V&V Reference Report
L2 ASCDS Version : 10.3.3

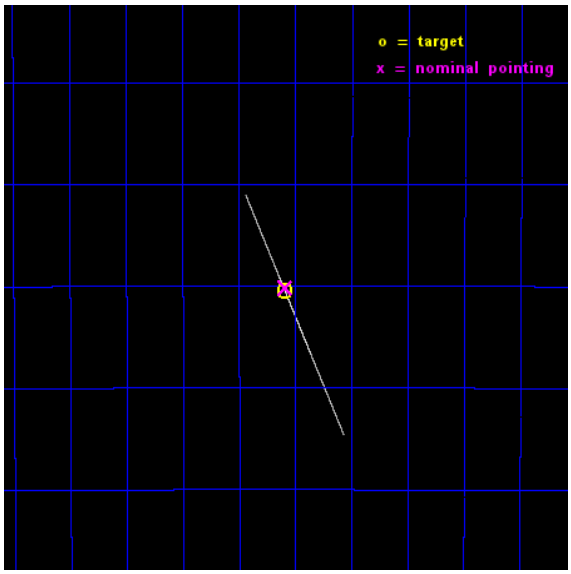
Observation 16762 - L2 Version 1
Chandra X-Ray Center

L2 Processing Date : May 4 2015

Contents

1 Front

seq_num	502280	Sequence number
obs_id	16762	Observation id
title	The Energetic Magnetar in HESS J1713-381/CTB 37B	Proposal title
observer	Prof. Jules Halpern	Principal investigator
object	CXOU J171405.7-381031	Source name
ra_targ	258.52375	Observer's specified target RA [deg]
dec_targ	-38.17525	Observer's specified target Dec [deg]
ra_nom	258.52187152847	Nominal RA [deg]
dec_nom	-38.170017628314	Nominal Dec [deg]
roll_nom	66.42291878378	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20130.0	Sum of GTIs [s]
livetime	20051.3671875	Livetime [s]
ontime6	20130.0	Sum of GTIs [s]
ontime7	20130.0	Sum of GTIs [s]
ontime8	20130.0	Sum of GTIs [s]
l2events	95536	Number of level 2 events

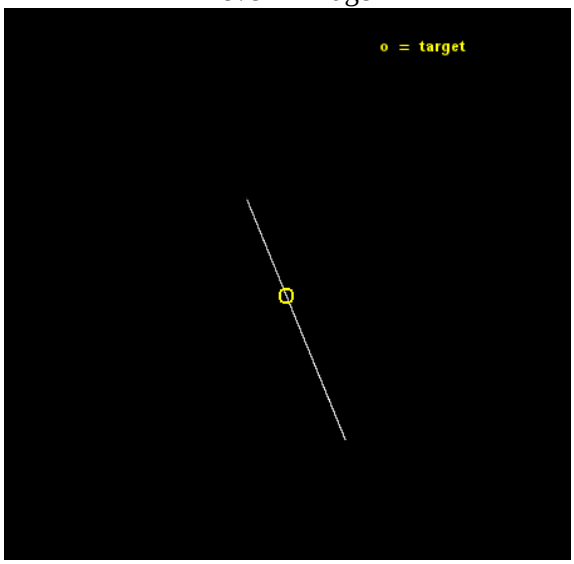


2 OBI

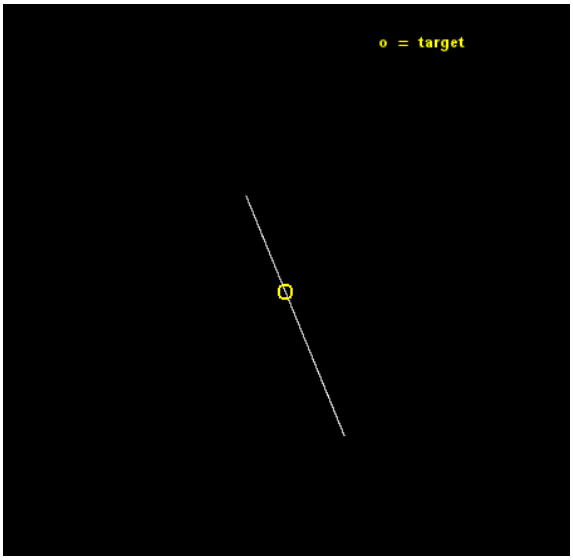
2.1 OBI

2.1.1 Images

Level 1 Image

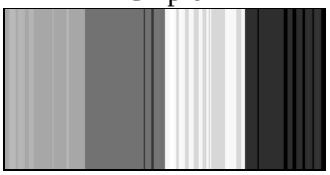


Level 1 Bad Events

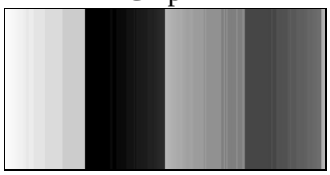


2.1.2 Bias

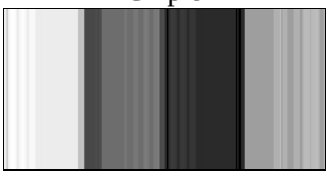
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	10.3.3	Processing system revision
caldbver	4.6.7	
date	2015-05-05T02:25:42	Date and time of file creation
revision	1	Processing version of data

sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ontime	20130.0	Sum of GTIs [s]
ontime6	20130.0	Sum of GTIs [s]
ontime7	20130.0	Sum of GTIs [s]
ontime8	20130.0	Sum of GTIs [s]
l1events	658158	Number of level 1 events

2.1.4 Events

	ccd 6	**ccd 7**	**ccd 8**
level 1 events	178423	200695	279040
rejected events	159674	136136	231387
rejected %	89%	67%	82%

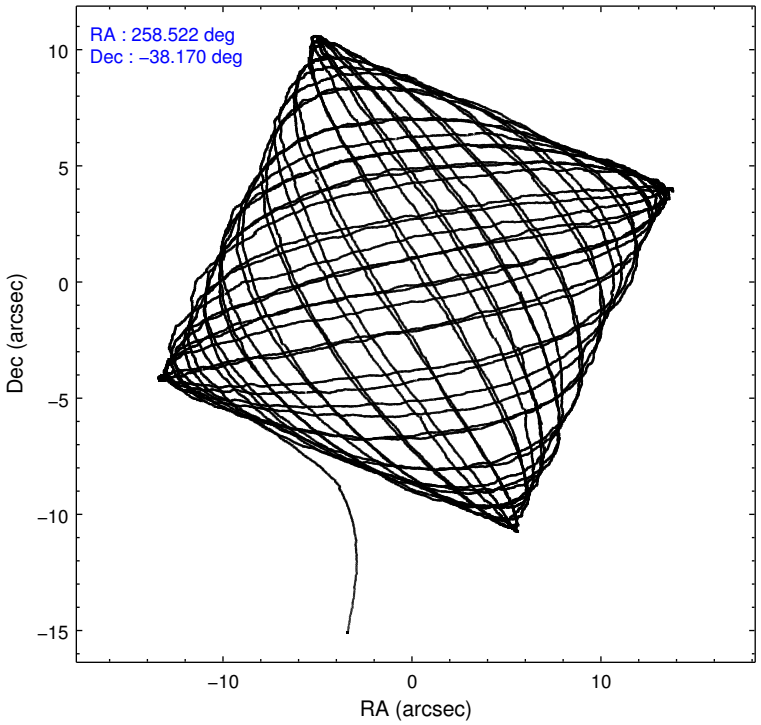
	ccd 6	**ccd 7**	**ccd 8**
grade 0 events	2086	4549	10617
	1%	2%	3%
grade 1 events	95	159	183
	0%	0%	0%
grade 2 events	7463	17557	14696
	4%	8%	5%
grade 3 events	2225	3143	4949
	1%	1%	1%
grade 4 events	1930	3073	4813
	1%	1%	1%
grade 5 events	5312	12943	7696
	2%	6%	2%
grade 6 events	5092	36326	12644
	2%	18%	4%
grade 7 events	154220	122945	223442
	86%	61%	80%

