

V&V Reference Report

L2 ASCDS Version : 8.3.2.1

Observation 94 - L2 Version 8
Chandra X-Ray Center

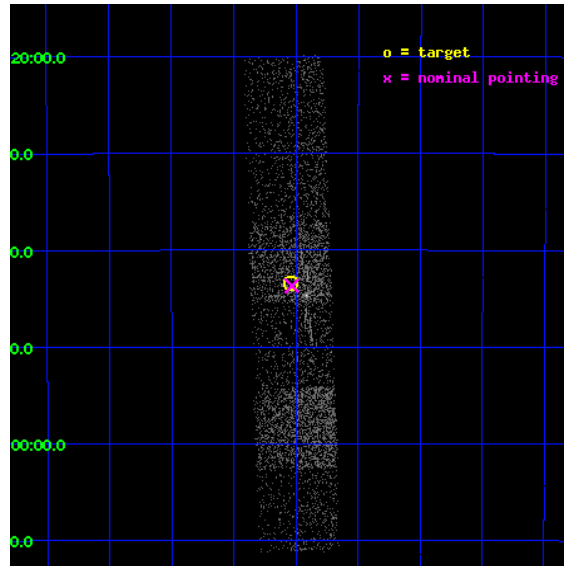
L2 Processing Date : Jul 29 2011

Contents

1	Front	2
2	OBI Primary	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	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	OBI Secondary	17
3.1	OBI	17
3.1.1	Images	17
3.1.2	Bias	17
3.1.3	Parameters	18
3.1.4	Events	18
4	Gratings	19
4.1	HEG Arm	19
4.2	MEG Arm	21
A	Summary	23
A.1	Status	23
A.2	Comments	23

1 Front

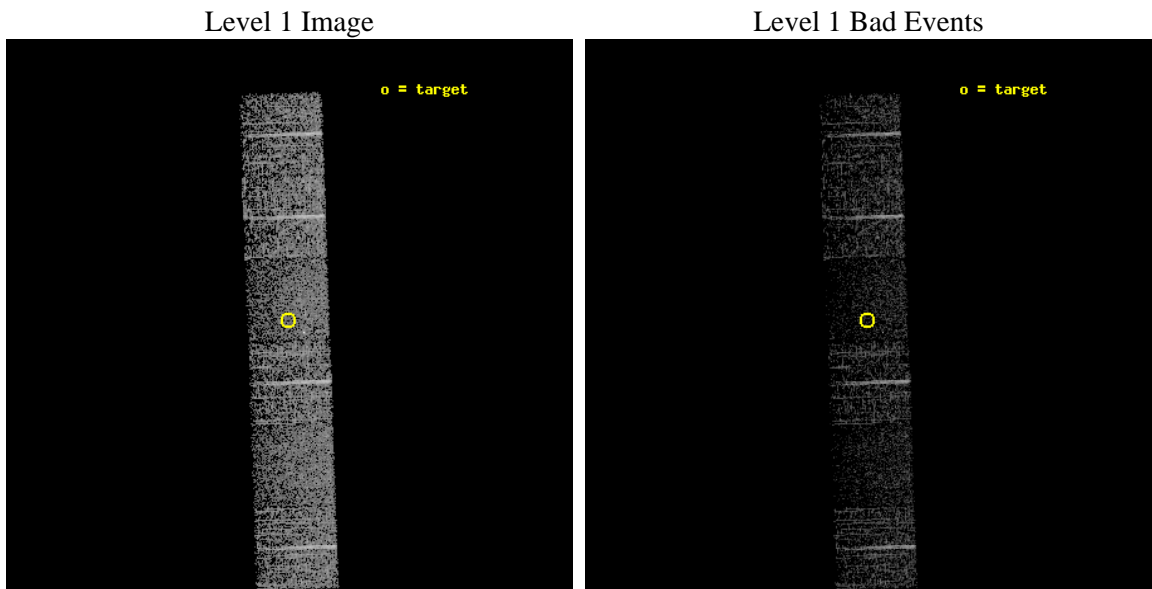
seq_num	400007	Sequence number
obs_id	94	Observation id
title	MEASURING BLACK HOLE SPIN	Proposal title
observer	Prof. Gordon Garmire	Principal investigator
object	1E 1740.7-2942	Source name
dtcycle	0	
cycle	P	events are from which exps? P[rimary] S[econdar
ra_targ	266.010833	Observer's specified target RA
dec_targ	-29.723611	Observer's specified target Dec
ra_nom	266.00817895668	Nominal RA
dec_nom	-29.728230339397	Nominal Dec
roll_nom	267.95361068657	Nominal Roll
revision	8	Processing version of data
ontime	2342.0018246025	Sum of GTIs [s]
livetime	200.0935669885	Livetime [s]
ontime4	2342.0018545315	Sum of GTIs [s]
ontime5	2342.0018545315	Sum of GTIs [s]
ontime6	2342.0018246025	Sum of GTIs [s]
ontime7	2342.0018246025	Sum of GTIs [s]
ontime8	2342.0018246025	Sum of GTIs [s]
ontime9	2342.0018246025	Sum of GTIs [s]
l2events	7058	Number of level 2 events



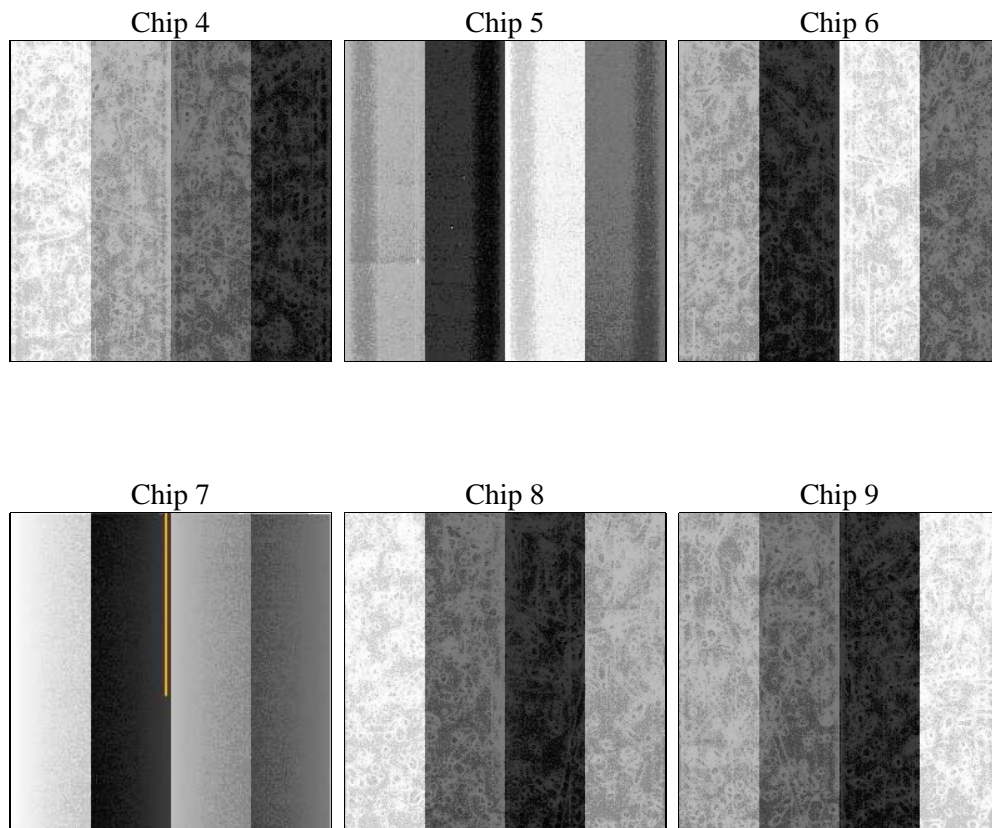
2 OBI Primary

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	12360.000000	Scheduled observation exposure time
ascdsver	8.3.2.1	ASCDS version number	ontime	2342.0018246025	Sum of GTIs [s]
caldsver	4.3.1	 	ontime4	2342.0018545315	Sum of GTIs [s]
date	2010-09-28T12:07:55	Date and time of file creation	ontime5	2342.0018545315	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	2342.0018246025	Sum of GTIs [s]
			ontime7	2342.0018246025	Sum of GTIs [s]
			ontime8	2342.0018246025	Sum of GTIs [s]
			ontime9	2342.0018246025	Sum of GTIs [s]
			l1events	69467	Number of level 1 events

2.1.4 Events

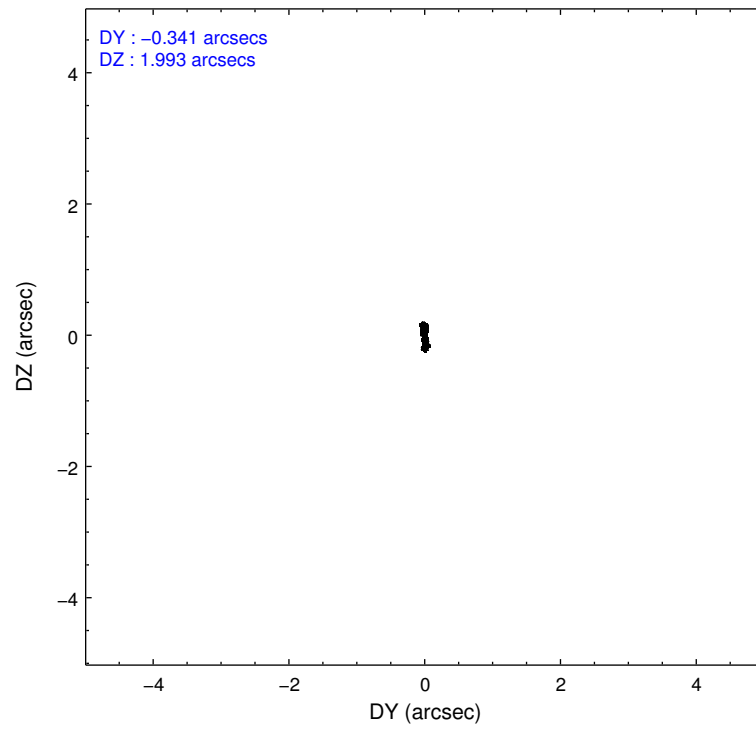
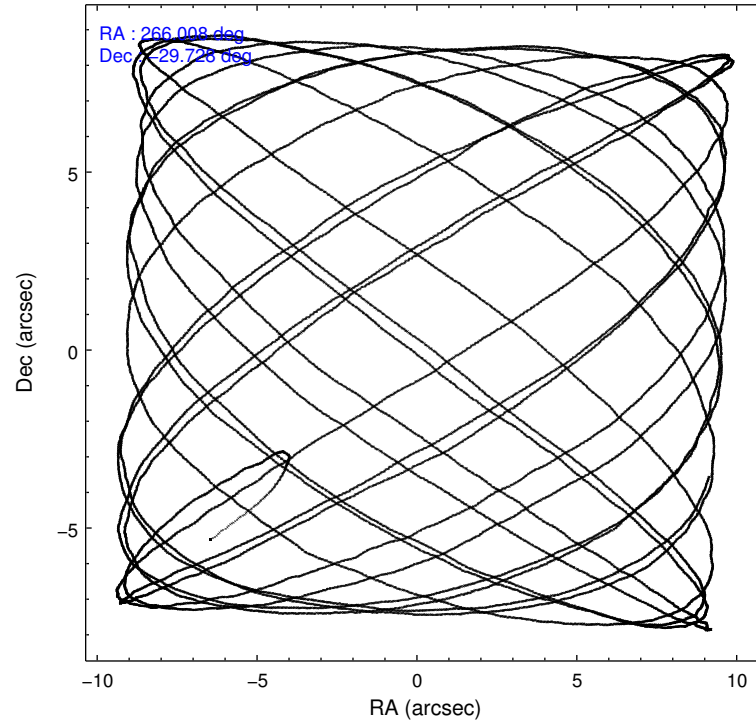
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	13499	8463	13067	8721	14138	11579
rejected events	12854	6130	12219	6195	12929	10877
rejected %	95%	72%	93%	71%	91%	93%

