

V&V Reference Report

L2 ASCDS Version : 10.2.1

Observation 16605 - L2 Version 2
Chandra X-Ray Center

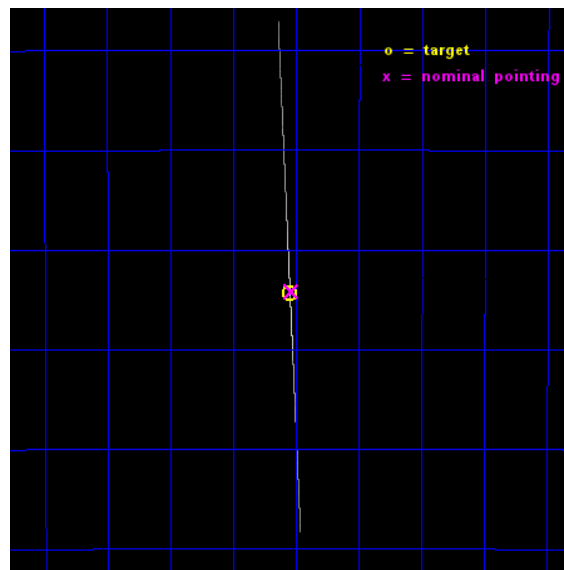
L2 Processing Date : Dec 10 2014

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1 Front

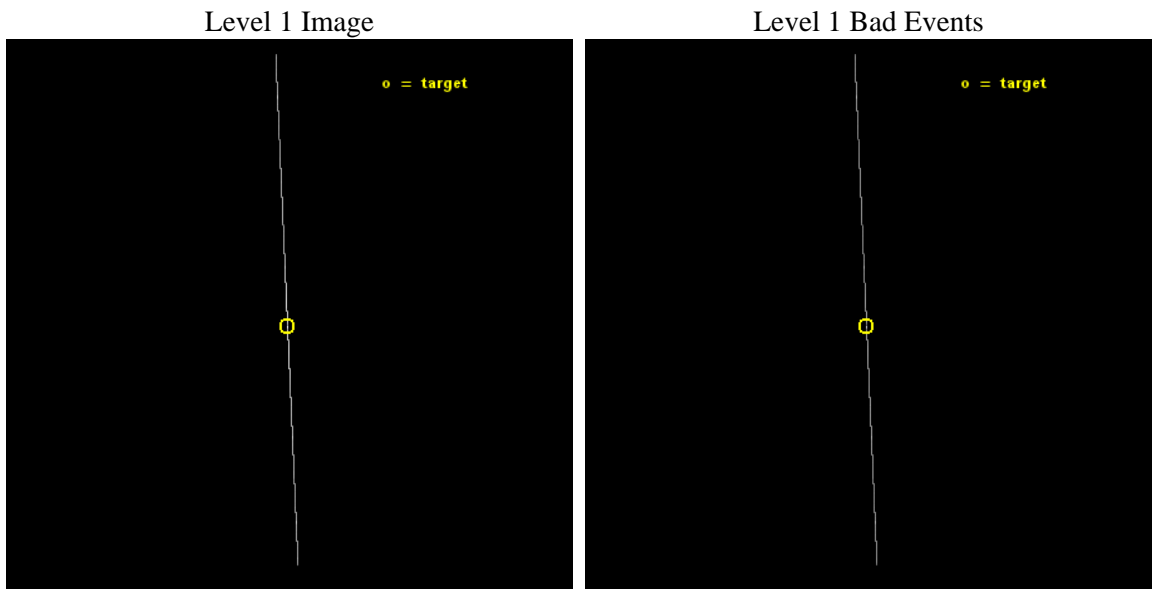
seq_num	401613	Sequence number
obs_id	16605	Observation id
title	A Harder Look at the Bursting Pulsar	Proposal title
observer	Dr. Jon Miller	Principal investigator
object	GRO J1744-28	Source name
ra_targ	266.137917	Observer's specified target RA [deg]
dec_targ	-28.740833	Observer's specified target Dec [deg]
ra_nom	266.13430141479	Nominal RA [deg]
dec_nom	-28.736548098795	Nominal Dec [deg]
roll_nom	87.354885529177	Nominal Roll [deg]
revision	2	Processing version of data
ontime	35073.25	Sum of GTIs [s]
livetime	34936.245117188	Livetime [s]
ontime4	35073.25	Sum of GTIs [s]
ontime5	35073.25	Sum of GTIs [s]
ontime6	35073.25	Sum of GTIs [s]
ontime7	35073.25	Sum of GTIs [s]
ontime8	35073.25	Sum of GTIs [s]
ontime9	35073.25	Sum of GTIs [s]
l2events	3061595	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	35000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	35073.25	Sum of GTIs [s]
caldbver	4.6.4	 	ontime4	35073.25	Sum of GTIs [s]
date	2014-12-10T18:10:14	Date and time of file creation	ontime5	35073.25	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	35073.25	Sum of GTIs [s]
			ontime7	35073.25	Sum of GTIs [s]
			ontime8	35073.25	Sum of GTIs [s]
			ontime9	35073.25	Sum of GTIs [s]
			l1events	4660596	Number of level 1 events
			tgmetho	TGDETECT	Method used to create src1a file
				4073.40	

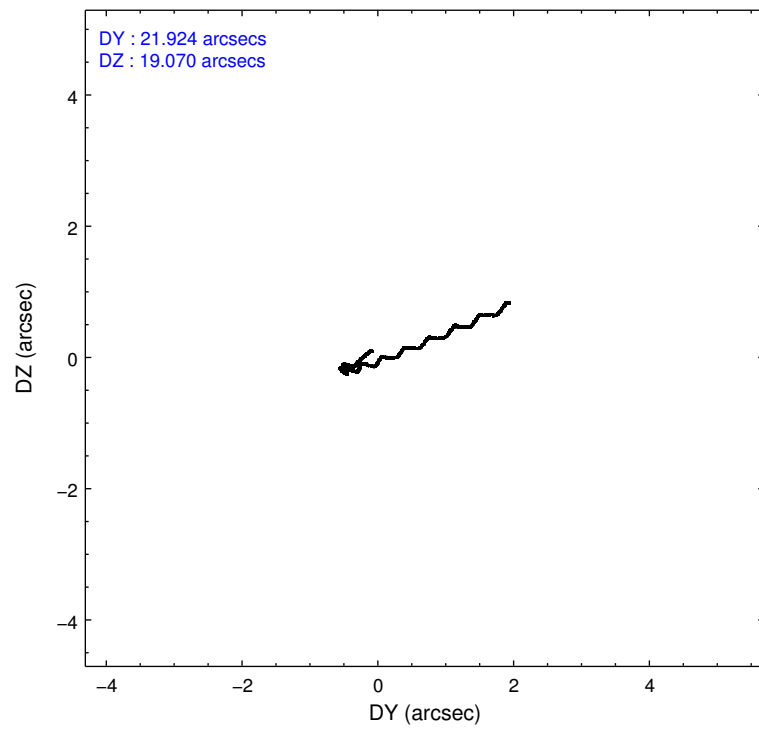
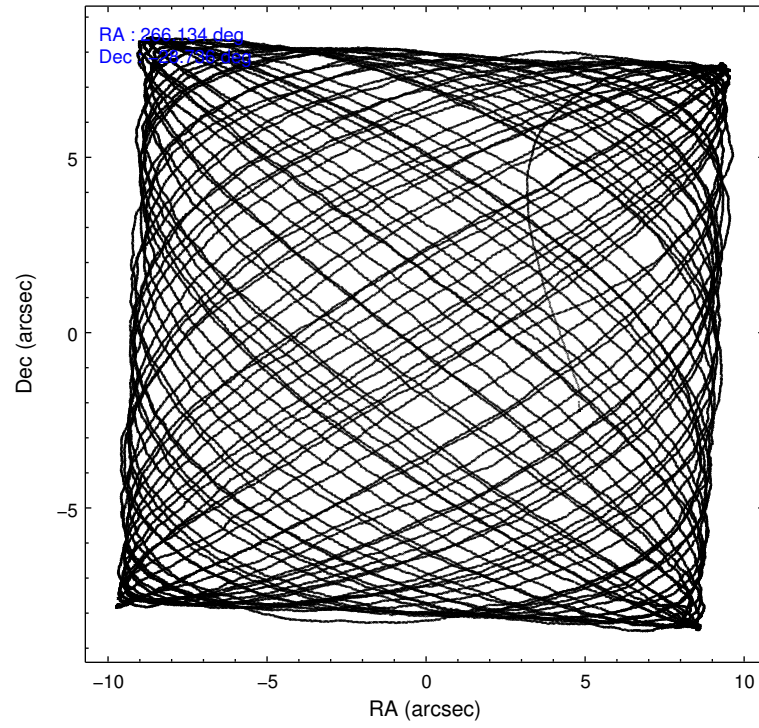
2.1.3 Events

