

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 22139 - L2 Version 2
Chandra X-Ray Center

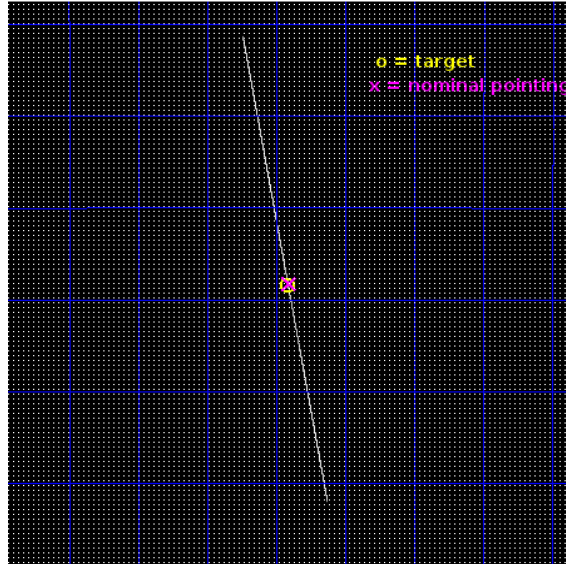
L2 Processing Date : Mar 5 2019

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1 Front

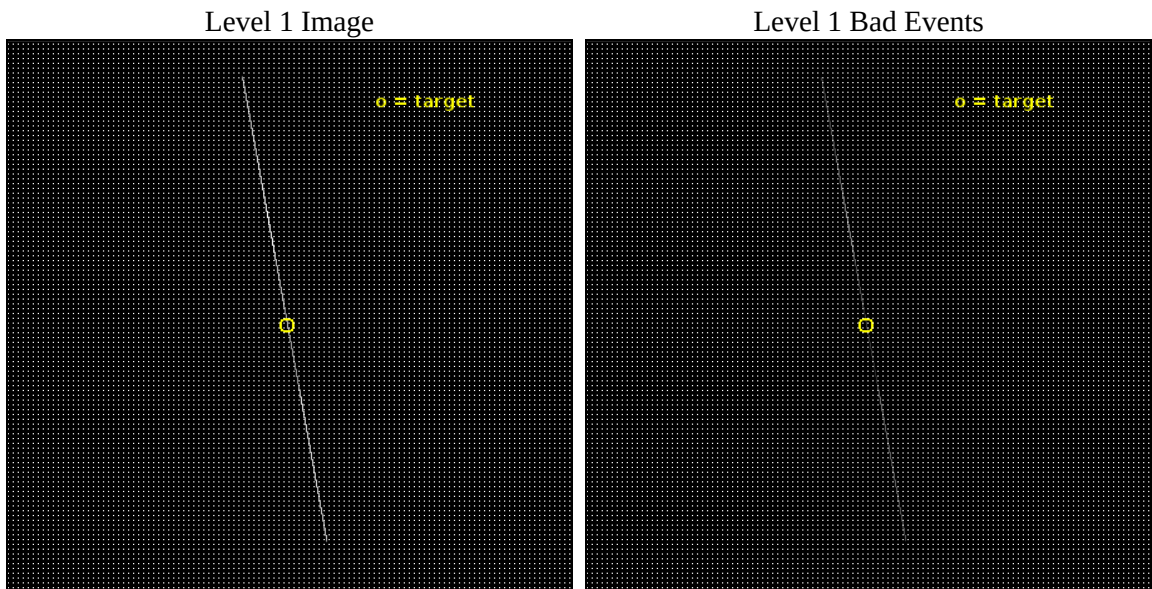
seq_num	402095	Sequence number
obs_id	22139	Observation id
title	Probing the disc-jet coupling in the neutron star binary Sco X-1	P
observer	Sara Motta	Principal investigator
object	Sco X-1	Source name
ra_targ	244.979583	Observer's specified target RA [deg]
dec_targ	-15.640278	Observer's specified target Dec [deg]
ra_nom	244.97637137531	Nominal RA [deg]
dec_nom	-15.638059119131	Nominal Dec [deg]
roll_nom	80.055754993152	Nominal Roll [deg]
revision	2	Processing version of data
ontime	21326.253099442	Sum of GTIs [s]
livetime	21242.947423272	Livetime [s]
ontime4	15776.188952208	Sum of GTIs [s]
ontime5	12574.755585313	Sum of GTIs [s]
ontime6	8938.4560751915	Sum of GTIs [s]
ontime7	21326.253099442	Sum of GTIs [s]
ontime8	12150.119876146	Sum of GTIs [s]
ontime9	14449.130502582	Sum of GTIs [s]
l2events	4326613	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	25500.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	21326.253099442	Sum of GTIs [s]
caldsver	4.8.2	 	ontime4	15776.188952208	Sum of GTIs [s]
date	2019-03-05T23:20:00	Date and time of file creation	ontime5	12574.755585313	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	8938.4560751915	Sum of GTIs [s]
			ontime7	21326.253099442	Sum of GTIs [s]
			ontime8	12150.119876146	Sum of GTIs [s]
			ontime9	14449.130502582	Sum of GTIs [s]
			l1events	9495134	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			ra_pos	(4078.66, 4052.60)	src1a sky pixel position

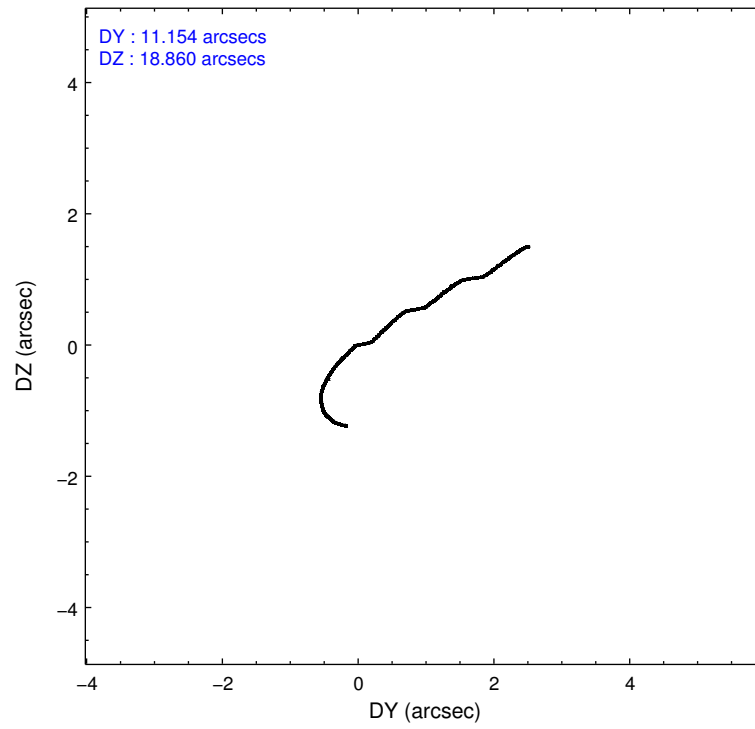
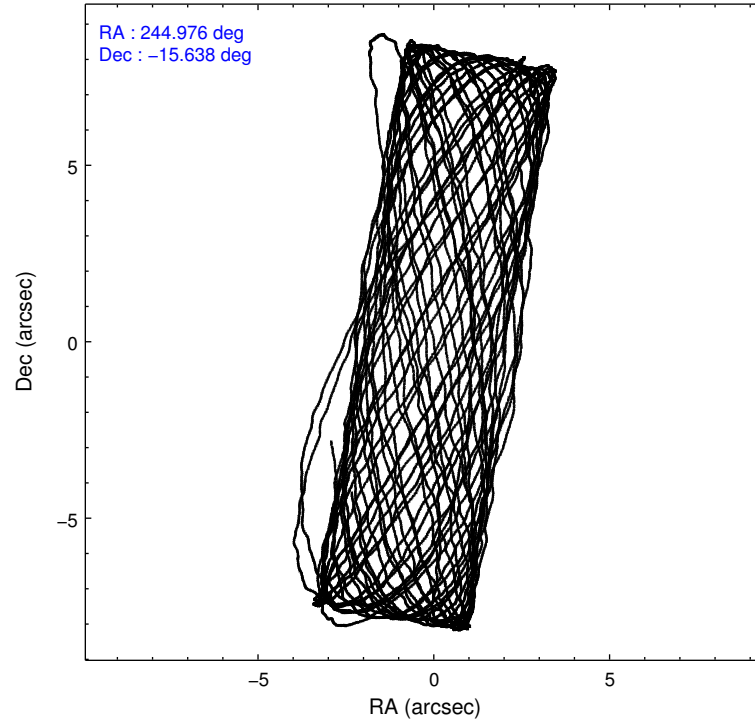
2.1.3 Events

