V&V Reference Report
L2 ASCDS Version : 10.9.1

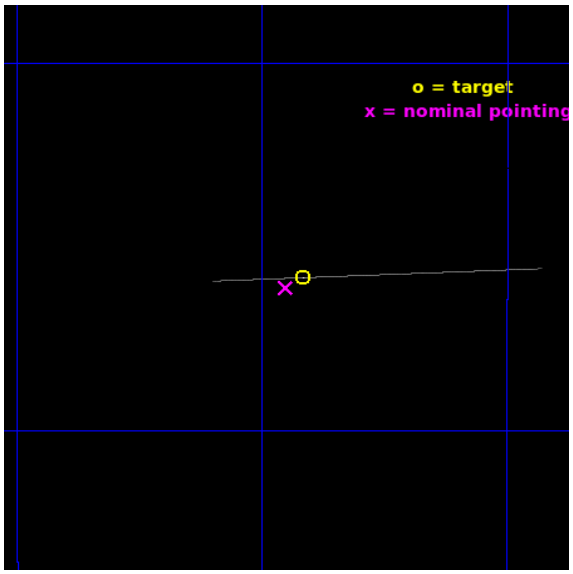
Observation 4668 - L2 Version 5
Chandra X-Ray Center

L2 Processing Date : Sep 21 2020

Contents

1 Front

seq_num	500487	Sequence number
obs_id	4668	Observation id
title	Timing the Enigmatic Nearby Neutron Star RX J0720.4-3125	Proposal
observer	Prof. David Kaplan	Principal investigator
object	RX J0720.4-3125	Source name
ra_targ	110.104167	Observer's specified target RA [deg]
dec_targ	-31.430444	Observer's specified target Dec [deg]
ra_nom	110.1127131473	Nominal RA [deg]
dec_nom	-31.435142701869	Nominal Dec [deg]
roll_nom	357.69936156796	Nominal Roll [deg]
revision	5	Processing version of data
ontime	5156.75	Sum of GTIs [s]
livetime	5136.6064453125	Livetime [s]
ontime7	5156.75	Sum of GTIs [s]
l2events	26757	Number of level 2 events

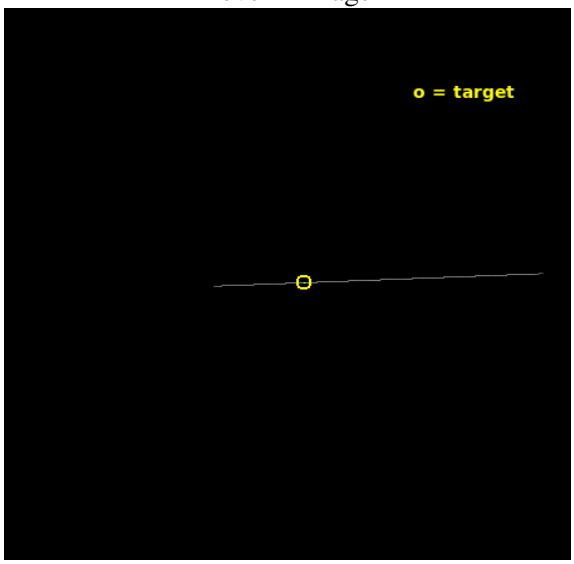


2 OBI

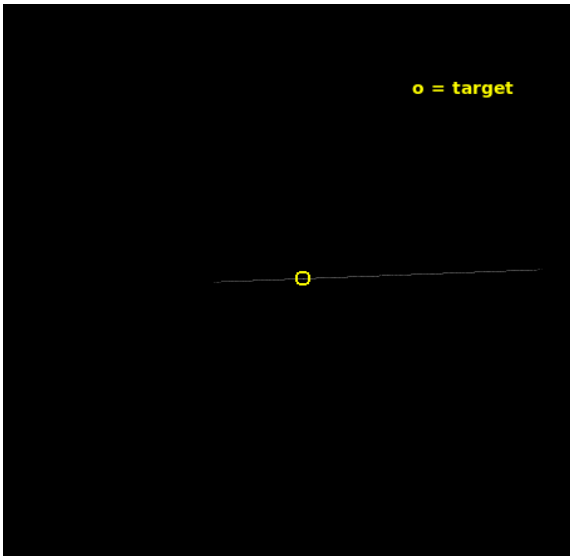
2.1 OBI

2.1.1 Images

Level 1 Image

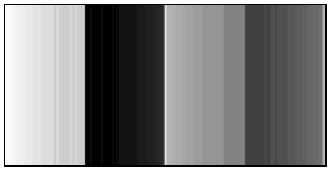


Level 1 Bad Events



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	1	Obi number
ascdsver	10.9.1	Processing system revision
caldbver	4.9.2	
date	2020-09-22T01:56:34	Date and time of file creation
revision	5	Processing version of data

sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ontime	5156.75	Sum of GTIs [s]
ontime7	5156.75	Sum of GTIs [s]
l1events	35706	Number of level 1 events

2.1.4 Events

	ccd 7
level 1 events	35706
rejected events	8292
rejected %	23%

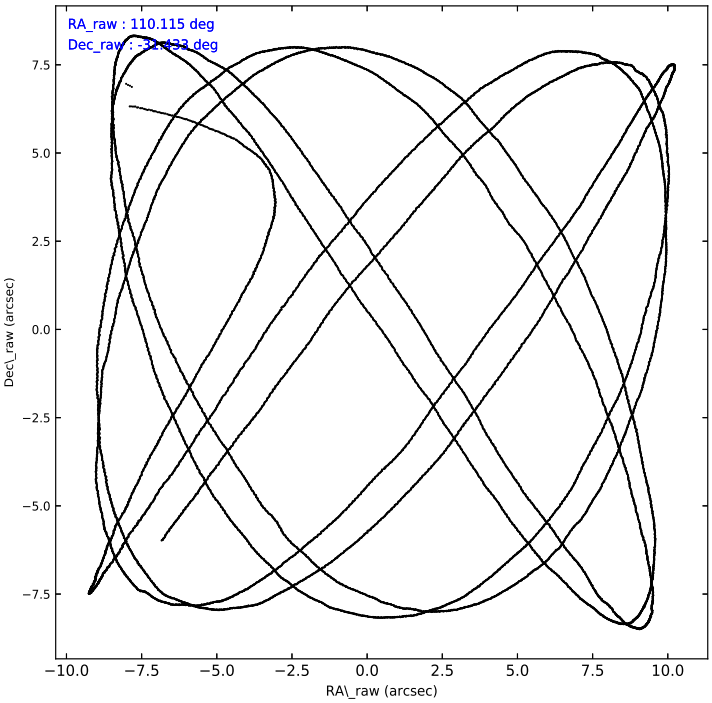
	ccd 7
grade 0 events	7954
	22%
grade 1 events	64
	0%
grade 2 events	7220
	20%
grade 3 events	2426
	6%
grade 4 events	2493
	6%
grade 5 events	4175
	11%
grade 6 events	11374
	31%
grade 7 events	0
	0%

