

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 3724 - L2 Version 3
Chandra X-Ray Center

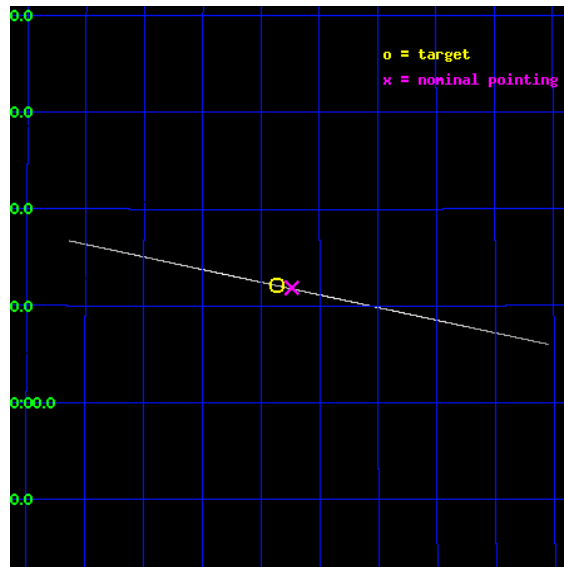
L2 Processing Date : Oct 13 2012

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1 Front

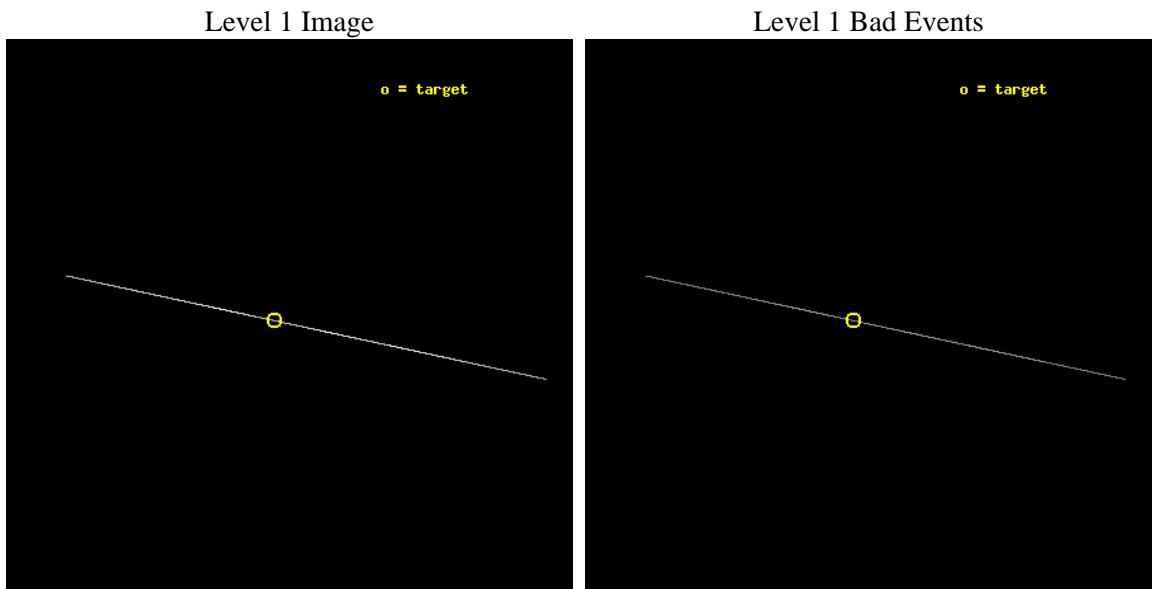
seq_num	400270	Sequence number
obs_id	3724	Observation id
title	OBSERVATION OF CYG X-1 IN THE HIGH STATE WITH HETG/CHANDRA	Proposa
observer	Dr. Yuxin Feng	Principal investigator
object	CYG X-1	Source name
ra_targ	299.590833	Observer's specified target RA [deg]
dec_targ	35.201806	Observer's specified target Dec [deg]
ra_nom	299.55900882332	Nominal RA [deg]
dec_nom	35.198057182034	Nominal Dec [deg]
roll_nom	192.01073653226	Nominal Roll [deg]
revision	3	Processing version of data
ontime	8135.0400957465	Sum of GTIs [s]
livetime	8103.2625953725	Livetime [s]
ontime4	18449.953989059	Sum of GTIs [s]
ontime5	26444.453862071	Sum of GTIs [s]
ontime6	5982.7198958397	Sum of GTIs [s]
ontime7	8135.0400957465	Sum of GTIs [s]
ontime8	7000.6743533611	Sum of GTIs [s]
ontime9	16910.20106563	Sum of GTIs [s]
l2events	10402588	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	29000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	8135.0400957465	Sum of GTIs [s]
caldbver	4.5.2	 	ontime4	18449.953989059	Sum of GTIs [s]
date	2012-10-11T22:49:25	Date and time of file creation	ontime5	26444.453862071	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	5982.7198958397	Sum of GTIs [s]
			ontime7	8135.0400957465	Sum of GTIs [s]
			ontime8	7000.6743533611	Sum of GTIs [s]
			ontime9	16910.20106563	Sum of GTIs [s]
			l1events	11492071	Number of level 1 events

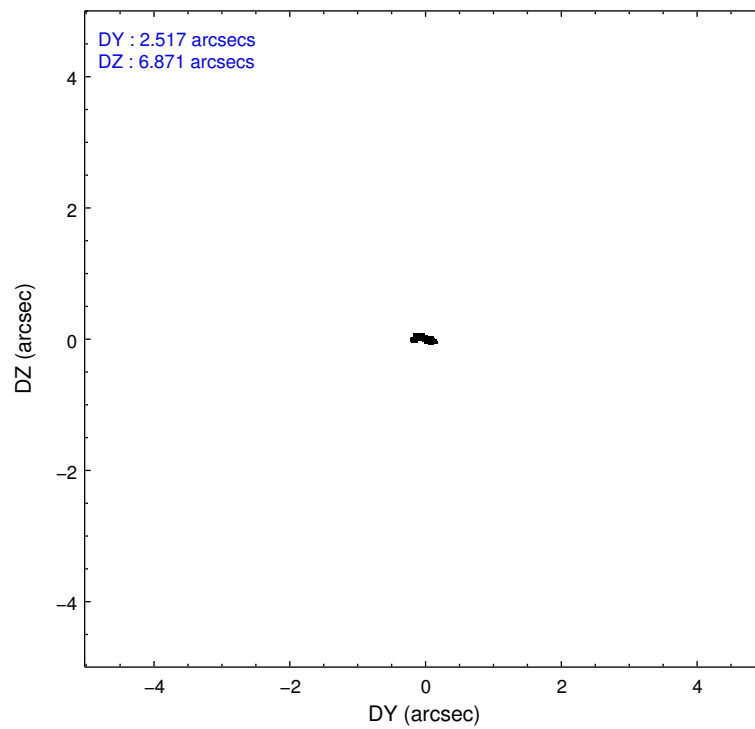
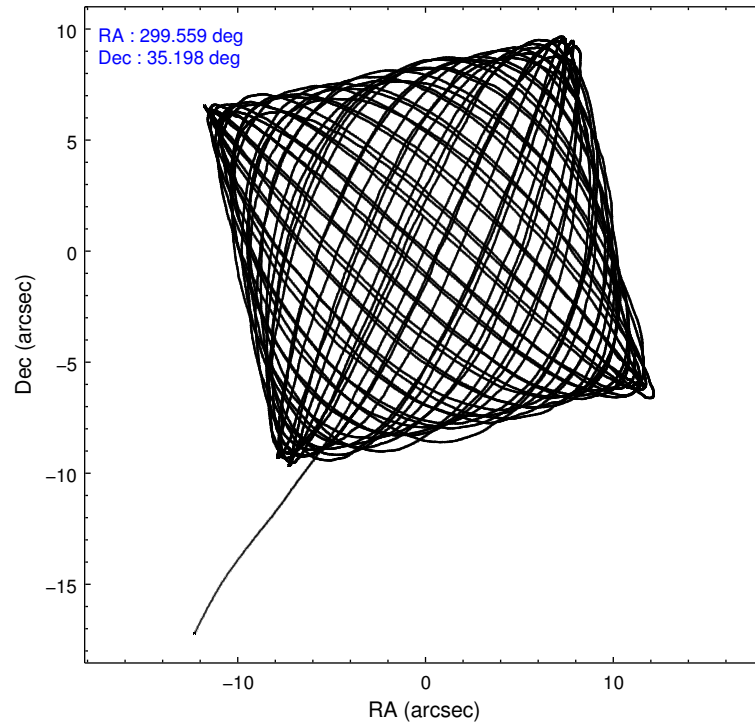
2.1.3 Events

