

V&V Reference Report

L2 ASCDS Version : 10.2.1

Observation 16596 - L2 Version 2
Chandra X-Ray Center

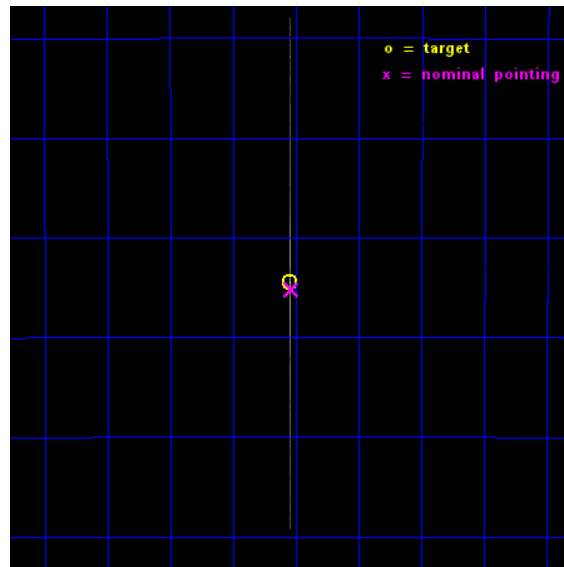
L2 Processing Date : Dec 10 2014

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Parameters	4
2.1.3	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
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

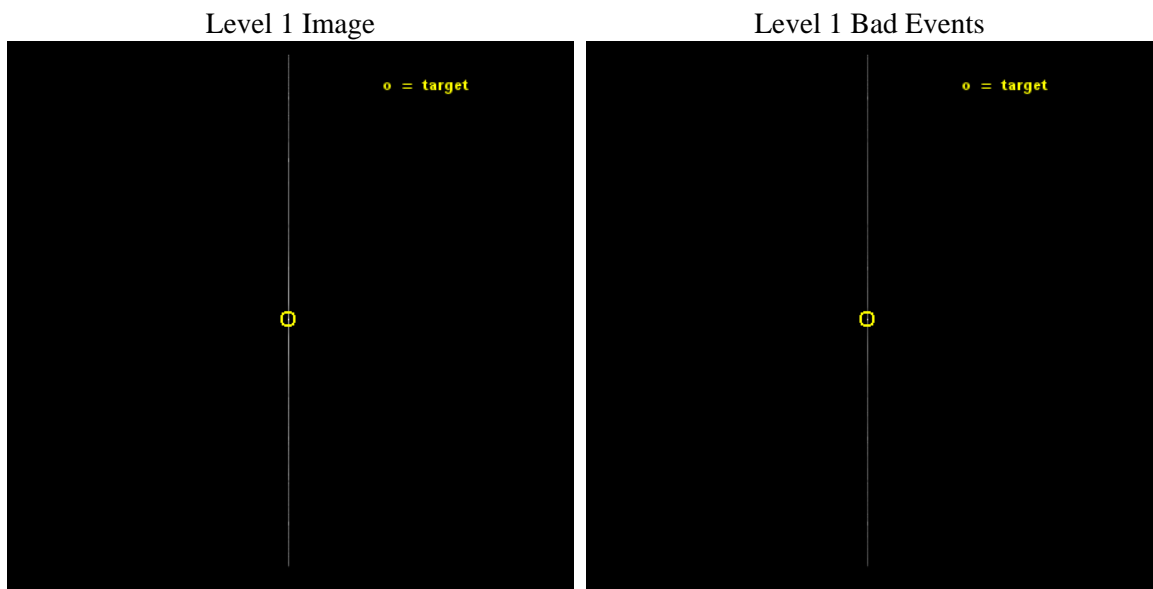
seq_num	401612	Sequence number
obs_id	16596	Observation id
title	A rare opportunity to resolve the emission line complex in GRO J1744-28	Proposal title
observer	Dr Jamie Kennea	Principal investigator
object	GRO J1744-28	Source name
ra_targ	266.137917	Observer's specified target RA [deg]
dec_targ	-28.740833	Observer's specified target Dec [deg]
ra_nom	266.13397378877	Nominal RA [deg]
dec_nom	-28.753393110376	Nominal Dec [deg]
roll_nom	89.93985914885	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10077.5	Sum of GTIs [s]
livetime	10038.134765625	Livetime [s]
ontime4	10077.5	Sum of GTIs [s]
ontime5	10077.5	Sum of GTIs [s]
ontime6	10077.5	Sum of GTIs [s]
ontime7	10077.5	Sum of GTIs [s]
ontime8	10077.5	Sum of GTIs [s]
ontime9	10077.5	Sum of GTIs [s]
l2events	1337815	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	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	10077.5	Sum of GTIs [s]
caldsver	4.6.4	 	ontime4	10077.5	Sum of GTIs [s]
date	2014-12-10T11:58:26	Date and time of file creation	ontime5	10077.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	10077.5	Sum of GTIs [s]
			ontime7	10077.5	Sum of GTIs [s]
			ontime8	10077.5	Sum of GTIs [s]
			ontime9	10077.5	Sum of GTIs [s]
			l1events	1944793	Number of level 1 events
			tgmetho	TGDETECT	Method used to create src1a file
				14071.50	

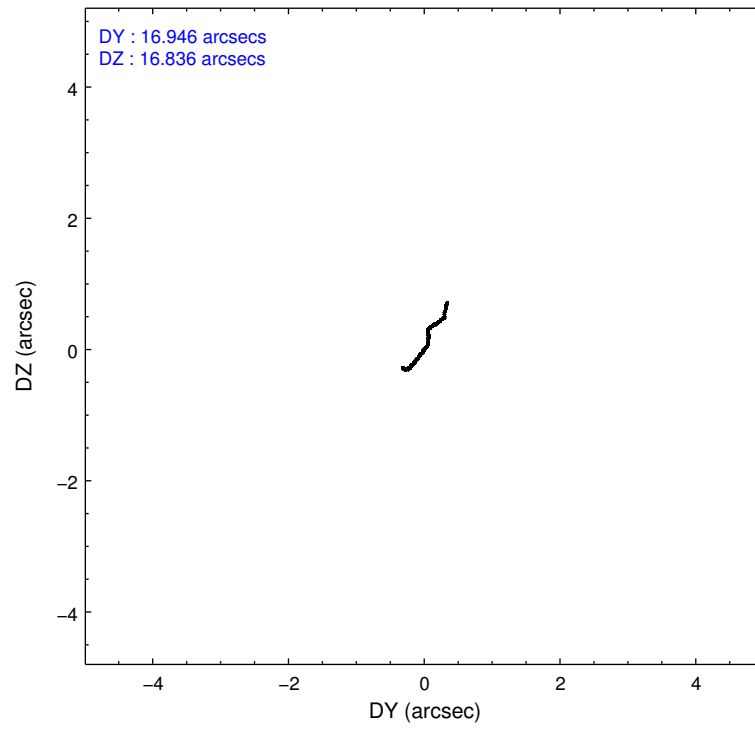
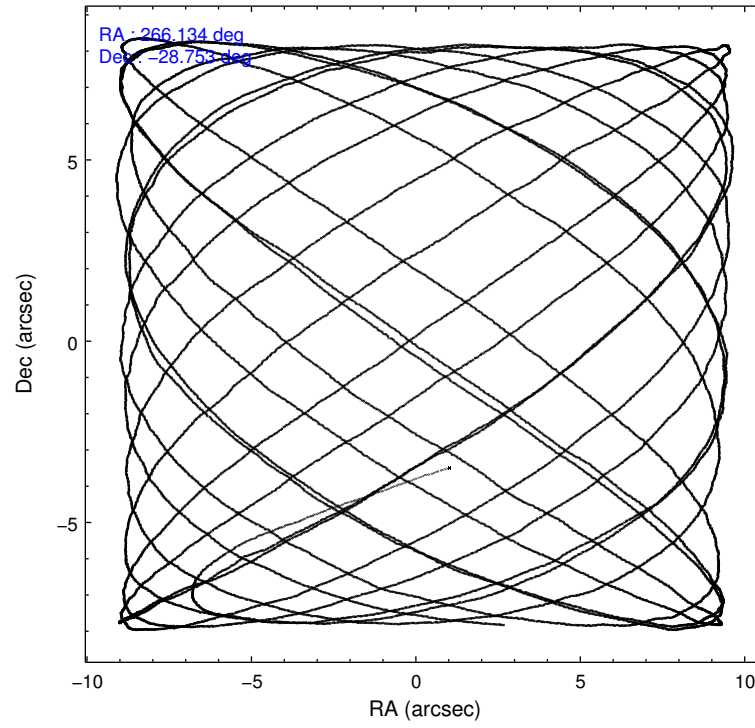
2.1.3 Events

