

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 21679 - L2 Version 1
Chandra X-Ray Center

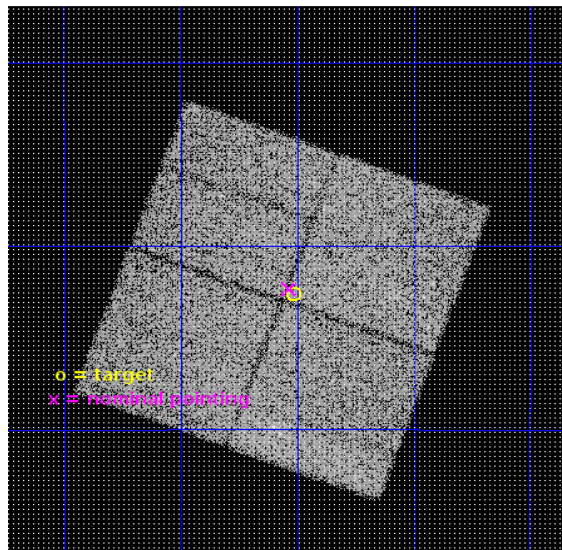
L2 Processing Date : Jun 8 2019

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1 Front

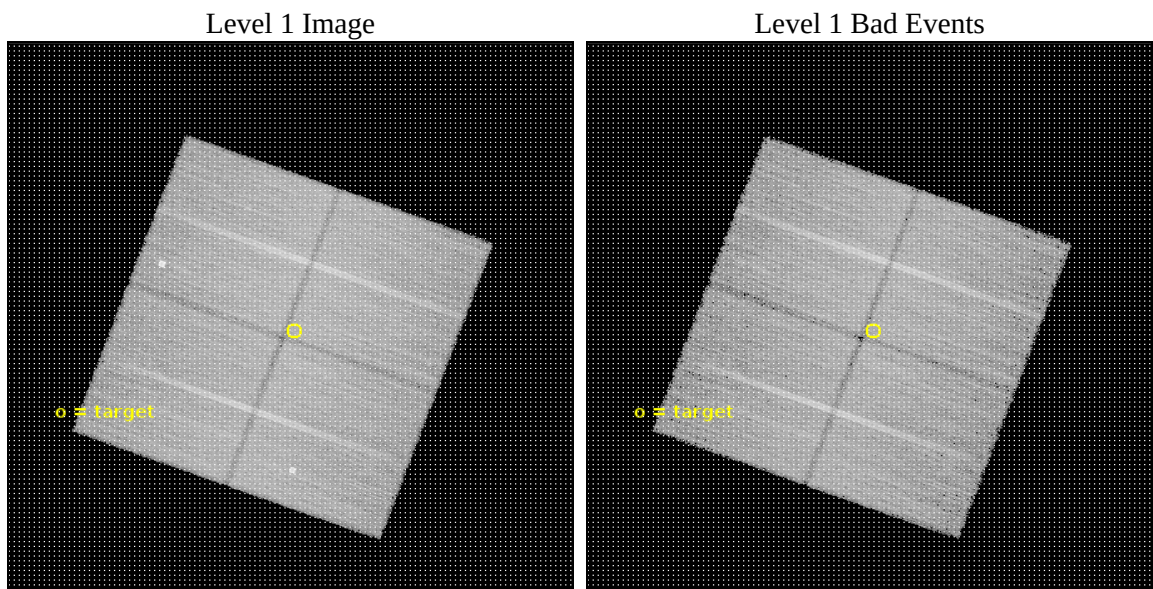
seq_num	201258	Sequence number
obs_id	21679	Observation id
title	Linking the G352 Giant Molecular Filament to the Giant HII Region NGC 6334	Proposal title
observer	Gordon Garmire	Principal investigator
object	G351.744+0.594	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	260.503333	Observer's specified target RA [deg]
dec_targ	-35.543611	Observer's specified target Dec [deg]
ra_nom	260.50839920293	Nominal RA [deg]
dec_nom	-35.538857435861	Nominal Dec [deg]
roll_nom	20.159424336449	Nominal Roll [deg]
revision	1	Processing version of data
ontime	37578.128791809	Sum of GTIs [s]
livetime	37087.142874528	Livetime [s]
ontime0	37581.146742225	Sum of GTIs [s]
ontime1	37578.046791911	Sum of GTIs [s]
ontime2	37578.08779192	Sum of GTIs [s]
ontime3	37578.128791809	Sum of GTIs [s]
l2events	112937	Number of level 2 events



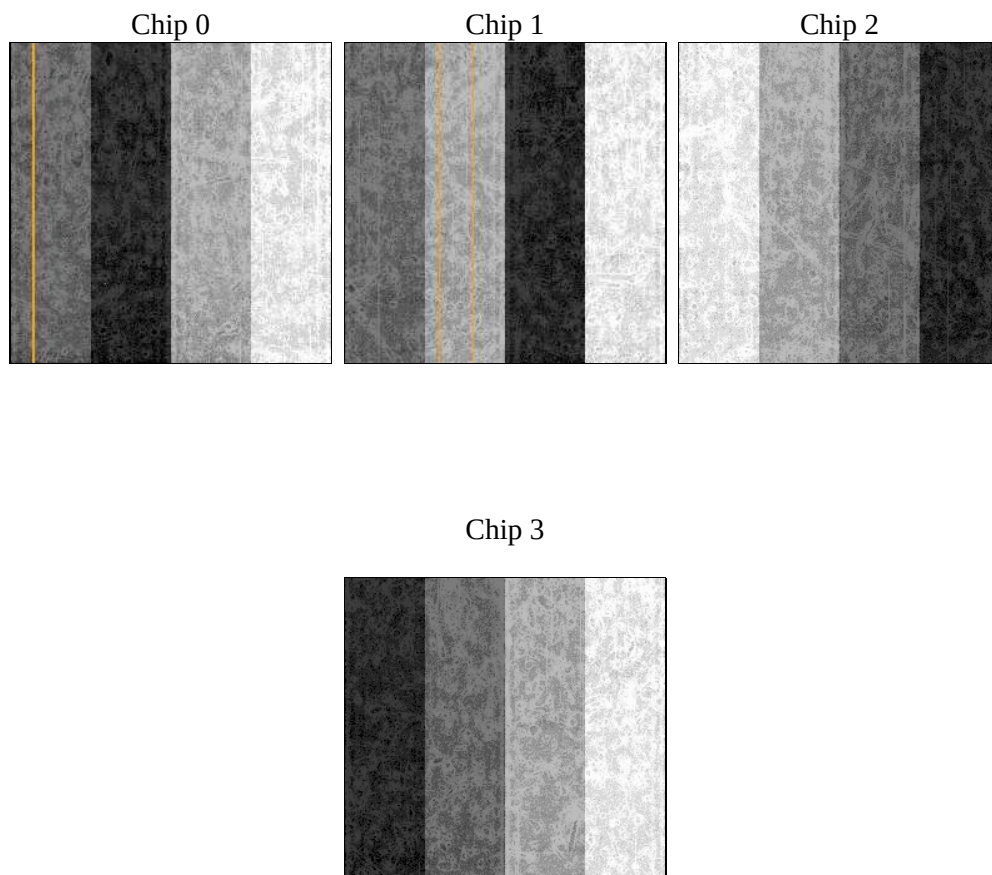
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37500.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	37578.128791809	Sum of GTIs [s]
caldsver	4.8.3	 	ontime0	37581.146742225	Sum of GTIs [s]
date	2019-06-08T16:16:33	Date and time of file creation	ontime1	37578.046791911	Sum of GTIs [s]
revision	1	Processing version of data	ontime2	37578.08779192	Sum of GTIs [s]
			ontime3	37578.128791809	Sum of GTIs [s]
			l1events	1122696	Number of level 1 events

