

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9713 - L2 Version 2  
Chandra X-Ray Center

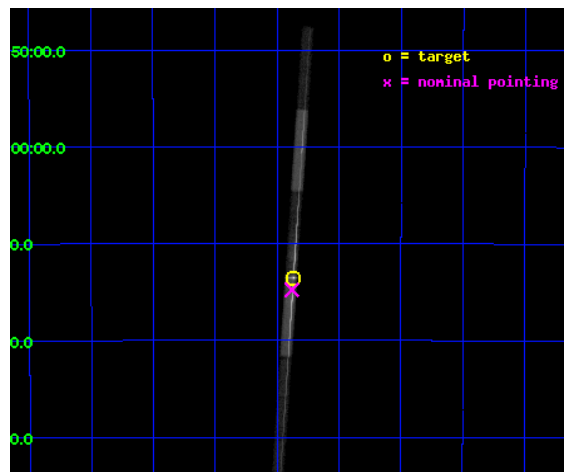
L2 Processing Date : May 17 2012

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
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
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	LETG Arm . . . . .	17
<b>A</b>	<b>Summary</b>	<b>19</b>
A.1	Status . . . . .	19
A.2	Comments . . . . .	19

# 1 Front

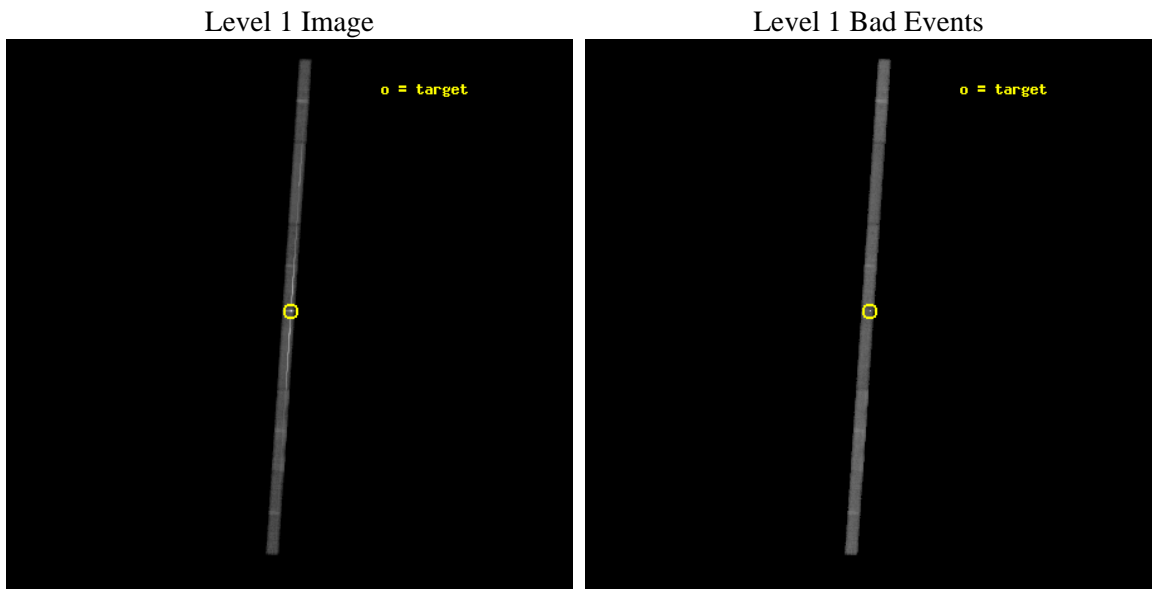
seq_num	790190	Sequence number
obs_id	9713	Observation id
title	AO9 Calibration Observation of PKS2155-304 Near the Read-Out	Propo
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.72007578075	Nominal RA [deg]
dec_nom	-30.24627669429	Nominal Dec [deg]
roll_nom	93.872552282838	Nominal Roll [deg]
revision	2	Processing version of data
ontime	31679.401258826	Sum of GTIs [s]
livetime	29651.255390141	Livetime [s]
ontime4	31679.401258826	Sum of GTIs [s]
ontime5	31679.401258826	Sum of GTIs [s]
ontime6	31679.401258826	Sum of GTIs [s]
ontime7	31679.401258826	Sum of GTIs [s]
ontime8	31679.401258826	Sum of GTIs [s]
ontime9	31679.401258826	Sum of GTIs [s]
l2events	256702	Number of level 2 events



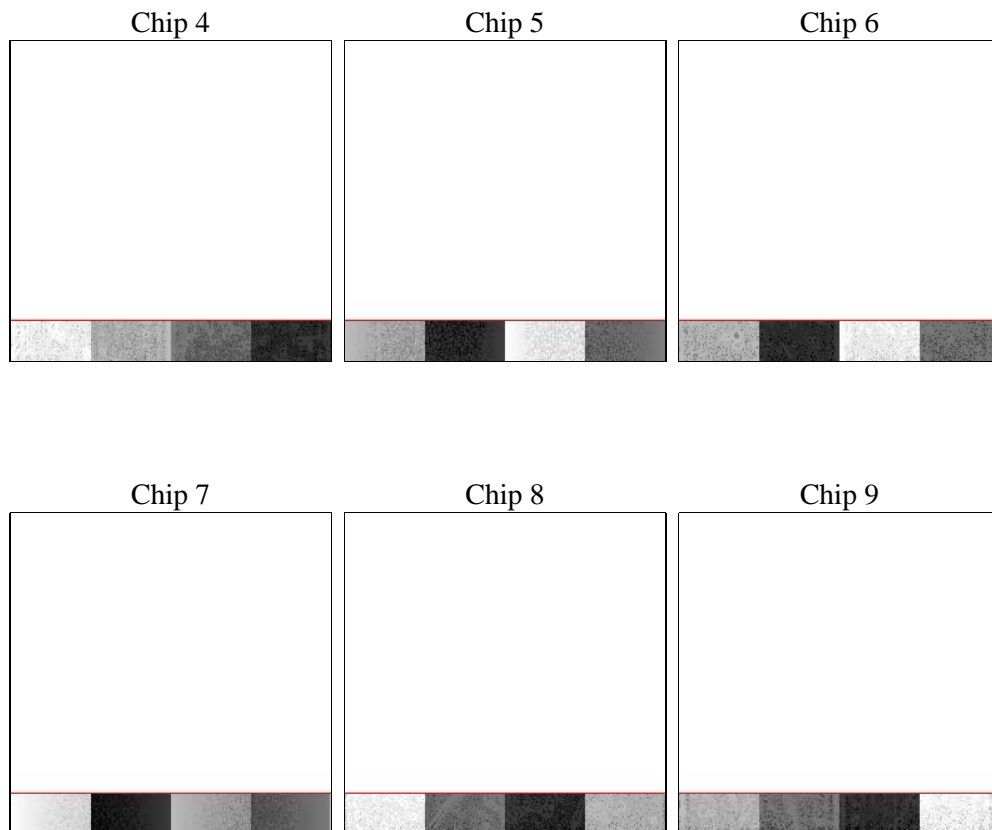
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	31500.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	31679.401258826	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	31679.401258826	Sum of GTIs [s]
date	2012-05-17T04:51:03	Date and time of file creation	ontime5	31679.401258826	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	31679.401258826	Sum of GTIs [s]
			ontime7	31679.401258826	Sum of GTIs [s]
			ontime8	31679.401258826	Sum of GTIs [s]
			ontime9	31679.401258826	Sum of GTIs [s]
			l1events	551452	Number of level 1 events

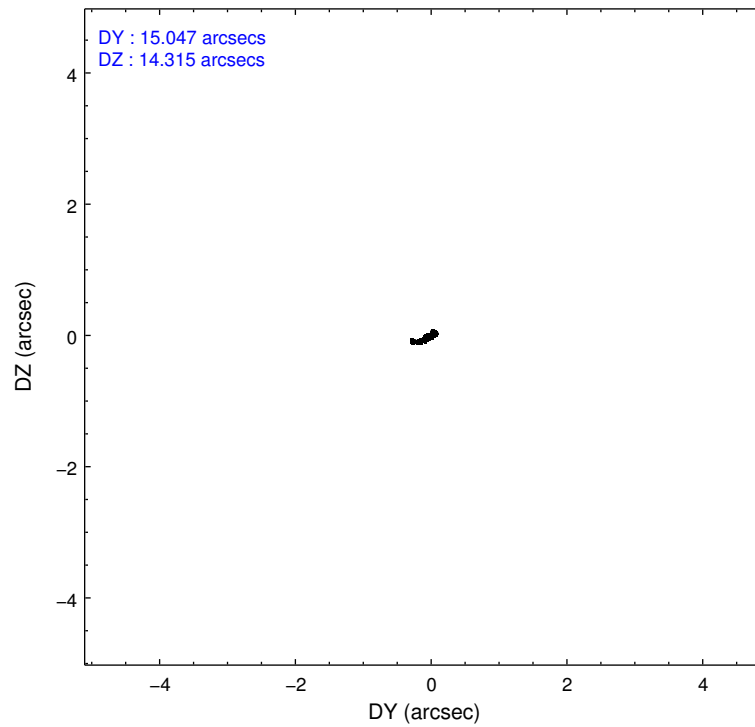
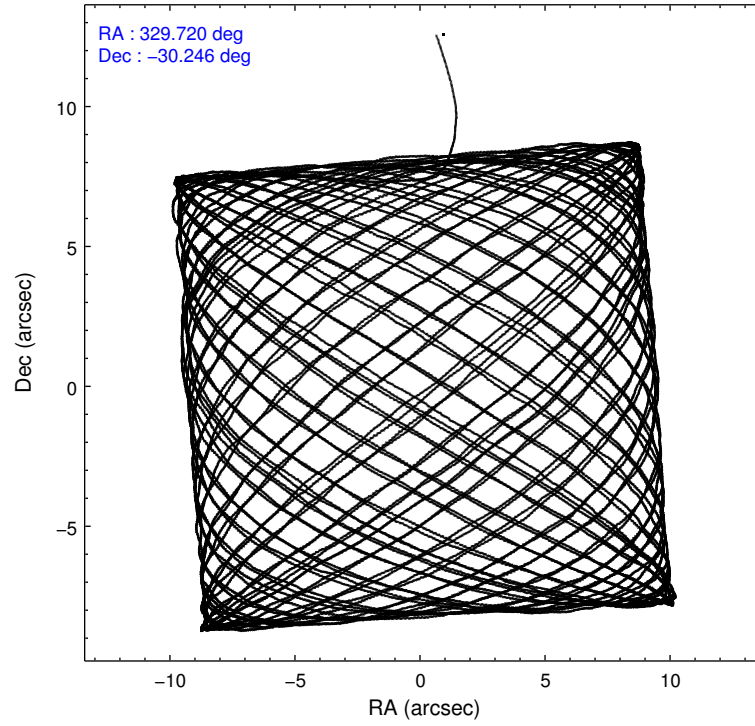
### 2.1.4 Events