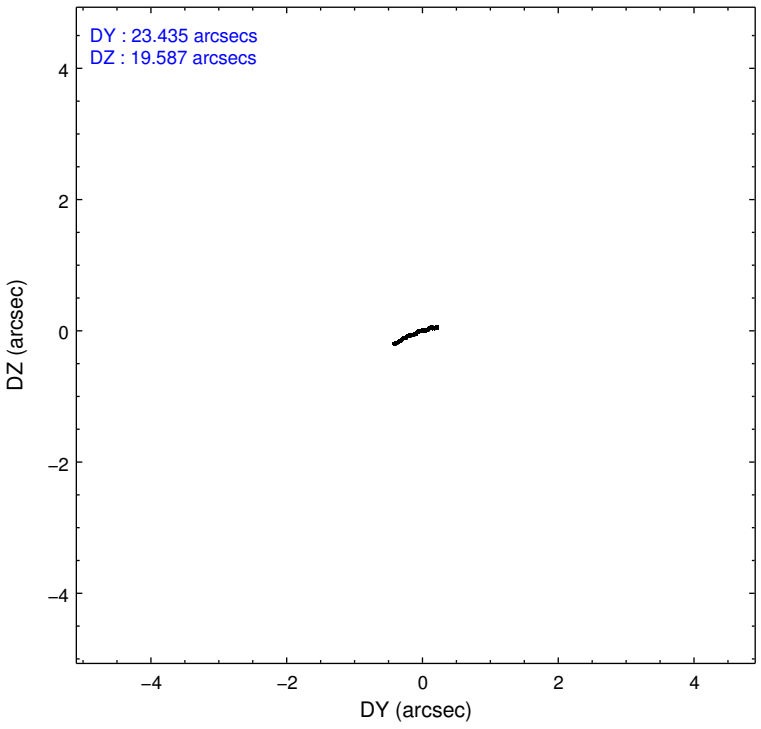
2.2 Compared Parameters

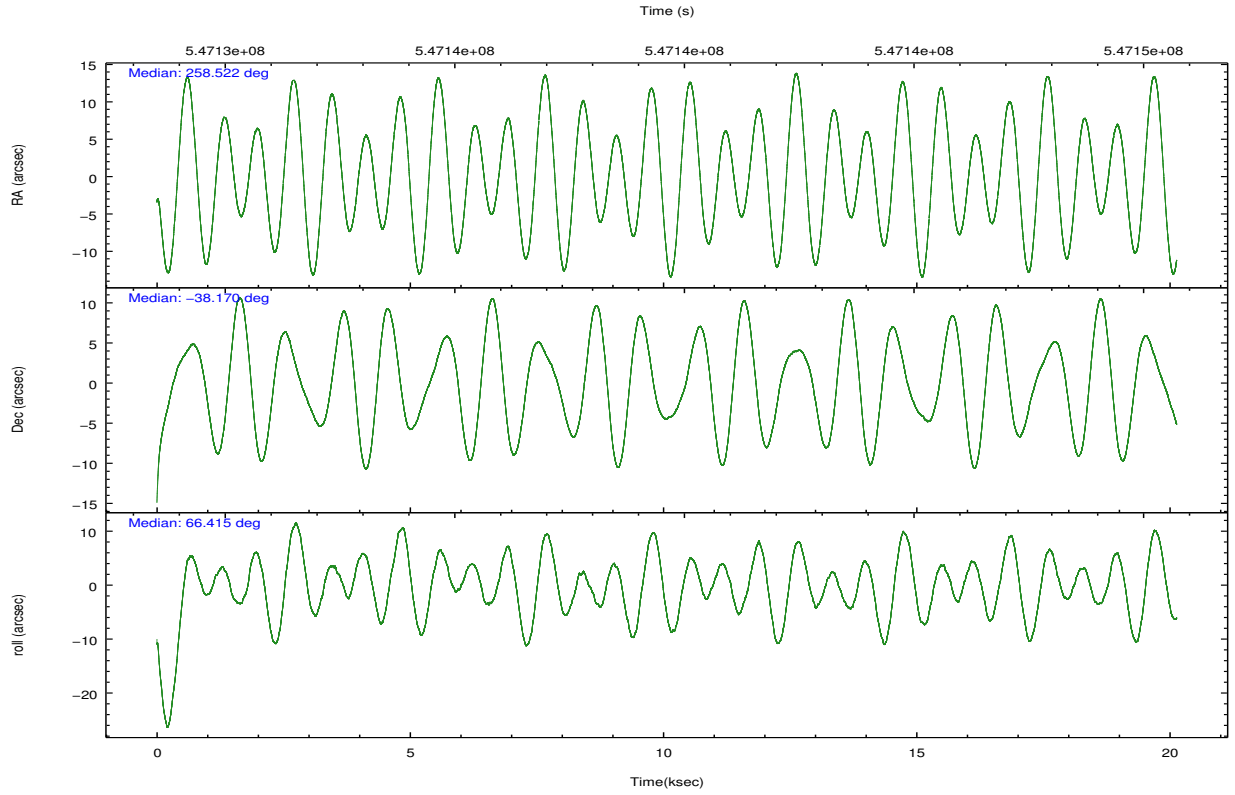
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-678	ACIS-678
Grating	NONE	NONE
Data mode	CC33_FAINT	CC33_FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	258.526274	258.5218715284701
[deg] Pointing Dec	-38.197236	-38.17001762831361
[deg] Pointing Roll	66.269005	66.42291878378003
[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)	547129667.184000	547128090.77376
Observation start date	2015-05-04T12:26:40	2015-05-04T12:01:30
[s] Observation end time (MET)	547149667.184000	547150114.94999
Observation end date	2015-05-04T18:00:00	2015-05-04T18:08:34
Read mode	CONTINUOUS	CONTINUOUS

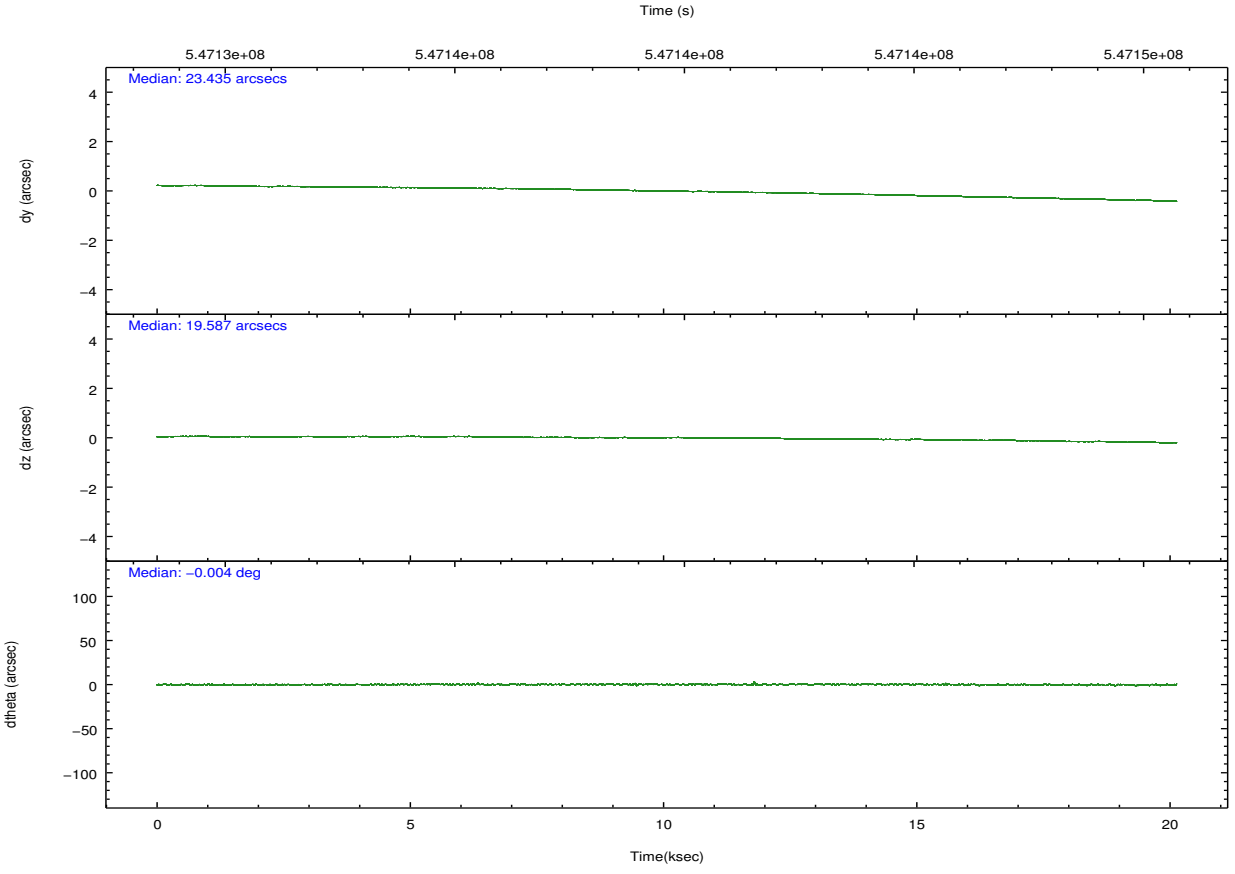
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	N	N
CCD S1 on	N	N
CCD S2 on	O2	Y
CCD S3 on	Y	Y
CCD S4 on	O1	Y
CCD S5 on	N	N
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0

