V&V Reference Report
L2 ASCDS Version : 8.5.1.1

Observation 14795 - L2 Version 2
Chandra X-Ray Center

L2 Processing Date : Dec 2 2014

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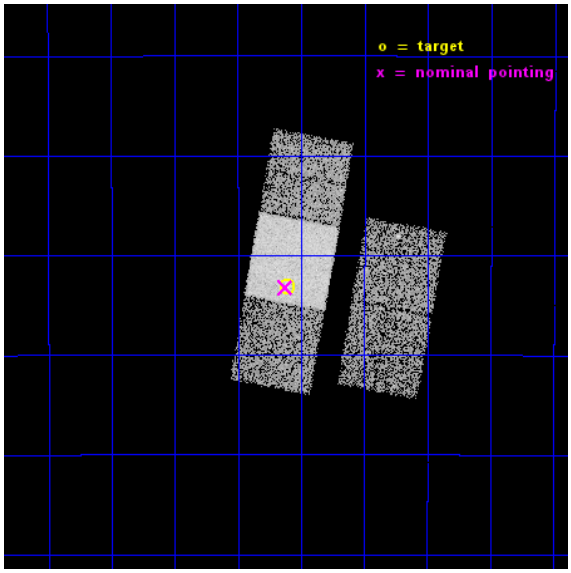
1 Front

seq_num	501923	Sequence number
obs_id	14795	Observation id
title	The Energetics and Environments of Type Ibc Supernovae	Proposal ti
observer	Prof Alicia Soderberg	Principal investigator
object	SN2013ak	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	121.777875	Observer's specified target RA [deg]
dec_targ	-28.052806	Observer's specified target Dec [deg]
ra_nom	121.78100748329	Nominal RA [deg]
dec_nom	-28.053913641622	Nominal Dec [deg]
roll_nom	280.36379078	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10068.800077438	Sum of GTIs [s]
livetime	9937.2437918838	Livetime [s]
ontime2	10068.800077438	Sum of GTIs [s]
ontime3	10068.800077438	Sum of GTIs [s]
ontime6	10068.800077438	Sum of GTIs [s]
ontime7	10068.800077438	Sum of GTIs [s]
ontime8	10068.800077438	Sum of GTIs [s]
l2events	53541	Number of level 2 events

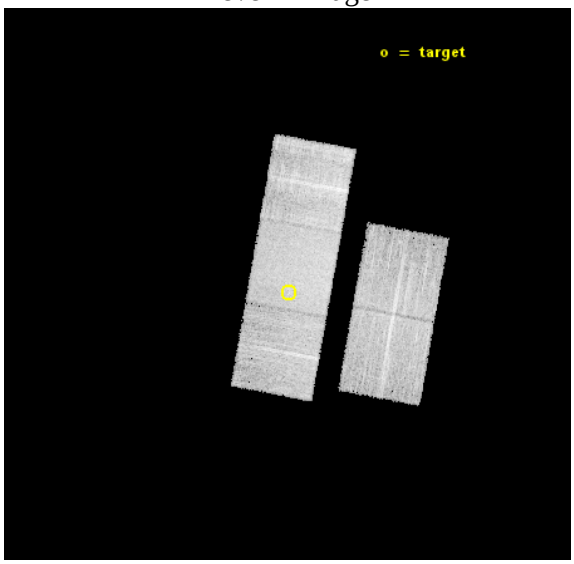


2 OBI

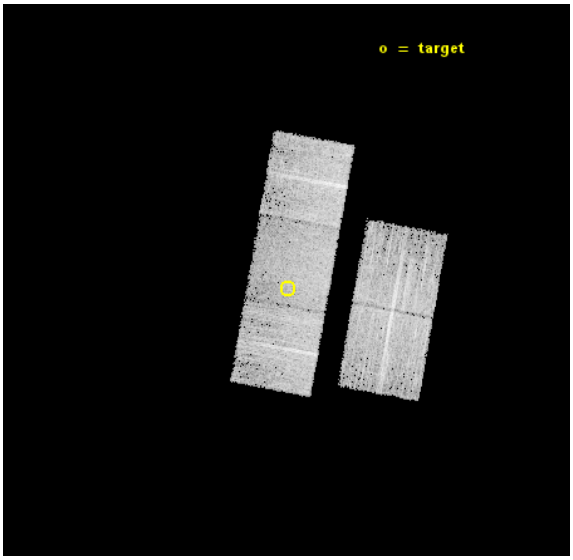
2.1 OBI

2.1.1 Images

Level 1 Image

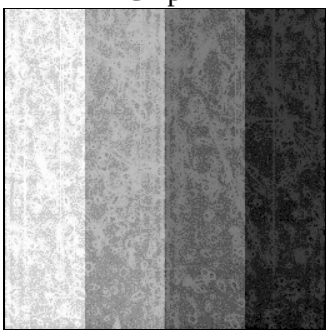


Level 1 Bad Events

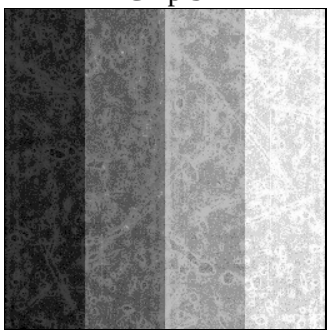


2.1.2 Bias

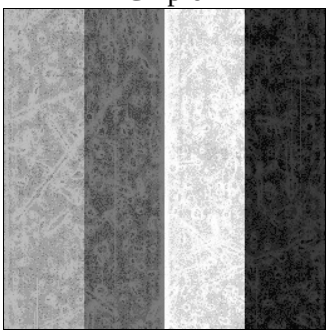
Chip 2



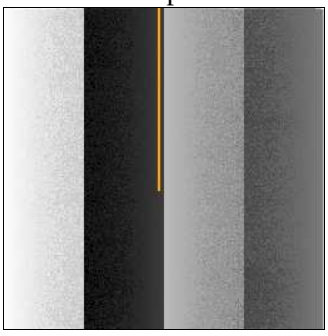
Chip 3



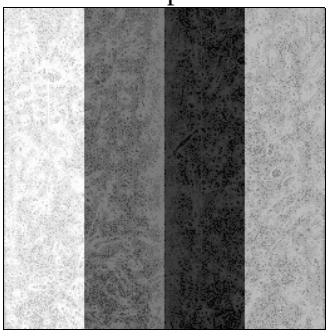
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.3	Processing system revision
caldbver	4.6.4	
date	2014-12-02T13:41:58	Date and time of file creation
revision	2	Processing version of data

sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ontime	10068.800077438	Sum of GTIs [s]
ontime2	10068.800077438	Sum of GTIs [s]
ontime3	10068.800077438	Sum of GTIs [s]
ontime6	10068.800077438	Sum of GTIs [s]
ontime7	10068.800077438	Sum of GTIs [s]
ontime8	10068.800077438	Sum of GTIs [s]
l1events	301255	Number of level 1 events

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	52564	50364	54081	71971	72275
rejected events	46417	44370	47612	40502	52547
rejected %	88%	88%	88%	56%	72%

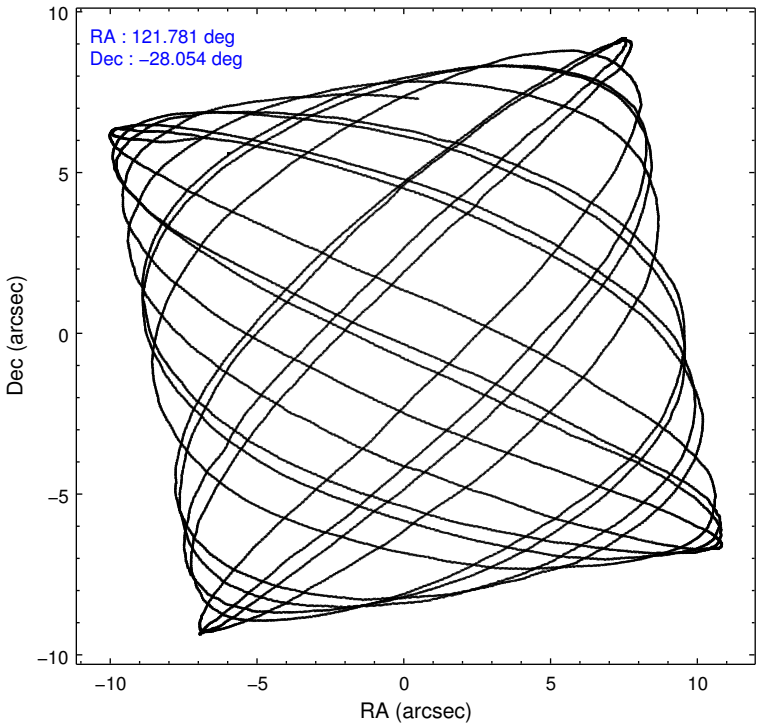
	ccd 2	**ccd 3**	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	2150	2178	2193	2797	5600
	4%	4%	4%	3%	7%
grade 1 events	27	21	26	77	45
	0%	0%	0%	0%	0%
grade 2 events	1483	1391	1421	6476	4612
	2%	2%	2%	8%	6%
grade 3 events	662	639	663	2666	2115
	1%	1%	1%	3%	2%
grade 4 events	660	623	667	2740	1947
	1%	1%	1%	3%	2%
grade 5 events	2312	2711	2747	7490	4089
	4%	5%	5%	10%	5%
grade 6 events	1195	1163	1529	16805	5454
	2%	2%	2%	23%	7%
grade 7 events	44075	41638	44835	32920	48413
	83%	82%	82%	45%	66%