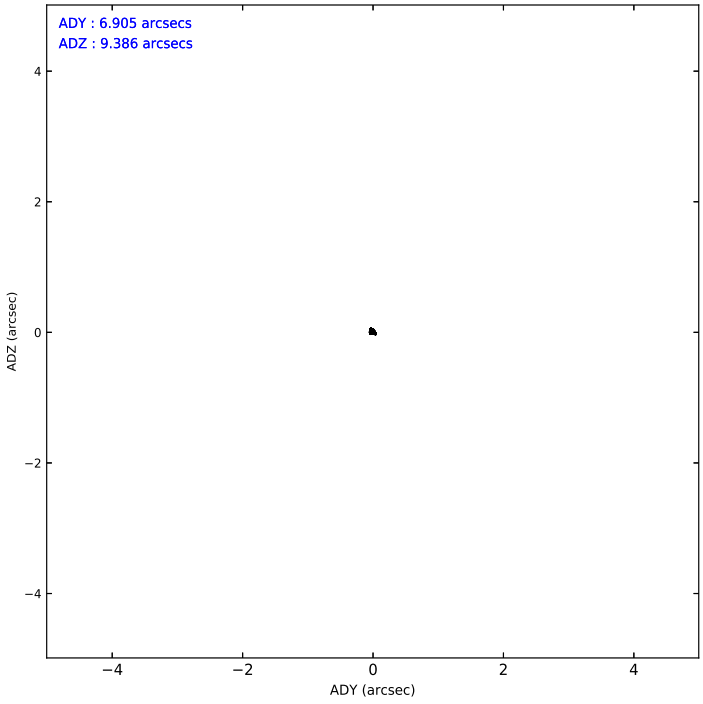
2.2 Compared Parameters

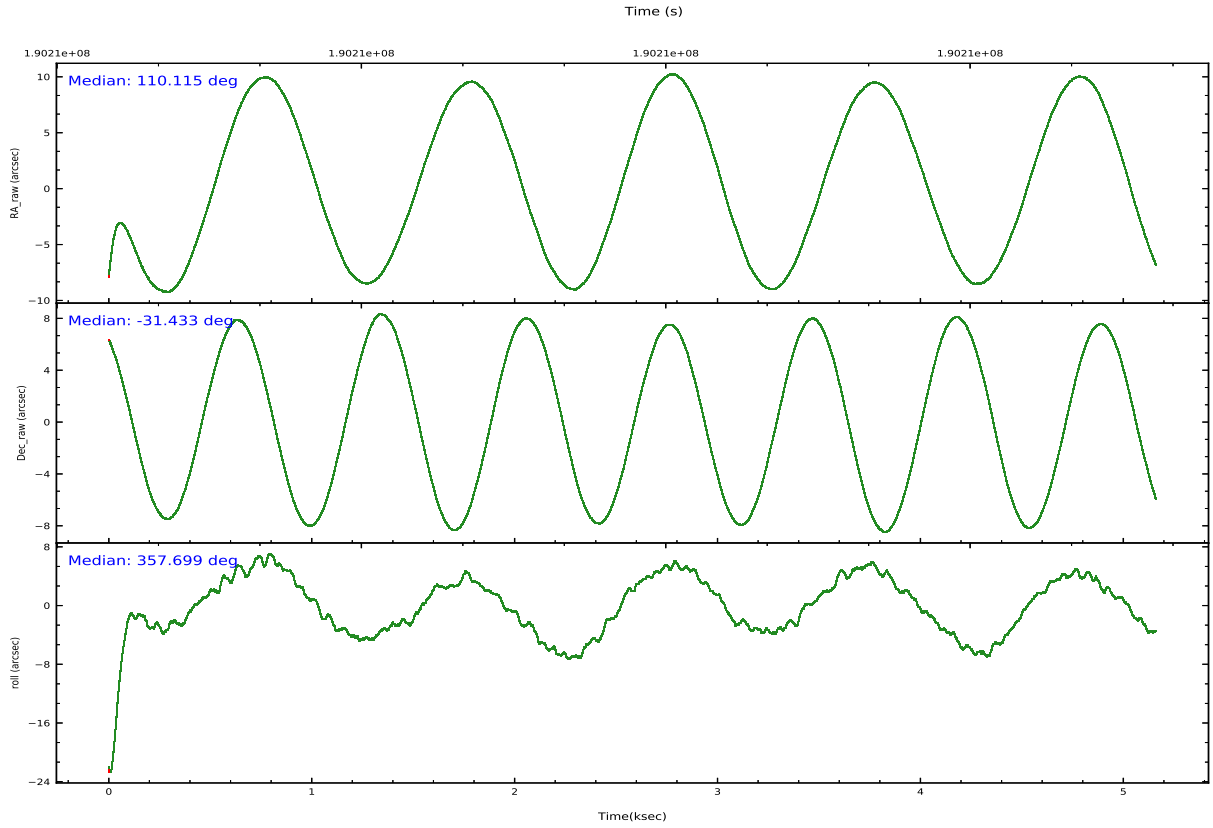
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	CC33_FAINT	CC33_FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	110.087186	110.1127131473
[deg] Pointing Dec	-31.445501	-31.435142701869
[deg] Pointing Roll	357.529897	357.69936156796
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	190210417.184000	190209141.87492
Observation start date	2004-01-11T12:12:33	2004-01-11T11:52:21
[s] Observation end time (MET)	190215417.184000	190216340.45023
Observation end date	2004-01-11T13:35:53	2004-01-11T13:52:20
Read mode	CONTINUOUS	CONTINUOUS

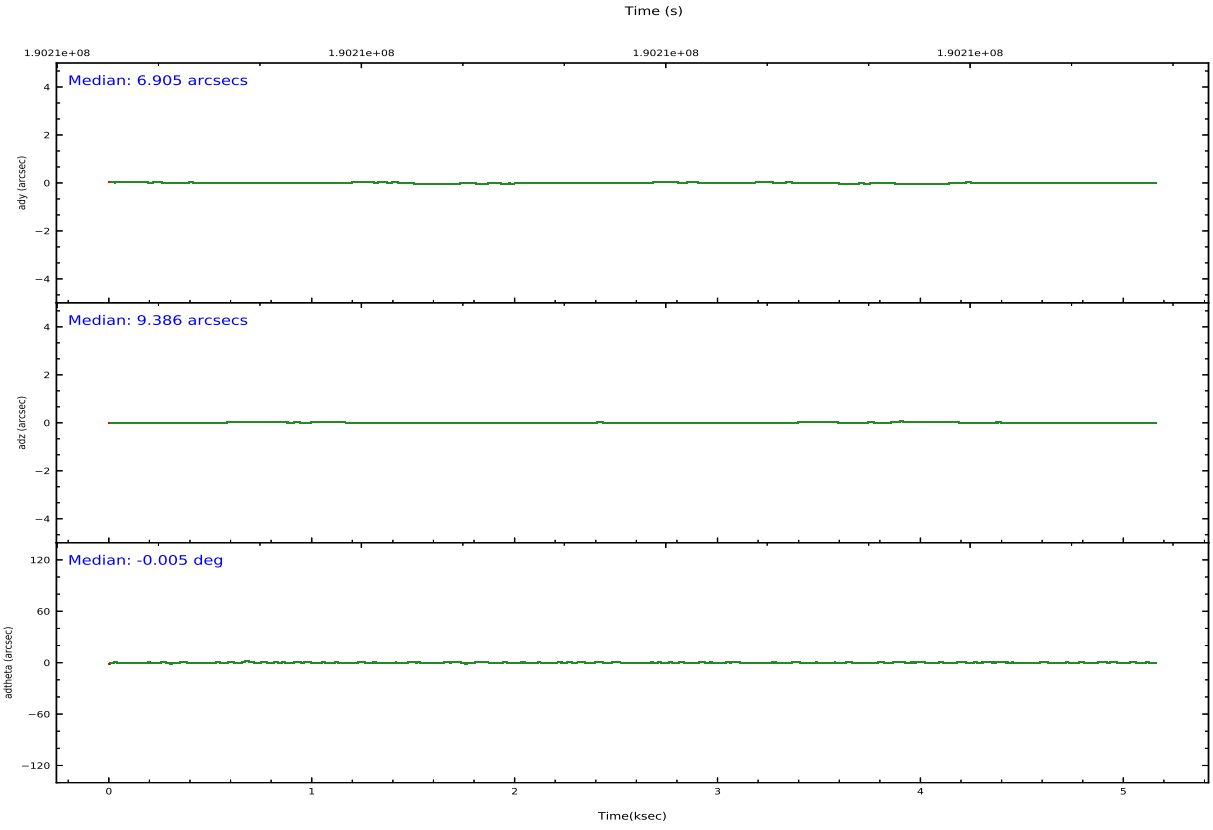
Parameter	Planned	Actual
Obspar version number	8	8
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	0