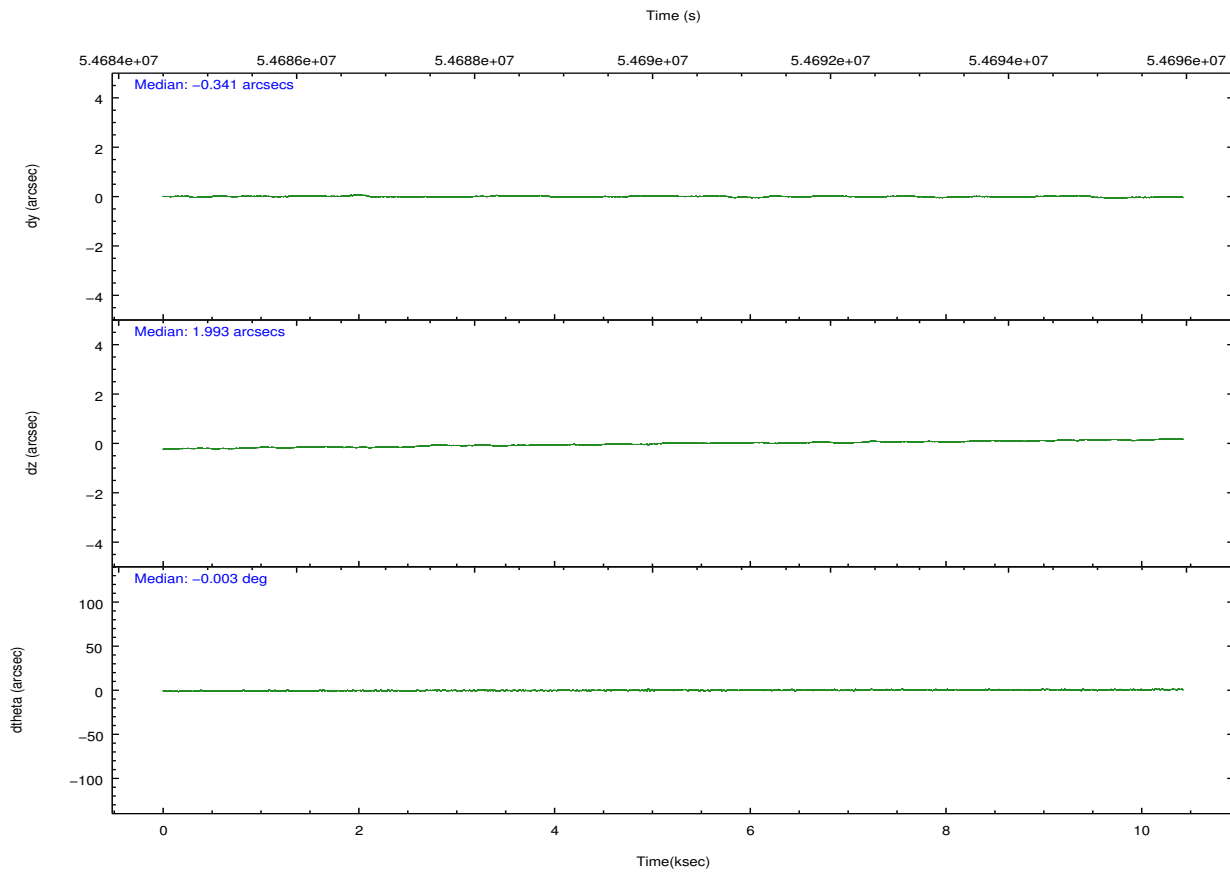
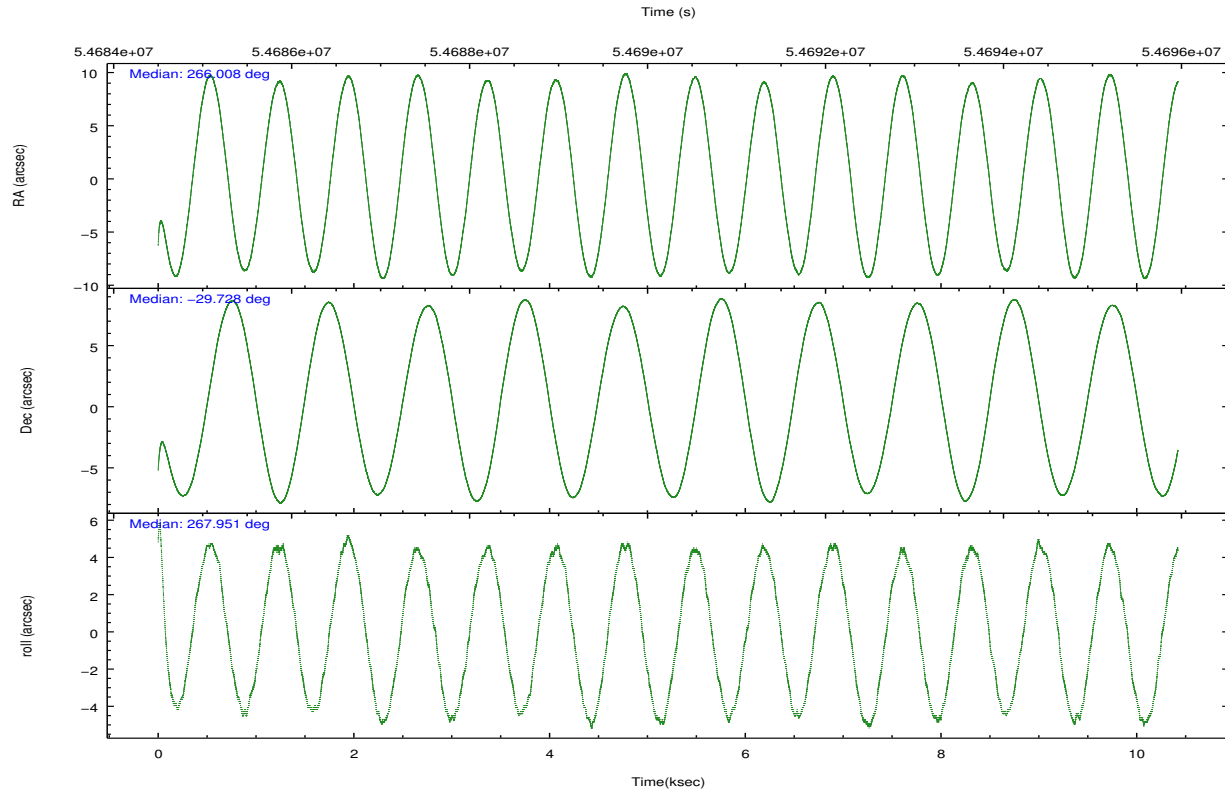
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	106	97	144	253	274	118
	0%	1%	1%	2%	1%	1%
grade 1 events	2	9	3	6	2	1
	0%	0%	0%	0%	0%	0%
grade 2 events	214	443	319	587	305	219
	1%	5%	2%	6%	2%	1%
grade 3 events	93	159	106	221	135	98
	0%	1%	0%	2%	0%	0%
grade 4 events	114	110	99	217	148	96
	0%	1%	0%	2%	1%	0%
grade 5 events	174	375	197	468	306	202
	1%	4%	1%	5%	2%	1%
grade 6 events	119	1531	183	1262	353	174
	0%	18%	1%	14%	2%	1%
grade 7 events	12677	5739	12016	5707	12615	10671
	93%	67%	91%	65%	89%	92%

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	FAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	266.012299	266.0081789566776	Subarray requested	NONE	NONE
Pointing Dec	-29.725604	-29.72823033939696	Alternating exposures requested	Y	Y
Pointing Roll	268.039996	267.9536106865693	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	3	3
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	54683524.184000	54683477.039577			
Observation start date	1999-09-25T21:51:00	1999-09-25T21:51:17			
Observation end time	54695884.184000	54695870.827521			
Observation end date	1999-09-26T01:17:00	1999-09-26T01:17:50			
Read mode	TIMED	TIMED			