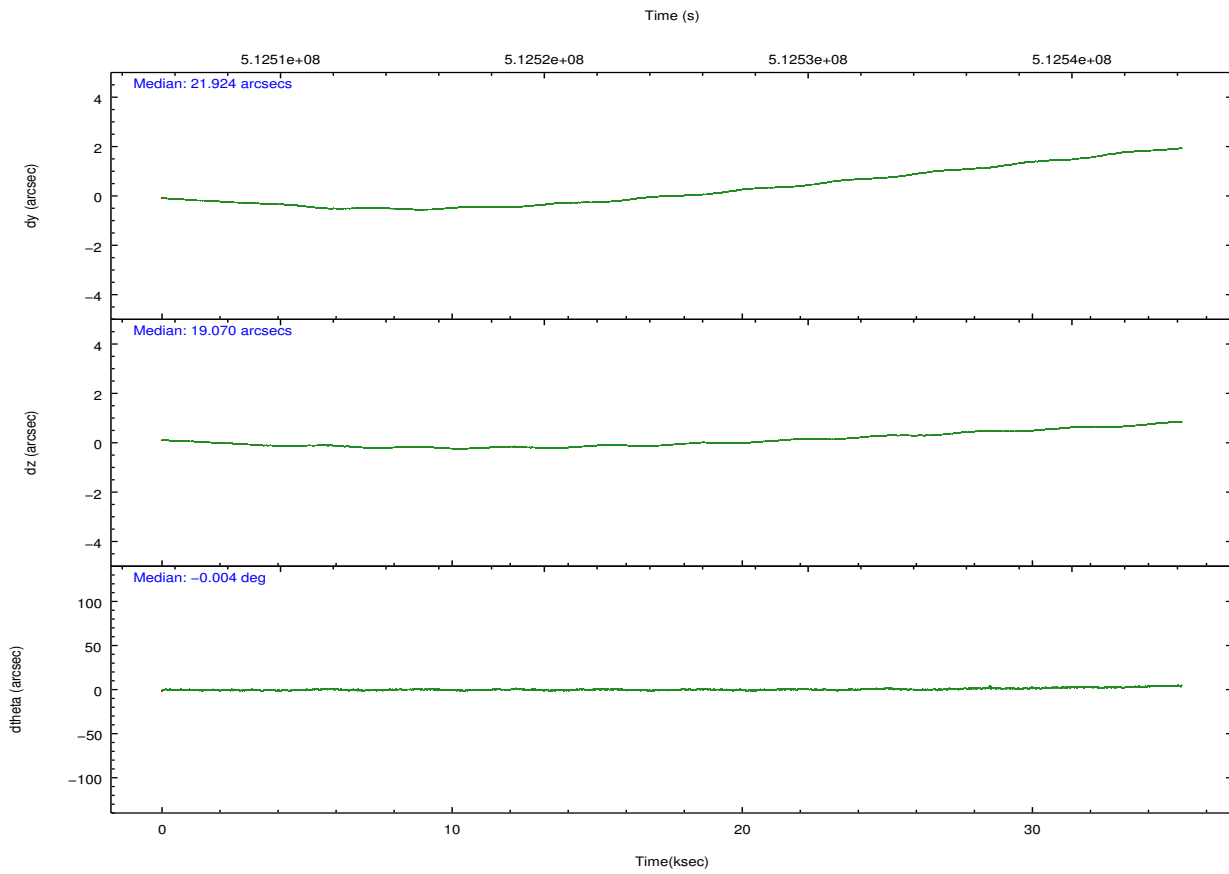
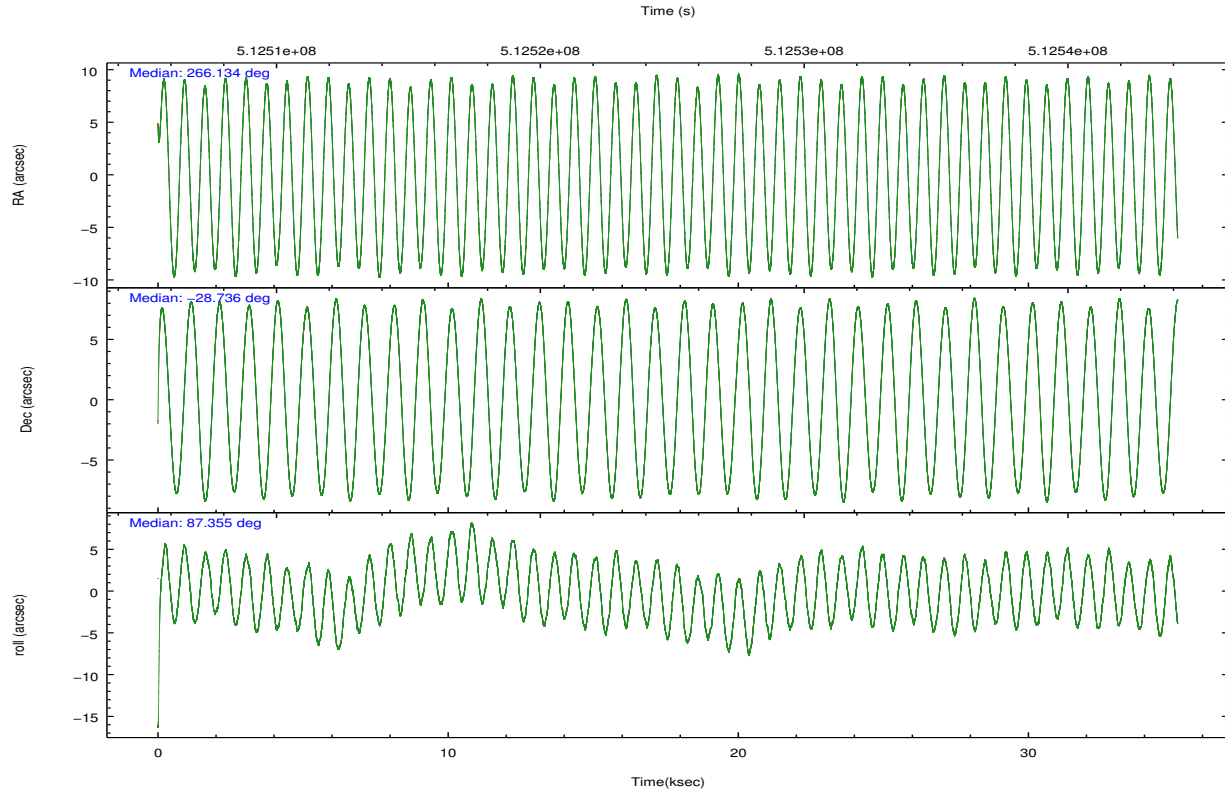
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	325257	445836	1173309	1772529	602549	341116	grade 0 events	5483	9711	27279	119348	52618	9776
rejected events	175263	188675	206525	306084	233923	176125		1%	2%	2%	6%	8%	2%
rejected %	53%	42%	17%	17%	38%	51%	grade 1 events	114	217	220	2103	400	180
								0%	0%	0%	0%	0%	0%
							grade 2 events	127093	137070	793684	627976	260592	135972
								39%	30%	67%	35%	43%	39%
							grade 3 events	4166	3374	5334	67144	10597	3625
								1%	0%	0%	3%	1%	1%
							grade 4 events	4063	3317	4975	65838	10450	3949
								1%	0%	0%	3%	1%	1%
							grade 5 events	7495	15706	11736	37444	13096	9082
								2%	3%	1%	2%	2%	2%
							grade 6 events	9199	103709	135592	586285	34395	11677
								2%	23%	11%	33%	5%	3%
							grade 7 events	167644	172732	194489	266391	220401	166855
								51%	38%	16%	15%	36%	48%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	CC33_GRADED	CC33_GRADED	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	266.148998	266.1343014147894	CCD I2 on	N	N
[deg] Pointing Dec	-28.760668	-28.73654809879462	CCD I3 on	N	N
[deg] Pointing Roll	87.205333	87.35488552917717	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-183.992523	-183.985022191653	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.147500391354811	CCD S4 on	Y	Y
[s] Observation start time (MET)	512507408.184000	512506427.07391	CCD S5 on	Y	Y
Observation start date	2014-03-29T19:09:01	2014-03-29T18:53:47	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	512542408.184000	512543011.37593	On-chip summing requested	N	N
Observation end date	2014-03-30T04:52:21	2014-03-30T05:03:31	Subarray requested	NONE	NONE
Read mode	CONTINUOUS	CONTINUOUS	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0

2.3 Aspect





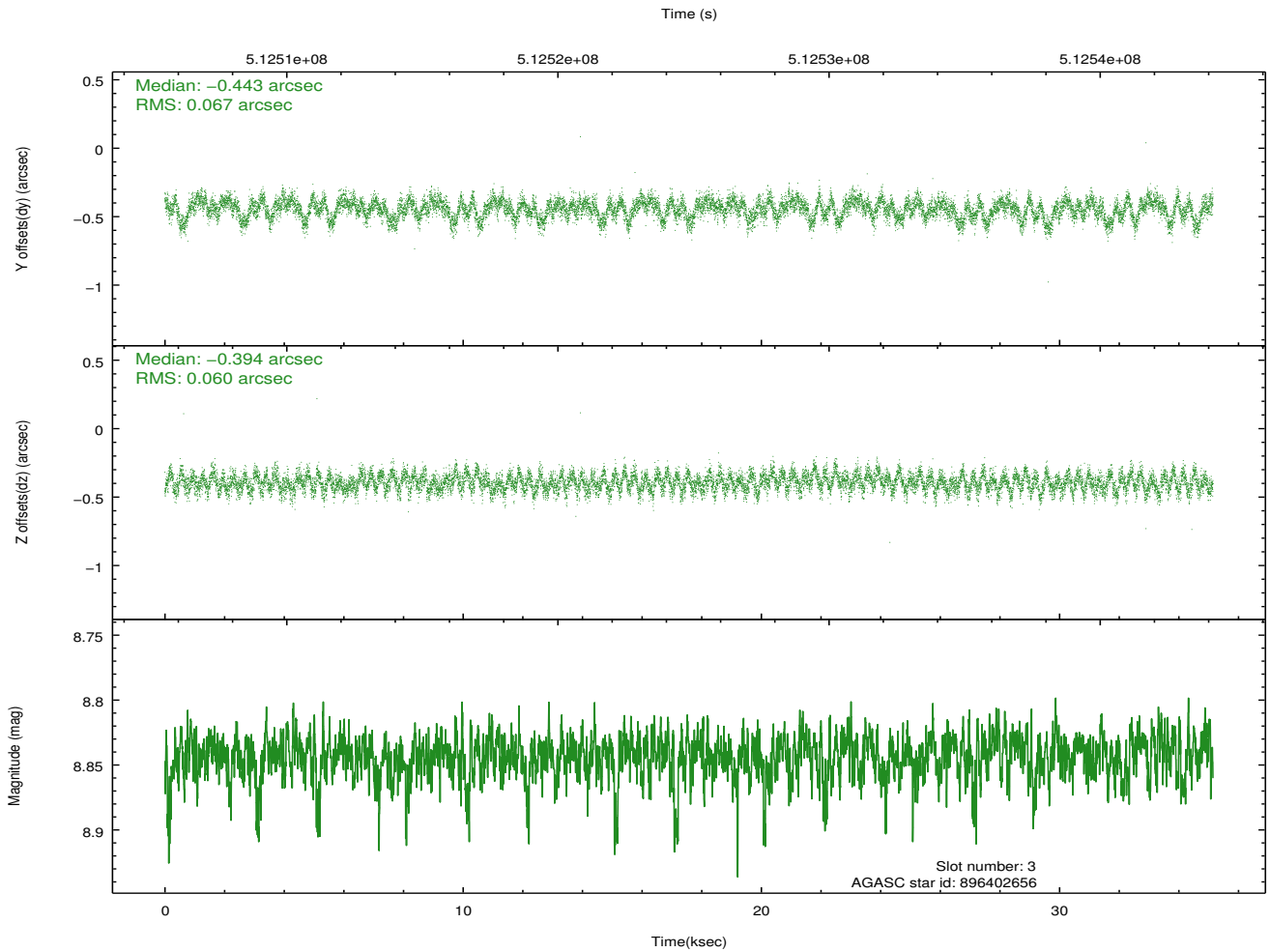
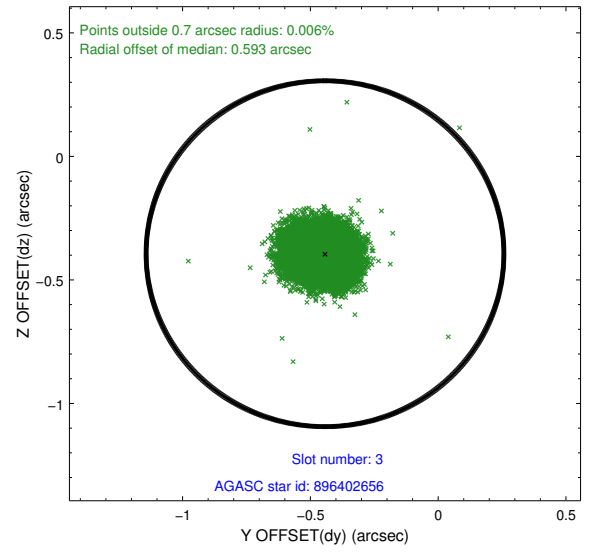
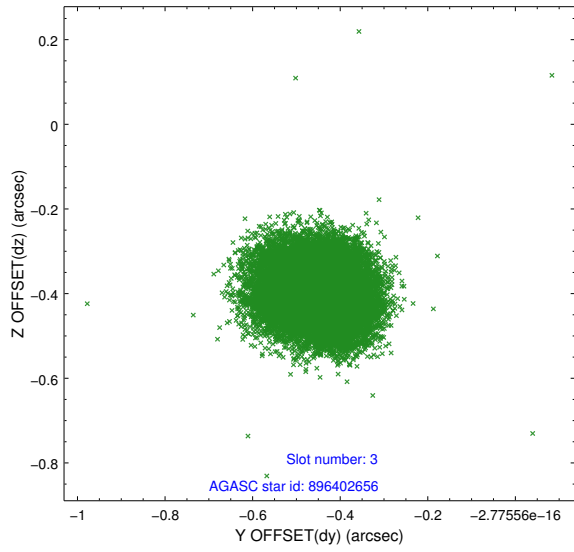
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.94	8573	-0.130	-0.089	0.020	0.049	0.000000	0.000000	-775.09	-1867.47
1	FID		ACIS-S-4	7.02	8573	0.293	0.086	0.014	0.076	0.000000	0.000000	2138.61	41.12
2	FID		ACIS-S-5	7.07	8573	-0.195	0.012	0.024	0.070	0.000000	0.000000	-1827.95	34.77
3	GUIDE	used	896402656	8.84	17136	-0.443	-0.394	0.096	0.151	265.739192	-28.230753	1839.49	1390.94
4	GUIDE	used	896404568	7.84	17141	-0.367	-0.335	0.066	0.103	265.687293	-28.431080	1110.86	1517.52
5	GUIDE	used	896533888	7.02	17144	0.470	0.544	0.055	0.088	266.666434	-29.392757	-2196.67	-1731.52
6	GUIDE	used	896537176	8.03	17145	0.056	0.309	0.077	0.119	266.498272	-28.678259	348.50	-1087.12
7	GUIDE	used	896540808	7.52	17144	0.292	-0.124	0.072	0.111	265.985401	-29.308604	-1995.23	416.71