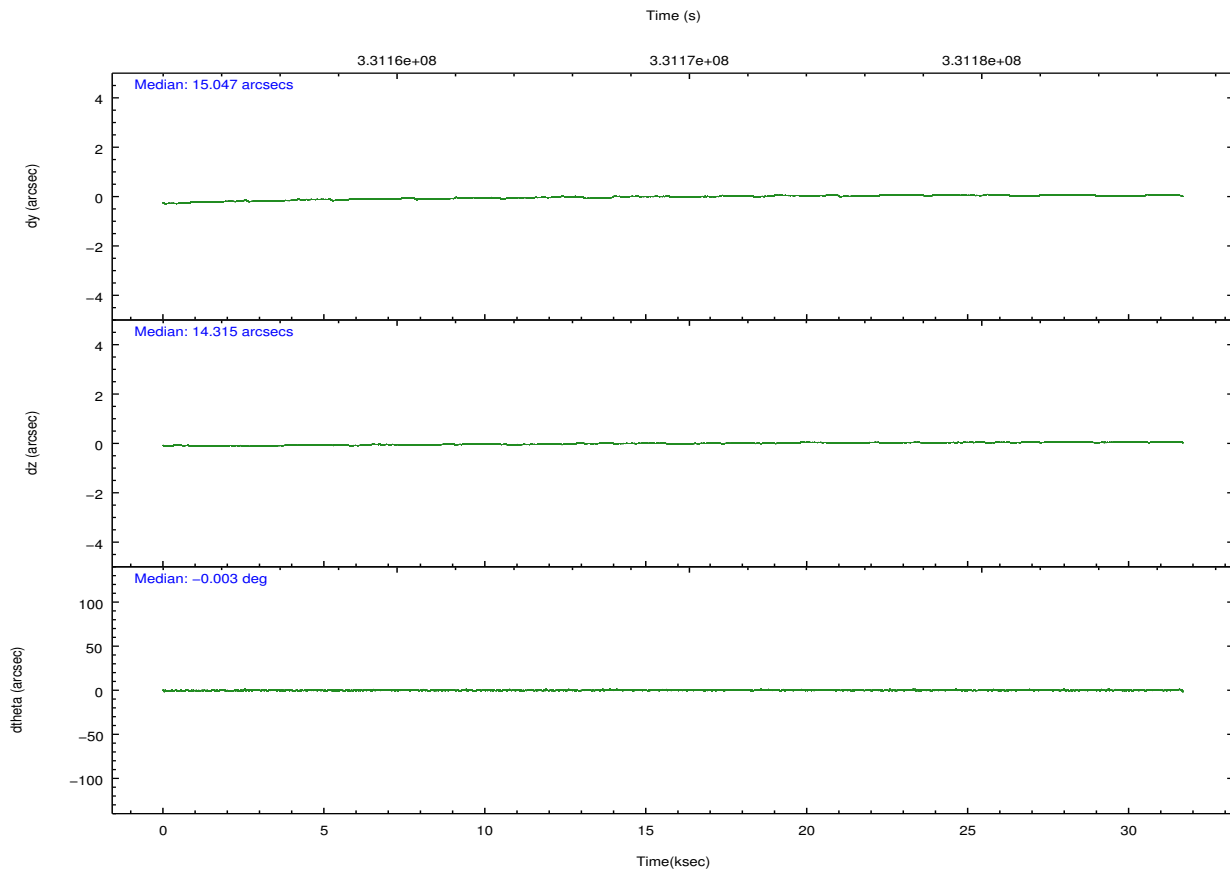
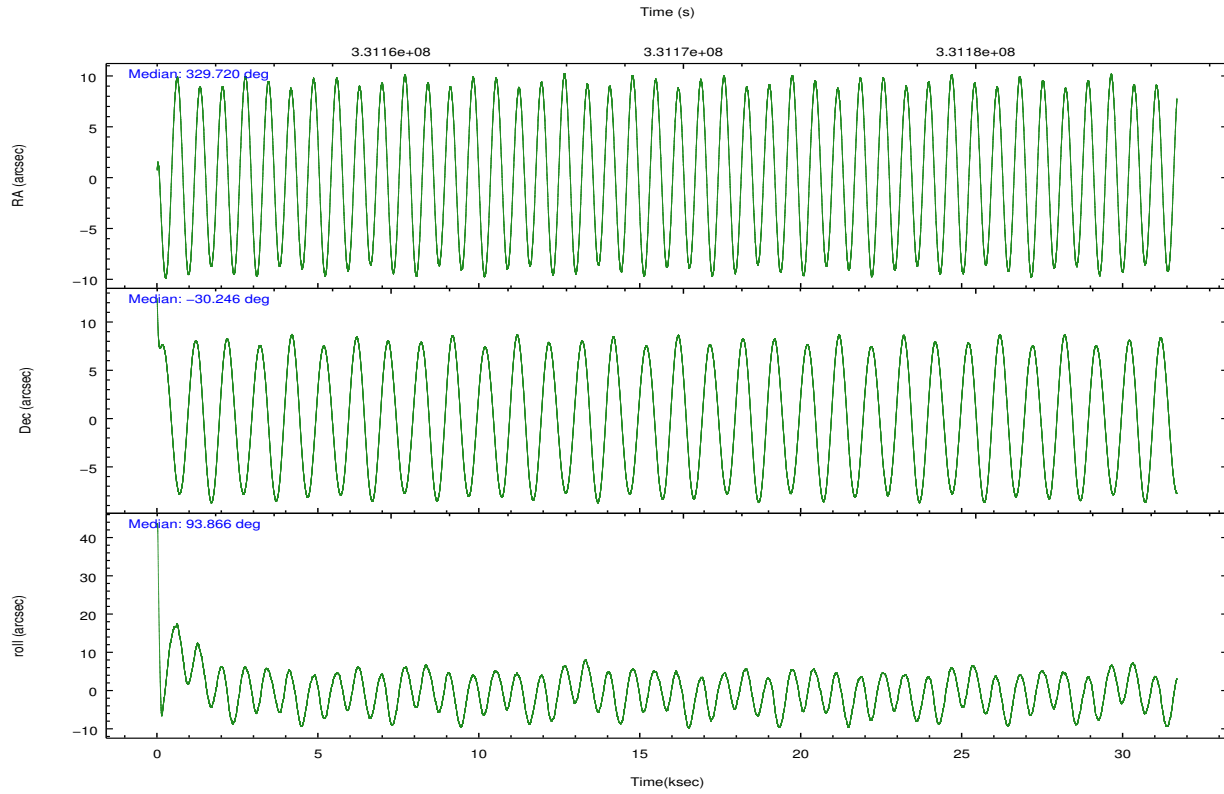
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	58794	75518	98981	195948	73944	48267	grade 0 events	3505	12067	41922	32464	7335	3493
rejected events	51008	32174	44646	52900	55800	40604		5%	15%	42%	16%	9%	7%
rejected %	86%	42%	45%	26%	75%	84%	grade 1 events	25	83	84	1562	26	14
								0%	0%	0%	0%	0%	0%
							grade 2 events	1380	10017	5780	34094	3165	1196
								2%	13%	5%	17%	4%	2%
							grade 3 events	997	3416	2425	16431	1822	1023
								1%	4%	2%	8%	2%	2%
							grade 4 events	970	3391	2463	15964	1719	959
								1%	4%	2%	8%	2%	1%
							grade 5 events	1723	5301	1691	11165	2311	1752
								2%	7%	1%	5%	3%	3%
							grade 6 events	1024	14865	2176	44812	4245	1052
								1%	19%	2%	22%	5%	2%
							grade 7 events	49170	26378	42440	39456	53321	38778
								83%	34%	42%	20%	72%	80%

## 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	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	329.738093	329.7200757807514	CCD I2 on	N	N
[deg] Pointing Dec	-30.268769	-30.24627669429045	CCD I3 on	N	N
[deg] Pointing Roll	93.724981	93.87255228283824	CCD S0 on	O1	Y
[s] Window start time (MET)	328665665.184000	328665665.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	333849665.184000	333849665.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-179.132523	-179.1399366055469	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-11	-10.99258597746092	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	331153788.184000	331152746.66295	On-chip summing requested	N	N
Observation start date	2008-06-29T19:08:43	2008-06-29T18:52:26	Subarray requested	CUSTOM	1/8
[s] Observation end time (MET)	331185288.184000	331186366.6646	Subarray start row	1	1
Observation end date	2008-06-30T03:53:43	2008-06-30T04:12:46	Subarray row count	128	128
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0.6