2.3 Aspect


RA : 258.522 deg
Dec : −38.170 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−10
0
10


DY : 23.435 arcsecs
DZ : 19.587 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.4713e+08
5.4714e+08
5.4714e+08
5.4714e+08
5.4715e+08
Median: 258.522 deg
RA (arcsec)
Median: −38.170 deg
Dec (arcsec)
Median: 66.415 deg
roll (arcsec)
Time(ksec)

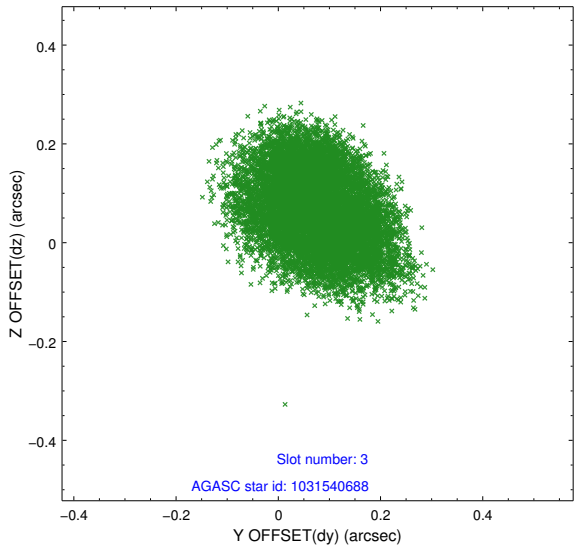

Time (s)
5.4713e+08
5.4714e+08
5.4714e+08
5.4714e+08
5.4715e+08
Median: 23.435 arcsecs
dy (arcsec)
Median: 19.587 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

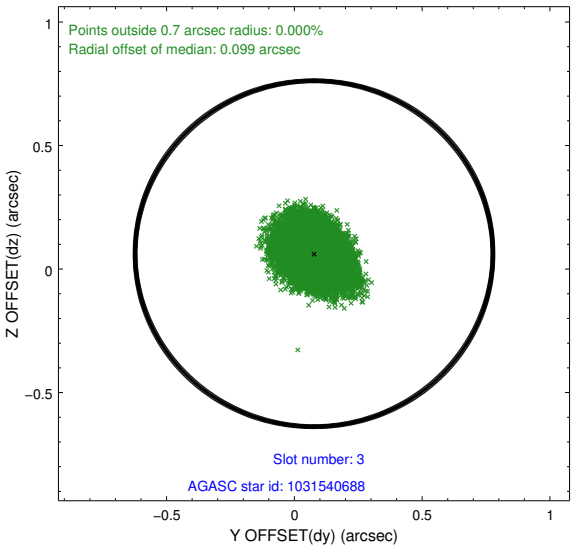
Slot Statistics

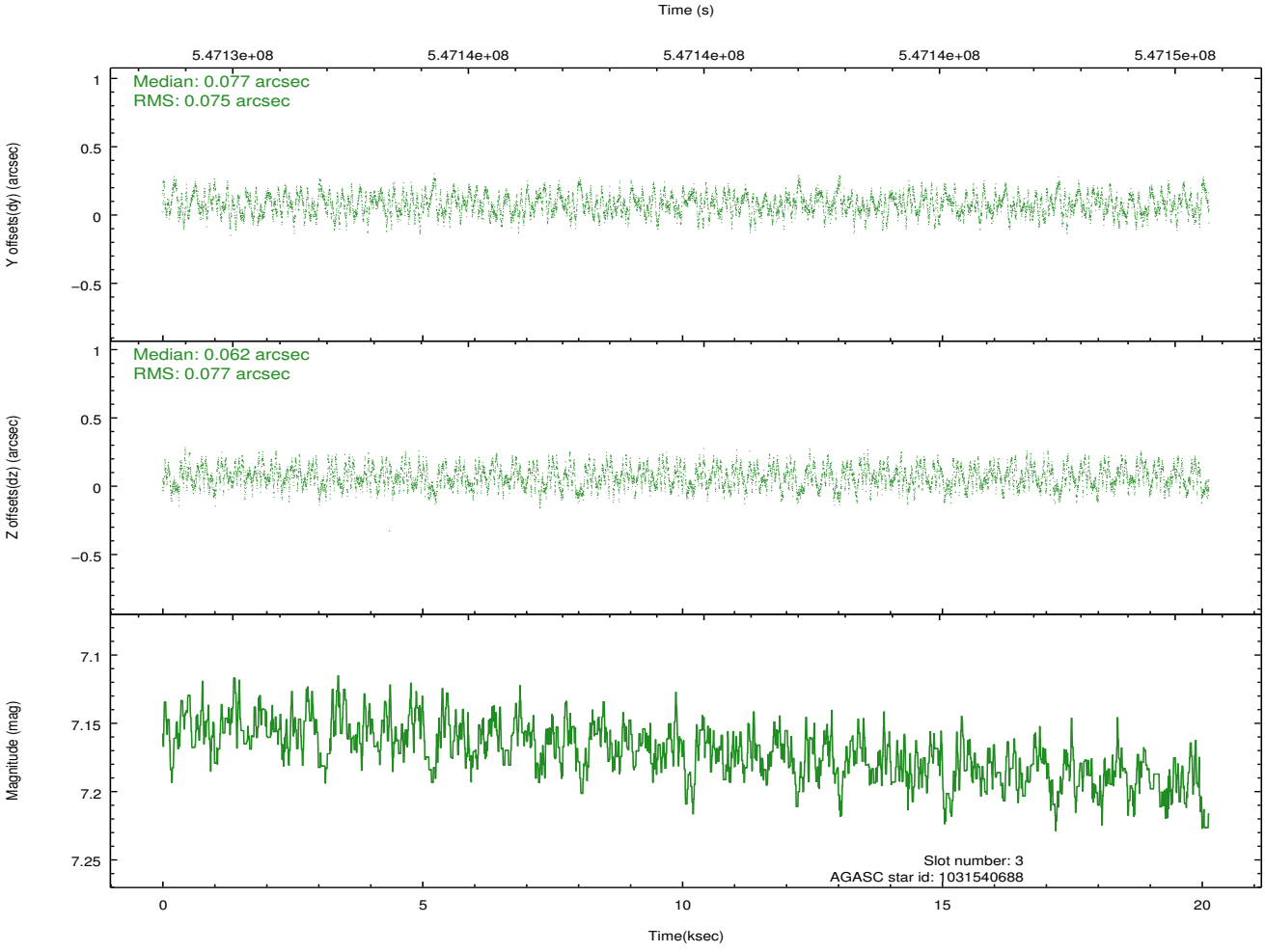
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.09	4911	-0.189	-0.095	0.016	0.025	0.000000	0.000000	-776.78	-1741.11
1	FID		ACIS-S-4	7.19	4911	0.448	0.117	0.012	0.020	0.000000	0.000000	2137.04	167.40
2	FID		ACIS-S-5	7.20	4912	-0.288	-0.013	0.013	0.023	0.000000	0.000000	-1829.49	161.14
3	GUIDE	used	1031540688	7.17	9821	0.077	0.062	0.118	0.175	258.843021	-38.212972	307.79	-843.54
4	GUIDE	used	1031541216	6.72	9820	-0.147	-0.342	0.100	0.157	258.289266	-37.952377	535.47	969.91
5	GUIDE	used	1031549032	7.97	9820	0.273	0.310	0.098	0.154	258.584727	-38.516573	-985.49	-613.18
6	GUIDE	used	1031538744	7.06	9821	-0.137	-0.526	0.095	0.145	257.905000	-37.853256	417.06	2112.07
7	GUIDE	used	1031541992	8.55	9815	-0.074	0.493	0.104	0.169	259.348449	-38.357588	396.74	-2360.44