2.1.4 Events

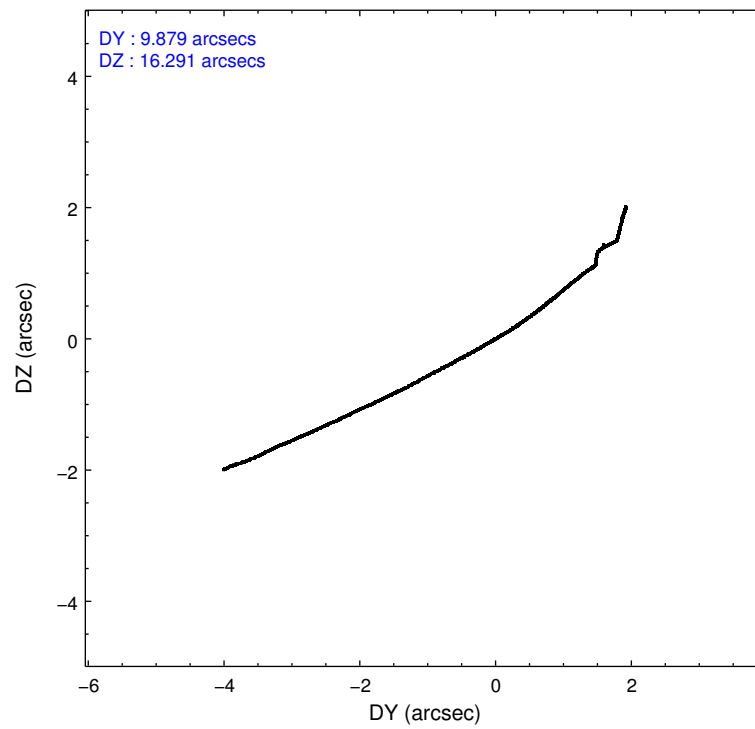
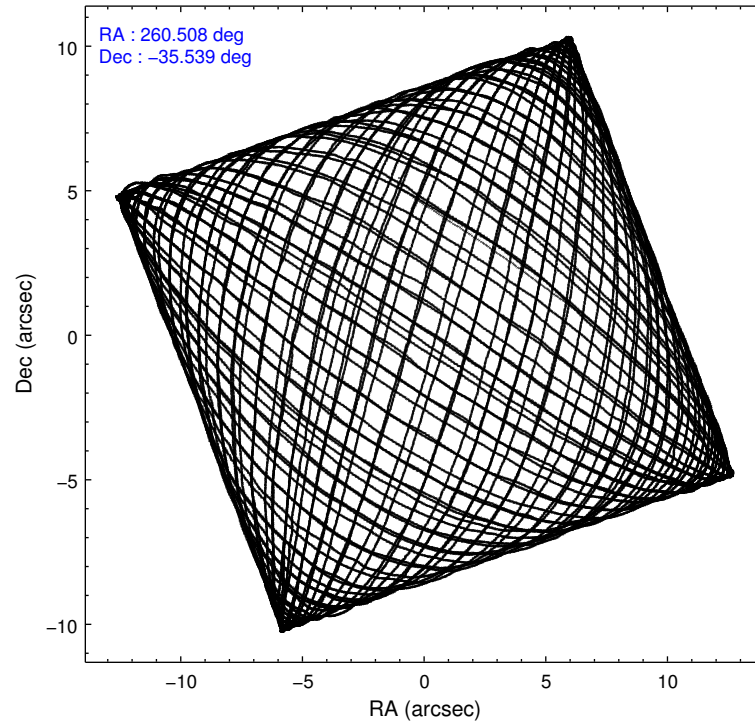
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	263726	277588	297752	283630
rejected events	230791	238361	262021	251856
rejected %	87%	85%	87%	88%

