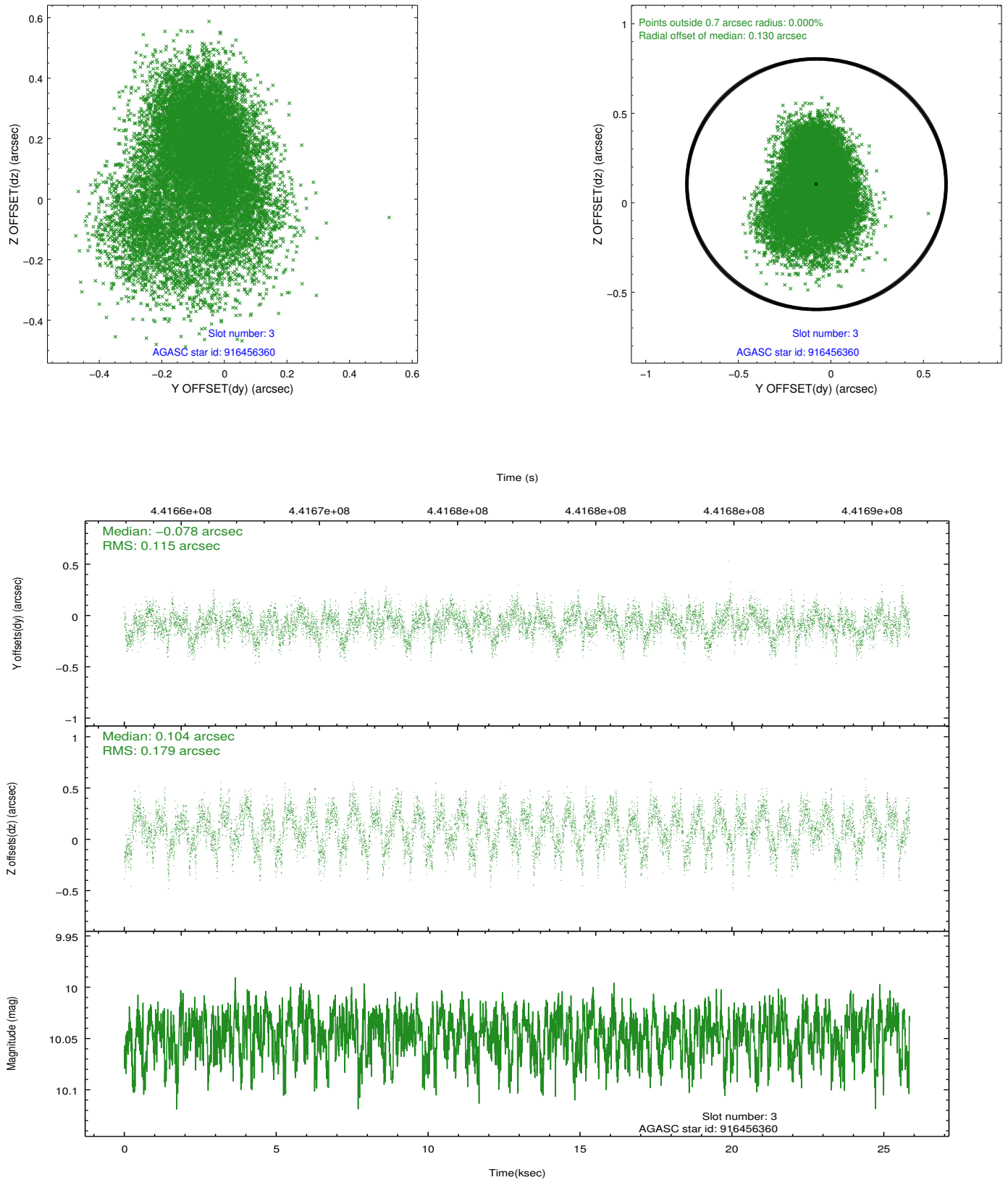


Slot Statistics

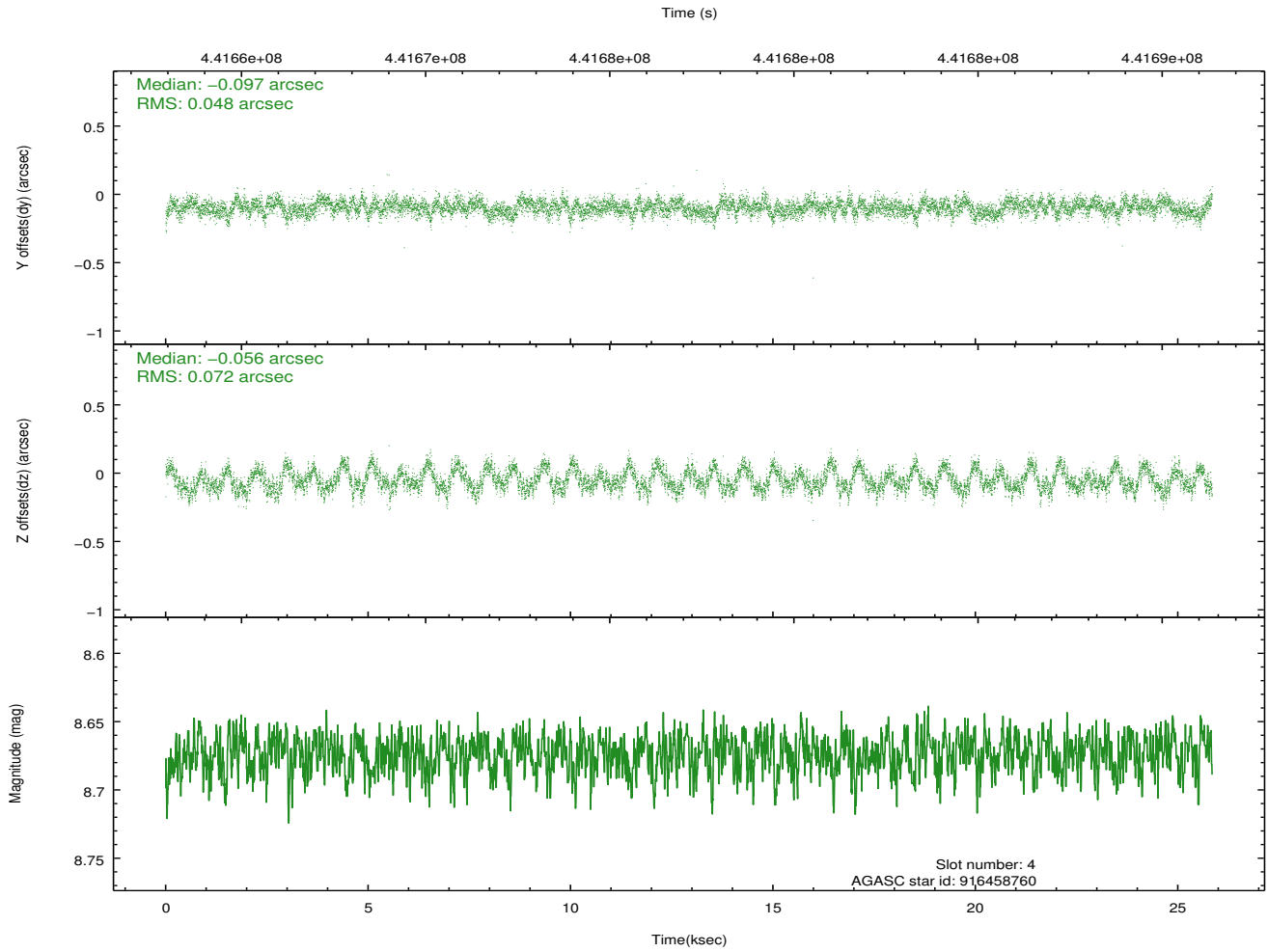
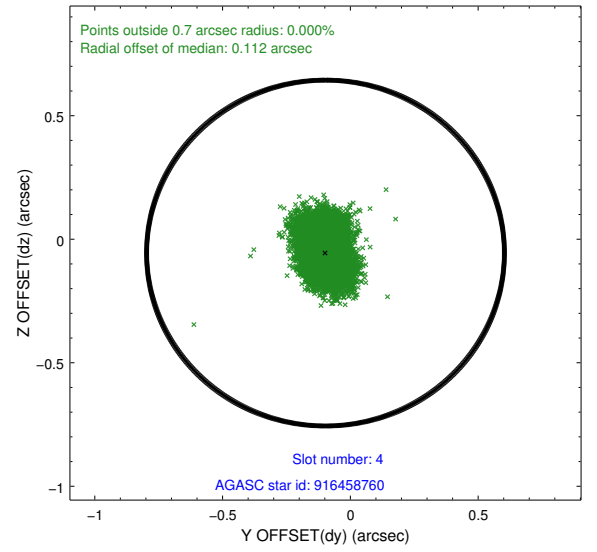
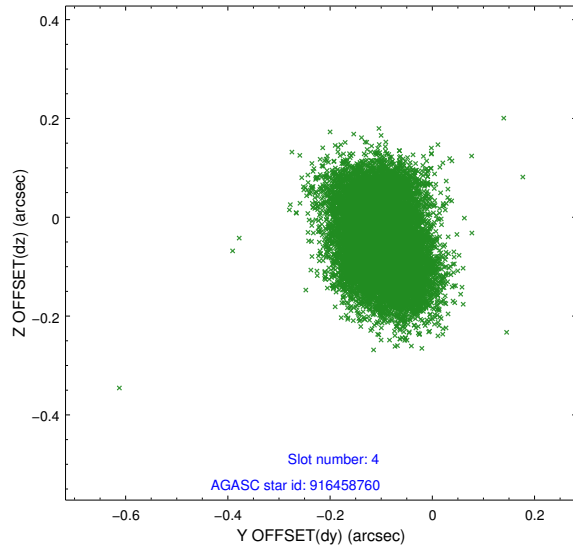