2.4 Star Slots

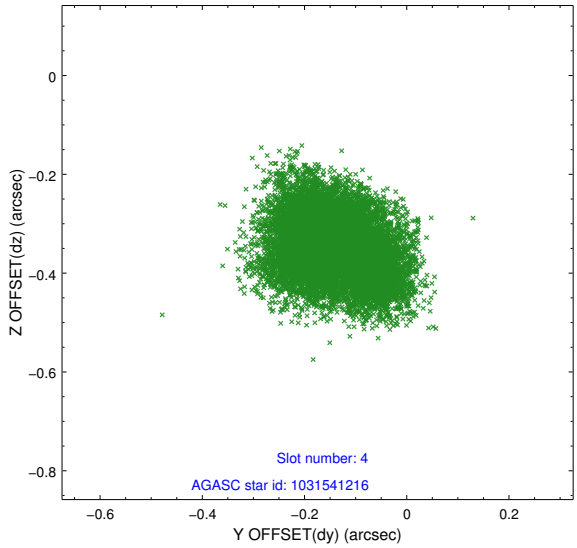
2.4.1 Slot 3

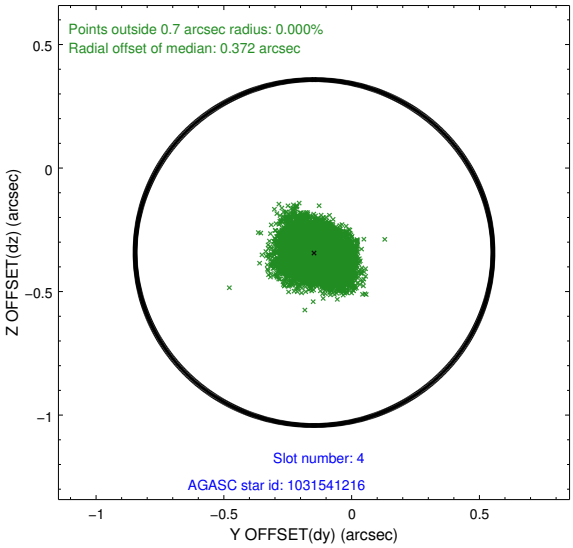


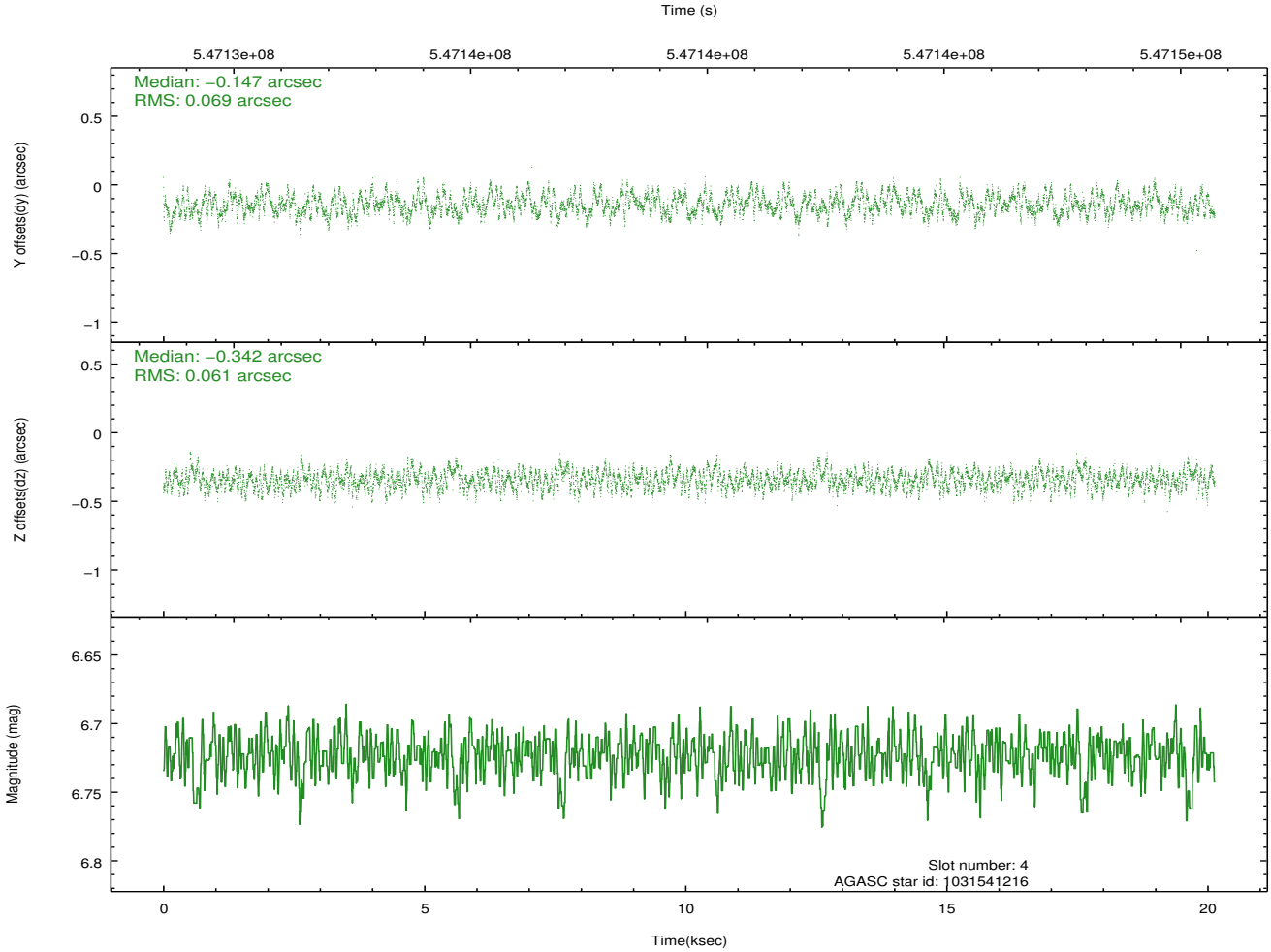




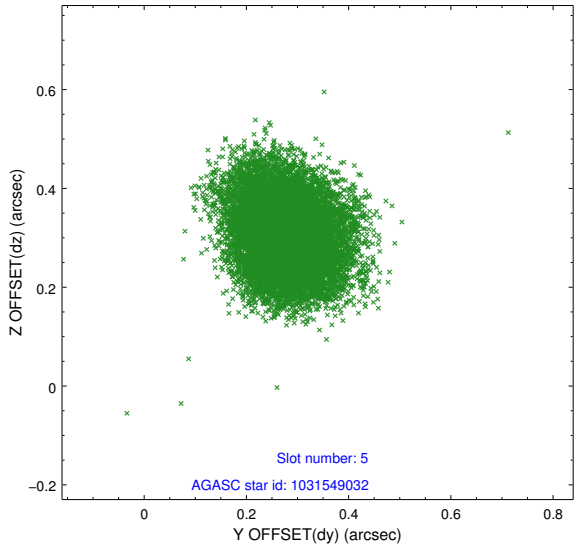
2.4.2 Slot 4

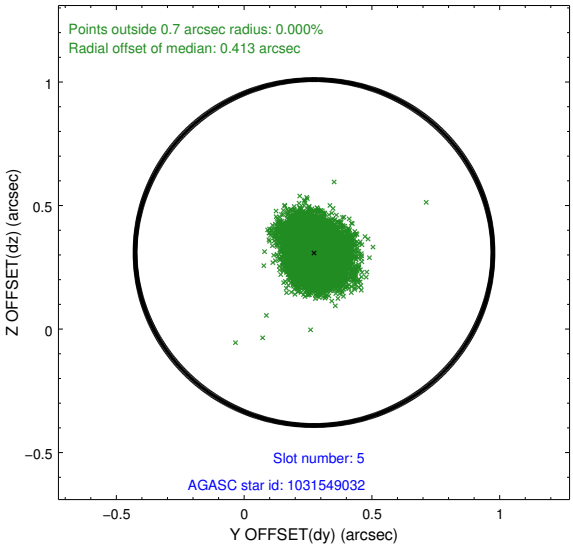

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1031541216

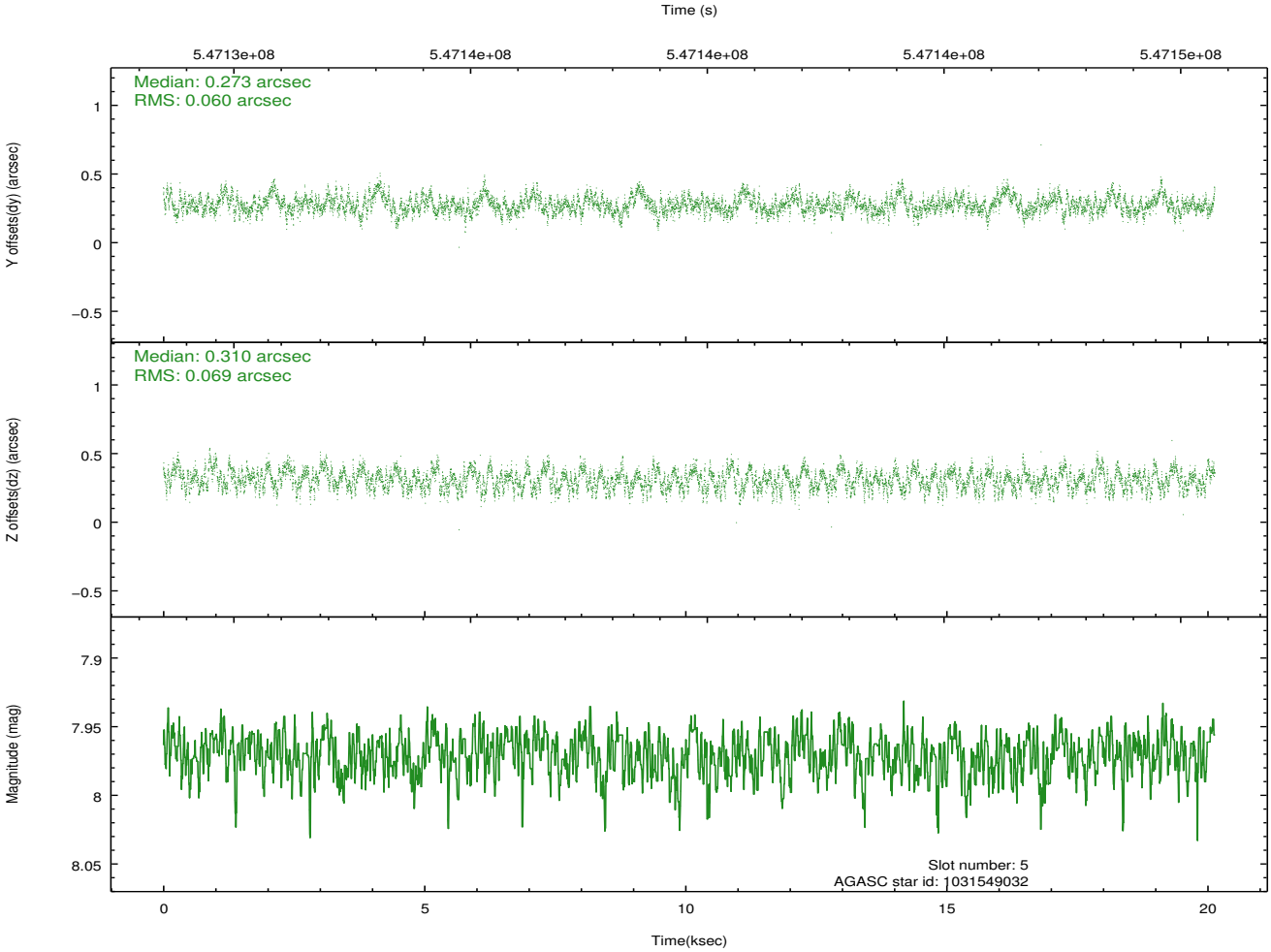

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.372 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1031541216


Time (s)