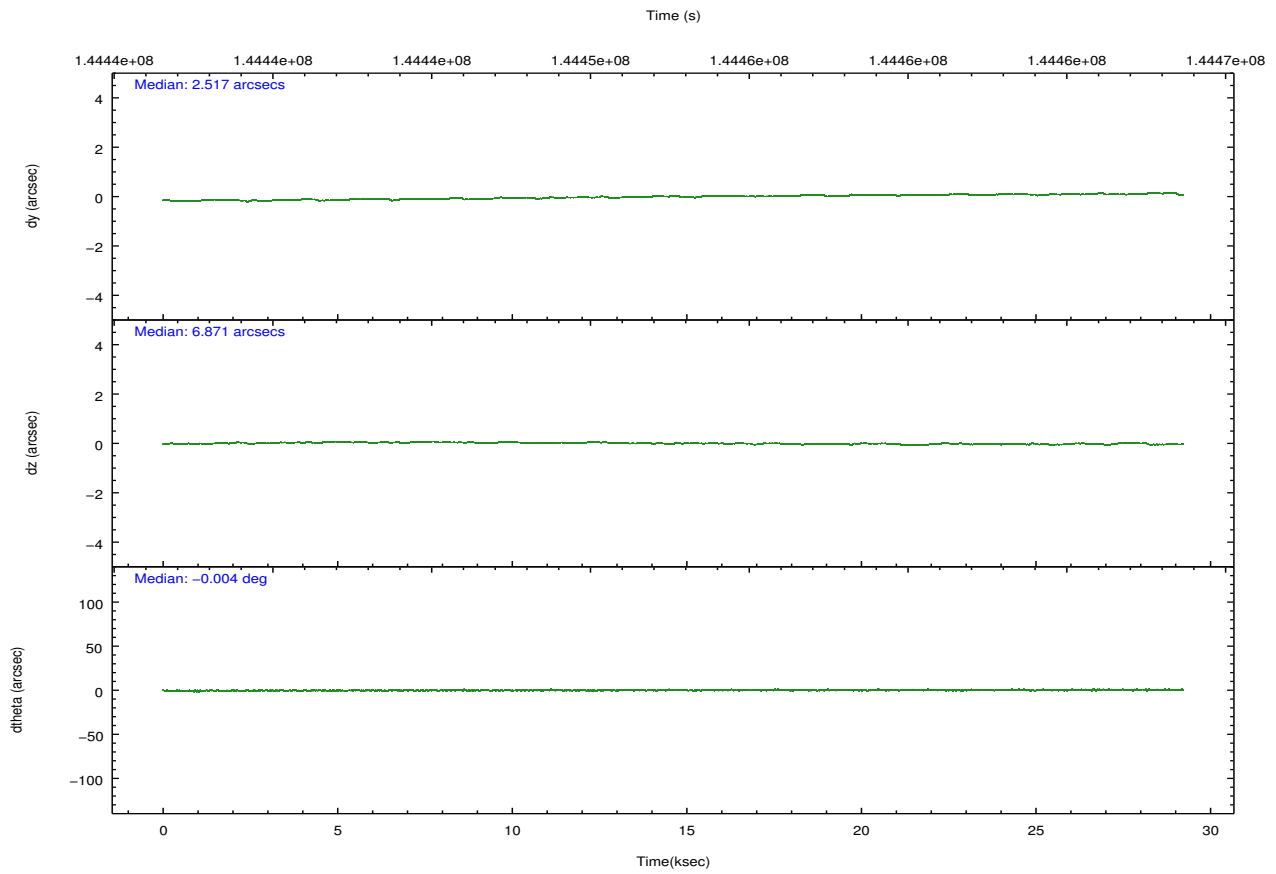
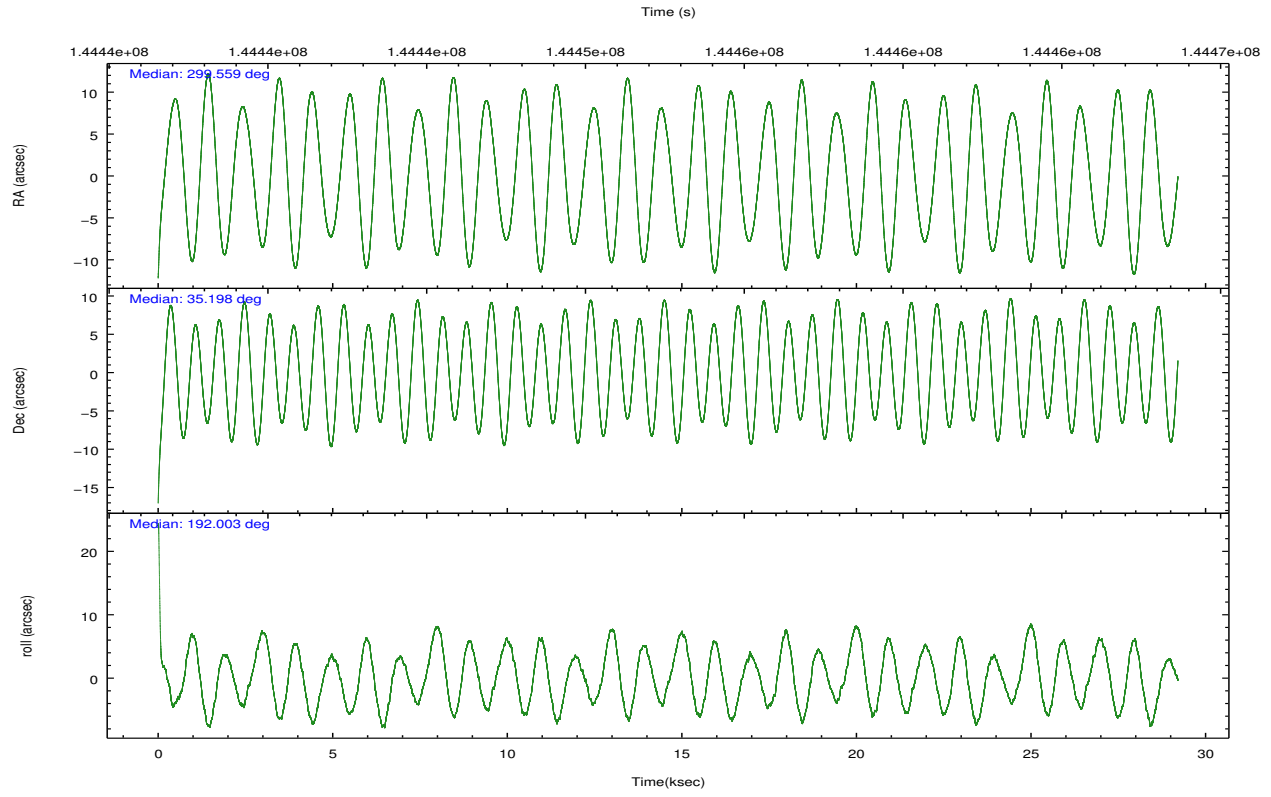
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	585536	2773178	2654972	1857083	2552738	1068564	grade 0 events	6220	314354	11412	207145	23812	20767
rejected events	27895	87873	68825	77586	61302	30234		1%	11%	0%	11%	0%	1%
rejected %	4%	3%	2%	4%	2%	2%	grade 1 events	78	547	82	1731	174	111
								0%	0%	0%	0%	0%	0%
							grade 2 events	532904	1500461	2442679	680273	2348481	97112
								91%	54%	92%	36%	91%	90%
							grade 3 events	2758	88898	1345	113213	3764	3046
								0%	3%	0%	6%	0%	0%
							grade 4 events	2934	87505	1345	109797	3697	3163
								0%	3%	0%	5%	0%	0%
							grade 5 events	6282	54912	14041	36959	14537	7614
								1%	1%	0%	1%	0%	0%
							grade 6 events	34360	726501	184068	707965	158273	62743
								5%	26%	6%	38%	6%	5%
							grade 7 events	0	0	0	0	0	0
								0%	0%	0%	0%	0%	0%

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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	299.583500	299.5590088233162	Subarray requested	NONE	NONE
[deg] Pointing Dec	35.216562	35.19805718203377	Alternating exposures requested	N	N
[deg] Pointing Roll	191.839980	192.0107365322554	[s] Primary exposure time	0.000000	0
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-194.132523	-194.1227414875429			
[mm] SIM translation stage offset	4	3.990218904535112			
Phase constraints	Y	Y			
[d] Phase period	5.599847	5.599847			
[d] Phase epoch (MJD)	51998.668500	51998.668500			
Phase start	0.000000	0.000000			
Phase end	0.010000	0.010000			
Phase start error	0.050000	0.050000			
Phase end error	0.050000	0.050000			
[s] Observation start time (MET)	144438208.184000	144437237.06446			
Observation start date	2002-07-30T17:42:24	2002-07-30T17:27:17			
[s] Observation end time (MET)	144467208.184000	144467528.37821			
Observation end date	2002-07-31T01:45:44	2002-07-31T01:52:08			
Read mode	CONTINUOUS	CONTINUOUS			

2.3 Aspect



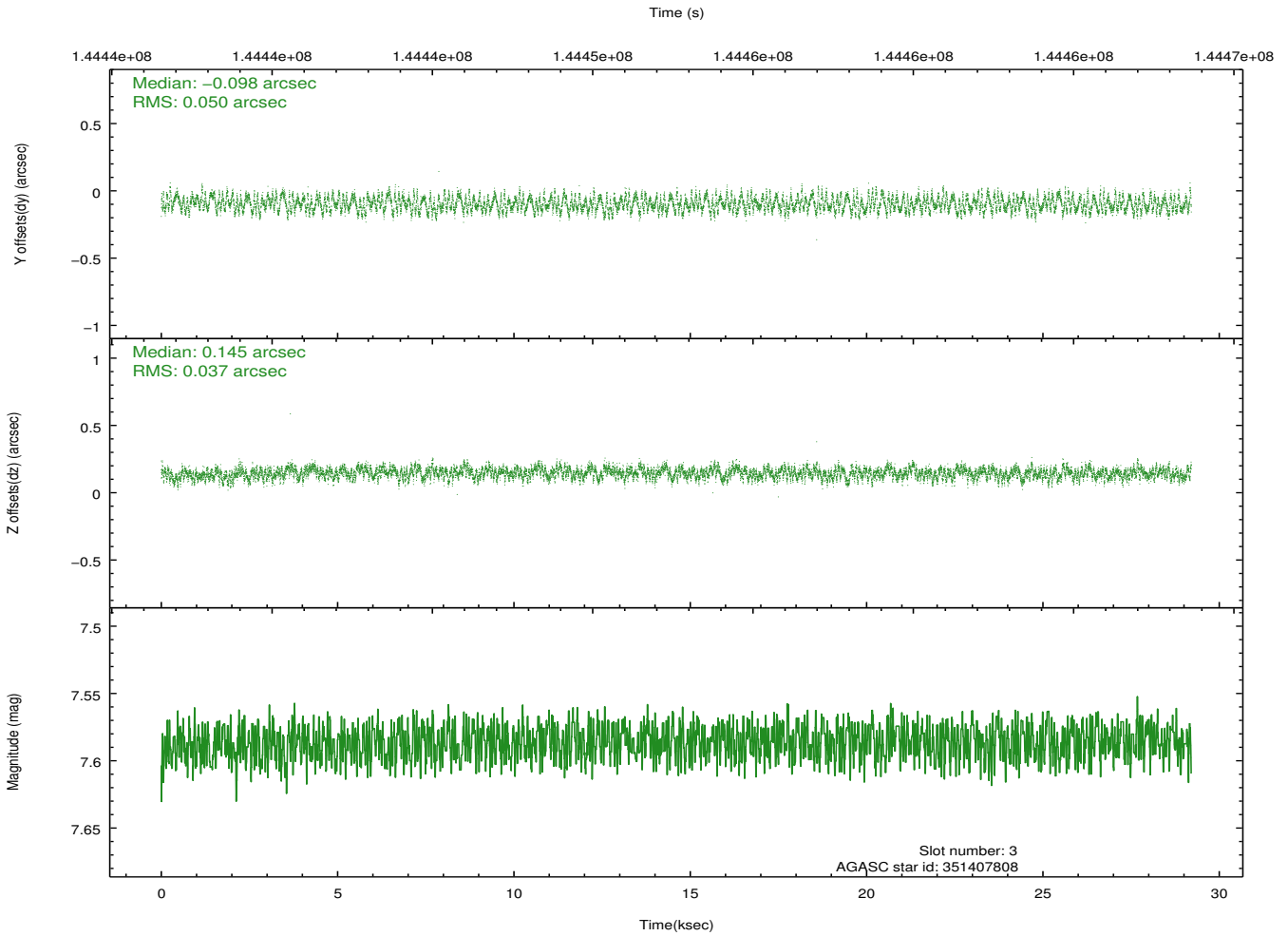
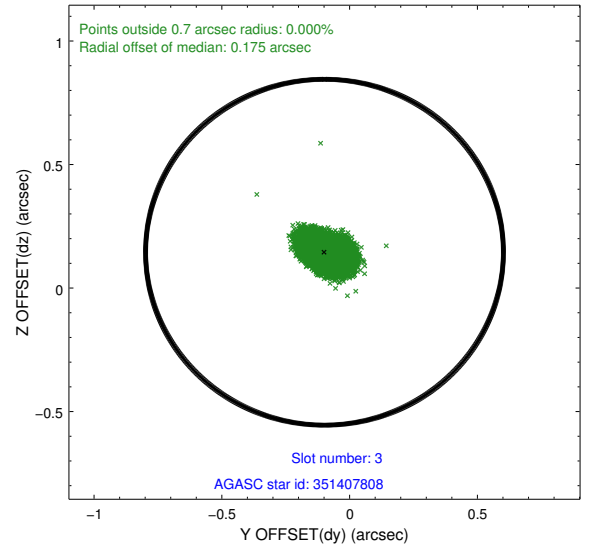
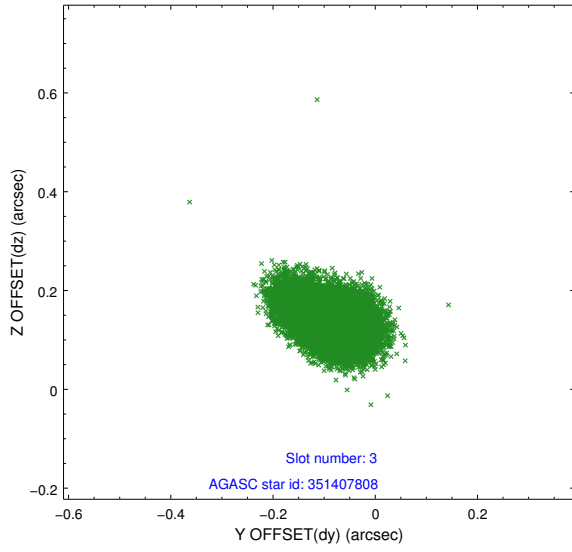