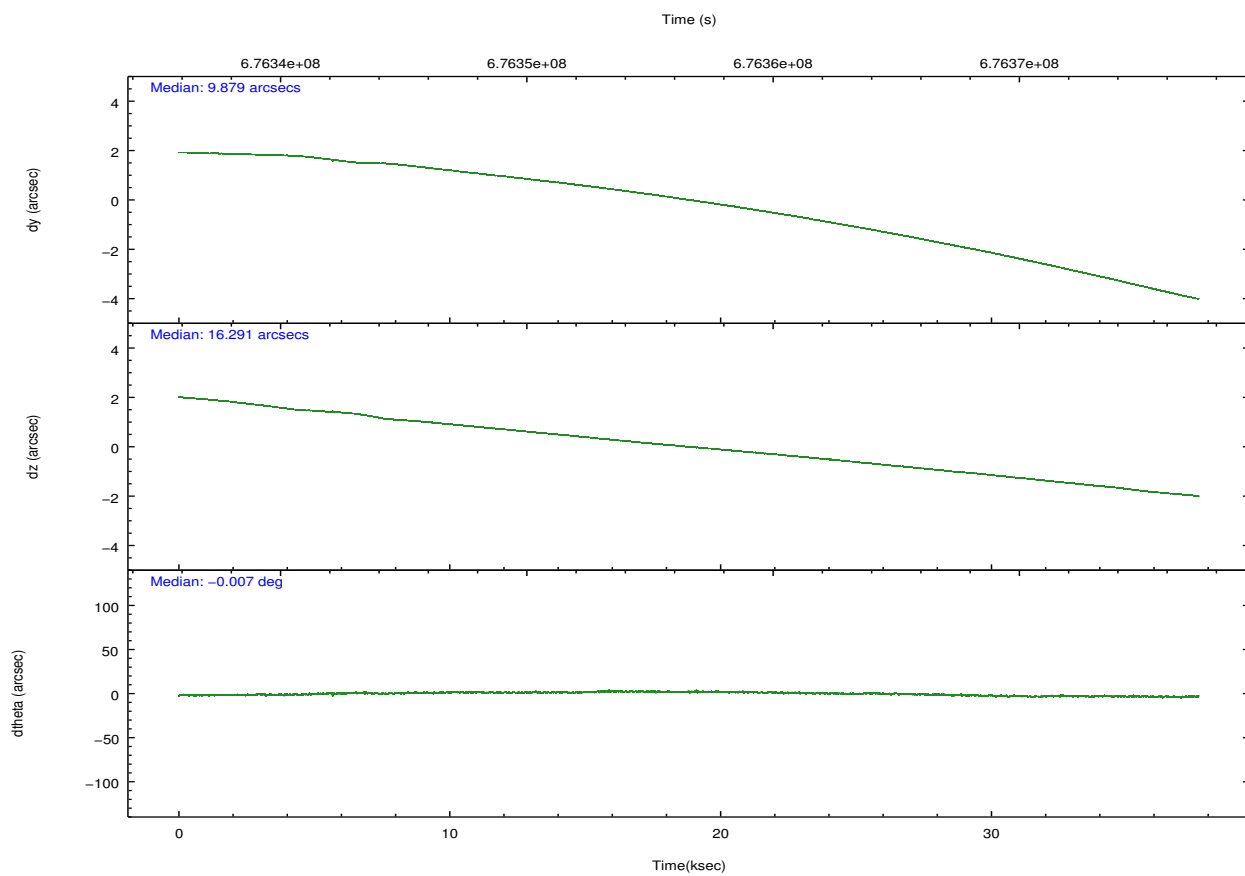
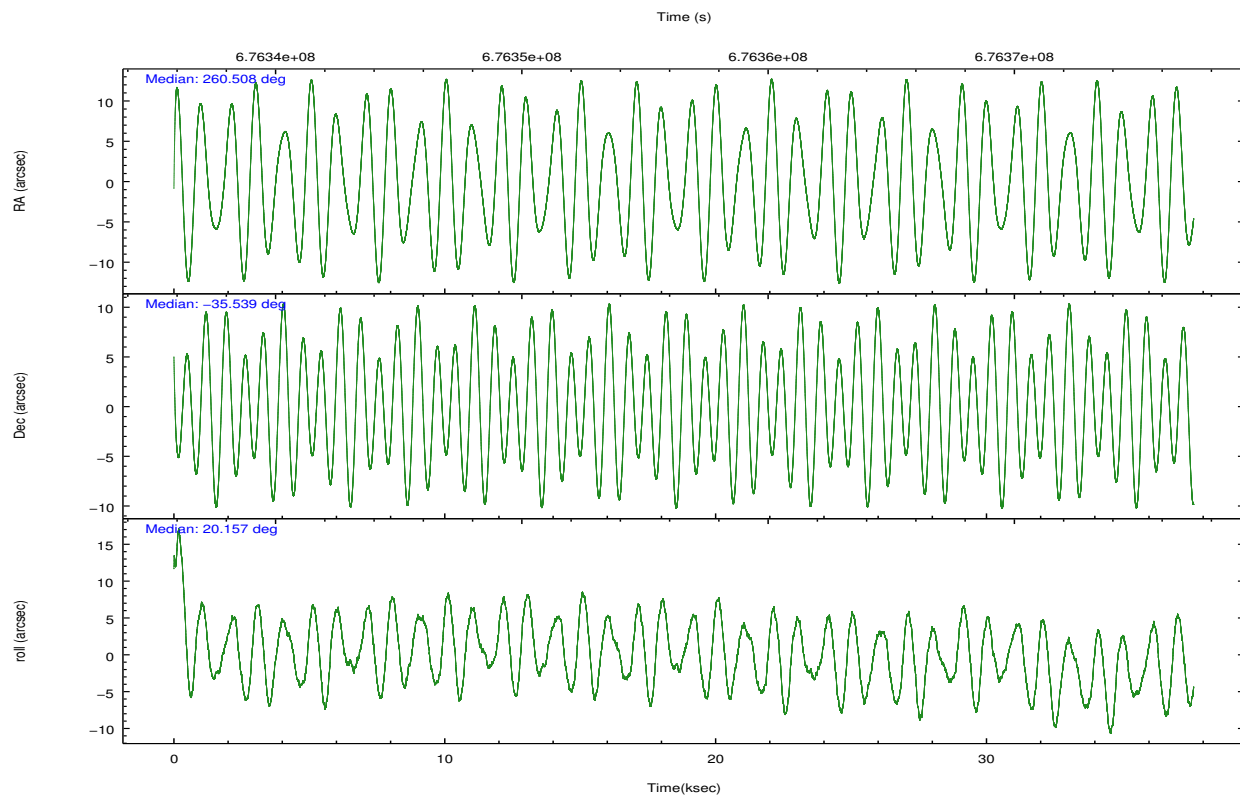
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	11317	14966	14854	11906
	4%	5%	4%	4%
grade 1 events	152	189	213	171
	0%	0%	0%	0%
grade 2 events	8384	9426	7925	6772
	3%	3%	2%	2%
grade 3 events	3346	3434	3198	3152
	1%	1%	1%	1%
grade 4 events	3034	3387	3272	3227
	1%	1%	1%	1%
grade 5 events	12416	12689	12092	13754
	4%	4%	4%	4%
grade 6 events	6859	8018	6489	6723
	2%	2%	2%	2%
grade 7 events	218218	225479	249709	237925
	82%	81%	83%	83%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	260.486766	260.5083992029252	CCD I2 on	Y	Y
[deg] Pointing Dec	-35.560105	-35.5388574358609	CCD I3 on	Y	Y
[deg] Pointing Roll	19.938157	20.15942433644881	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O2	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	676337913.184000	676336529.7286299	CCD S5 on	N	N
Observation start date	2019-06-07T23:37:24	2019-06-07T23:15:29	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	676375413.184000	676375996.331	On-chip summing requested	N	N
Observation end date	2019-06-08T10:02:24	2019-06-08T10:13:16	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