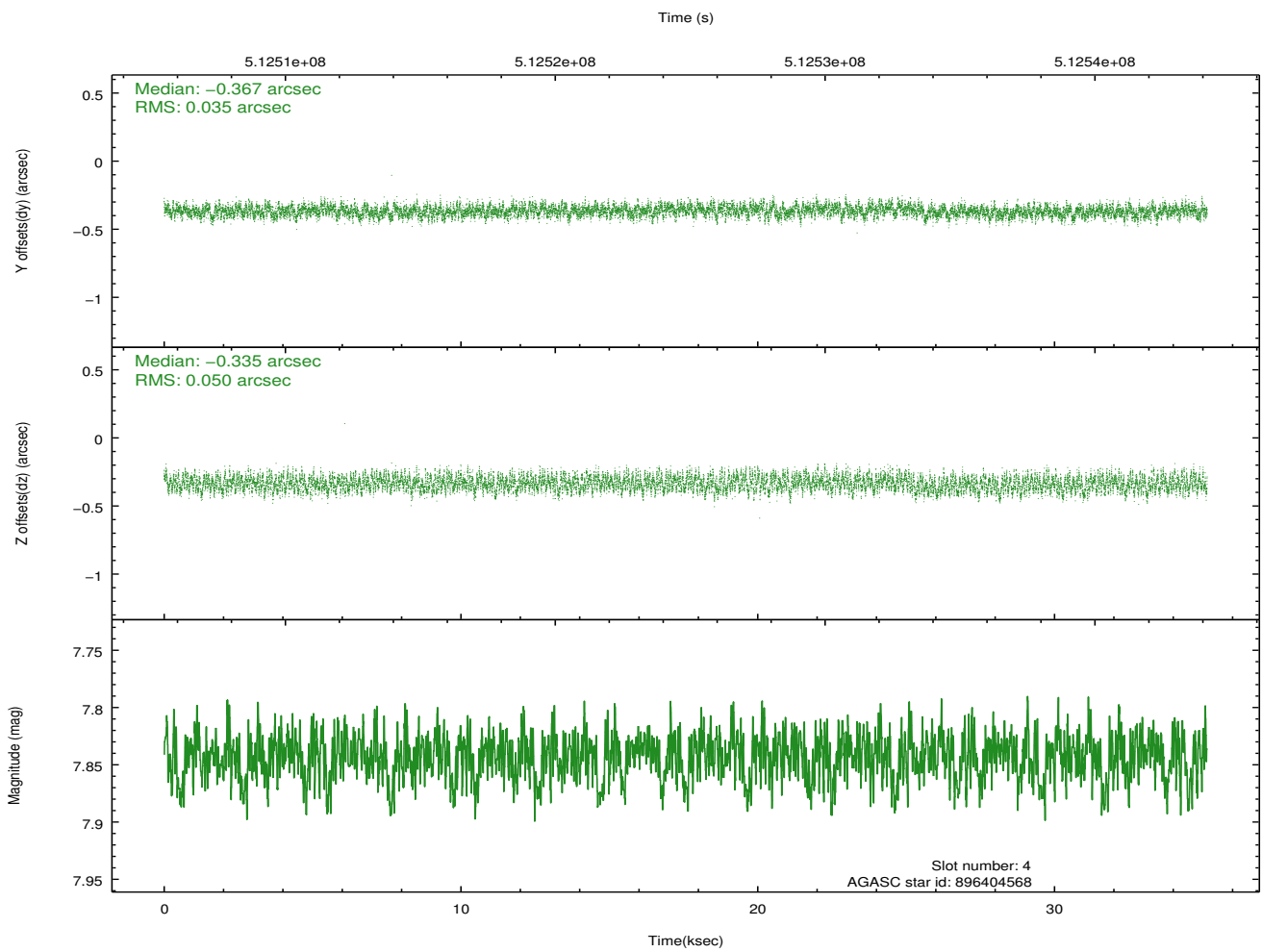
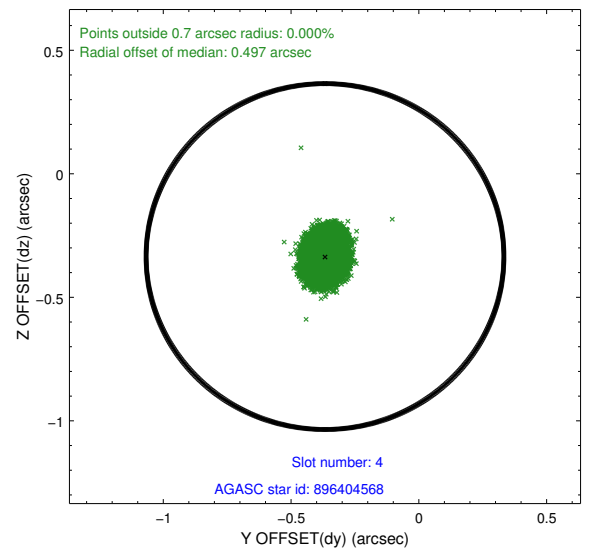
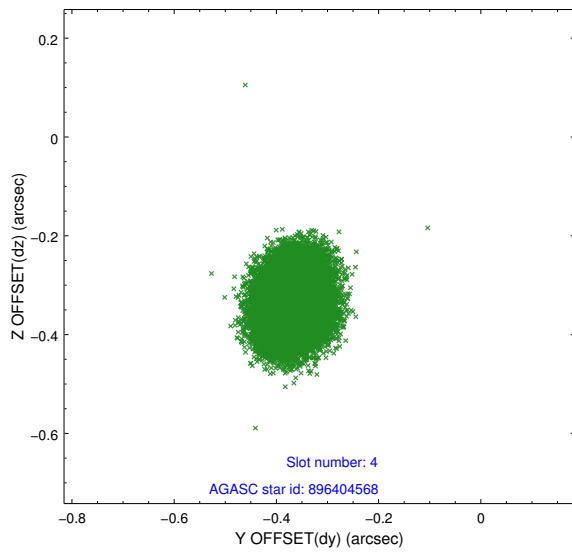
∞

2.4 Star Slots

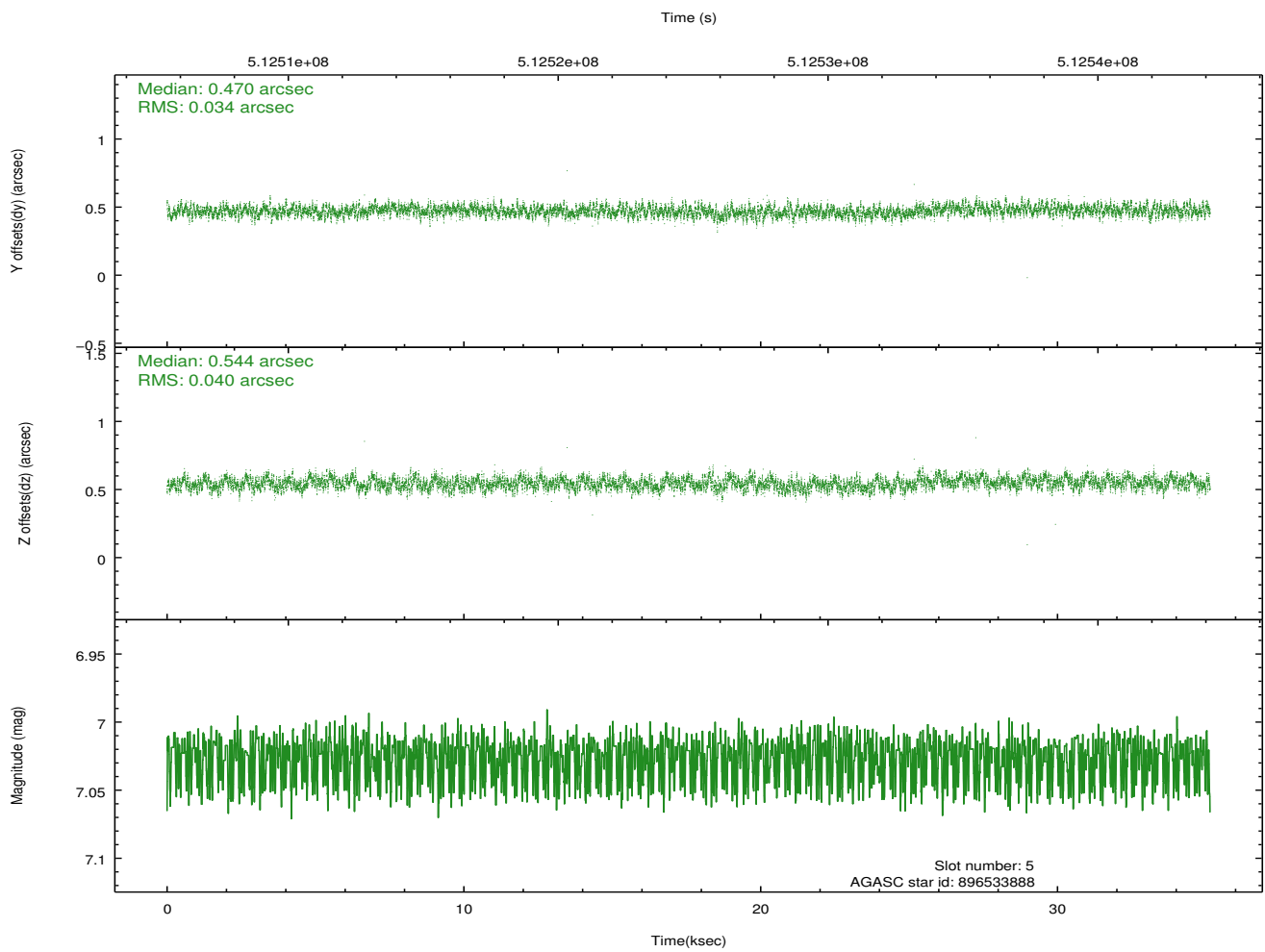
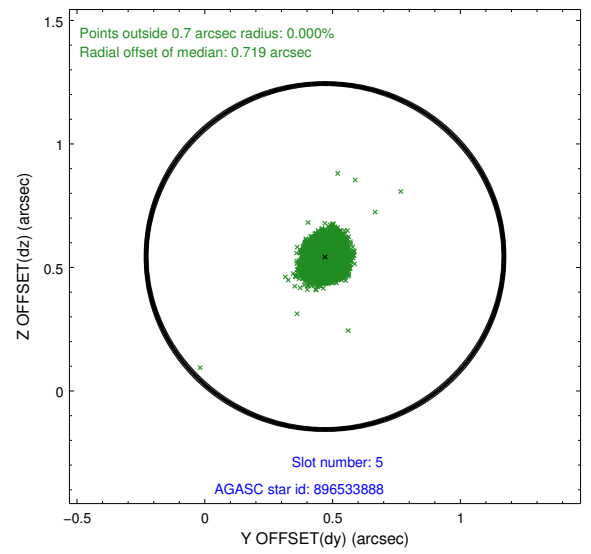
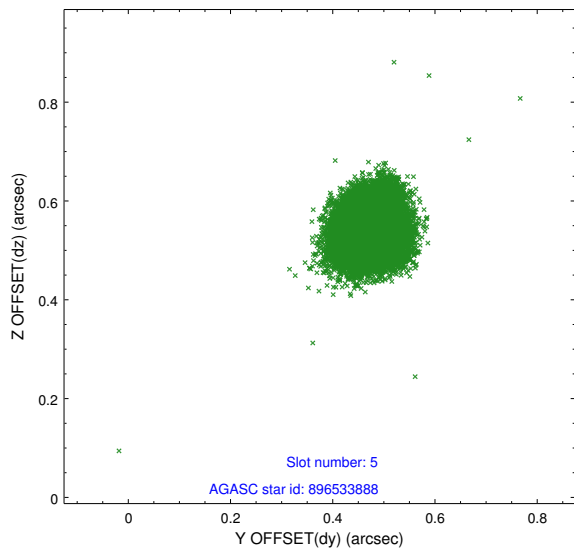
2.4.1 Slot 3