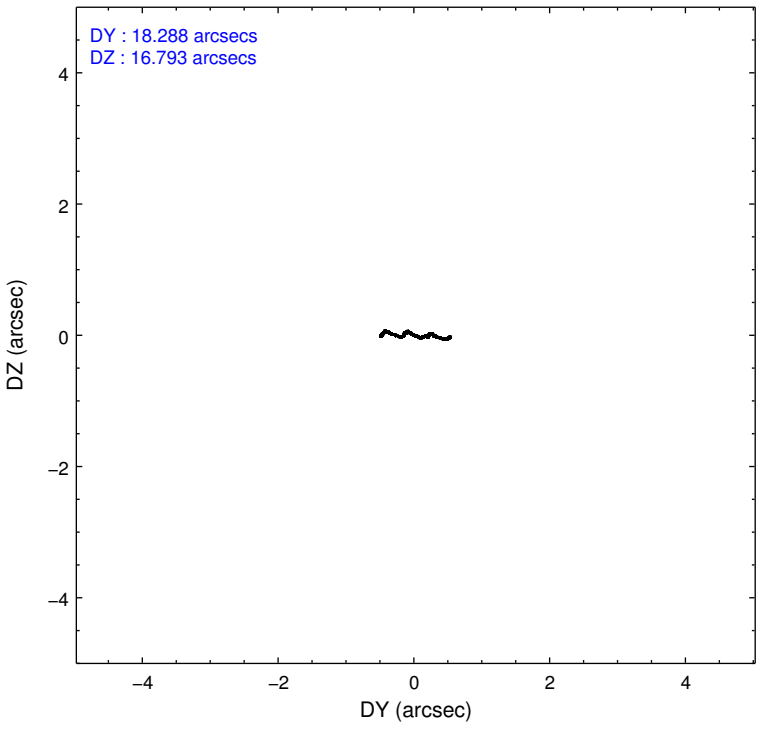
2.2 Compared Parameters

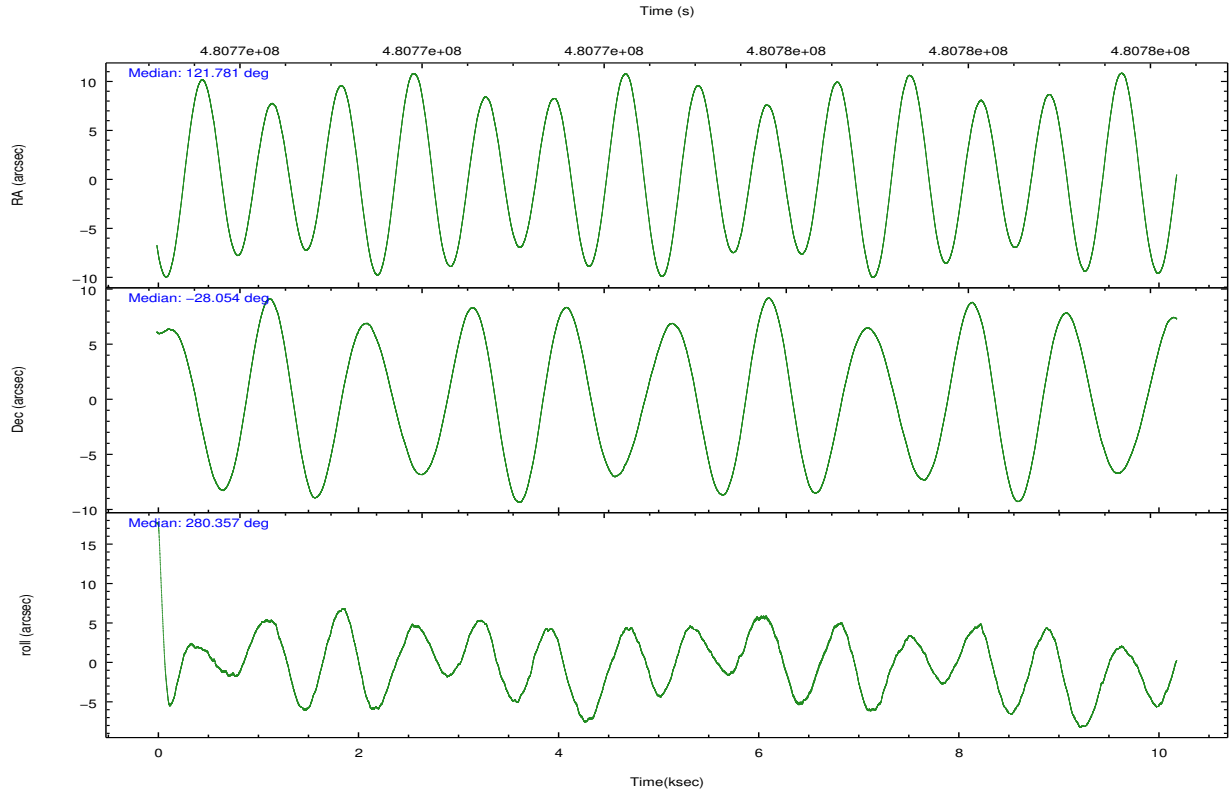
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-23678	ACIS-23678
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	121.760675	121.7810074832878
[deg] Pointing Dec	-28.033359	-28.05391364162196
[deg] Pointing Roll	280.197607	280.3637907800033
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	480769777.184000	480768832.20255
Observation start date	2013-03-27T11:08:30	2013-03-27T10:53:52
[s] Observation end time (MET)	480779777.184000	480780486.96568
Observation end date	2013-03-27T13:55:10	2013-03-27T14:08:06
Read mode	TIMED	TIMED

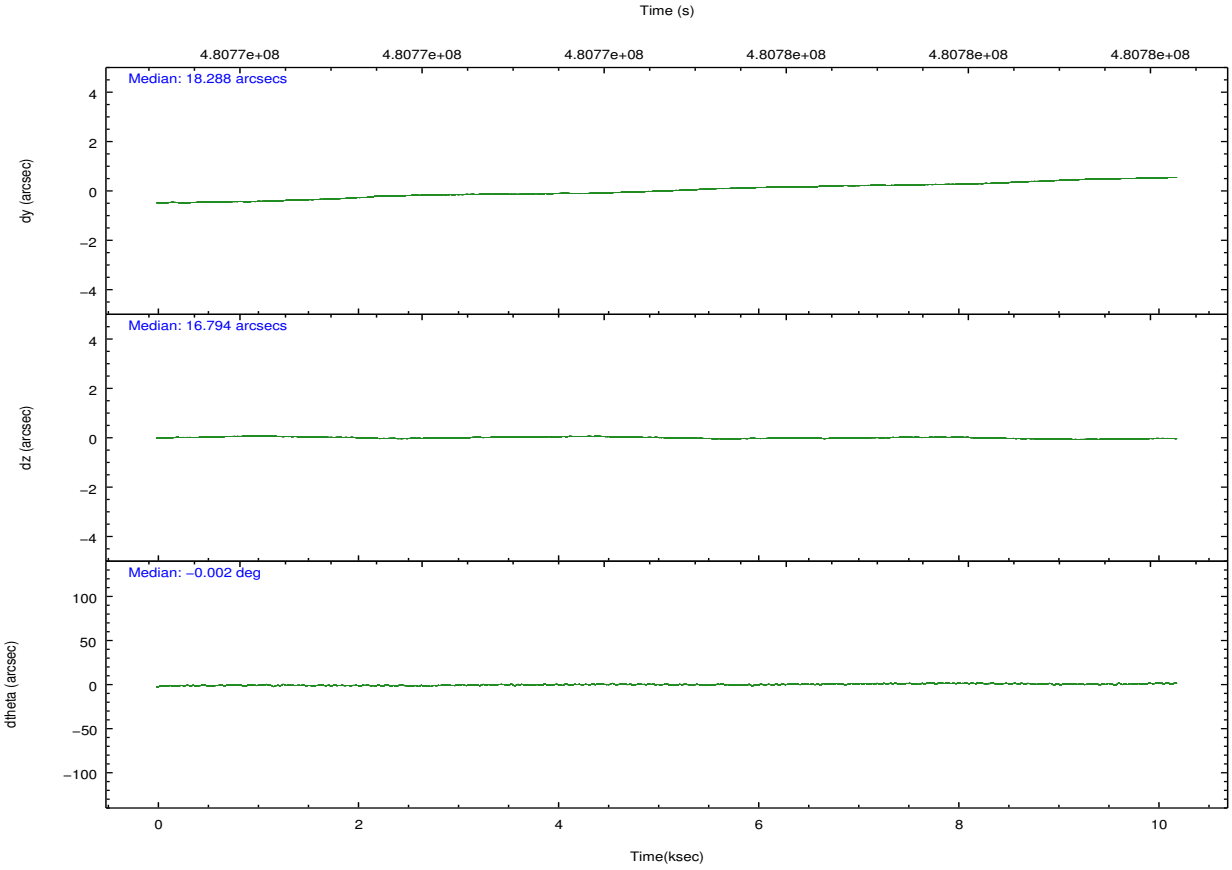
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect