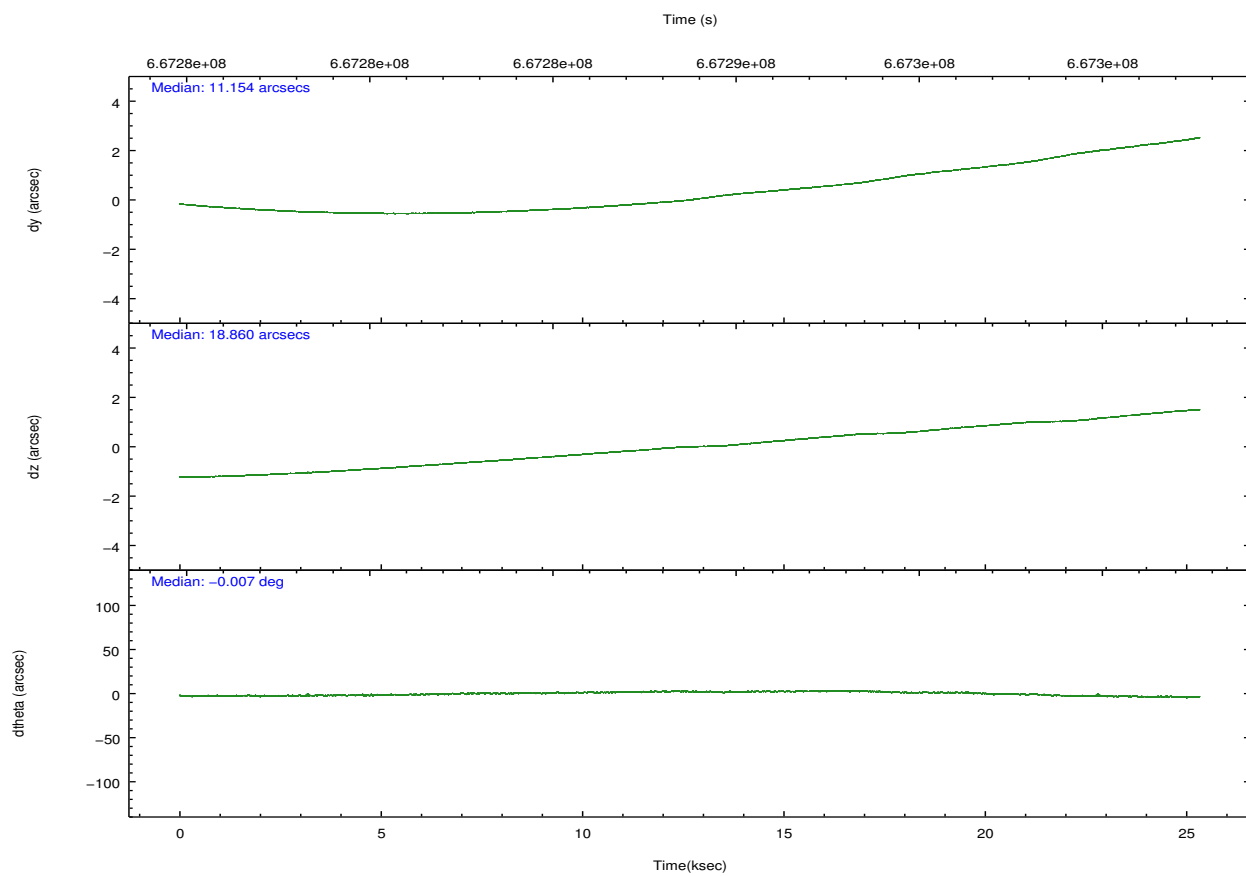
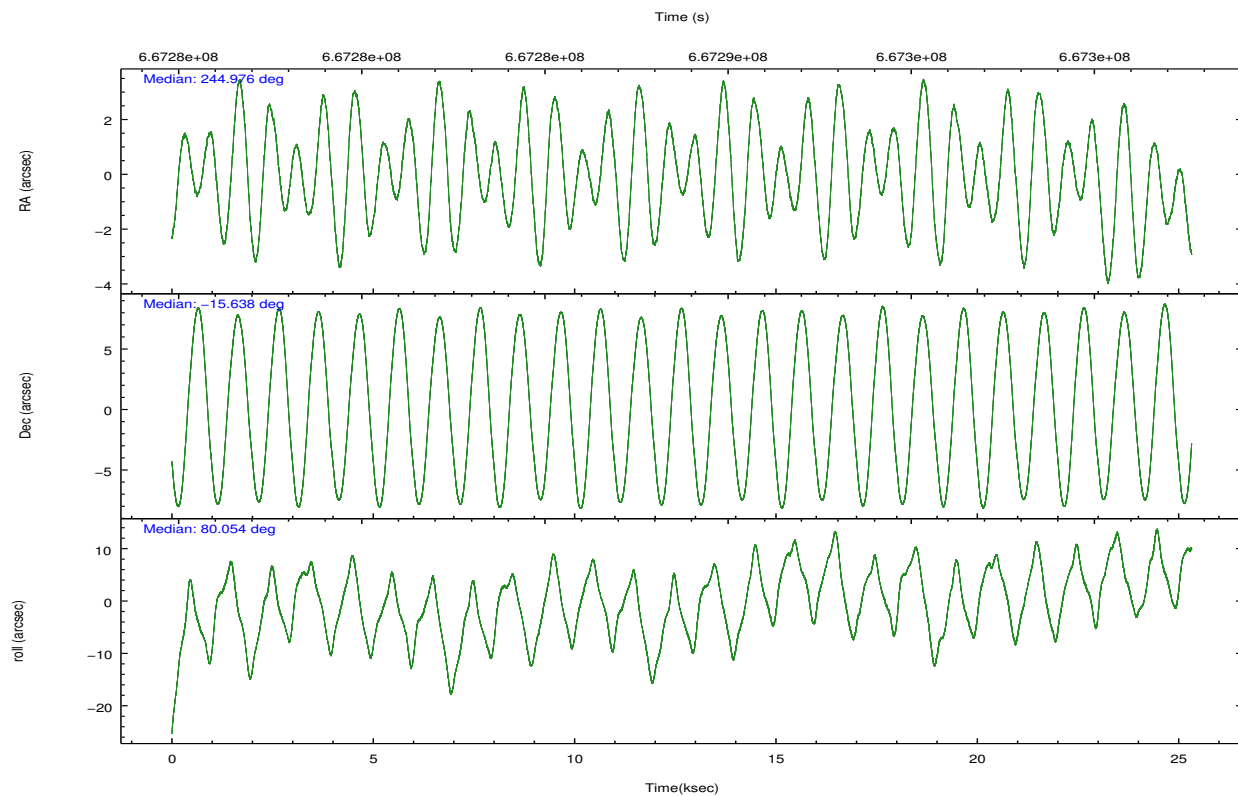
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	831147	3316468	2240862	261784	1666191	1178682	grade 0 events	51727	687842	1451084	34261	1140707	489018
rejected events	12534	63573	36415	3772	25552	16587		6%	20%	64%	13%	68%	41%
rejected %	1%	1%	1%	1%	1%	1%	grade 1 events	179	2565	12068	113	5719	1079
								0%	0%	0%	0%	0%	0%
							grade 2 events	690237	1372809	531715	87527	350473	561678
								83%	41%	23%	33%	21%	47%
							grade 3 events	5011	203423	61814	18929	45491	25243
								0%	6%	2%	7%	2%	2%
							grade 4 events	5010	200145	61380	18096	45106	25345
								0%	6%	2%	6%	2%	2%
							grade 5 events	10859	51192	16209	3466	14481	12769
								1%	1%	0%	1%	0%	1%
							grade 6 events	68124	798492	106592	99392	64214	63550
								8%	24%	4%	37%	3%	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	244.986507	244.9763713753098	Subarray requested	NONE	NONE
[deg] Pointing Dec	-15.663689	-15.63805911913095	Alternating exposures requested	N	N
[deg] Pointing Roll	79.901869	80.05575499315214	[s] Primary exposure time	0.000000	0
[s] Window start time (MET)	667094529.184000	667094529.184000			
[s] Window stop time (MET)	667461669.184000	667461669.184000			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-175.932523	-175.9417275419626			
[mm] SIM translation stage offset	-14.2	-14.19079504104525			
[s] Observation start time (MET)	667275911.184000	667276085.7612			
Observation start date	2019-02-23T02:24:02	2019-02-23T02:28:05			
[s] Observation end time (MET)	667301411.184000	667301544.71272			
Observation end date	2019-02-23T09:29:02	2019-02-23T09:32:24			
Read mode	CONTINUOUS	CONTINUOUS			