## 2.3 Aspect





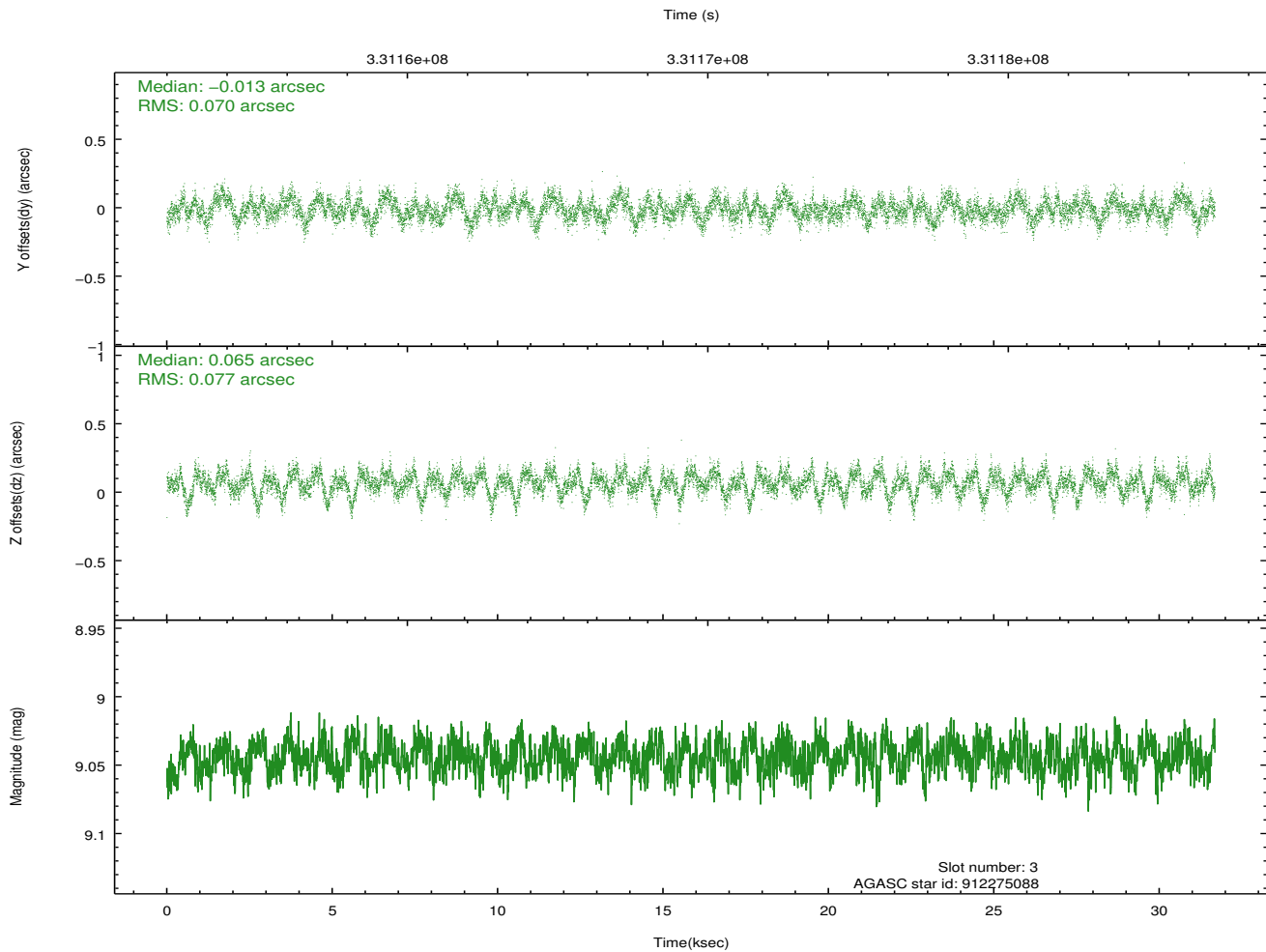
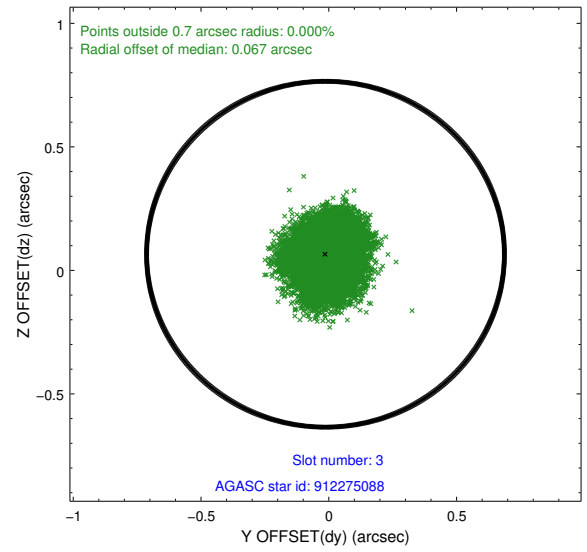
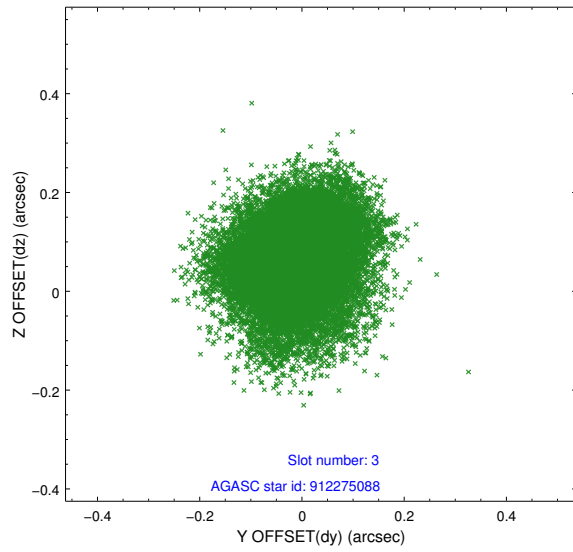
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.00	7726	0.173	0.074	0.008	0.021	0.000000	0.000000	928.96	-1957.57
1	FID	ACIS-S-5	7.04	7727	-0.188	0.174	0.007	0.012	0.000000	0.000000	-1820.28	-59.90
2	FID	ACIS-S-6	7.21	7726	-0.006	-0.236	0.008	0.016	0.000000	0.000000	394.38	583.62
3	GUIDE	912275088	9.04	15439	-0.013	0.065	0.112	0.179	329.619228	-29.738698	1928.37	246.93
4	GUIDE	912276032	9.58	15433	-0.027	-0.412	0.096	0.158	329.395967	-29.803466	1739.62	957.43
5	GUIDE	981468128	9.33	15442	0.274	0.290	0.116	0.178	329.756350	-30.158334	393.53	-82.50
6	GUIDE	981469488	9.58	15433	-0.317	0.018	0.156	0.236	329.261199	-30.045155	896.55	1430.84
7	GUIDE	981478152	9.36	15321	0.080	0.031	0.096	0.152	329.415589	-30.057192	824.17	953.43