Slot Statistics

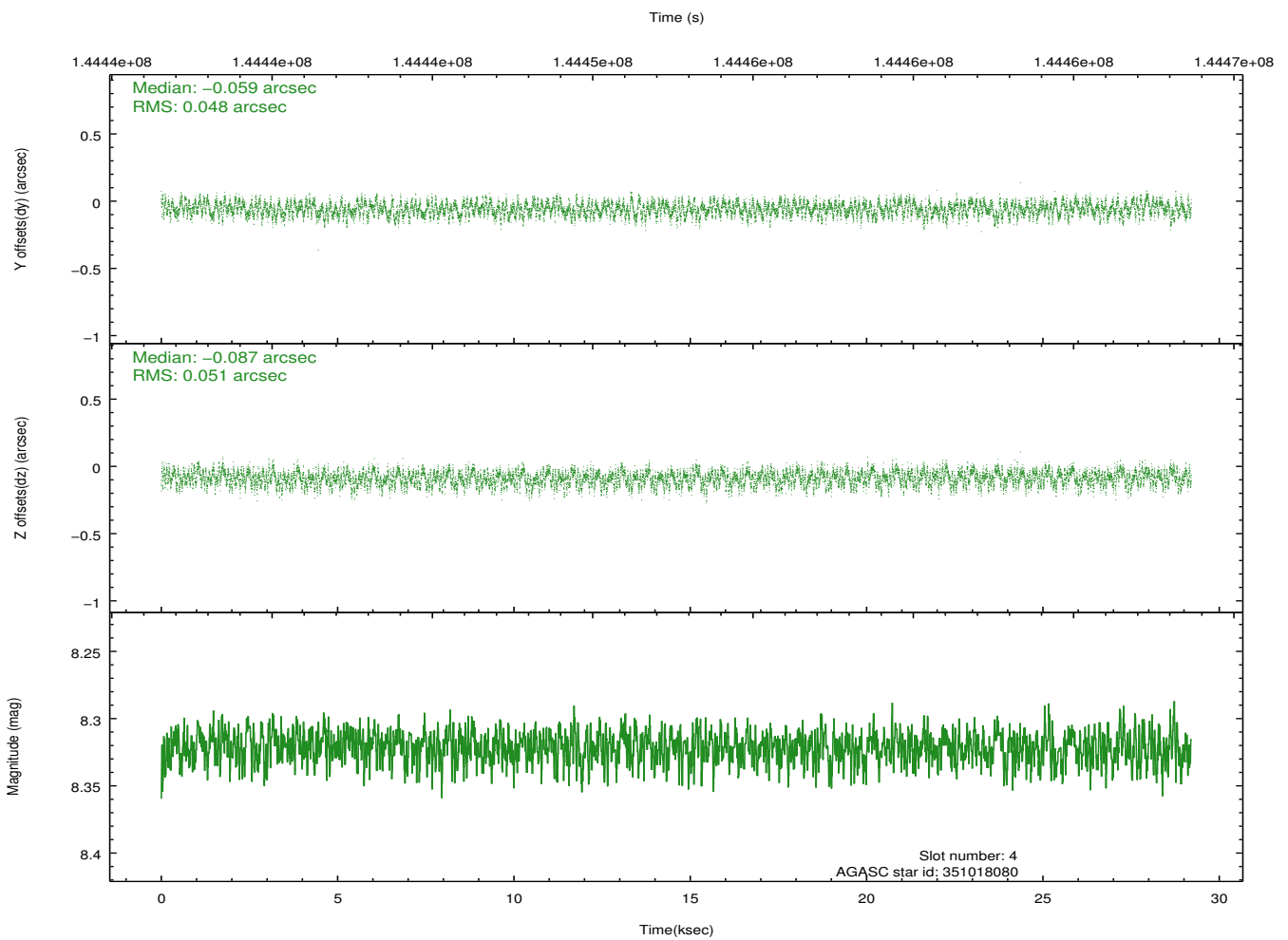
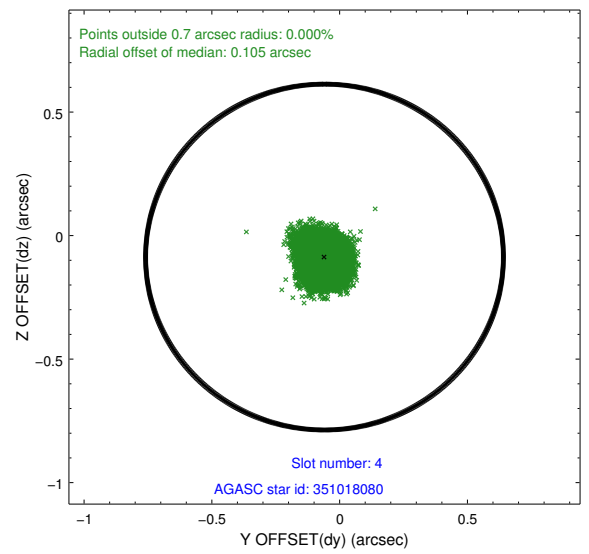
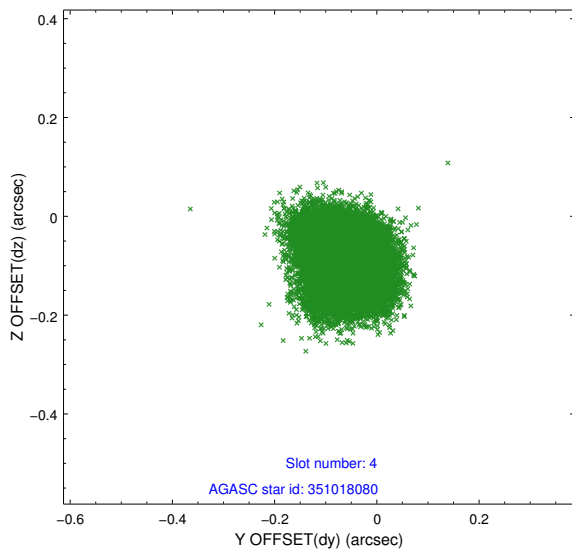
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.13	7122	-0.012	0.045	0.008	0.016	0.000000	0.000000	-755.39	-1645.90
1	FID	ACIS-S-4	7.21	7121	0.002	-0.006	0.007	0.023	0.000000	0.000000	2157.86	262.48
2	FID	ACIS-S-5	7.25	7124	-0.021	-0.029	0.008	0.015	0.000000	0.000000	-1808.15	256.20
3	GUIDE	351407808	7.59	14245	-0.098	0.145	0.067	0.105	299.102647	35.790086	950.96	-2311.71
4	GUIDE	351018080	8.32	14247	-0.059	-0.087	0.076	0.117	299.327312	34.581247	1212.72	2081.90
5	GUIDE	351016136	8.59	14247	0.120	-0.096	0.081	0.133	300.302636	34.786391	-1764.22	1944.52
6	GUIDE	351024856	8.53	14247	0.099	-0.091	0.065	0.107	300.374482	35.139033	-2223.05	741.93
7	GUIDE	351406096	8.89	14242	-0.068	0.132	0.077	0.126	299.076637	35.711249	1084.72	-2050.14