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.98	6305	-0.107	-0.040	0.021	0.038	0.000000	0.000000	-769.29	-1738.20
1	FID	ACIS-S-4	7.07	6304	0.230	0.062	0.007	0.013	0.000000	0.000000	2144.31	170.22
2	FID	ACIS-S-5	7.11	6303	-0.155	-0.014	0.020	0.036	0.000000	0.000000	-1822.01	164.00
3	GUIDE	916456360	10.05	12591	-0.078	0.104	0.228	0.371	0.174983	-32.558535	676.45	2001.15
4	GUIDE	916458760	8.67	12604	-0.097	-0.056	0.092	0.151	0.208450	-32.735965	1317.28	1913.41
5	GUIDE	985533536	7.22	12610	0.056	-0.040	0.080	0.128	359.409808	-33.189108	2188.58	-864.23
6	GUIDE	985538384	9.31	12603	0.211	-0.064	0.123	0.203	359.535631	-33.132150	2099.56	-443.07
7	GUIDE	985137968	9.01	12592	-0.086	0.061	0.108	0.173	358.620671	-32.471818	-957.80	-2434.75

2.4 Star Slots

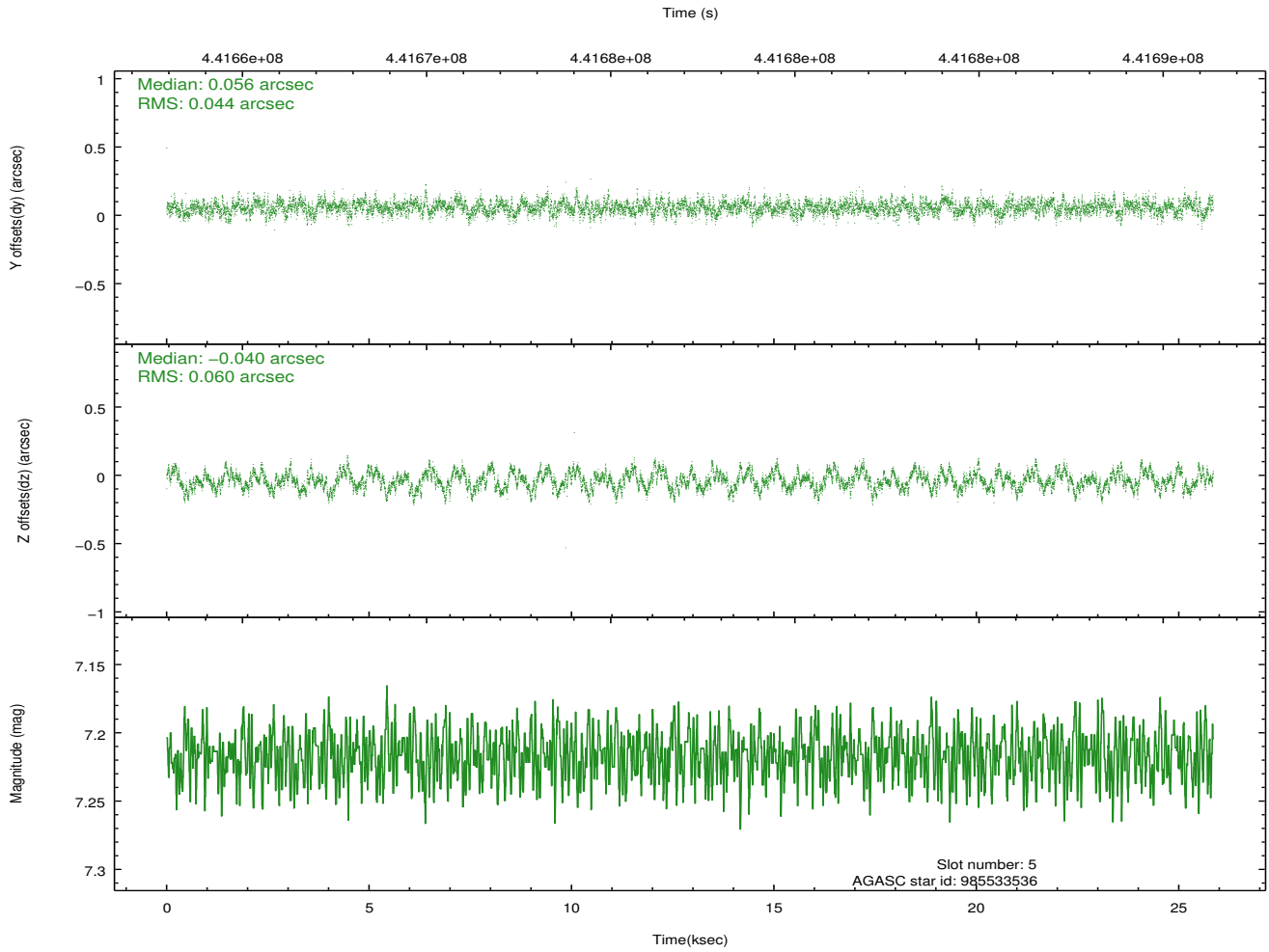
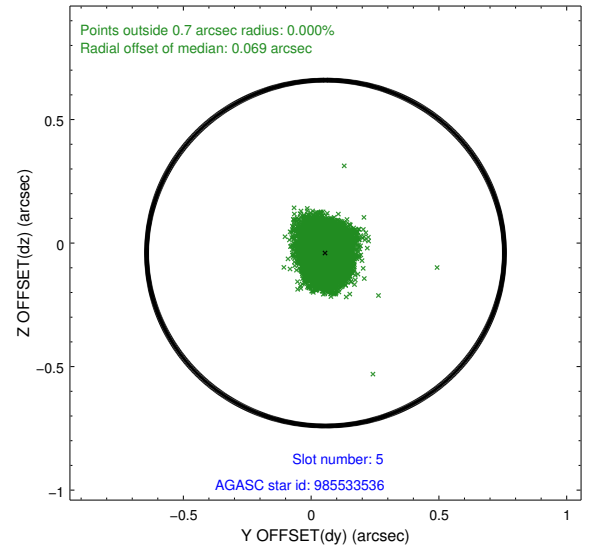