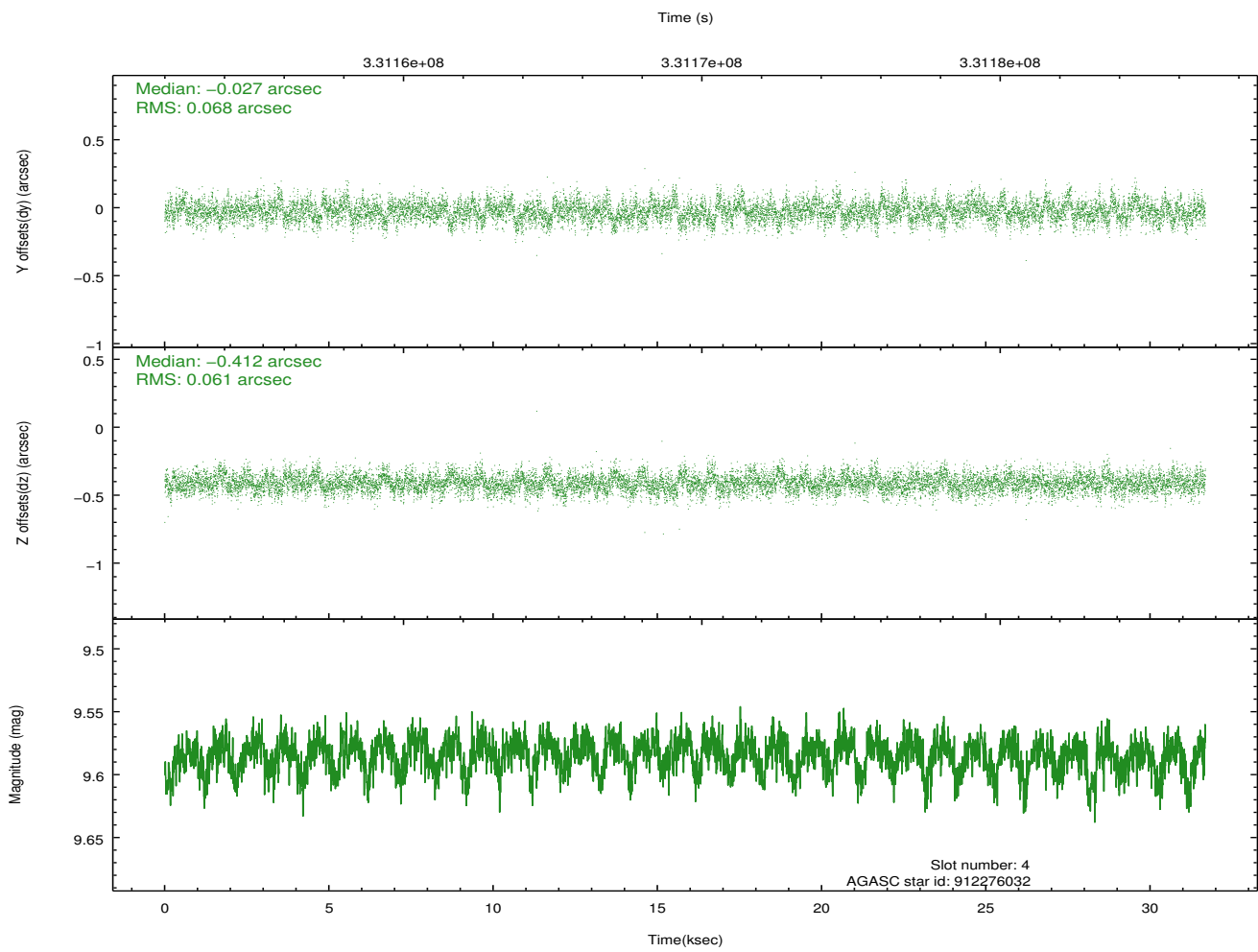
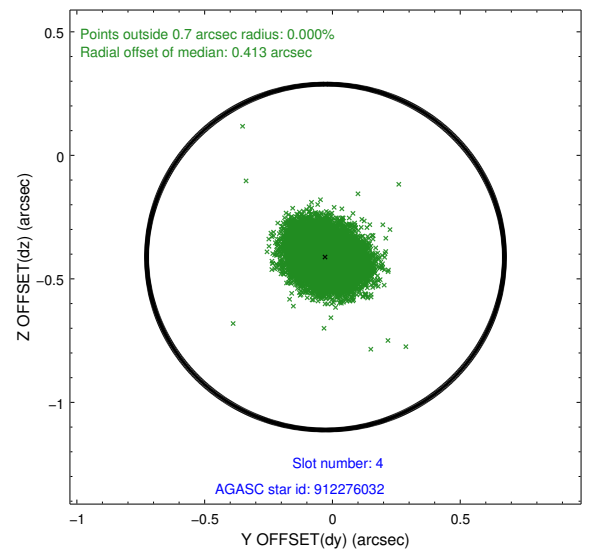
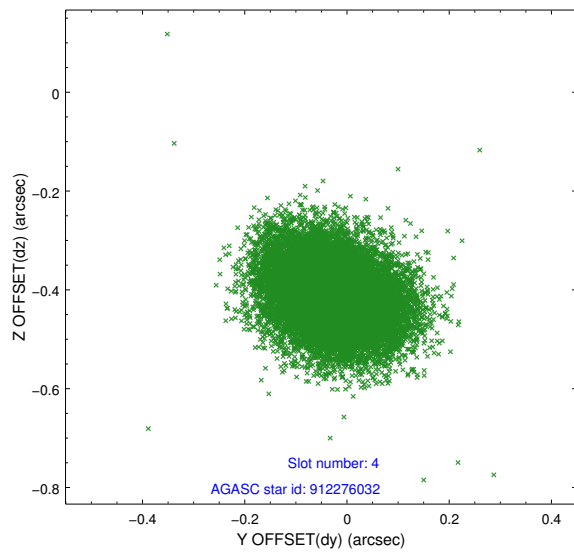
∞

## 2.4 Star Slots

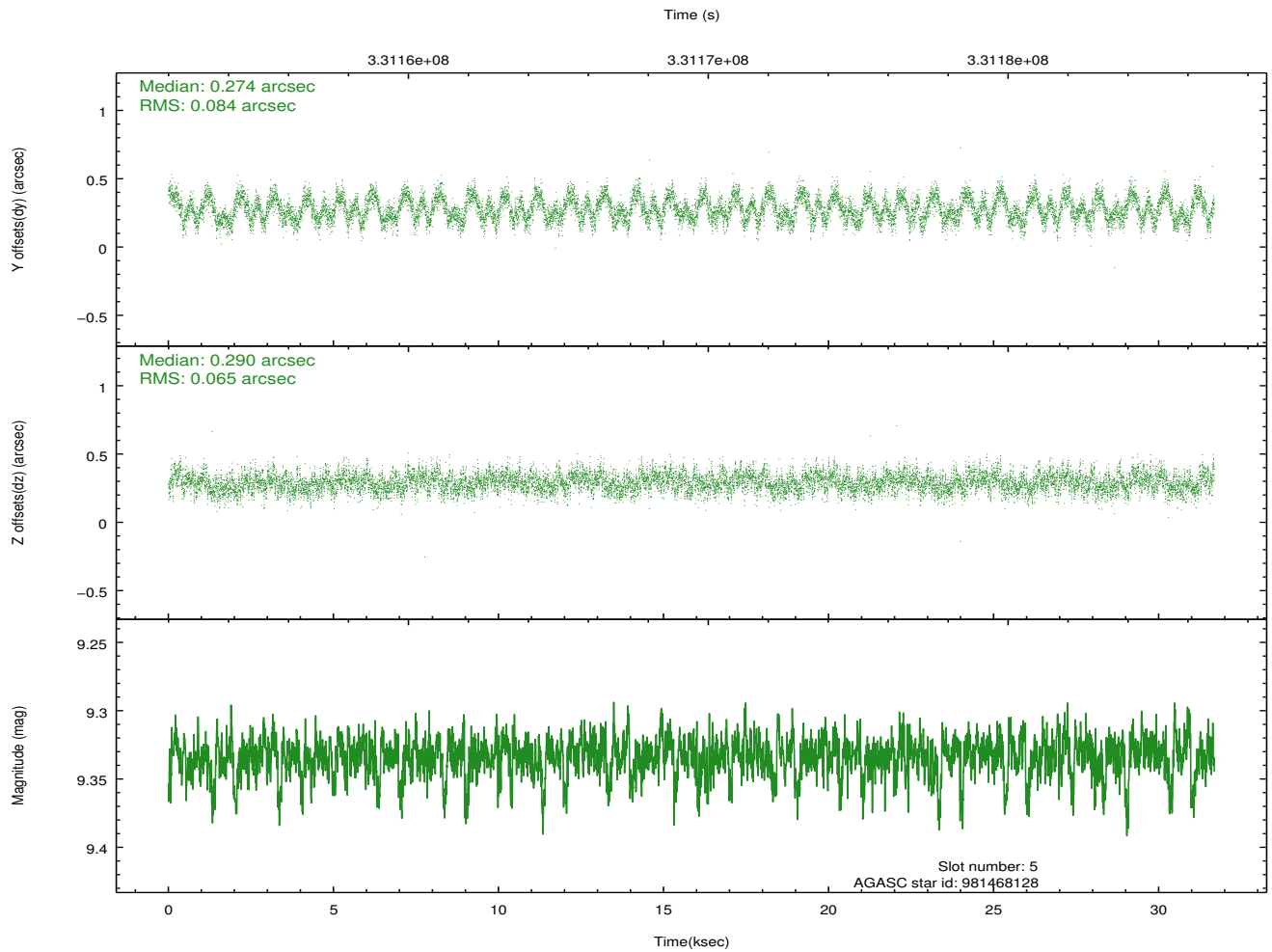
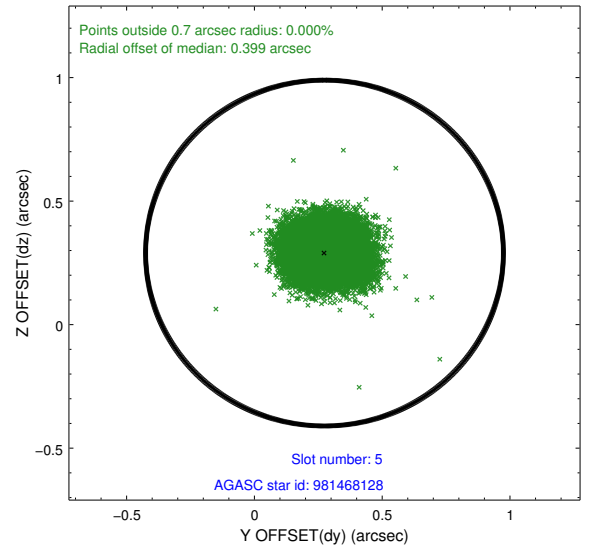
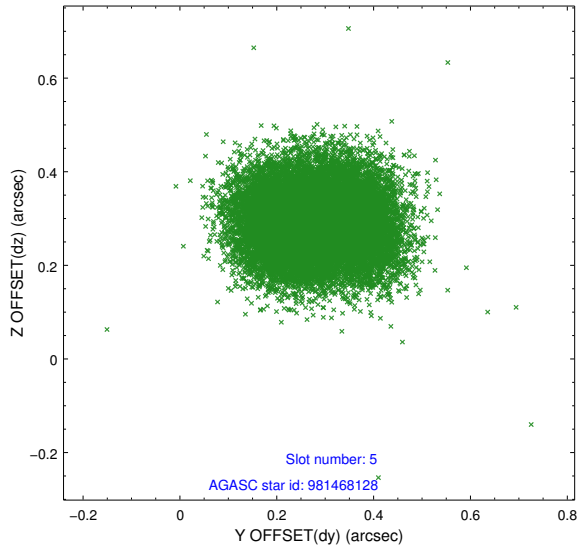
### 2.4.1 Slot 3