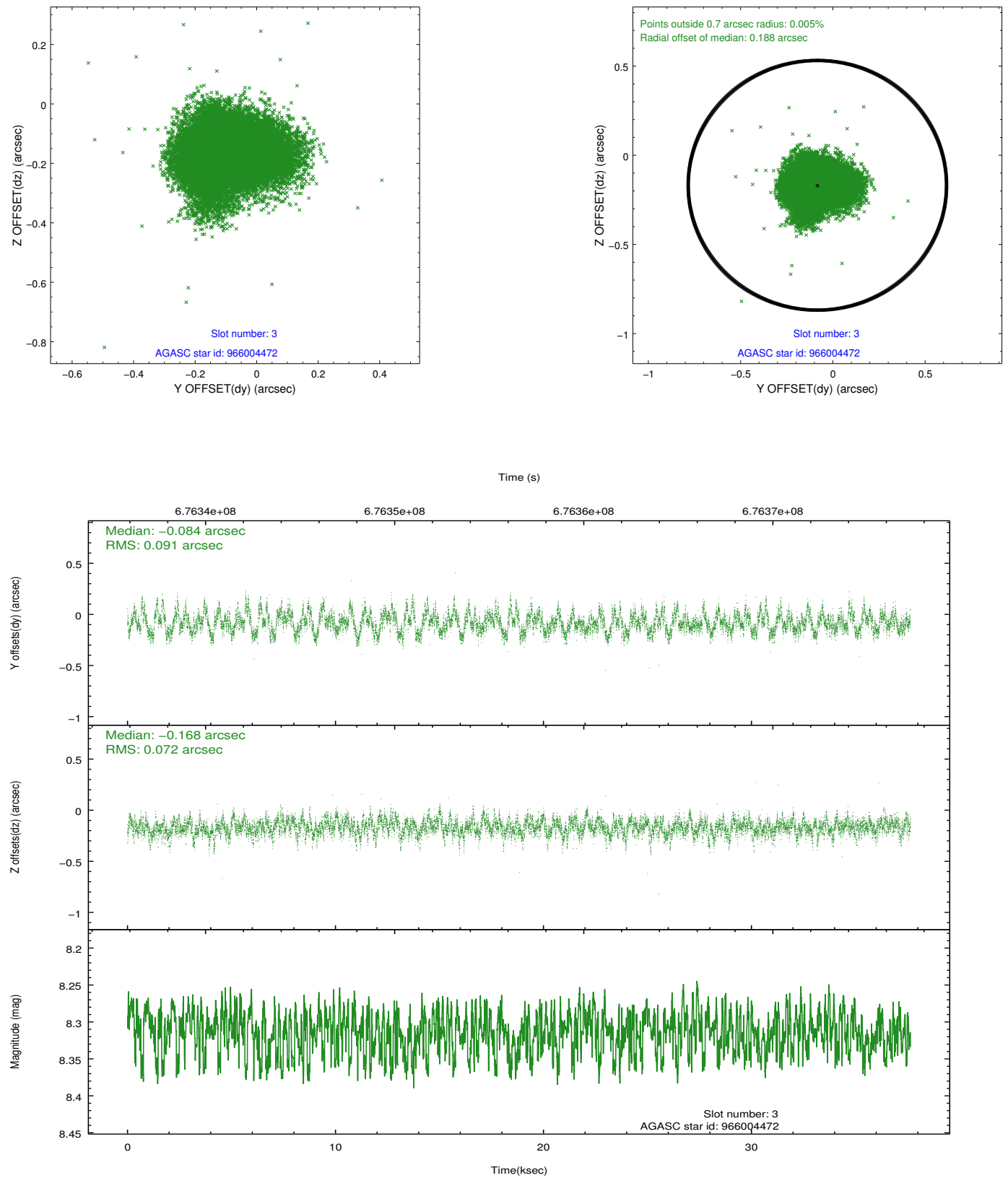


Slot Statistics

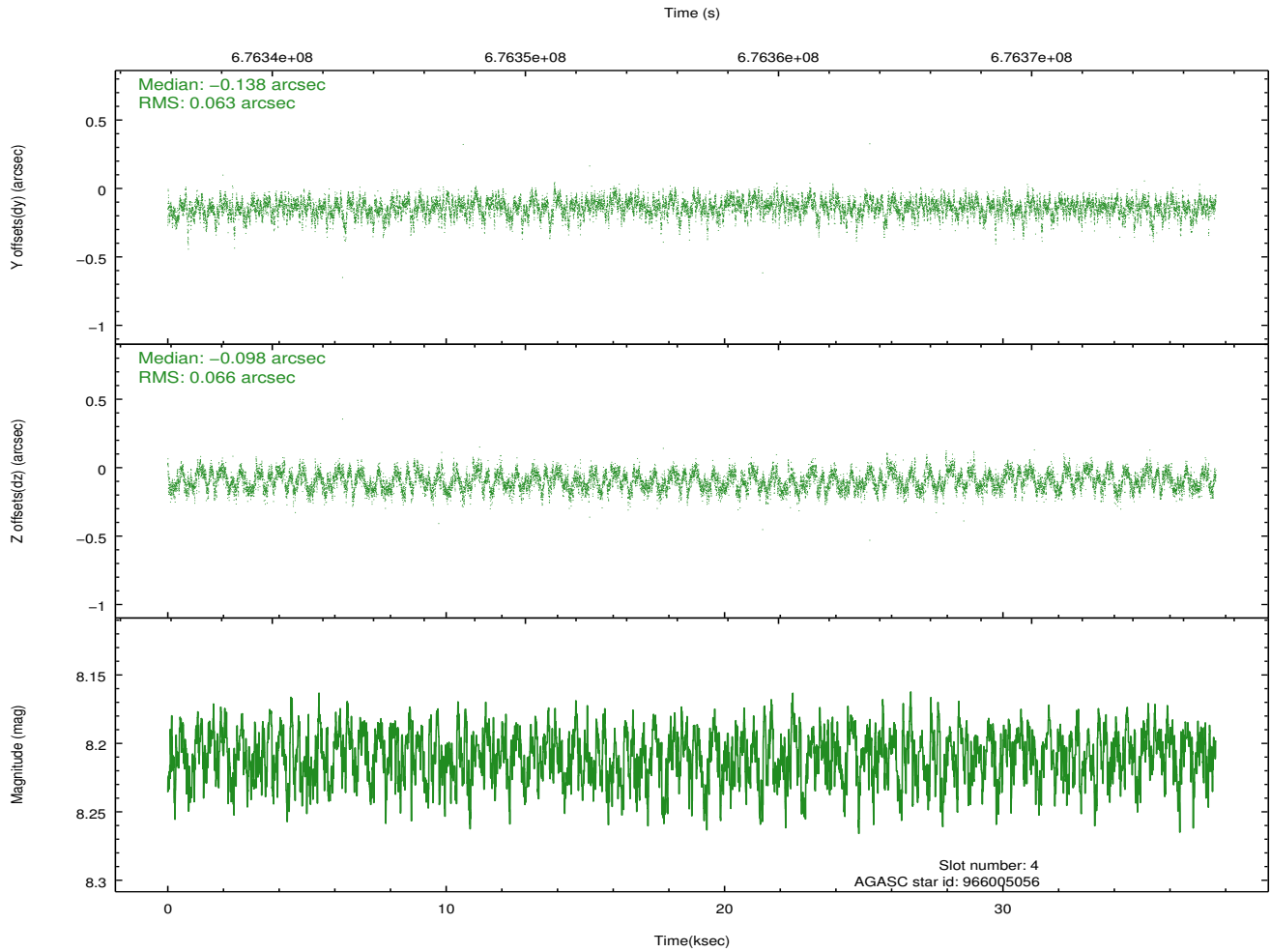
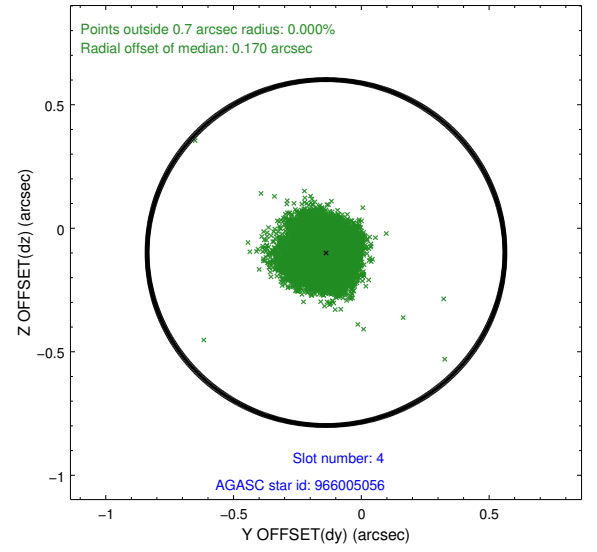
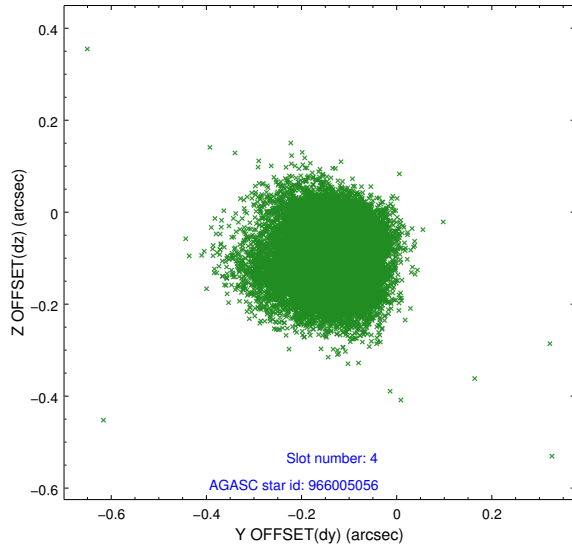
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.13	9181	1.000	0.091	-0.108	0.033	0.068	0.000000	0.000000	930.23	-839
1	FID		ACIS-I-5	7.09	9182	1.000	-0.455	0.012	0.015	0.026	0.000000	0.000000	-1818.57	1057
2	FID		ACIS-I-6	7.09	9183	1.000	0.273	0.168	0.045	0.073	0.000000	0.000000	395.71	1702
3	GUIDE	used	966004472	8.31	18348	1.000	-0.084	-0.168	0.126	0.196	260.641543	-35.382088	645.32	445
4	GUIDE	used	966005056	8.21	18361	1.000	-0.138	-0.098	0.097	0.153	260.445624	-35.348497	145.76	756
5	GUIDE	used	966533064	6.58	18362	1.000	0.214	0.472	0.120	0.190	260.658145	-35.910729	41.47	-1355
6	GUIDE	used	967711376	7.04	18366	1.000	-0.214	-0.224	0.099	0.153	261.036431	-34.798453	2459.79	2015
7	GUIDE	used	966002288	8.82	18351	1.000	0.220	0.017	0.102	0.180	259.614800	-35.563330	-2407.76	849