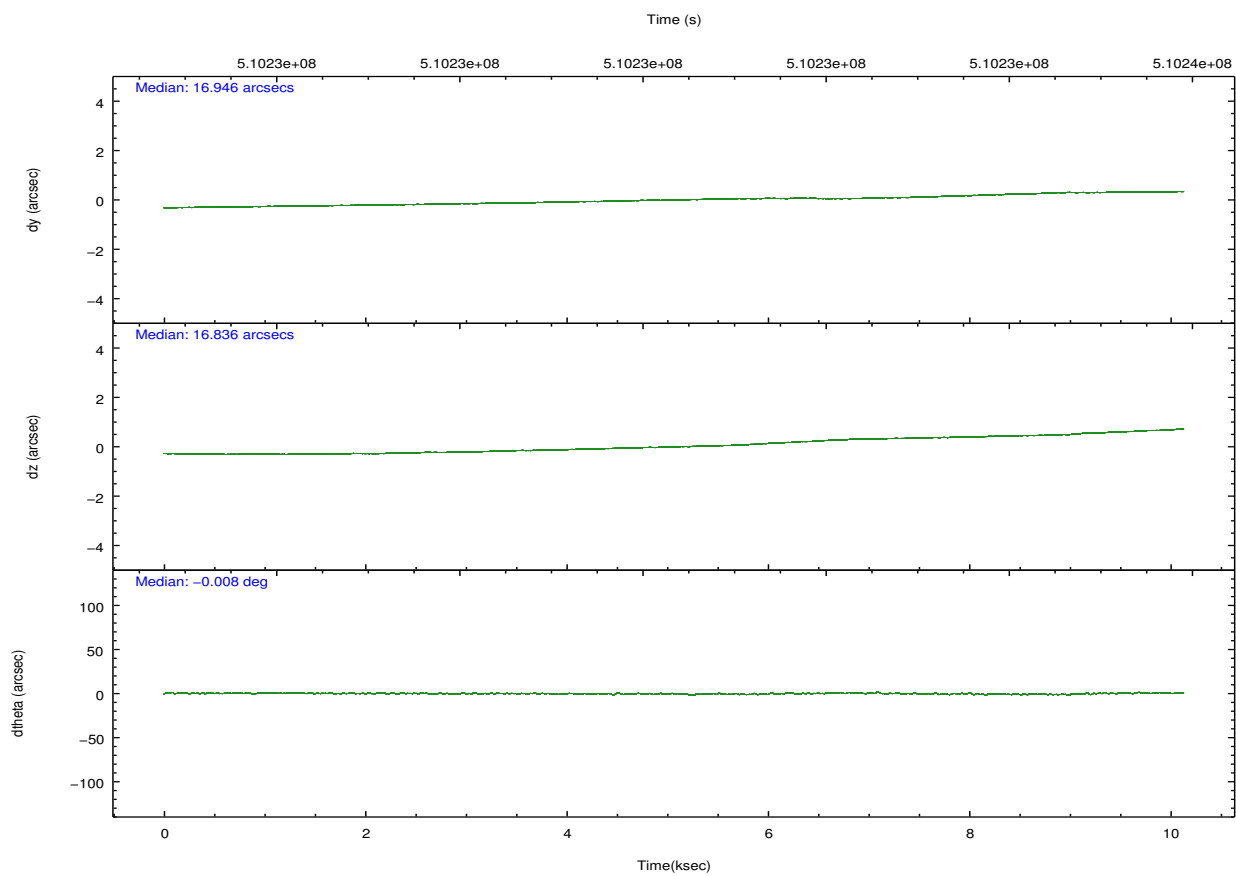
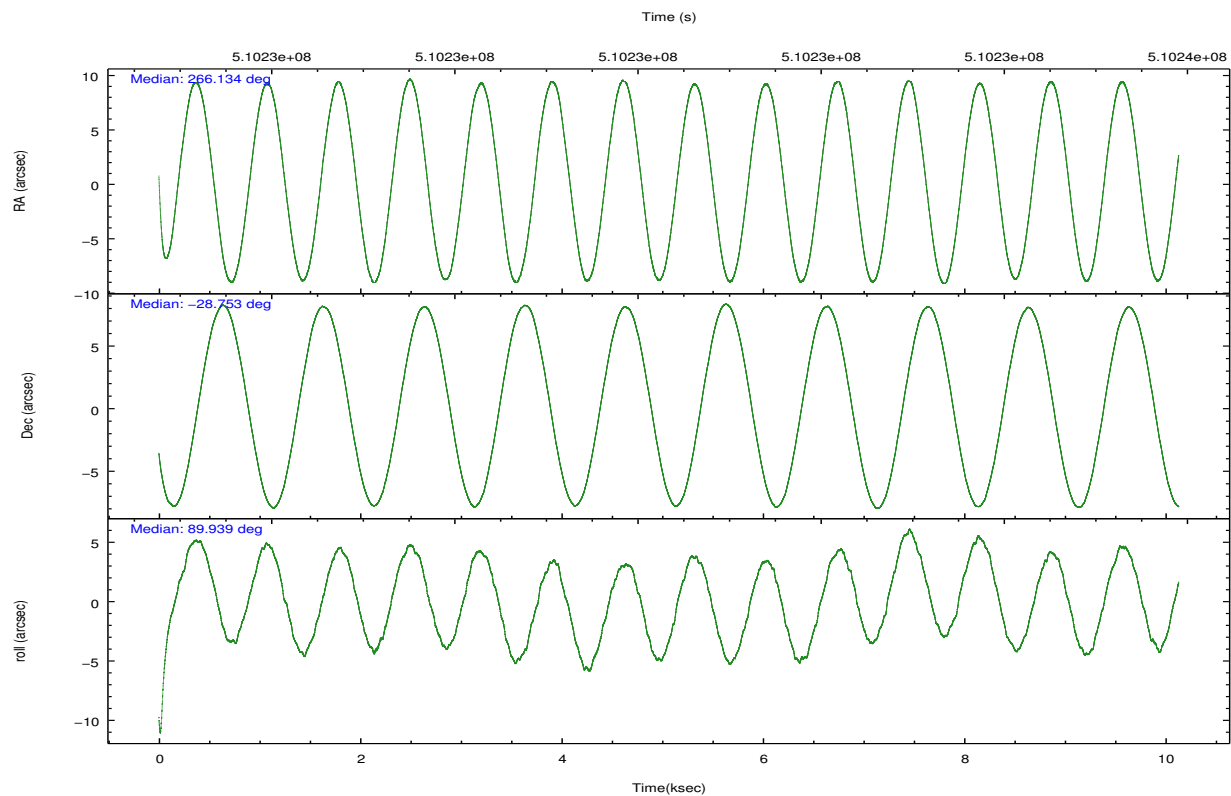
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	92564	142366	385933	1019952	209556	94422	grade 0 events	1730	18000	8221	57215	17429	2676
rejected events	45720	50649	59011	221717	63893	45101		1%	12%	2%	5%	8%	2%
rejected %	49%	35%	15%	21%	30%	47%	grade 1 events	33	58	61	2971	142	33
								0%	0%	0%	0%	0%	0%
							grade 2 events	40354	42813	268610	335012	106407	41613
								43%	30%	69%	32%	50%	44%
							grade 3 events	1090	1043	1469	32077	5713	1003
								1%	0%	0%	3%	2%	1%
							grade 4 events	1128	1037	1421	31541	5451	1053
								1%	0%	0%	3%	2%	1%
							grade 5 events	1956	4154	3314	31372	3565	2465
								2%	2%	0%	3%	1%	2%
							grade 6 events	2552	28844	47275	342607	10677	3136
								2%	20%	12%	33%	5%	3%
							grade 7 events	43721	46417	55562	187157	60172	42443
								47%	32%	14%	18%	28%	44%

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	266.149930	266.1339737887676	CCD I2 on	N	N
[deg] Pointing Dec	-28.776864	-28.75339311037622	CCD I3 on	N	N
[deg] Pointing Roll	89.790933	89.93985914885013	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)	510225405.184000	510224346.44818	CCD S5 on	O2	Y
Observation start date	2014-03-03T09:15:38	2014-03-03T08:59:06	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	510235405.184000	510236868.87387	On-chip summing requested	N	N
Observation end date	2014-03-03T12:02:18	2014-03-03T12:27:48	Subarray requested	NONE	NONE
Read mode	CONTINUOUS	CONTINUOUS	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0