RA : 121.781 deg
Dec : −28.054 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 18.288 arcsecs
DZ : 16.793 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
4.8077e+08
4.8077e+08
4.8077e+08
4.8078e+08
4.8078e+08
4.8078e+08
Median: 121.781 deg
RA (arcsec)
Median: −28.054 deg
Dec (arcsec)
Median: 280.357 deg
roll (arcsec)
Time(ksec)

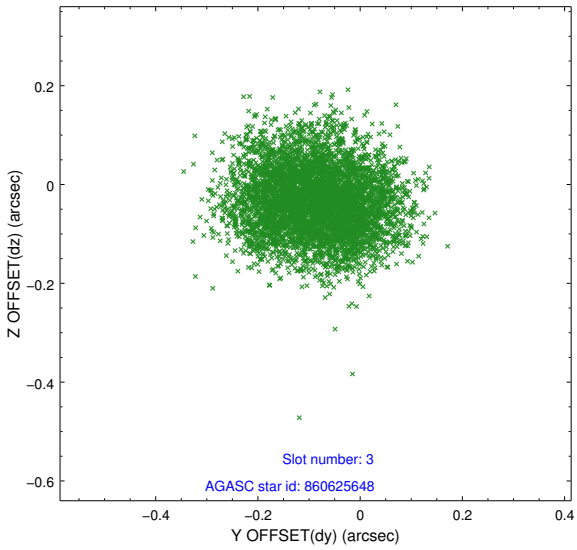

Time (s)
4.8077e+08
4.8077e+08
4.8077e+08
4.8078e+08
4.8078e+08
4.8078e+08
Median: 18.288 arcsecs
dy (arcsec)
Median: 16.794 arcsecs
dz (arcsec)
Median: −0.002 deg
dtheta (arcsec)
Time(ksec)

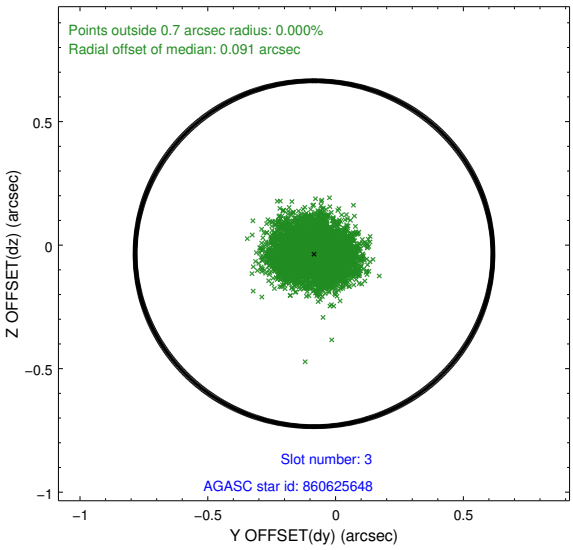
Slot Statistics

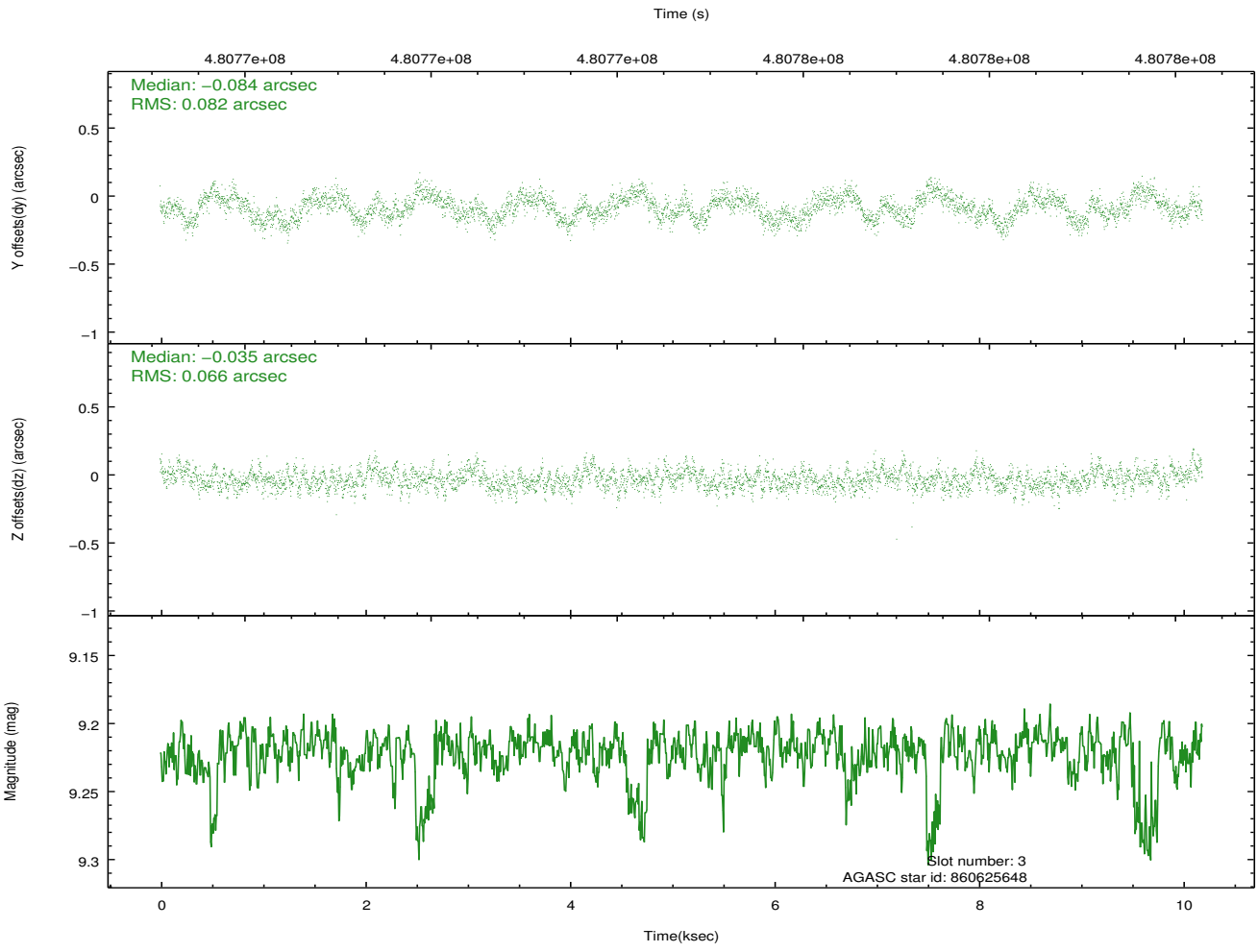
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.97	2486	-0.140	-0.104	0.012	0.019	0.000000	0.000000	-771.57	-1738.24
1	FID		ACIS-S-4	7.05	2486	0.182	0.056	0.009	0.015	0.000000	0.000000	2141.86	169.76
2	FID		ACIS-S-6	7.18	2485	-0.070	0.055	0.008	0.014	0.000000	0.000000	391.23	807.80
3	GUIDE	used	860625648	9.22	4970	-0.084	-0.035	0.114	0.175	121.170676	-28.411124	1013.01	-2079.79
4	GUIDE	used	860751120	9.30	4954	0.021	-0.128	0.118	0.187	122.396486	-28.293445	1284.18	1816.94
5	GUIDE	used	860761624	9.17	4961	-0.061	-0.012	0.112	0.178	122.434084	-28.427166	1779.24	1847.25
6	GUIDE	used	860229056	9.00	4971	-0.044	0.070	0.097	0.154	121.416930	-27.442632	-2284.93	-704.14
7	GUIDE	used	860622208	8.61	4970	0.170	0.092	0.086	0.141	121.079753	-28.509954	1313.91	-2424.42