2.3 Aspect



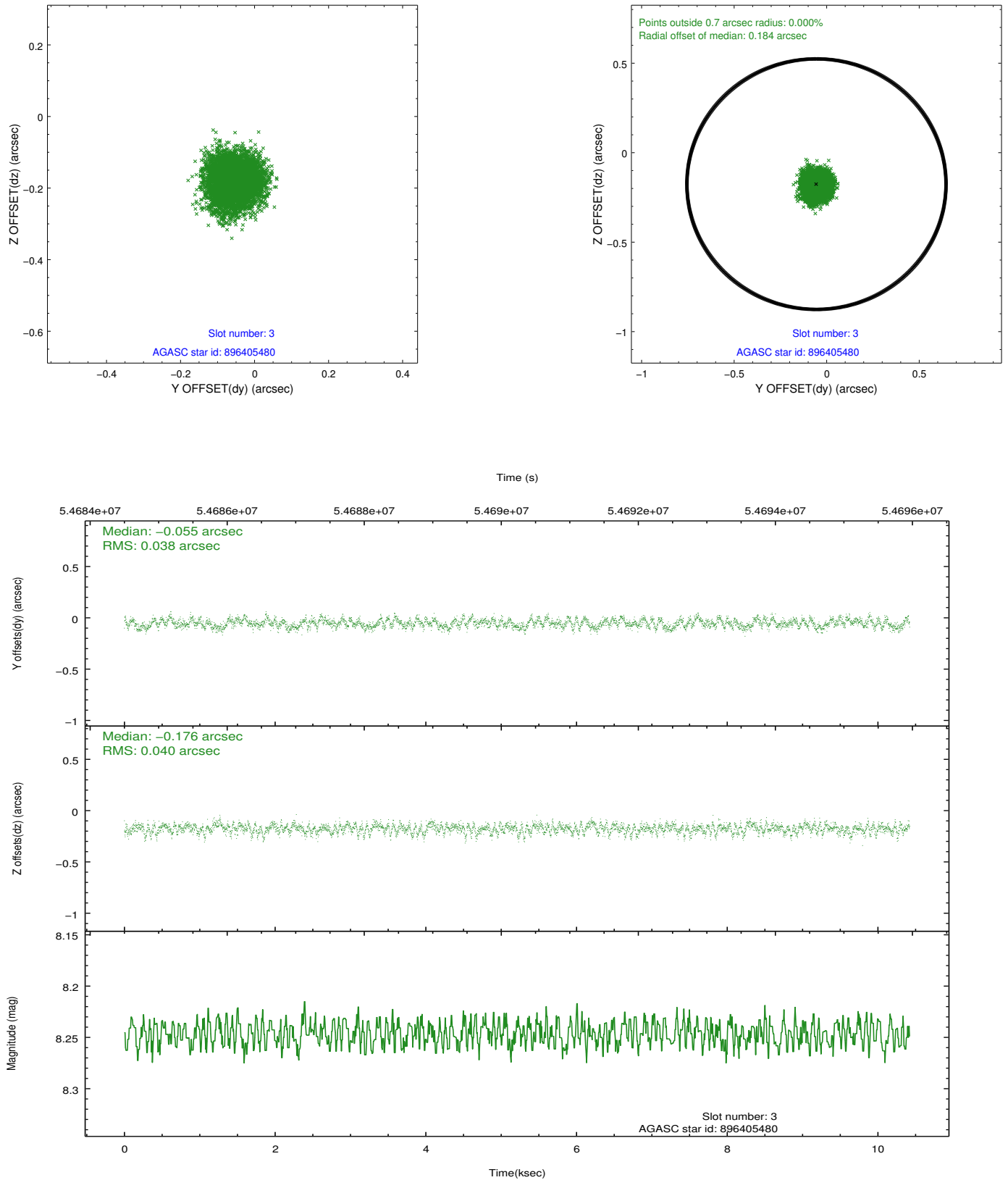


Slot Statistics

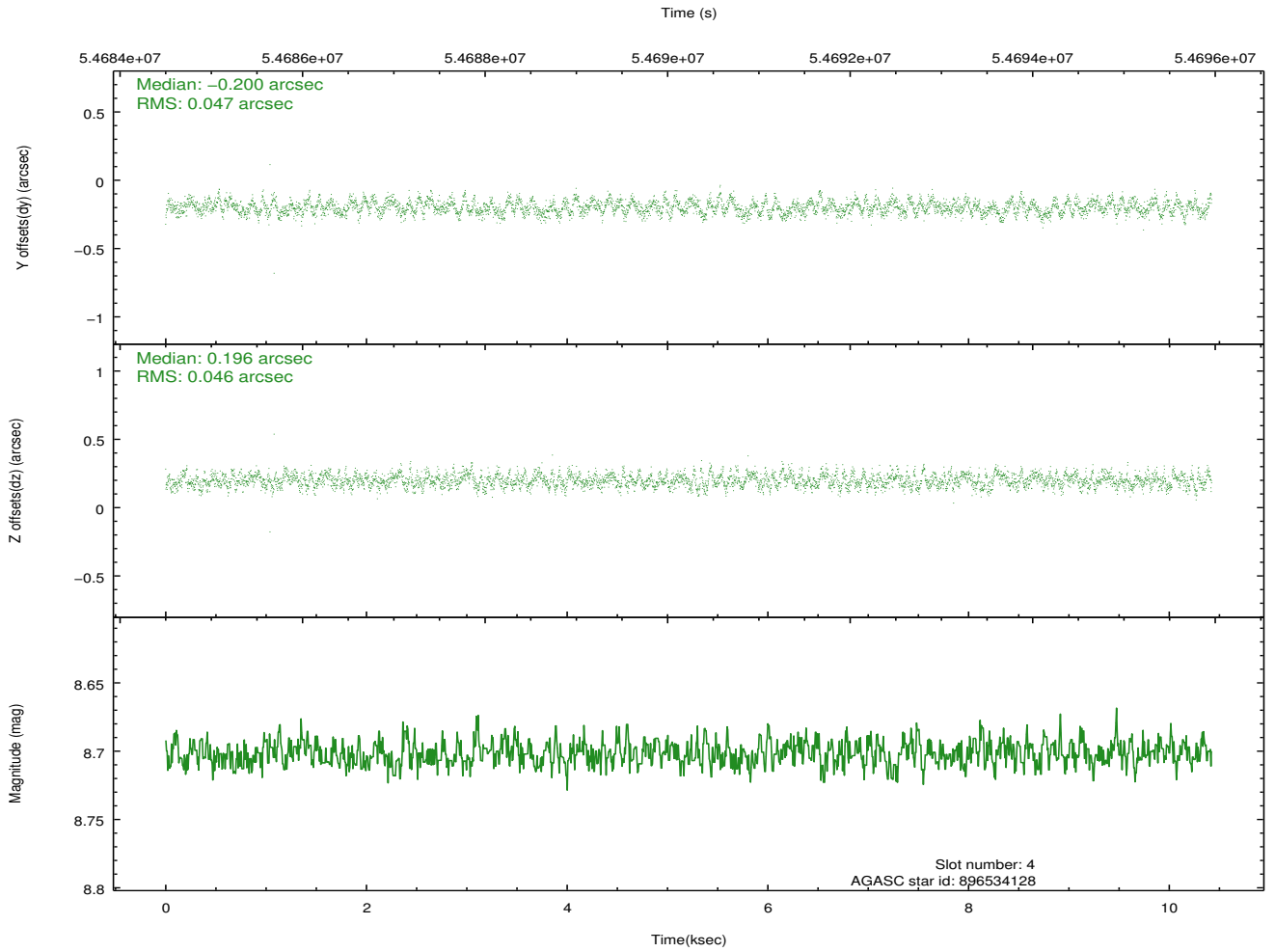
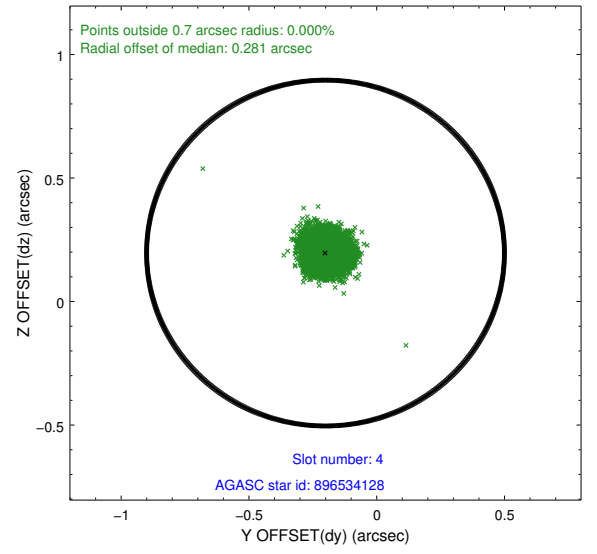
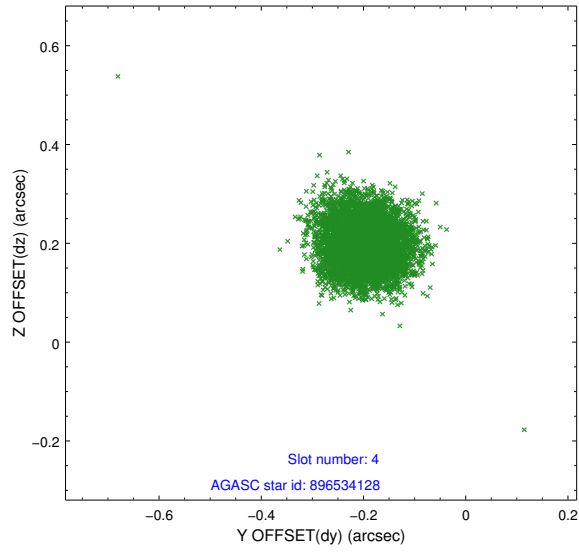
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	5085	-0.008	-0.011	0.007	0.011	0.000000	0.000000	-752.26	-1722.99
1	FID	ACIS-S-4	7.21	5085	0.088	0.007	0.007	0.012	0.000000	0.000000	2161.08	185.26
2	FID	ACIS-S-5	7.24	5083	-0.111	0.013	0.006	0.011	0.000000	0.000000	-1804.93	179.23
3	GUIDE	896405480	8.25	5085	-0.055	-0.176	0.060	0.095	265.220460	-29.599691	-273.13	-2432.06
4	GUIDE	896534128	8.70	5084	-0.200	0.196	0.071	0.109	266.503837	-29.080853	-2299.77	1517.98
5	GUIDE	896404784	9.31	5079	-0.154	-0.225	0.071	0.116	265.491289	-29.092670	-2134.75	-1663.28
6	GUIDE	966919024	9.08	5081	0.108	0.057	0.087	0.133	266.401662	-30.333532	2218.29	1354.93
7	GUIDE	966920656	9.86	5076	0.304	0.148	0.102	0.162	266.290188	-30.347457	2281.74	1011.25

2.4 Star Slots

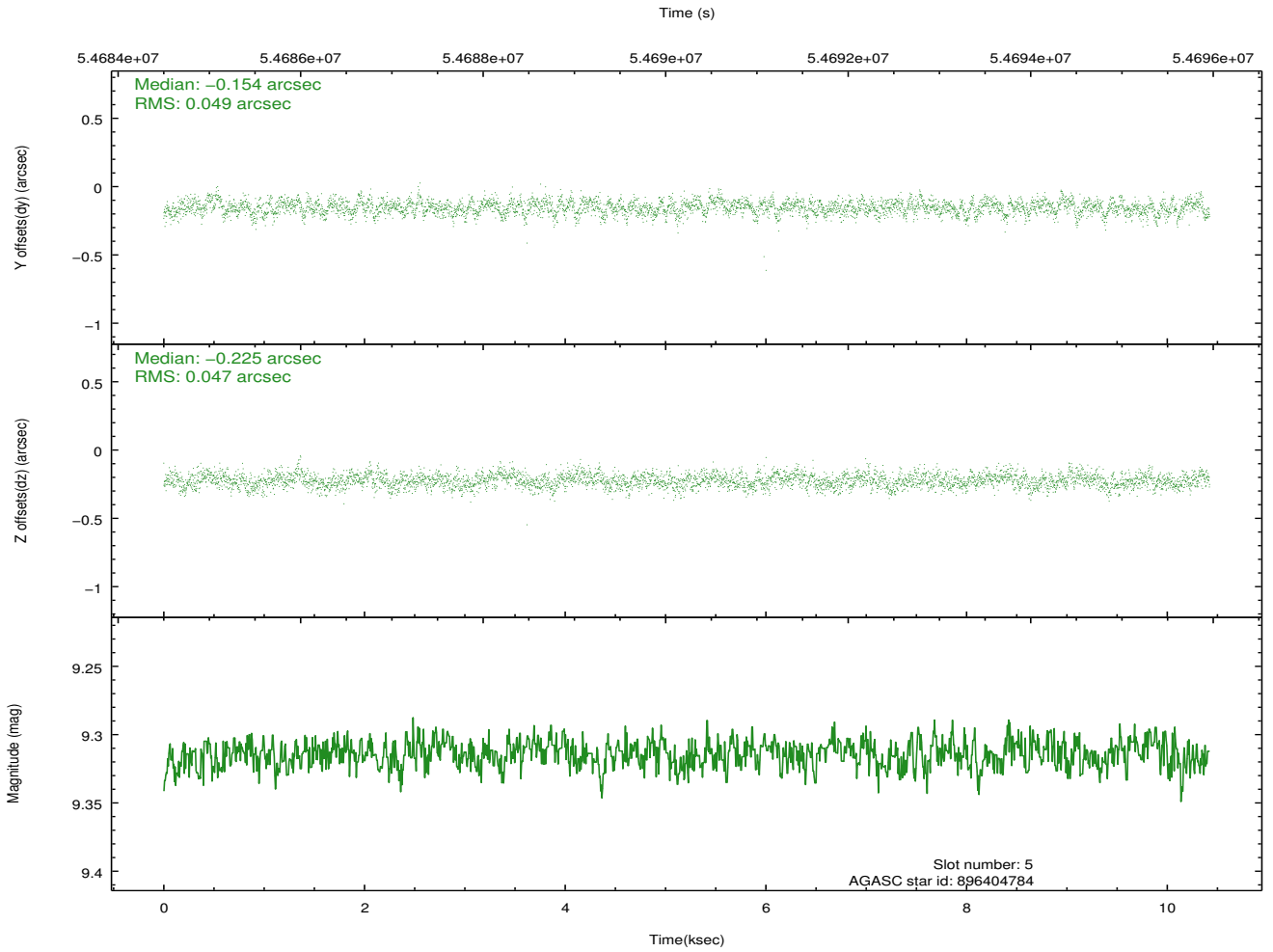
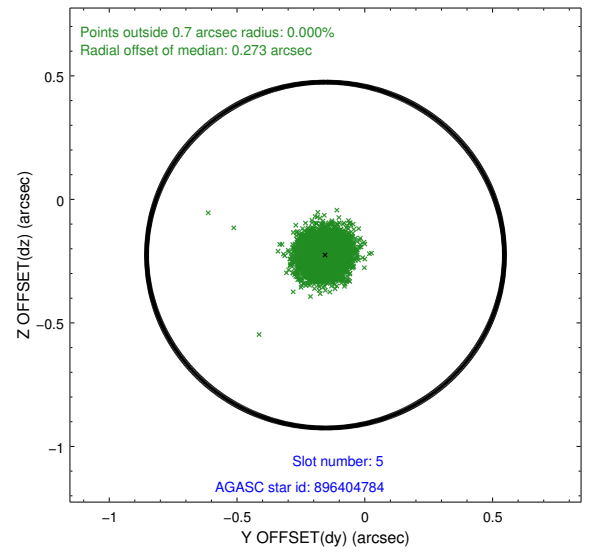
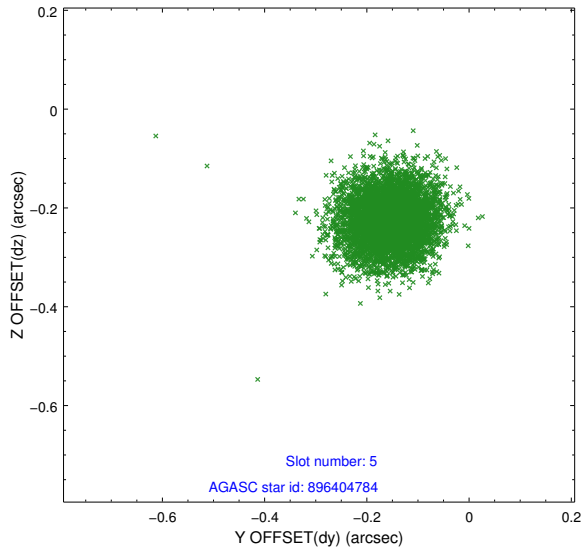
2.4.1 Slot 3