2.3 Aspect


RA_raw : 110.115 deg
Dec_raw : -31.633 deg
Dec_raw (arcsec)
RA_raw (arcsec)
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
−7.5
−5.0
−2.5
0.0
2.5
5.0
7.5
10.0


ADY : 6.905 arcsecs
ADZ : 9.386 arcsecs
ADZ (arcsec)
ADY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.9021e+08
1.9021e+08
1.9021e+08
1.9021e+08
Median: 110.115 deg
RA_raw (arcsec)
Median: -31.433 deg
Dec_raw (arcsec)
Median: 357.699 deg
roll (arcsec)
Time(ksec)

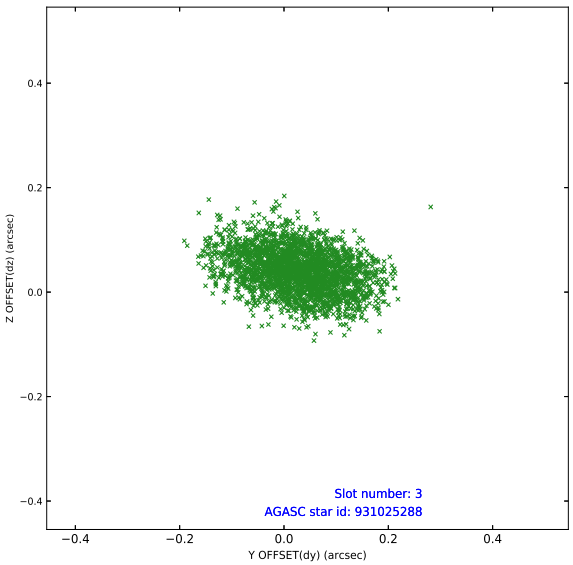

Time (s)
1.9021e+08
1.9021e+08
1.9021e+08
1.9021e+08
Median: 6.905 arcsecs
ady (arcsec)
Median: 9.386 arcsecs
adz (arcsec)
Median: -0.005 deg
adtheta (arcsec)
Time(ksec)

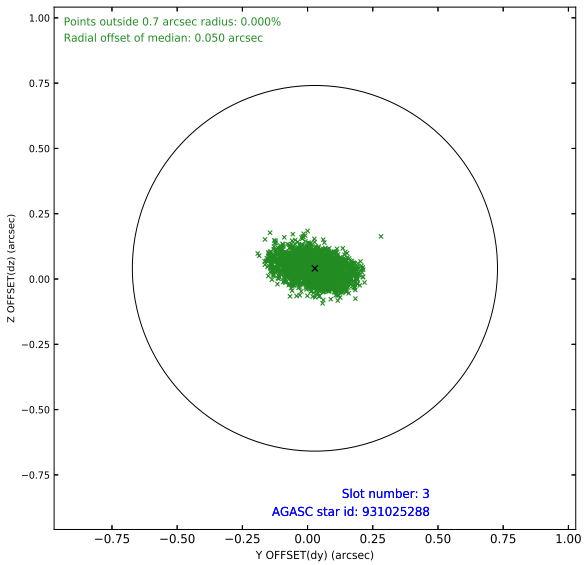
Slot Statistics

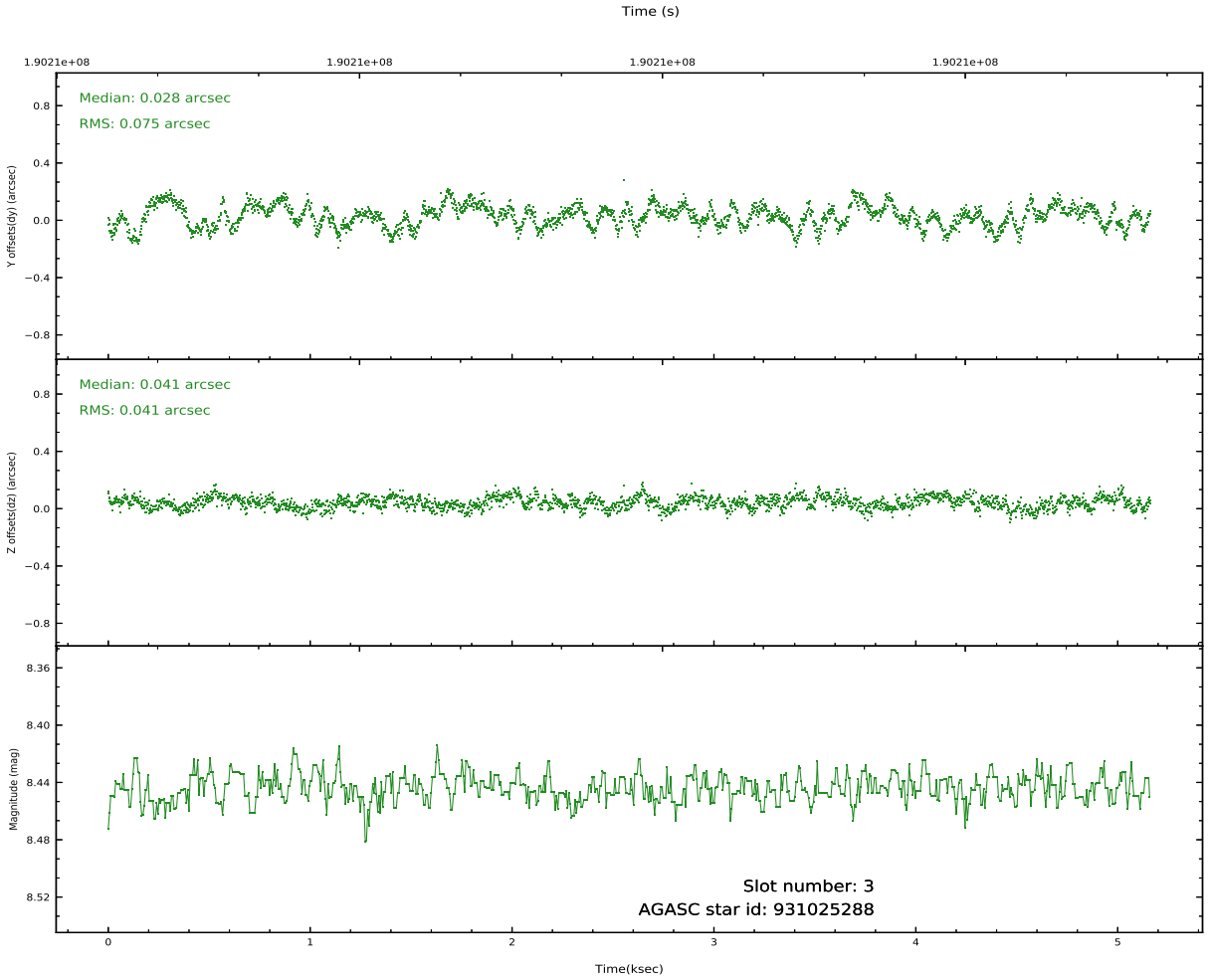
ot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-1	7.18	1260	1.000	0.048	-0.005	0.006	0.011	0.000000	0.000000	936.43	-1726
1	FID		ACIS-S-2	7.10	1259	1.000	-0.079	-0.043	0.006	0.010	0.000000	0.000000	-758.94	-1732
2	FID		ACIS-S-6	7.35	1259	1.000	0.011	0.054	0.006	0.011	0.000000	0.000000	401.52	813
3	GUIDE	used	931025288	8.44	2519	1.000	0.028	0.041	0.091	0.153	109.511084	-30.937793	-1855.71	1744
4	GUIDE	used	931019296	8.66	2518	1.000	-0.018	0.046	0.069	0.112	109.471771	-31.694370	-1844.89	-981
5	GUIDE	used	931018016	8.47	2519	1.000	0.060	-0.026	0.070	0.112	109.684535	-31.226562	-1272.69	731
6	GUIDE	used	931160352	8.64	2513	1.000	-0.085	-0.090	0.102	0.157	110.268138	-30.864891	468.05	2112
7	GUIDE	used	931695048	7.37	2517	1.000	0.005	0.036	0.087	0.149	110.648539	-32.046020	1805.56	-2089