Median: −0.147 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: −0.342 arcsec
RMS: 0.061 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 1031541216
Time(ksec)

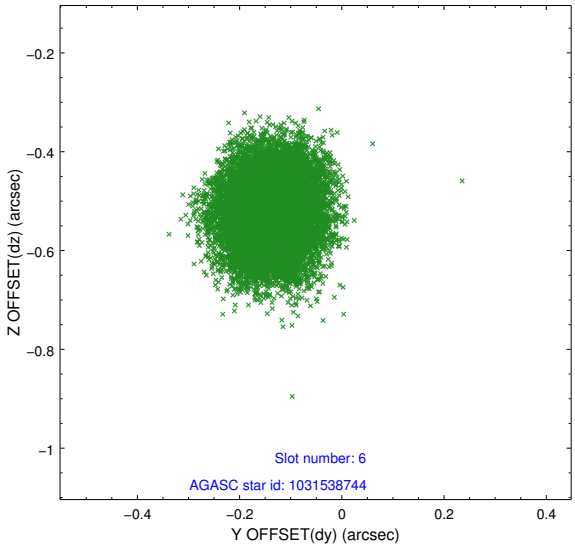
2.4.3 Slot 5

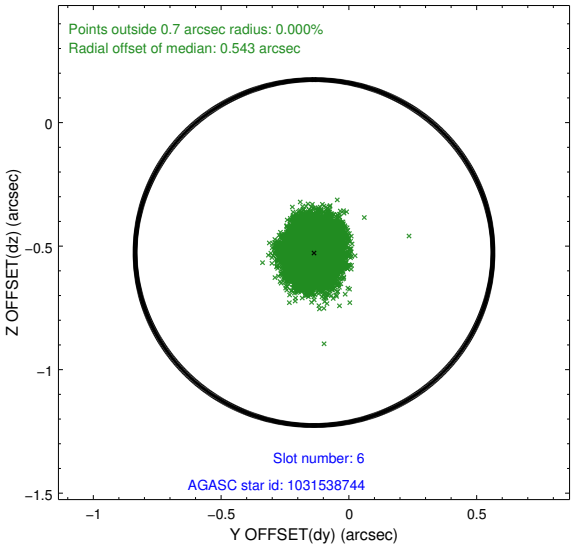

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1031549032

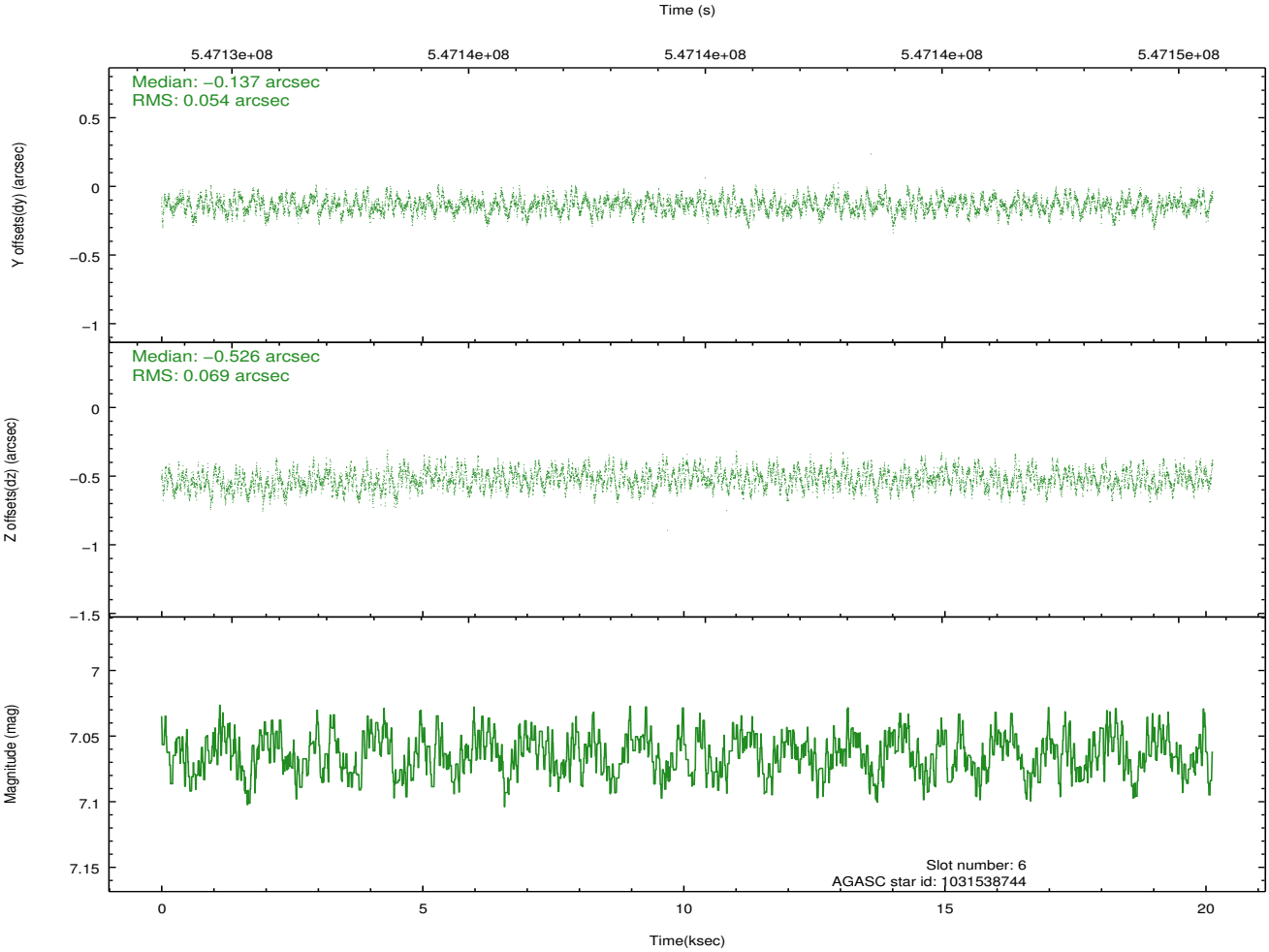

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.413 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1031549032