2.3 Aspect



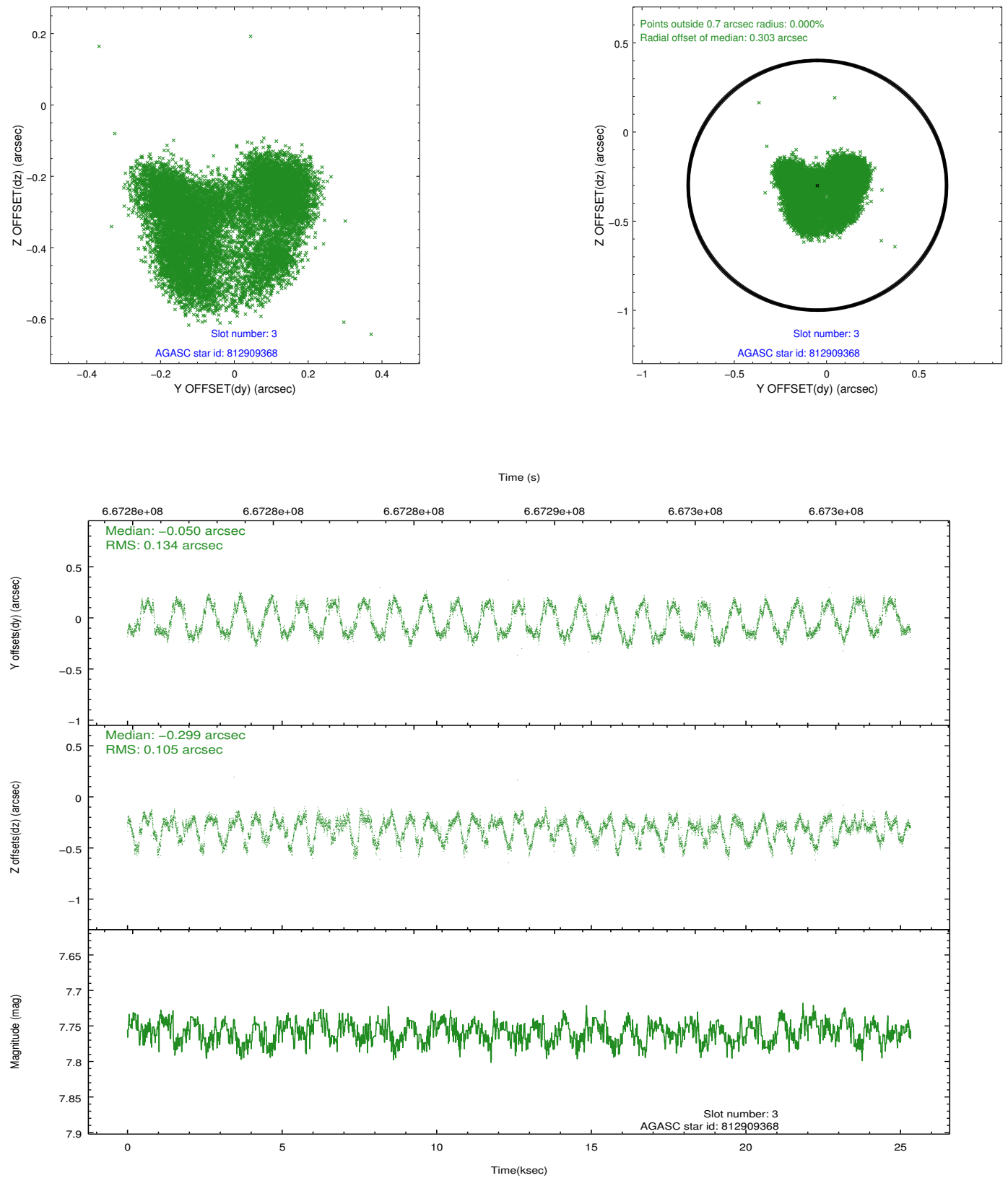


Slot Statistics

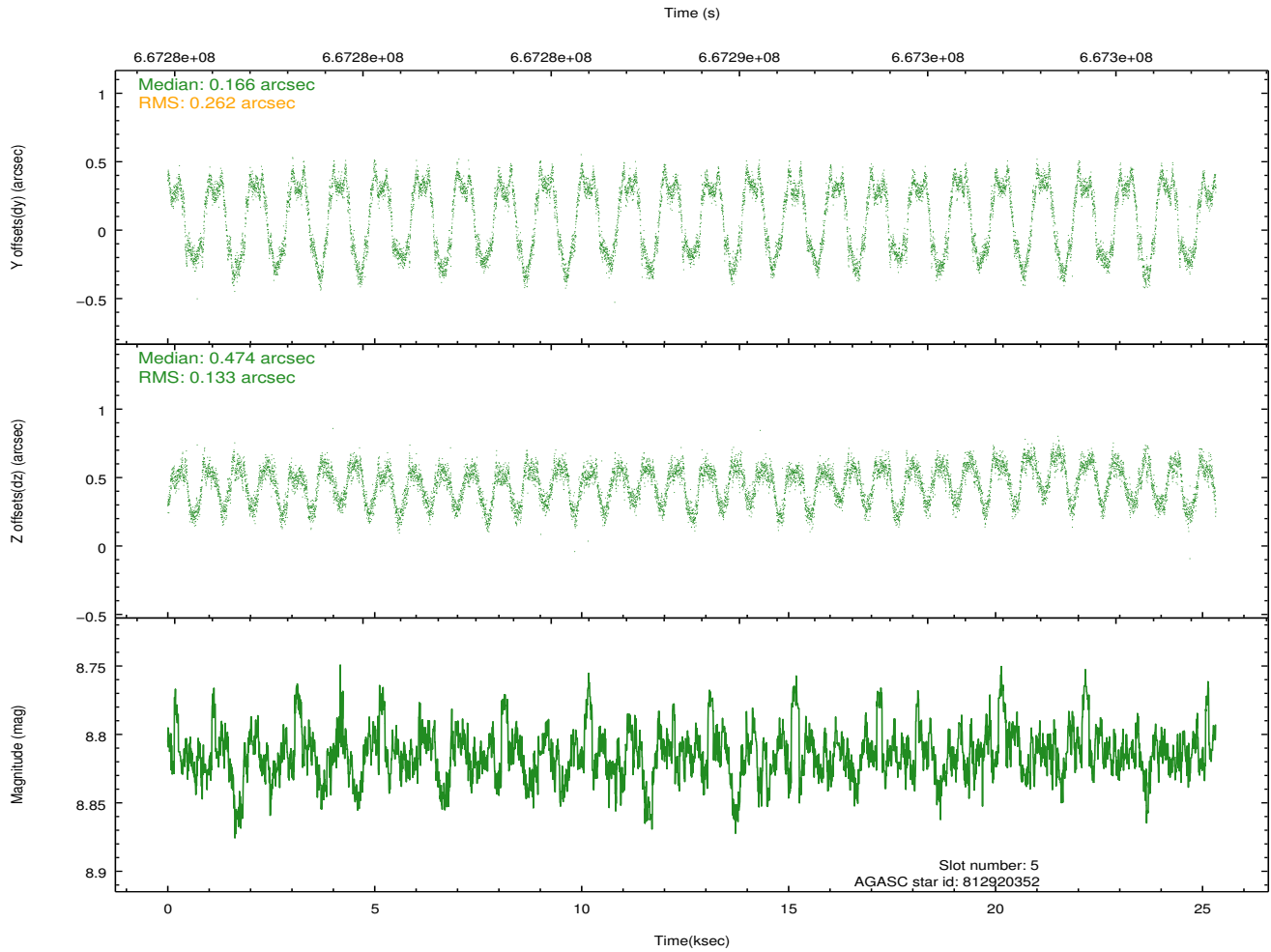
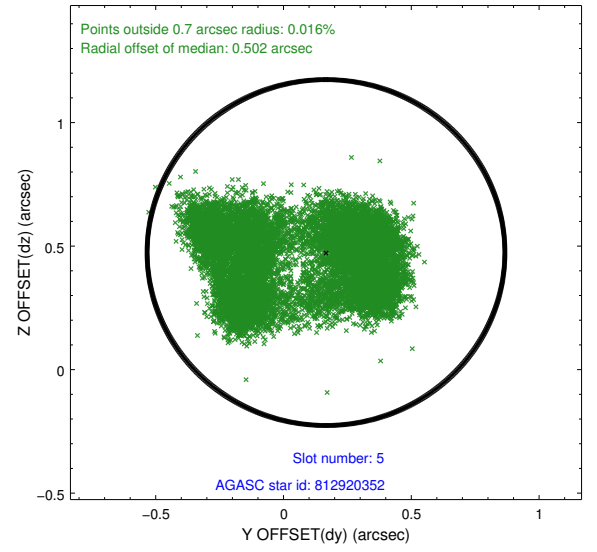
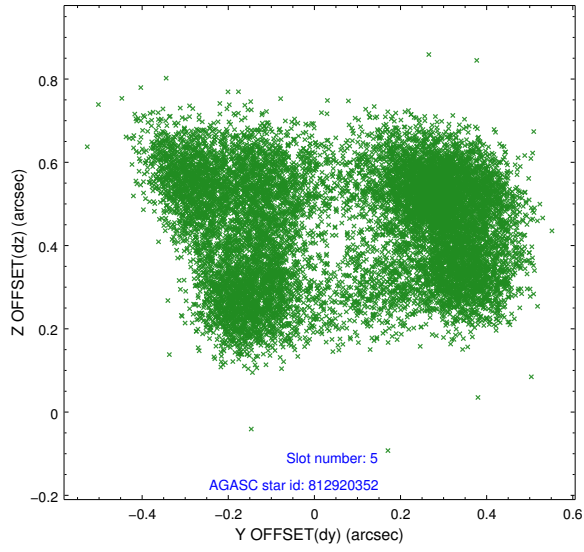
slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.10	6177	1.000	-0.372	-0.560	0.028	0.041	0.000000	0.000000	-763.63	-2032
1	FID		ACIS-S-4	7.16	6177	1.000	0.738	0.328	0.014	0.027	0.000000	0.000000	2150.62	-123
2	FID		ACIS-S-5	7.25	6176	1.000	-0.395	0.239	0.018	0.028	0.000000	0.000000	-1816.44	-130
3	GUIDE	used	812909368	7.76	12350	1.000	-0.050	-0.299	0.193	0.253	244.337230	-15.327996	791.03	2429
4	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
5	GUIDE	used	812920352	8.81	12344	1.000	0.166	0.474	0.325	0.479	244.854466	-15.546040	336.77	525
6	GUIDE	used	812914616	9.58	12207	1.000	-0.060	-0.129	0.194	0.296	244.358365	-15.447124	382.18	2281
7	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0