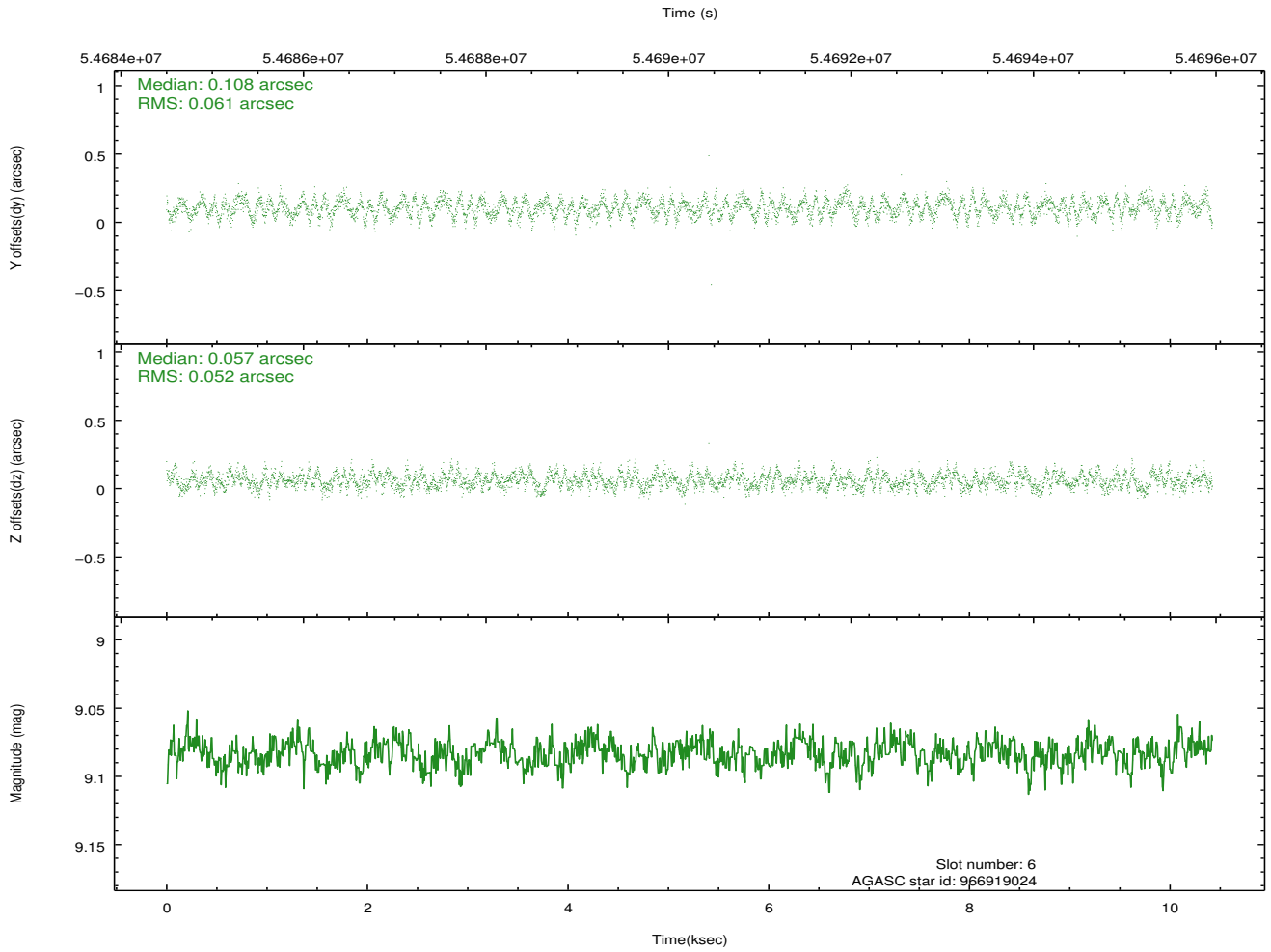
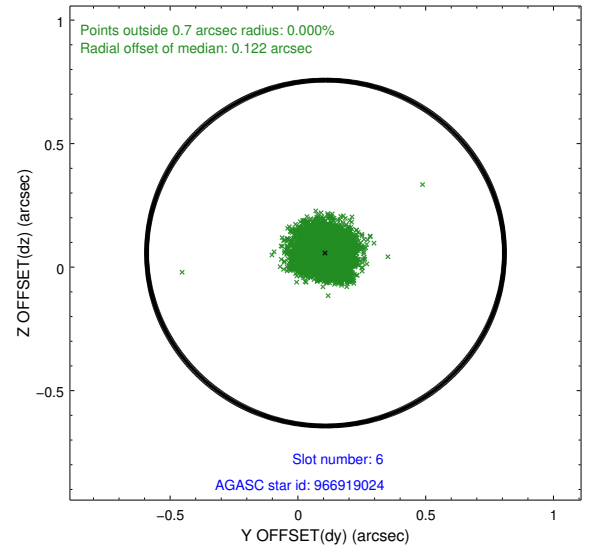
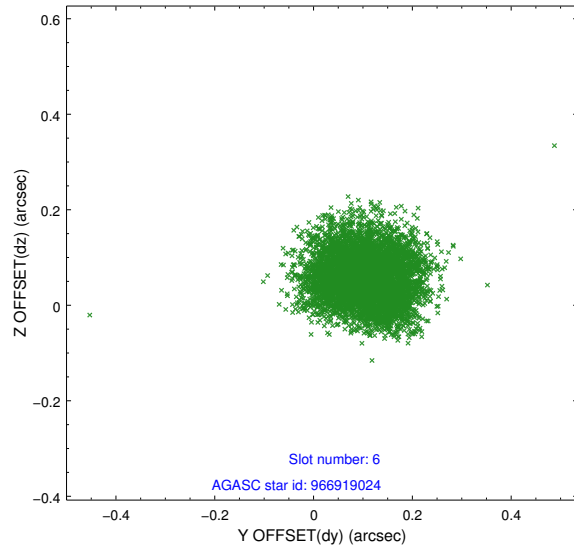
2.4.2 Slot 4



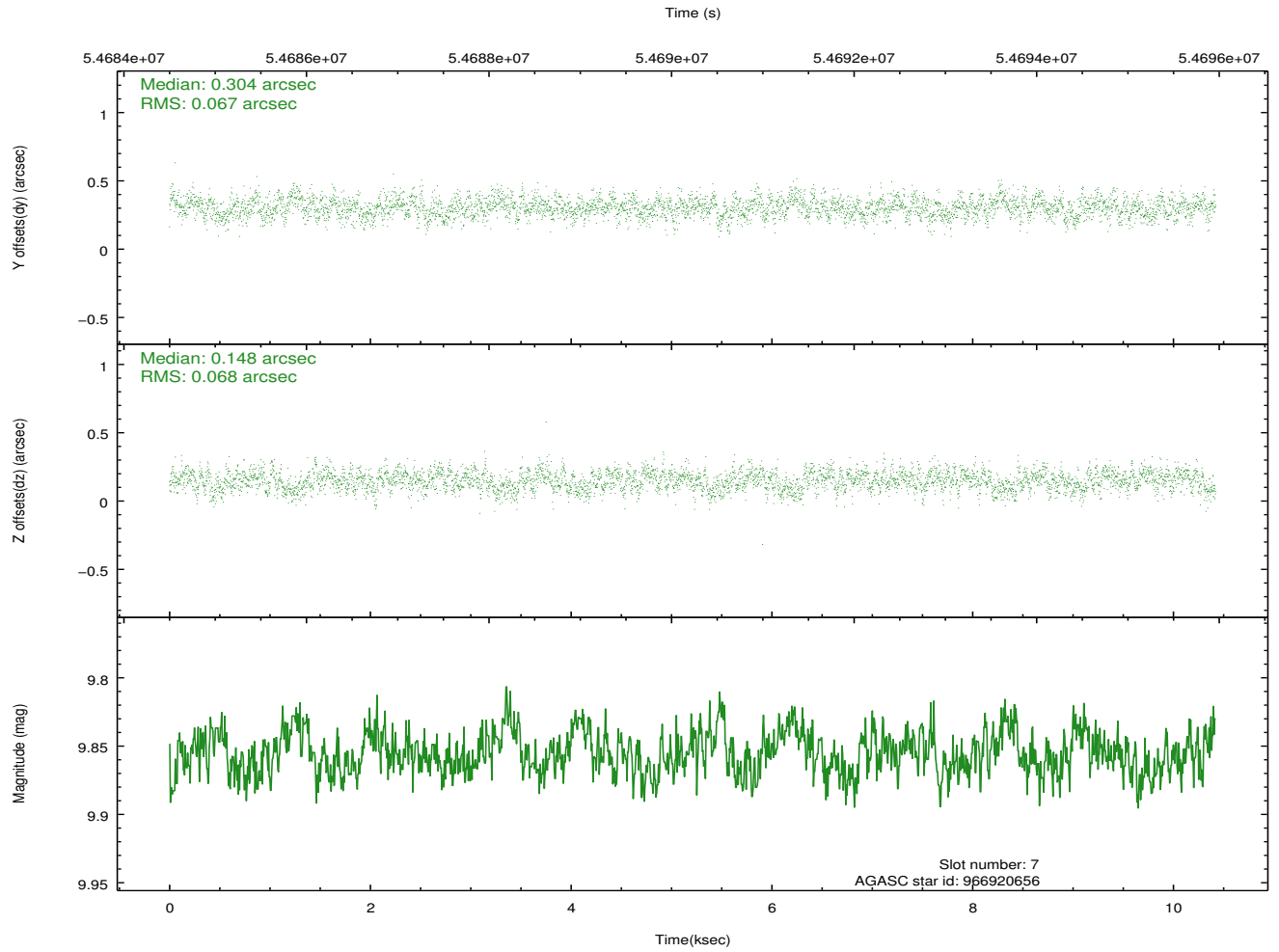
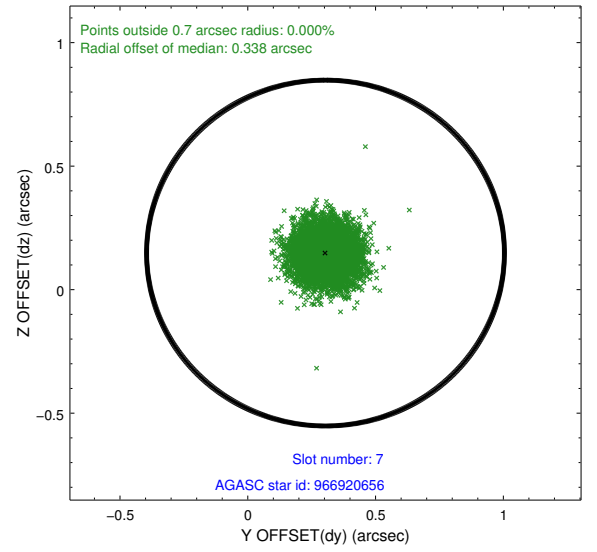
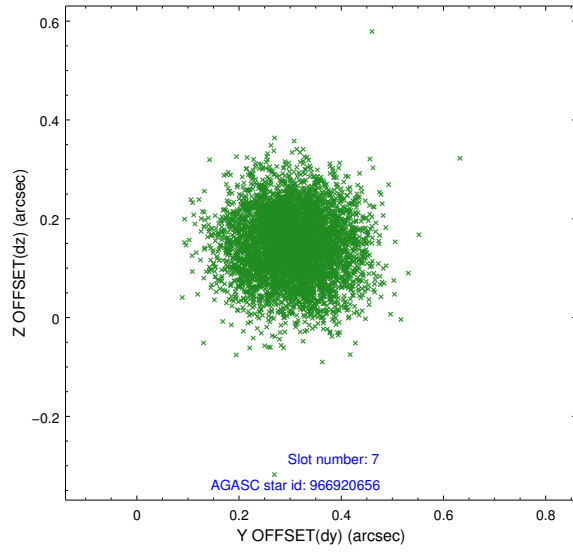
2.4.3 Slot 5