2.4 Star Slots

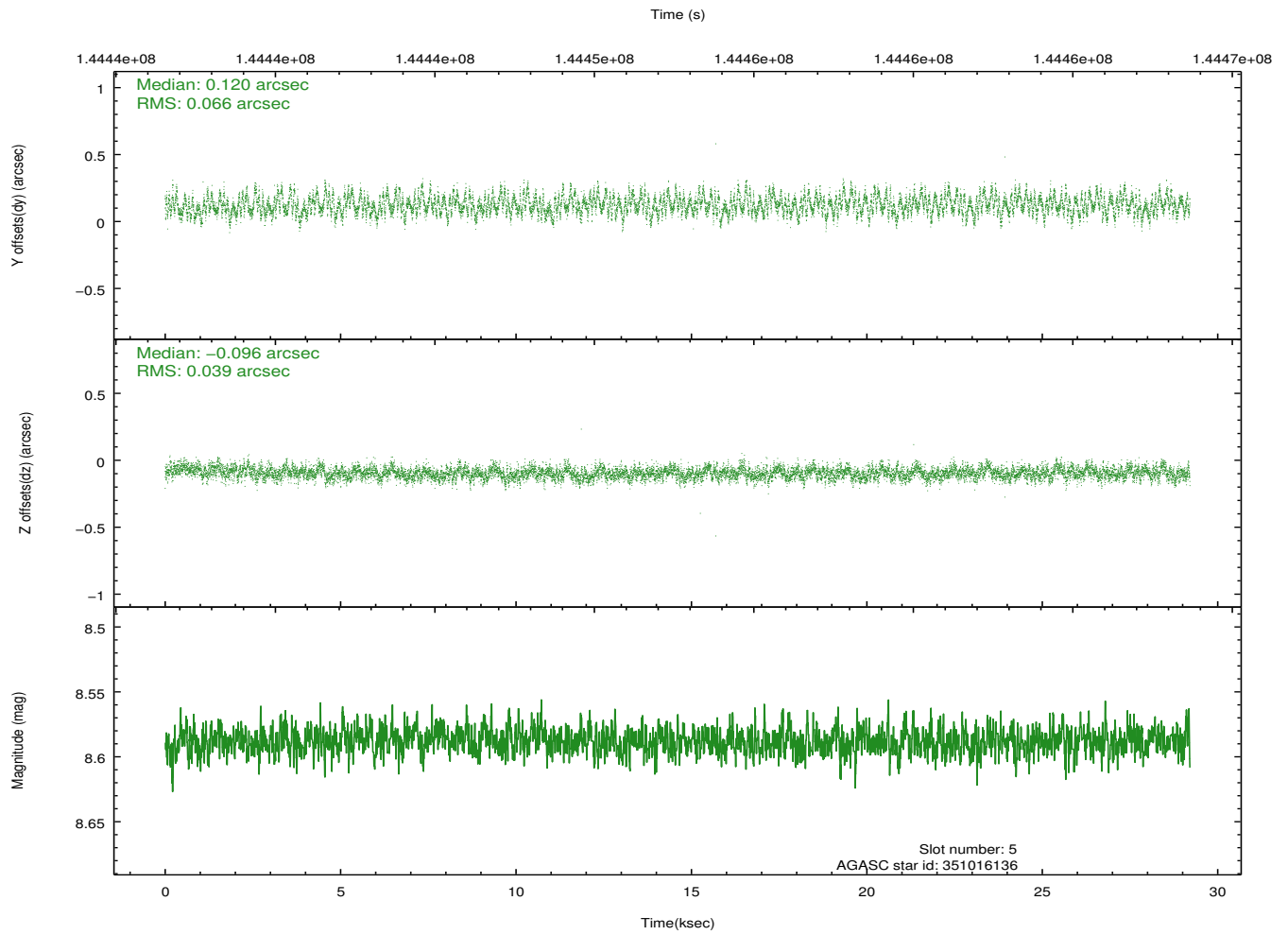
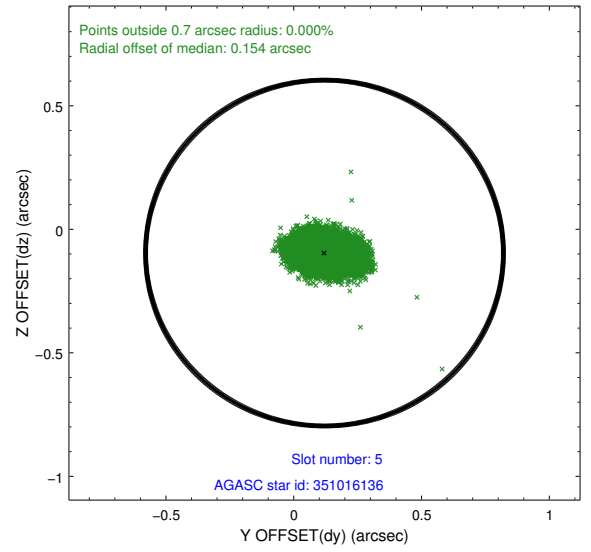
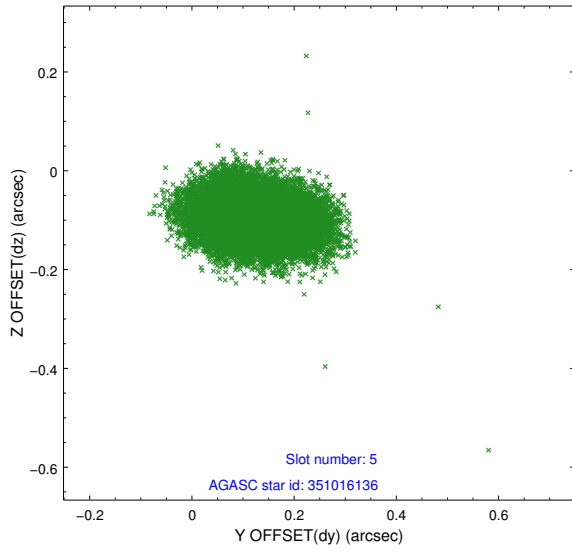
2.4.1 Slot 3