2.4 Star Slots

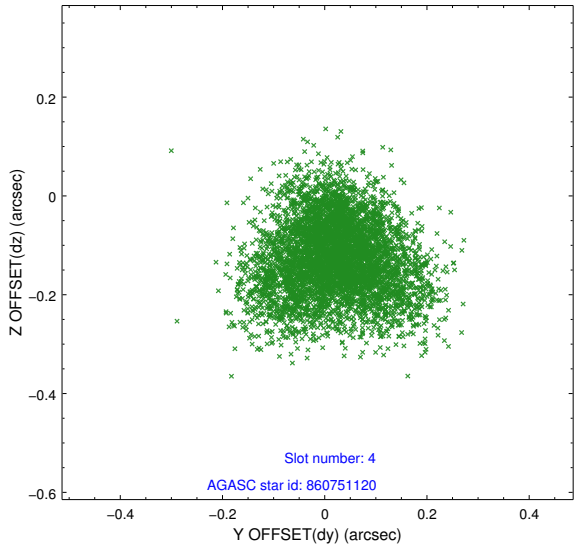
2.4.1 Slot 3

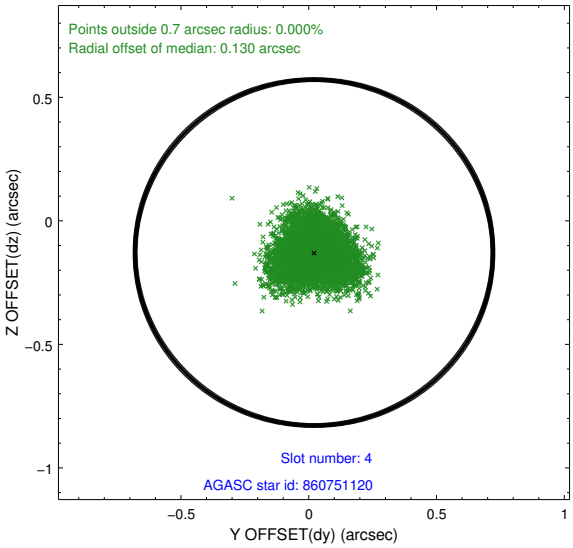


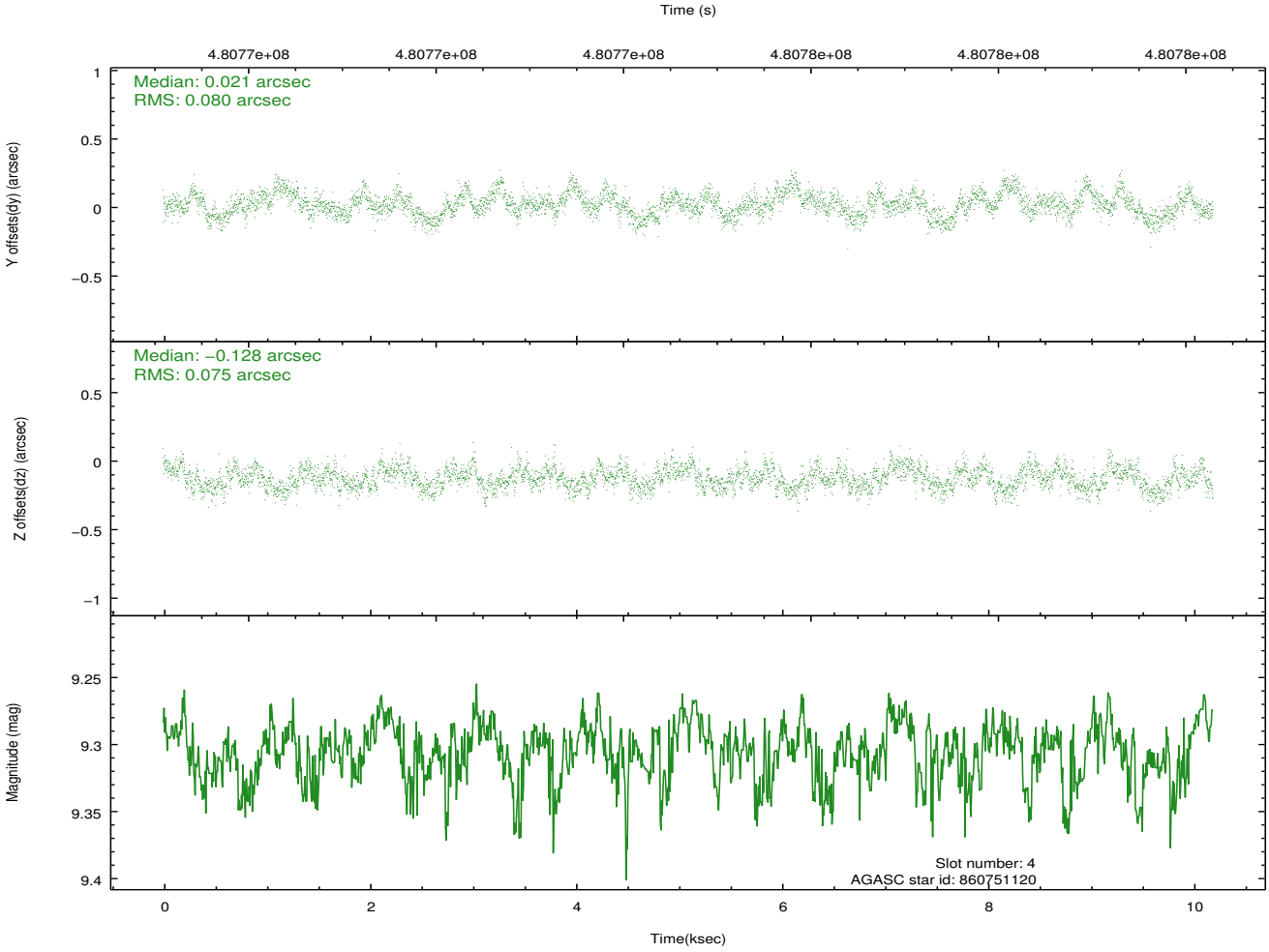




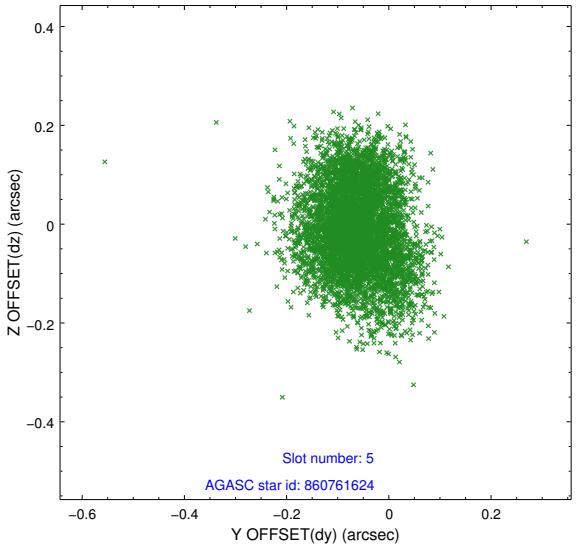
2.4.2 Slot 4

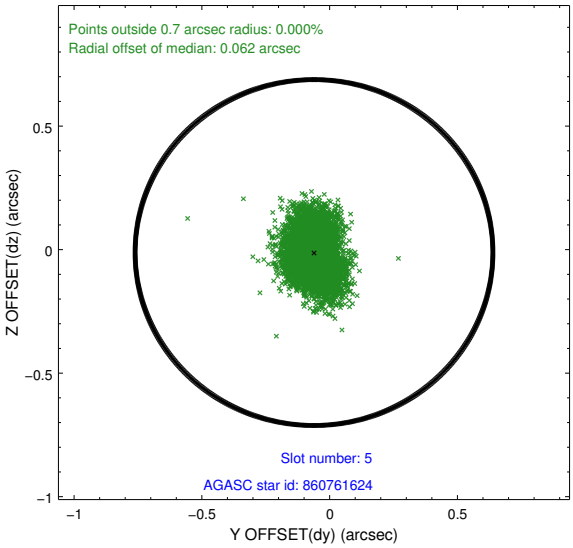

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 860751120

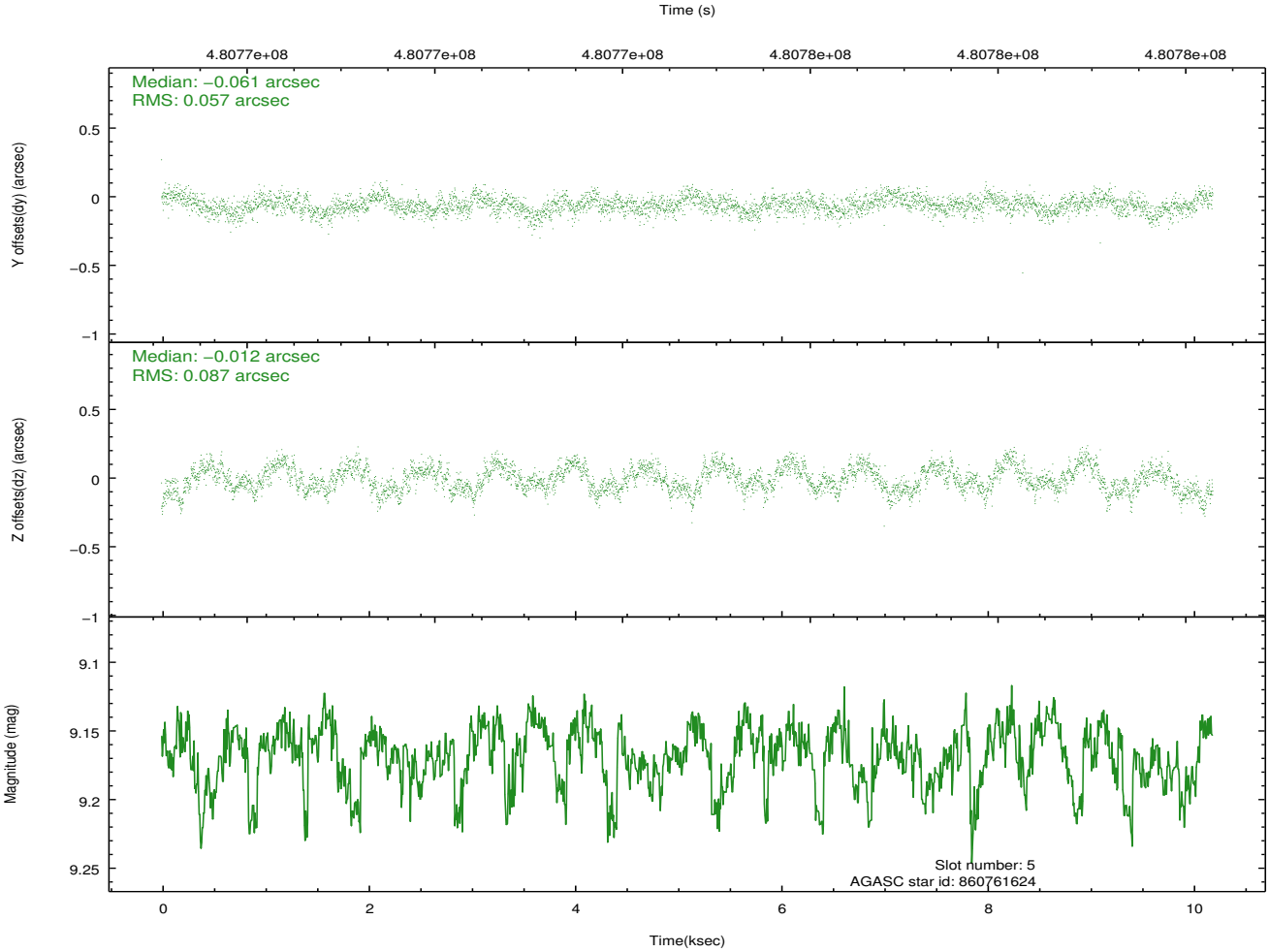

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.130 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 860751120


Time (s)
Median: 0.021 arcsec
RMS: 0.080 arcsec
Y offsets(dy) (arcsec)
Median: −0.128 arcsec
RMS: 0.075 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 860751120
Time(ksec)