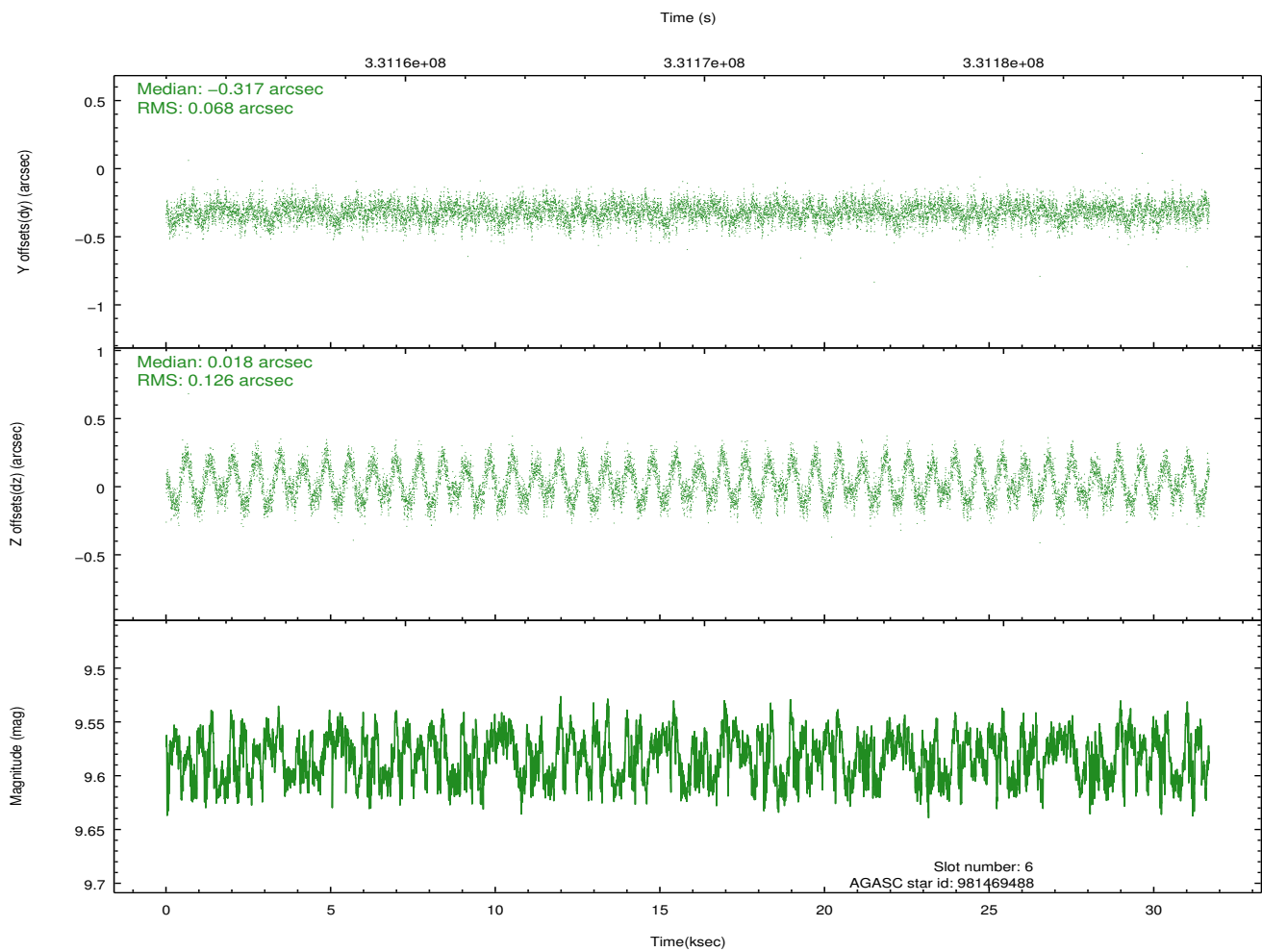
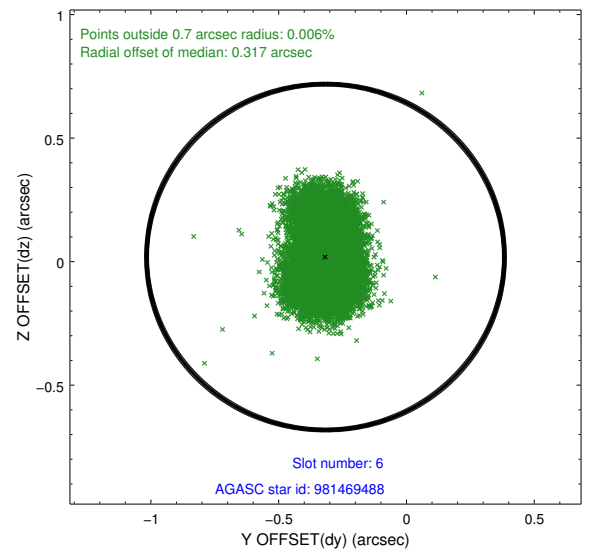
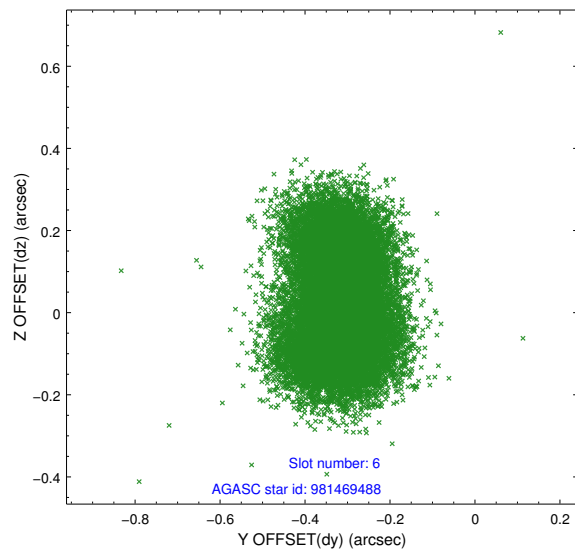
## 2.4.2 Slot 4



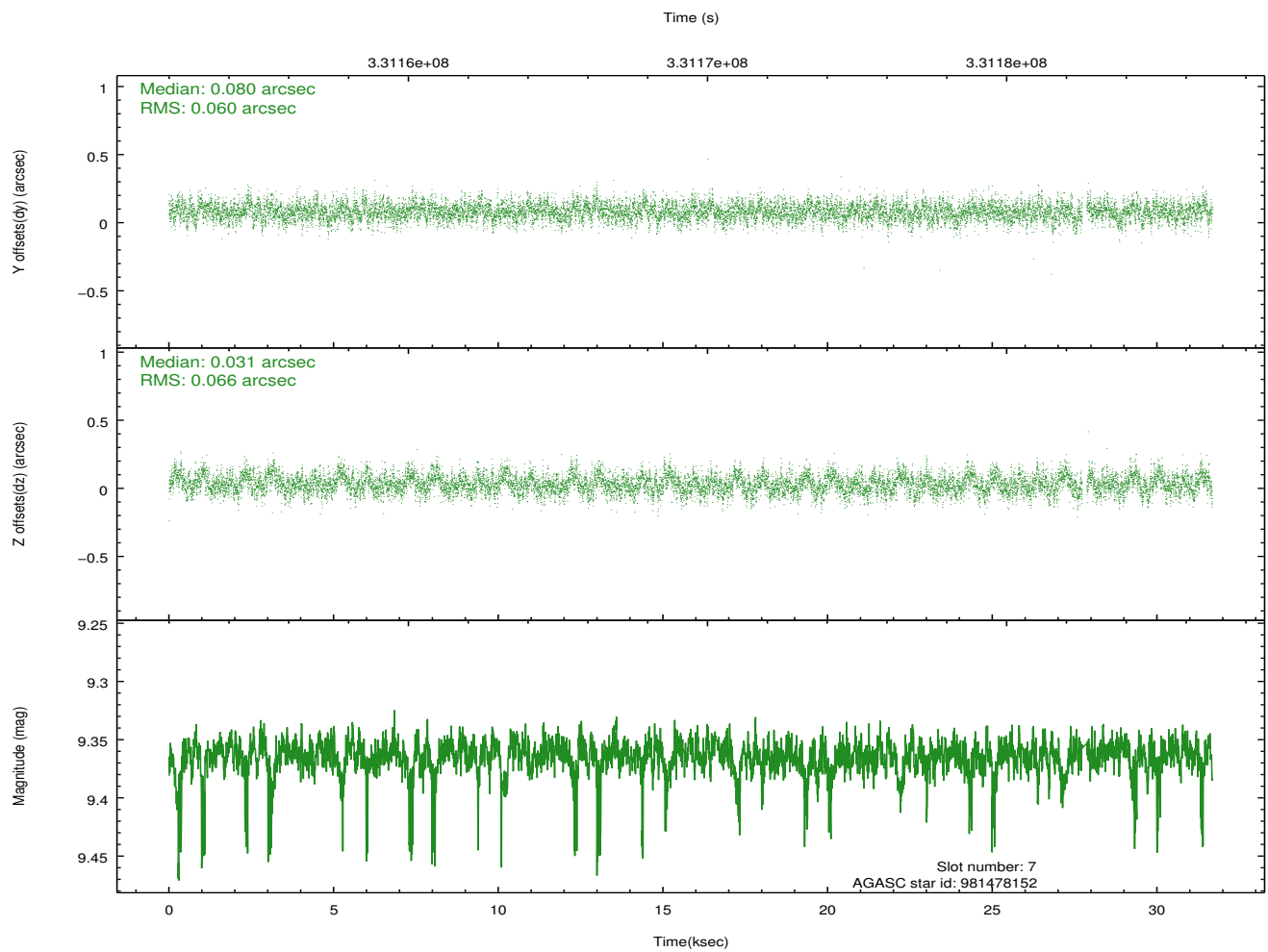
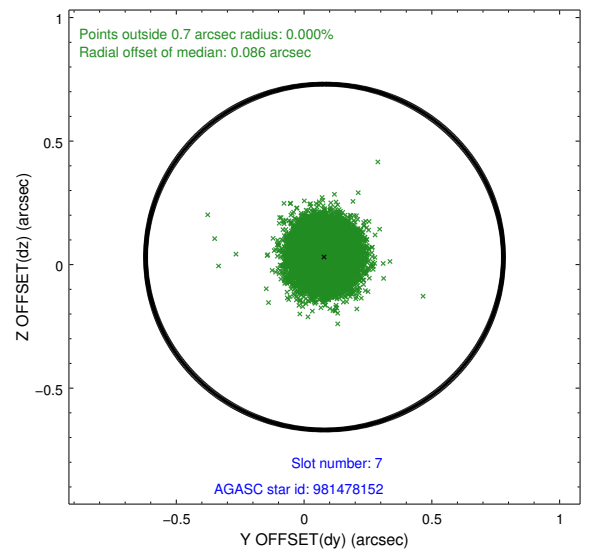
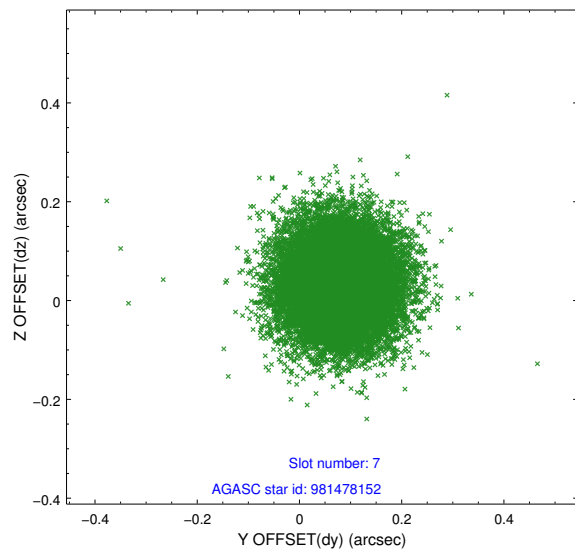
### 2.4.3 Slot 5