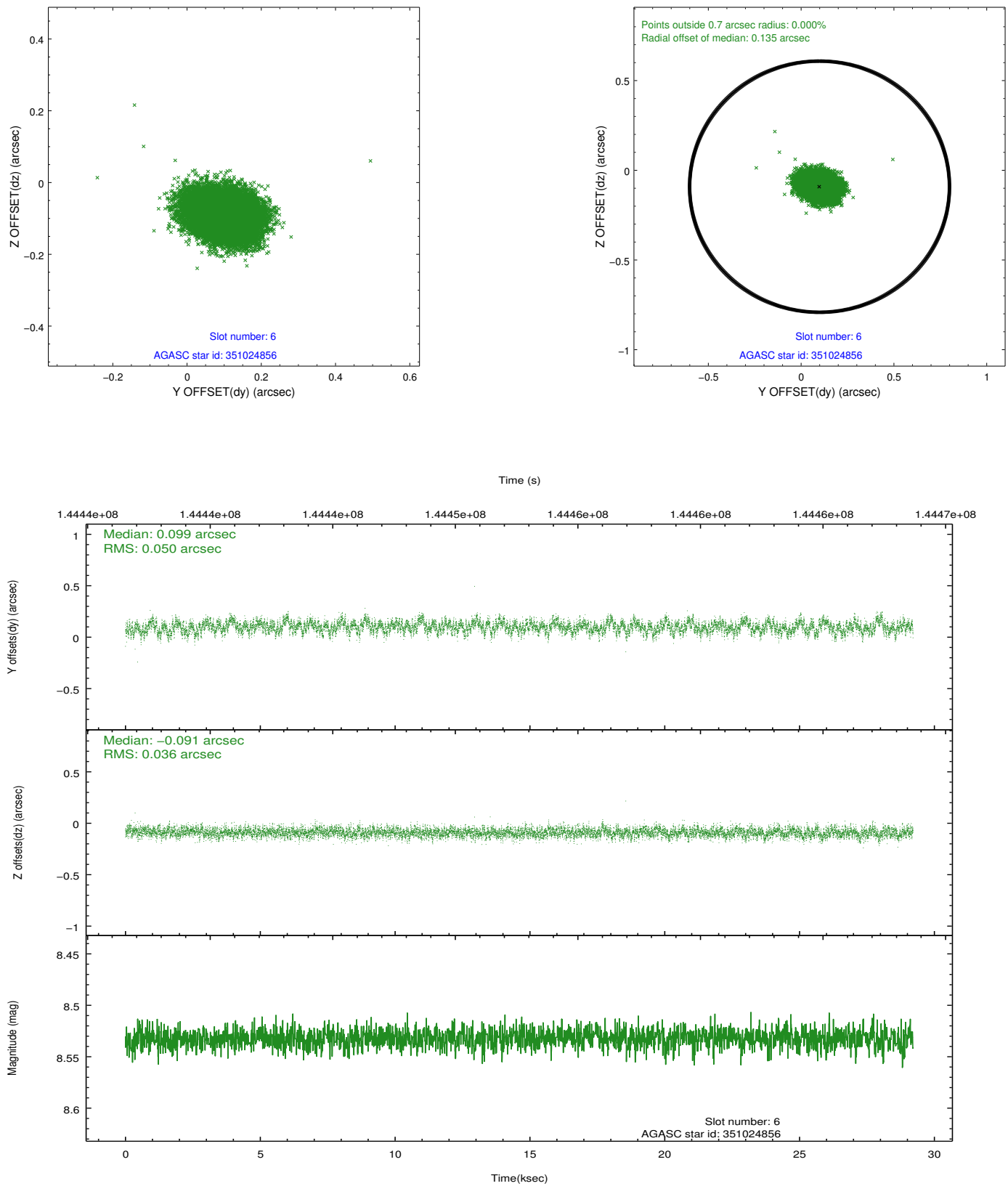
2.4.2 Slot 4



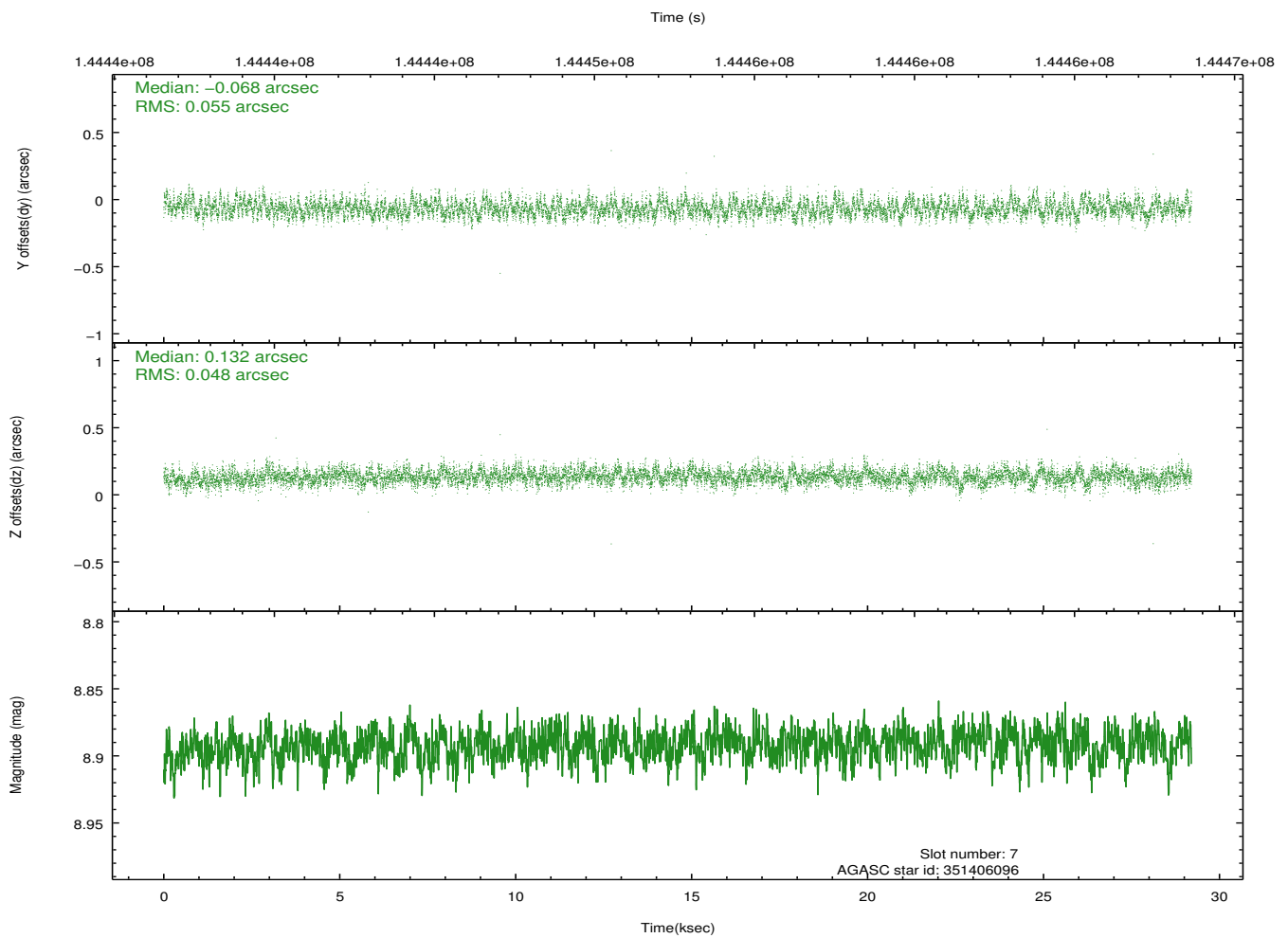
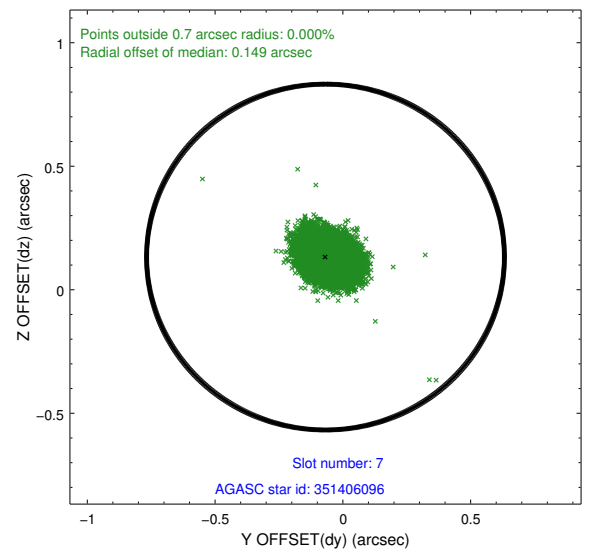
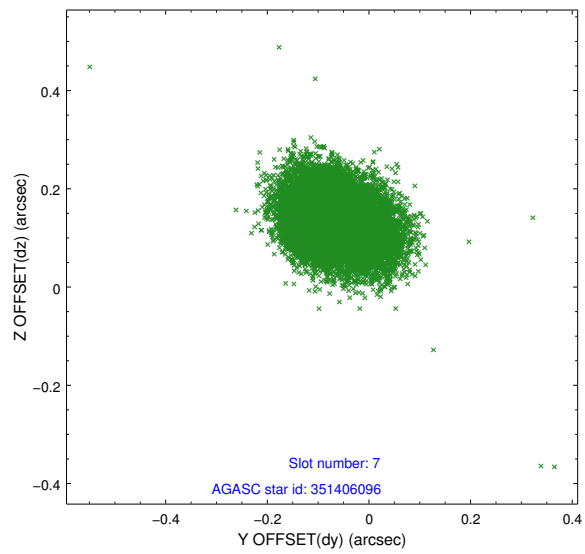
2.4.3 Slot 5



2.4.4 Slot 6

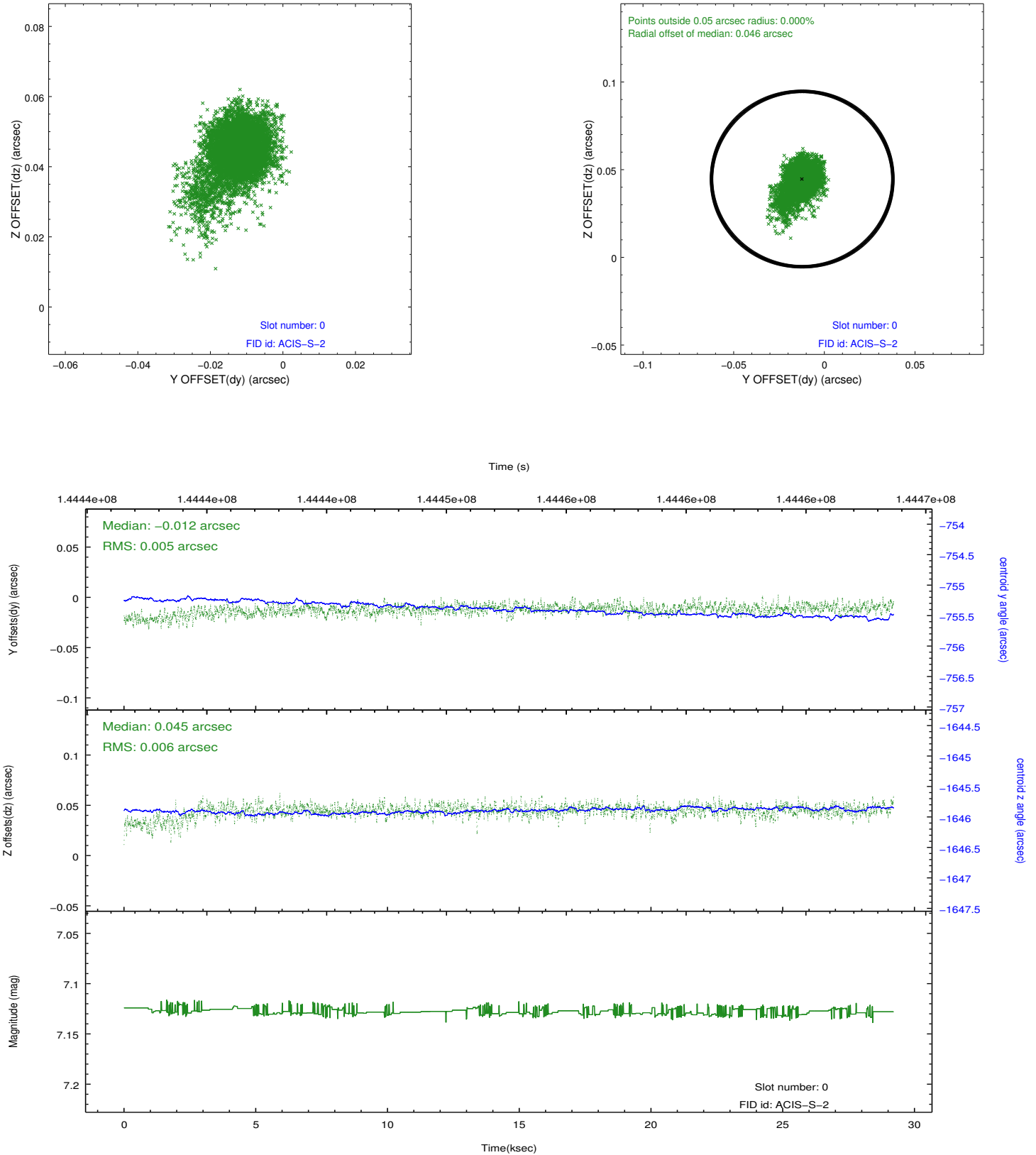


2.4.5 Slot 7

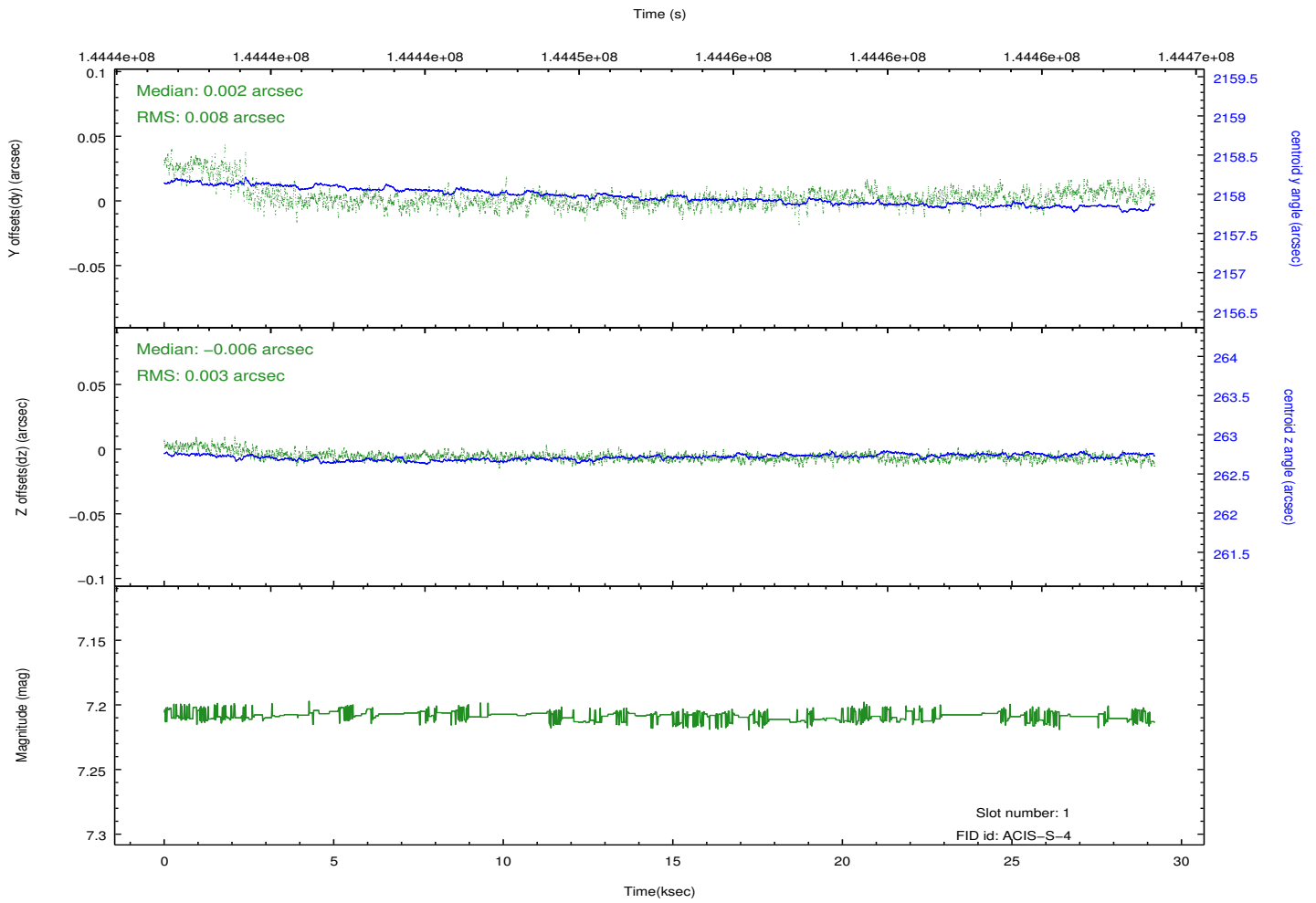
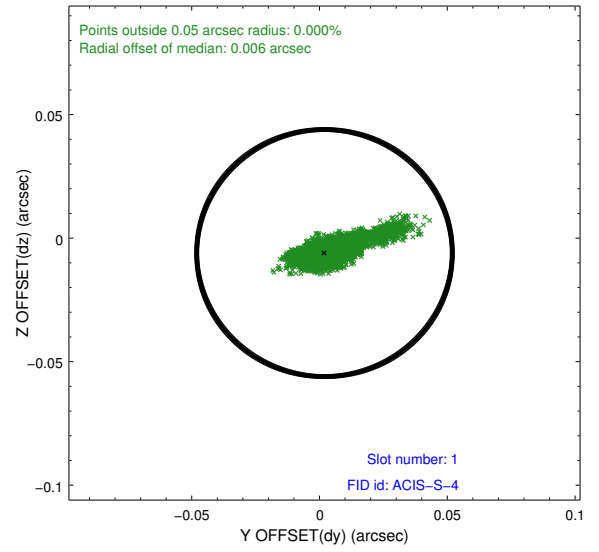
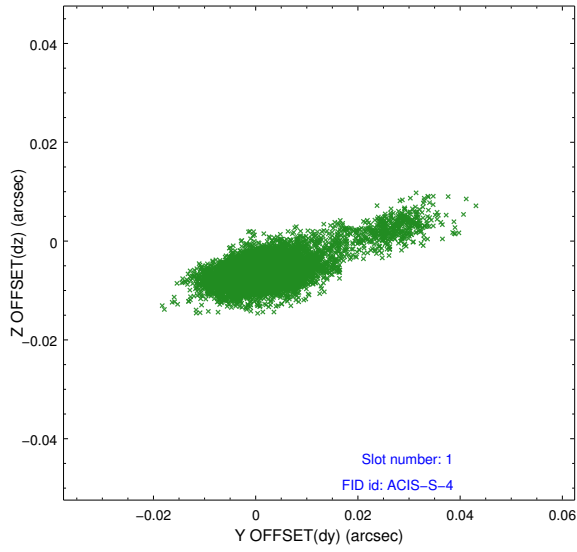