2.4 Star Slots

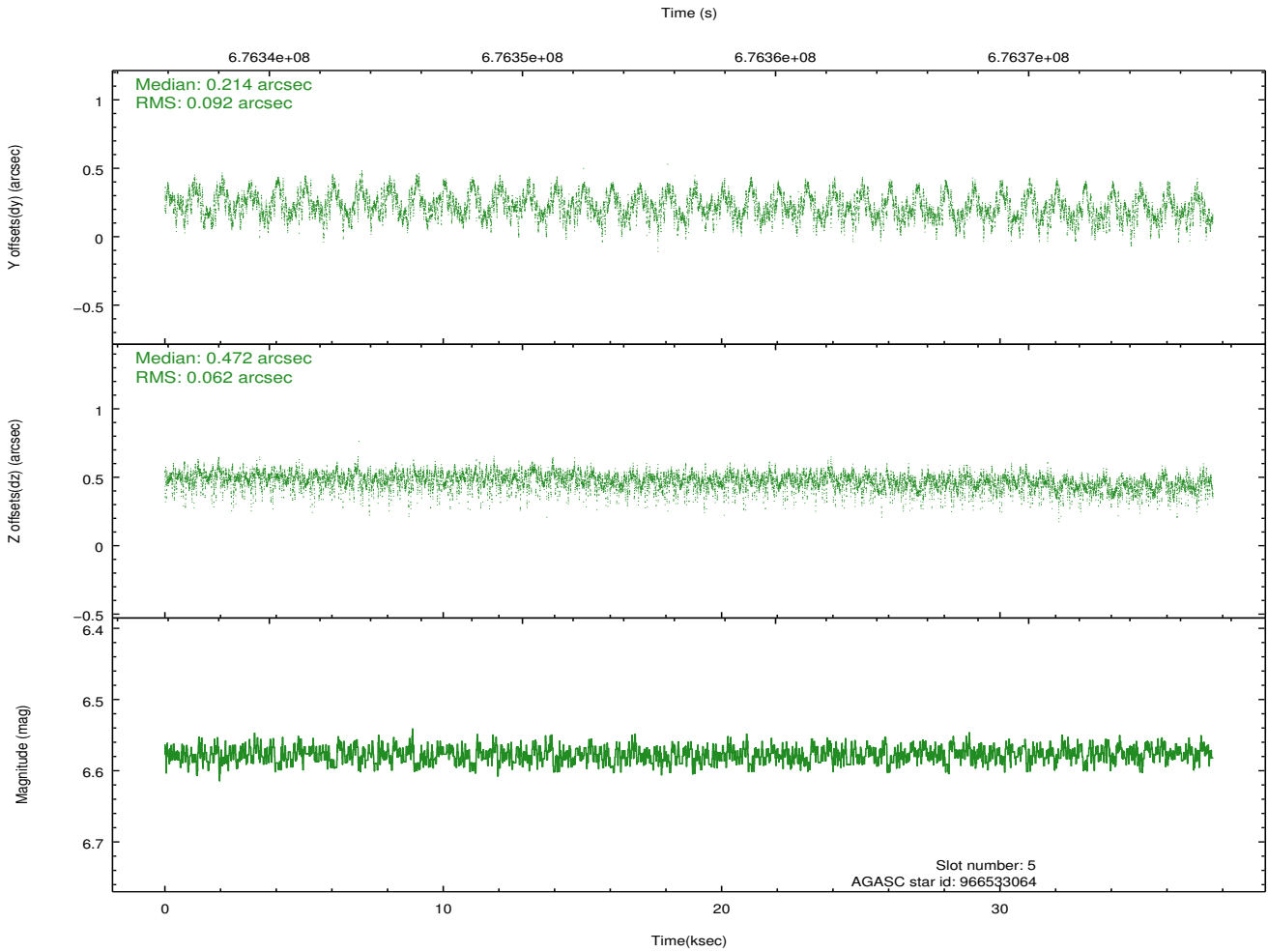
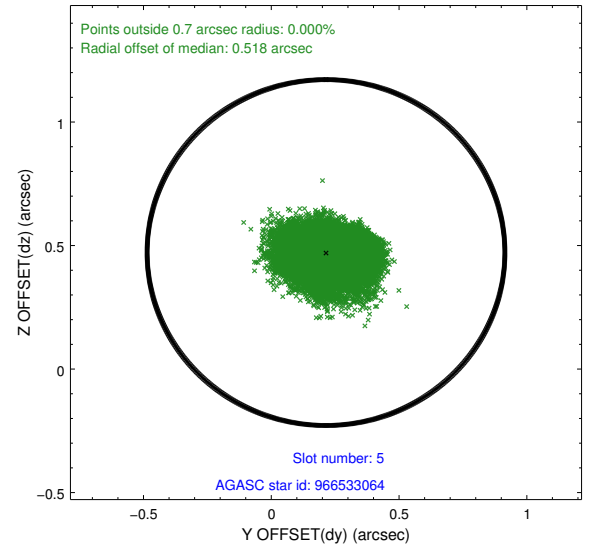
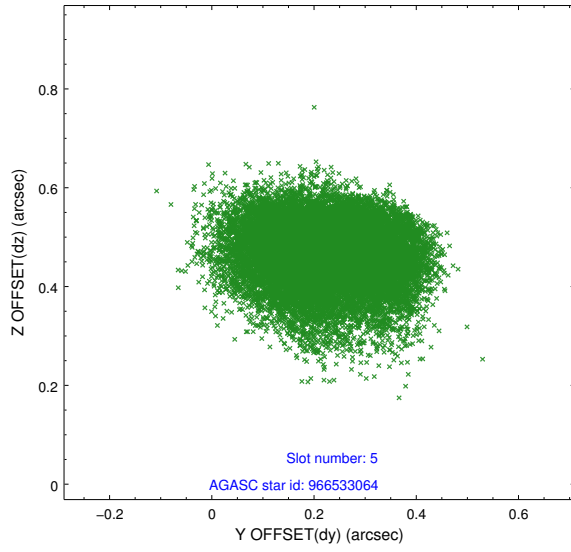
2.4.1 Slot 3



