

V&V Reference Report

L2 ASCDS Version : 8.1.1

Observation 107 - L2 Version 7
Chandra X-Ray Center

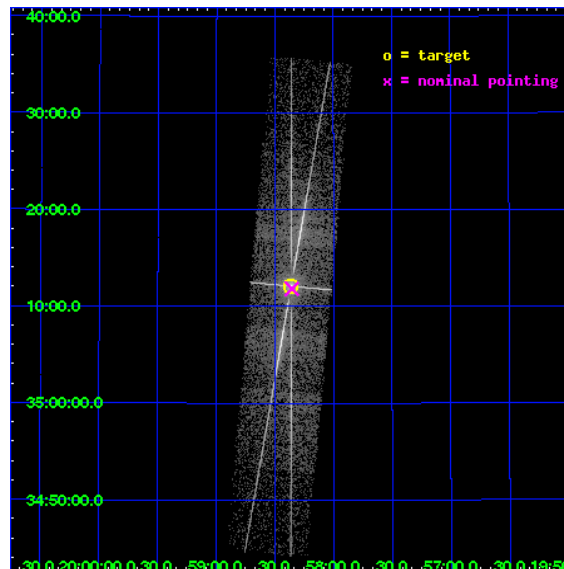
L2 Processing Date : Dec 8 2009

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1 Front

seq_num	400020	Sequence number
obs_id	107	Observation id
title	HETG OBSERVATIONS OF X-RAY BINARIES	Proposal title
observer	Prof. Claude Canizares	Principal investigator
object	CYG X-1	Source name
dtcycle	0	
cycle	P	events are from which exps? P[primary] S[econdar
ra_targ	299.59046	Observer's specified target RA
dec_targ	35.20175	Observer's specified target Dec
ra_nom	299.58862342747	Nominal RA
dec_nom	35.196951109187	Nominal Dec
roll_nom	275.26674903534	Nominal Roll
revision	7	Processing version of data
ontime	2419.302317895	Sum of GTIs [s]
livetime	206.69788781797	Livetime [s]
ontime4	2419.3023478165	Sum of GTIs [s]
ontime5	2419.302317895	Sum of GTIs [s]
ontime6	2419.302317895	Sum of GTIs [s]
ontime7	2419.302317895	Sum of GTIs [s]
ontime8	2419.302317895	Sum of GTIs [s]
ontime9	2419.3023478165	Sum of GTIs [s]
l2events	98925	Number of level 2 events

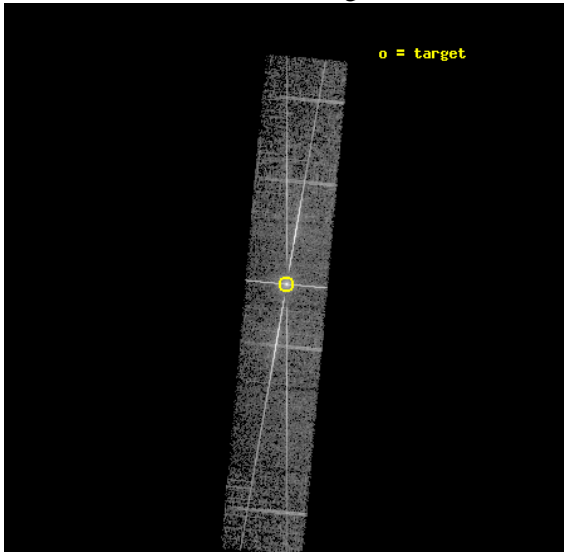


2 OBI Primary

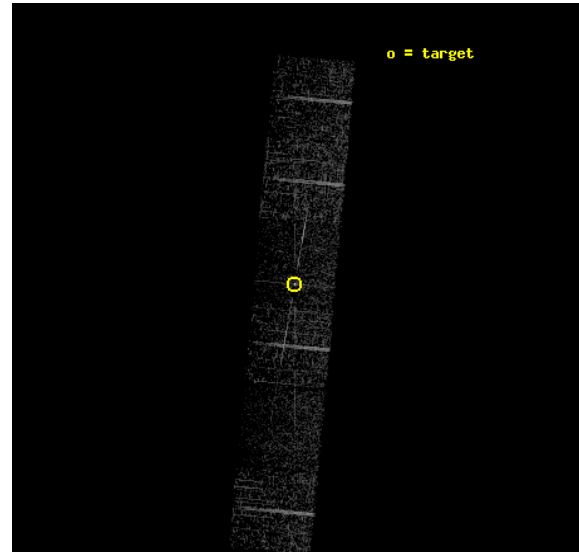
2.1 OBI

2.1.1 Images

Level 1 Image



Level 1 Bad Events



2.1.2 Parameters

obi_num	1	Obi number	sched_exp_time	15000.000000	Scheduled observation exposure time
ascdsver	8.1.1	ASCDS version number	ontime	2419.302317895	Sum of GTIs [s]
caldbver	4.1.4	 	ontime4	2419.3023478165	Sum of GTIs [s]
date	2009-11-20T11:54:57	Date and time of file creation	ontime5	2419.302317895	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	2419.302317895	Sum of GTIs [s]
			ontime7	2419.302317895	Sum of GTIs [s]
			ontime8	2419.302317895	Sum of GTIs [s]
			ontime9	2419.3023478165	Sum of GTIs [s]
			l1events	161580	Number of level 1 events

2.1.3 Events

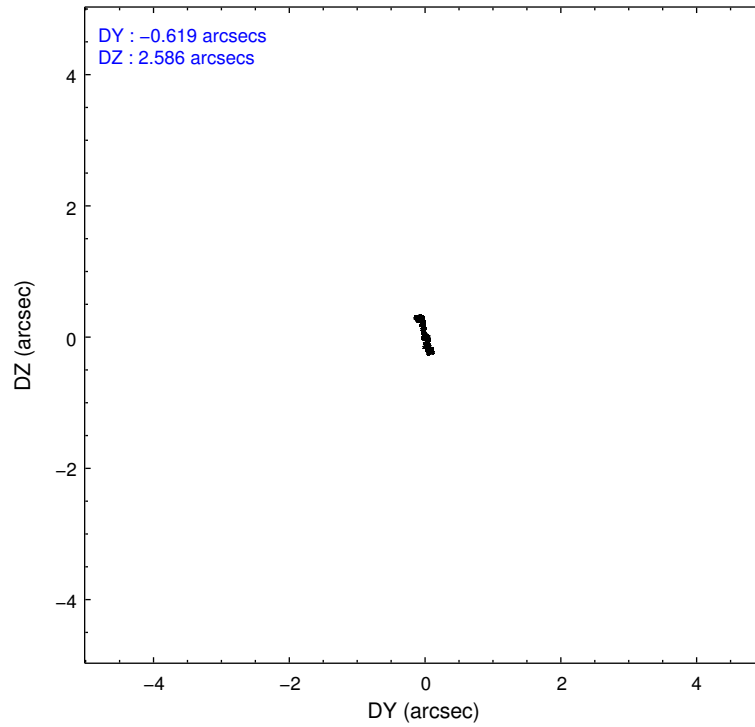
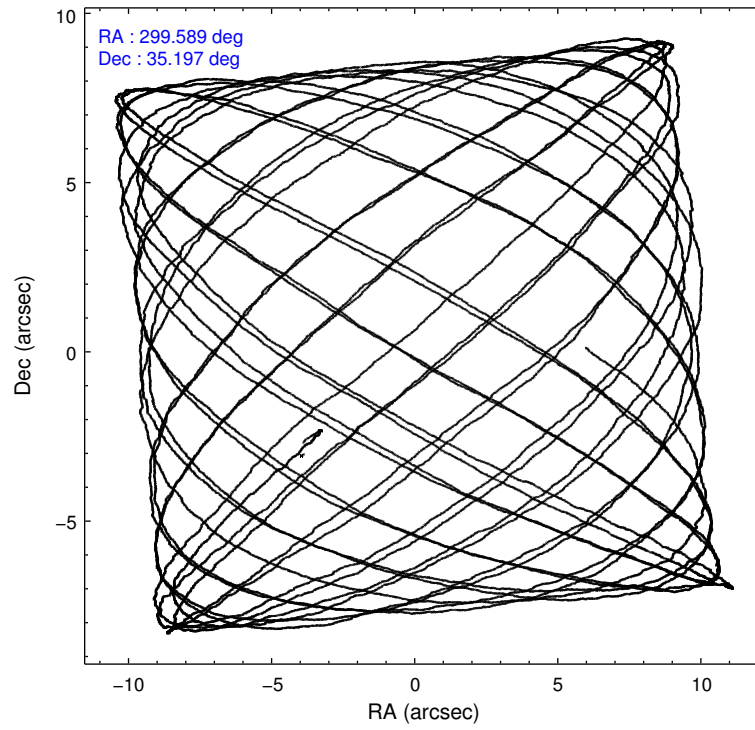
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	13753	17254	41271	42991	31977	14334
rejected events	10894	6409	11301	7939	13523	10189
rejected %	79%	37%	27%	18%	42%	71%