2.3 Aspect



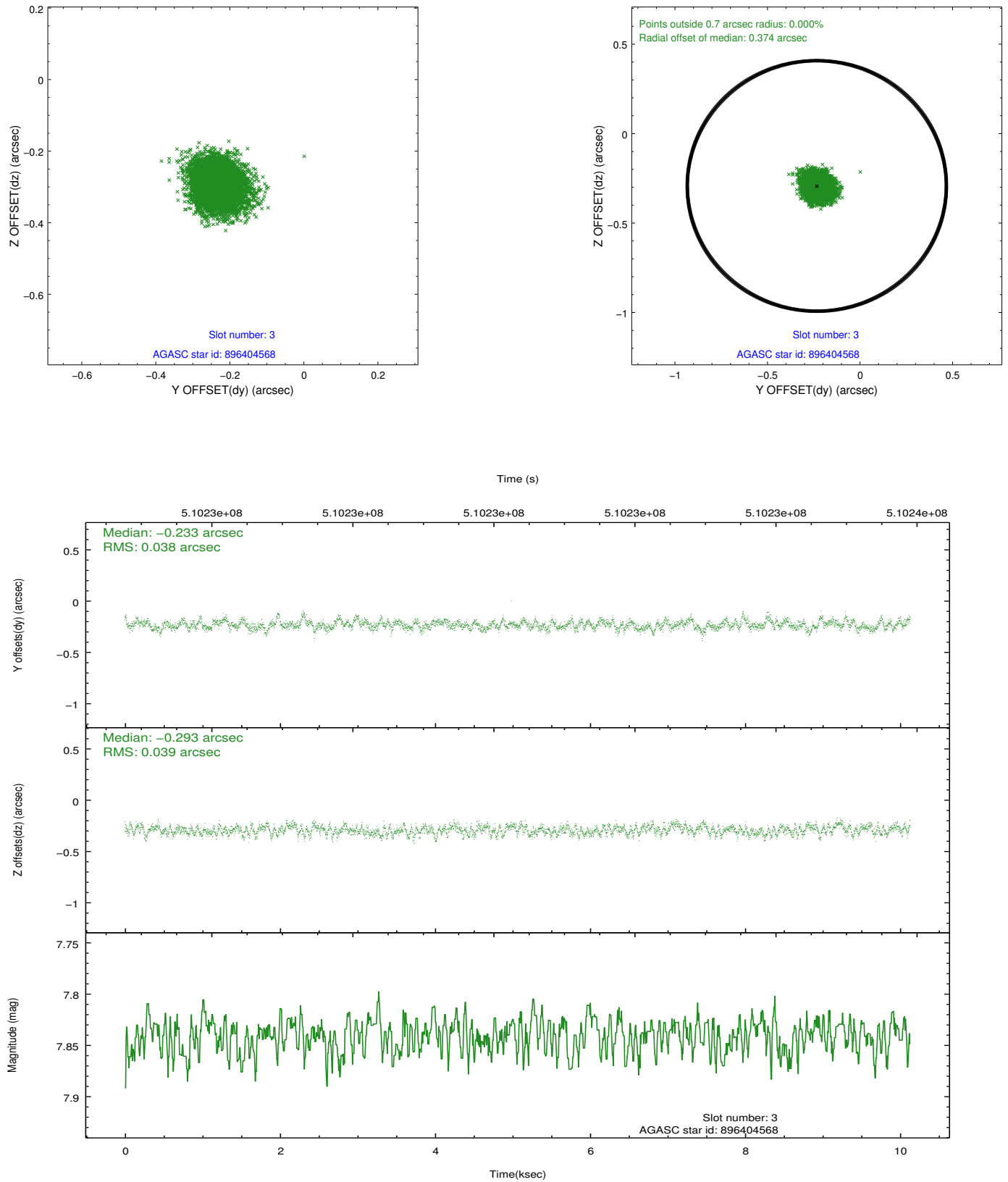


Slot Statistics

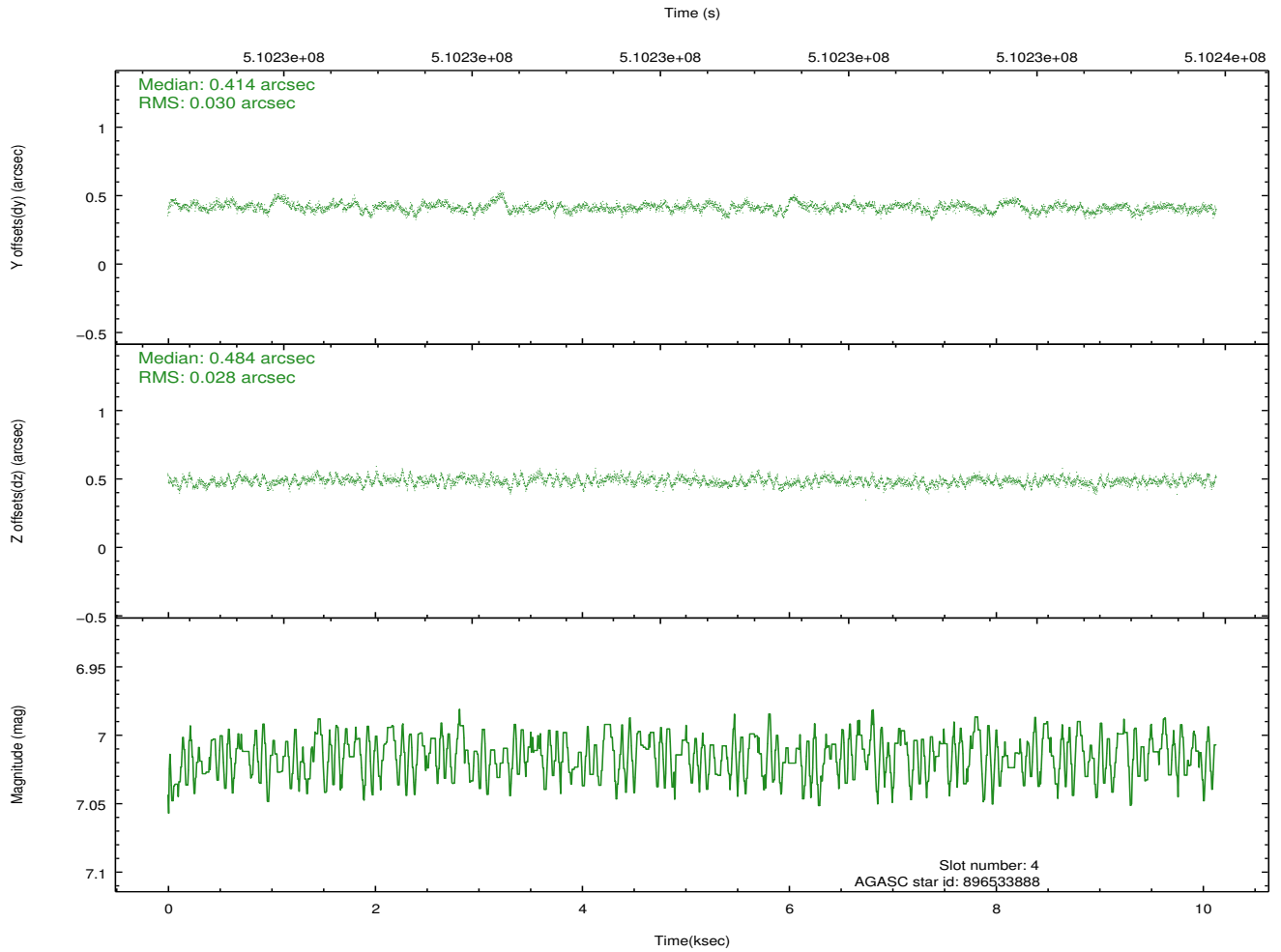
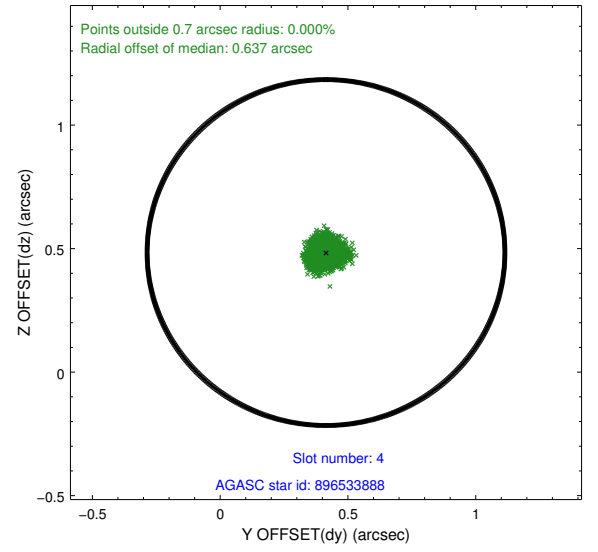
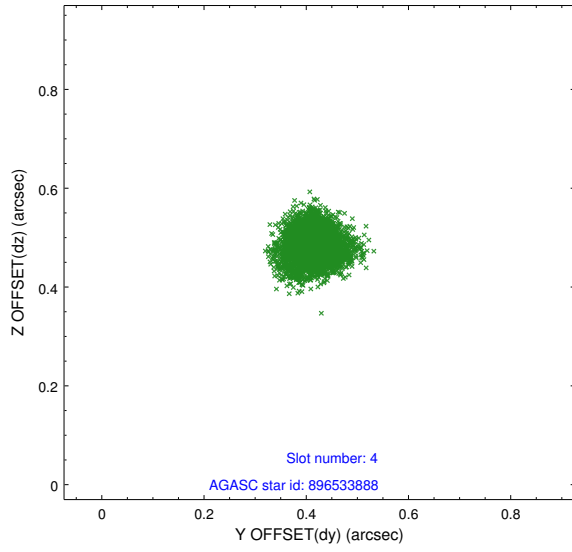
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	6.99	2471	0.122	0.044	0.013	0.019	0.000000	0.000000	926.73	-1860.59
1	FID		ACIS-S-2	6.90	2471	-0.136	-0.110	0.023	0.036	0.000000	0.000000	-769.14	-1865.97
2	FID		ACIS-S-5	7.03	2471	-0.010	0.070	0.013	0.019	0.000000	0.000000	-1822.89	36.26
3	GUIDE	used	896404568	7.84	4943	-0.233	-0.293	0.058	0.094	265.687293	-28.431080	1236.59	1468.88
4	GUIDE	used	896533888	7.01	4943	0.414	0.484	0.043	0.071	266.666434	-29.392757	-2214.02	-1627.47
5	GUIDE	used	896538696	6.77	4943	-0.144	0.227	0.050	0.079	266.298470	-28.325572	1625.66	-464.89
6	GUIDE	used	896540808	7.49	4942	0.262	-0.127	0.060	0.095	265.985401	-29.308604	-1915.73	509.29
7	GUIDE	used	896402272	7.58	4942	-0.300	-0.293	0.061	0.097	265.637294	-28.313189	1659.32	1630.65