2.5 FID Slots

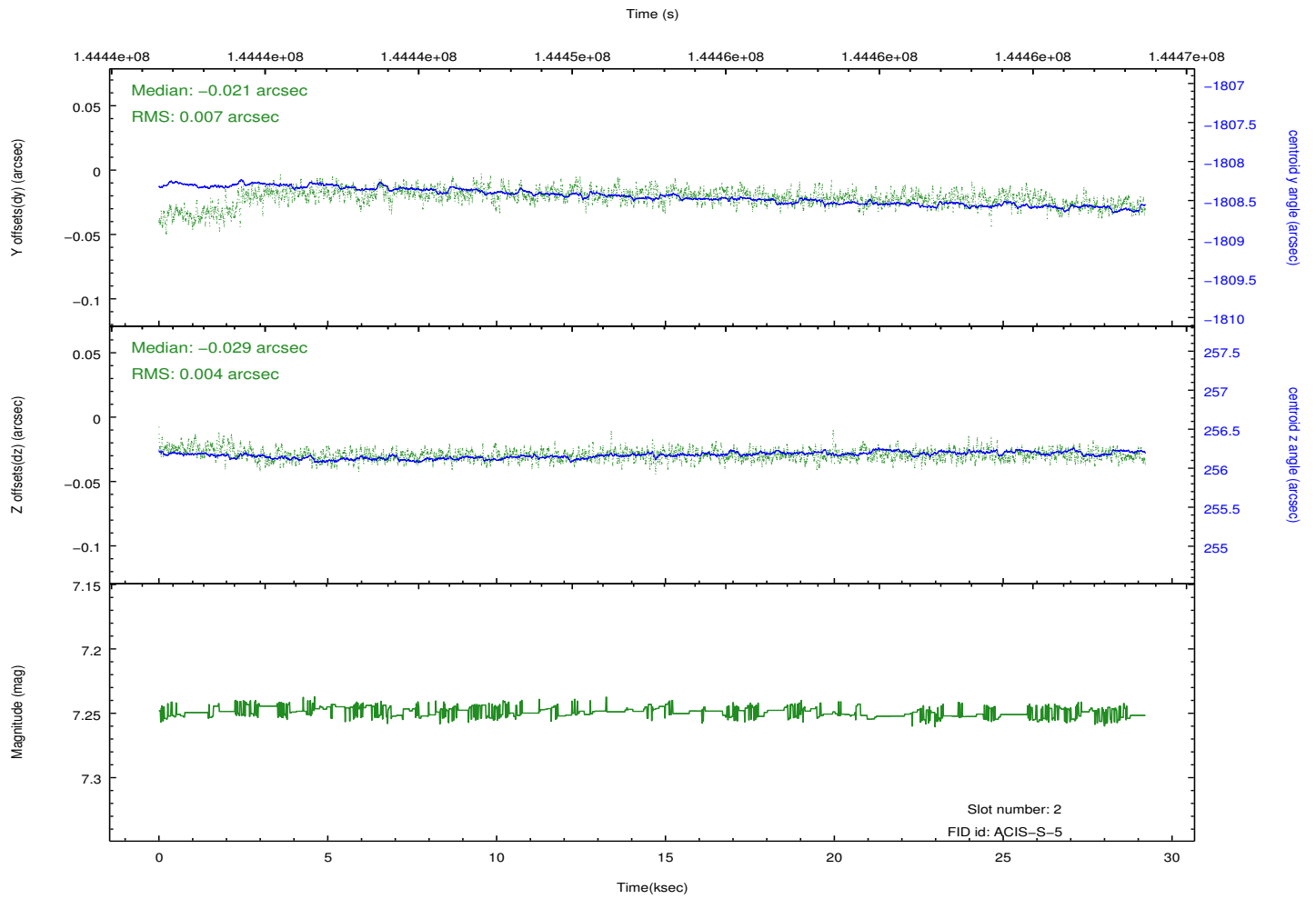
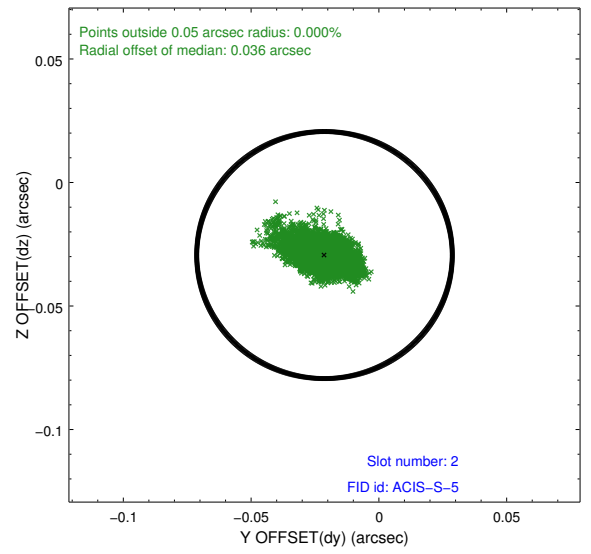
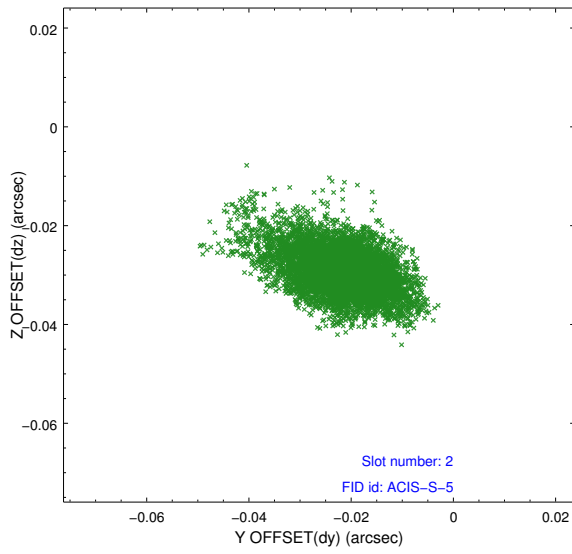
2.5.1 Slot 0