2.4 Star Slots

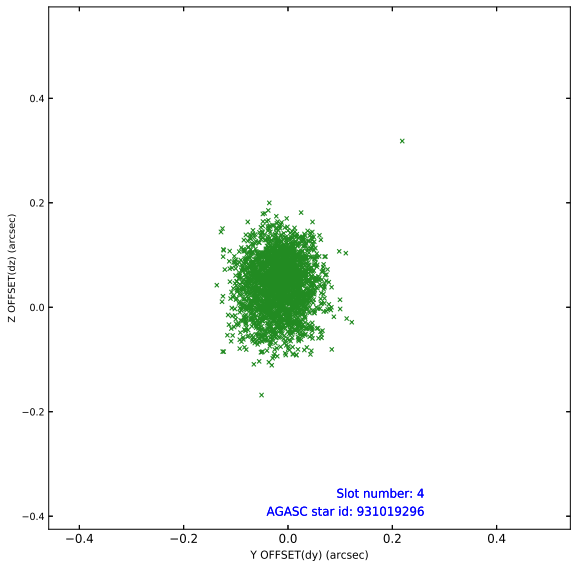
2.4.1 Slot 3

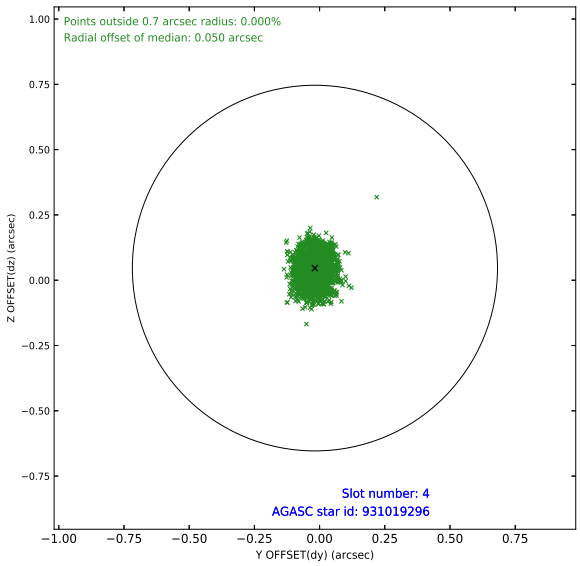


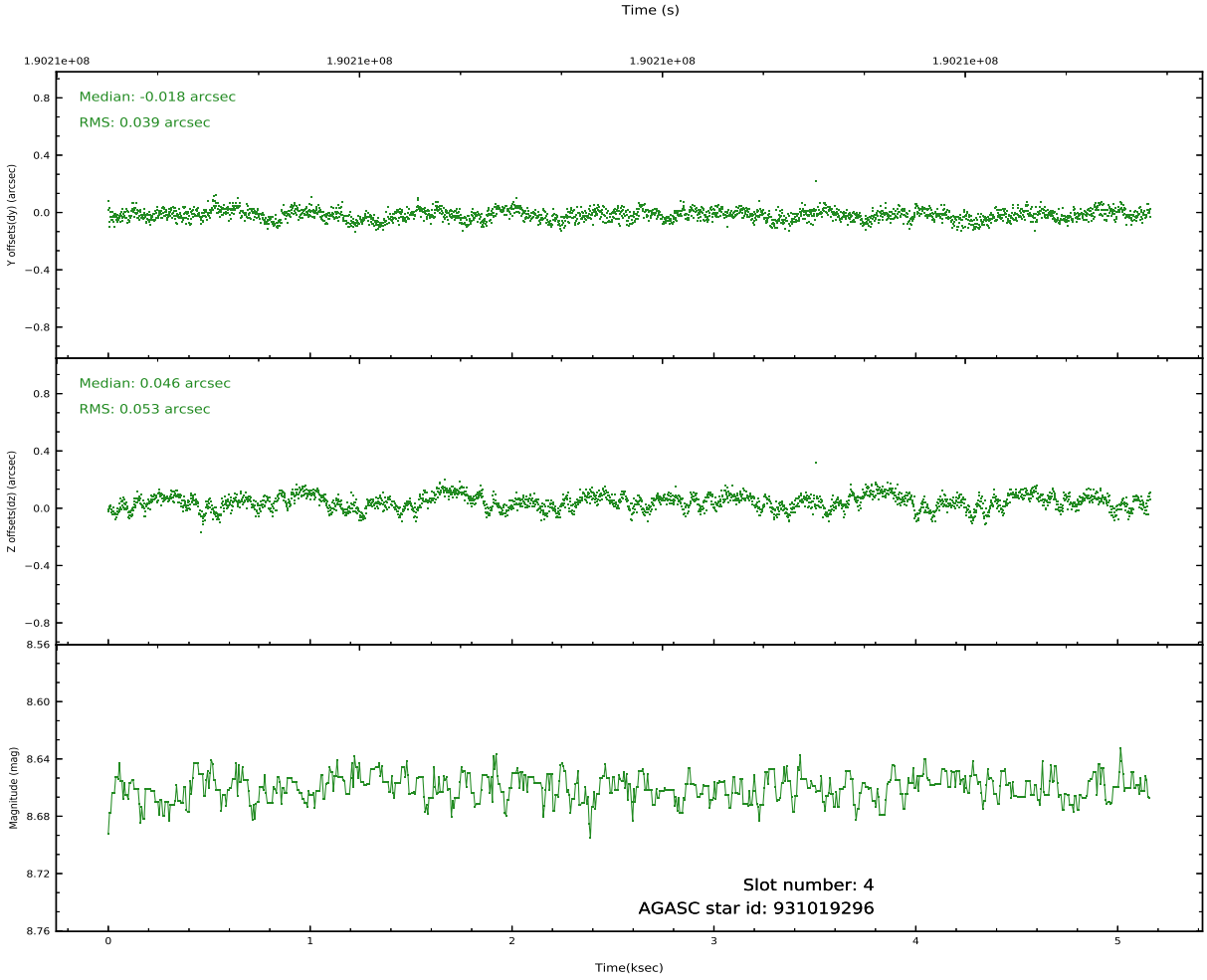




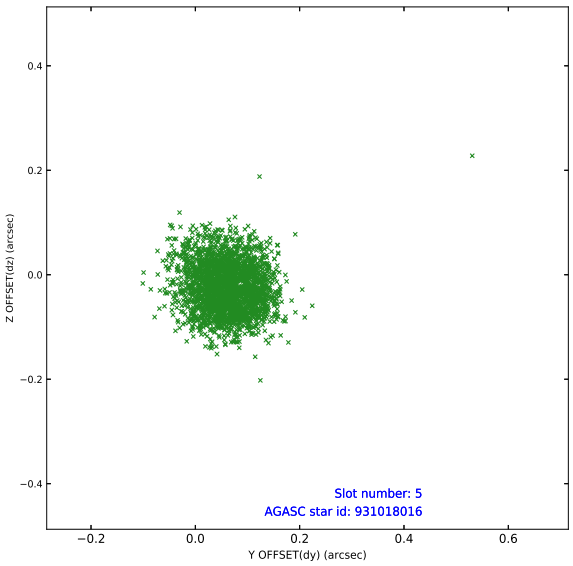
2.4.2 Slot 4

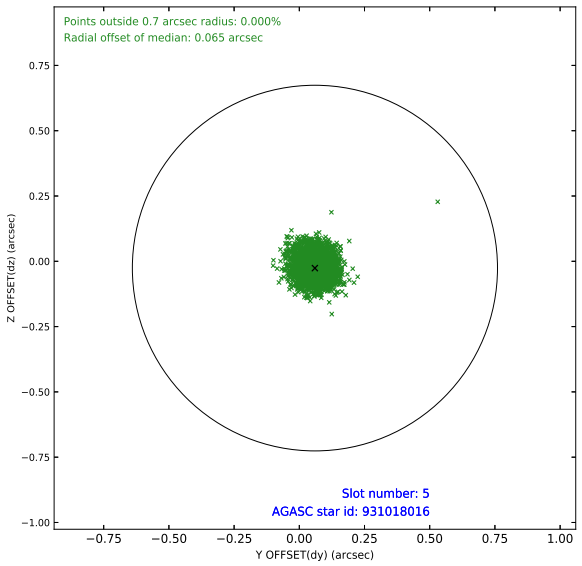

Slot number: 4
AGASC star id: 931019296
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)


Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.050 arcsec
Slot number: 4
AGASC star id: 931019296
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

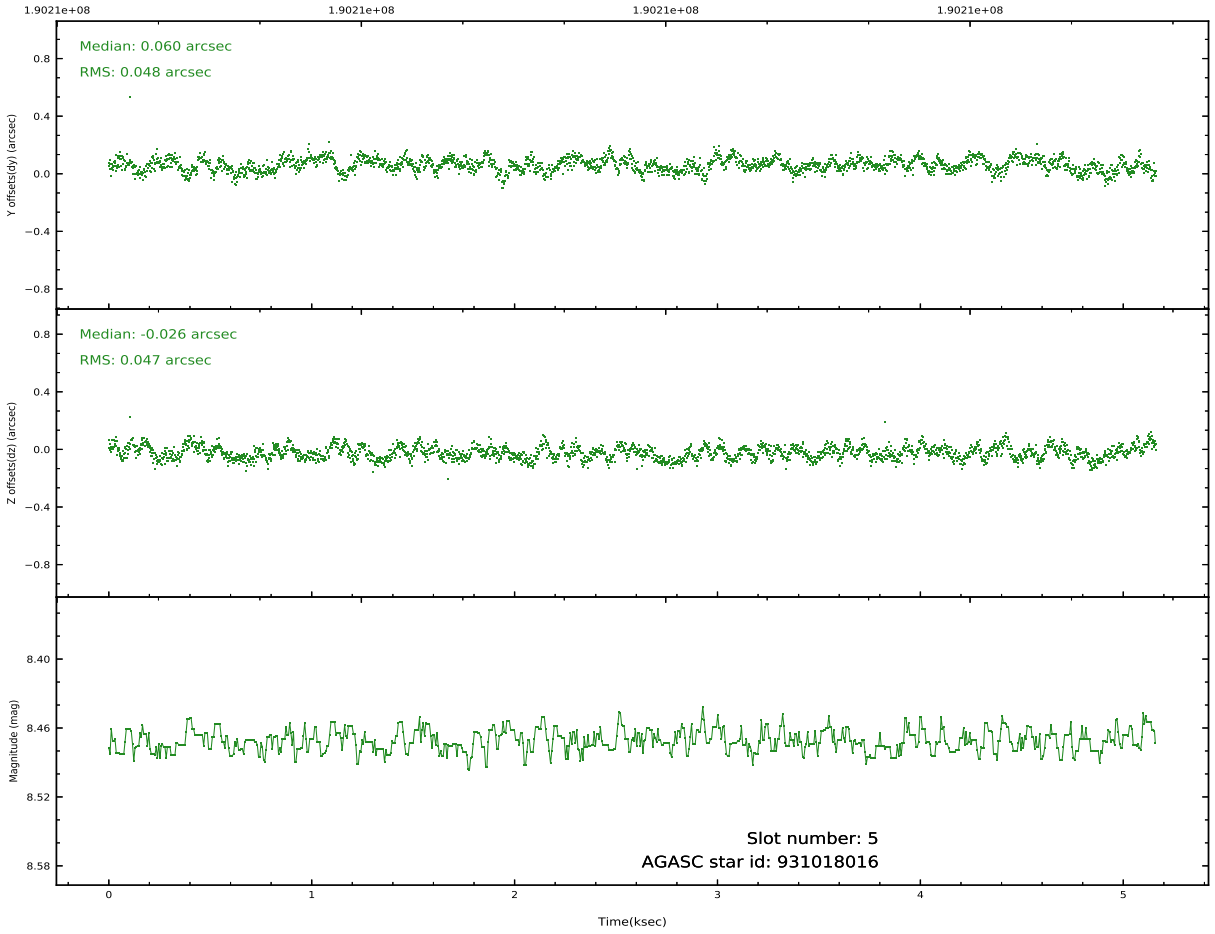

Time (s)
1.9021e+08
Median: -0.018 arcsec
RMS: 0.039 arcsec
Y offsets(dy) (arcsec)
Median: 0.046 arcsec
RMS: 0.053 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 931019296
Time(ksec)