2.4.4 Slot 6

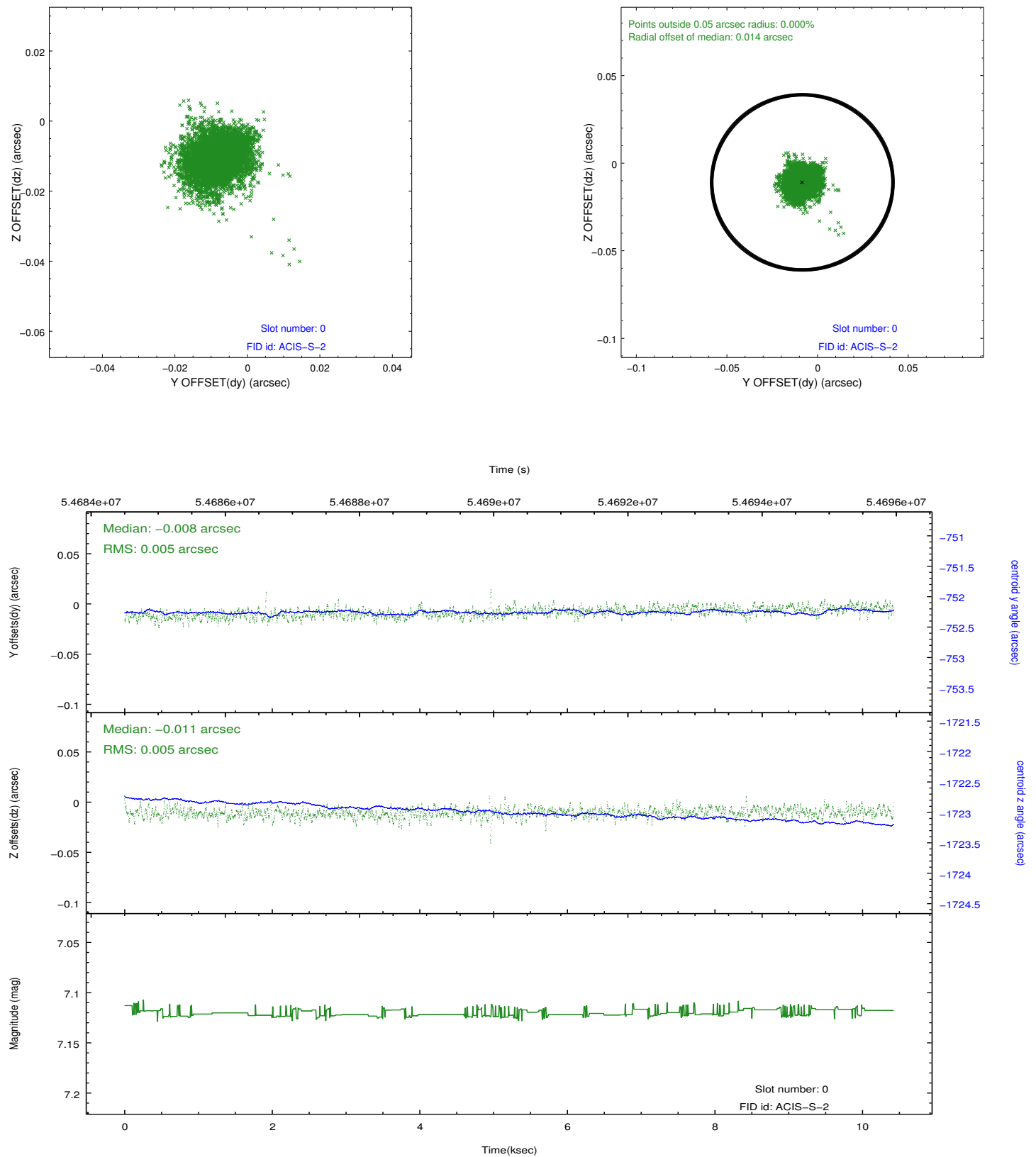


2.4.5 Slot 7

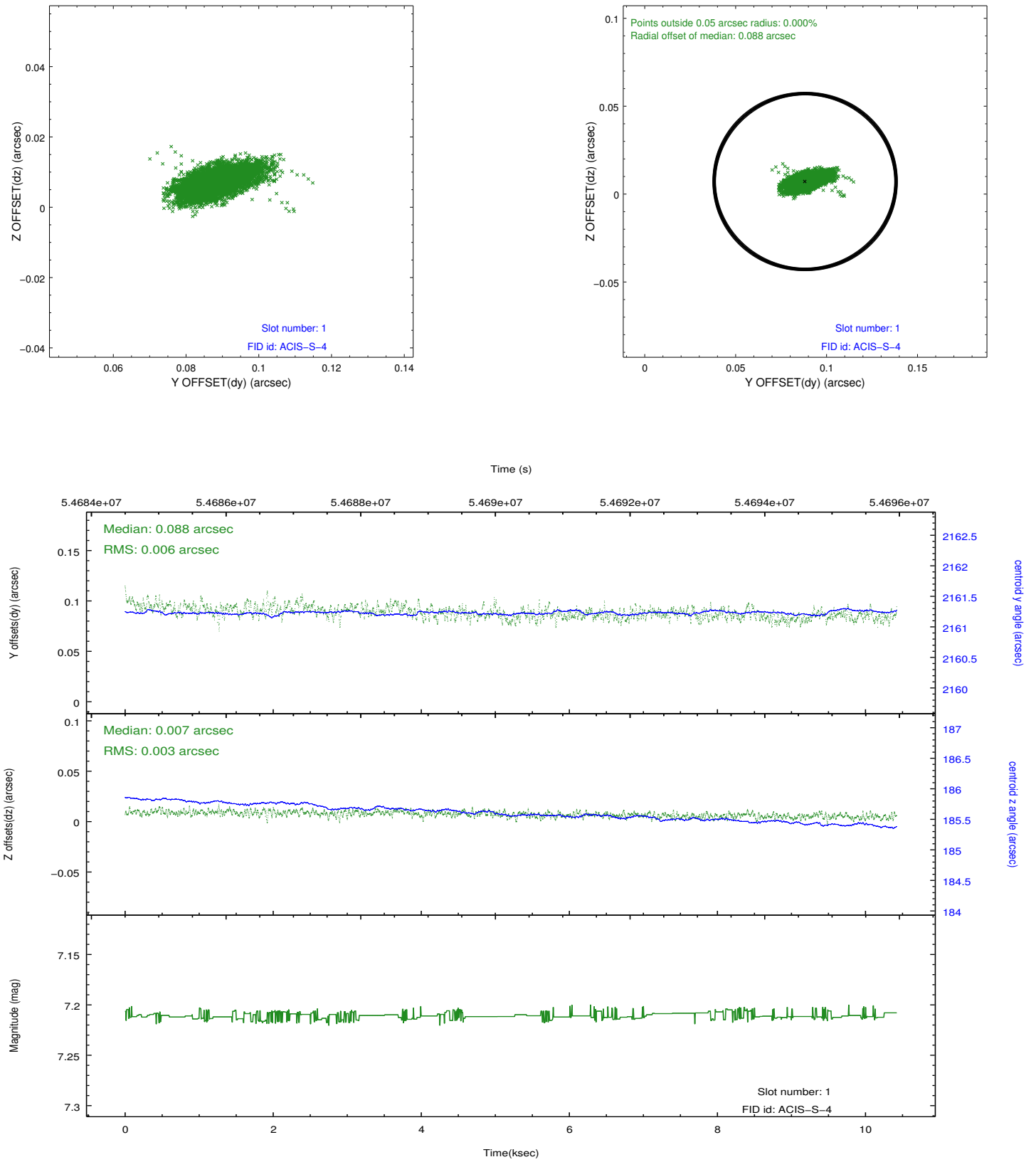


2.5 FID Slots

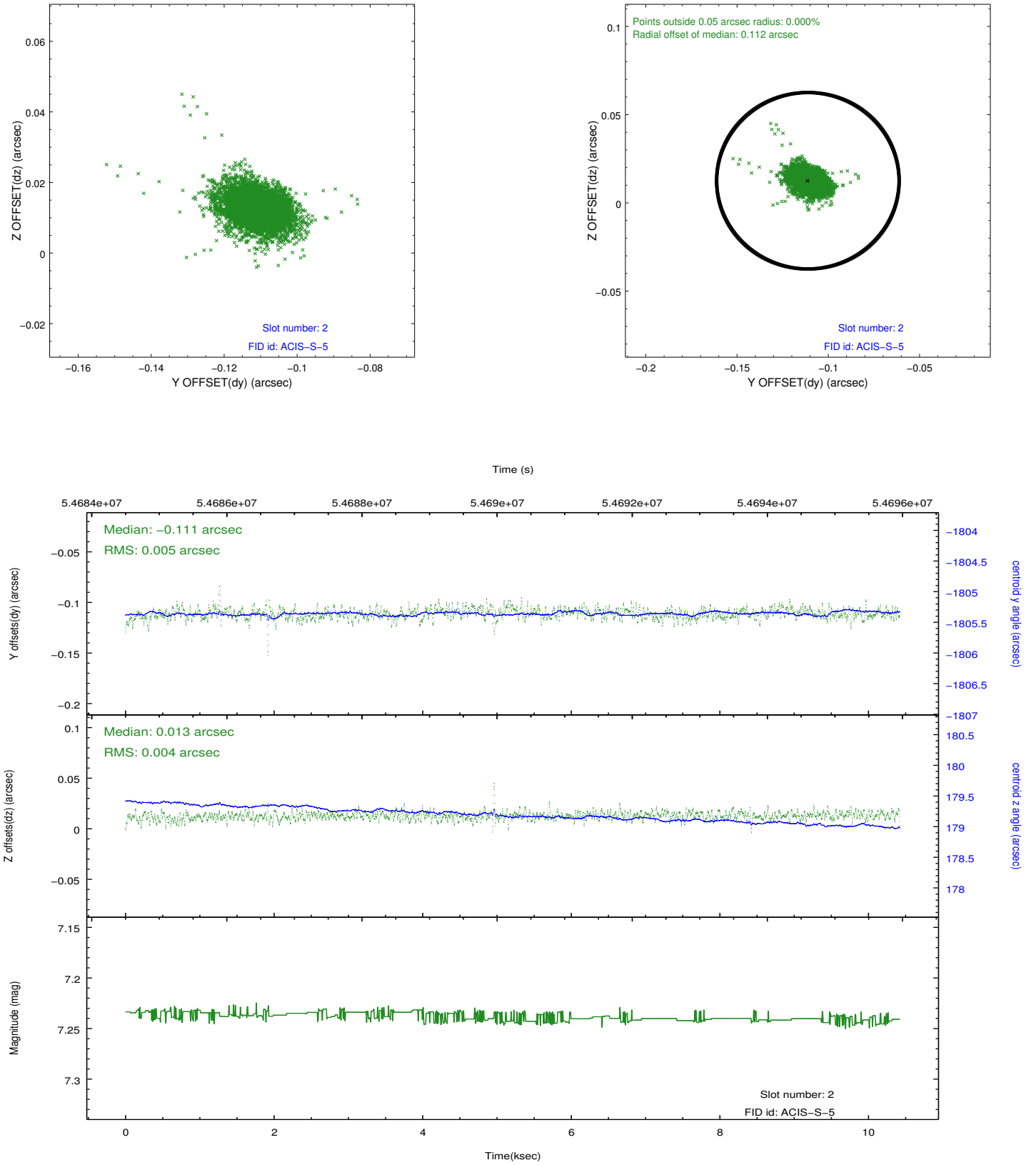
2.5.1 Slot 0



2.5.2 Slot 1



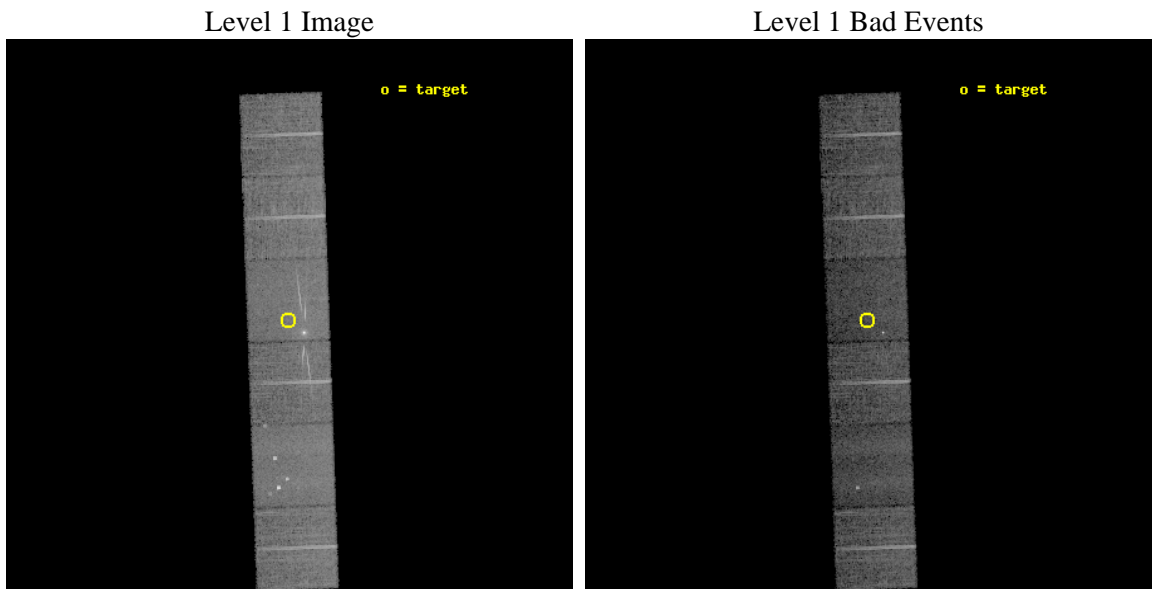
2.5.3 Slot 2



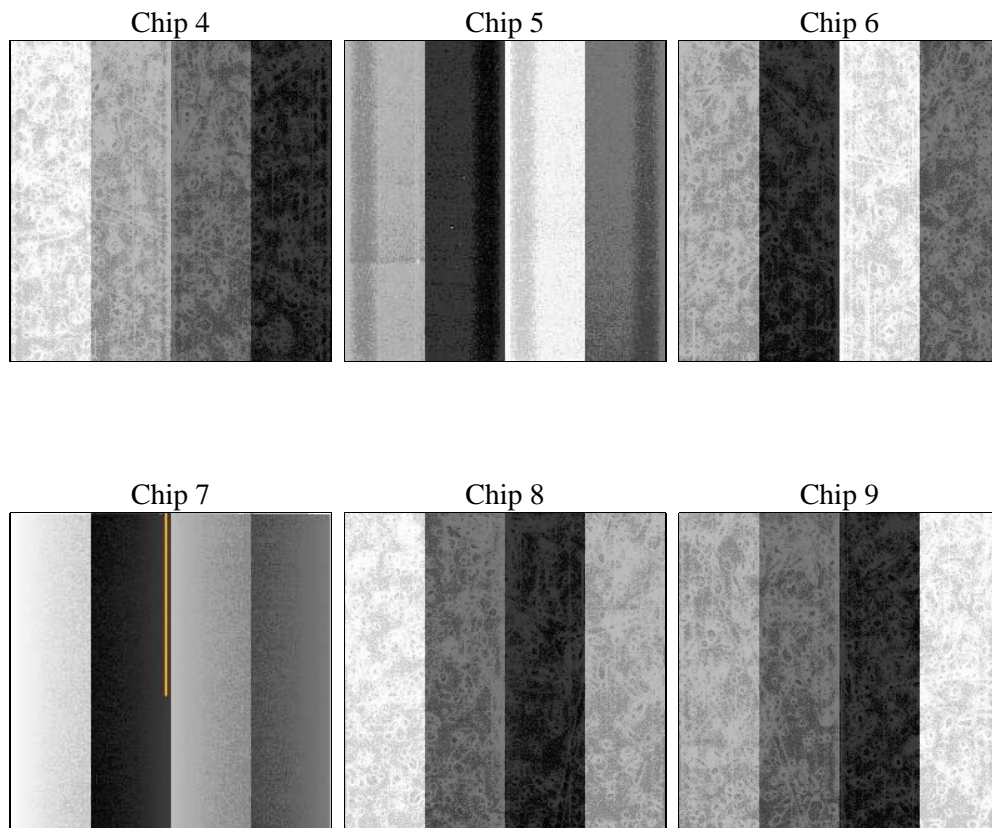
3 OBI Secondary

3.1 OBI

3.1.1 Images



3.1.2 Bias



3.1.3 Parameters

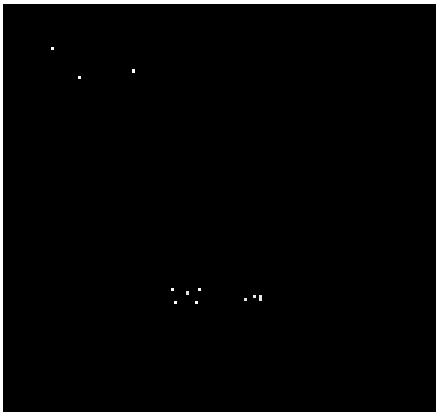
obi_num	0	Obi number	sched_exp_time	12360.000000	Scheduled observation exposure time
ascdsver	8.3.2.1	ASCDS version number	ontime	6701.9602519497	Sum of GTIs [s]
caldsver	4.3.1	 	ontime4	6701.9647602588	Sum of GTIs [s]
date	2010-09-28T12:14:51	Date and time of file creation	ontime5	6701.9616485909	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	6701.9624756873	Sum of GTIs [s]
			ontime7	6701.9602519497	Sum of GTIs [s]
			ontime8	6701.9640915692	Sum of GTIs [s]