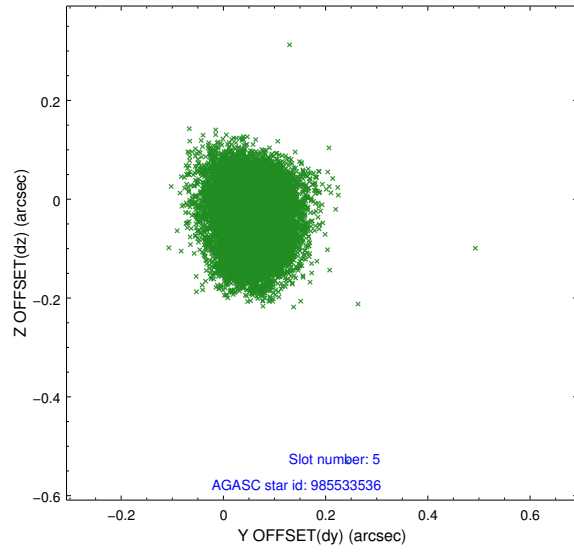
2.4.1 Slot 3



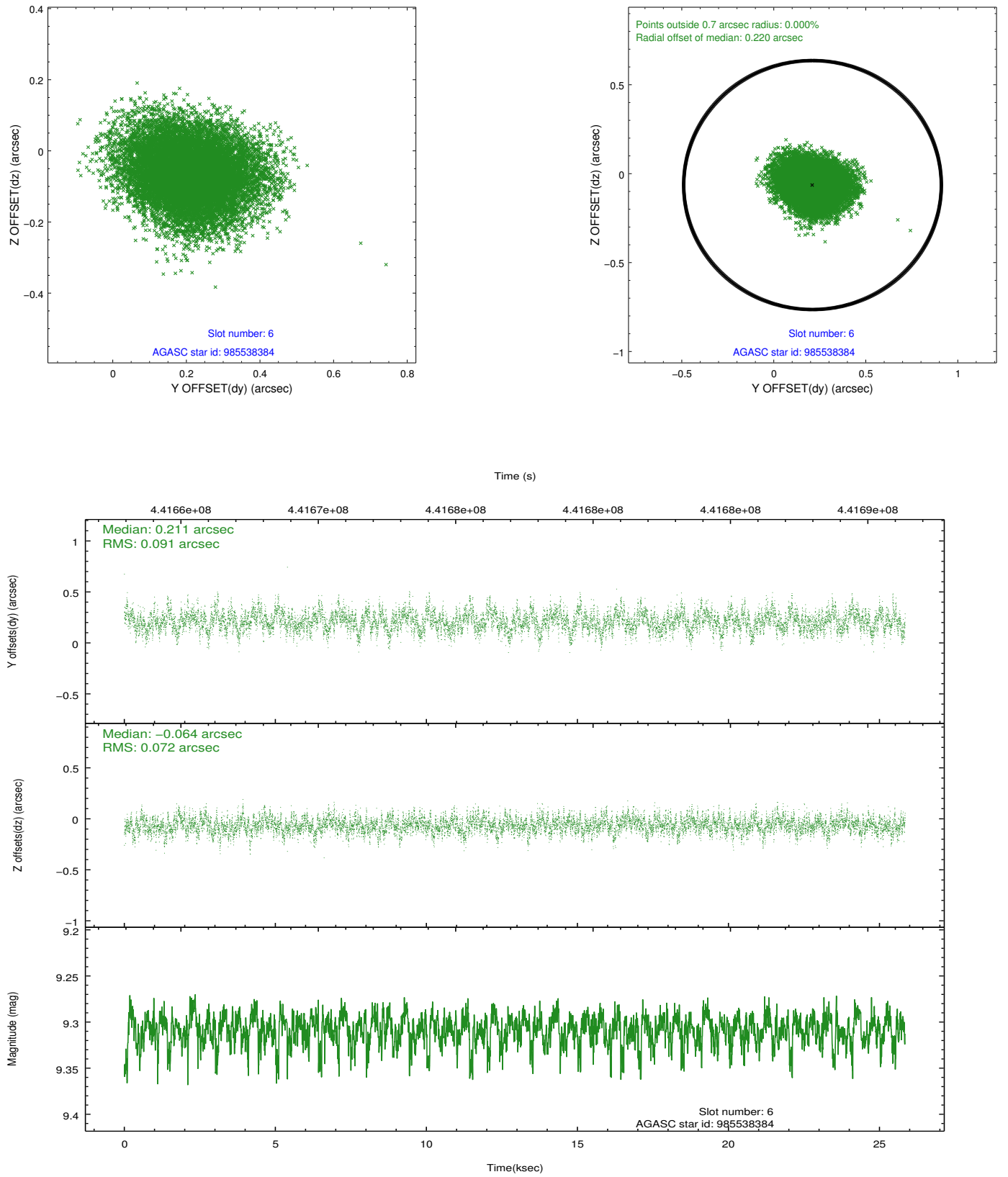
2.4.2 Slot 4



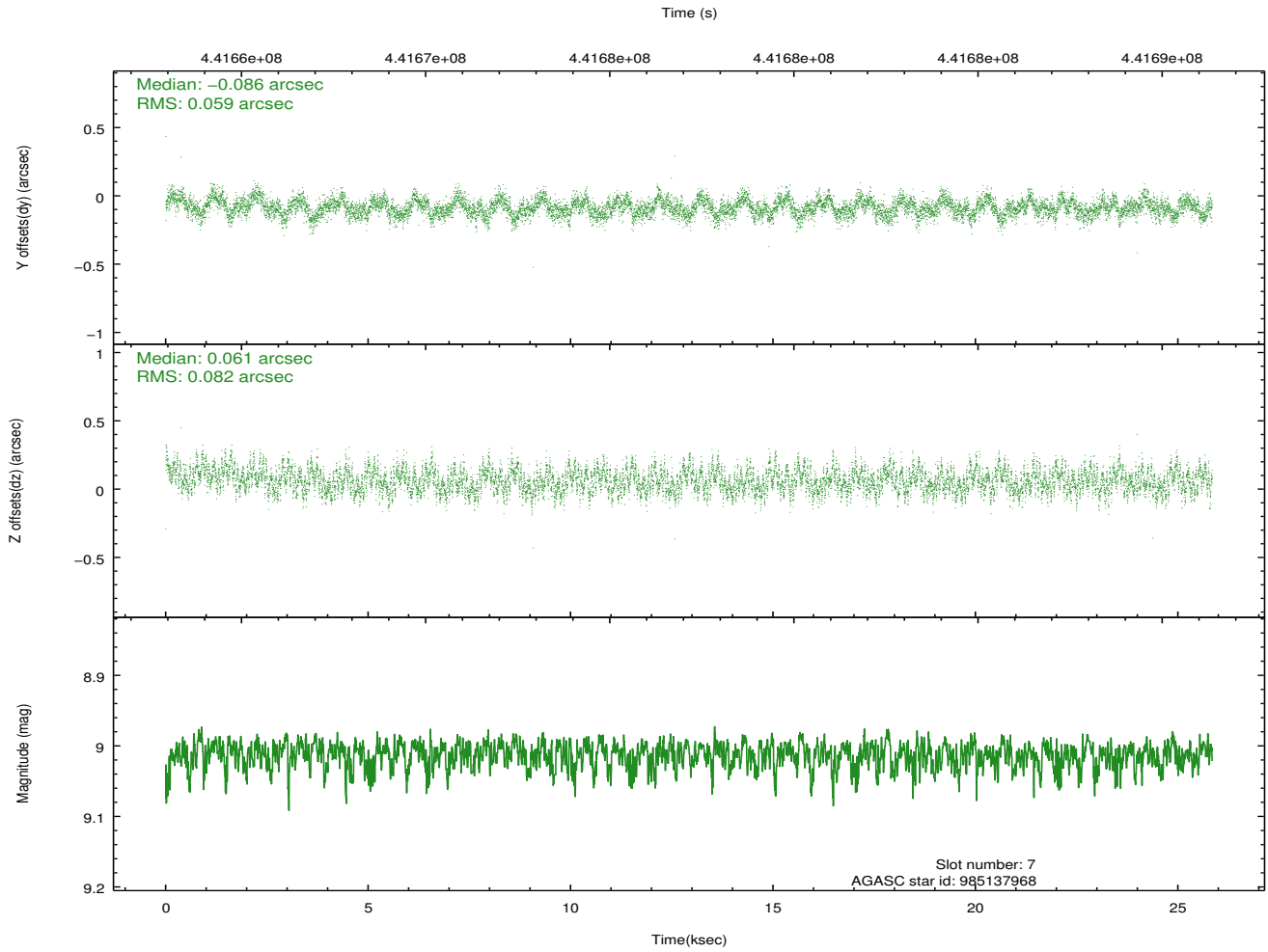
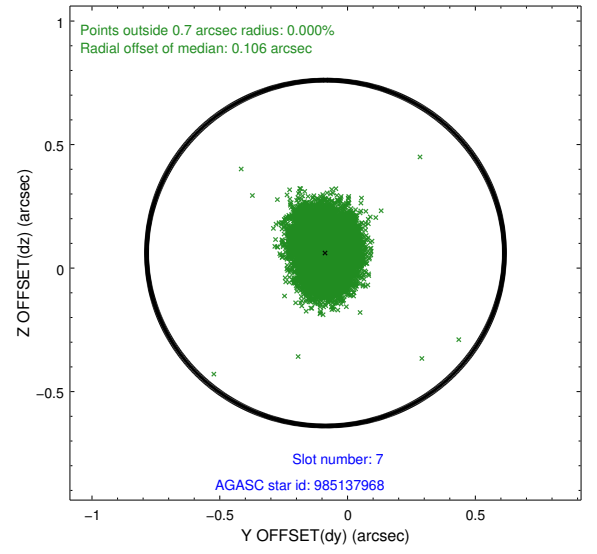