2.4.3 Slot 5

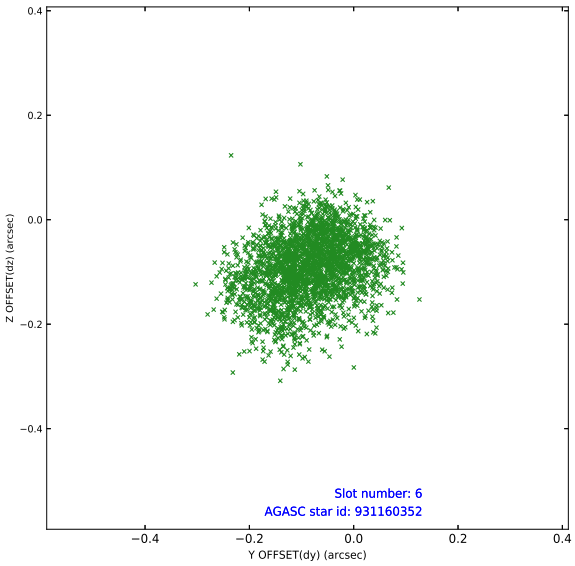


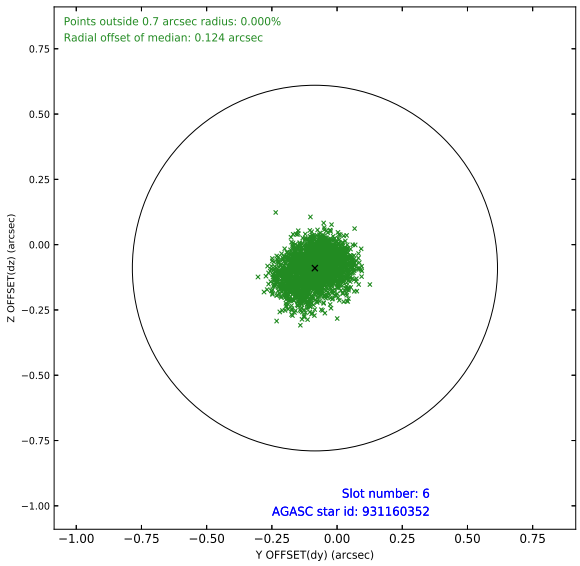


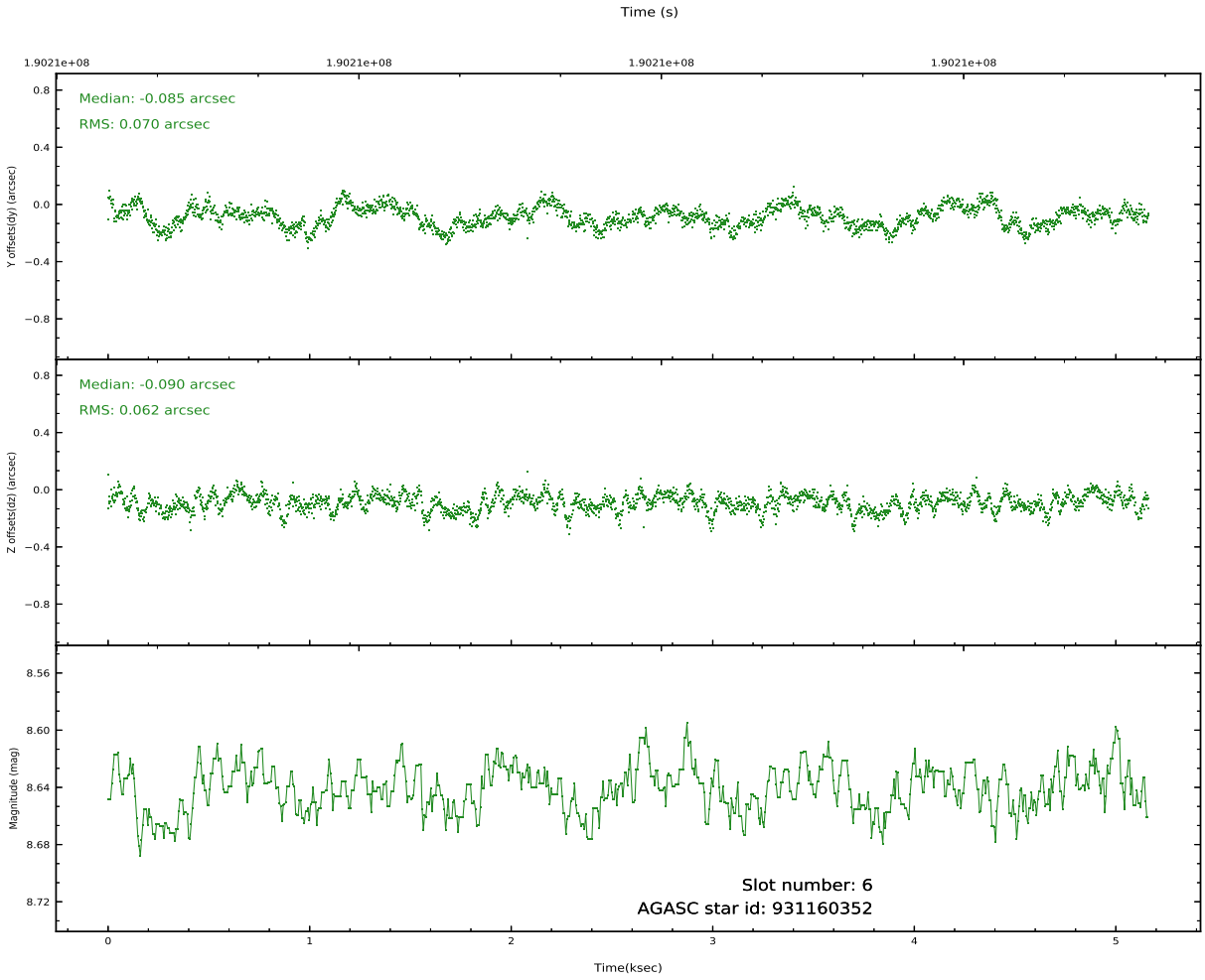
Time (s)



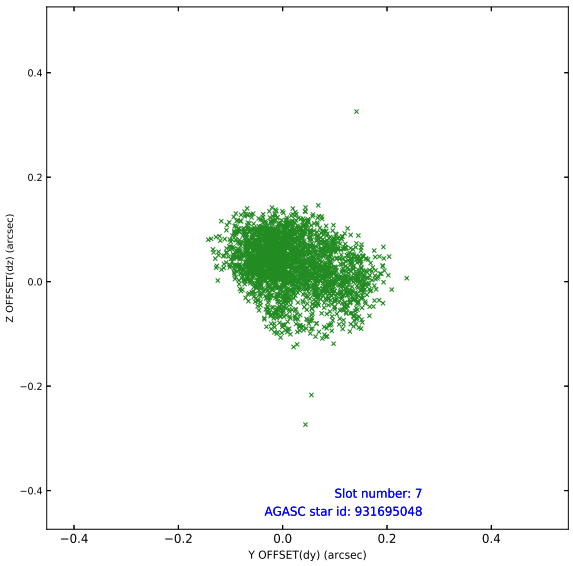
2.4.4 Slot 6

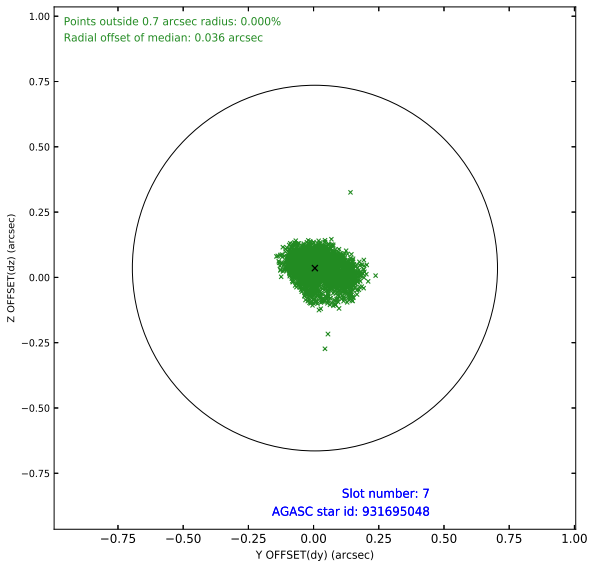

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 931160352

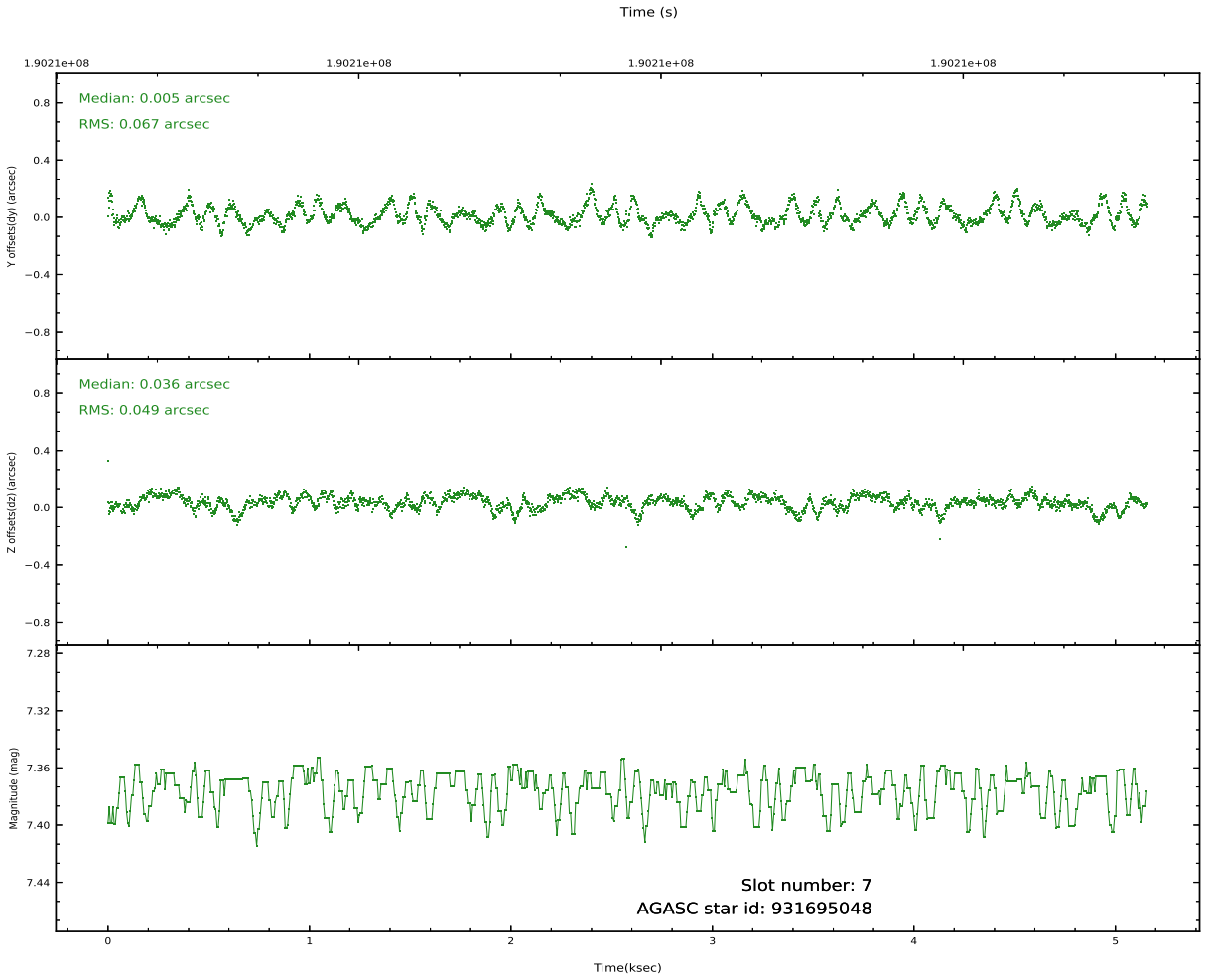

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.124 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 931160352