			ontime9	6701.9632439315	Sum of GTIs [s]
			l1events	448998	Number of level 1 events

3.1.4 Events

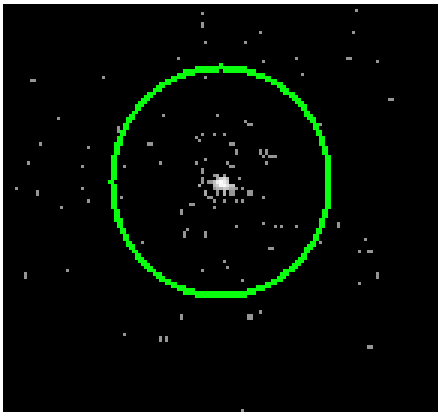
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	73577	81798	69356	81260	78463	64544	grade 0 events	1010	5920	1718	2893	3345	1443
rejected events	67567	45420	57330	43259	64762	57801		1%	7%	2%	3%	4%	2%
rejected %	91%	55%	82%	53%	82%	89%	grade 1 events	9	651	18	91	29	10
								0%	0%	0%	0%	0%	0%
							grade 2 events	2756	8396	6728	9340	4581	2753
								3%	10%	9%	11%	5%	4%
							grade 3 events	371	1130	484	2440	1032	442
								0%	1%	0%	3%	1%	0%
							grade 4 events	394	1071	461	2151	1032	415
								0%	1%	0%	2%	1%	0%
							grade 5 events	1008	3087	1300	4404	1850	1390
								1%	3%	1%	5%	2%	2%
							grade 6 events	1483	19893	2647	21236	3717	1696
								2%	24%	3%	26%	4%	2%
							grade 7 events	66546	41650	56000	38705	62877	56395
								90%	50%	80%	47%	80%	87%