2.4 Star Slots

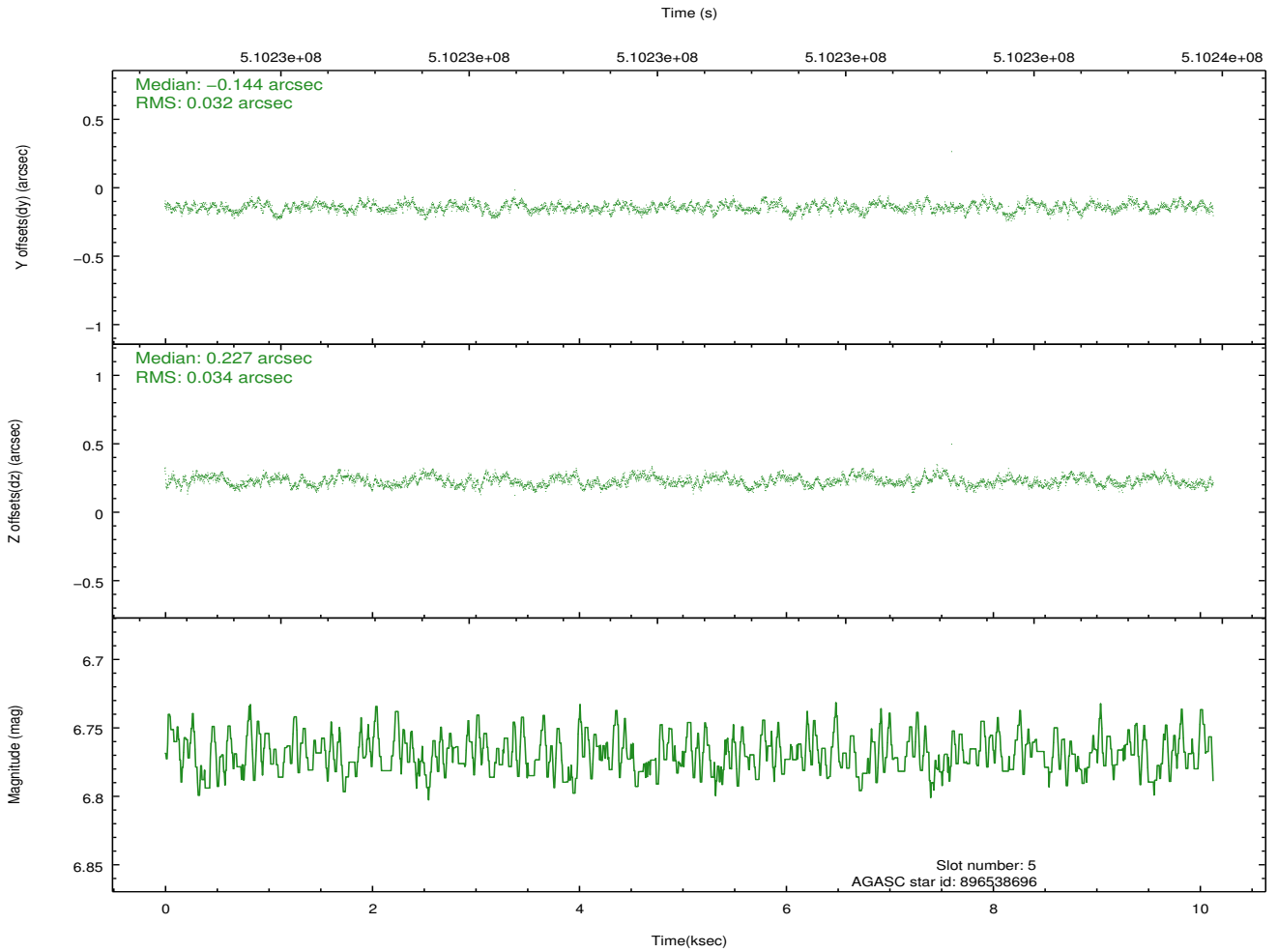
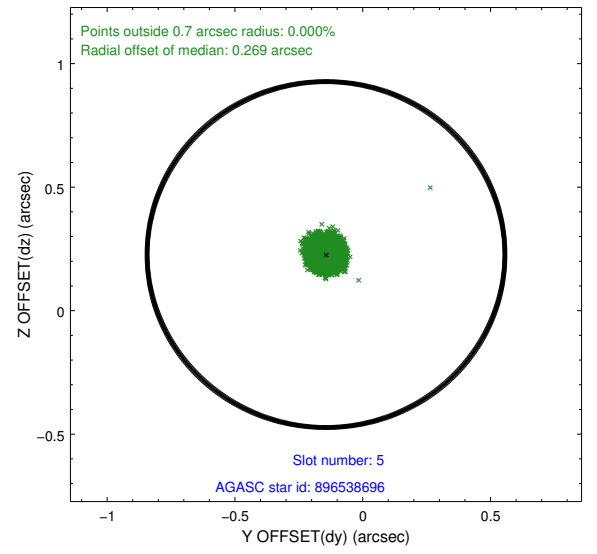
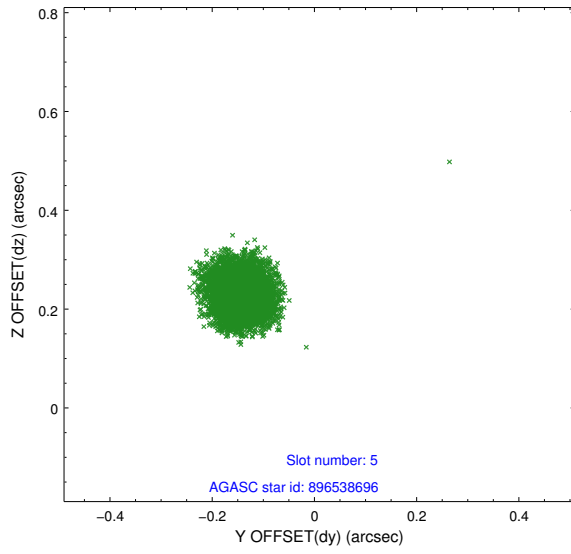
2.4.1 Slot 3



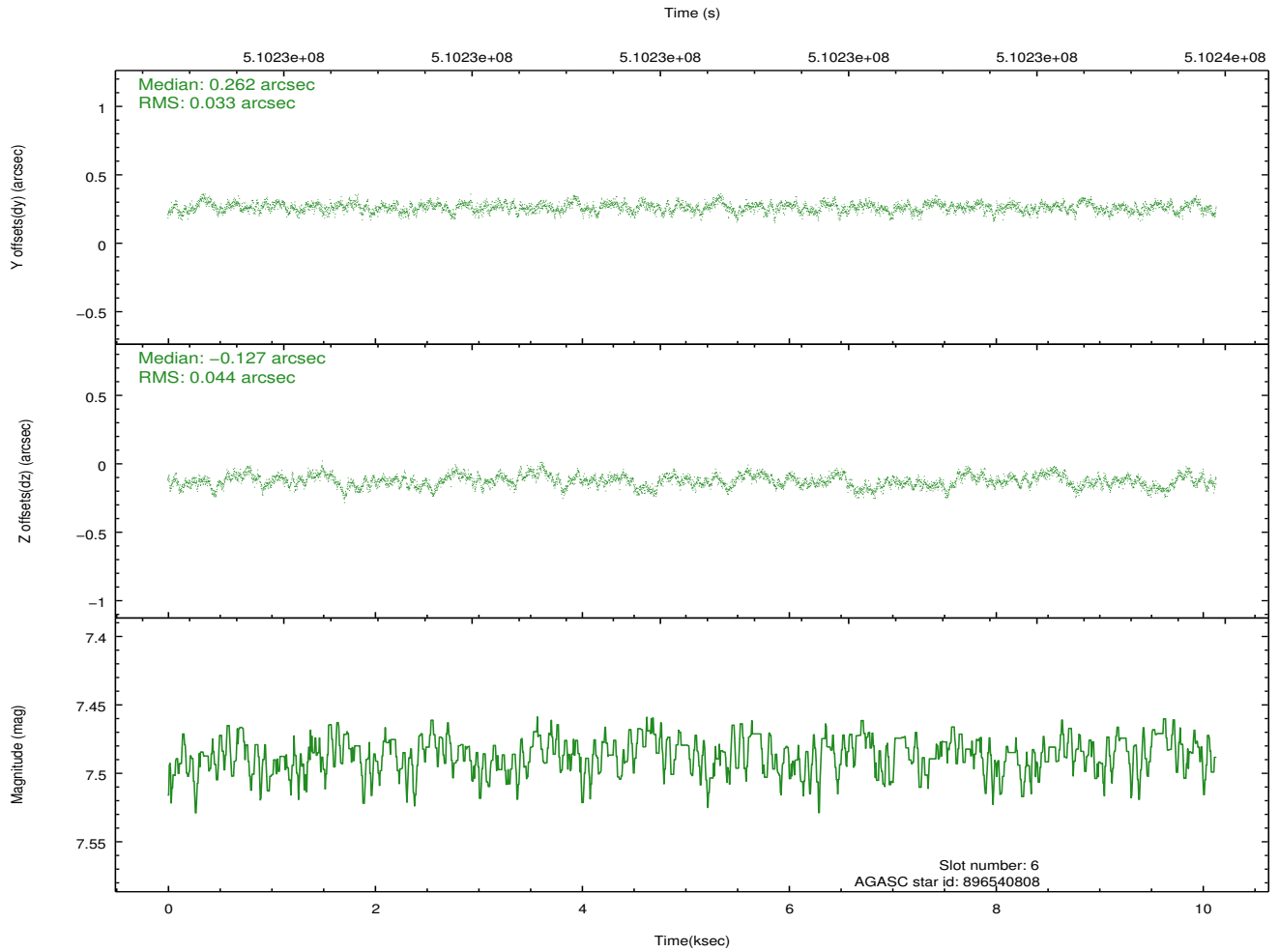
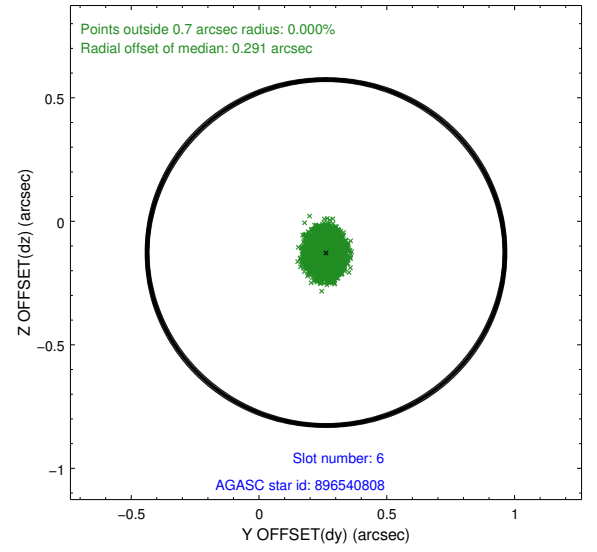
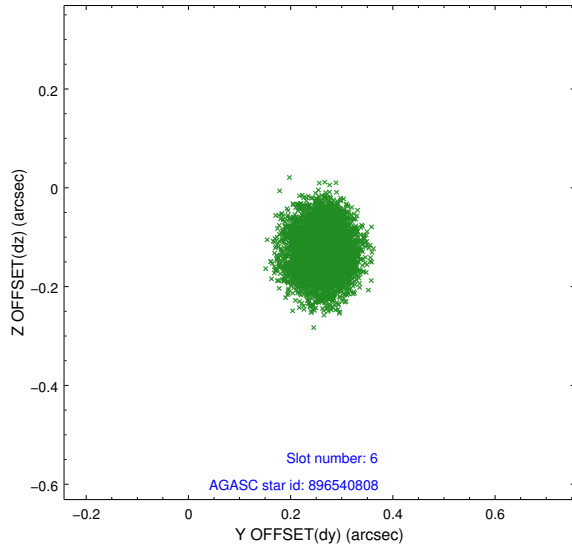
2.4.2 Slot 4