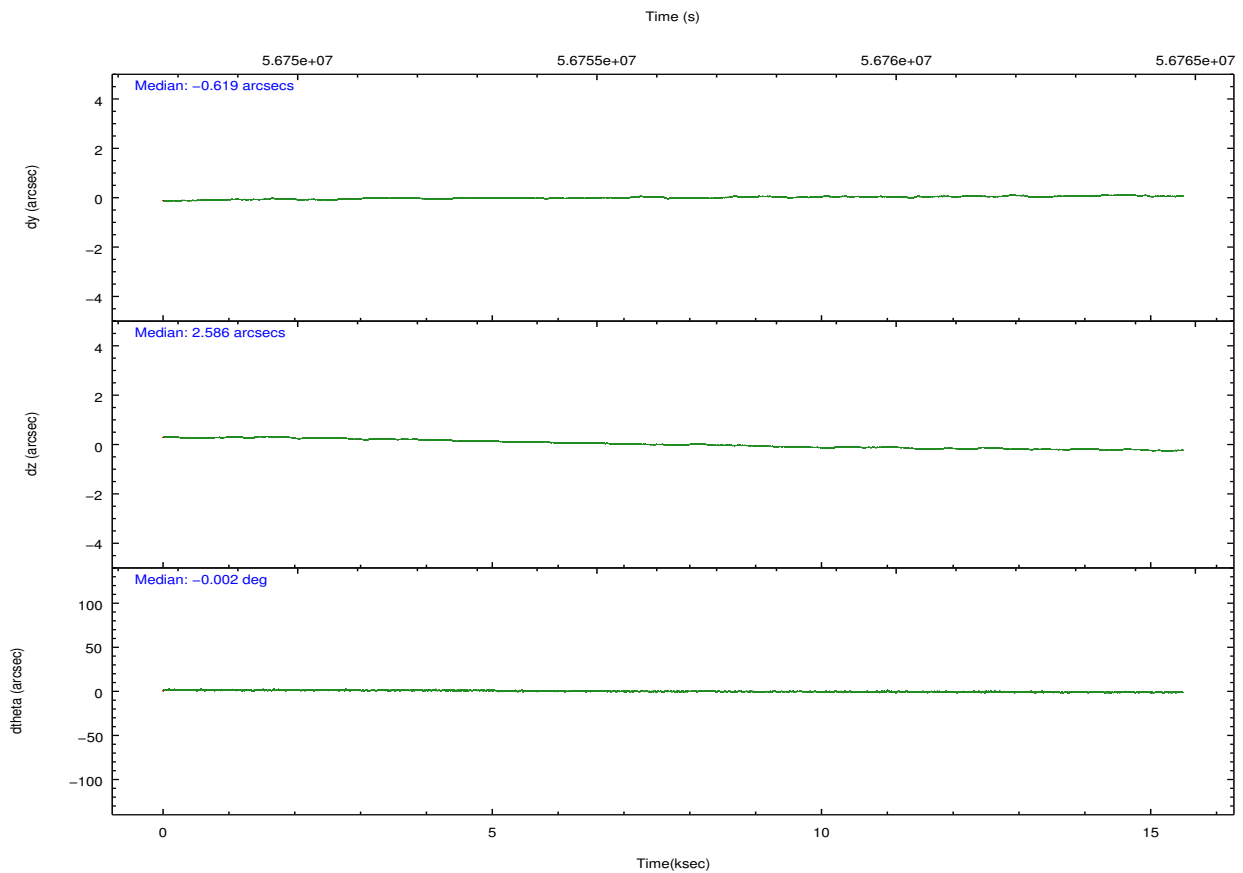
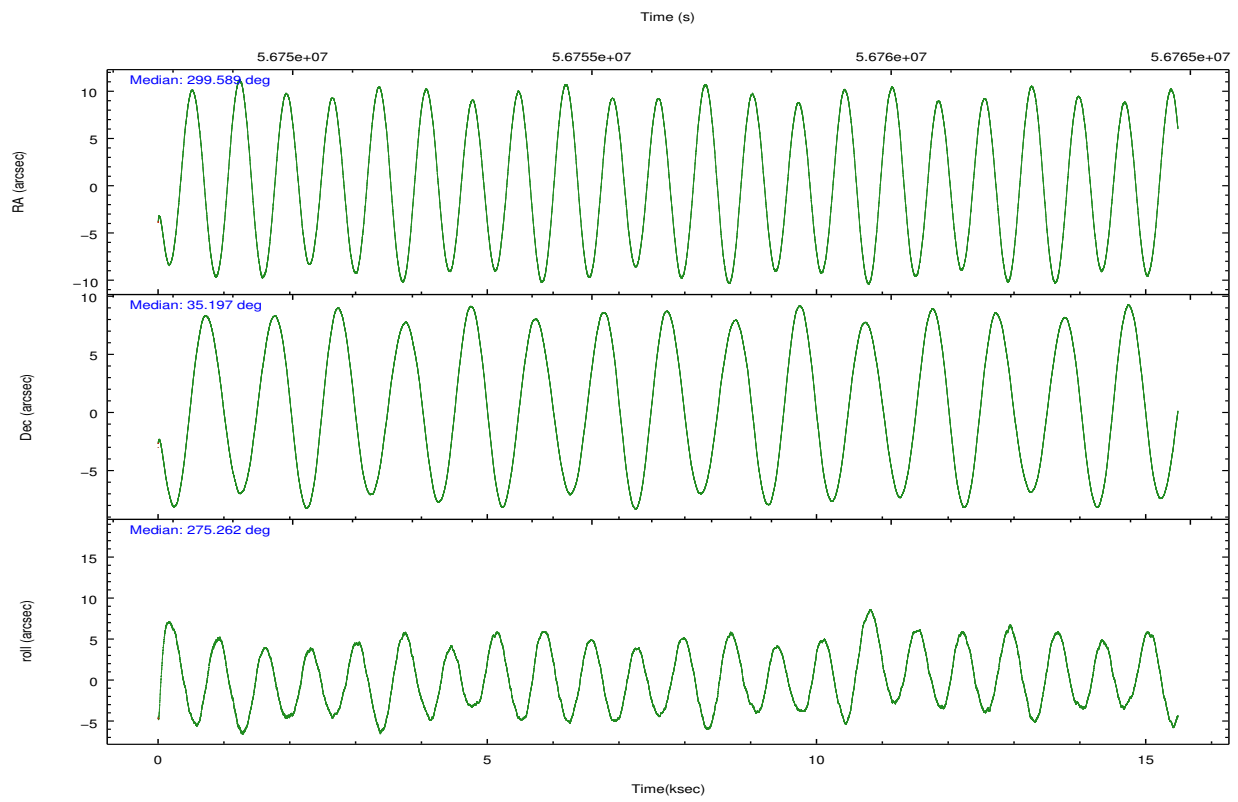
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1449	2215	18065	6554	13846	2577
	10%	12%	43%	15%	43%	17%
grade 1 events	3	5	224	81	114	5
	0%	0%	0%	0%	0%	0%
grade 2 events	969	3794	9019	9374	2834	1044
	7%	21%	21%	21%	8%	7%
grade 3 events	128	774	843	3783	622	168
	0%	4%	2%	8%	1%	1%
grade 4 events	128	750	819	3412	542	161
	0%	4%	1%	7%	1%	1%
grade 5 events	157	521	469	1072	356	205
	1%	3%	1%	2%	1%	1%
grade 6 events	190	3338	1268	11995	635	208
	1%	19%	3%	27%	1%	1%
grade 7 events	10729	5857	10564	6720	13028	9966
	78%	33%	25%	15%	40%	69%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	299.569250	299.5886234274654	Subarray requested	NONE	NONE
Pointing Dec	35.219607	35.19695110918741	Alternating exposures requested	Y	Y
Pointing Roll	275.121291	275.2667490353416	Primary exposure time	0.300000	0.3
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Secondary exposure time	3.300000	3.3
SIM defocus (mm)	0	0.001444936568705701	Duty cycle	5	5
SIM translation stage pos (mm)	-190.132523	-190.145094680475			
SIM translation stage offset (mm)	0	0.01257209746719923			
Observation start time	56749017.184000	56747857.35677			
Observation start date	1999-10-19T19:35:53	1999-10-19T19:17:37			
Observation end time	56764017.184000	56764330.132364			
Observation end date	1999-10-19T23:45:53	1999-10-19T23:52:10			
Read mode	TIMED	TIMED			

2.3 Aspect



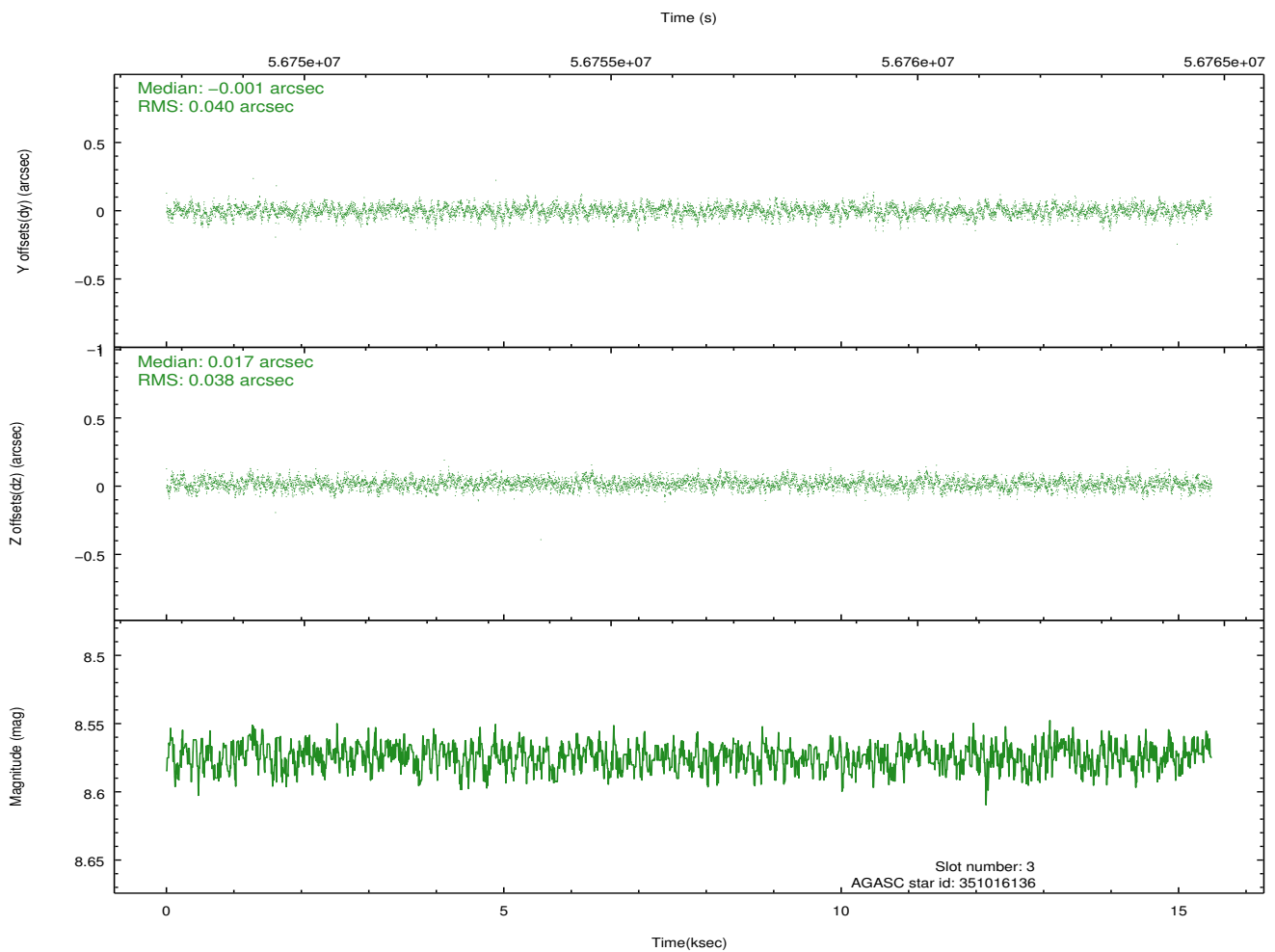
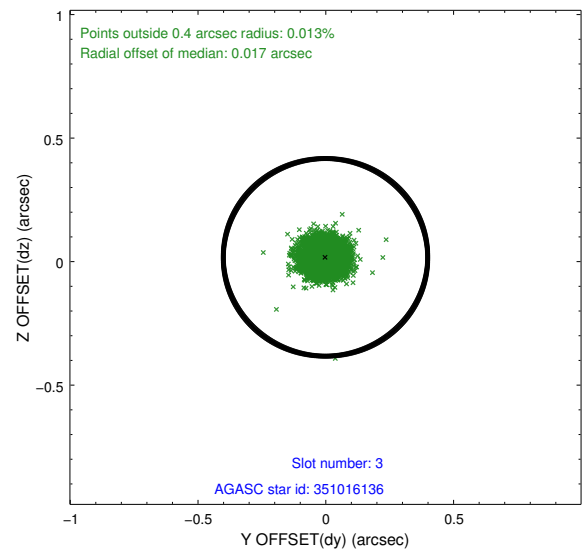
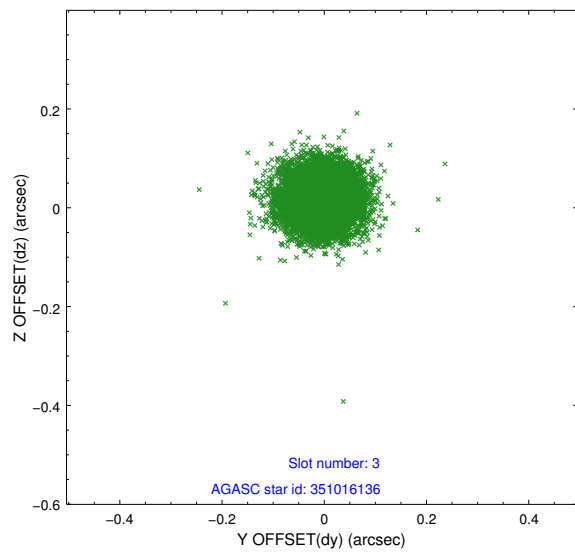