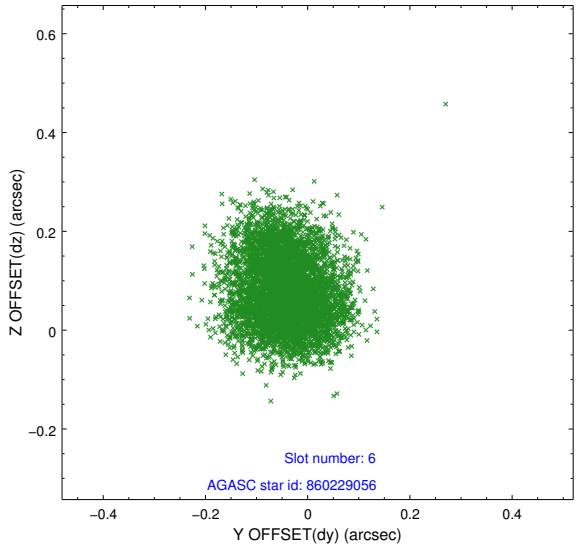
2.4.3 Slot 5

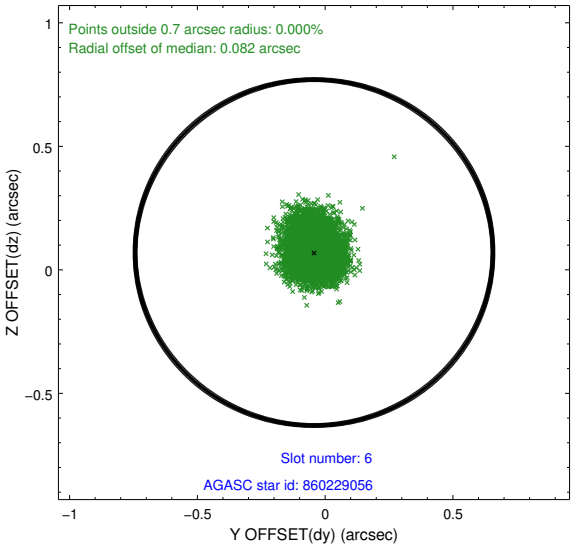

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 860761624

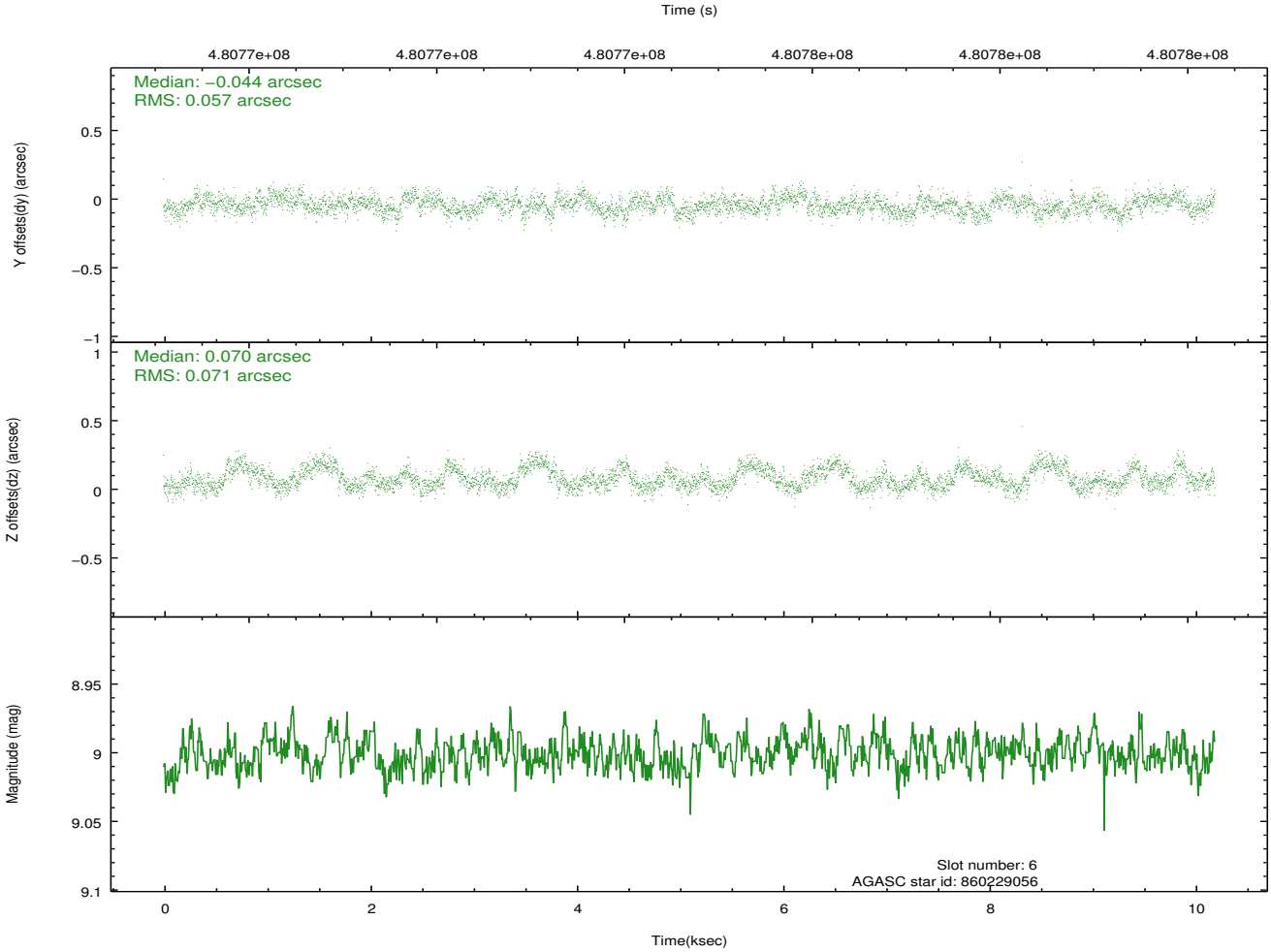

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.062 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 860761624


Time (s)
Median: −0.061 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: −0.012 arcsec
RMS: 0.087 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 860761624
Time(ksec)