2.4 Star Slots

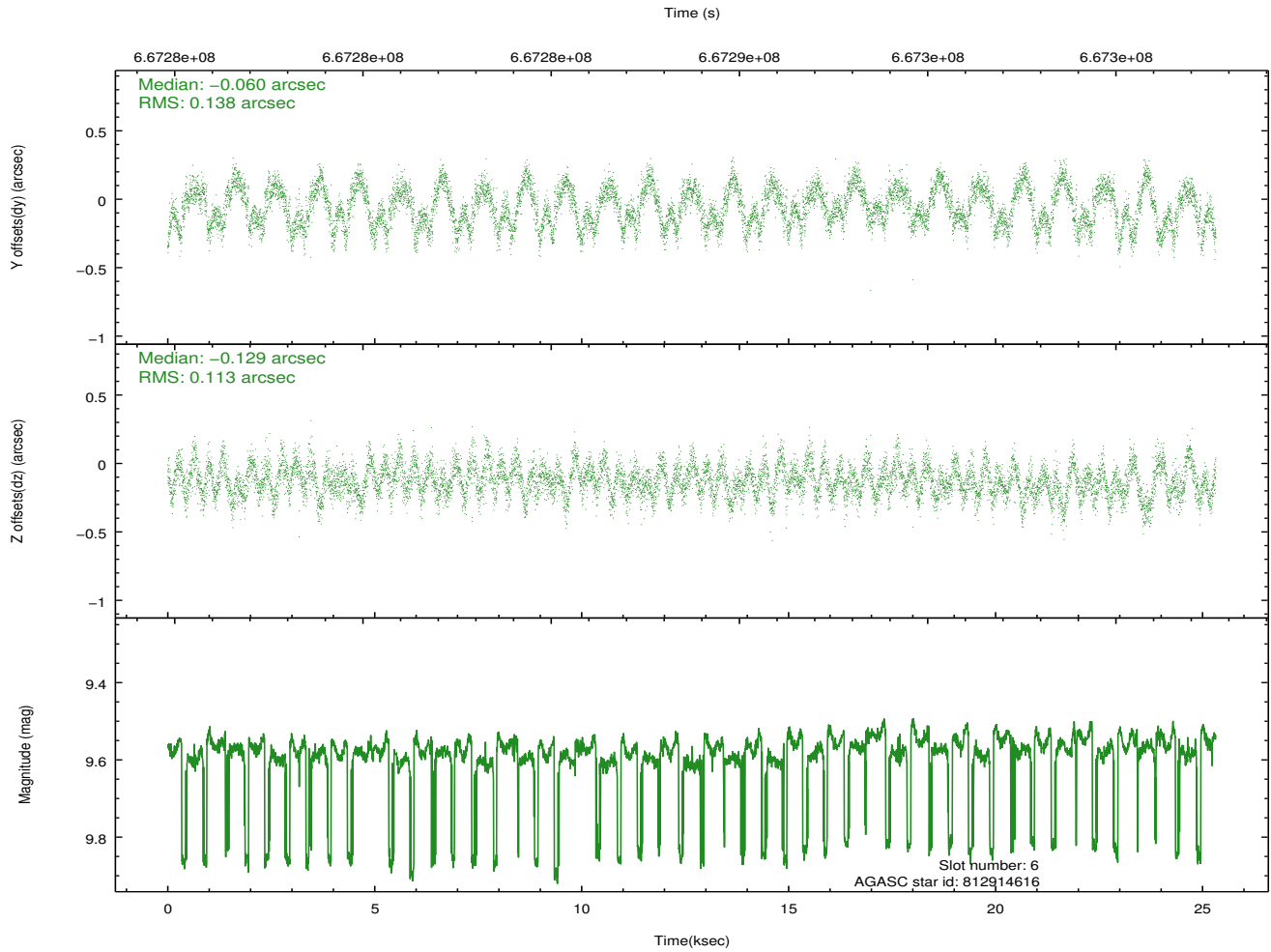
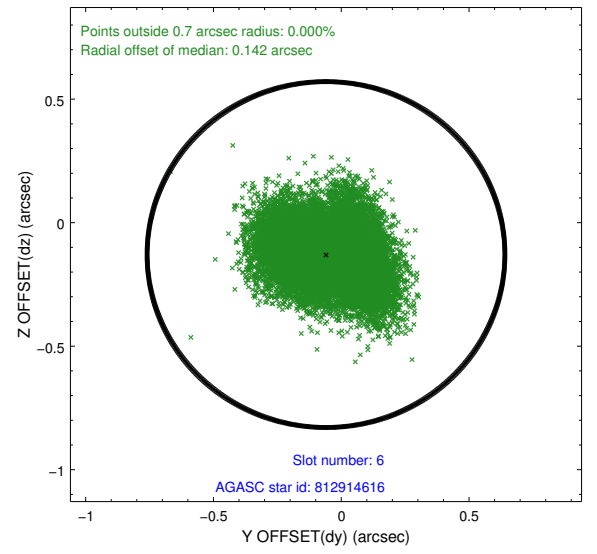
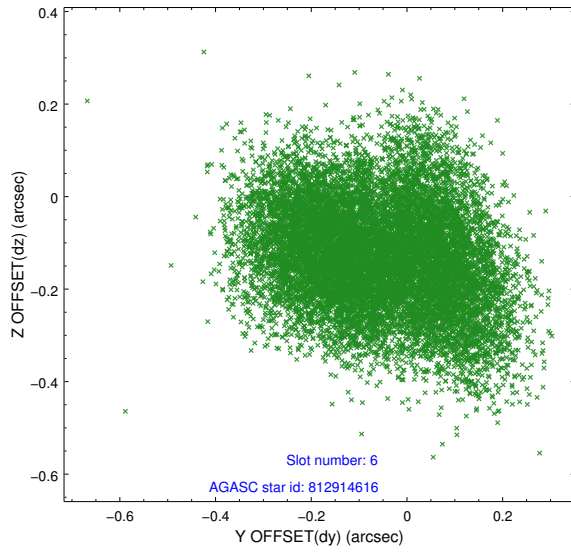
2.4.1 Slot 3