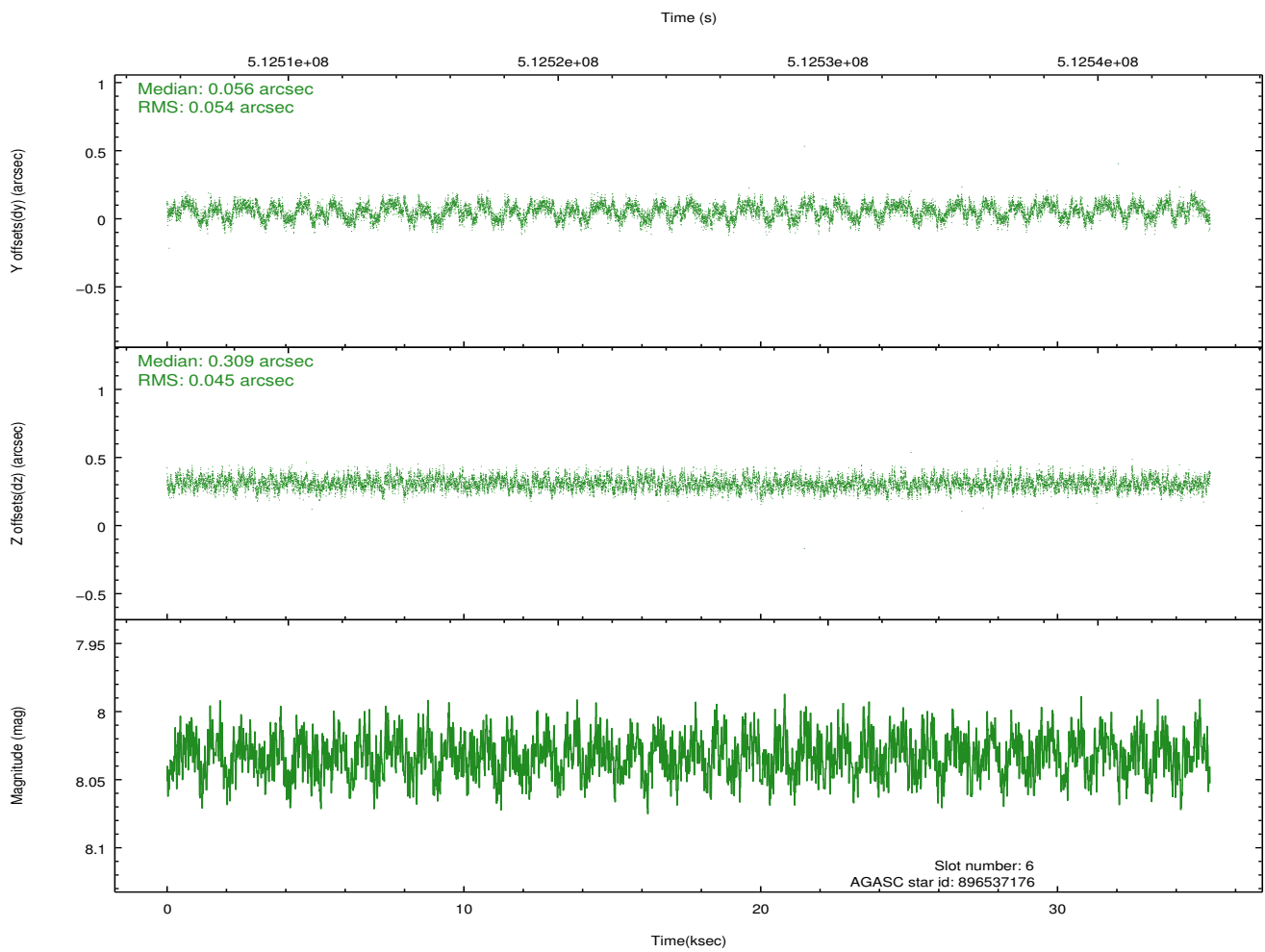
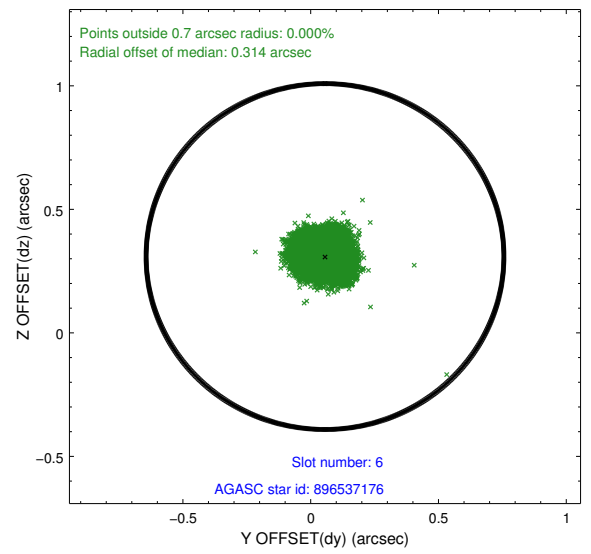
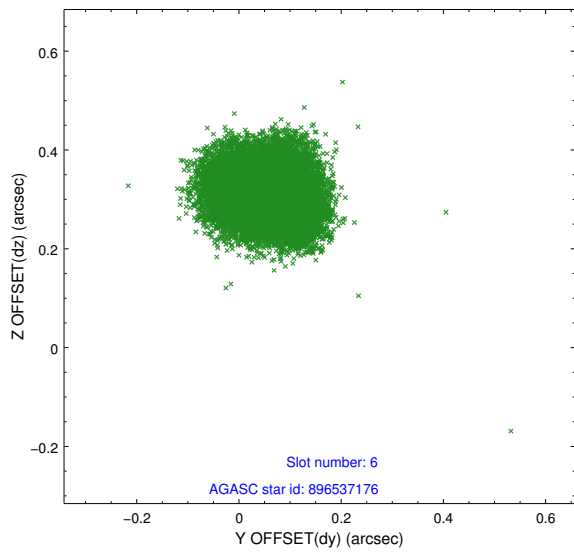
2.4.2 Slot 4