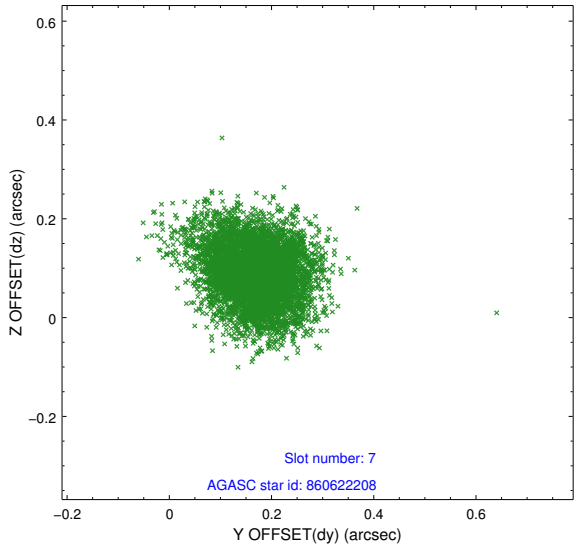
2.4.4 Slot 6

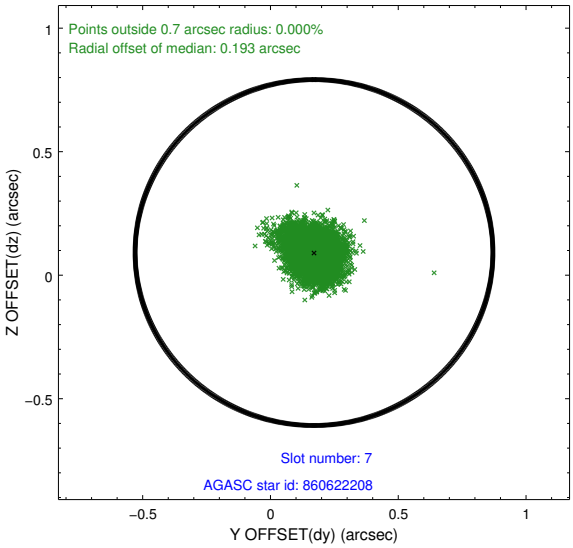

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 860229056

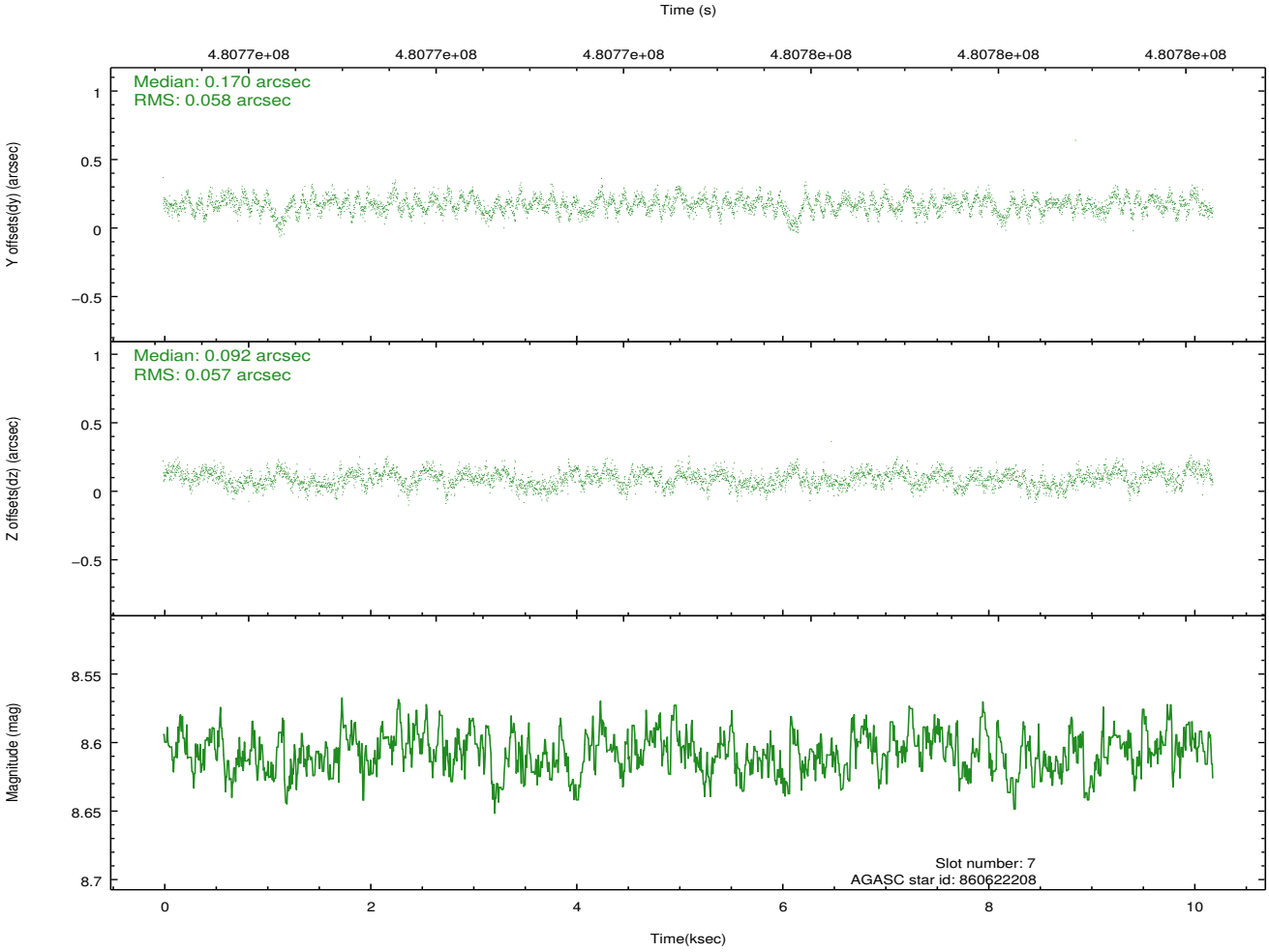

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.082 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 860229056


Time (s)
Median: −0.044 arcsec
RMS: 0.057 arcsec
Y offsets(dy) (arcsec)
Median: 0.070 arcsec
RMS: 0.071 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 860229056
Time(ksec)