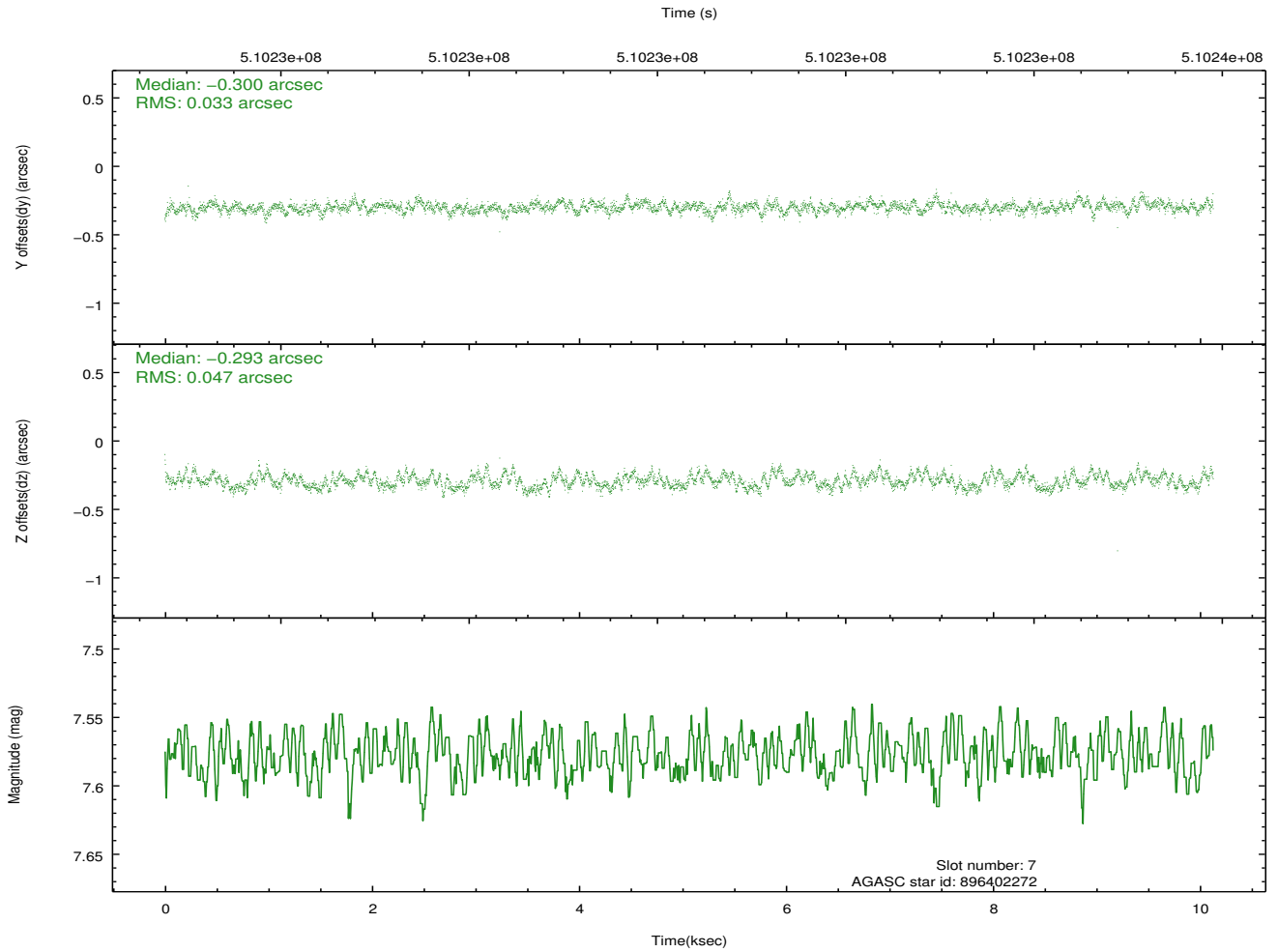
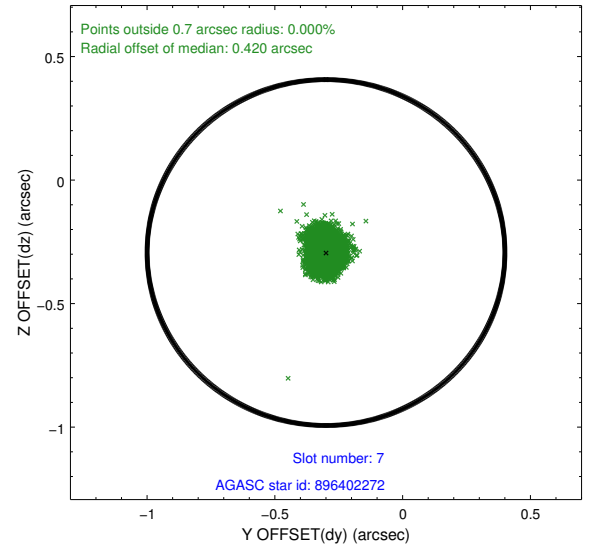
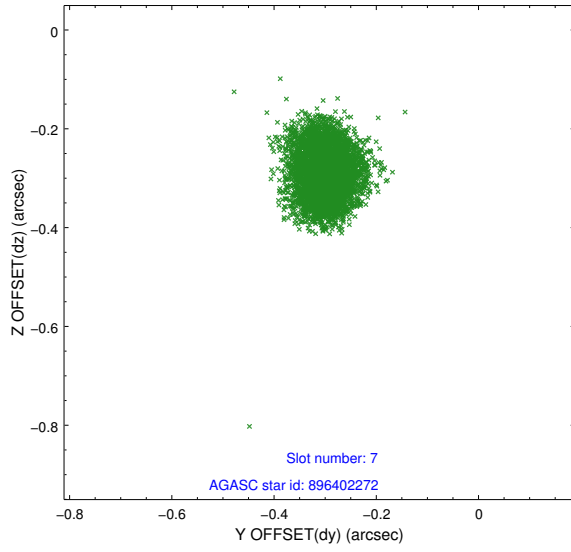
2.4.3 Slot 5