2.4.2 Slot 5

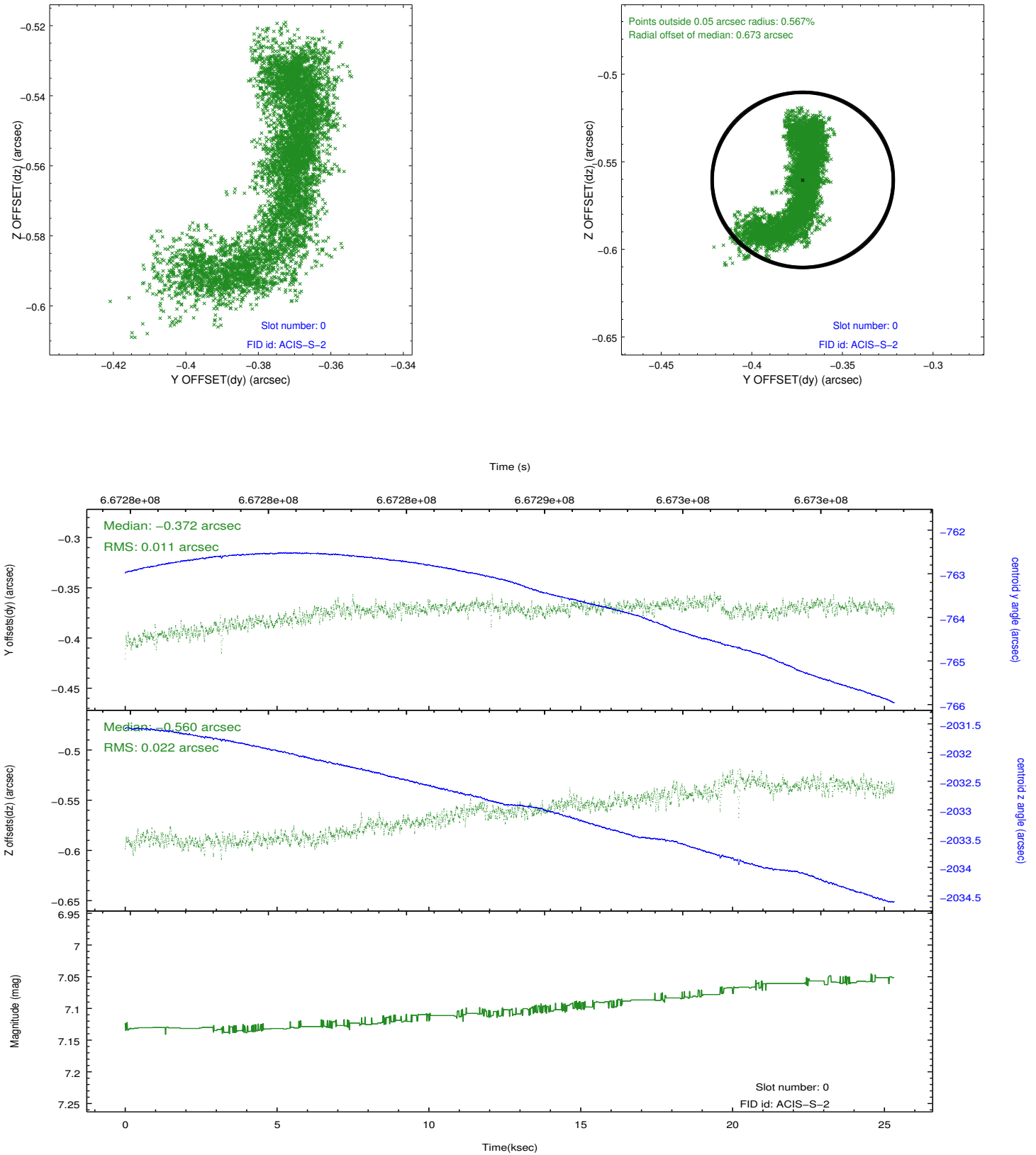


2.4.3 Slot 6

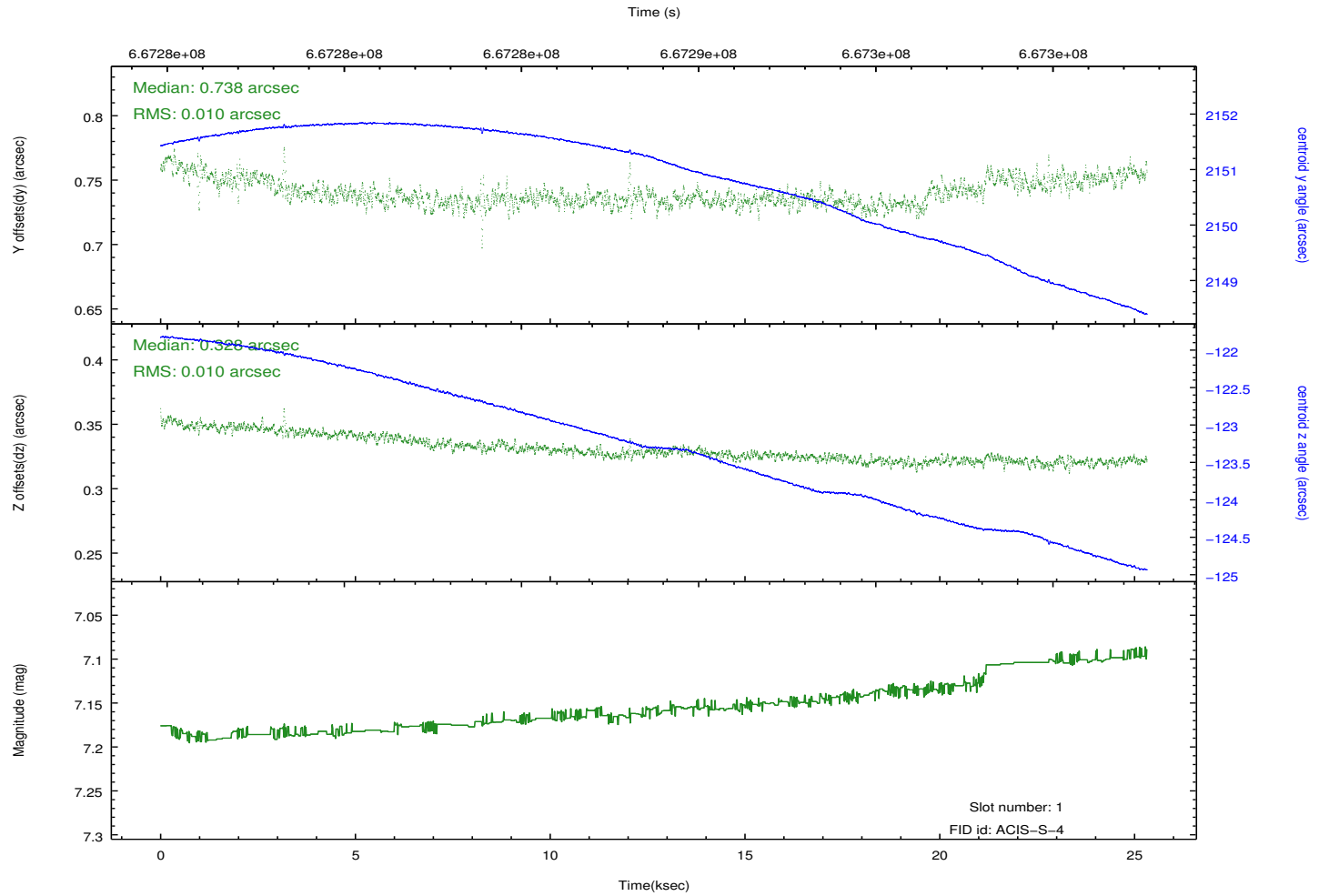
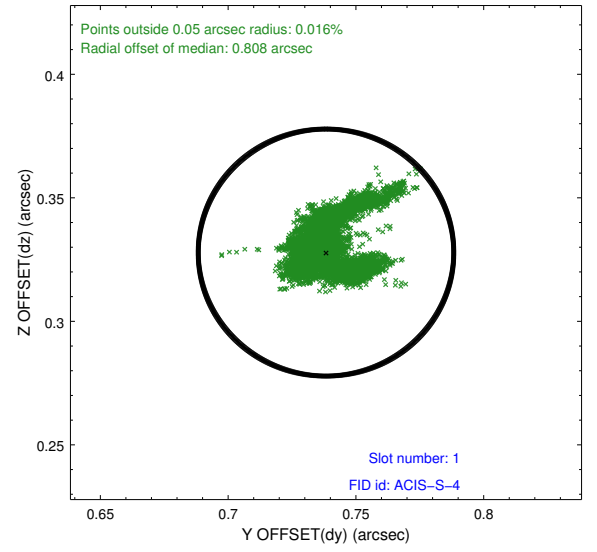
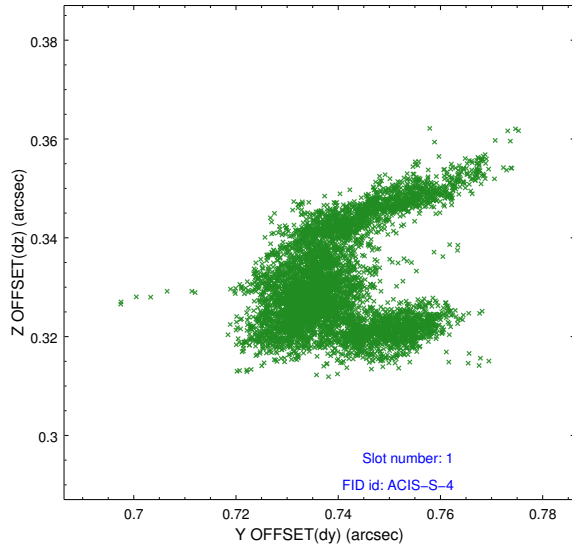