2.4.5 Slot 7

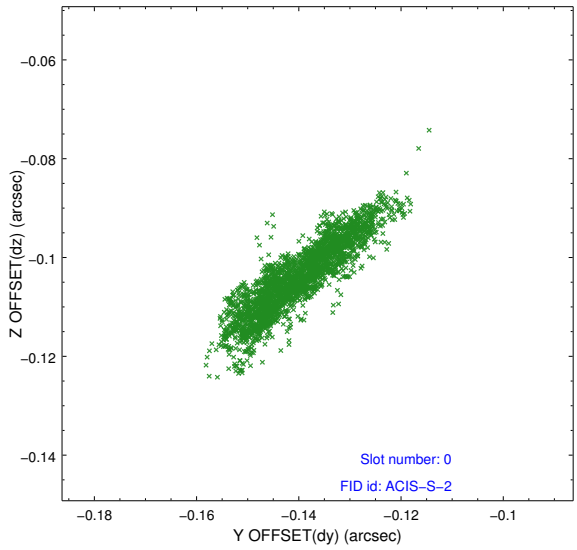

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 860622208

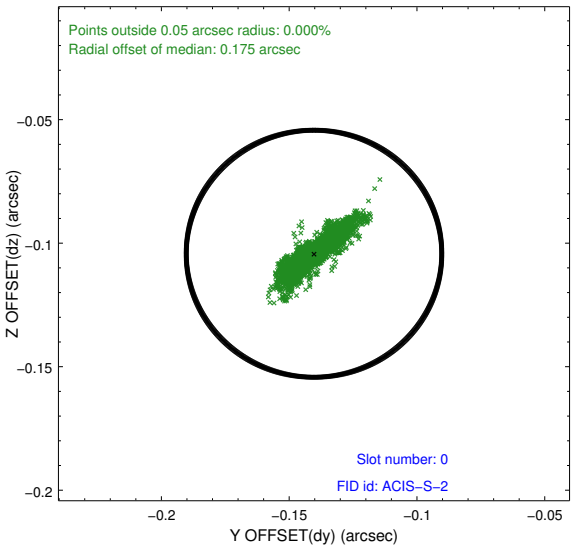

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.193 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 860622208

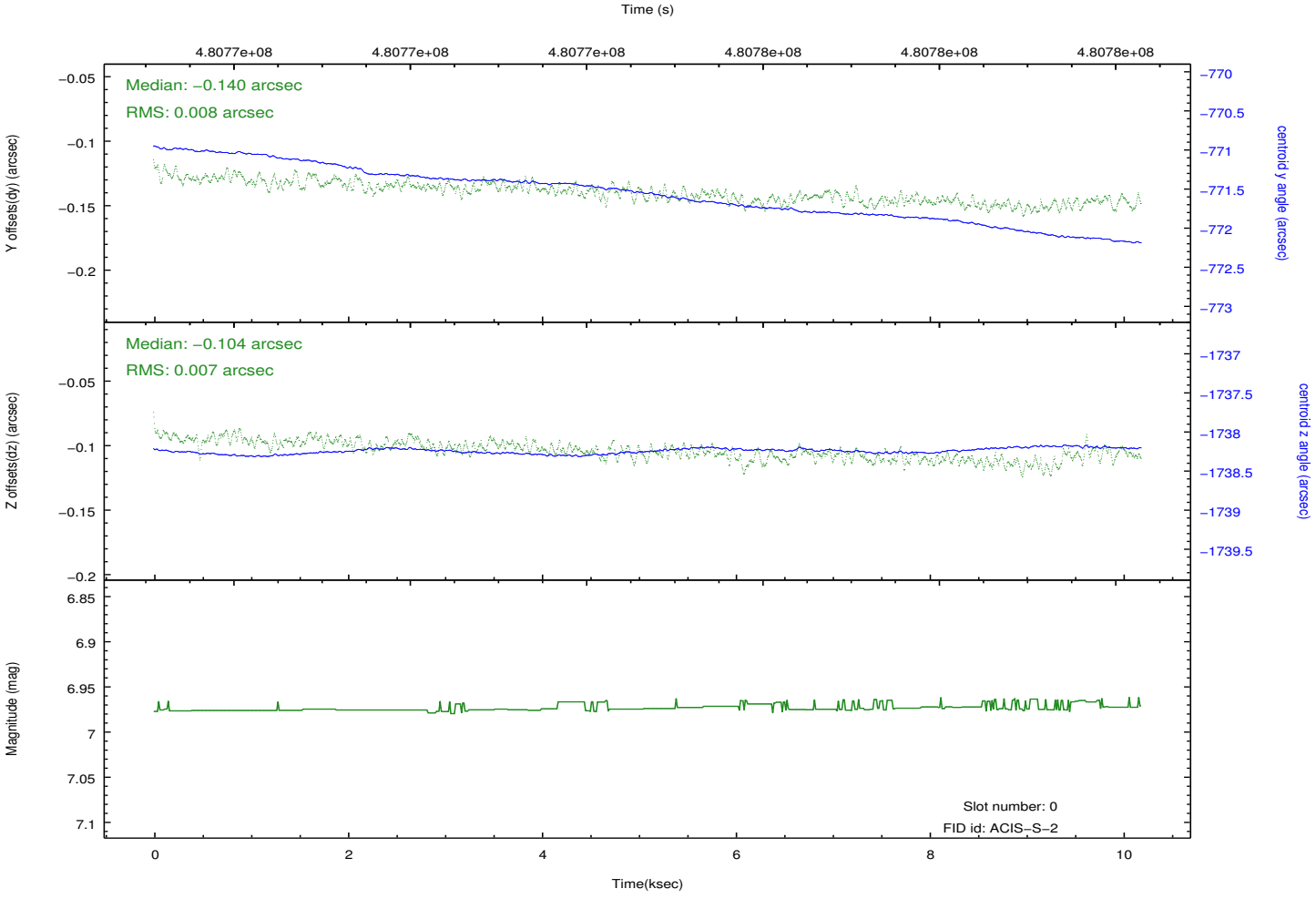

Time (s)
Median: 0.170 arcsec
RMS: 0.058 arcsec
Y offsets(dy) (arcsec)
Median: 0.092 arcsec
RMS: 0.057 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 860622208
Time(ksec)