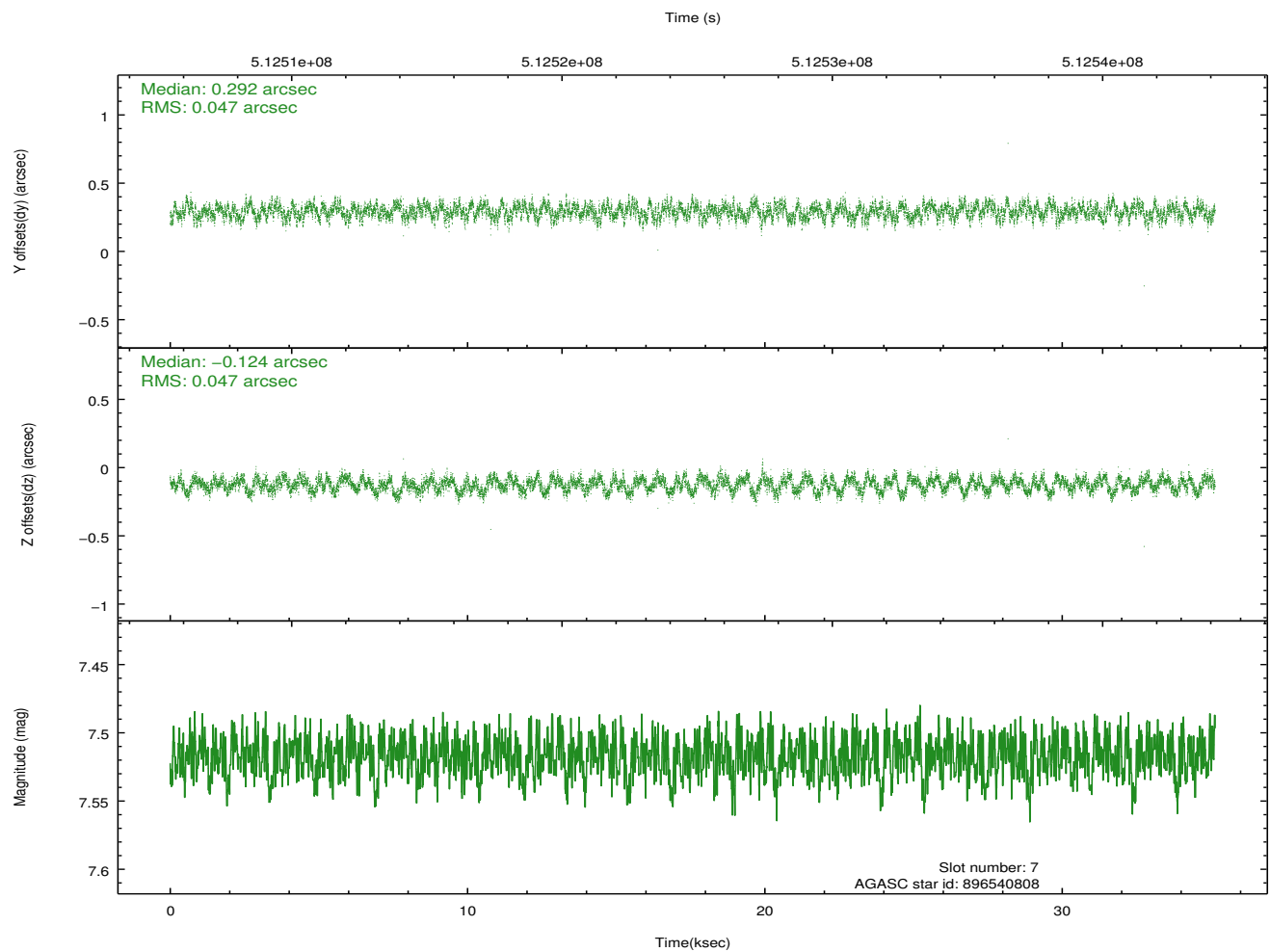
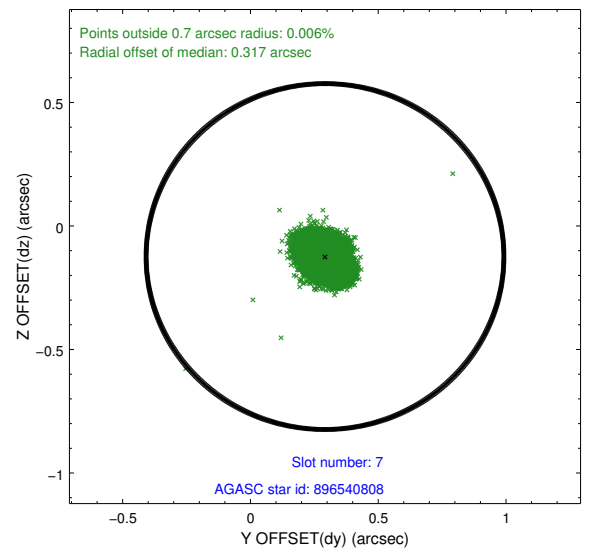
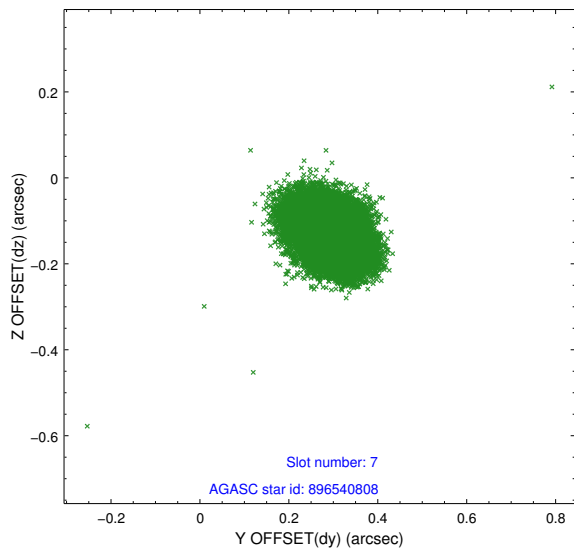
2.4.3 Slot 5



2.4.4 Slot 6

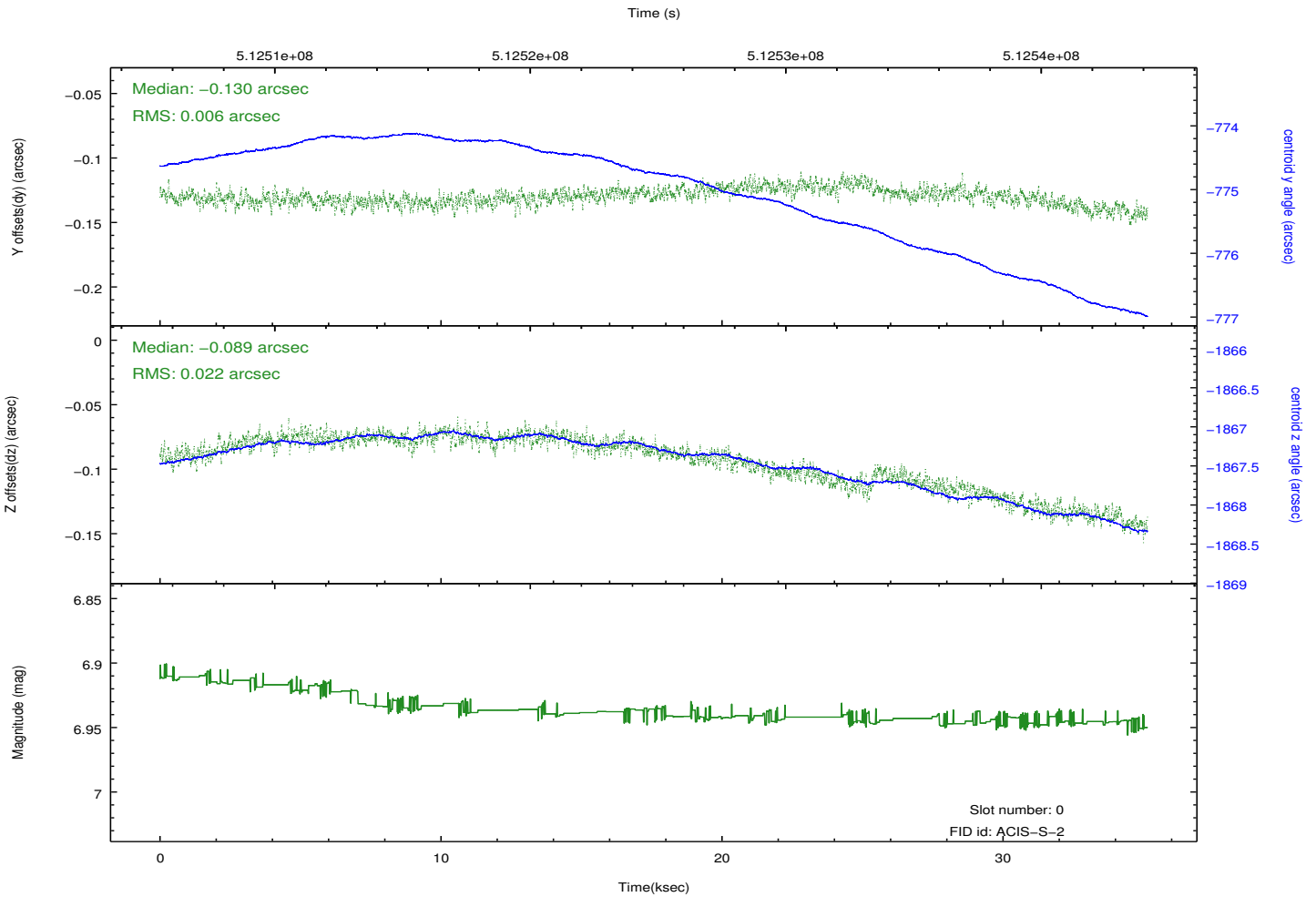
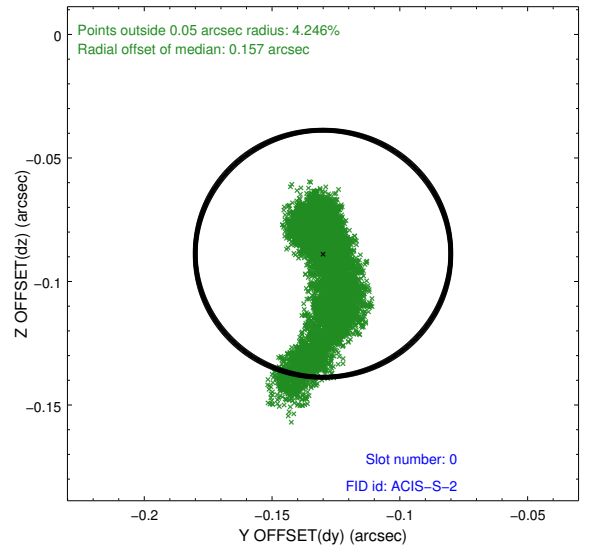
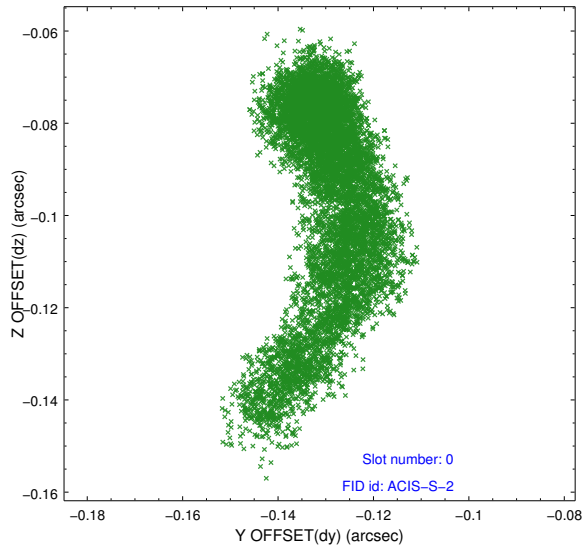