2.5 FID Slots

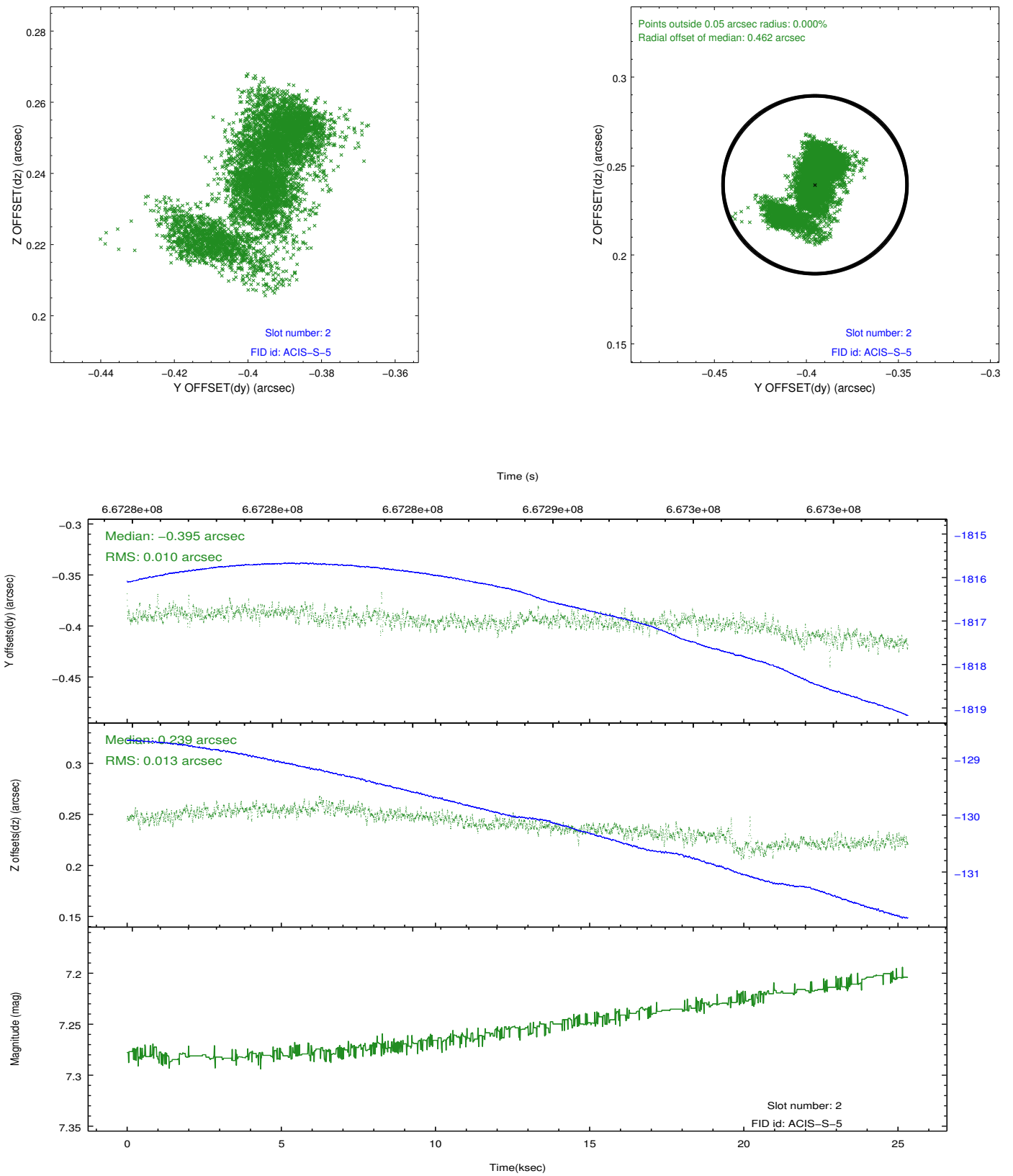
2.5.1 Slot 0



2.5.2 Slot 1

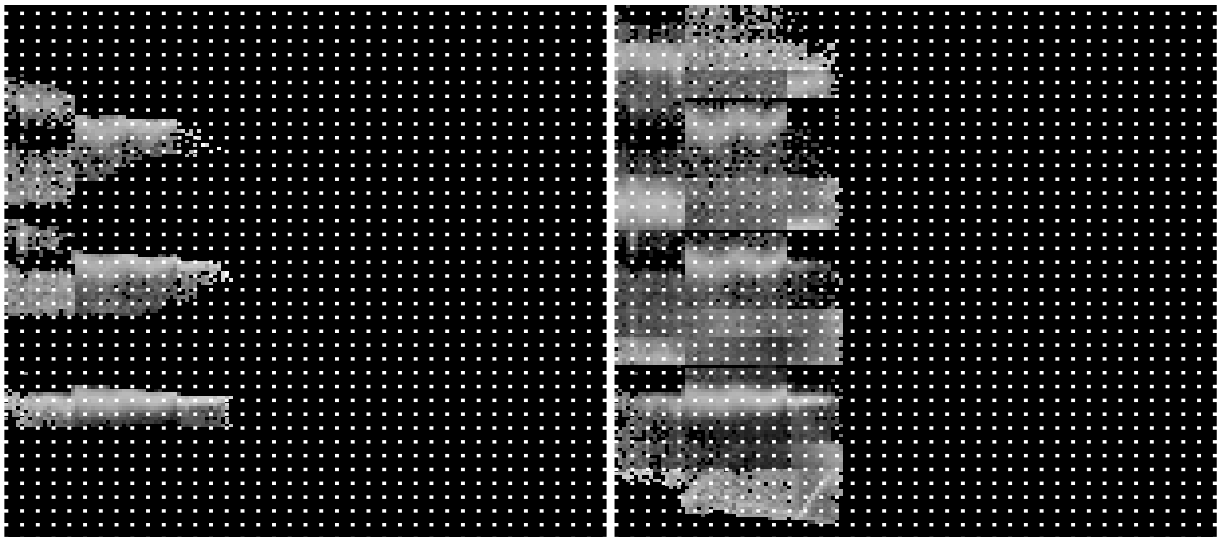


2.5.3 Slot 2



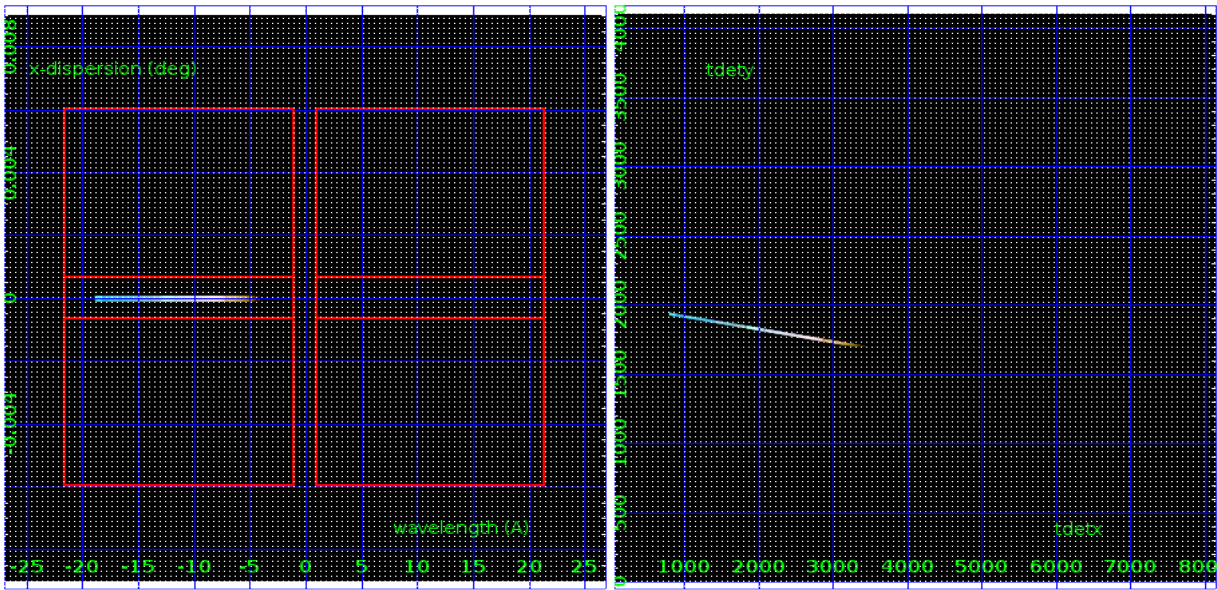
3 Gratings

3.1 HEG Arm



HEG Order Sort 123

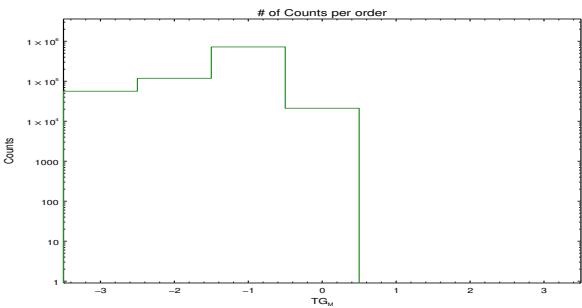