4 Gratings

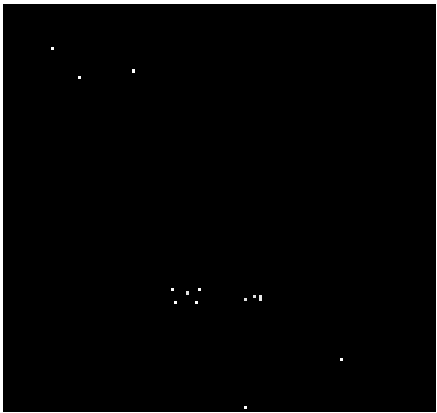
4.1 HEG Arm



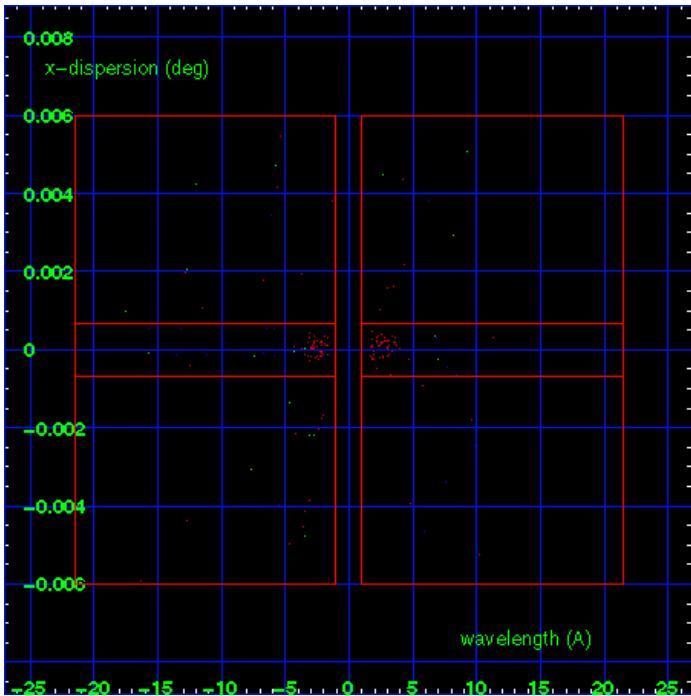
HEG Order Sort 123



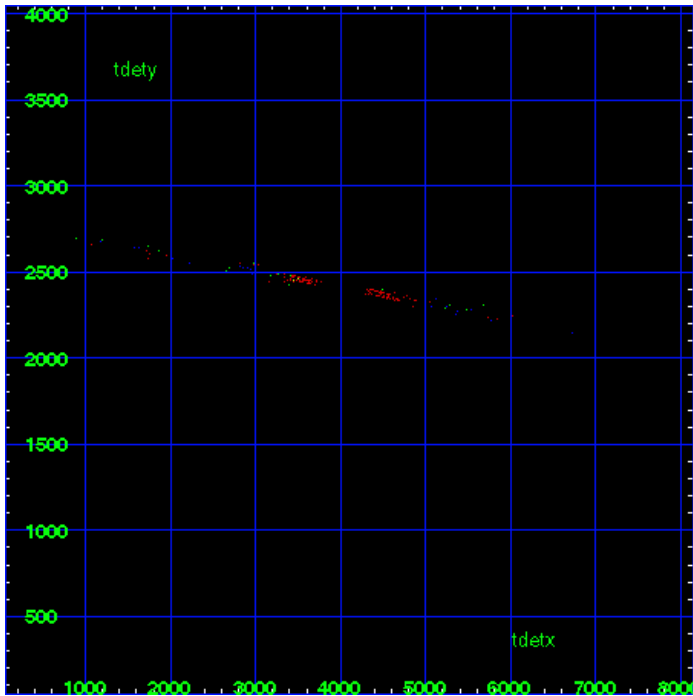
HEG Zero Order



HEG Order Sort ALL

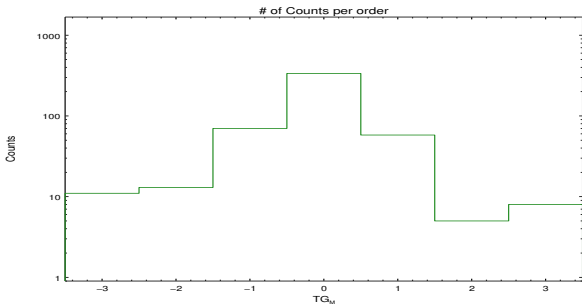


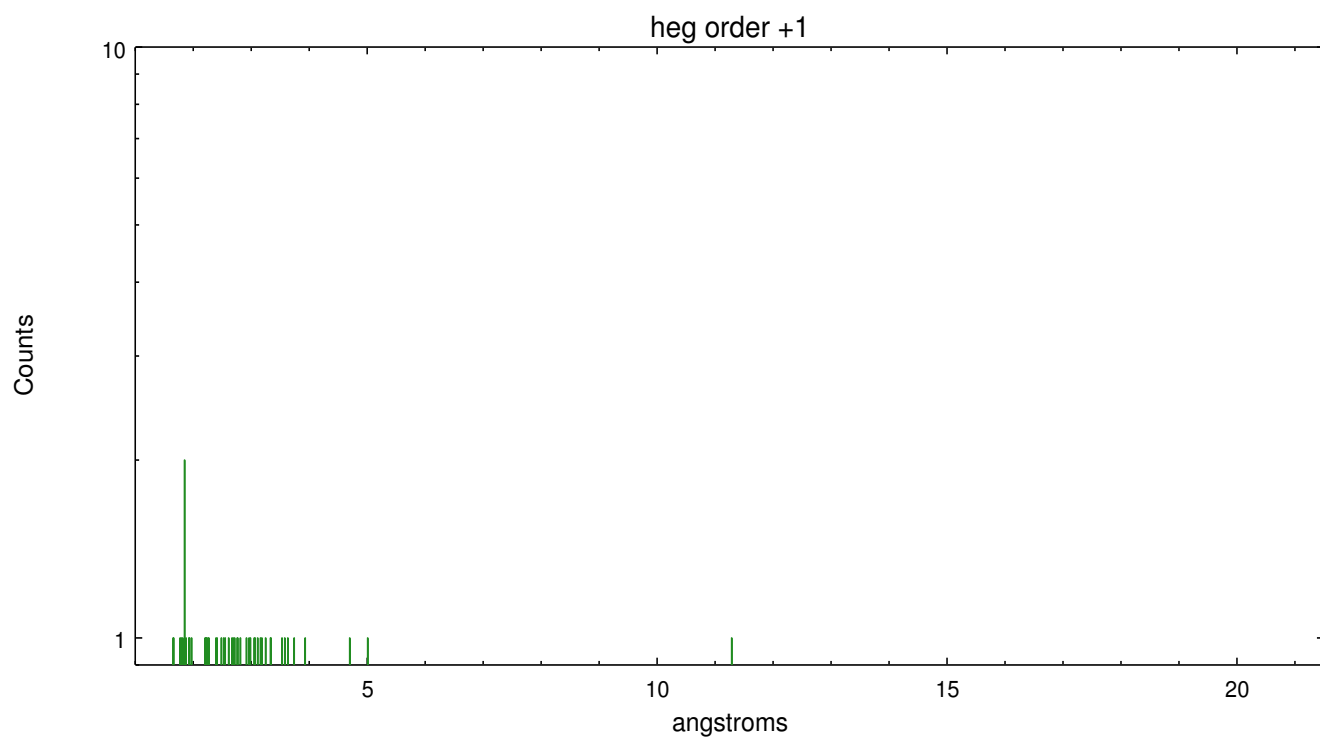
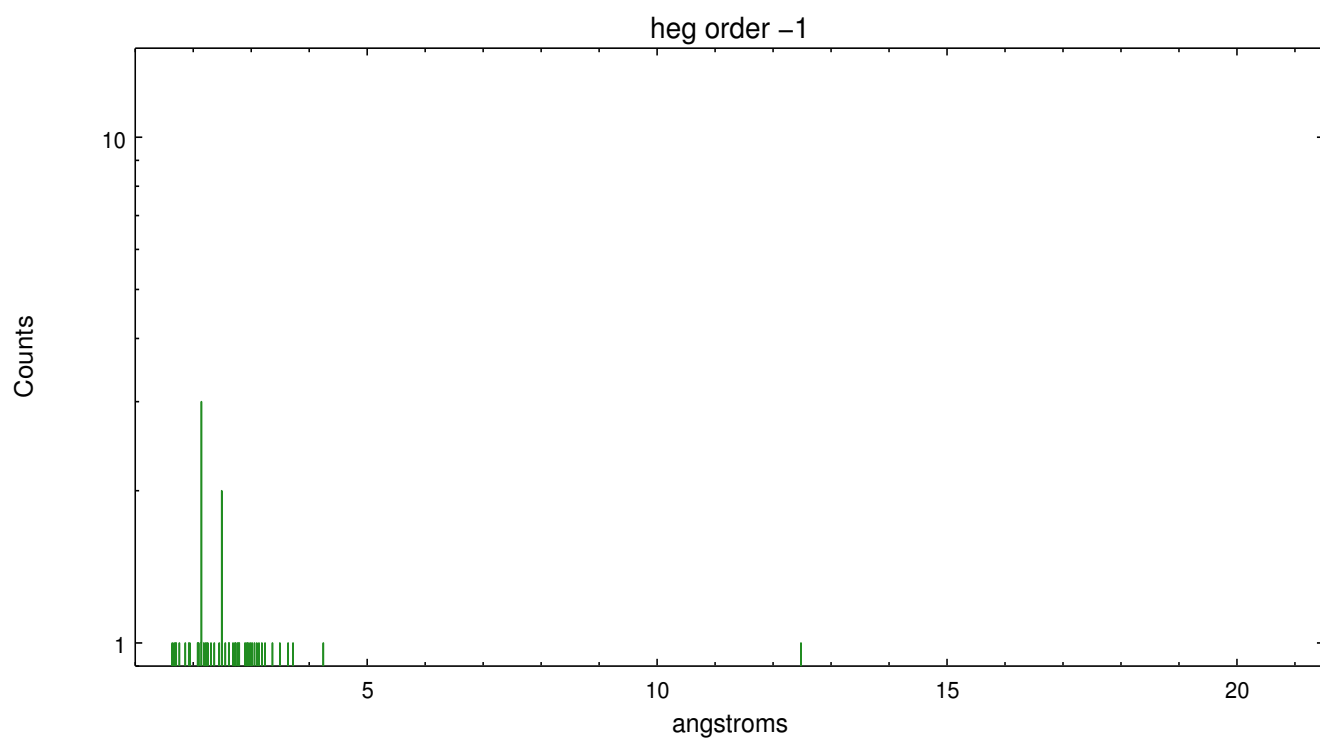
Spot Image HEG



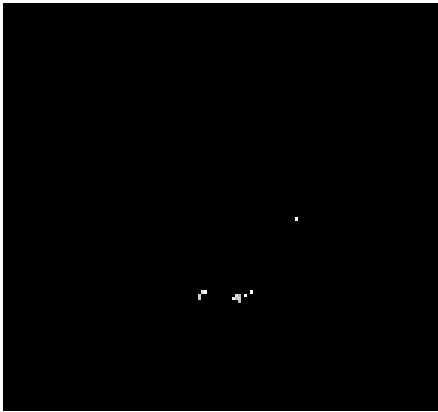
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	11	13	70	336	58	5	8