2.4.4 Slot 6

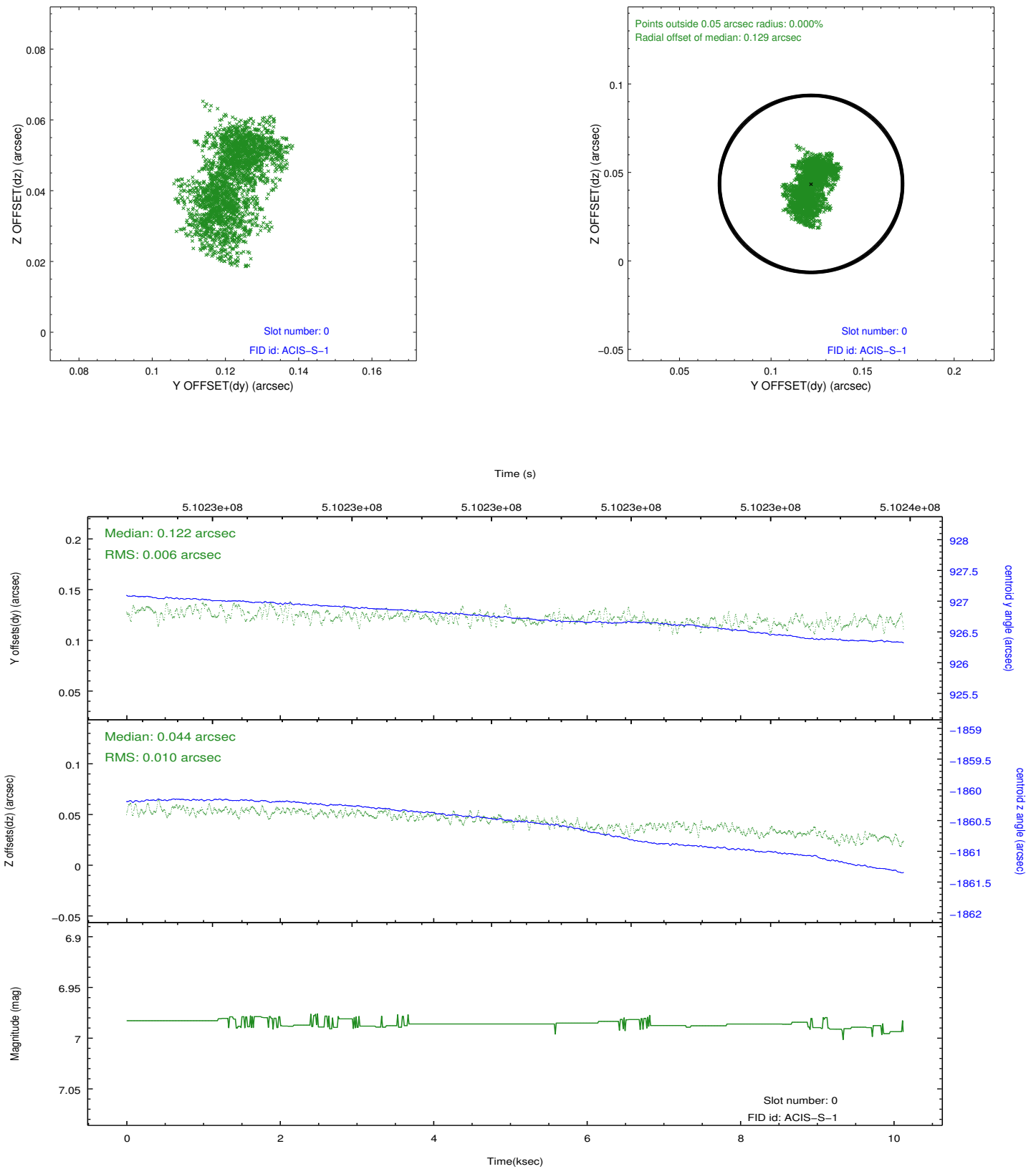


2.4.5 Slot 7

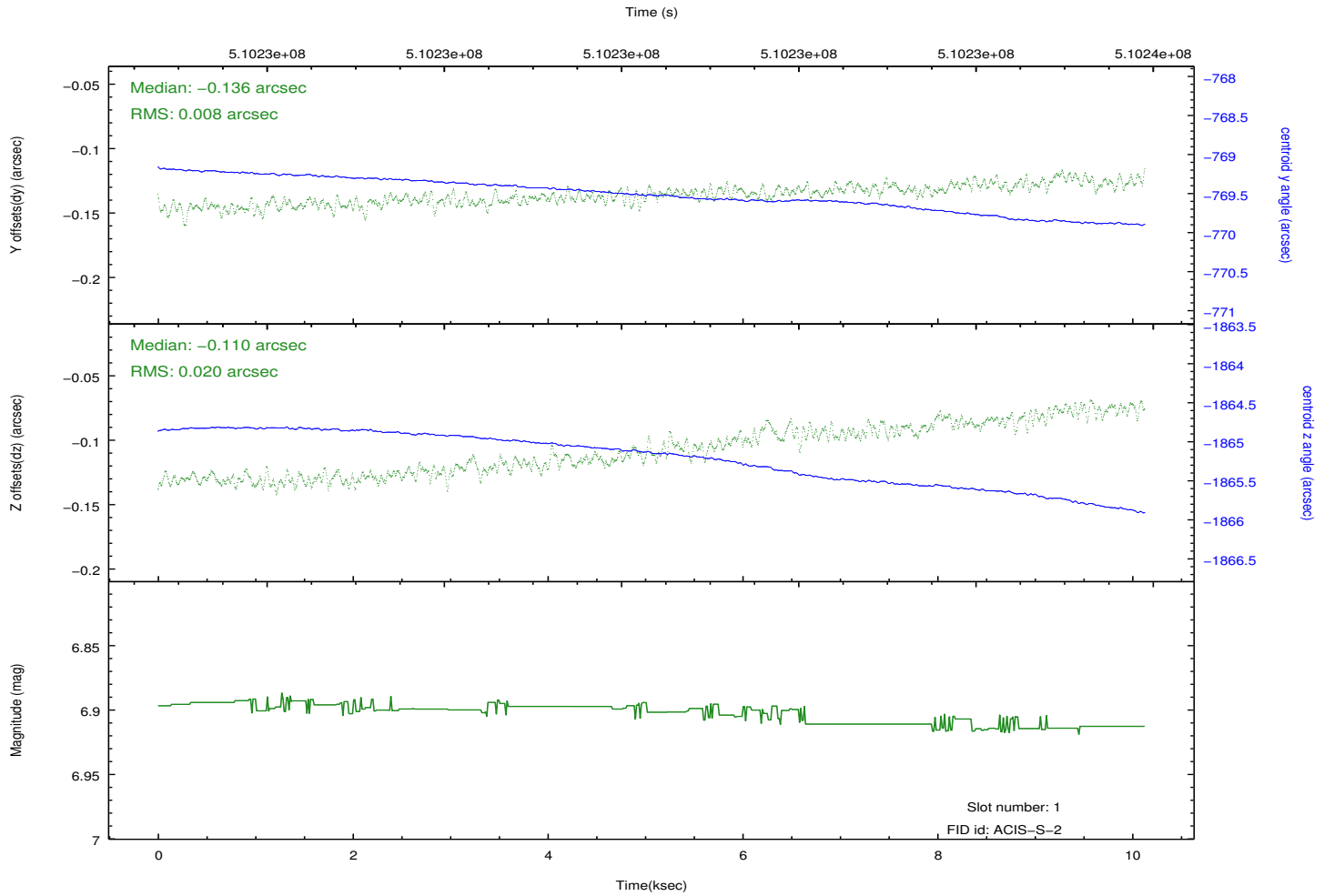
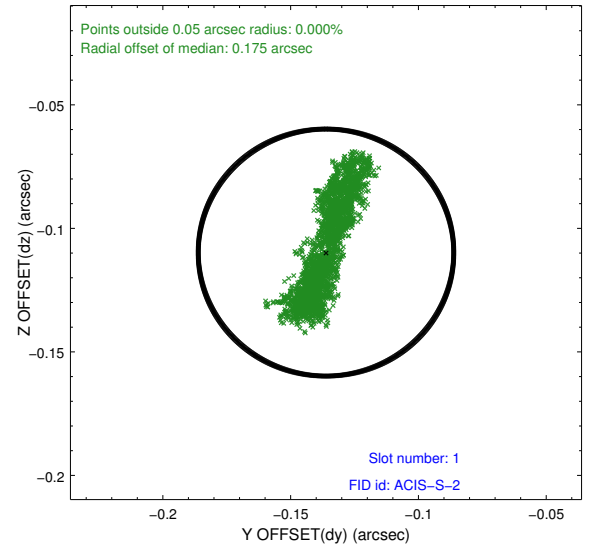
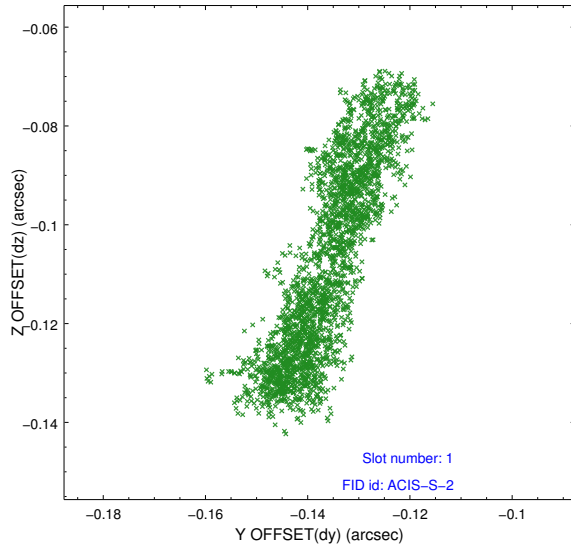