2.5 FID Slots

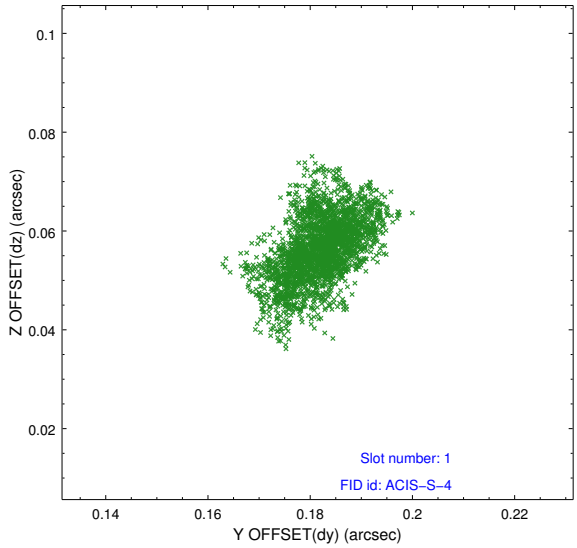
2.5.1 Slot 0

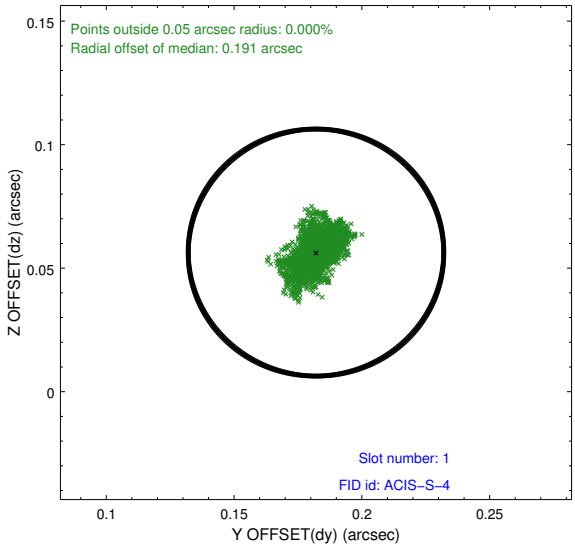


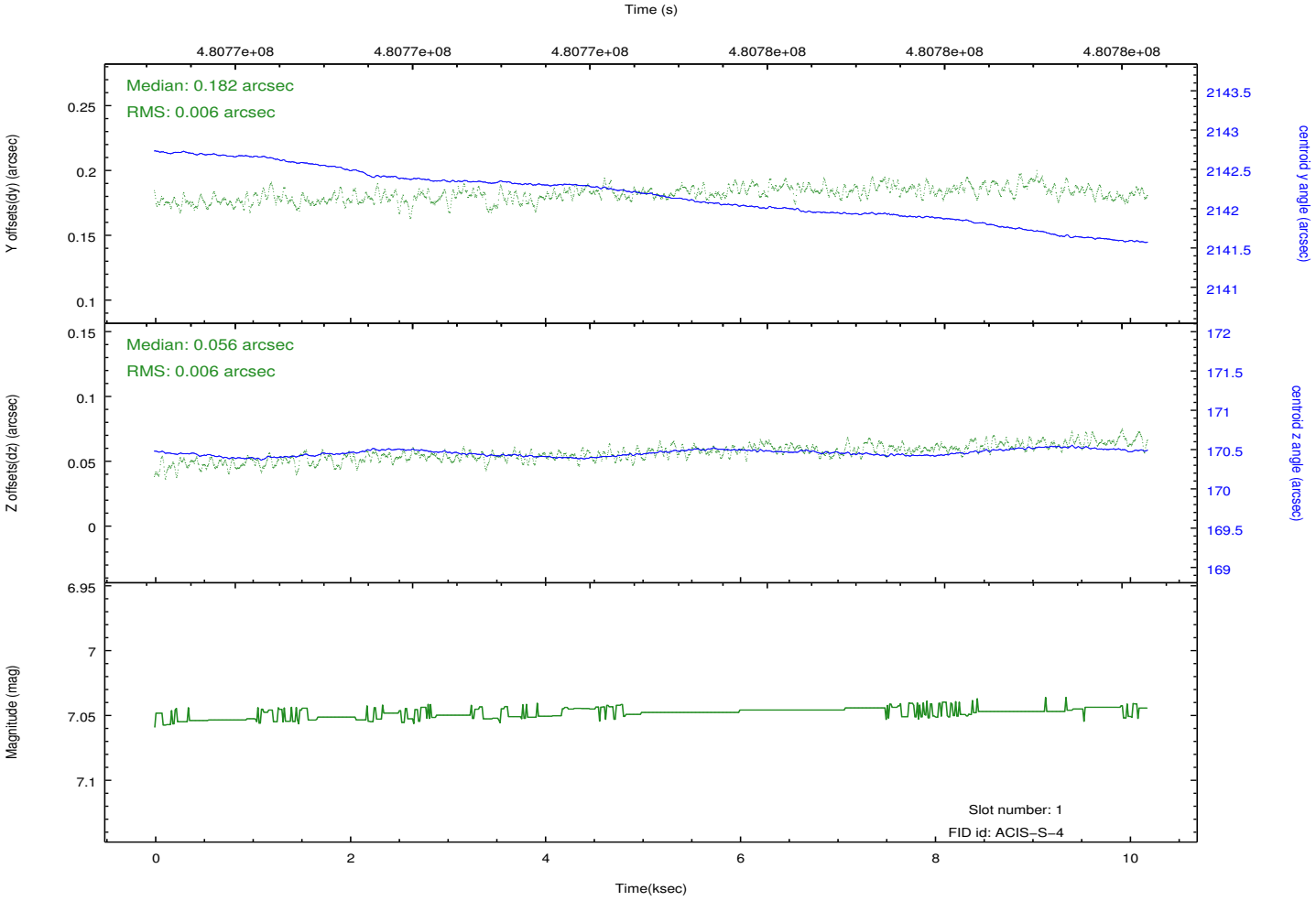




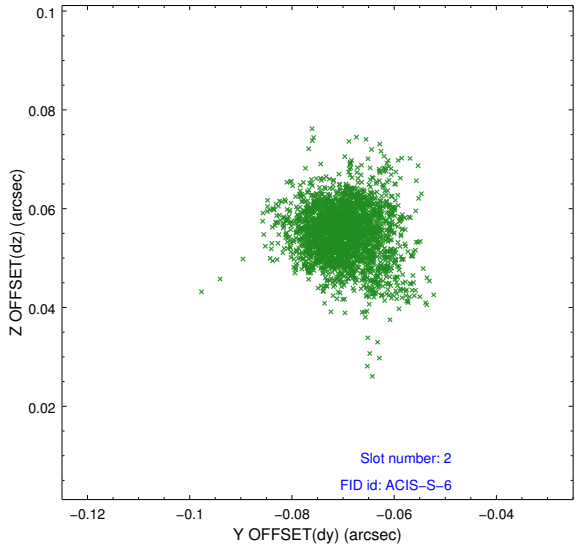
2.5.2 Slot 1

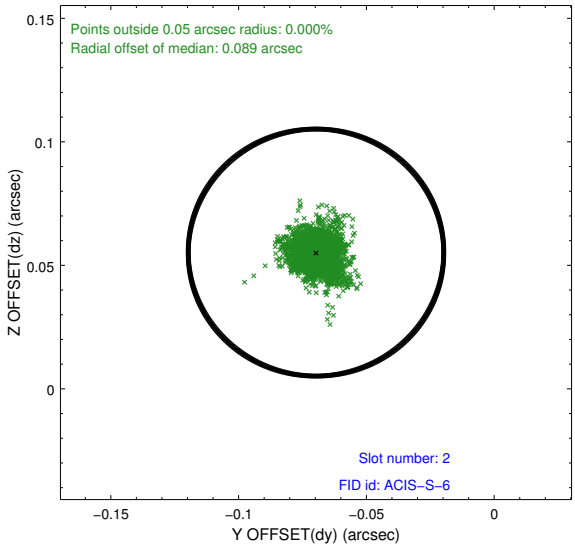

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

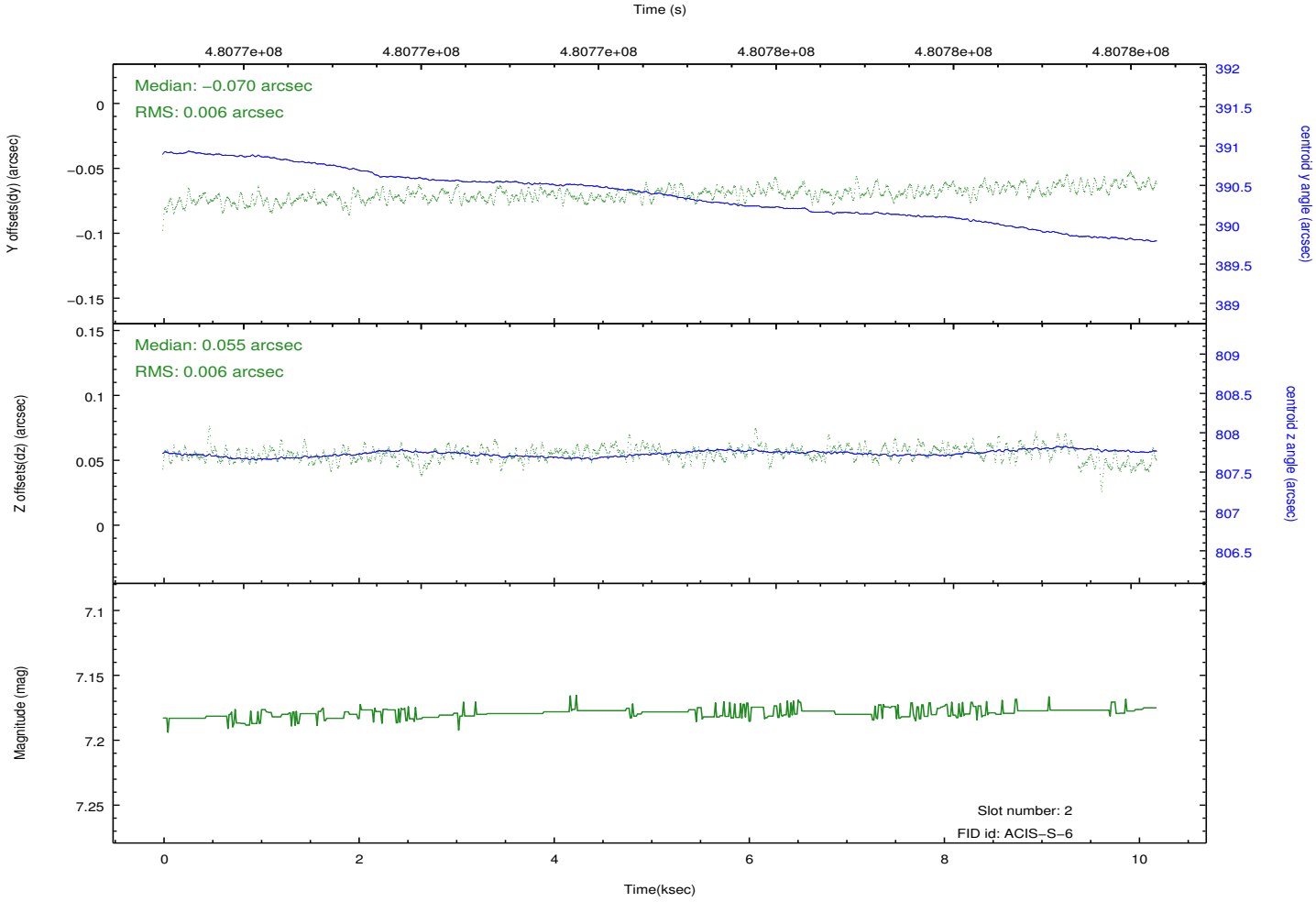

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.191 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.182 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.056 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−6


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.089 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−6


Time (s)
Median: −0.070 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.055 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−6
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.068800077438

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.