Slot Statistics

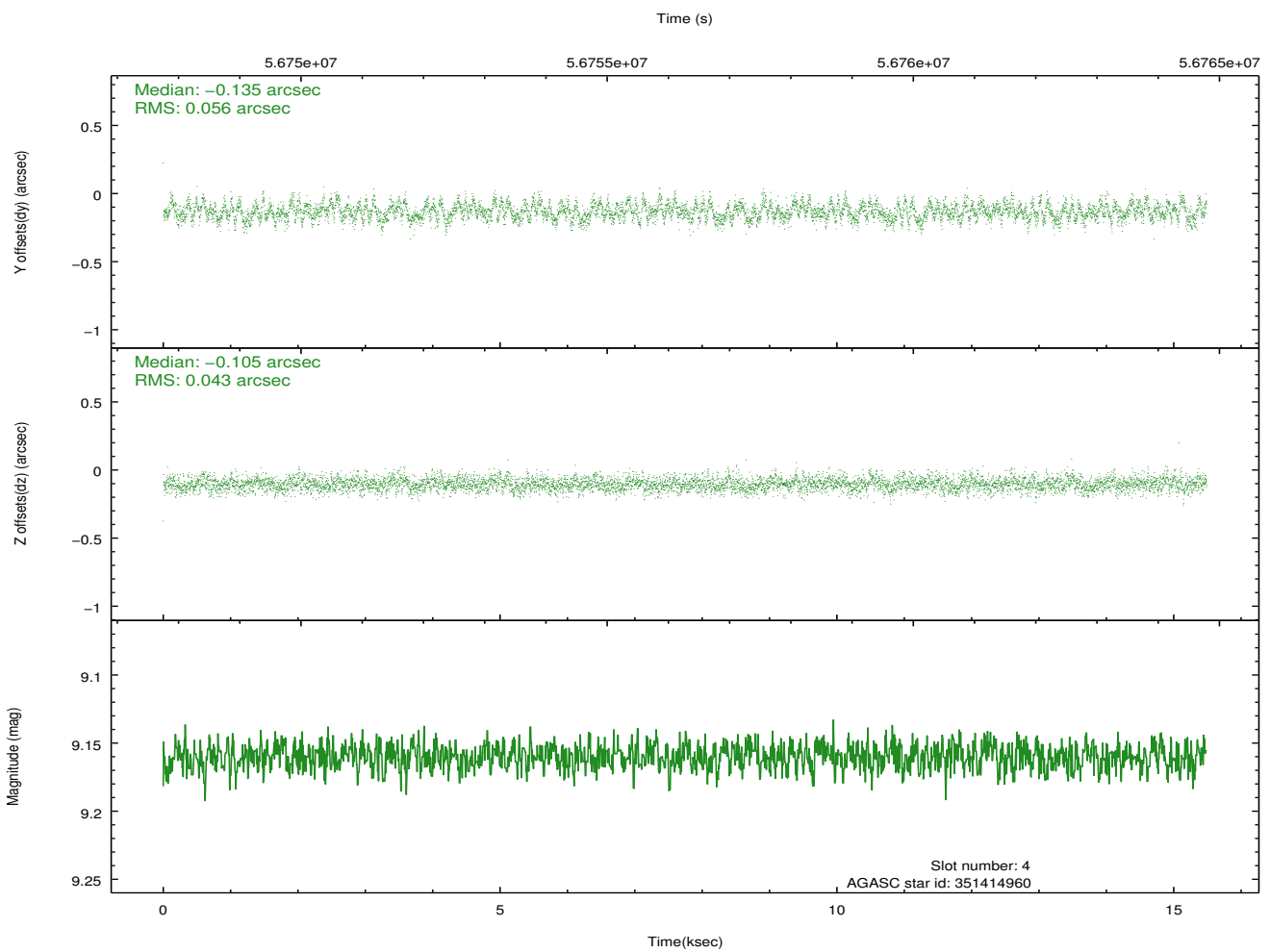
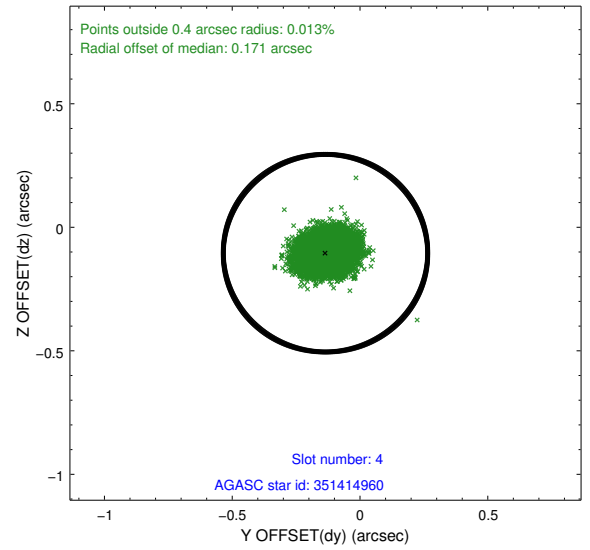
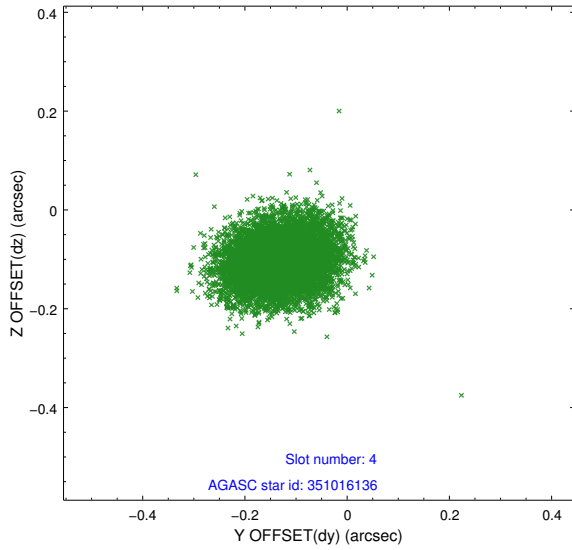
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-3	7.36	7556	-0.014	-0.055	0.010	0.017	0.000000	0.000000	61.19	-1852.66
1	FID	ACIS-S-4	7.21	7556	0.054	0.035	0.009	0.015	0.000000	0.000000	2161.49	184.80
2	FID	ACIS-S-5	7.24	7556	-0.069	0.030	0.007	0.011	0.000000	0.000000	-1804.75	178.72
3	GUIDE	351016136	8.57	7556	-0.001	0.017	0.059	0.094	300.302636	34.786391	1739.24	2021.48
4	GUIDE	351414960	9.16	7546	-0.135	-0.105	0.075	0.123	298.994276	35.824617	-2323.44	-1476.79
5	GUIDE	350880272	9.54	7551	0.010	-0.052	0.089	0.141	298.910133	34.790533	1358.46	-2078.28
6	GUIDE	351024008	9.69	7548	0.151	0.130	0.098	0.155	300.225099	34.683151	2091.11	1762.14
7	GUIDE	351535248	9.74	7549	-0.023	0.007	0.097	0.161	299.251840	35.849869	-2343.34	-719.76

2.4 Star Slots

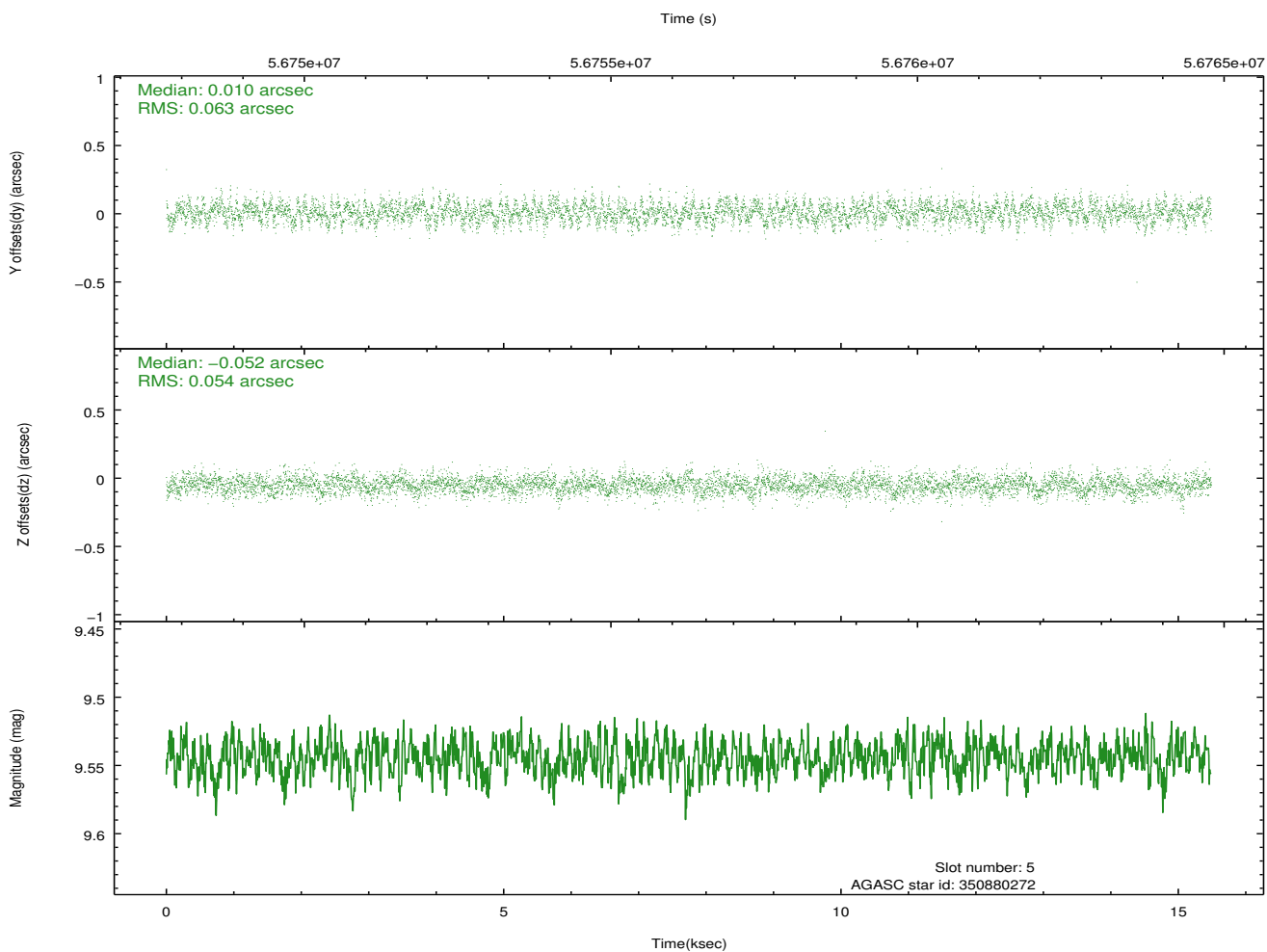
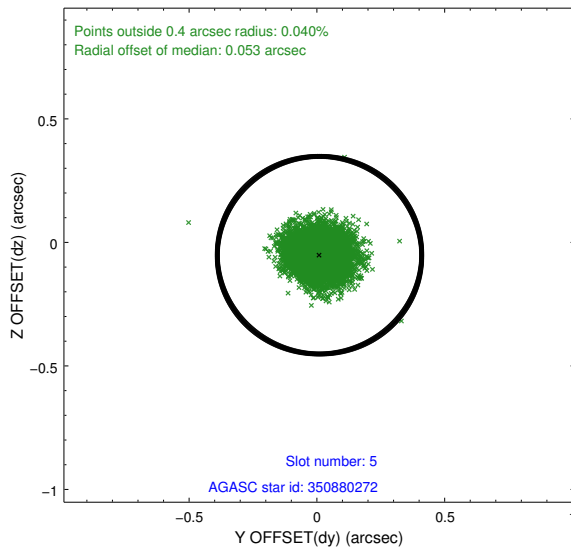
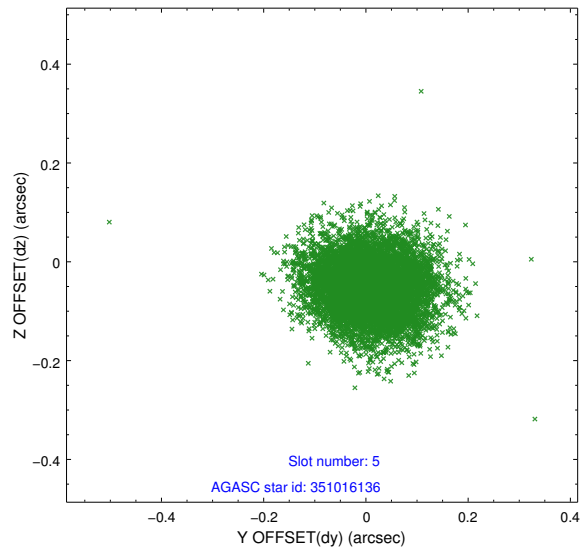
2.4.1 Slot 3