HEG Order Sort ALL

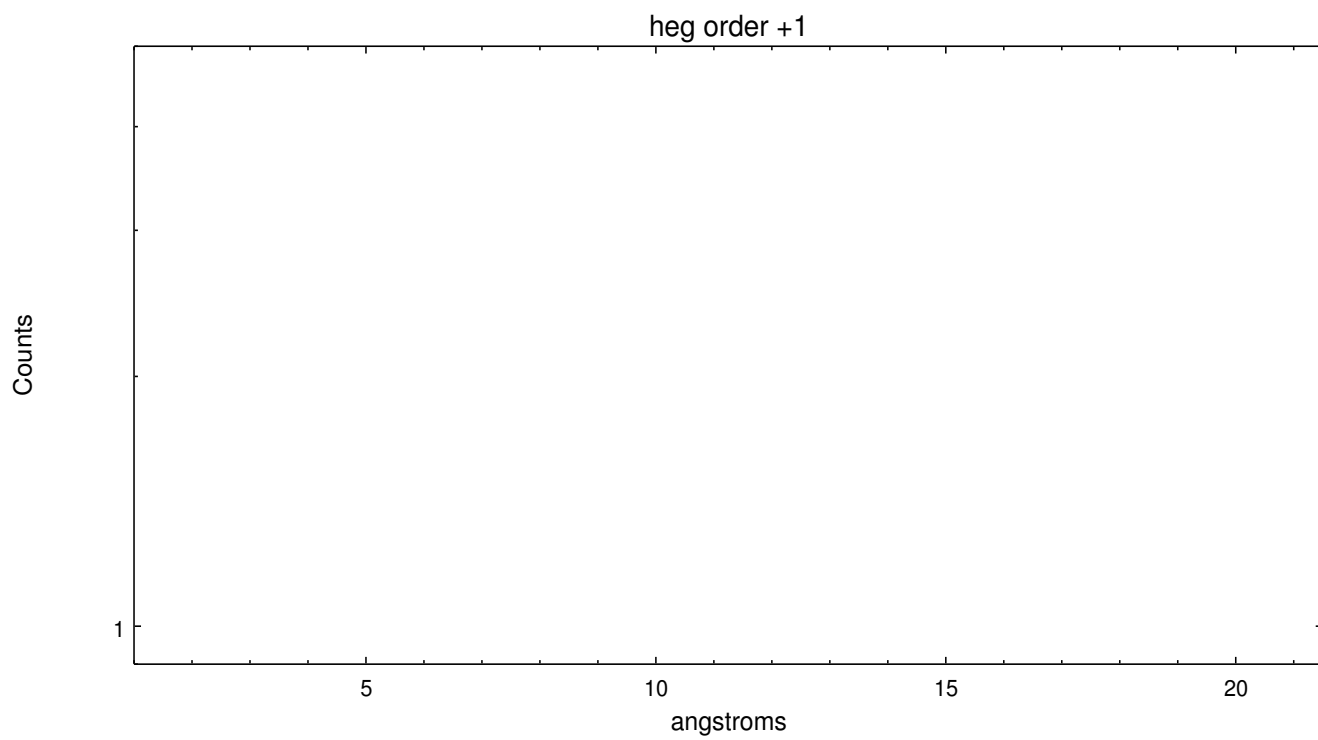
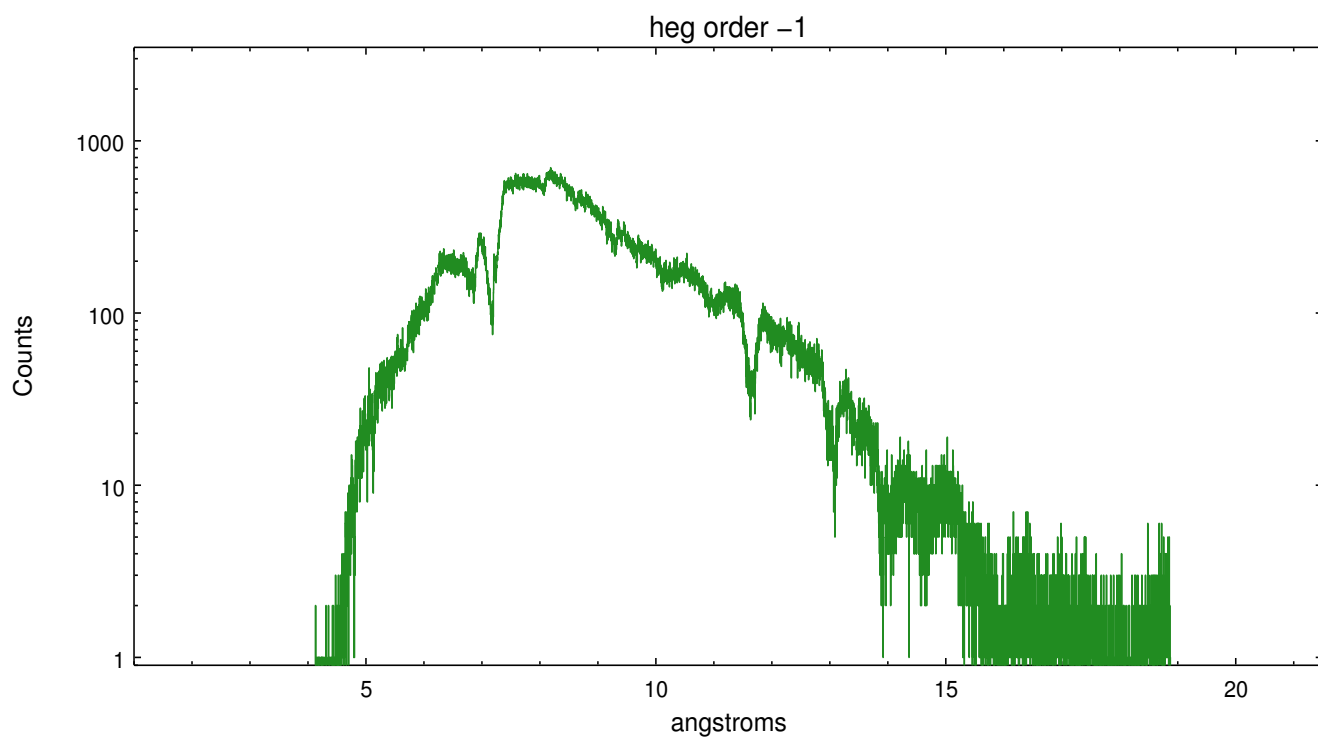


Spot Image HEG

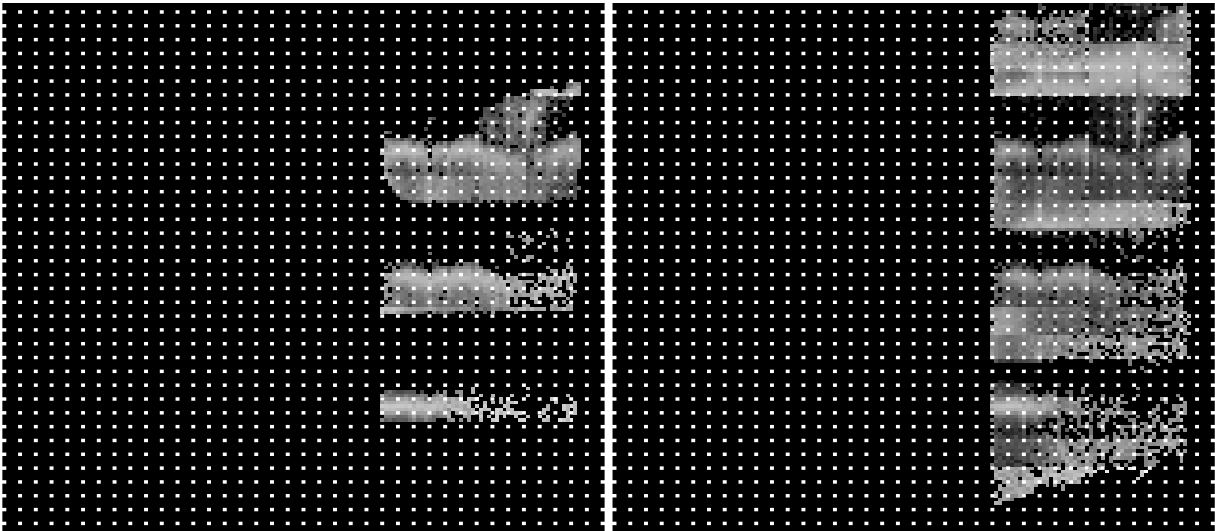
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	56192	118369	720393	21088	0	0	0