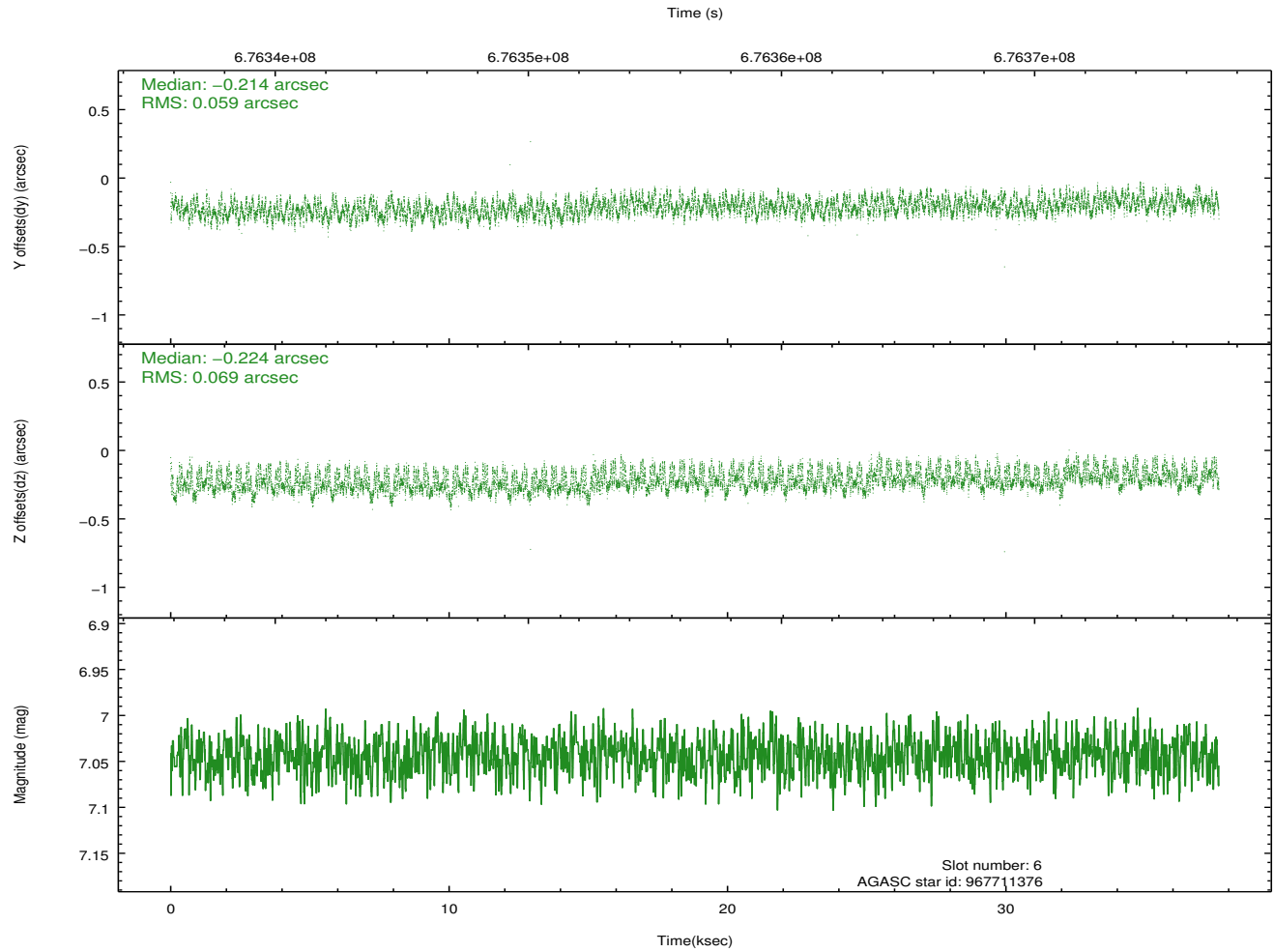
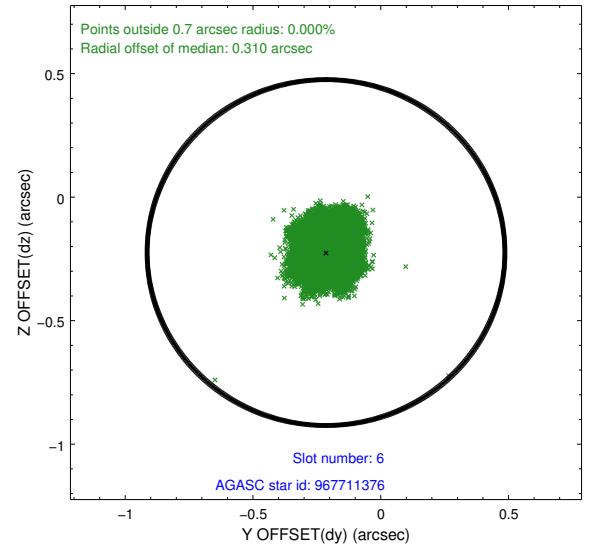
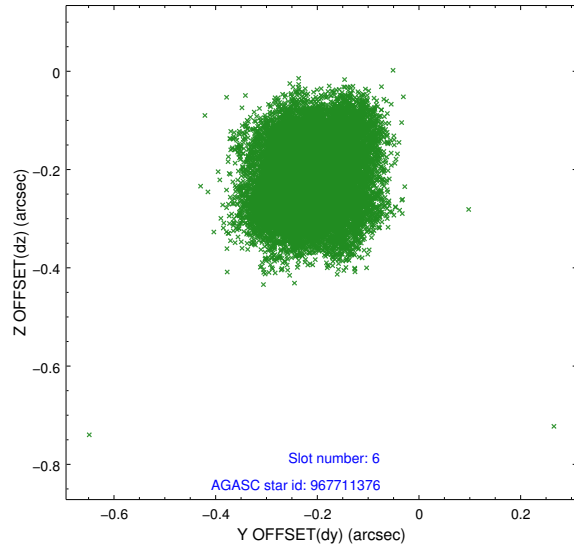
2.4.2 Slot 4