2.5.2 Slot 1

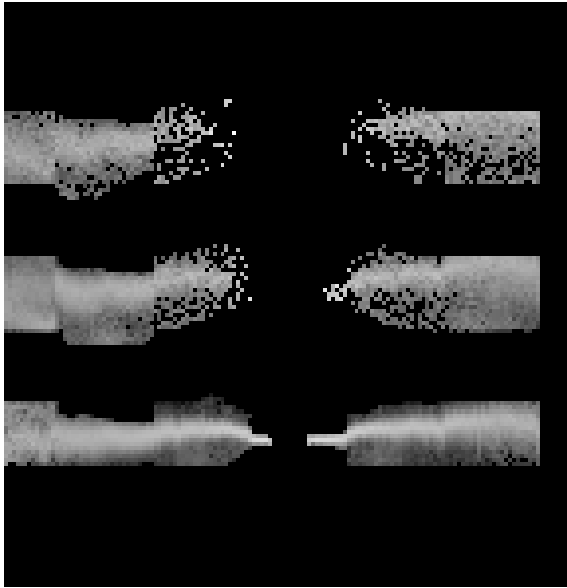


2.5.3 Slot 2



3 Gratings

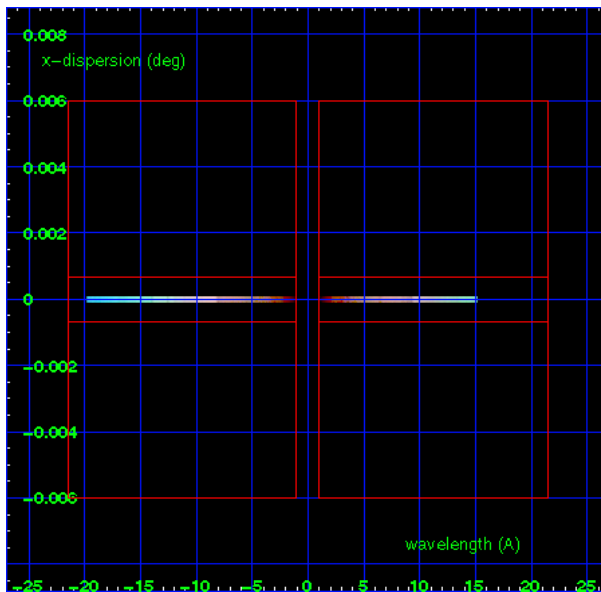
3.1 HEG Arm



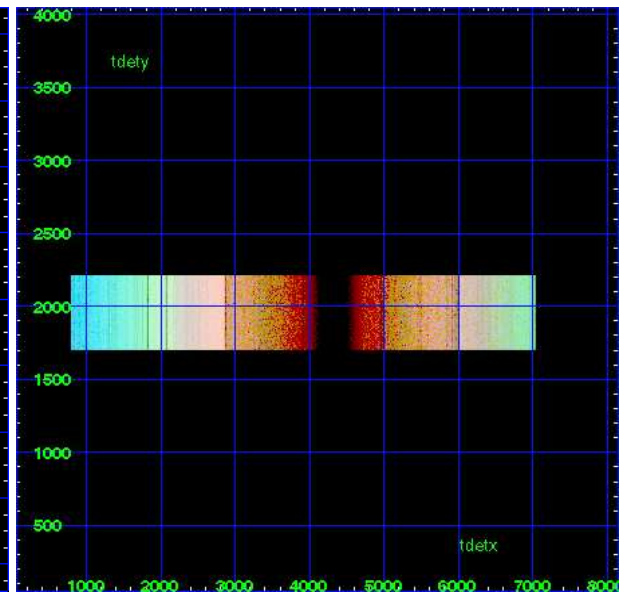
HEG Order Sort 123



HEG Order Sort ALL

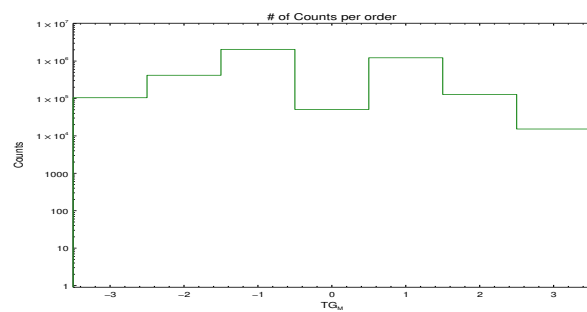


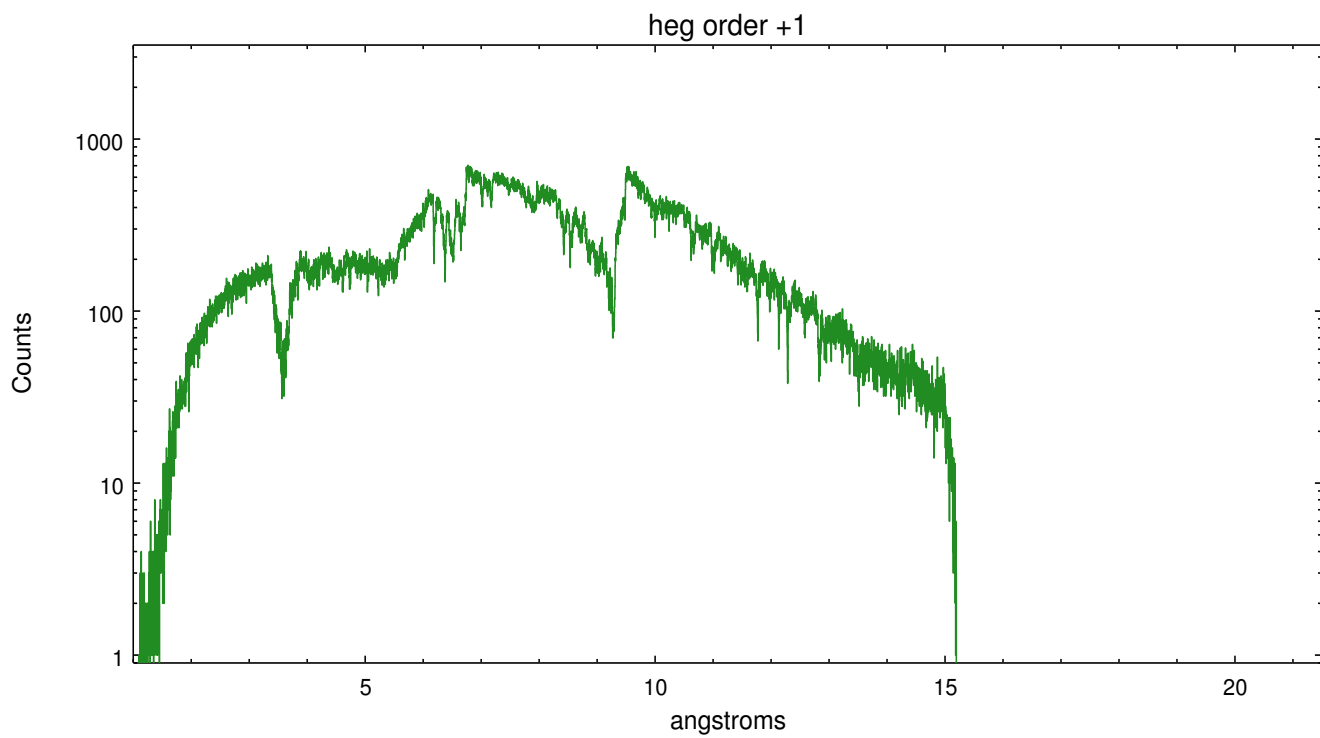
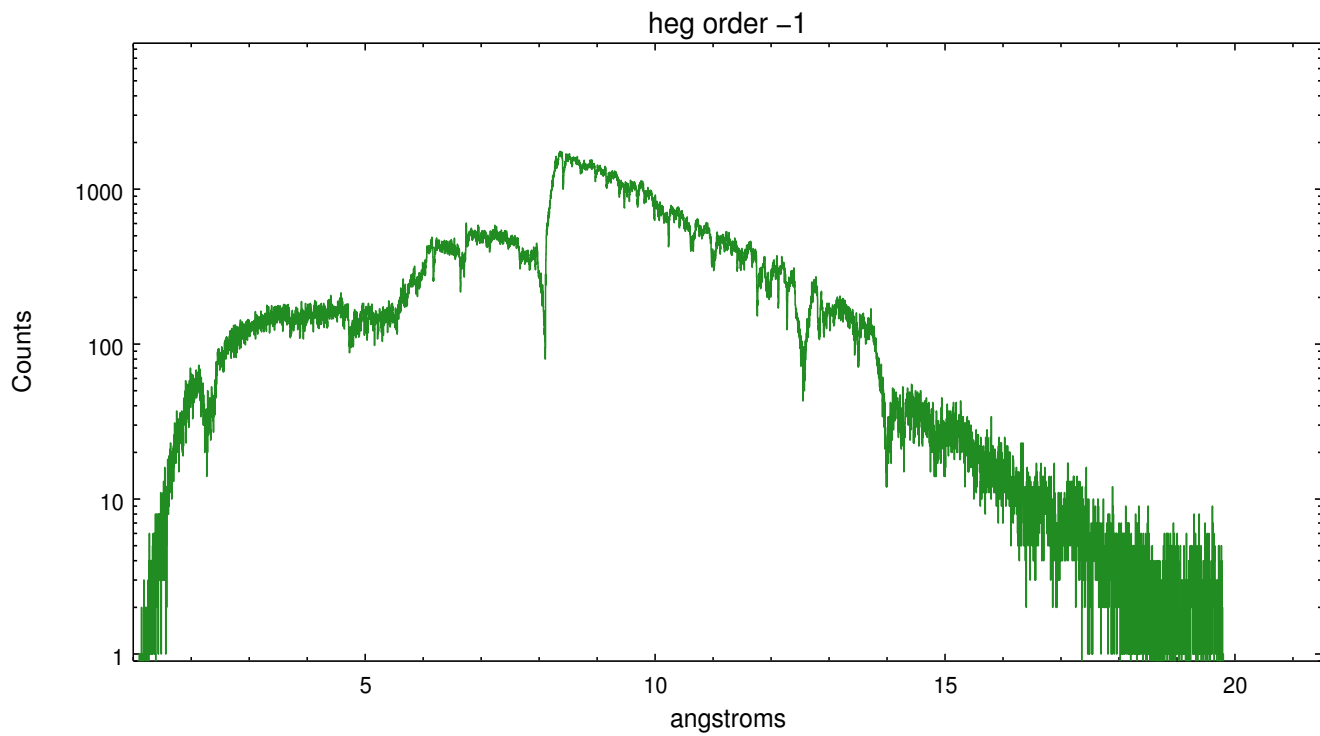
Spot Image HEG



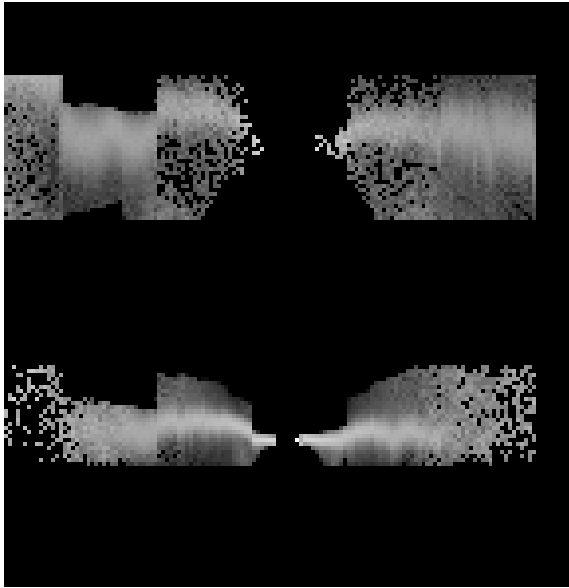
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	104915	416823	2051123	50972	1224743	127748	15266