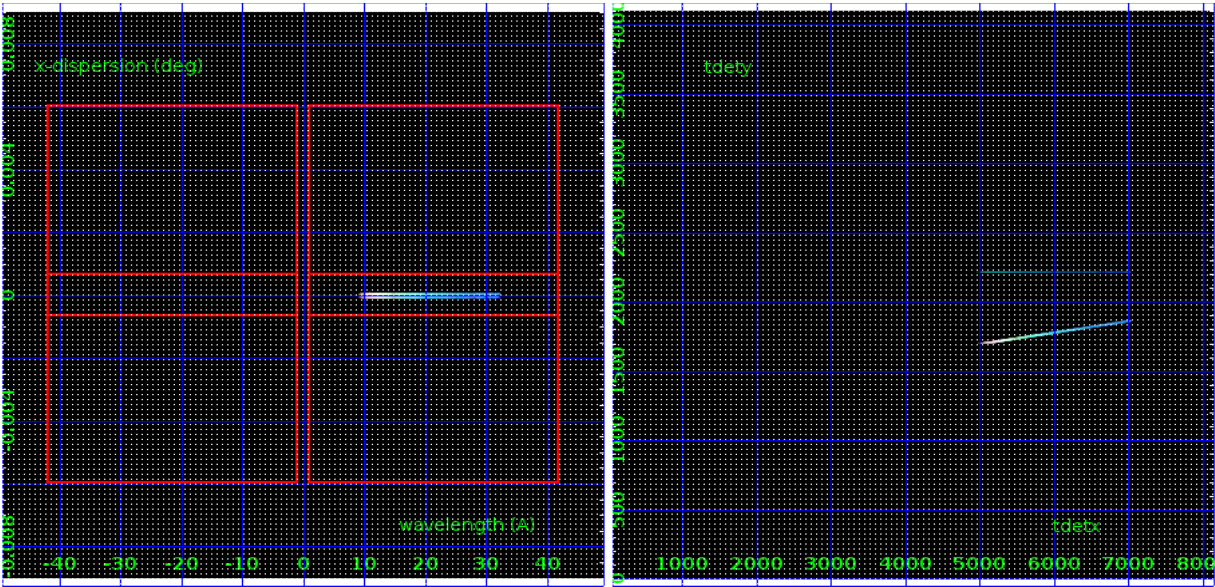


3.2 MEG Arm



MEG Order Sort 123

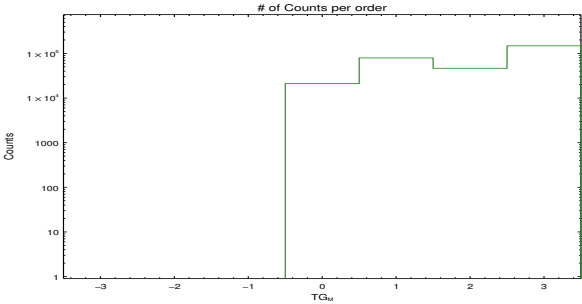
MEG Order Sort ALL

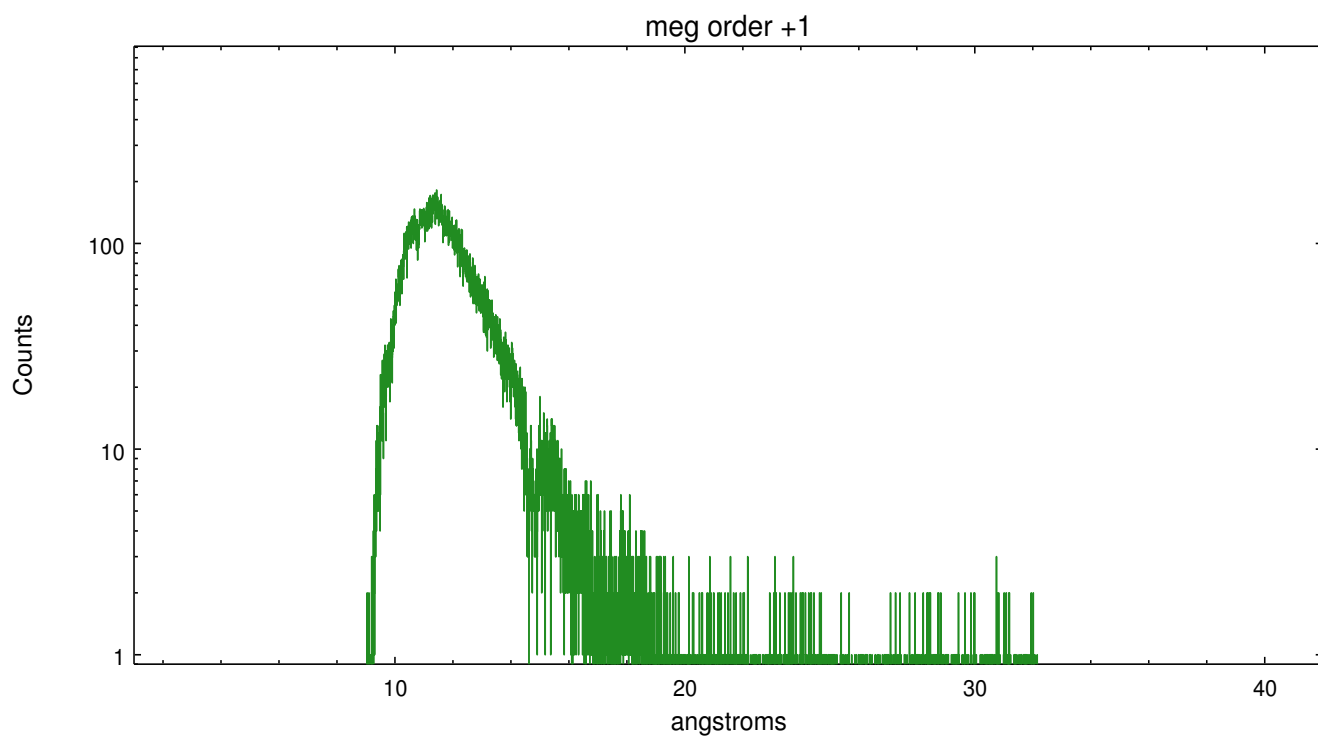
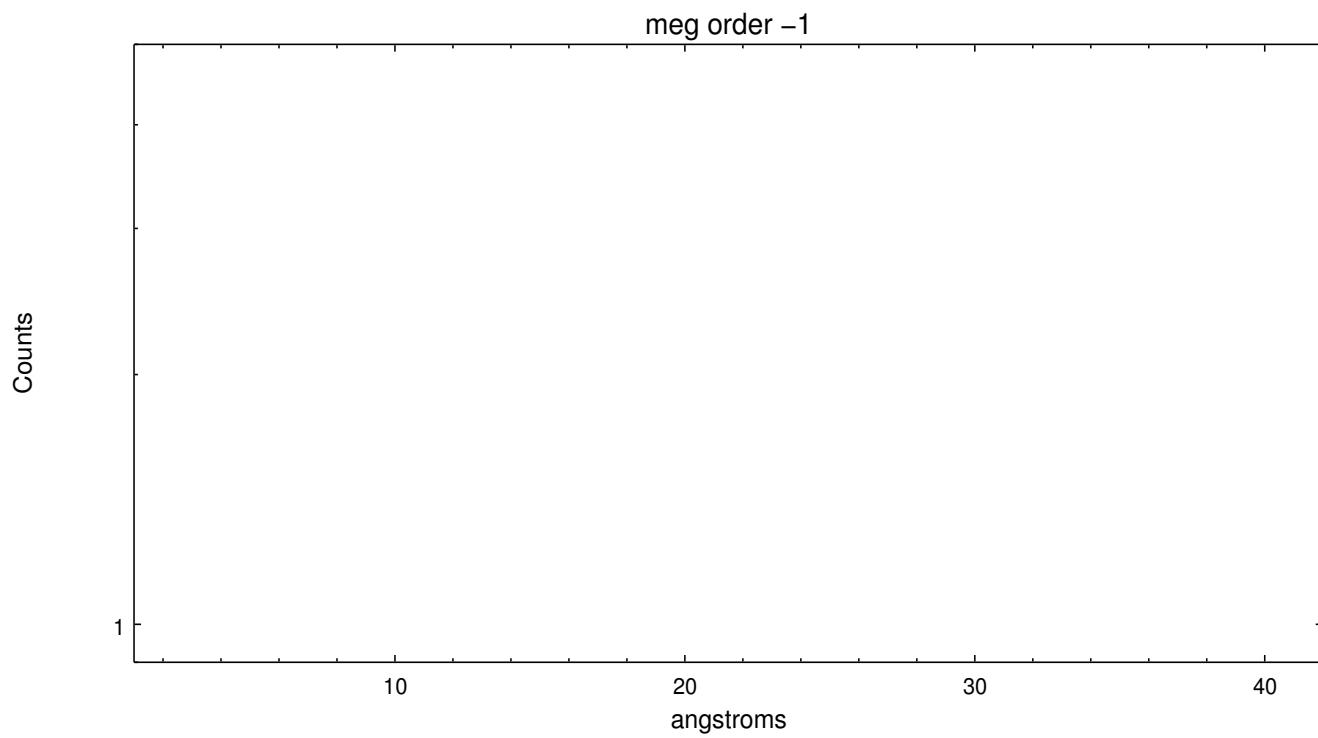


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	21088	79112	46365	147863





A Summary

A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2019.03.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	21.326253099442

A.2 Comments

Note: zeroth order intentionally off the array. projection of celestial source position was used for grating coordinates. Only MEG positive and HEG negative orders are present. Extraction of higher order spectra will require careful review of PHA extraction regions.

Comments for Obi 0

The ACIS focal plane temperature is warmer than -114.0 C degrees during the interval 667276626.14 - 667286563.39 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the front-illuminated chips. The focal plane temperature is warmer than -112.0 C during the interval 667276626.14 - 667279373.64 (MET s) of this observation. This temperature is the upper limit of the verified ACIS calibration for the back-illuminated chips. The ACIS spectral response calibration is less accurate at these warmer temperatures than it is at -115.0 C. Users whose science objectives depend on the most accurate spectral response (e.g., fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect. Star in slot 5 has an RMS deviation > 0.200000 arcsec

Charge time: time per chip varies due to saturation; duration of observation was as planned.

Variation in Chips > 15% threshold.

Low Chip 6, ONTIME=8938.456075 seconds

High Chip 7, ONTIME=21326.253099 seconds

Chip 9, ONTIME=14449.130503 seconds is less than 80% of scheduled time=25500.000000 seconds

Chip 8, ONTIME=12150.119876 seconds is less than 80% of scheduled time=25500.000000 seconds

Chip 6, ONTIME=8938.456075 seconds is less than 80% of scheduled time=25500.000000 seconds

Chip 5, ONTIME=12574.755585 seconds is less than 80% of scheduled time=25500.000000 seconds

Chip 4, ONTIME=15776.188952 seconds is less than 80% of scheduled

time=25500.000000 seconds

ONTIME of 21326.253099442 seconds is less than 85% of expected scheduled
time of 25500 seconds