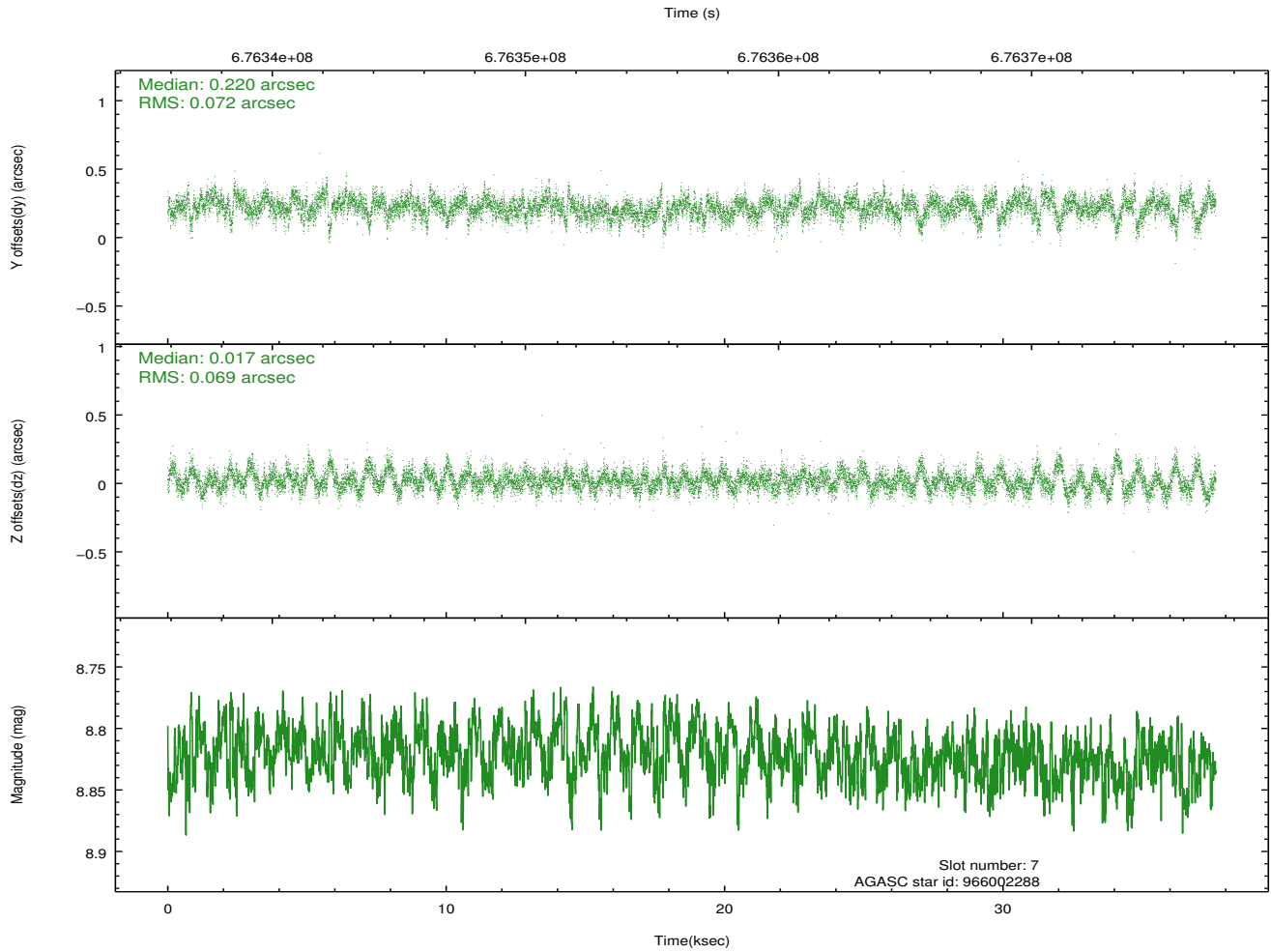
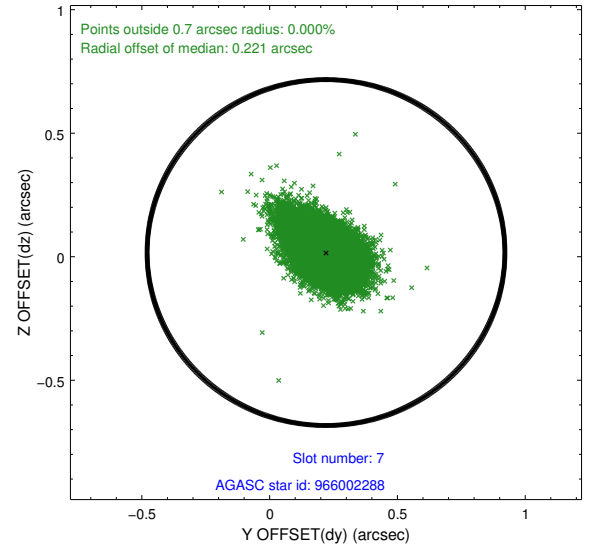
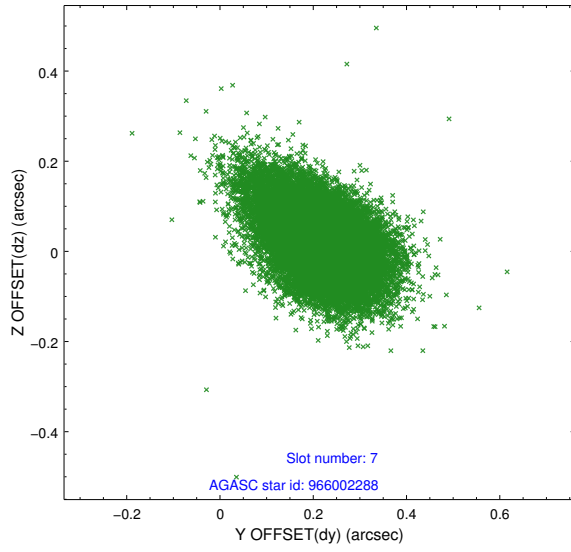
2.4.3 Slot 5