## 2.4.4 Slot 6

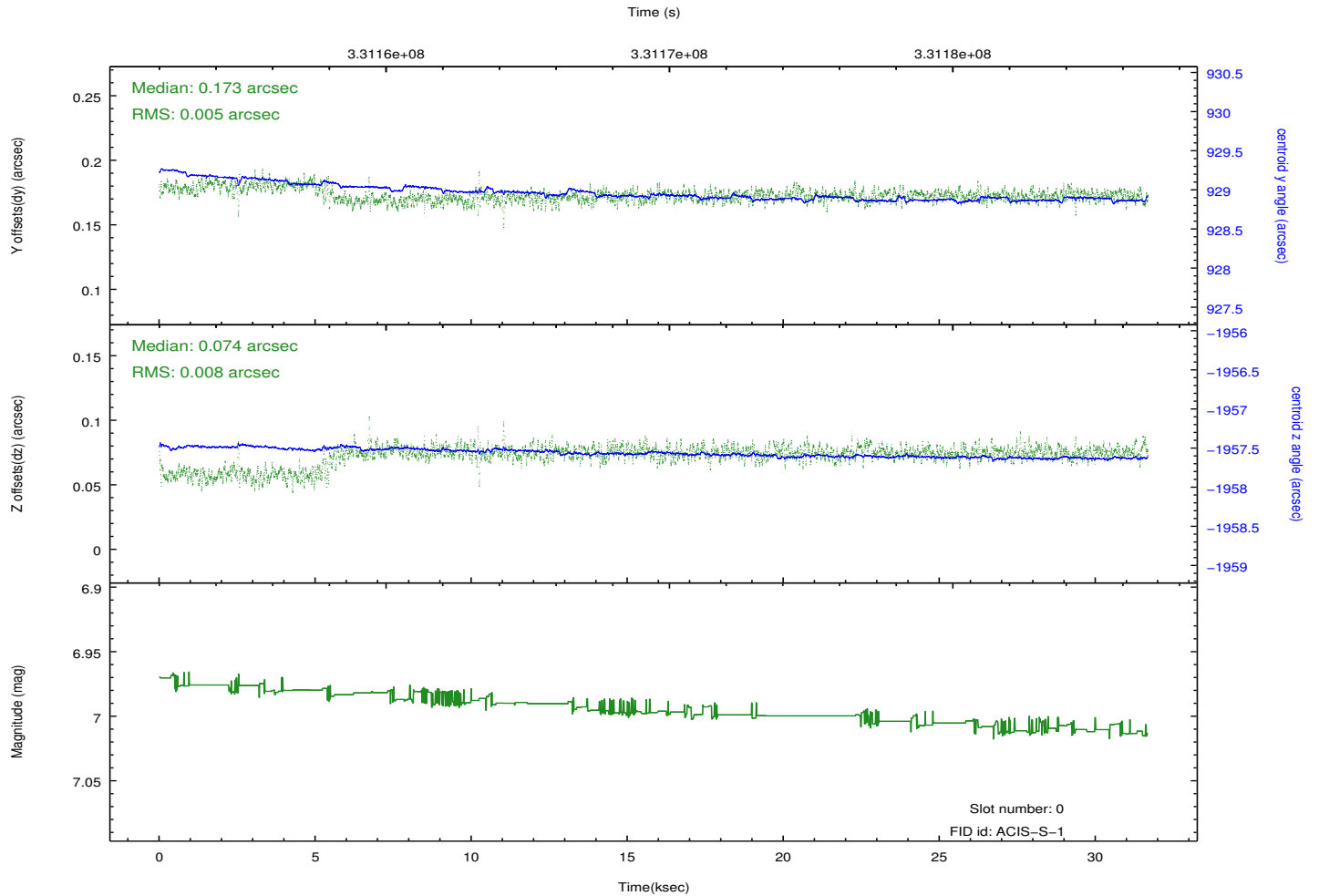
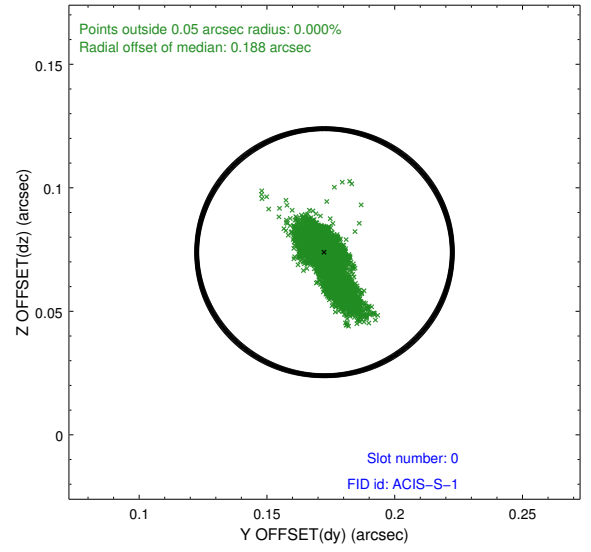
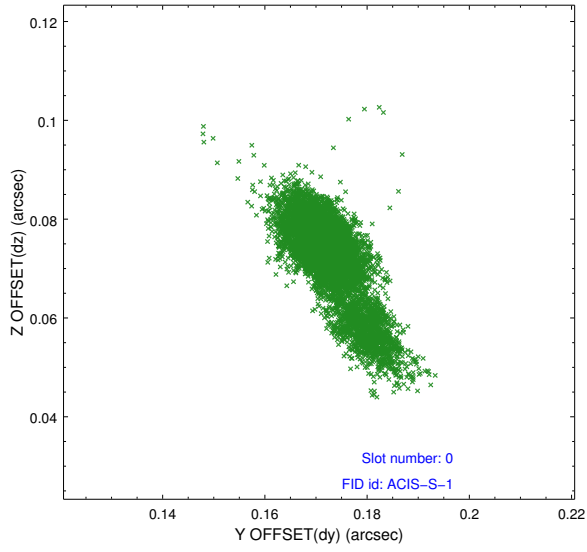