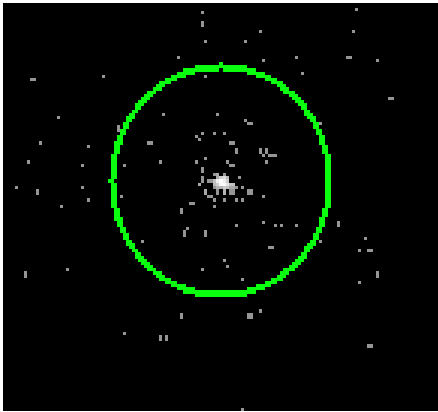




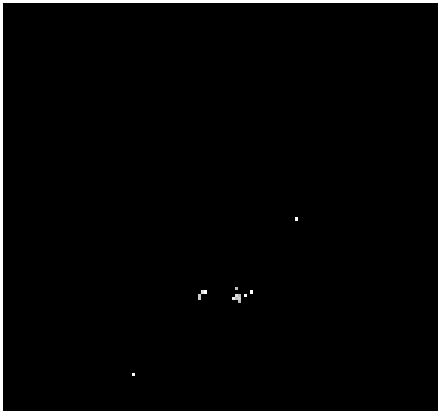
4.2 MEG Arm



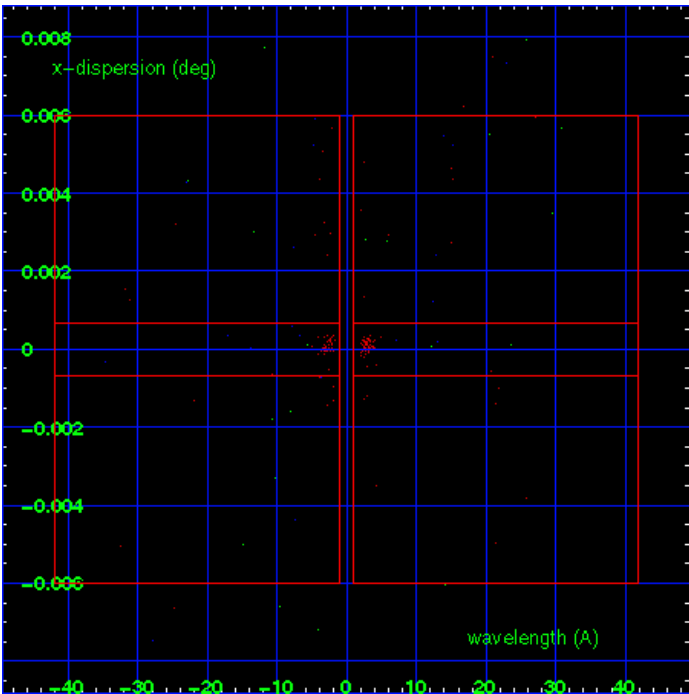
MEG Order Sort 123



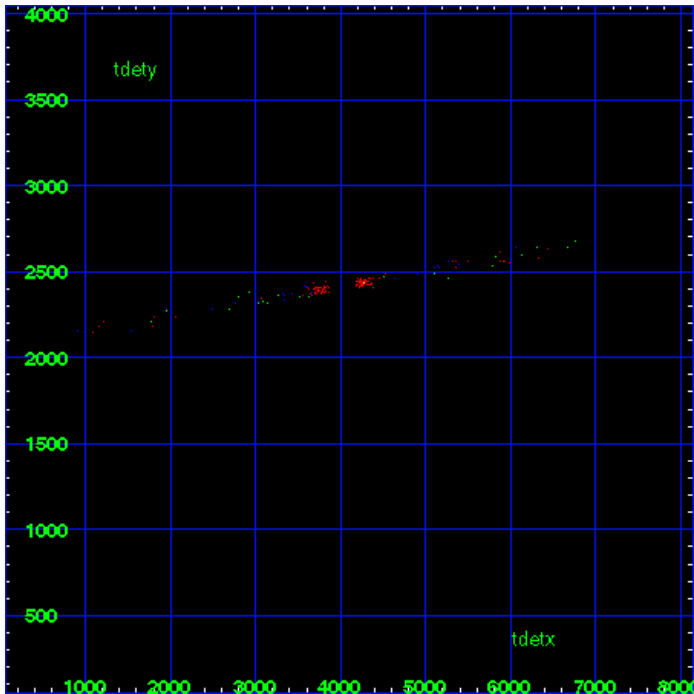
MEG Zero Order



MEG Order Sort ALL

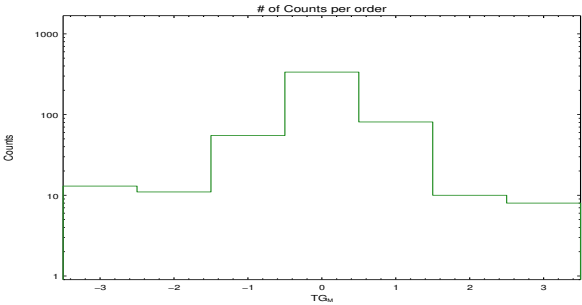


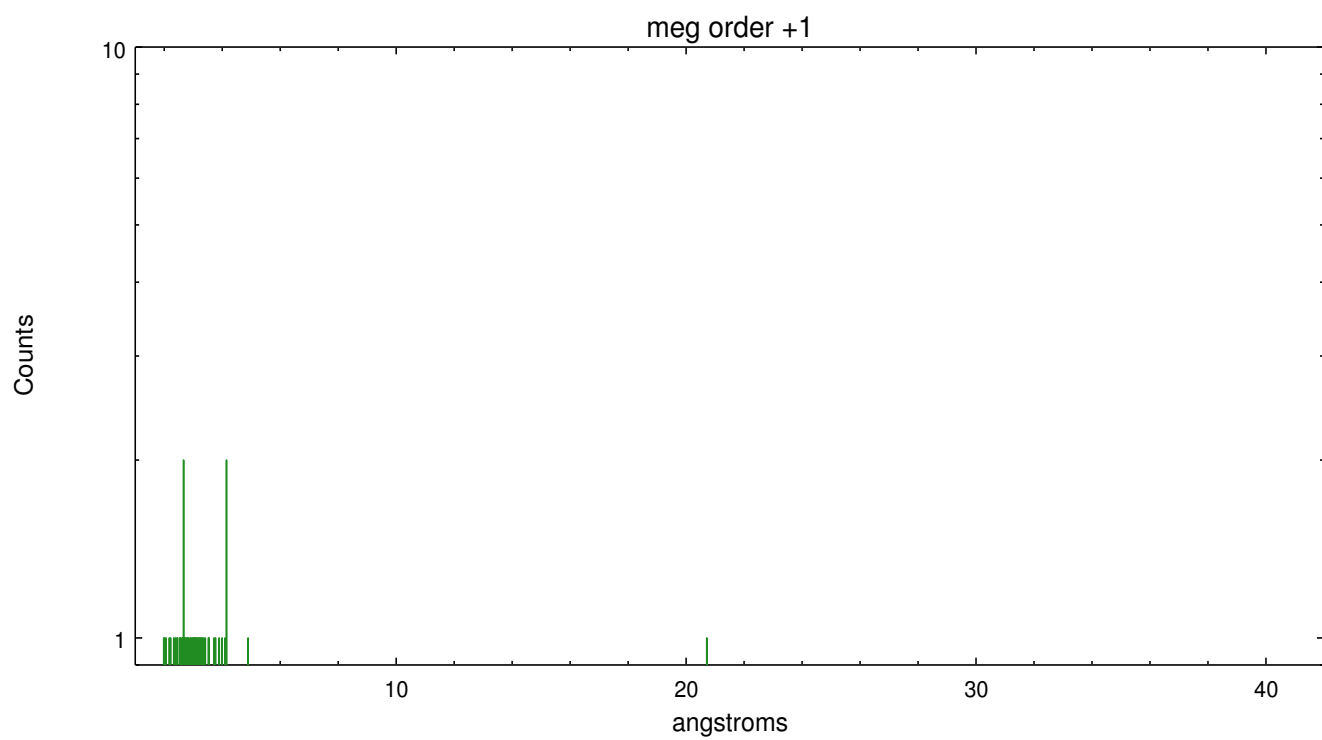
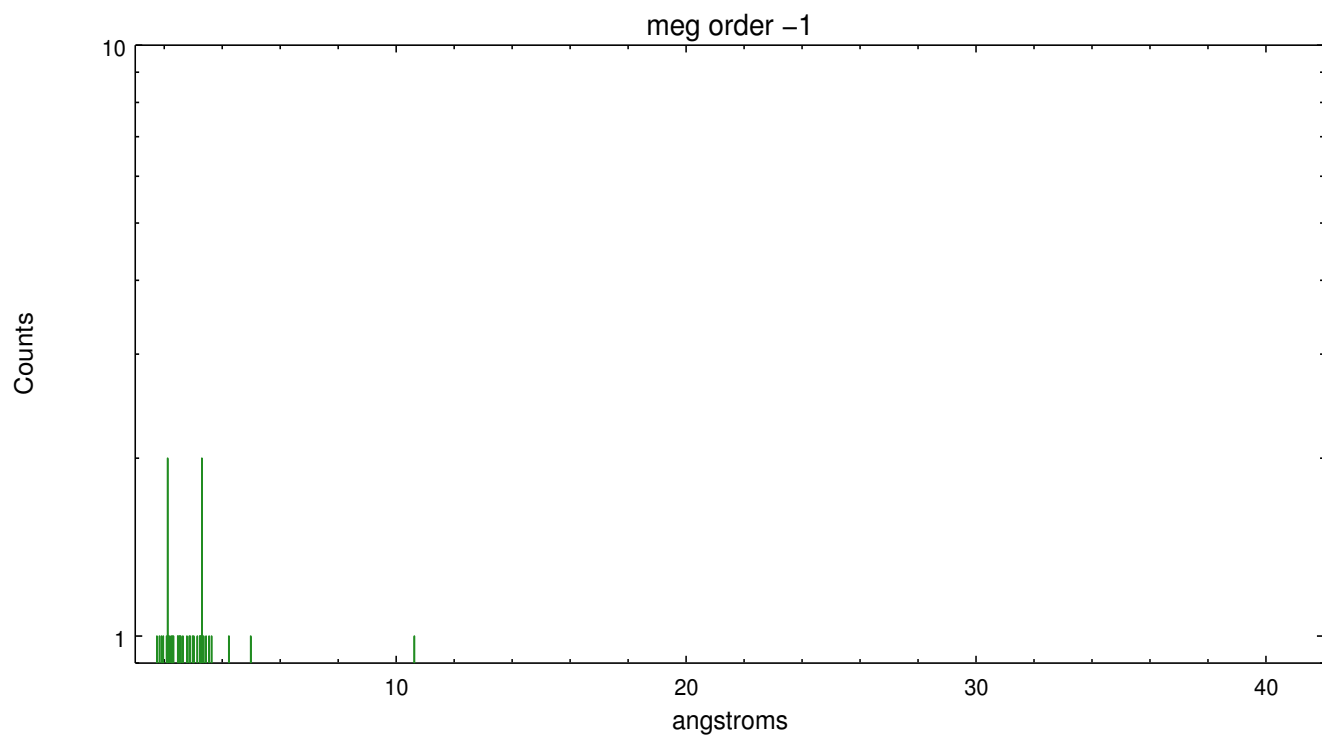
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	13	11	55	336	81	10	8





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2011.08.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.04

A.2 Comments

This observation was taken in VF mode, although it was originally planned as F mode.

===

This observation was taken in 'interleave' mode. Long and short exposures alternate throughout the observation. The primary exposure is 0.3 s long and the secondary exposure is 3.3 s long. Interleave mode is intended to allow analysis of both strong and weak sources while mitigating pileup.

===

Significant error in user-supplied coordinates caused target to be displaced from aim point by about 2 arcmin toward the SW. Due to this displacement, the software tool that locates the zeroth order, tgdetect, was unsuccessful and had to be manually seeded with a starting search position.

===

The zeroth order position for the secondary (longer) exposure was determined as described above with tgdetect. The zeroth order for the primary (shorter) exposure was manually forced to match the zeroth order position for the secondary exposure, thus ensuring the wavelength assignments match between the 2 types of exposures.