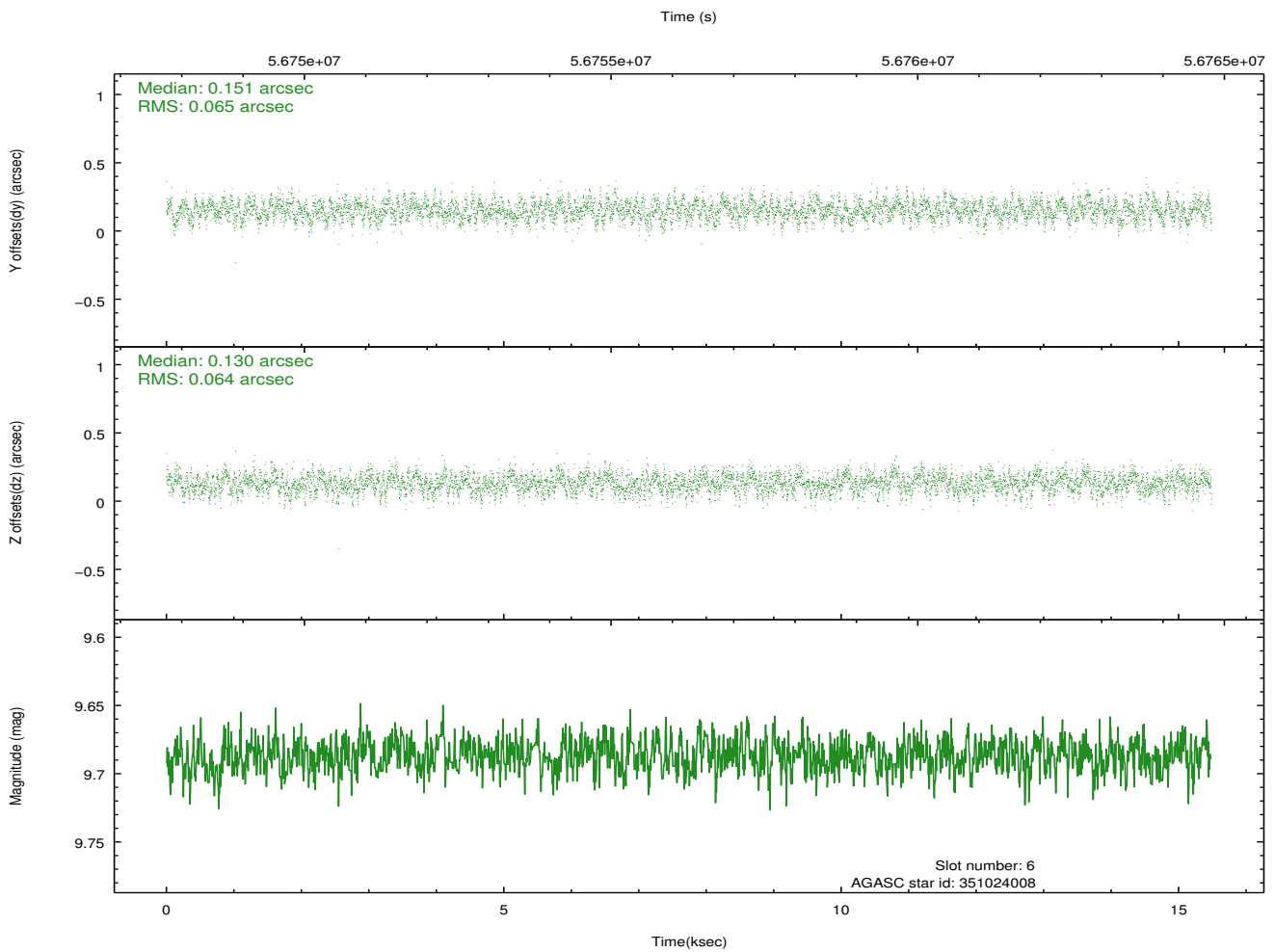
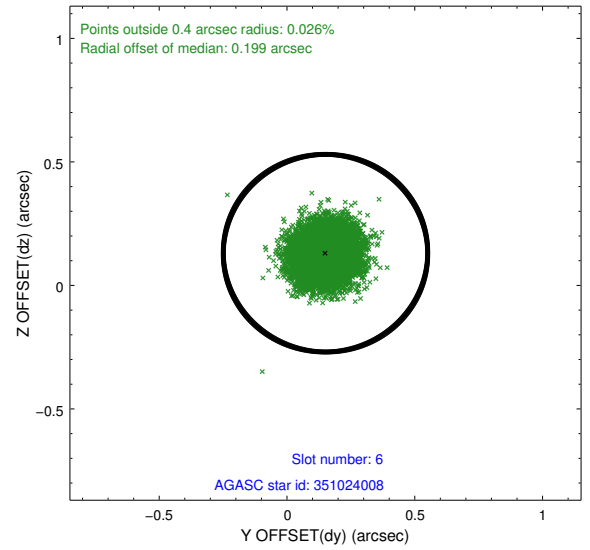
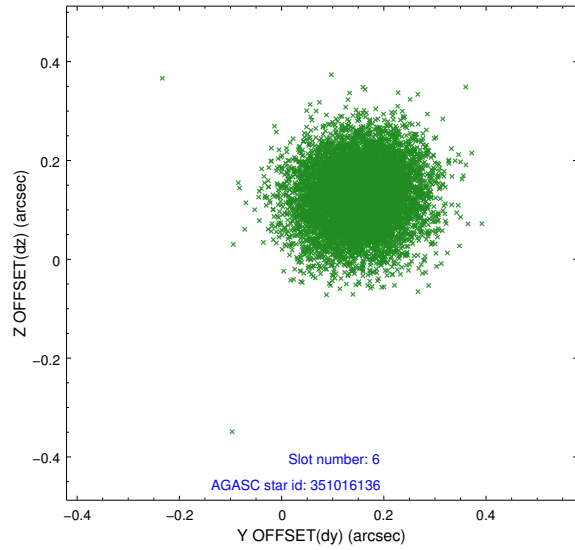
2.4.2 Slot 4



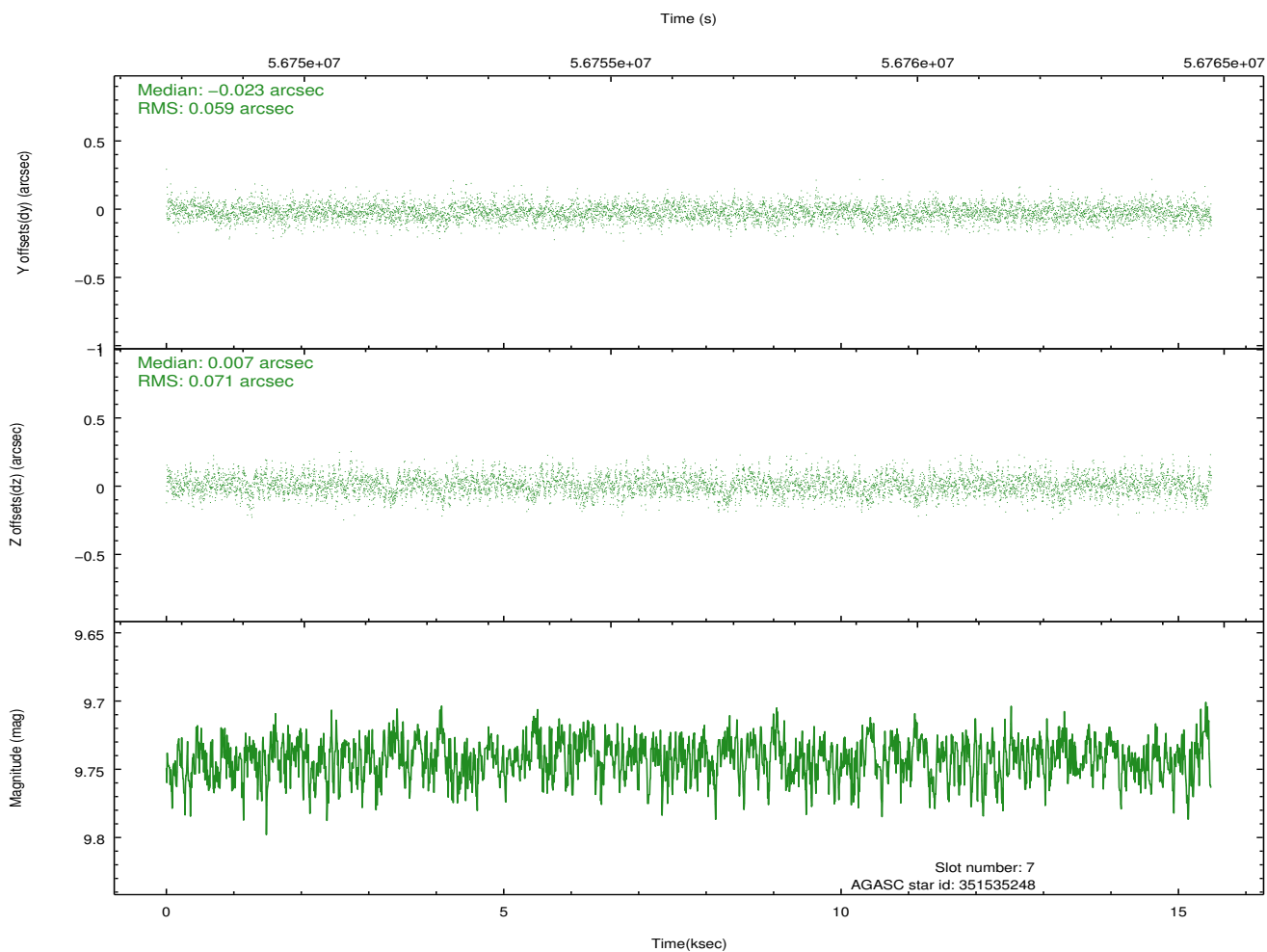
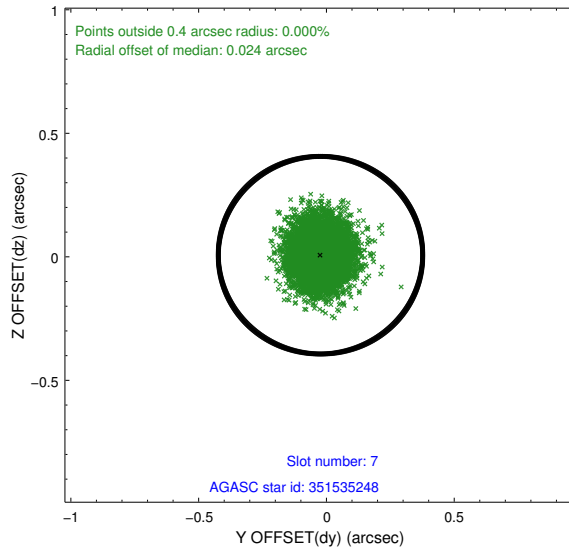
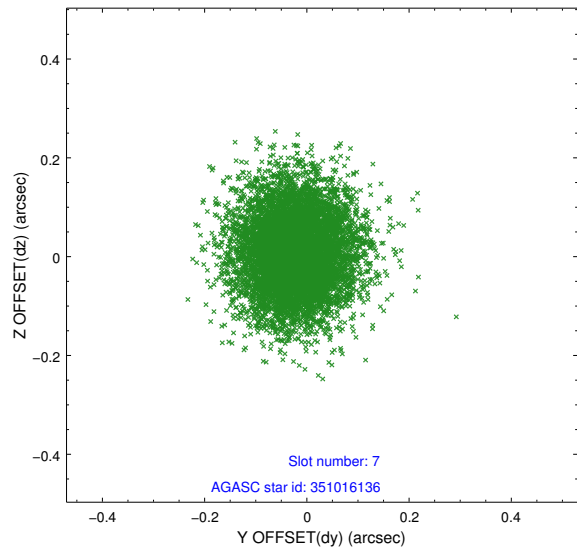
2.4.3 Slot 5