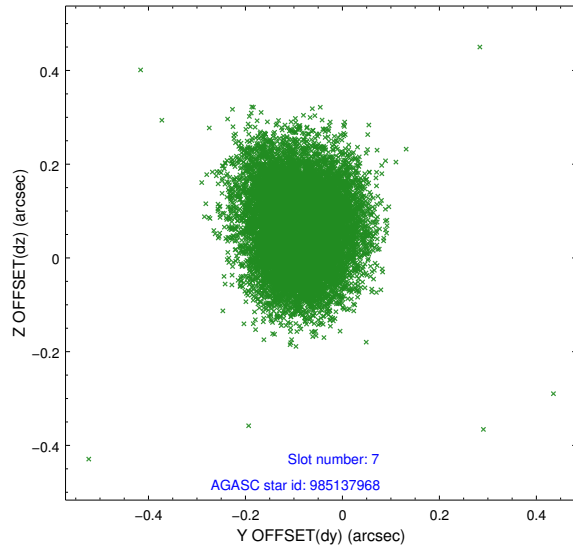
2.4.3 Slot 5



2.4.4 Slot 6

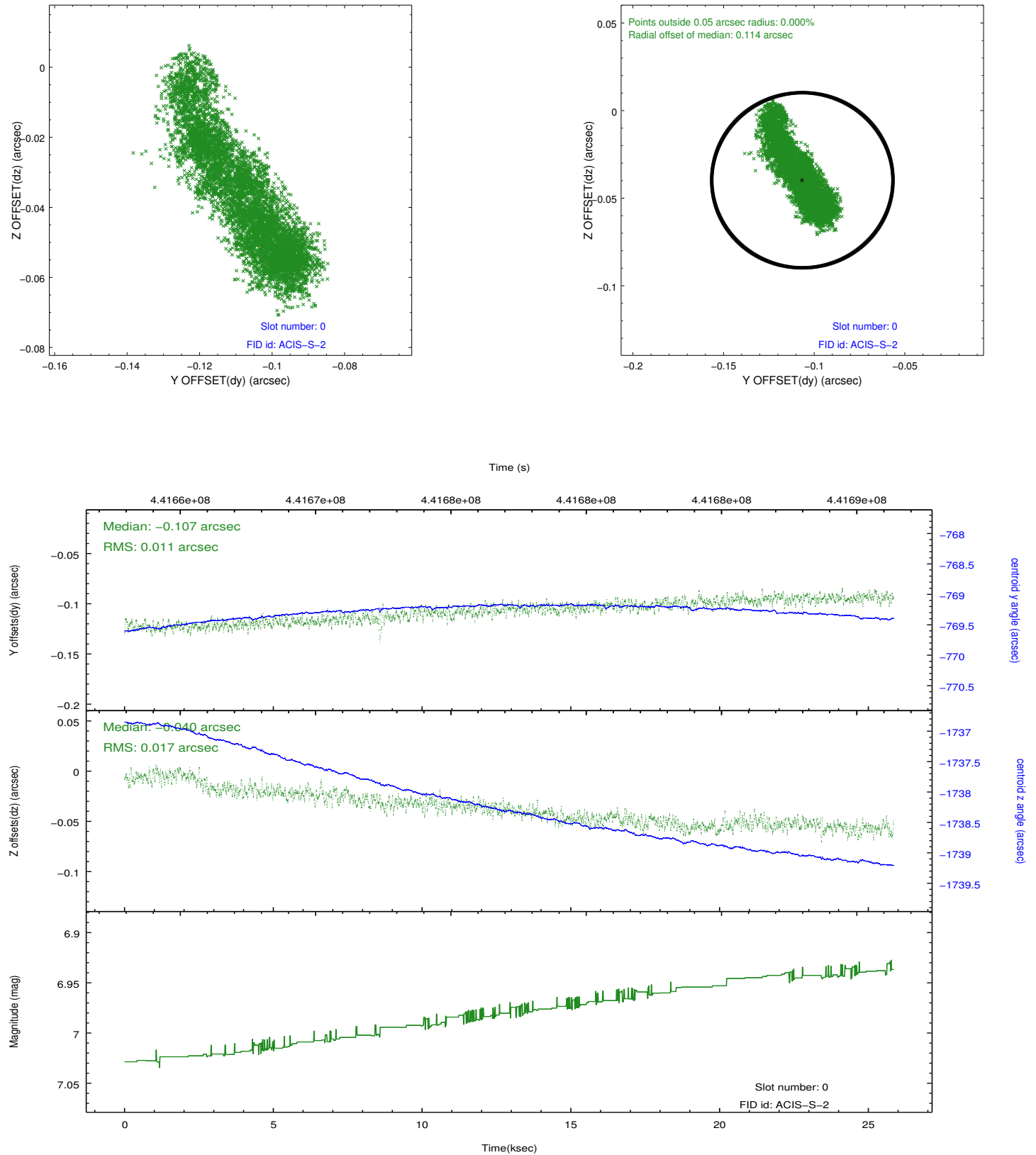


2.4.5 Slot 7

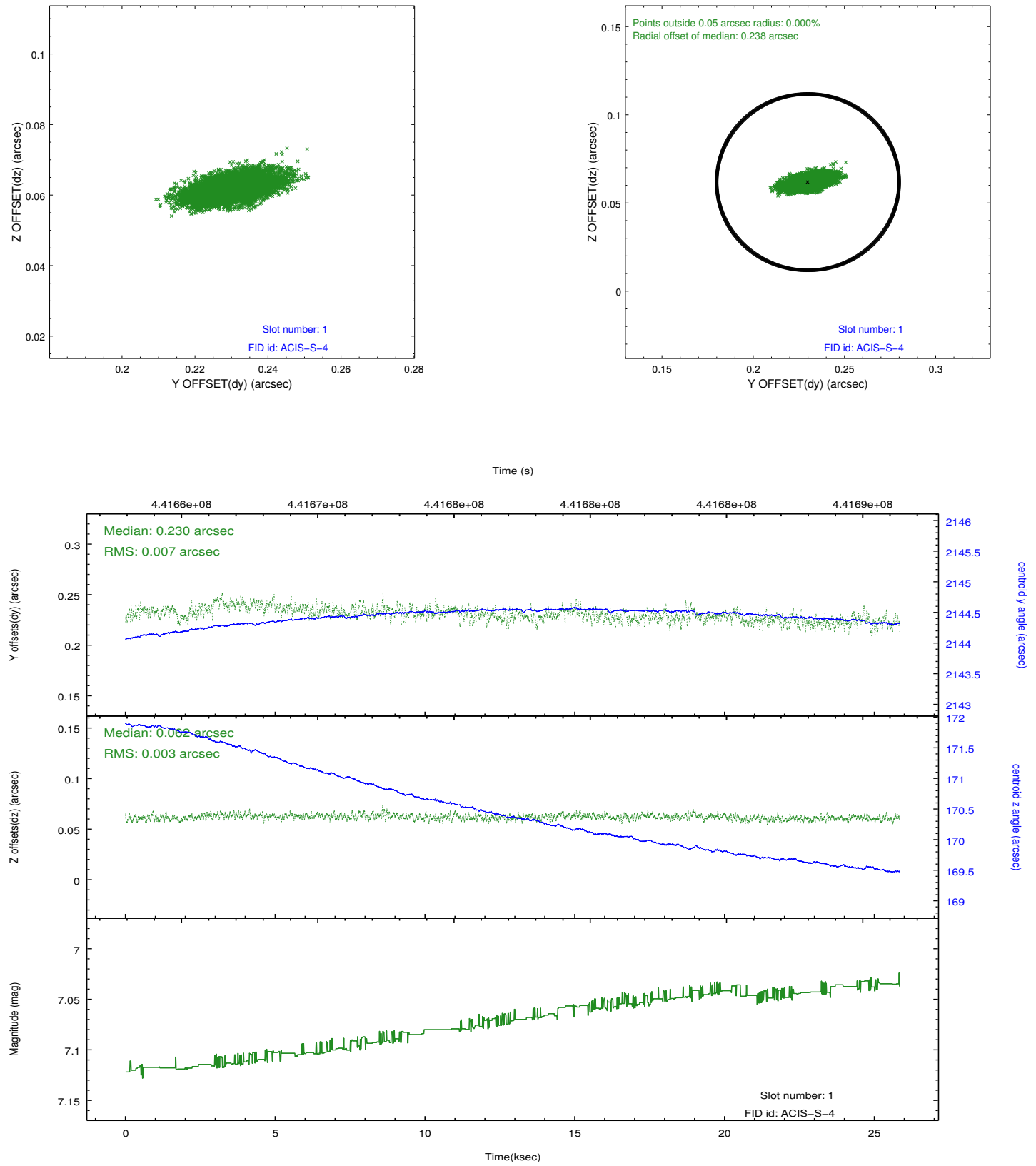


2.5 FID Slots

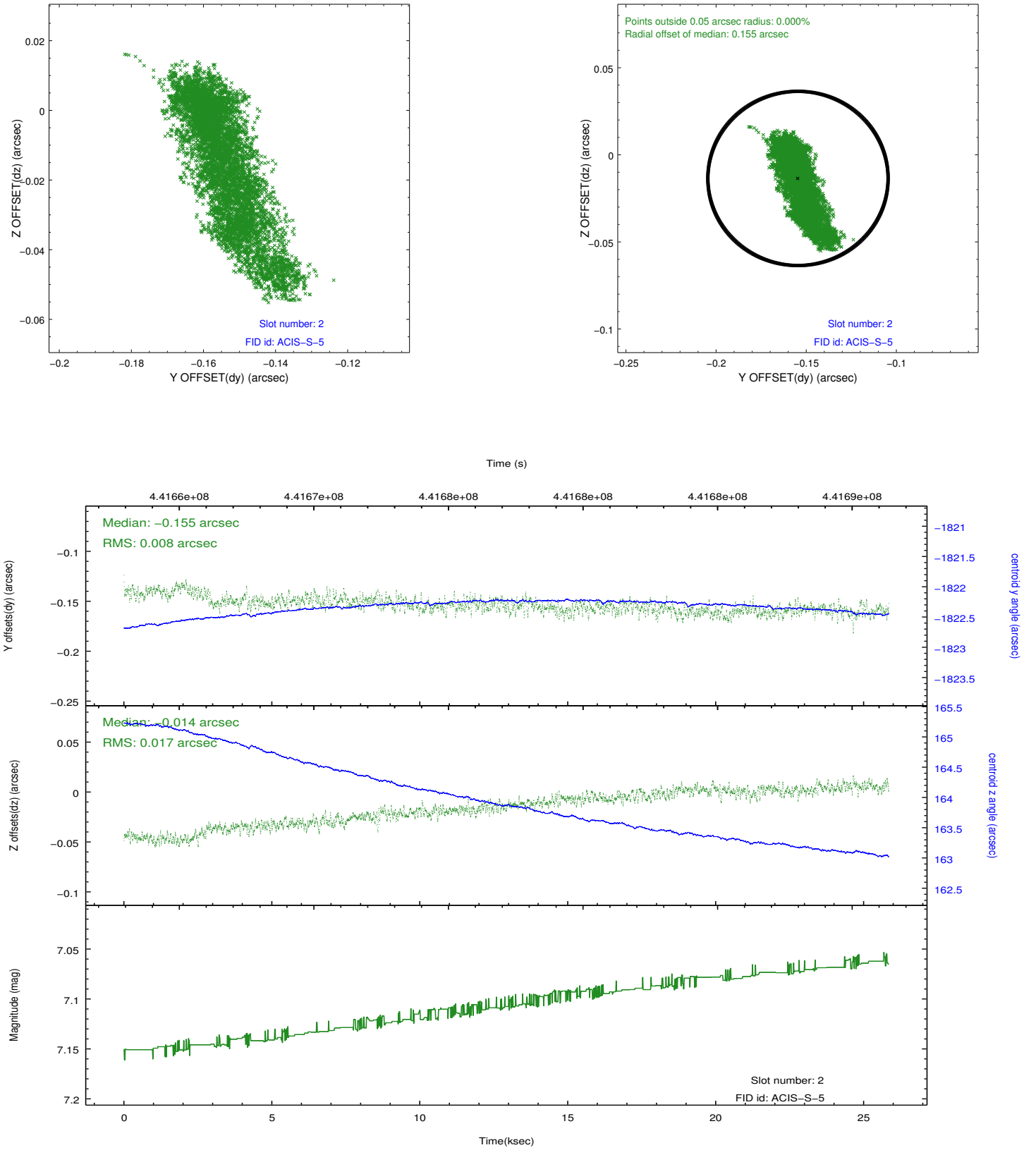
2.5.1 Slot 0



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)	2018.03.06
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	25.037775033236

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.