2.5 FID Slots

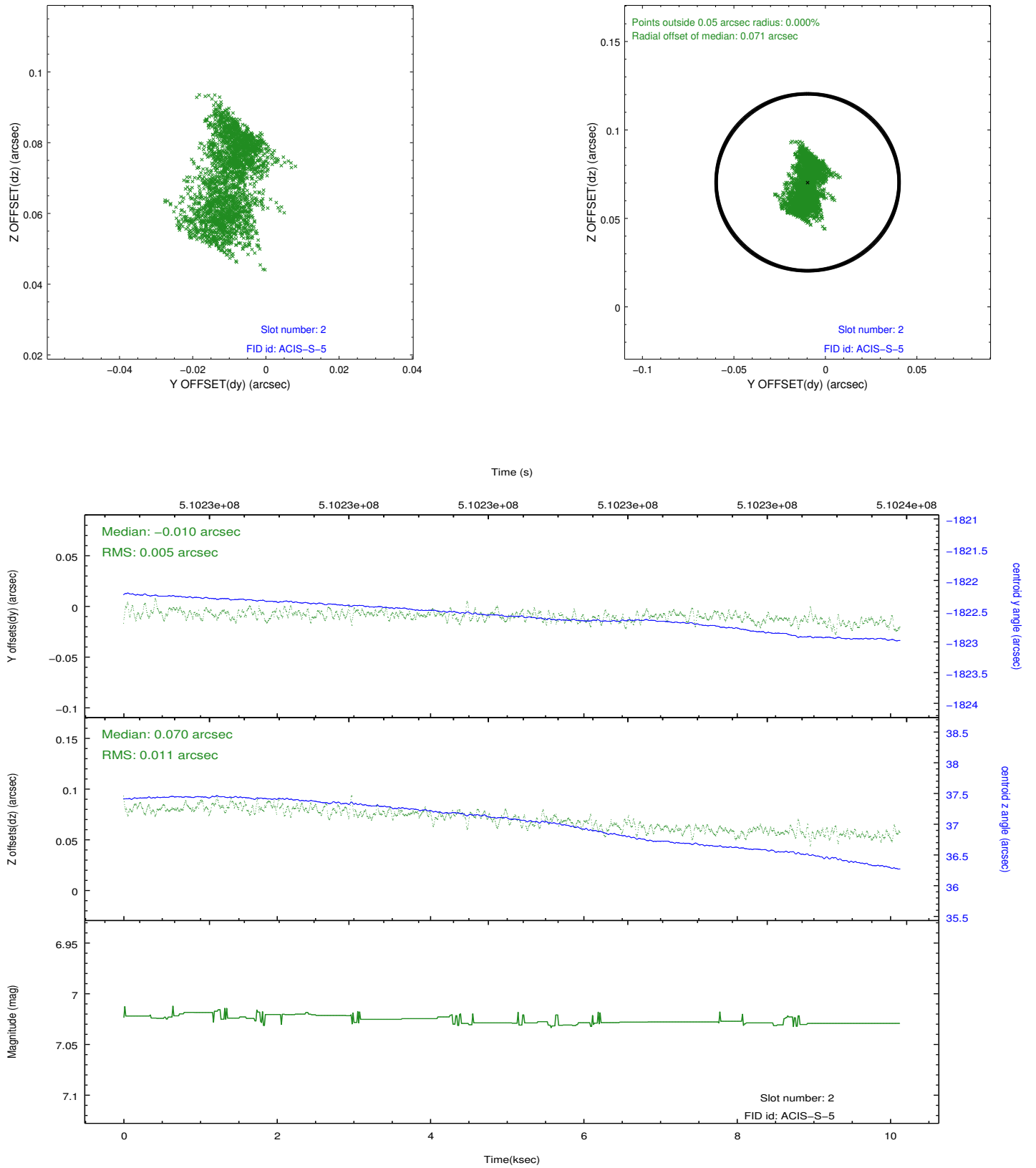
2.5.1 Slot 0



2.5.2 Slot 1

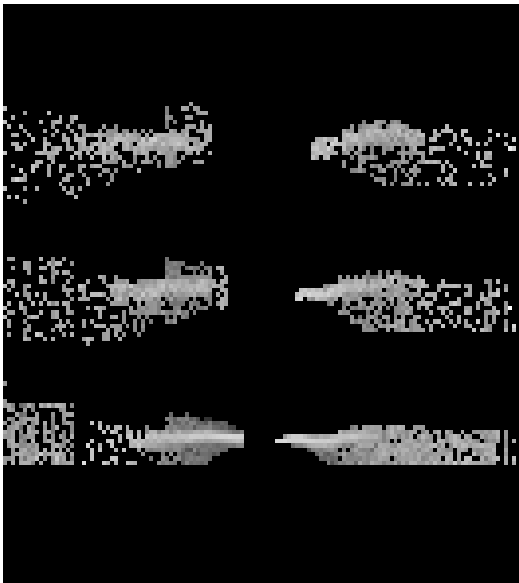


2.5.3 Slot 2

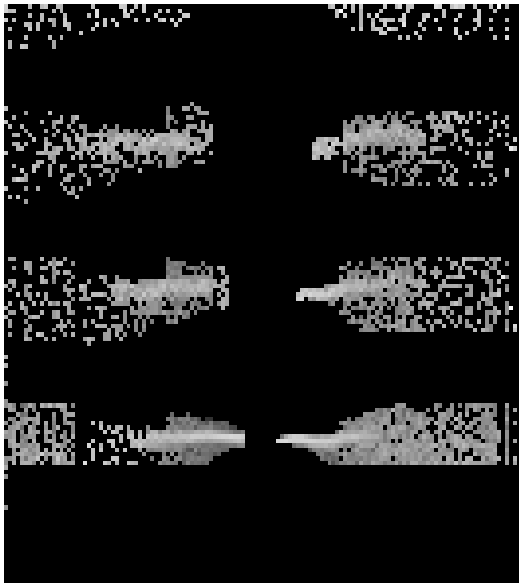


3 Gratings

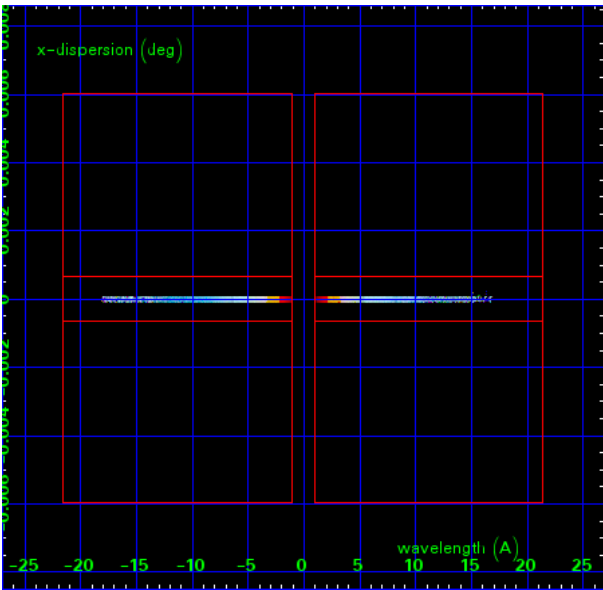
3.1 HEG Arm



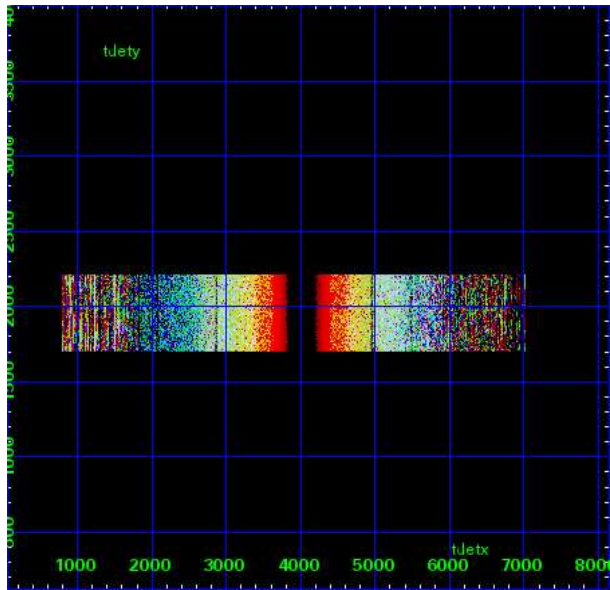
HEG Order Sort 123



HEG Order Sort ALL

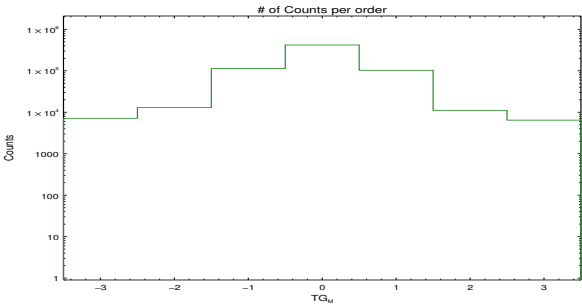


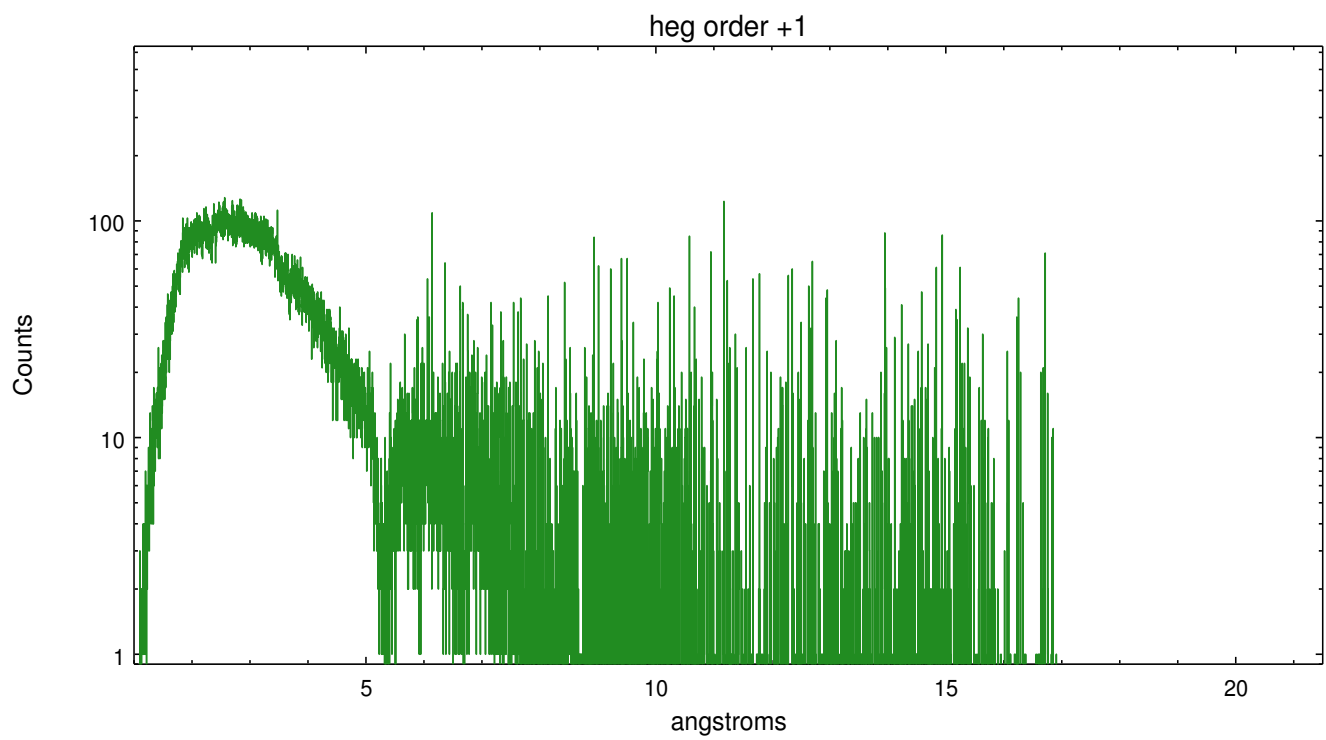
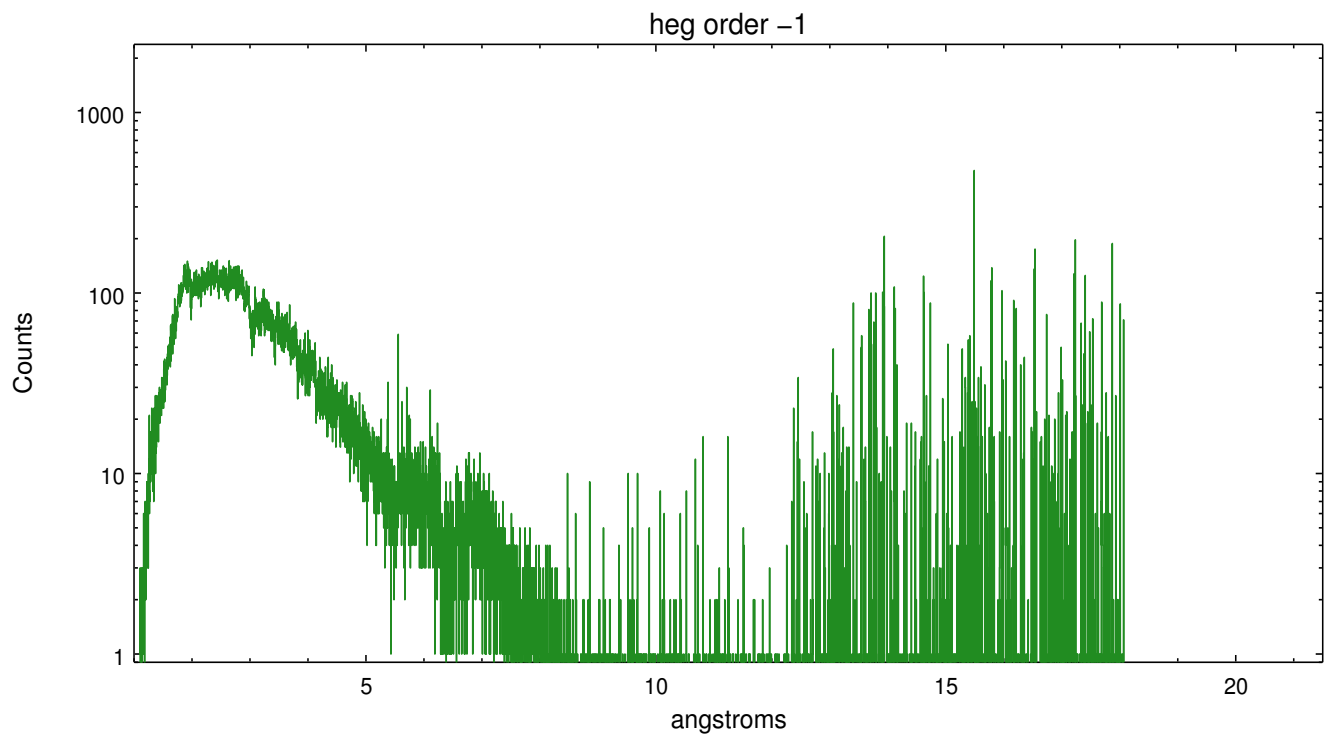
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	7142	12986	113349	419967	102796	11132	6449