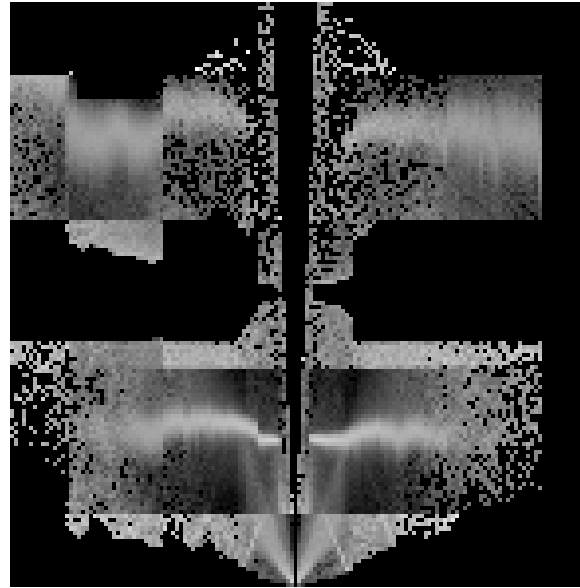




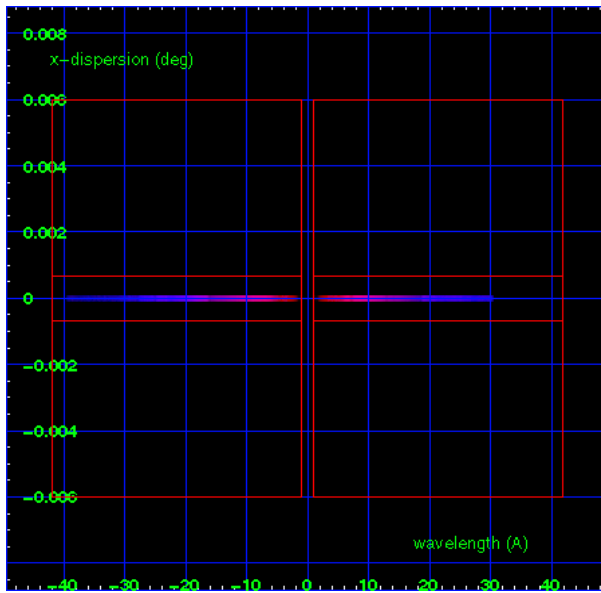
3.2 MEG Arm



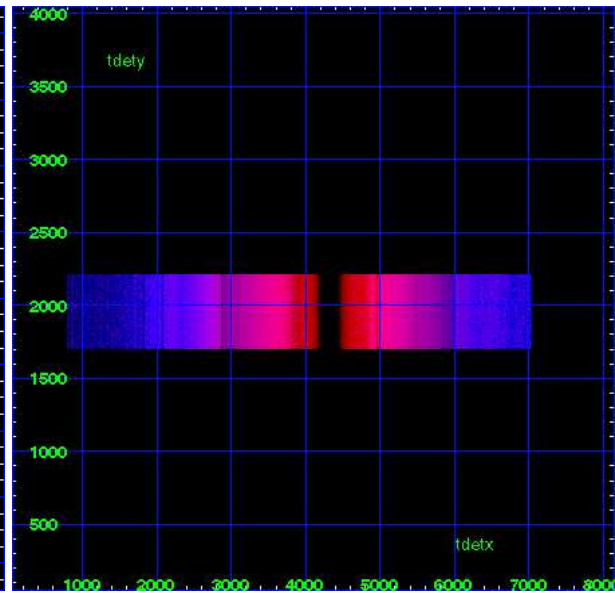
MEG Order Sort 123



MEG Order Sort ALL

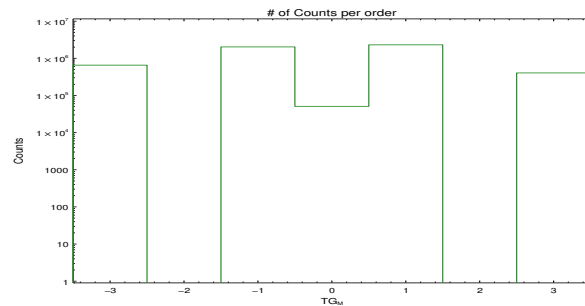


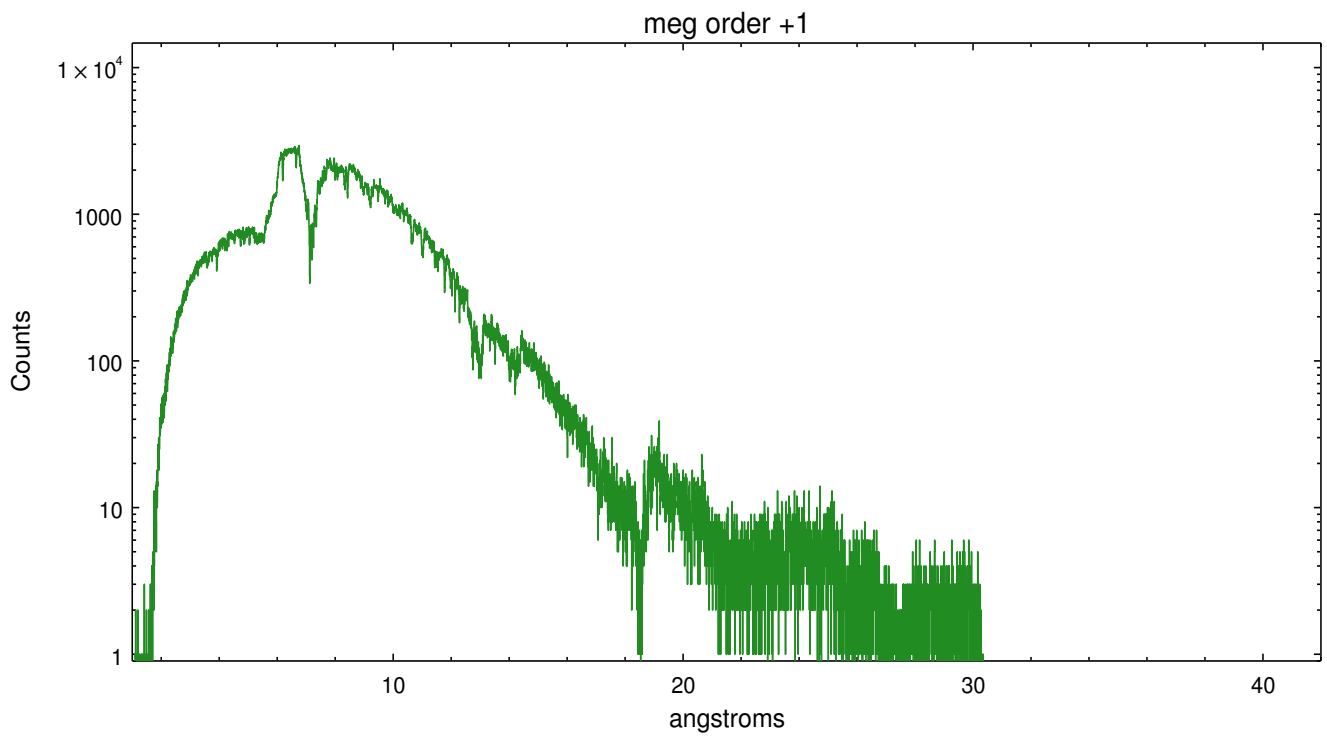
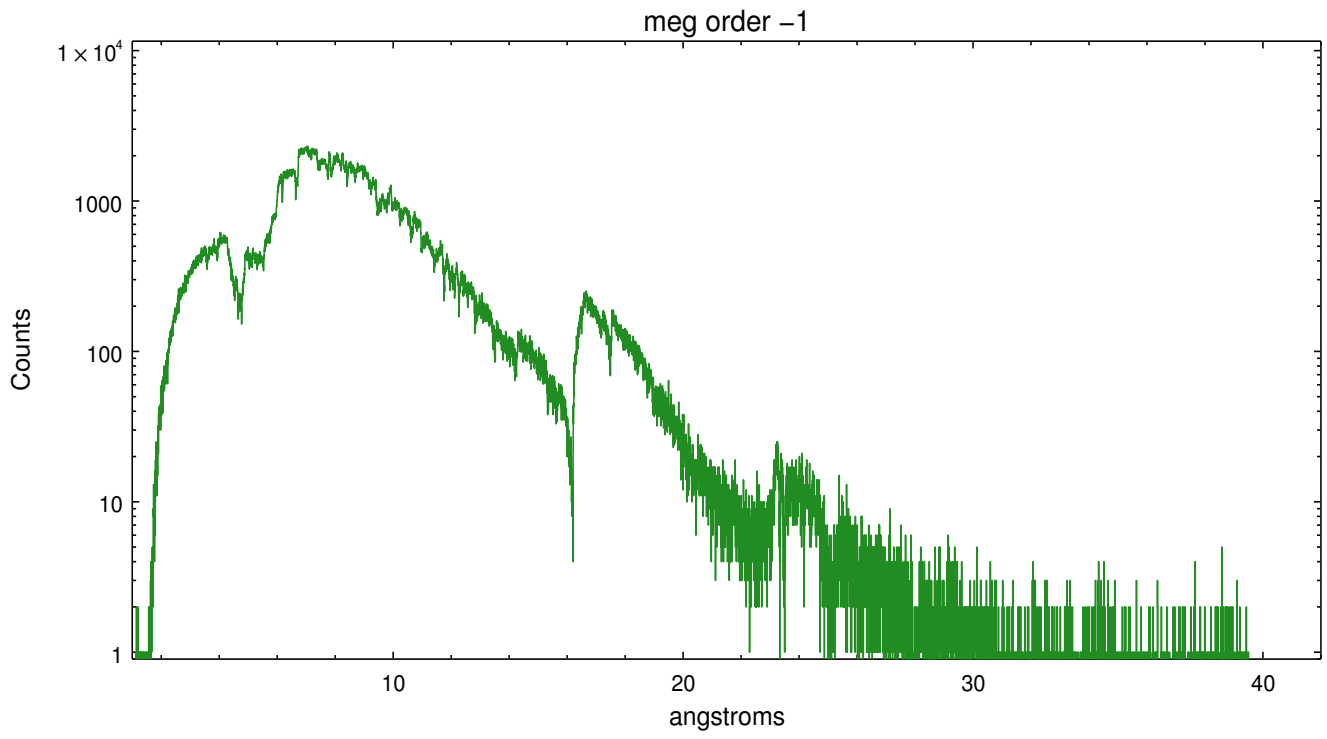
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	654911	0	2029220	50972	2306977	0	404918





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2012.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	26.4

A.2 Comments

Phase constraint met ($\phi_{\text{start}} \sim 0.98$).

Charge time:

used on-time from chip w/ greatest value; telemetry saturation lowers the effective exposure time for very bright sources; the exposure duration was as planned.

New charge time is less than existing charge time used in previously distributed version

NEW CHARGE TIME = 8.135040 ks, 1 Obis

EXISTING CHARGE TIME = 26.400000 ks, 1 Obis.

Variation in Chips > 15% threshold.

Low Chip 6, ONTIME=5982.719896 seconds

High Chip 5, ONTIME=26444.453862 seconds

Chip 9, ONTIME=16910.201066 seconds is less than 80% of scheduled time=29000.000000 seconds

Chip 8, ONTIME=7000.674353 seconds is less than 80% of scheduled time=29000.000000 seconds

Chip 7, ONTIME=8135.040096 seconds is less than 80% of scheduled time=29000.000000 seconds

Chip 6, ONTIME=5982.719896 seconds is less than 80% of scheduled time=29000.000000 seconds

Chip 4, ONTIME=18449.953989 seconds is less than 80% of scheduled time=29000.000000 seconds

ONTIME of 8135.0400957465 seconds is less than 85% of expected scheduled time of 29000 seconds