2.4.5 Slot 7

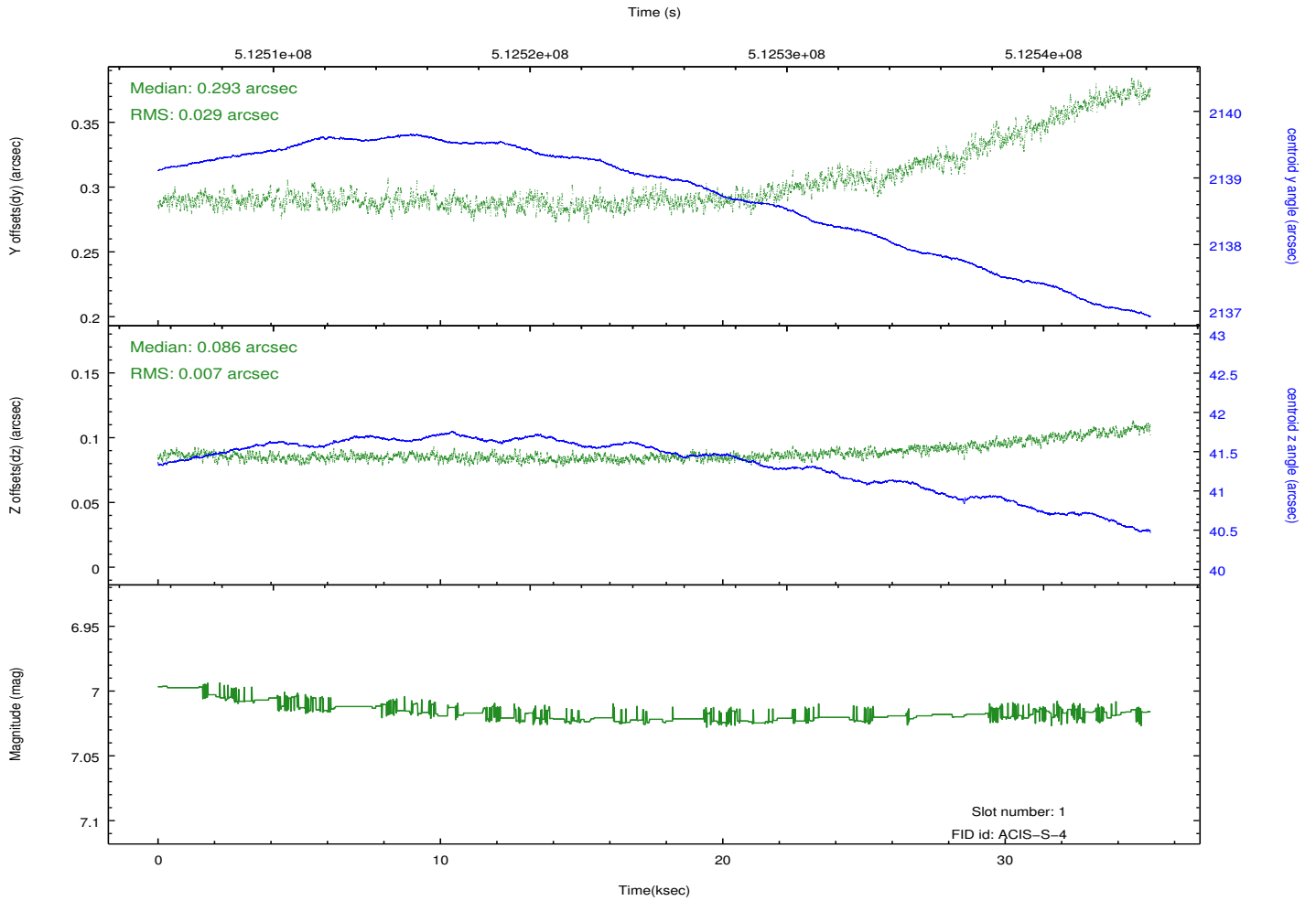
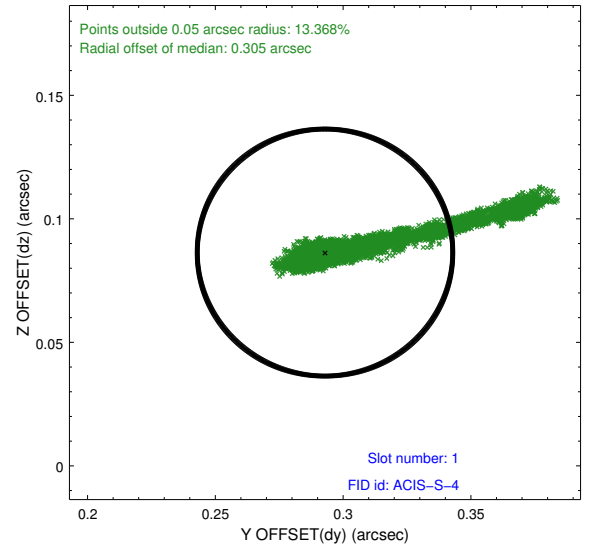
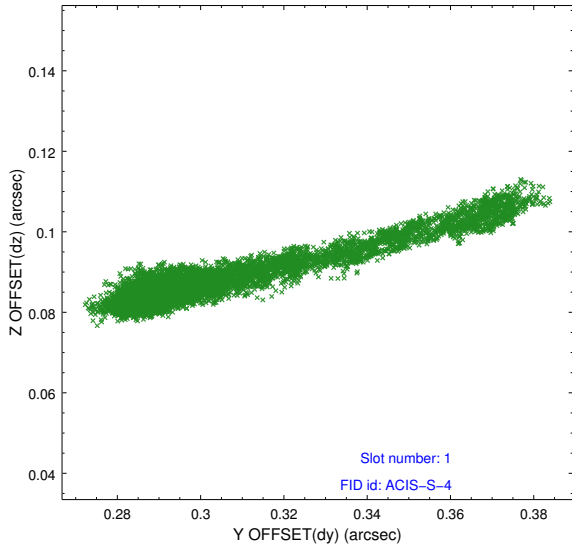


2.5 FID Slots

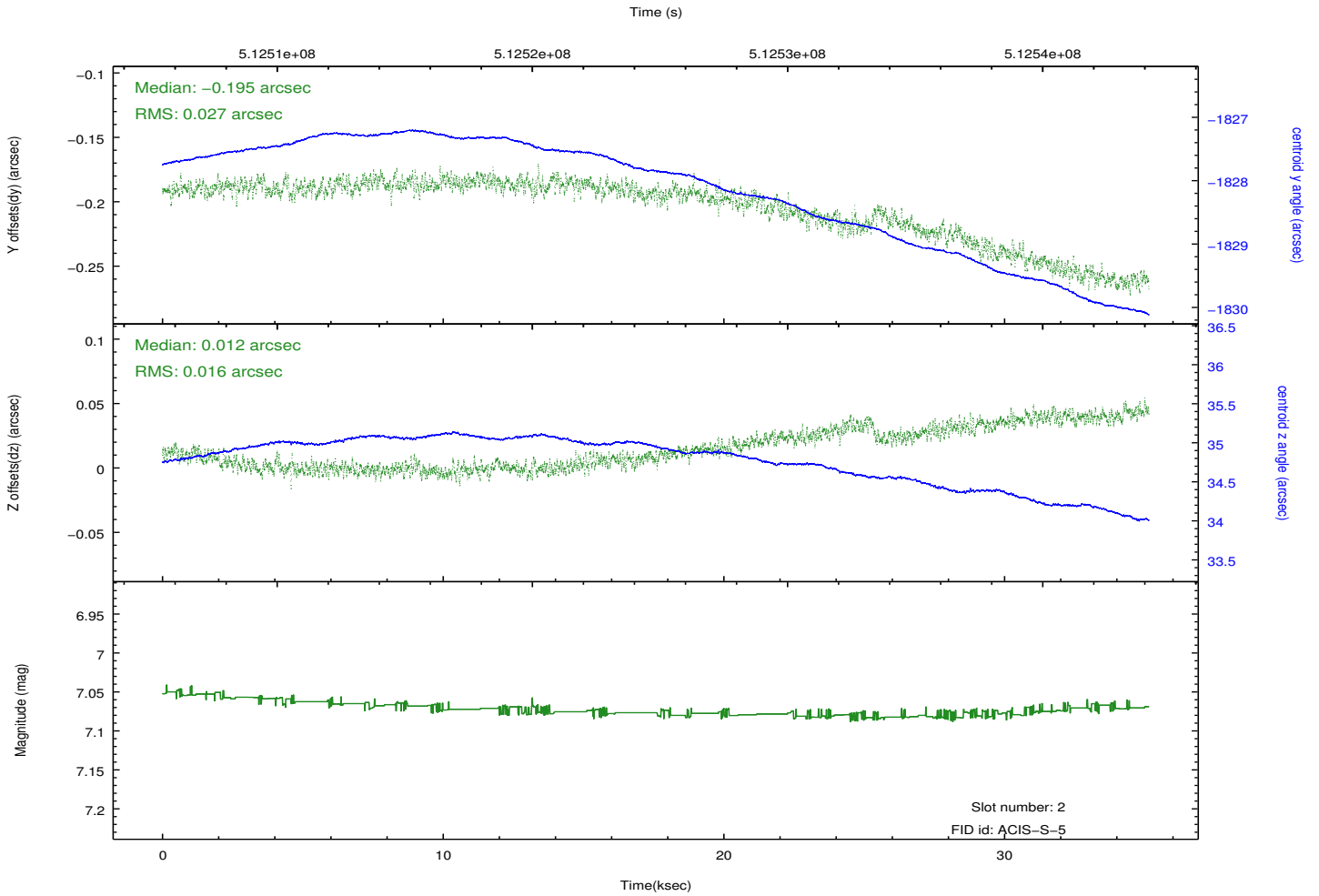
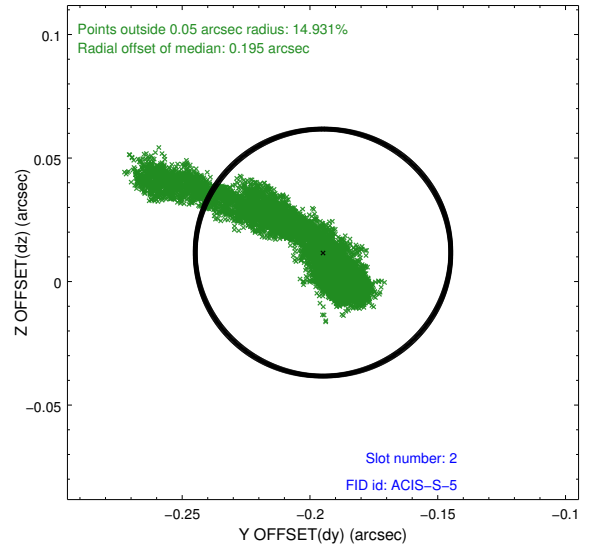
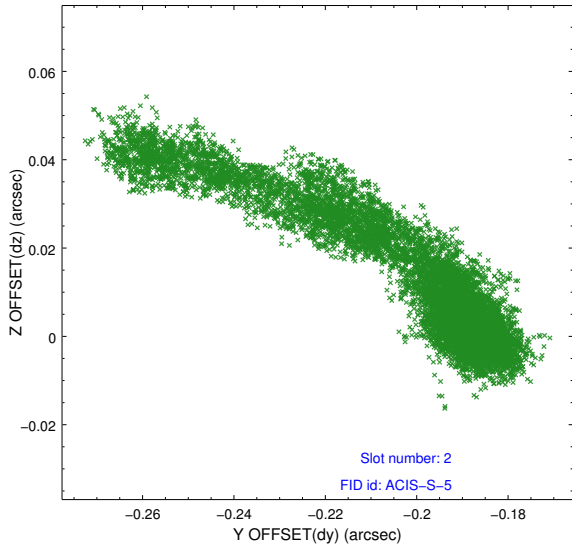
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