Time (s)
1.9021e+08
Median: -0.085 arcsec
RMS: 0.070 arcsec
Y offsets(dy) (arcsec)
Median: -0.090 arcsec
RMS: 0.062 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 931160352
Time(ksec)

2.4.5 Slot 7

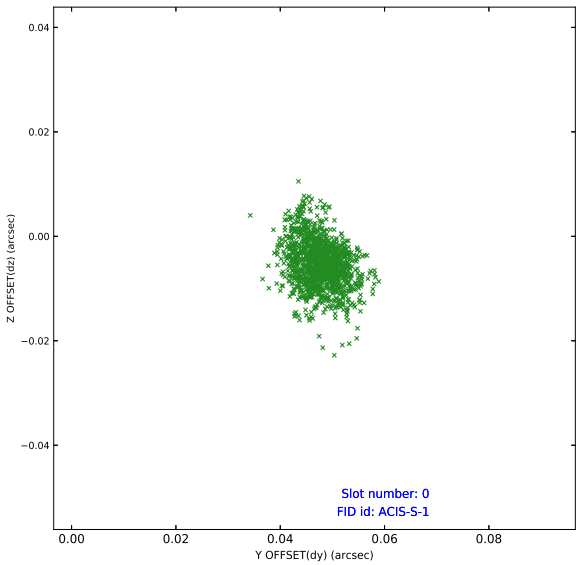

Slot number: 7
AGASC star id: 931695048
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

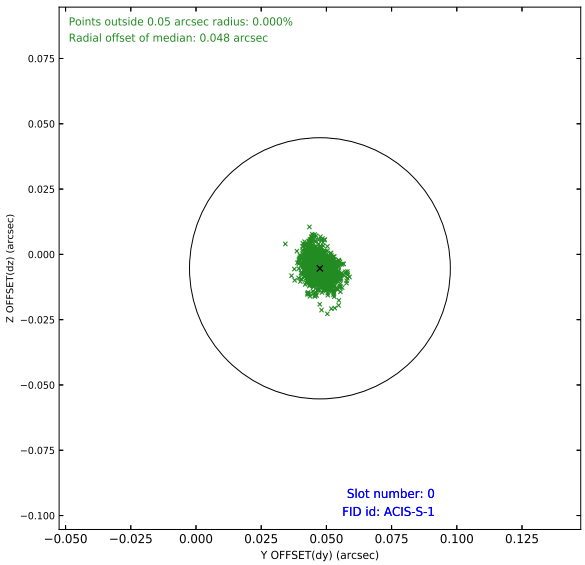

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.036 arcsec
Slot number: 7
AGASC star id: 931695048
Y OFFSET(dy) (arcsec)
Z OFFSET(dz) (arcsec)

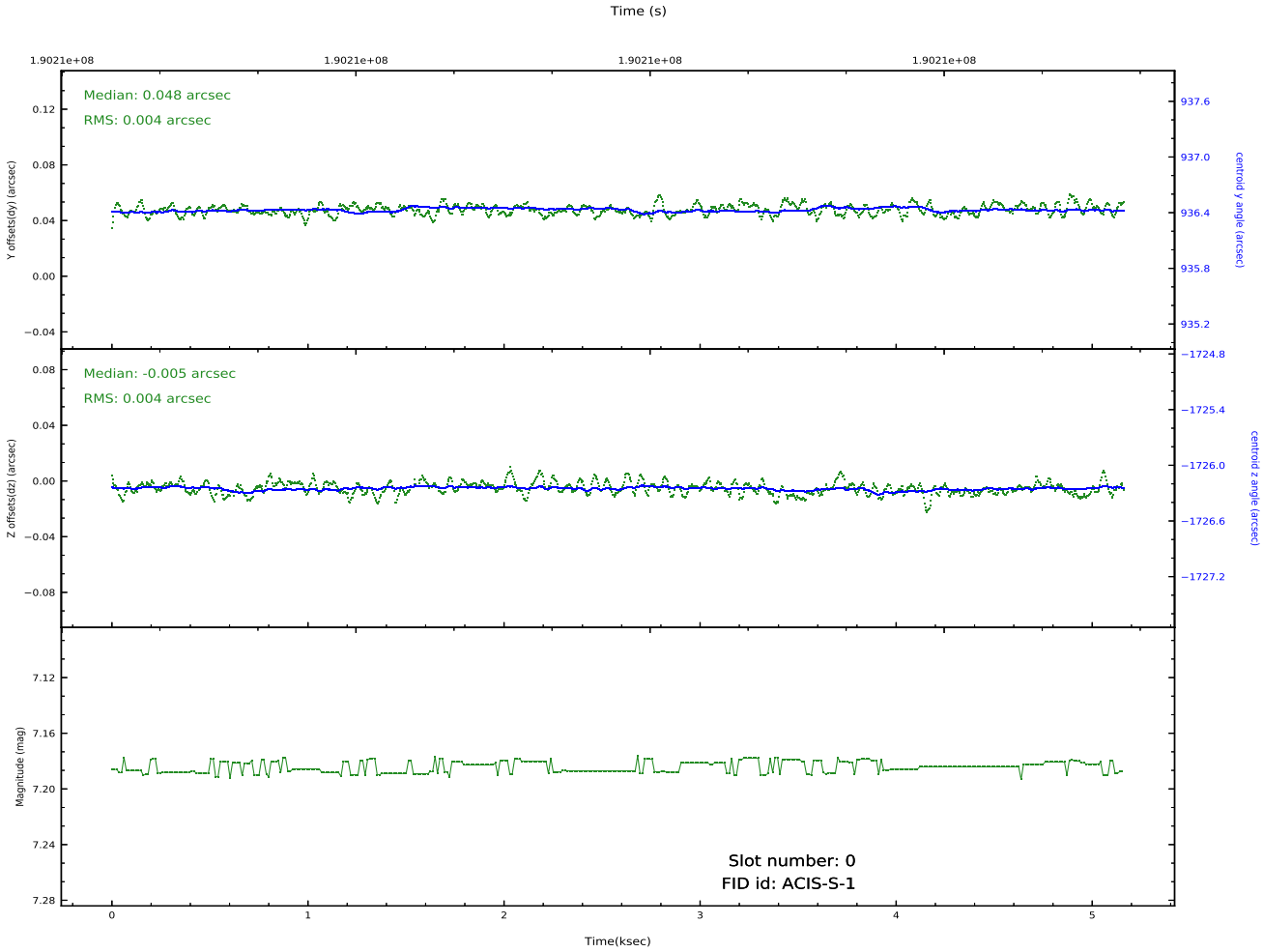

Time (s)
1.9021e+08
Median: 0.005 arcsec
RMS: 0.067 arcsec
Y offsets(dy) (arcsec)
Median: 0.036 arcsec
RMS: 0.049 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 931695048
Time(ksec)