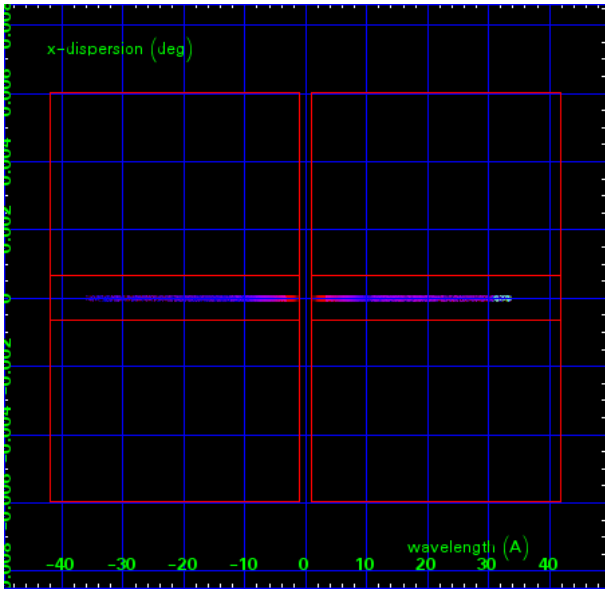
3.2 MEG Arm



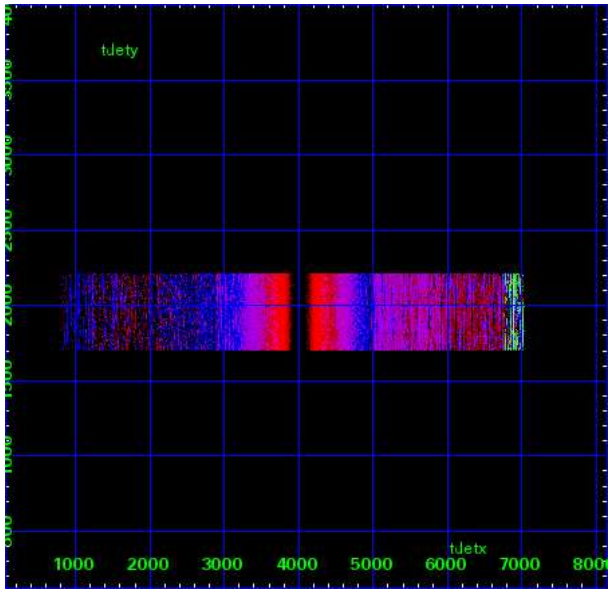
MEG Order Sort 123



MEG Order Sort ALL

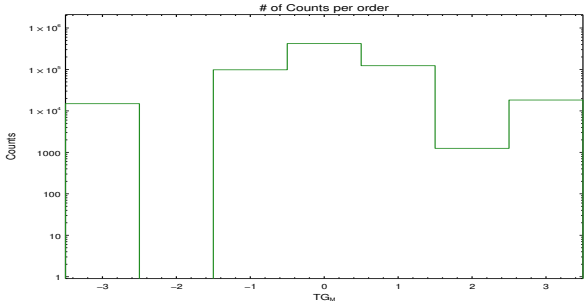


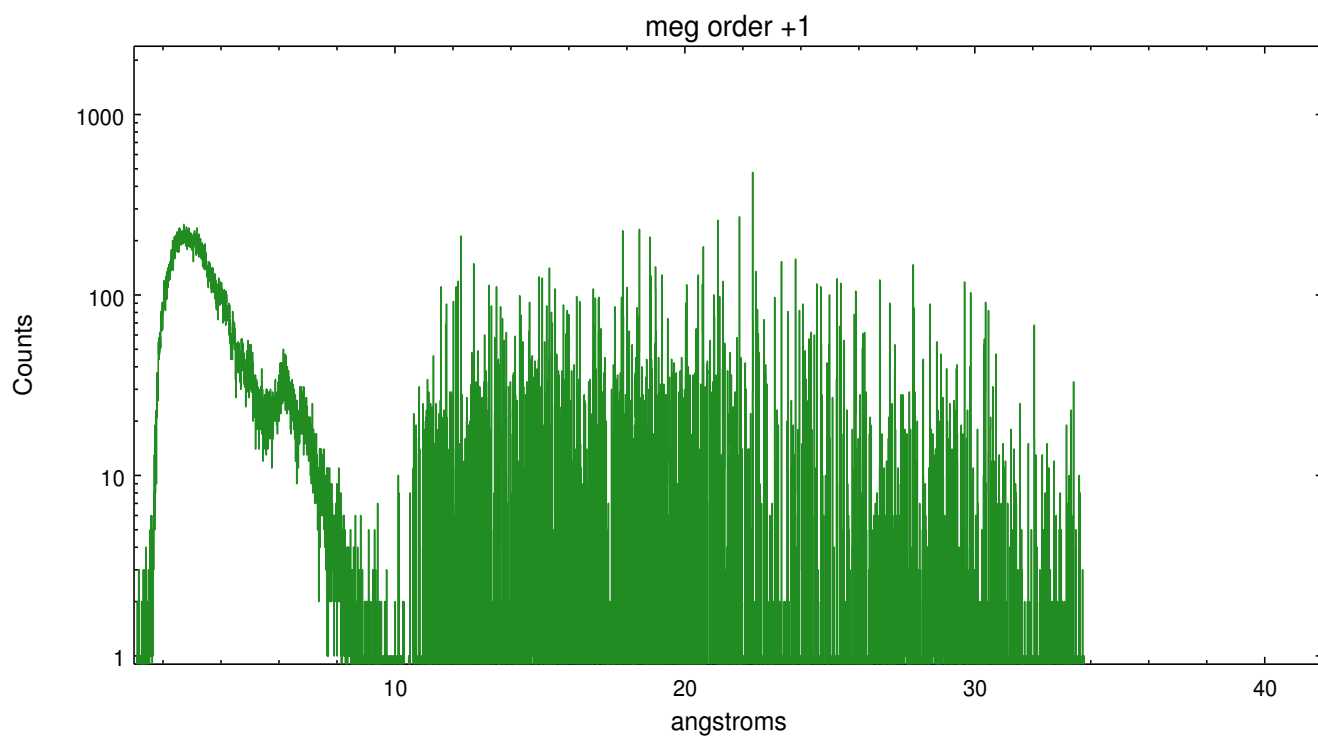
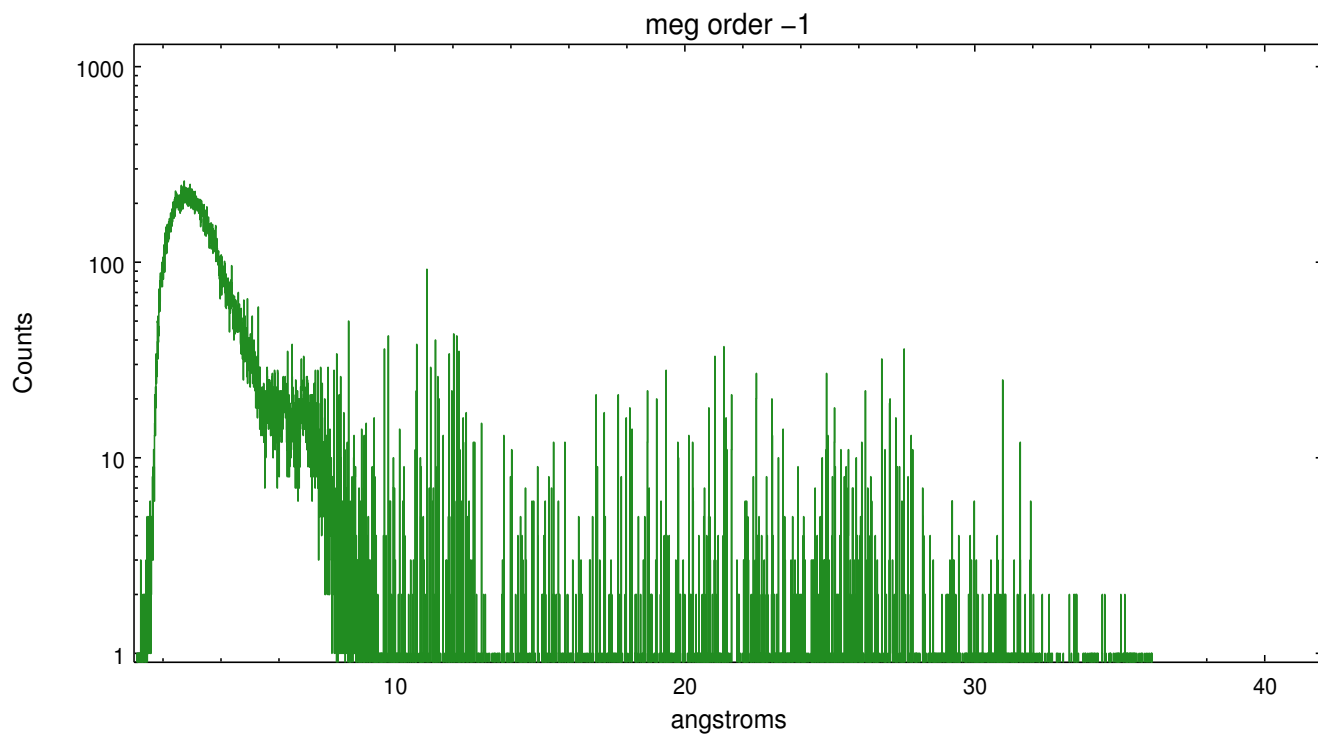
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	14929	0	98078	419967	123170	1250	18288





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	10.0775

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.

=====

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.

=====

Zeroth order position is misplaced by 0.5 pixels in the x direction, which is essentially cross-dispersion. This should make no difference in the extraction of the spectrum.

=====

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.