2.4.4 Slot 6

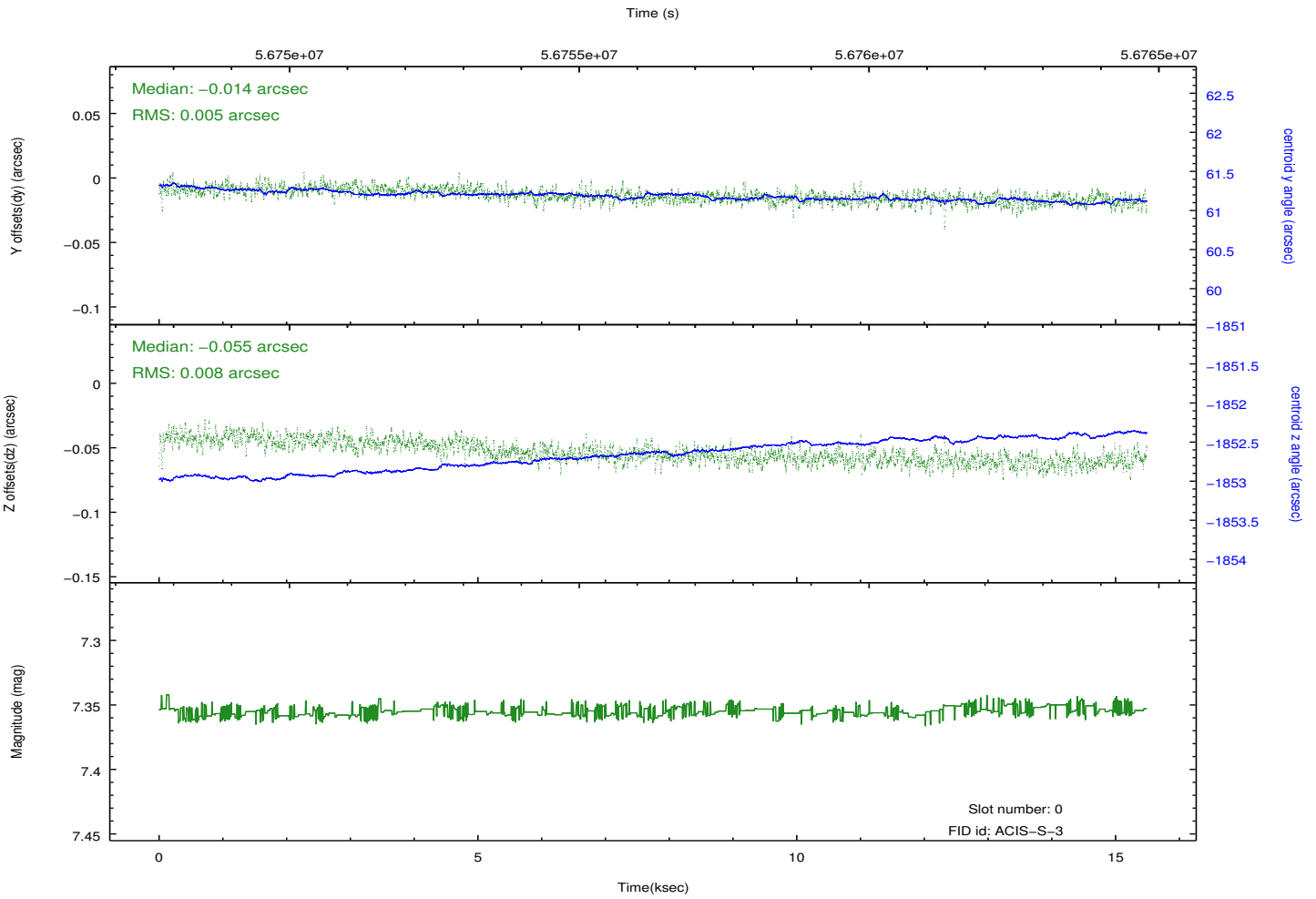
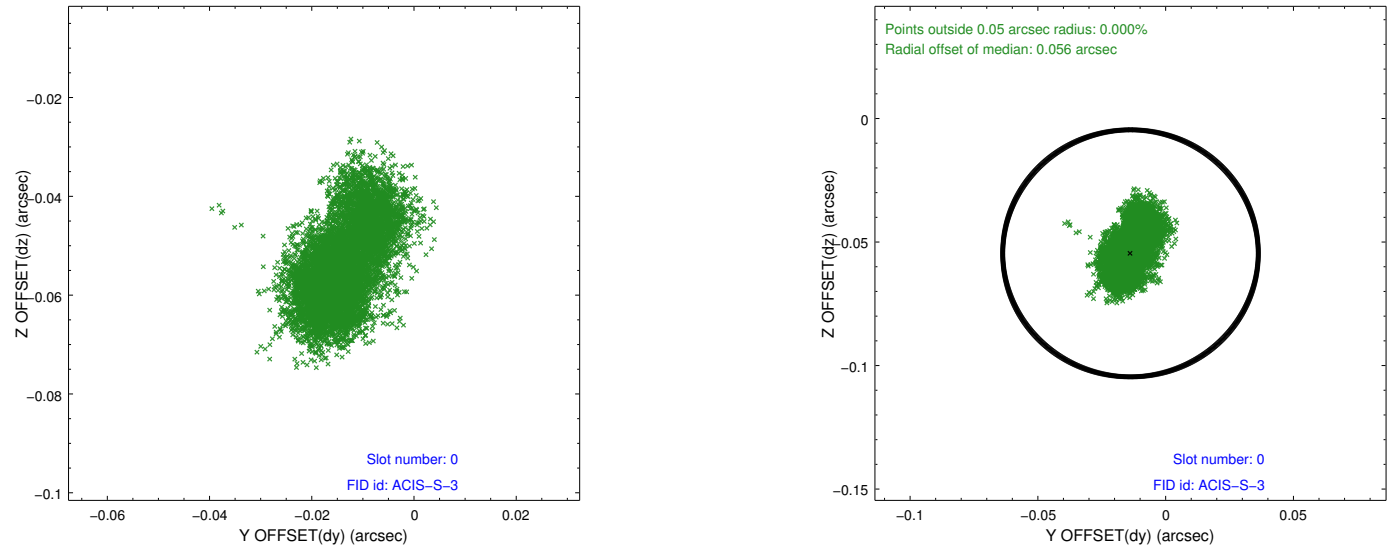