2.4.4 Slot 6

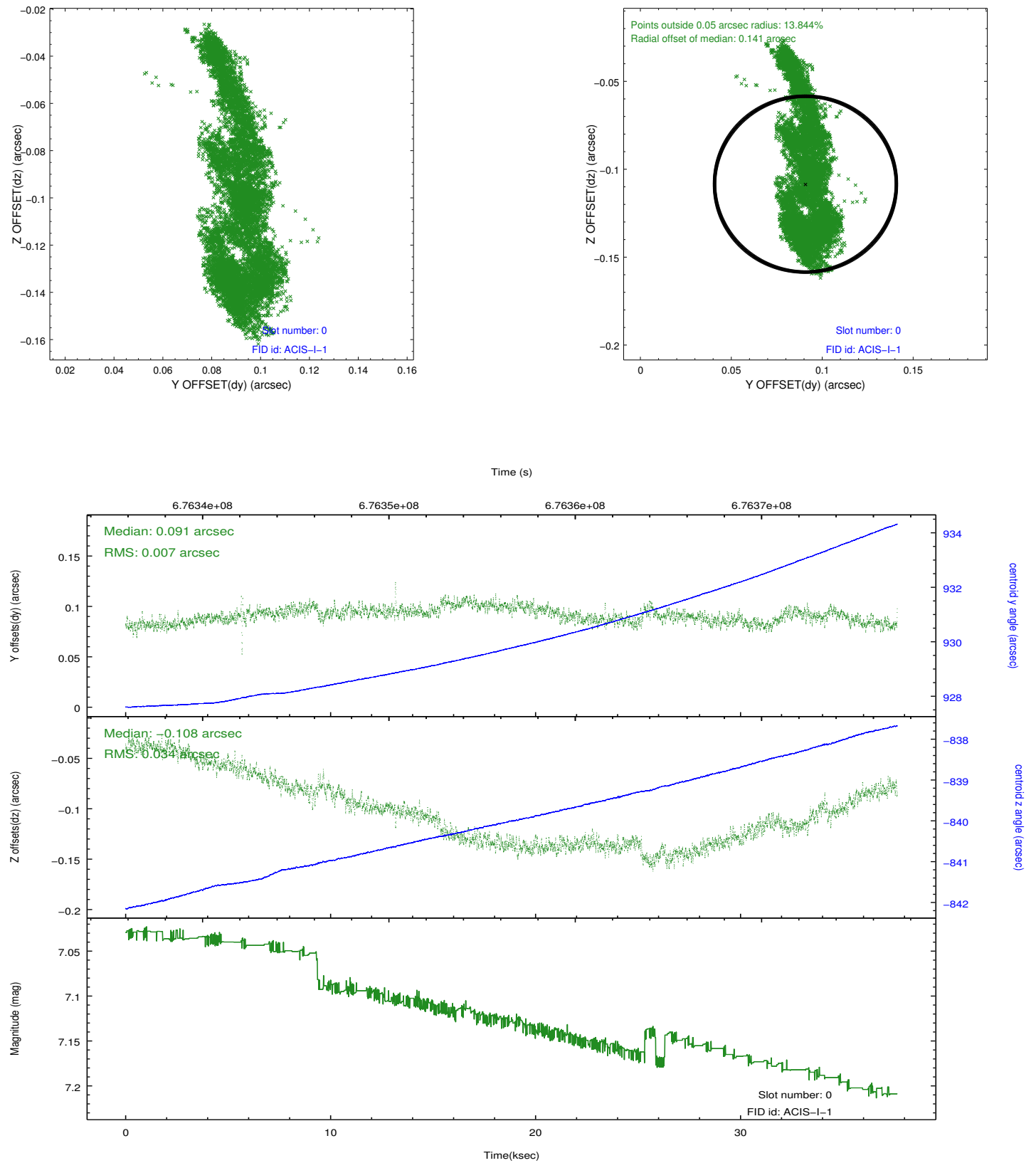


2.4.5 Slot 7

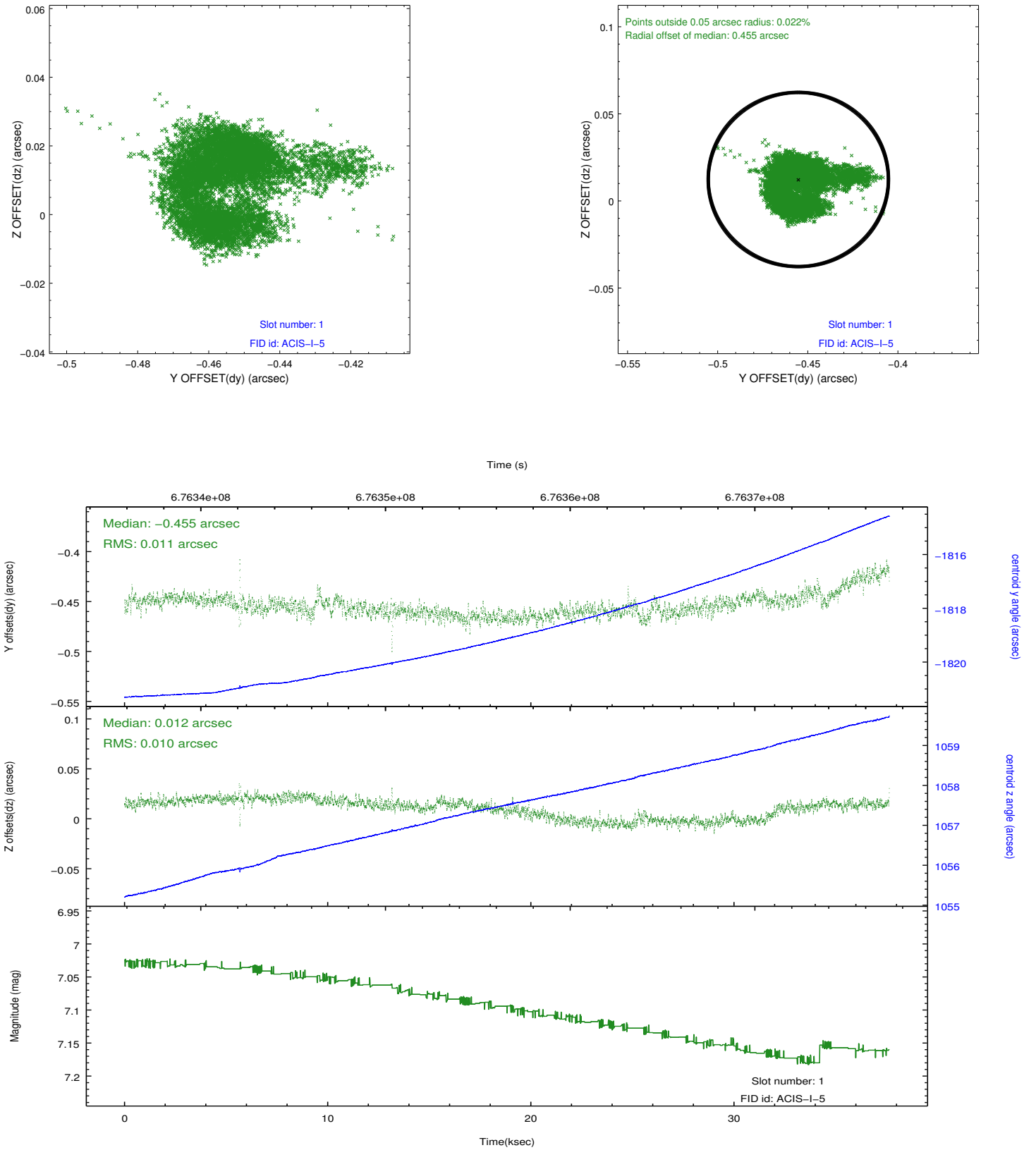


2.5 FID Slots

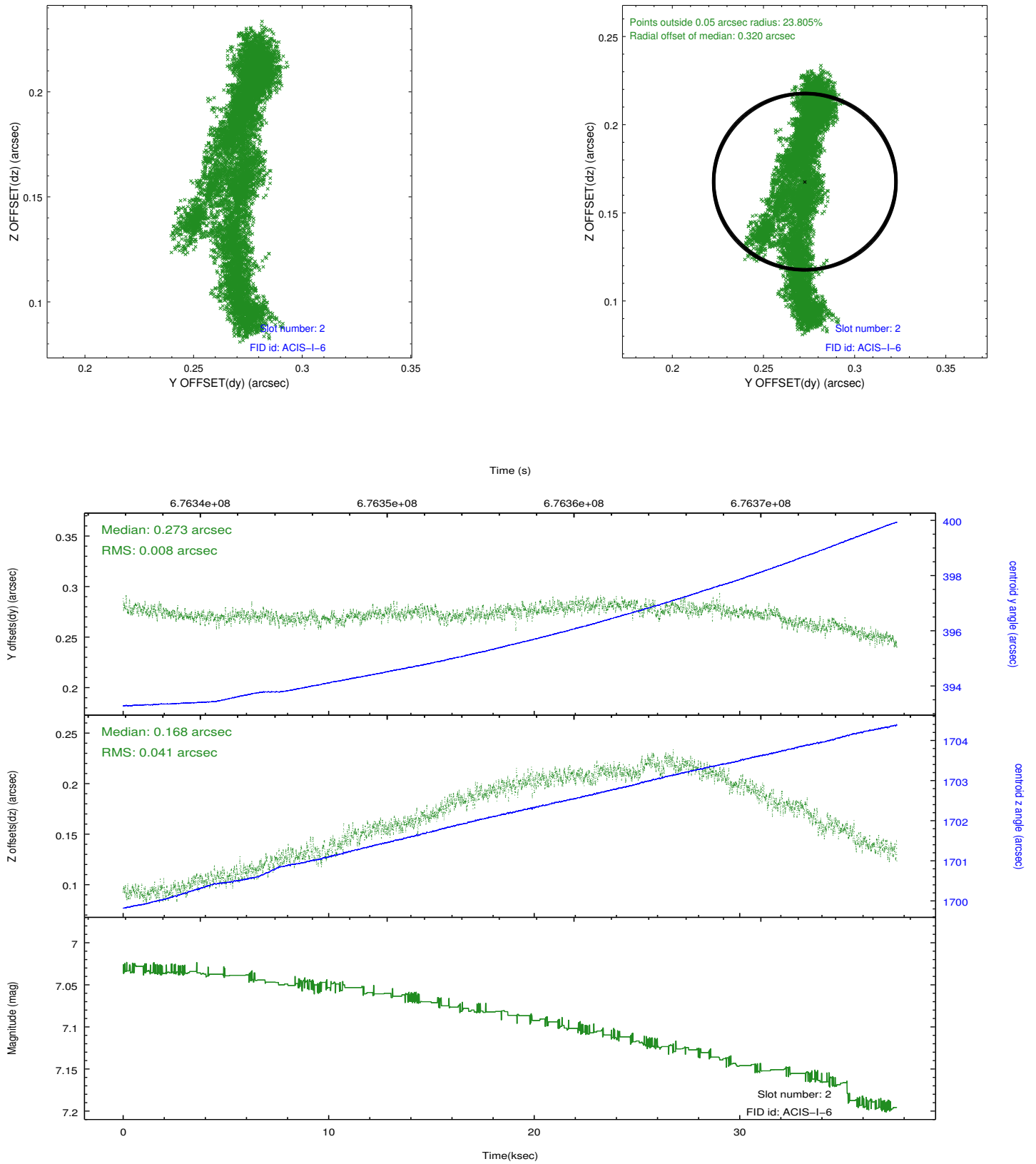
2.5.1 Slot 0



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)	2019.06.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.578128791809

A.2 Comments

Two optional chips were 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.