Time (s)
Median: 0.273 arcsec
RMS: 0.060 arcsec
Y offsets(dy) (arcsec)
Median: 0.310 arcsec
RMS: 0.069 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 1031549032
Time(ksec)

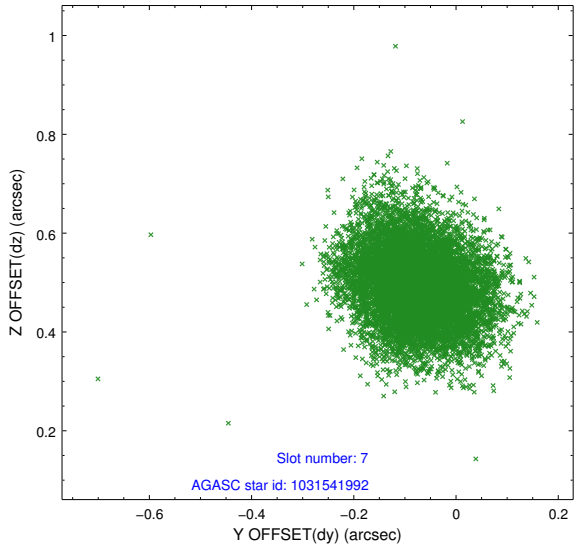
2.4.4 Slot 6

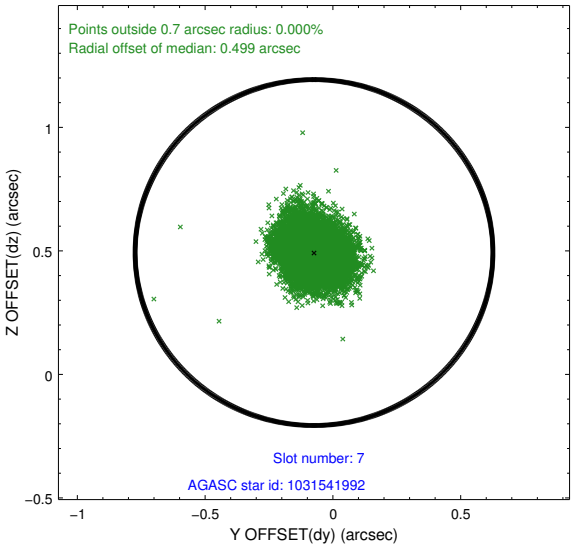

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1031538744

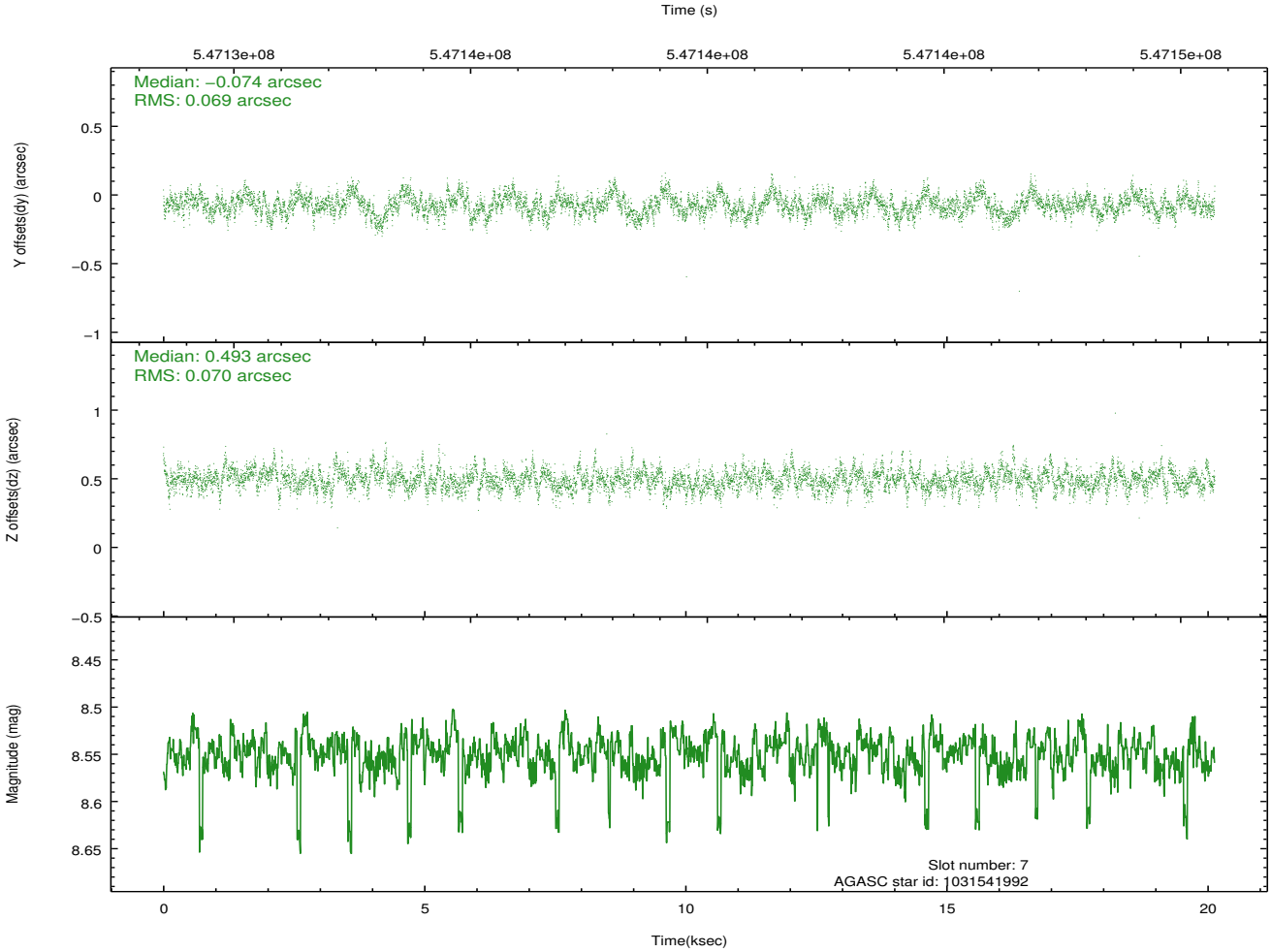

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.543 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1031538744


Time (s)
5.4713e+08
5.4714e+08
5.4714e+08
5.4714e+08
5.4715e+08
Median: −0.137 arcsec
RMS: 0.054 arcsec
Y offsets(dy) (arcsec)
Median: −0.526 arcsec
RMS: 0.069 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 1031538744
Time(ksec)

2.4.5 Slot 7

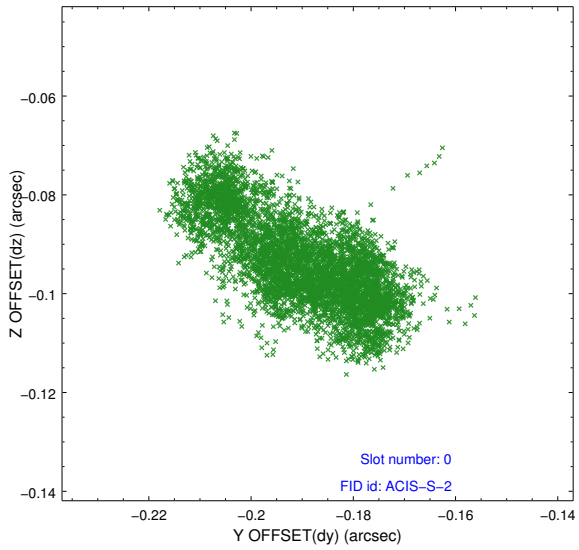

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1031541992

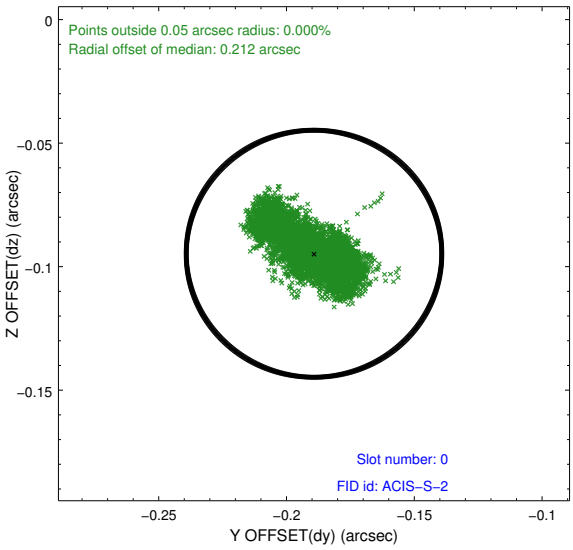

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.499 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1031541992