2.4.5 Slot 7

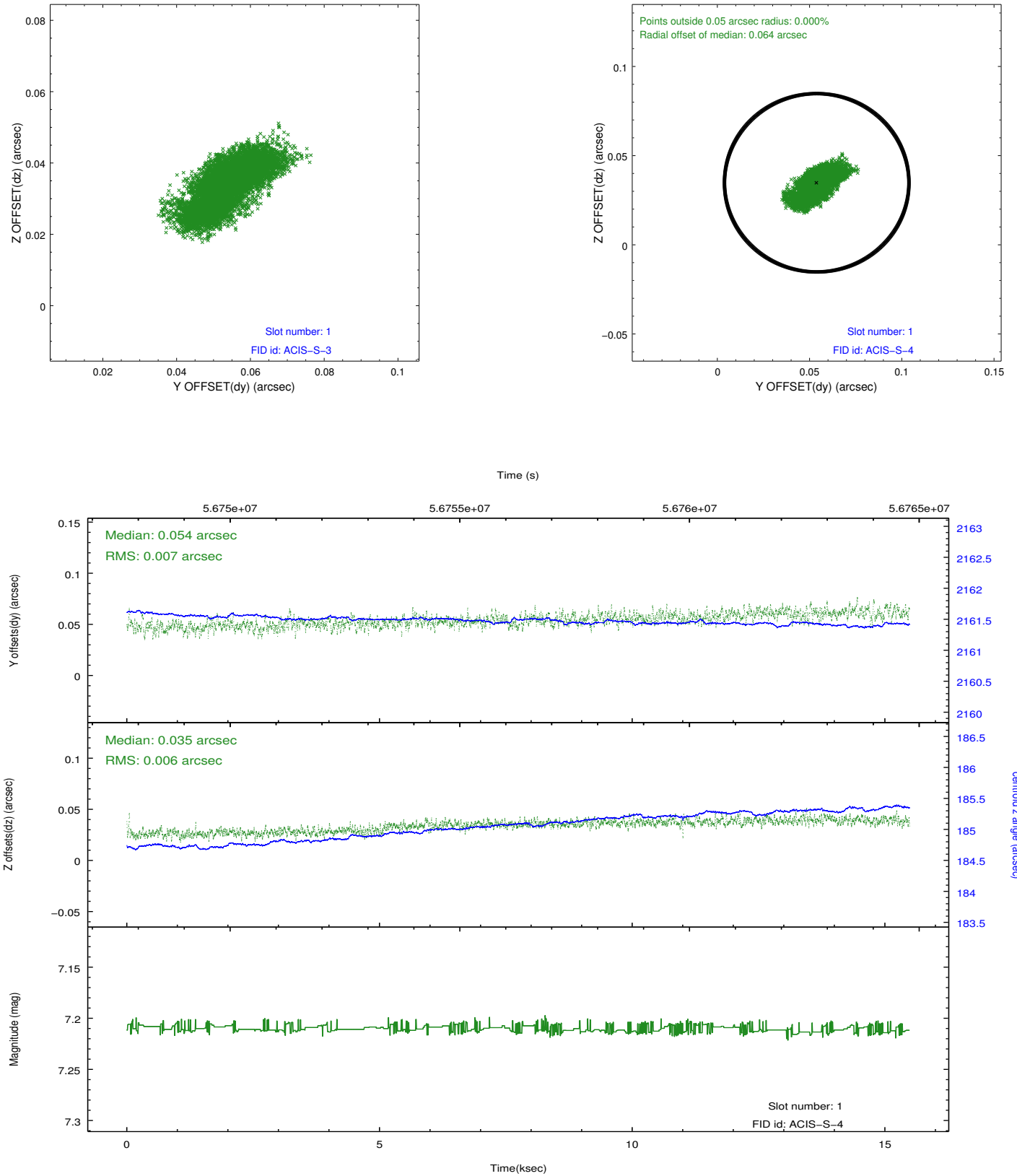


2.5 FID Slots

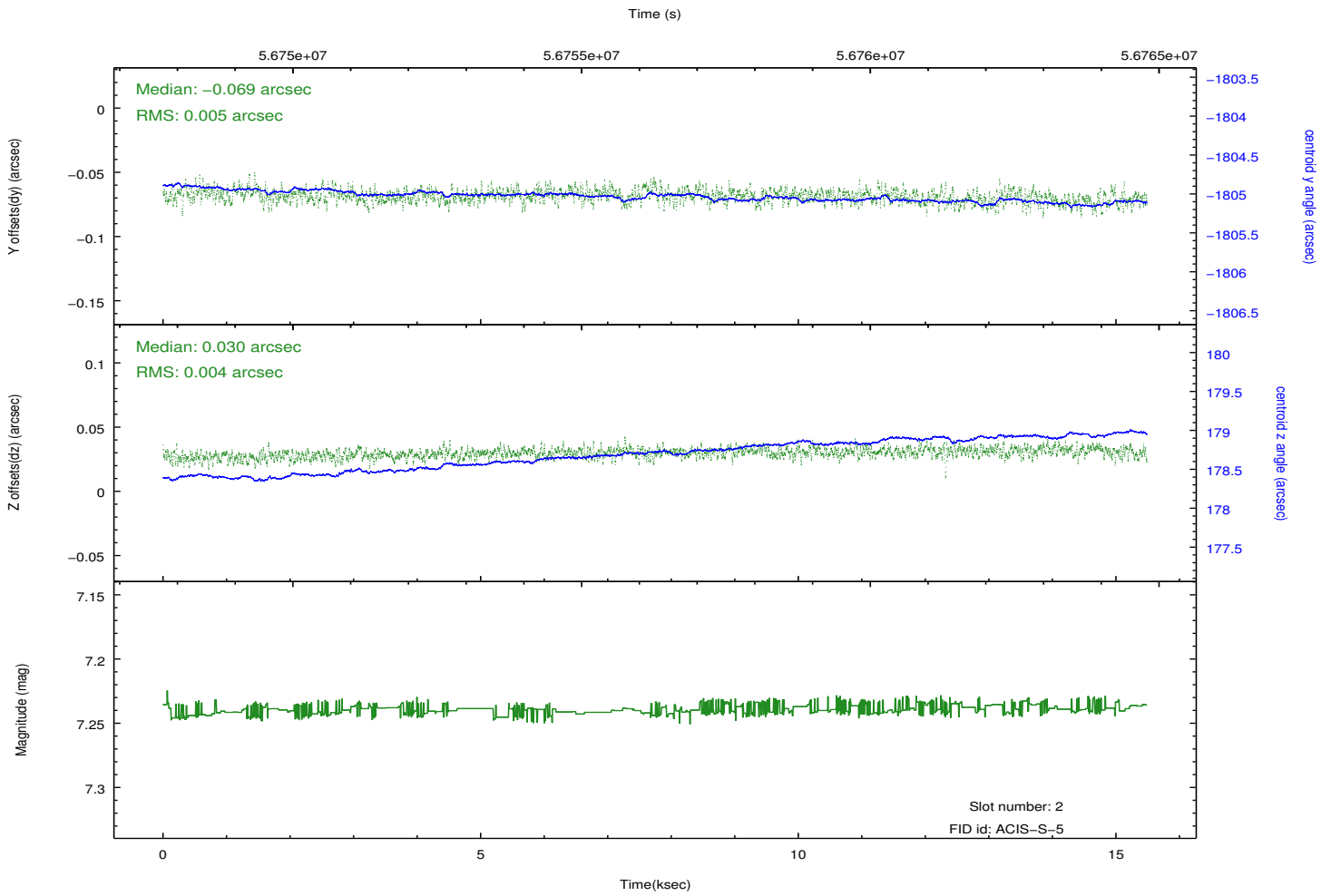
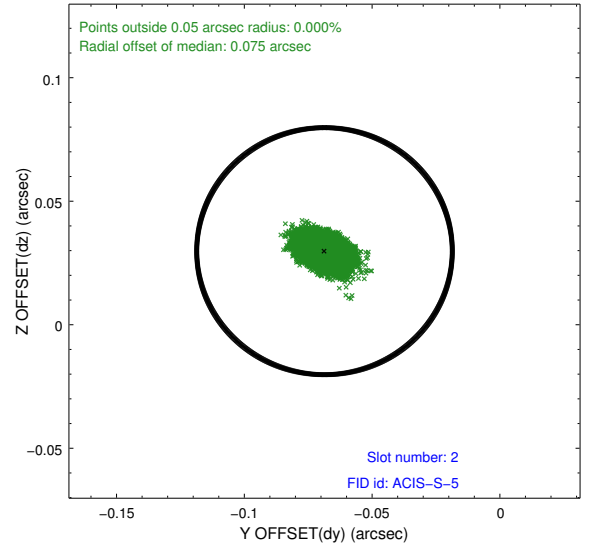
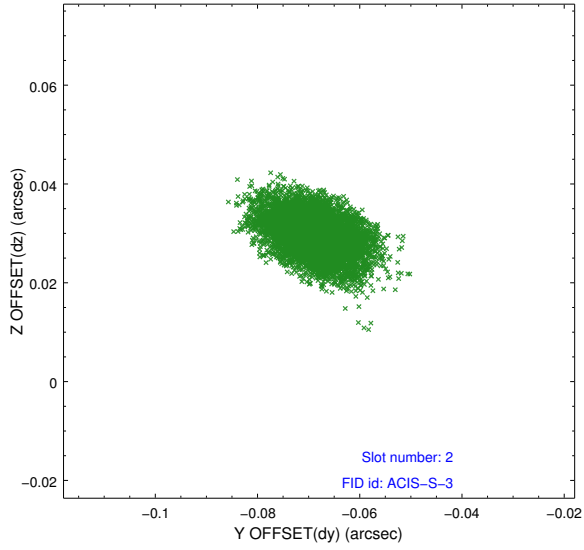
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

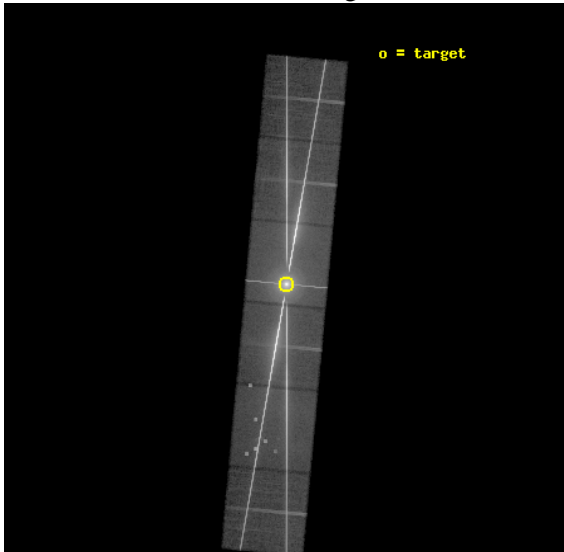


3 OBI Secondary

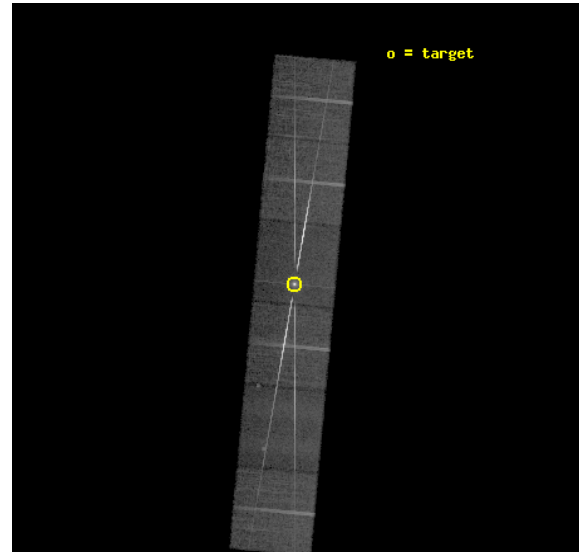
3.1 OBI

3.1.1 Images

Level 1 Image



Level 1 Bad Events



3.1.2 Parameters

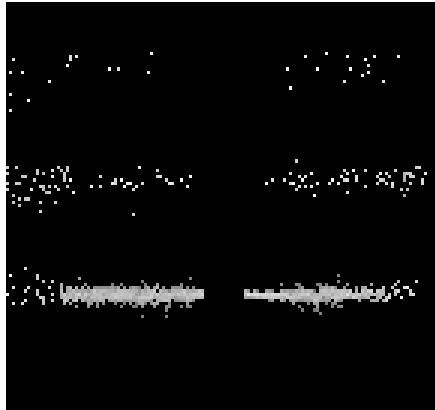
obi_num	1	Obi number	sched_exp_time	15000.000000	Scheduled observation exposure time
ascdsver	8.1.1	ASCDS version number	ontime	11539.911285721	Sum of GTIs [s]
caldbver	4.1.4	 	ontime4	11539.911615357	Sum of GTIs [s]
date	2009-11-20T12:23:39	Date and time of file creation	ontime5	11539.911116242	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	11539.911824435	Sum of GTIs [s]
			ontime7	11539.911285721	Sum of GTIs [s]
			ontime8	11539.91121643	Sum of GTIs [s]
			ontime9	11539.91138573	Sum of GTIs [s]
			l1events	4306909	Number of level 1 events