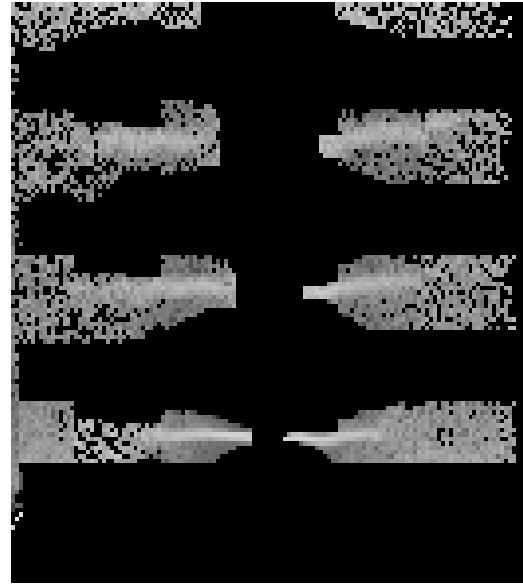


3 Gratings

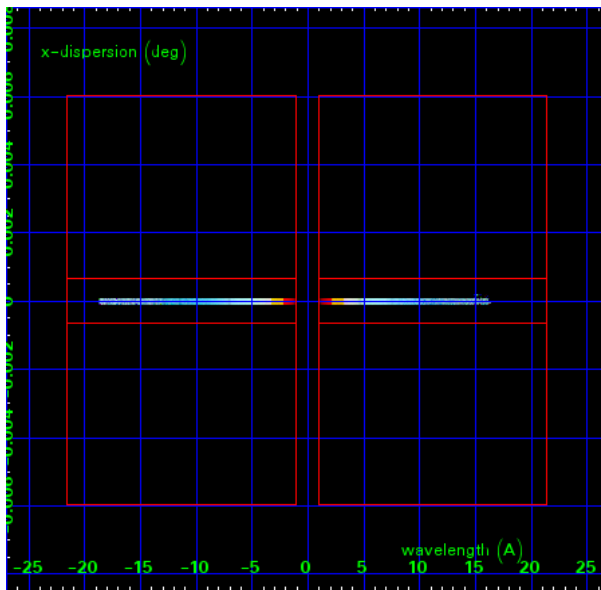
3.1 HEG Arm



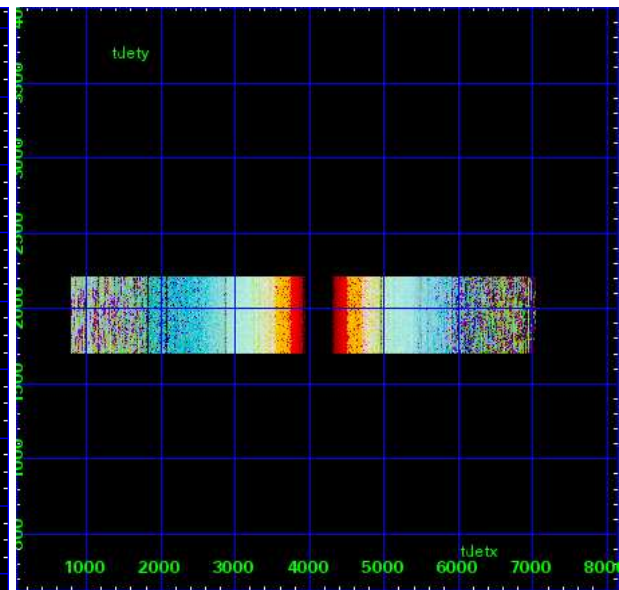
HEG Order Sort 123



HEG Order Sort ALL

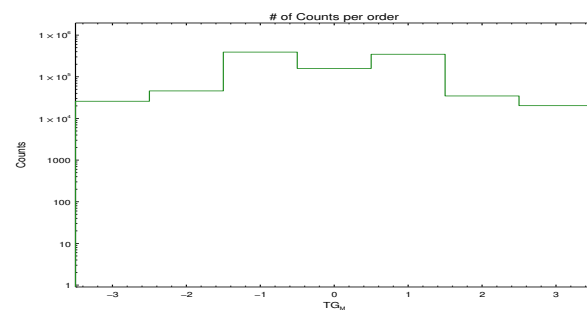


Spot Image HEG

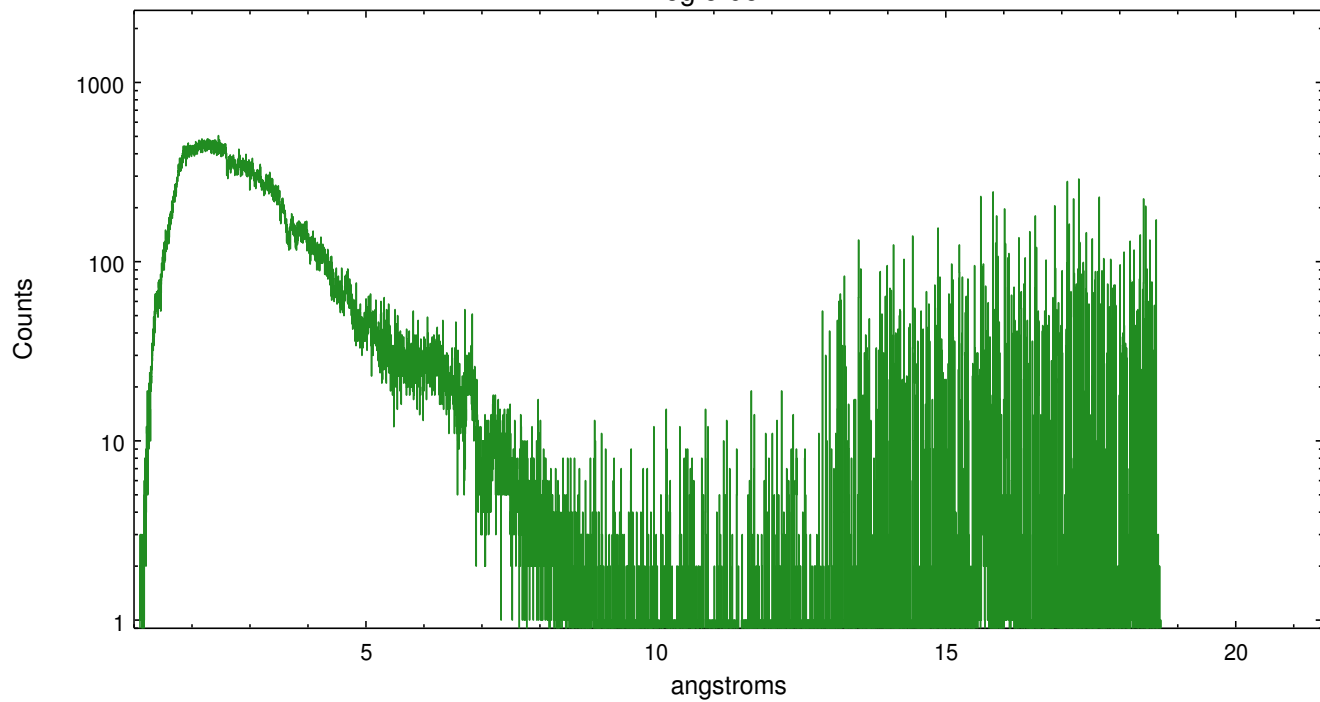


Full Detector HEG

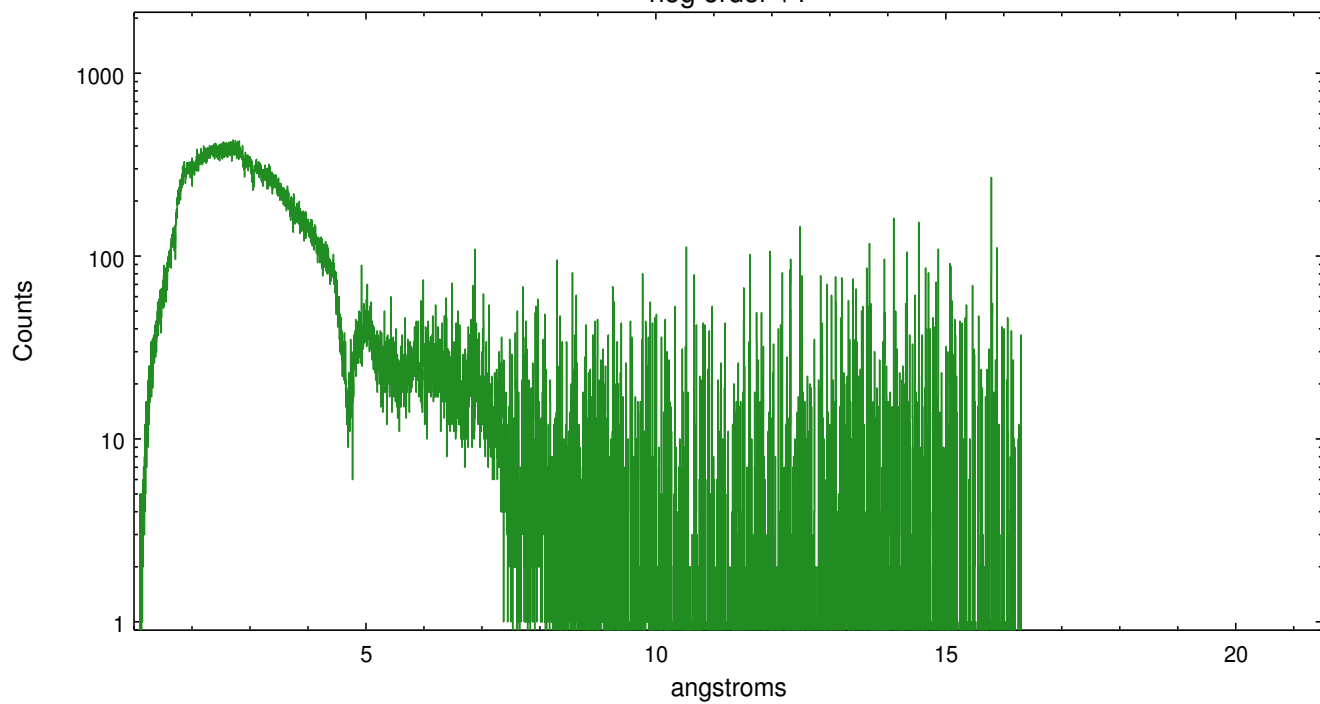
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	25829	45807	391063	158662	346985	34656	20285