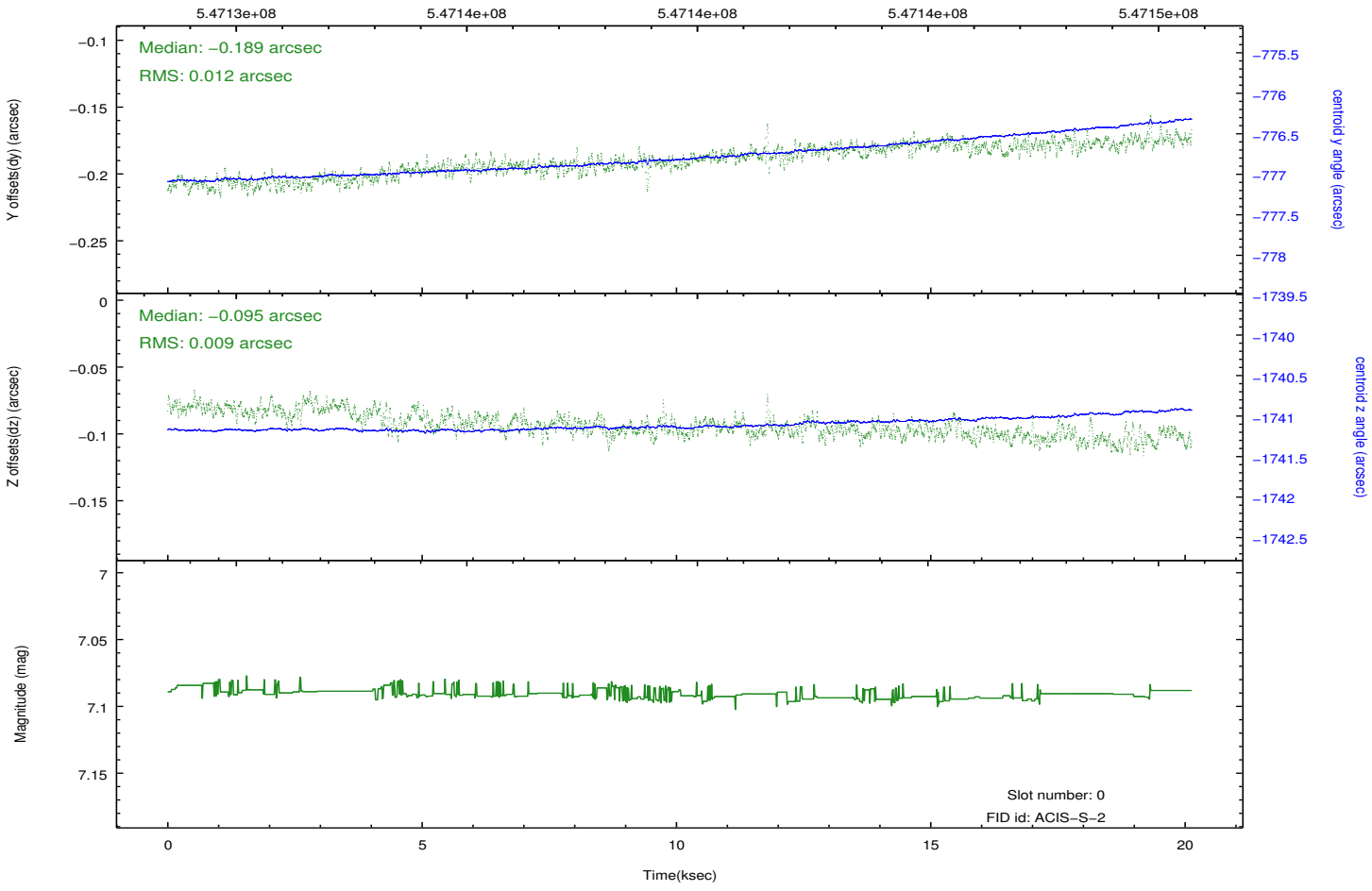

Time (s)
Median: −0.074 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: 0.493 arcsec
RMS: 0.070 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 1031541992
Time(ksec)