3.1.3 Events

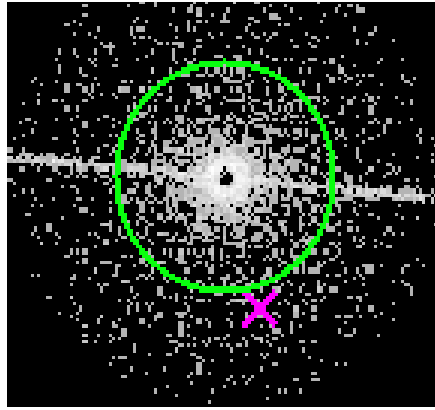
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	221030	544636	1203401	1233460	834016	270366	grade 0 events	62384	109952	484499	161023	475448	113773
rejected events	108217	107139	261747	283954	168099	98873		28%	20%	40%	13%	57%	42%
rejected %	48%	19%	21%	23%	20%	36%	grade 1 events	391	2511	47146	9285	28390	1066
								0%	0%	3%	0%	3%	0%
							grade 2 events	40454	154749	314357	248223	114394	42211
								18%	28%	26%	20%	13%	15%
							grade 3 events	2444	30905	35679	94281	25948	4470
								1%	5%	2%	7%	3%	1%
							grade 4 events	2450	29745	34315	89867	25596	4408
								1%	5%	2%	7%	3%	1%
							grade 5 events	2345	17361	55976	57521	21050	3269
								1%	3%	4%	4%	2%	1%
							grade 6 events	5131	112391	73272	356616	24866	6703
								2%	20%	6%	28%	2%	2%
							grade 7 events	105431	87022	158157	216644	118324	94466
								47%	15%	13%	17%	14%	34%

4 Gratings

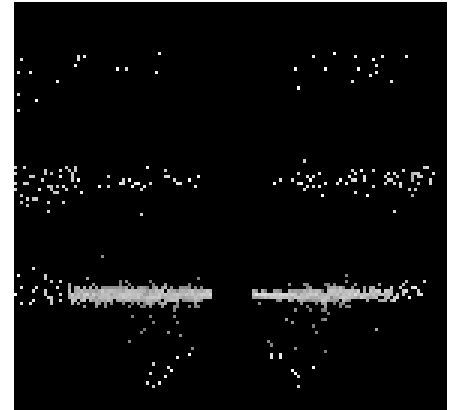
4.1 HEG Arm



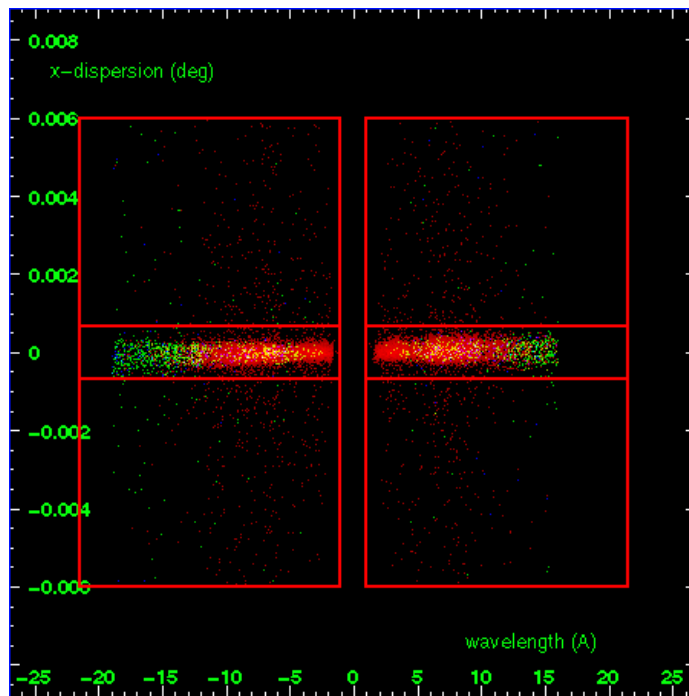
HEG Order Sort 123



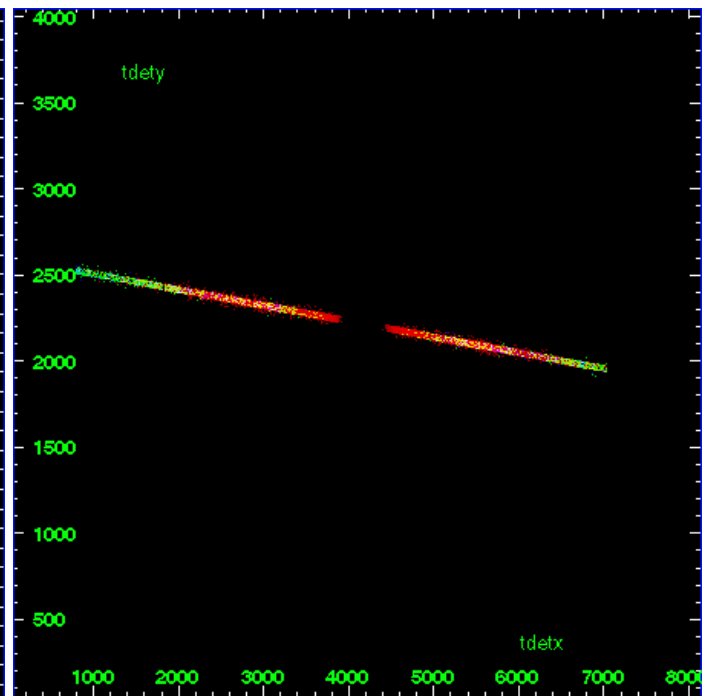
HEG Zero Order



HEG Order Sort ALL

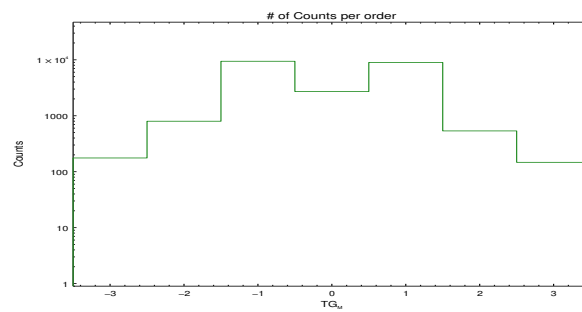


Spot Image HEG

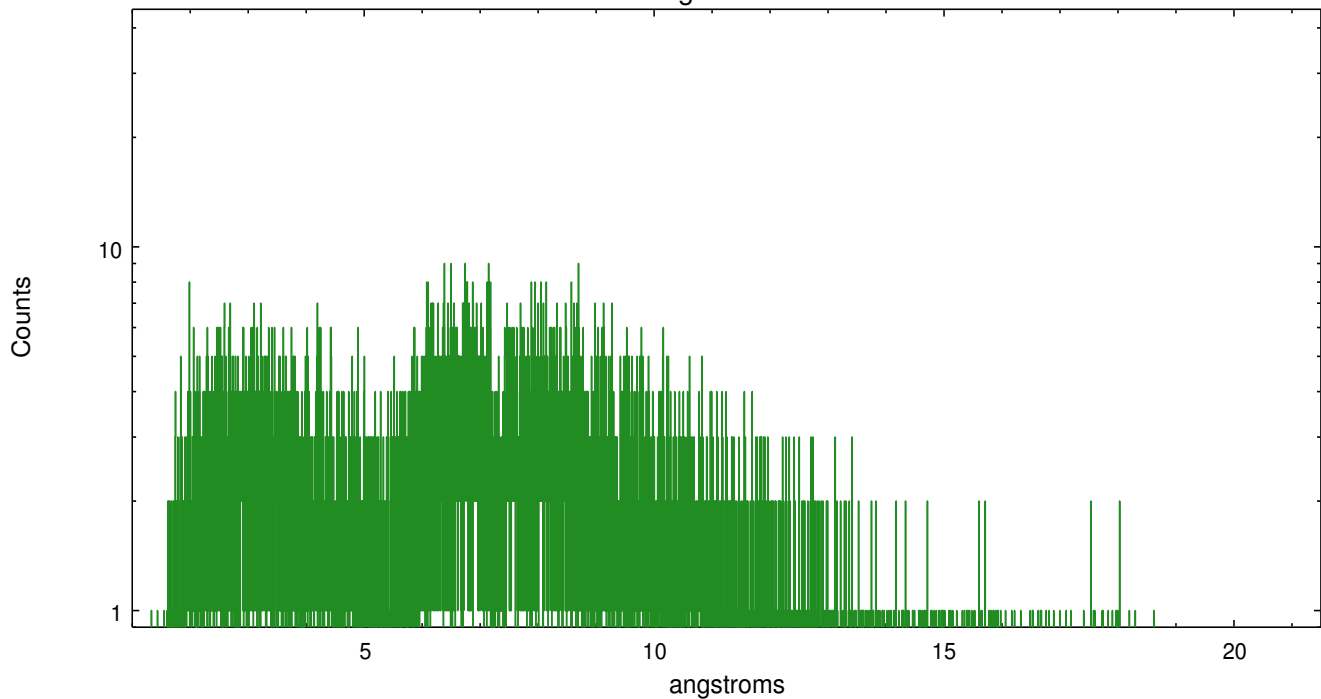


Full Detector HEG

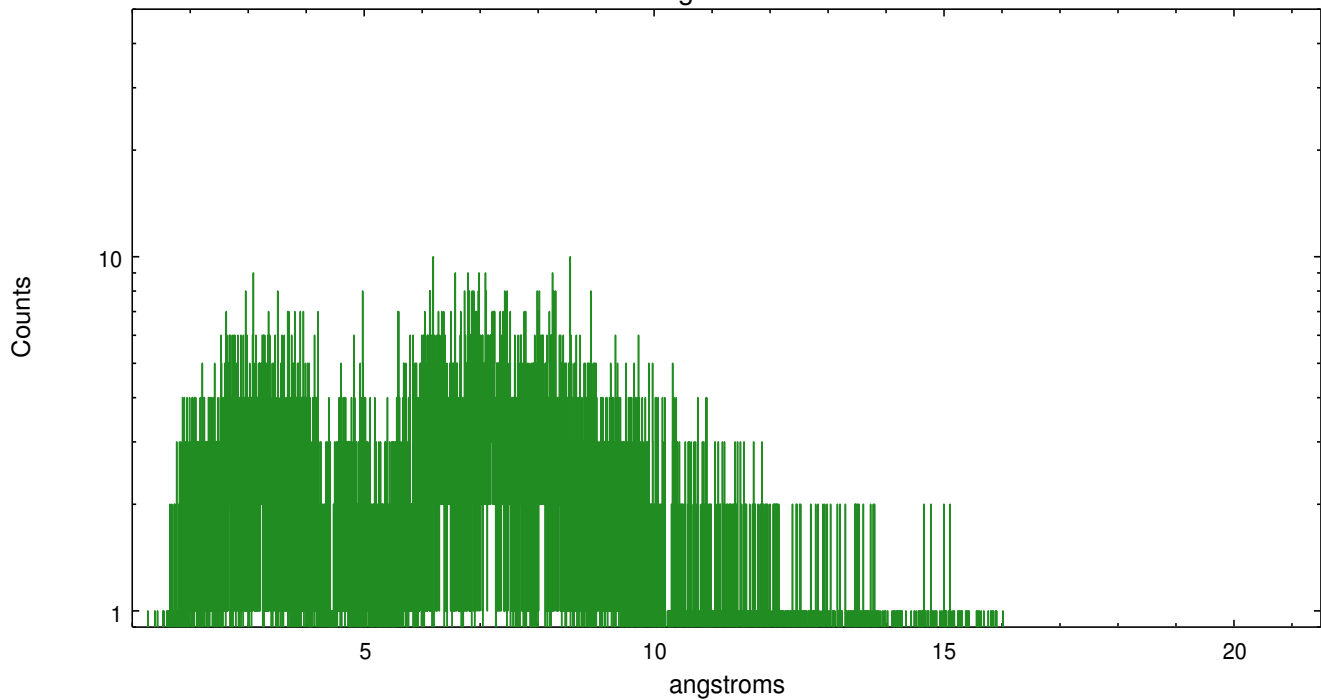
	order	order	order	order	order	order	order
	-3	-2	-1	0	1	2	3
Events	176	798	9413	2711	8975	536	147