## 2.4.5 Slot 7

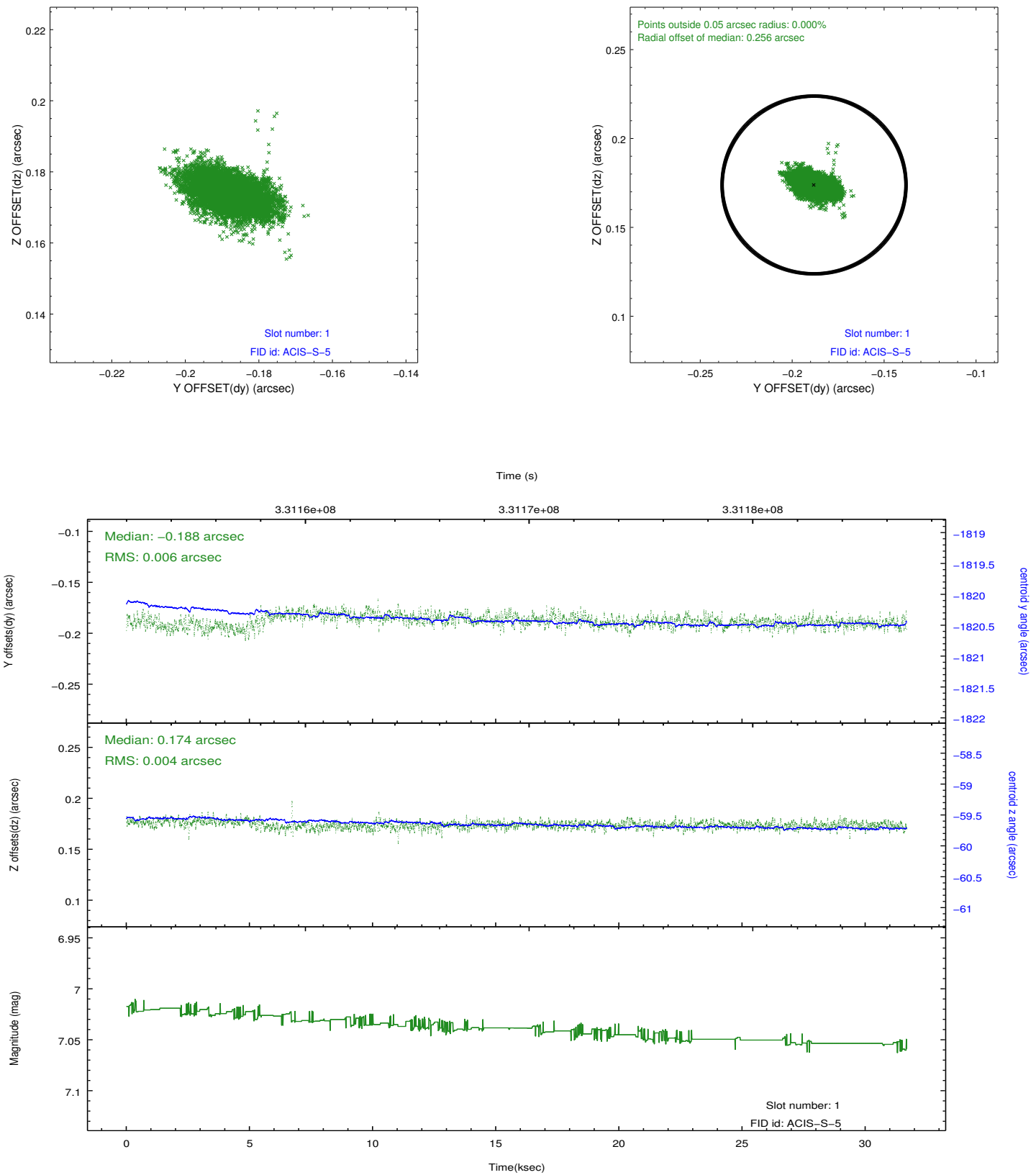


## 2.5 FID Slots

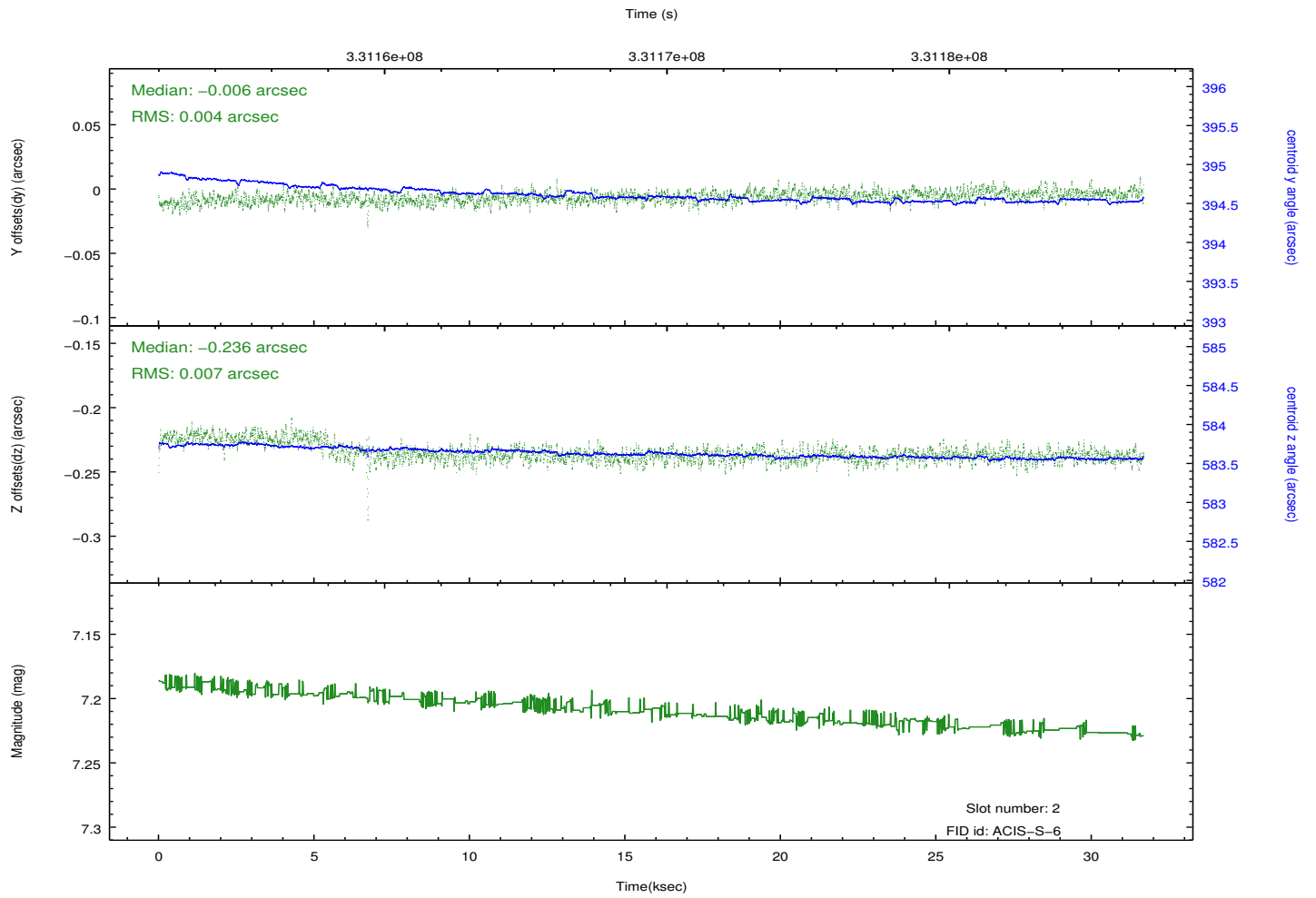
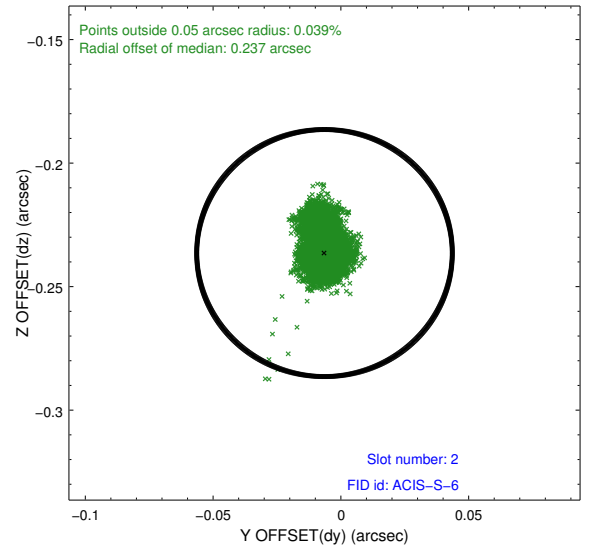
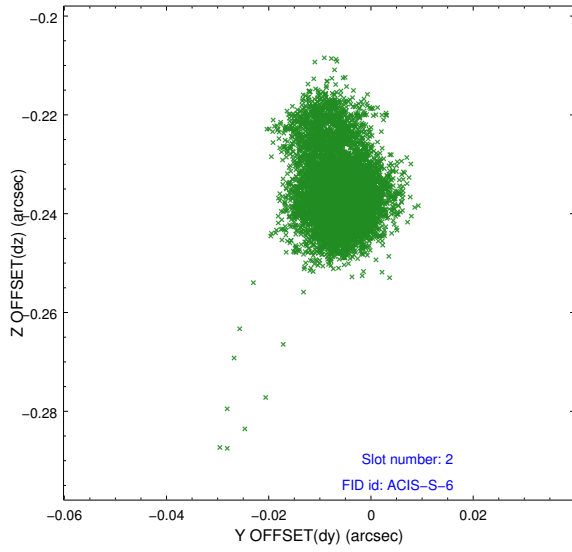
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