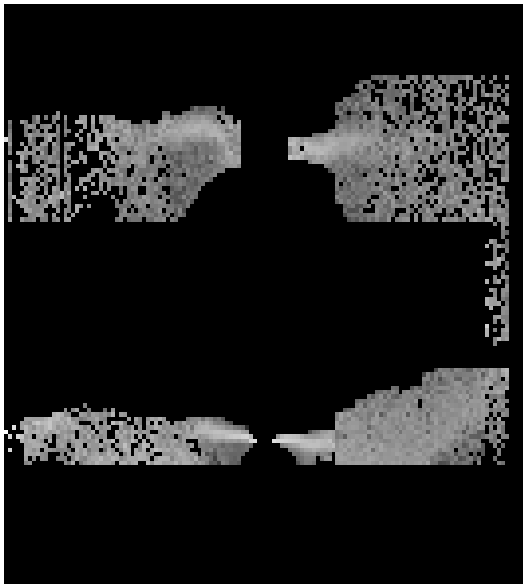
heg order -1



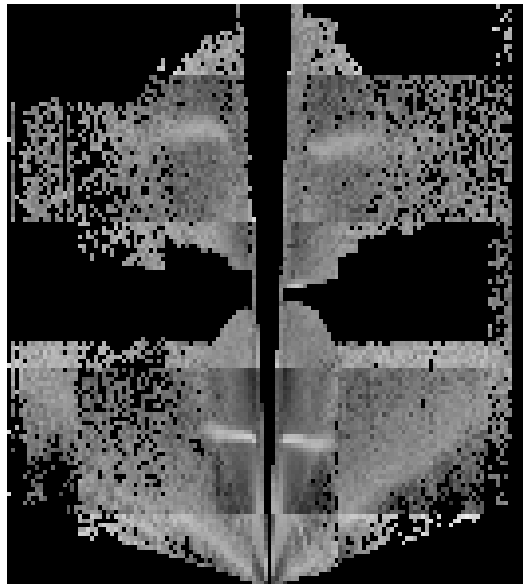
heg order +1



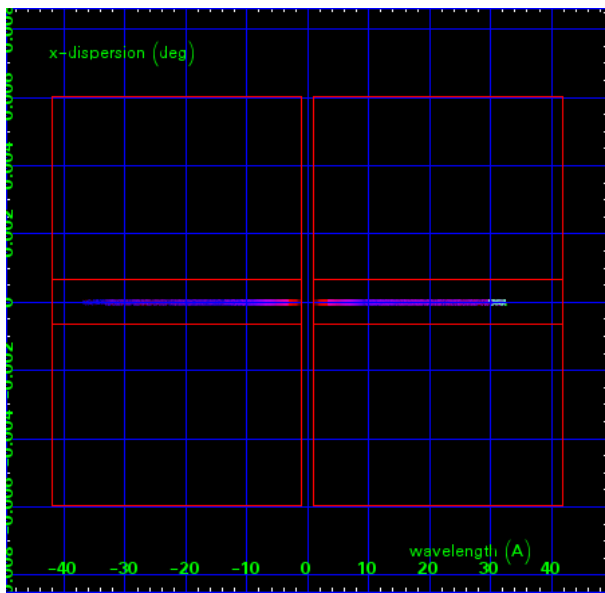
3.2 MEG Arm



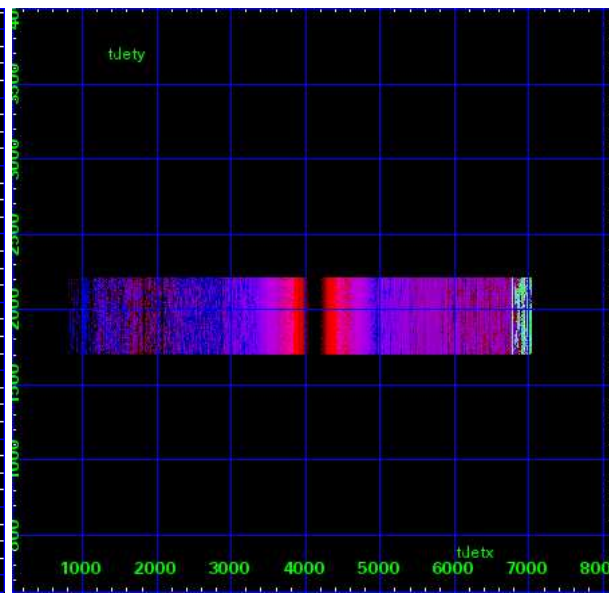
MEG Order Sort 123



MEG Order Sort ALL

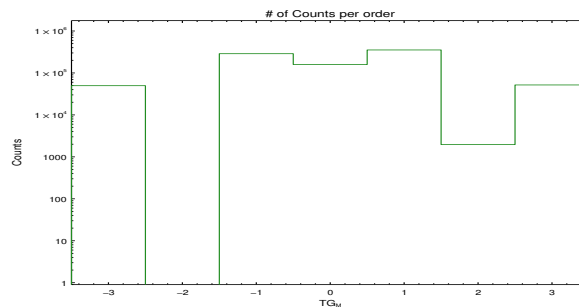


Spot Image MEG

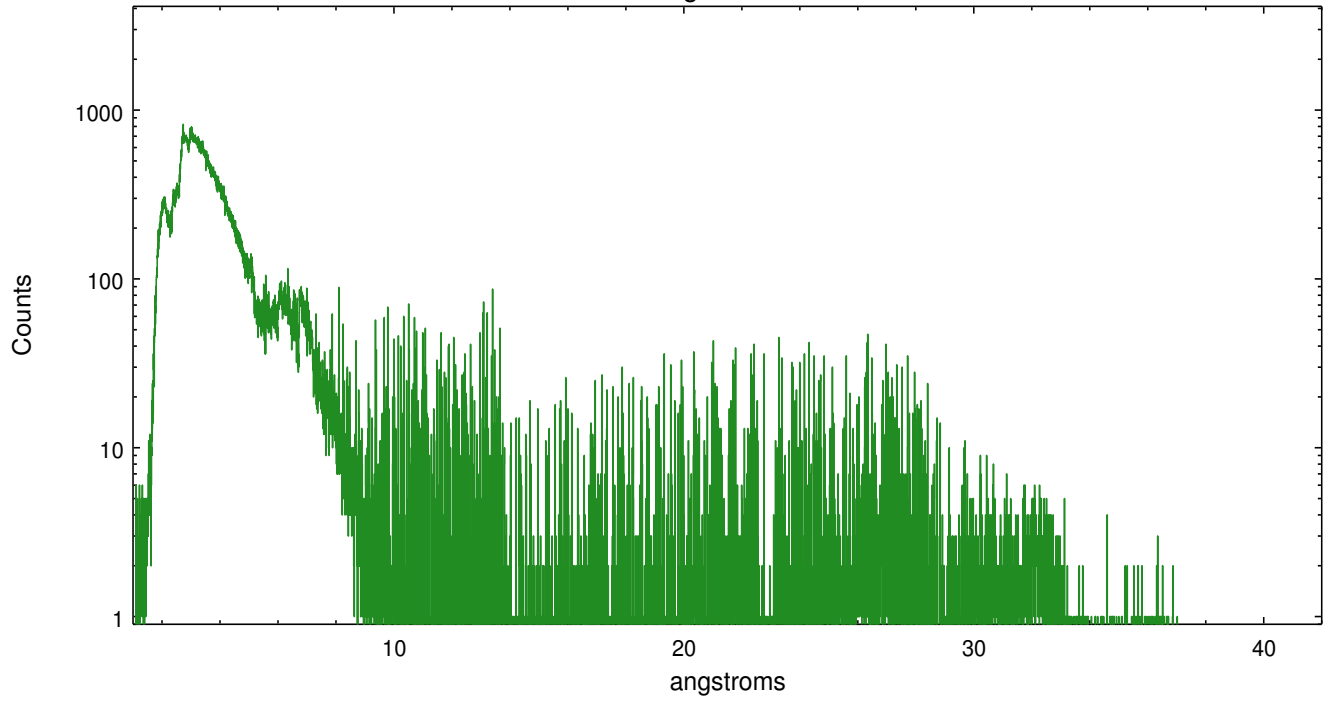


Full Detector MEG

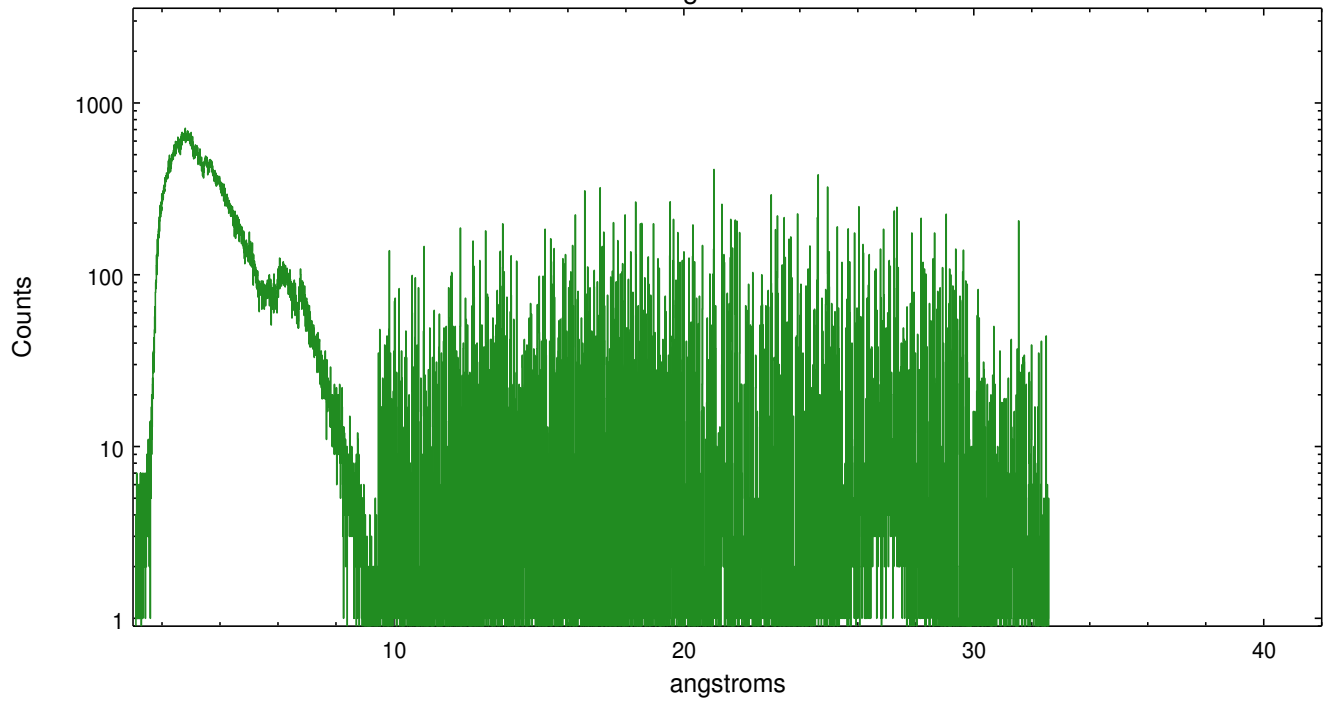
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	49748	0	288012	158662	353386	1959	51762



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.10.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	35.07325

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.

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For ACIS-S with CC mode and HETG:

For ACIS/CC-mode w/ HETG, at with no SIM-Z offset, there are no MEG even order counts. MEG even orders overlap with HEG orders in energy, but MEG even order efficiencies are very low. Since HEG and MEG cannot be spatially separated, events are preferentially assigned to HEG. (MEG odd orders can be resolved.) For observations with a SIM-Z offset, MEG negative and MEG positive orders will be missing (off the array), and remove some of the ambiguity.

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As of November 1, 2009, events with a flight grade of 66 were added to the telemetry stream for continuous-clocking mode observations because it was found that a significant fraction of real X-ray events have this flight grade in this mode. To prevent these events from being discarded from Level 2 event files, the CALDB grade file was modified to change the 'ASCA' grade for these events from 7 (a bad grade) to 2 (a good grade). The new grade file has been used in standard pipeline processing for code versions DS 10.3 and later (i.e. 2014 Oct 30 and later). Since the calibration products for continuous-clocking mode observations are appropriate for data that includes flight grade 66 events, data obtained on or after 2009 Nov 1, but that were processed using an earlier version of the pipeline code, should be reprocessed with CIAO using version 4.7 (i.e. 2014 December) or later. Note that it is not possible to fix the data obtained before 2009 Nov 1. Since these earlier continuous-clocking observations are not calibrated at present, spectral analyses of these data may yield inaccurate results.