heg order -1



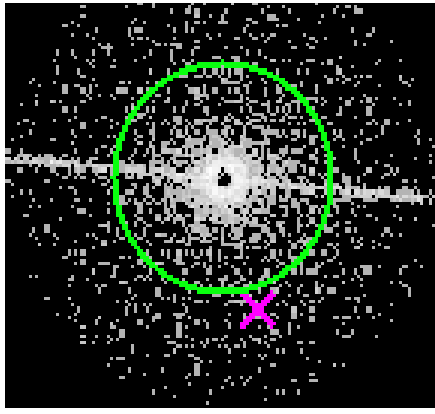
heg order +1



4.2 MEG Arm



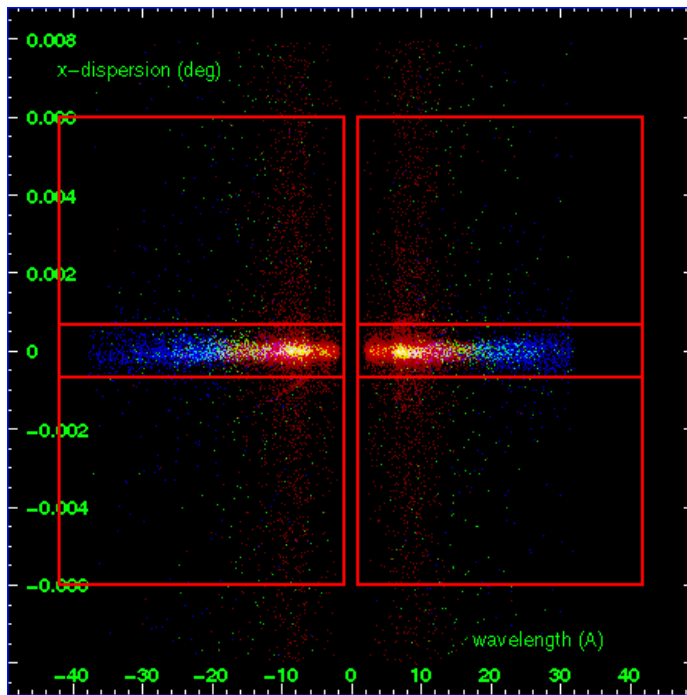
MEG Order Sort 123



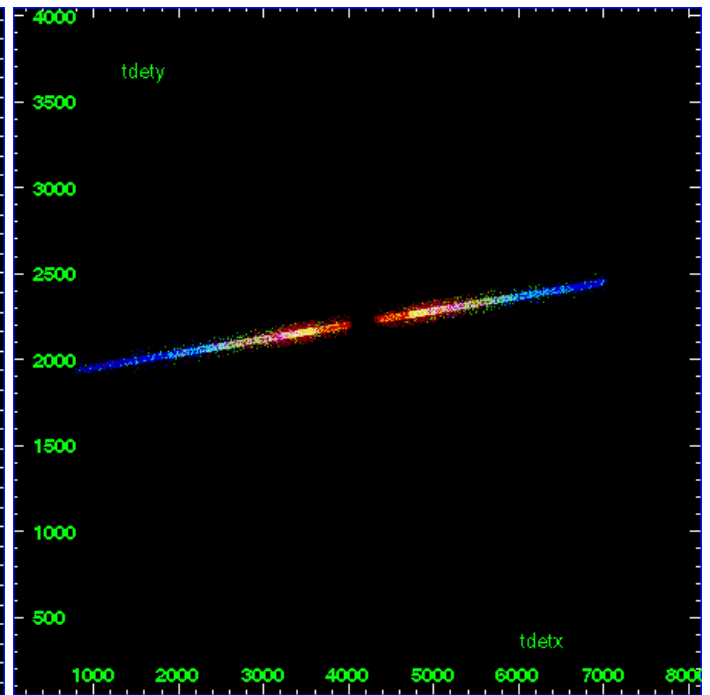
MEG Zero Order



MEG Order Sort ALL

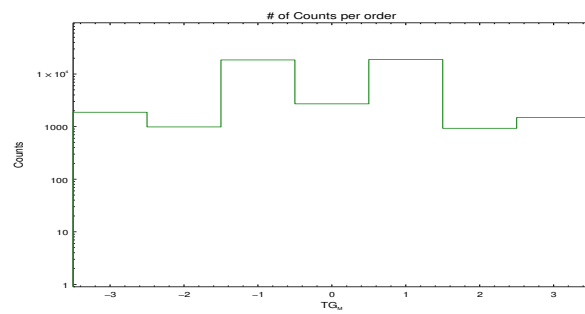


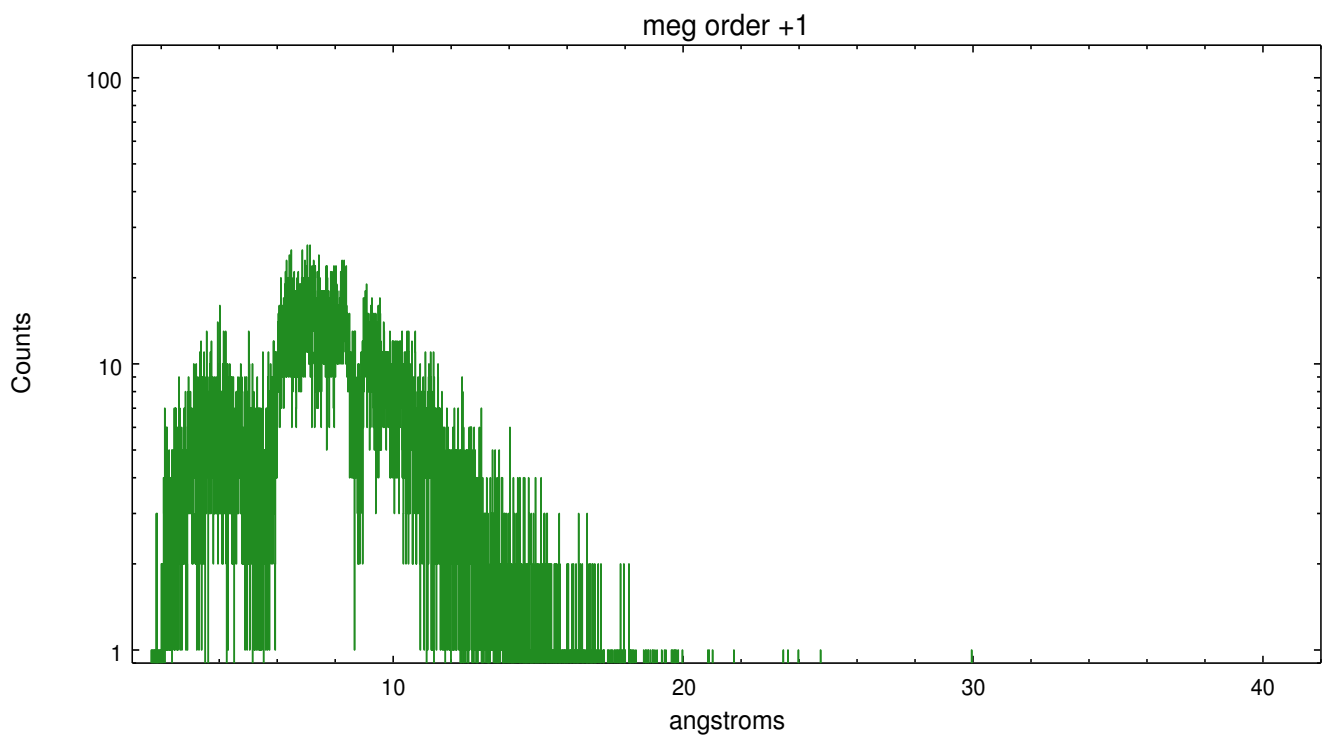
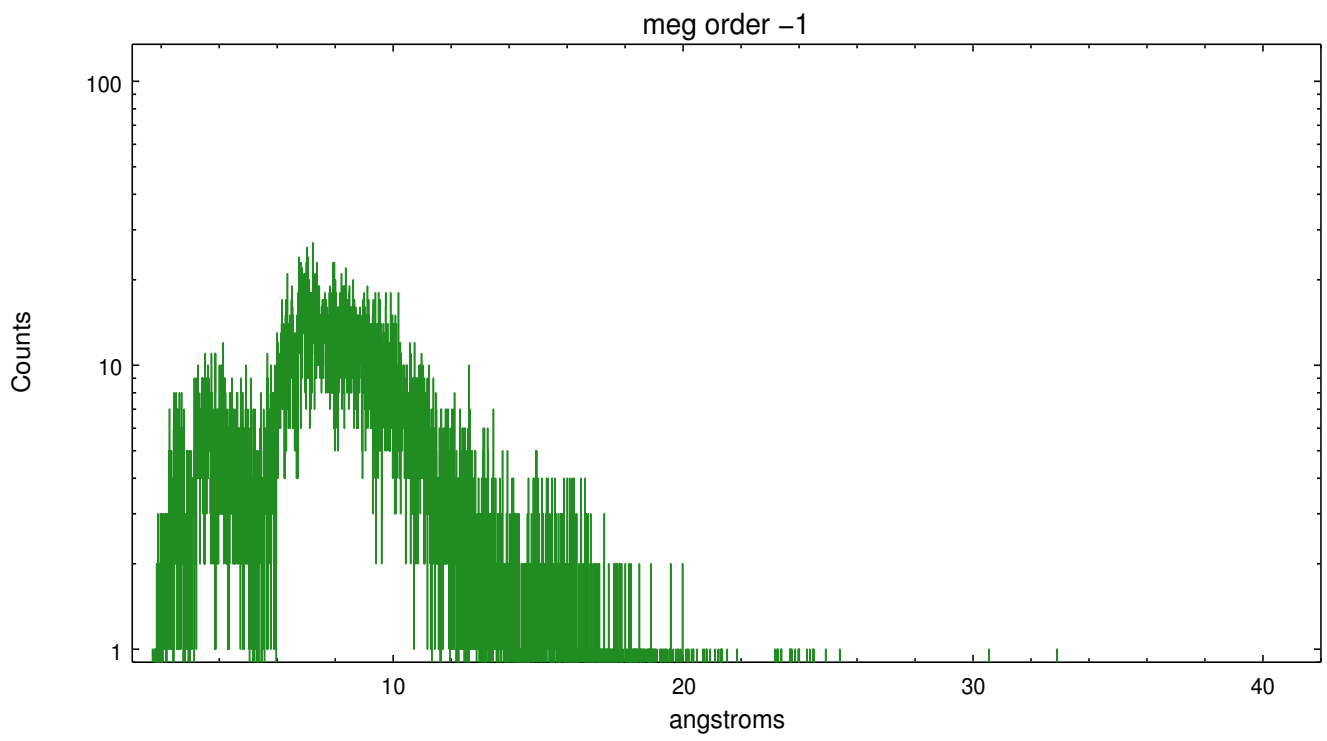
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1874	987	18531	2711	18827	928	1485





A Summary

A.1 Status

V&V Scientist	John Houck
V&V Date (YYYY-MM-DD)	2009.12.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	13.962

A.2 Comments