2.5 FID Slots

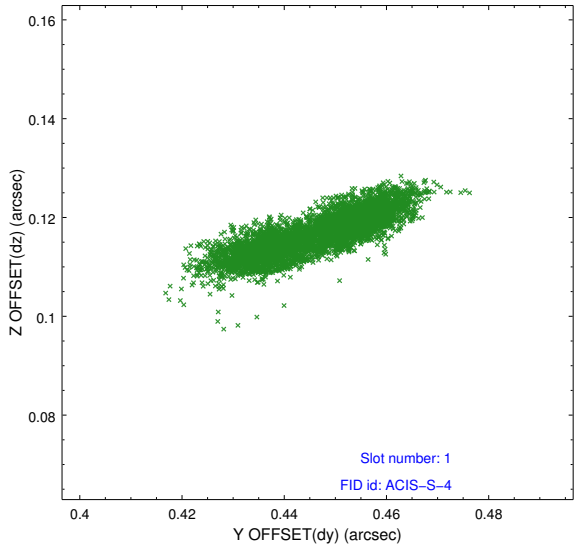
2.5.1 Slot 0

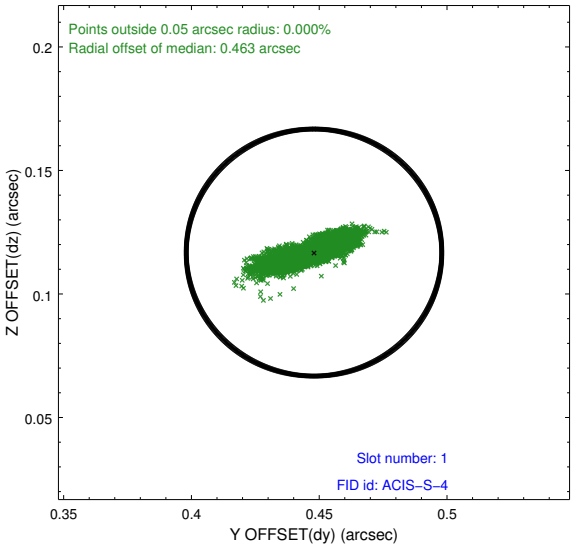


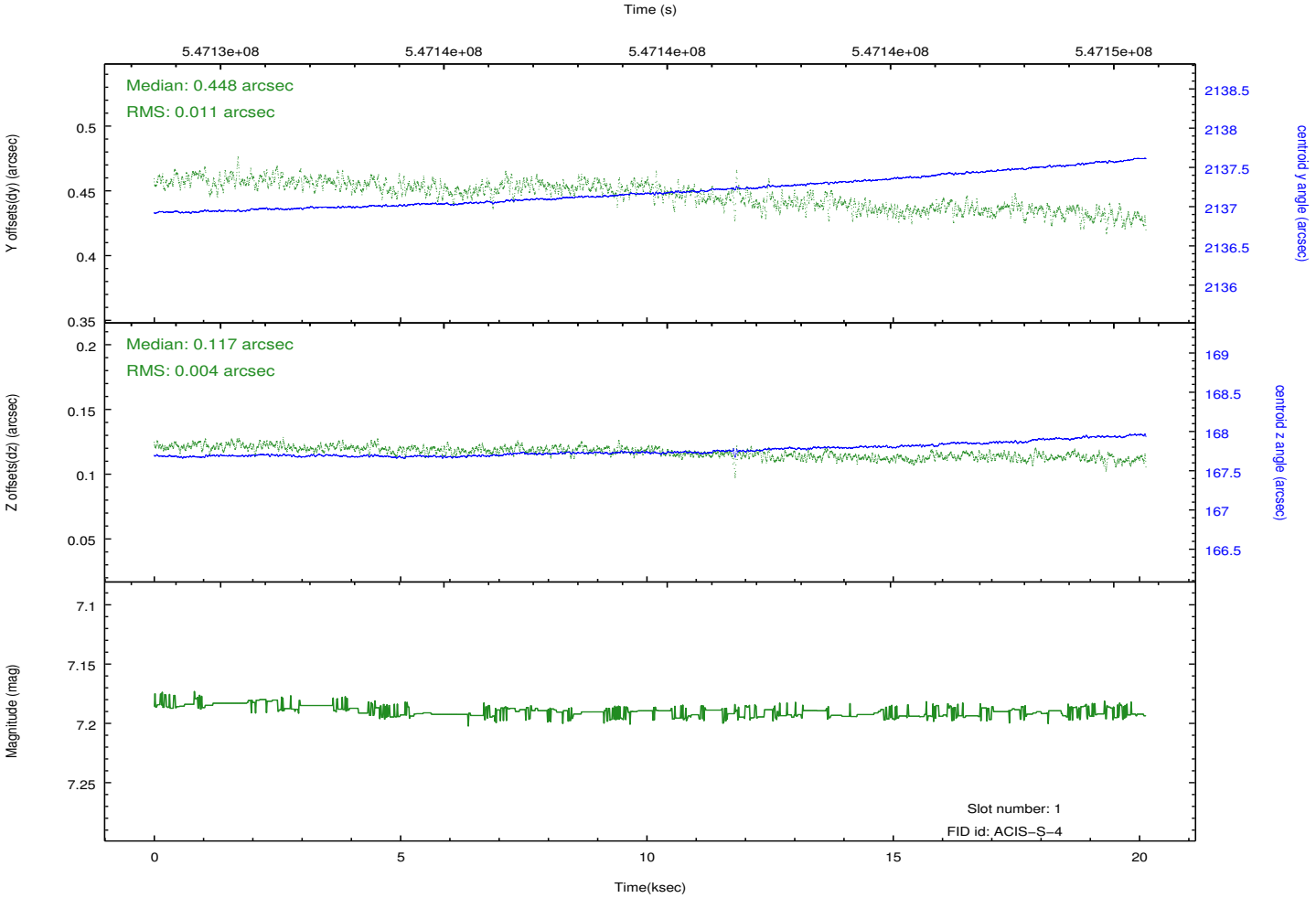




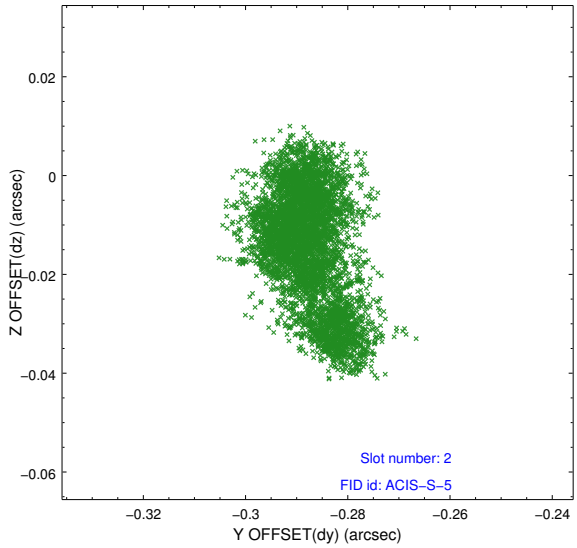
2.5.2 Slot 1

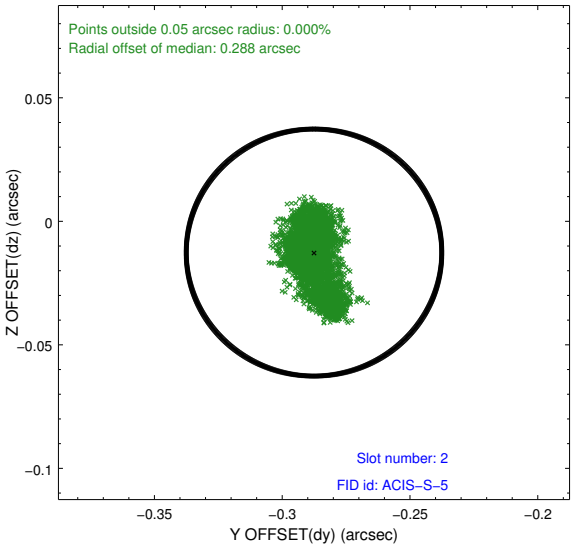

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

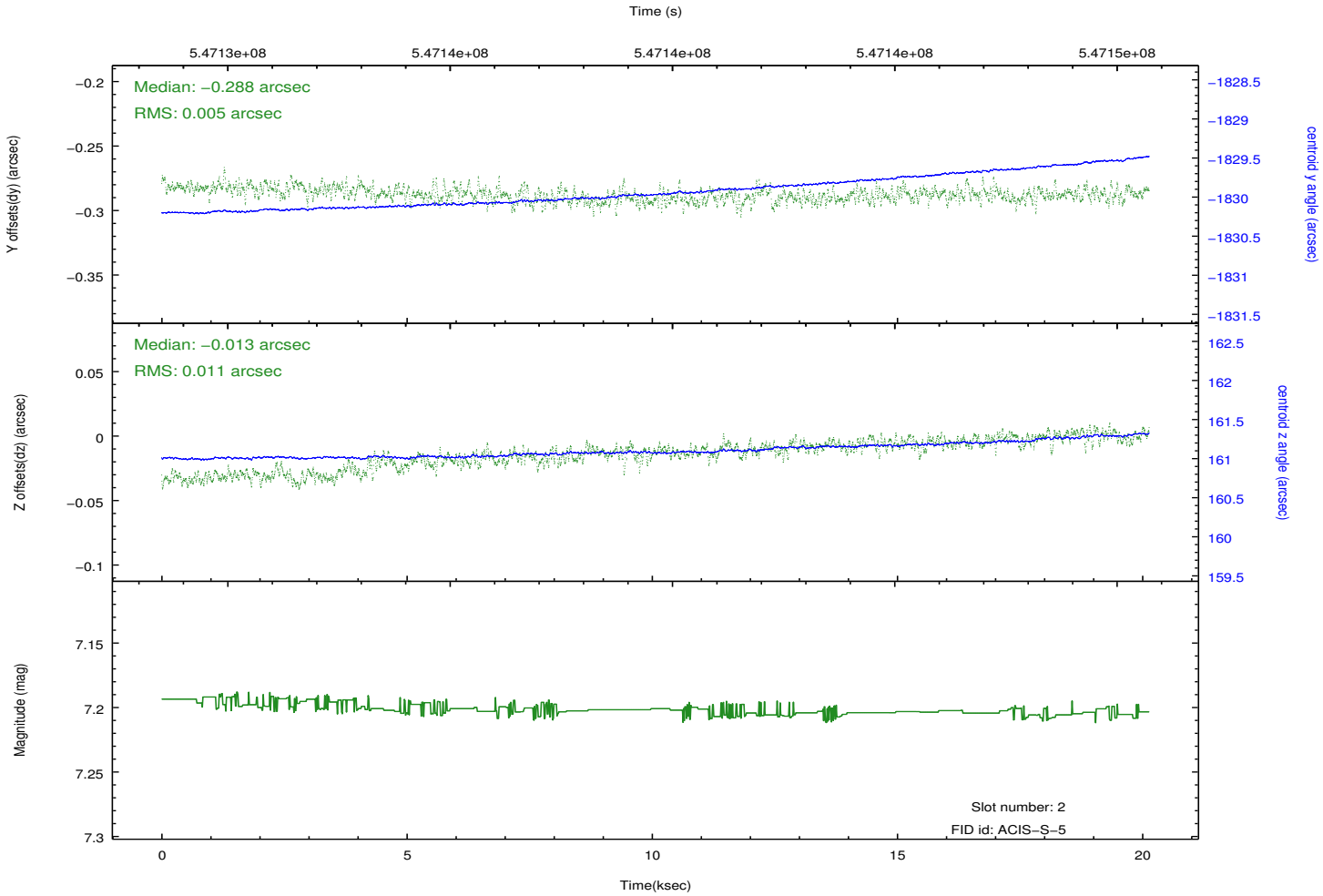

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.463 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
Median: 0.448 arcsec
RMS: 0.011 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.117 arcsec
RMS: 0.004 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−5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.288 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.288 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.013 arcsec
RMS: 0.011 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−5
Time(ksec)

A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.05.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.13

A.2 Comments

```
The slot 1 radial offset of 0.463 arcsec is acceptable.
```