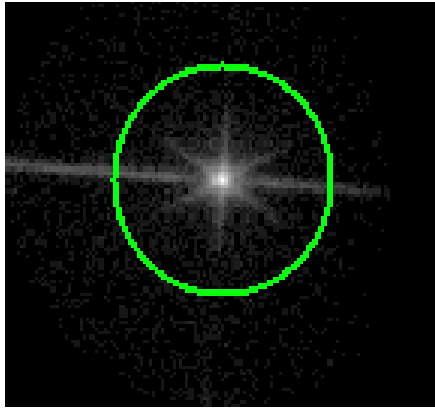


# 3 Gratings

## 3.1 LETG Arm



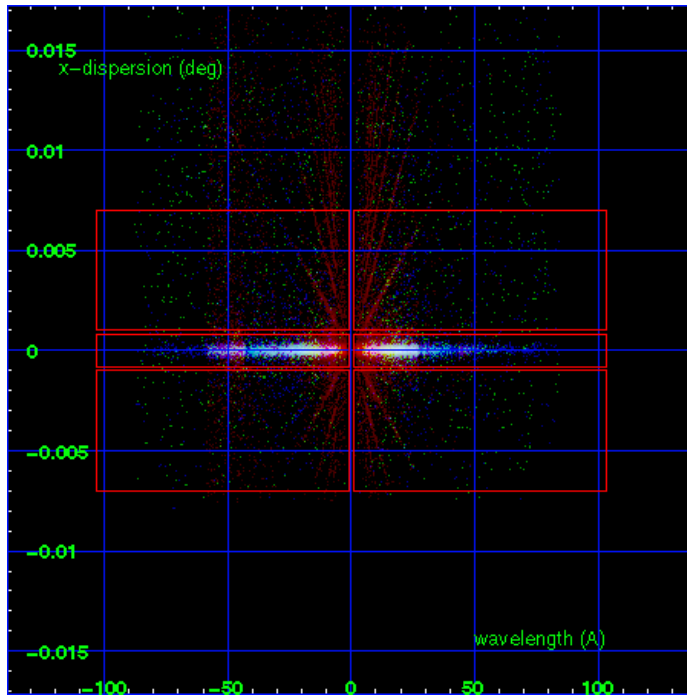
LETG Order Sort 123



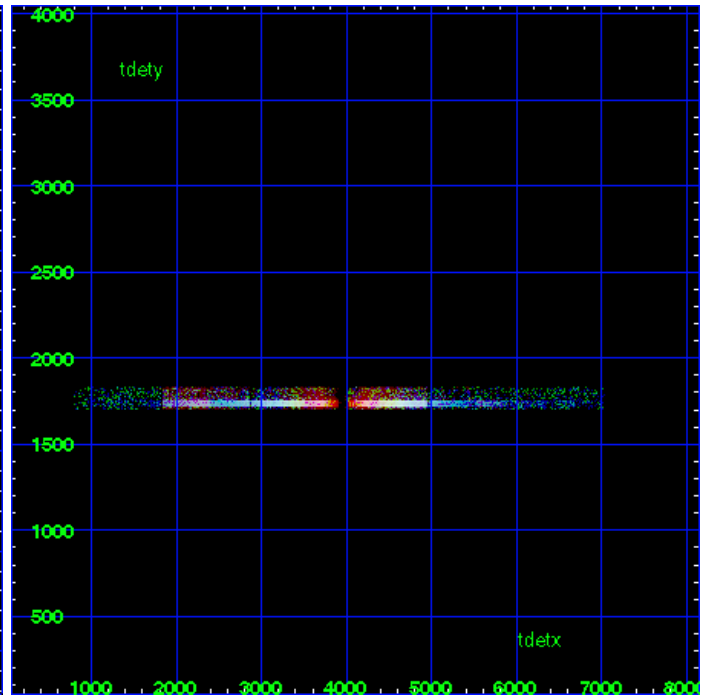
LETG Zero Order



LETG Order Sort ALL

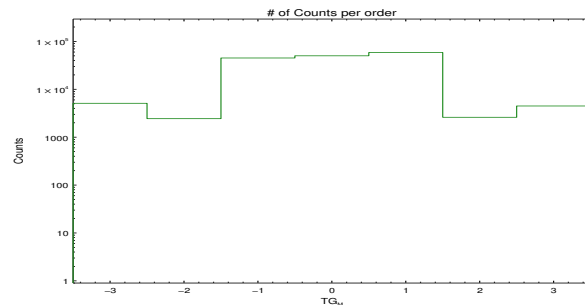


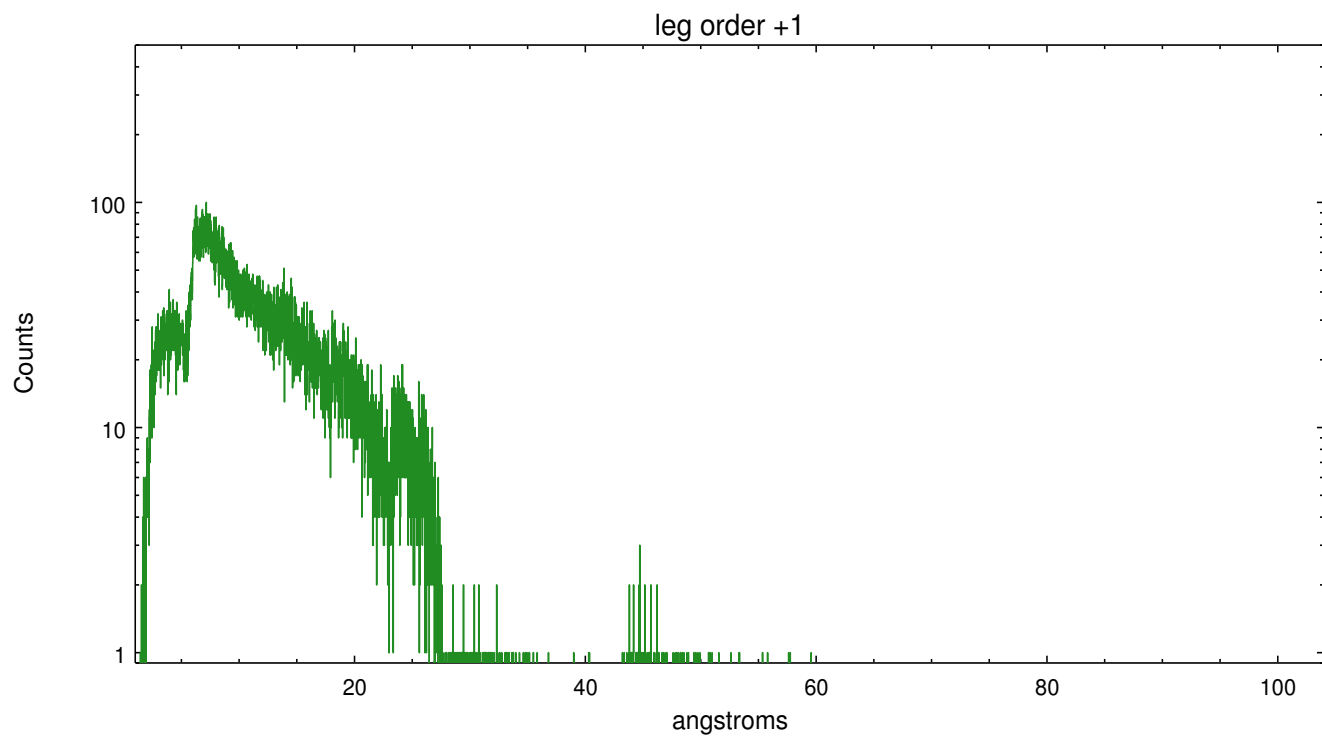
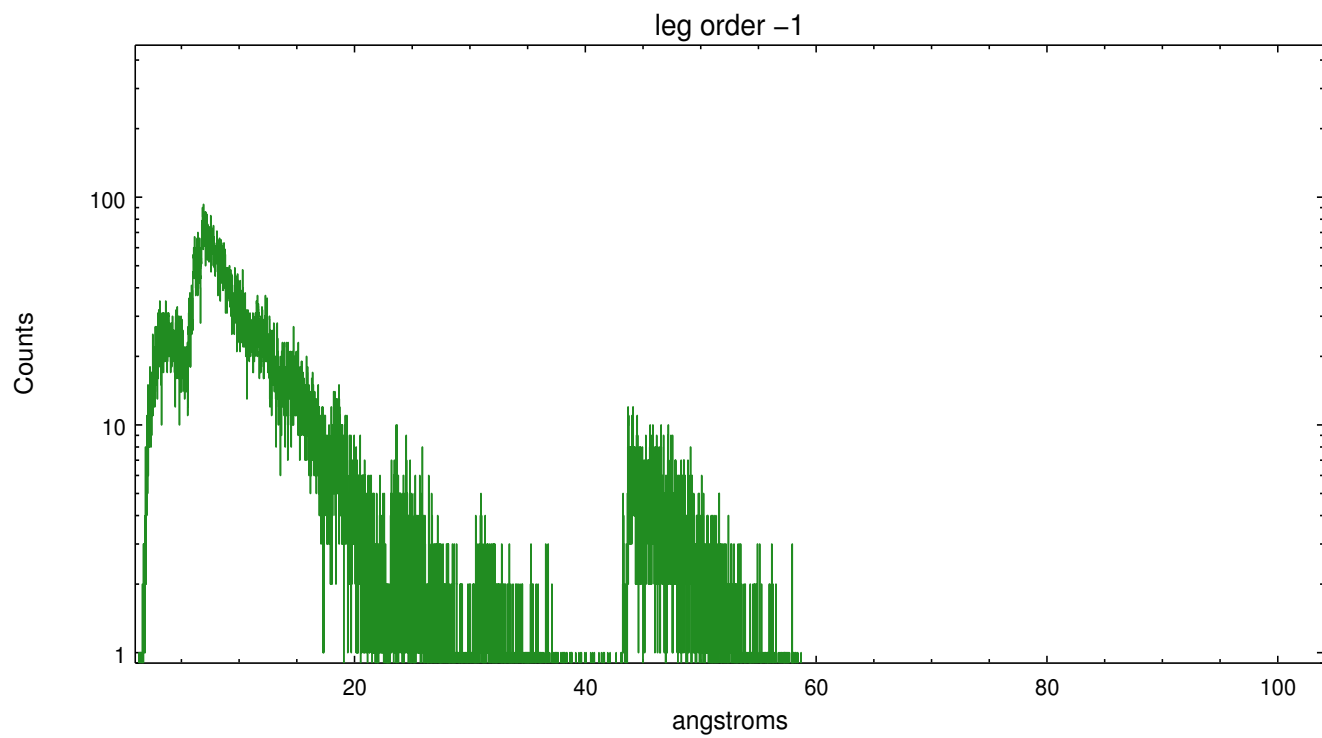
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5100	2439	45090	50099	58648	2602	4485





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	31.6794012

## A.2 Comments

Gain and CTI correction are not well calibrated on CCD\_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.

===Source is piled up, but software tool `tgdetect` did a good job of finding the zeroth order position.