2.5 FID Slots

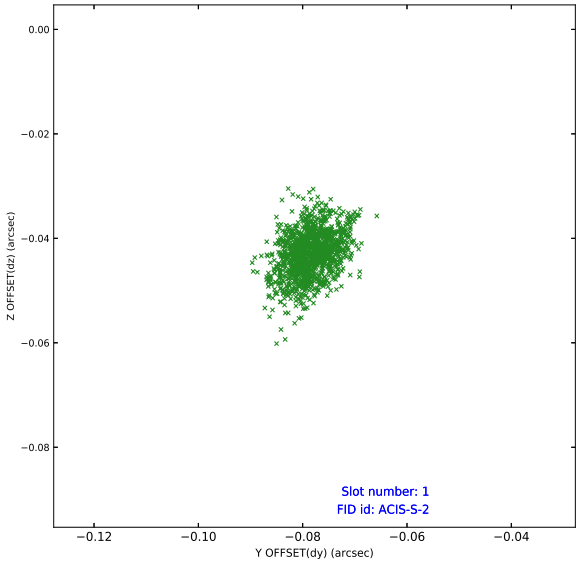
2.5.1 Slot 0

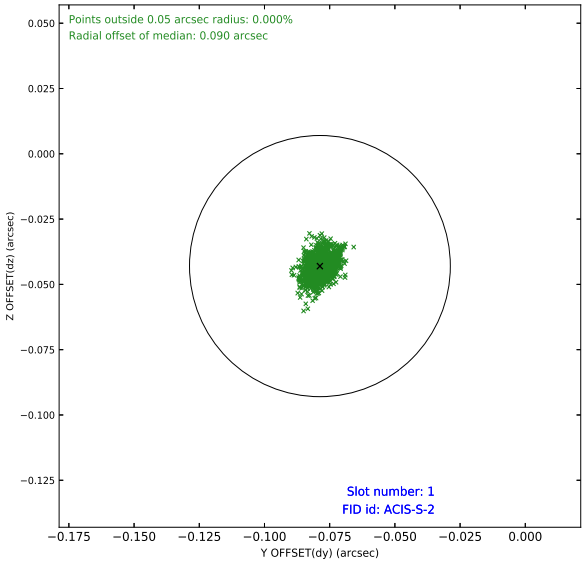


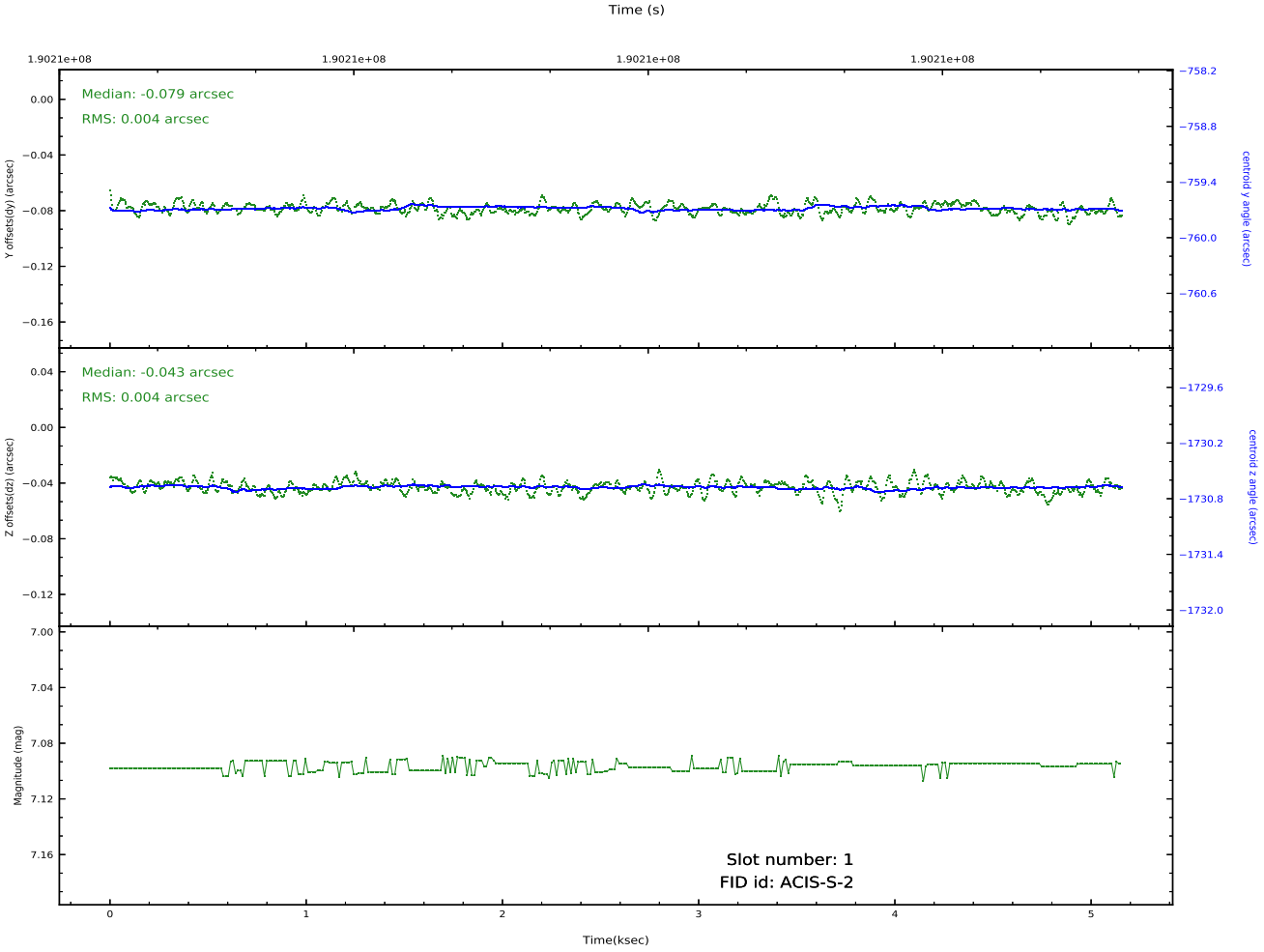




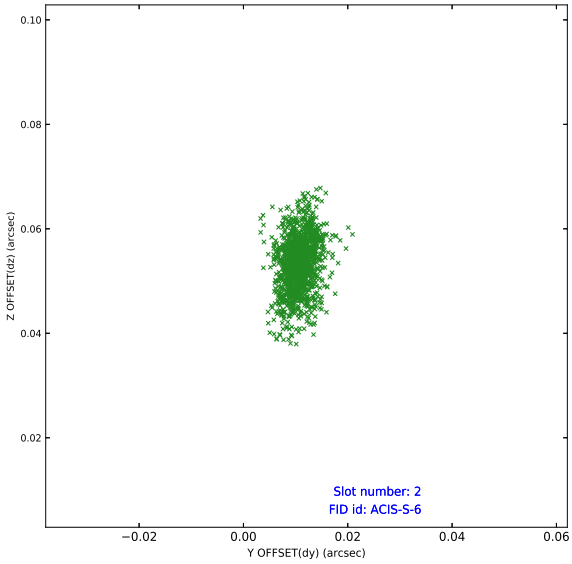
2.5.2 Slot 1

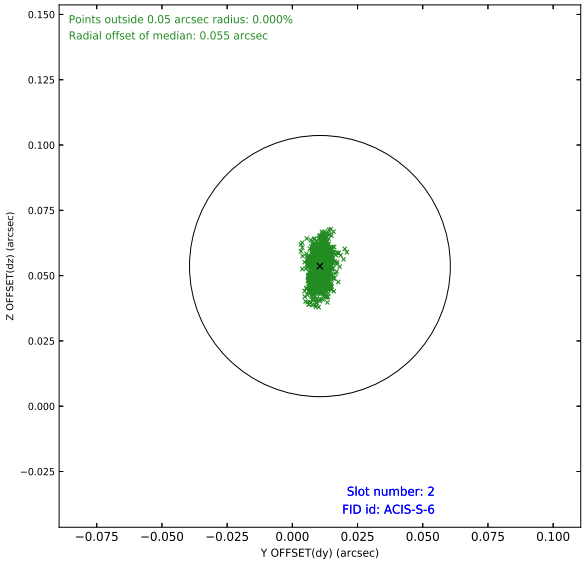

Slot number: 1
FID id: ACIS-S-2
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)

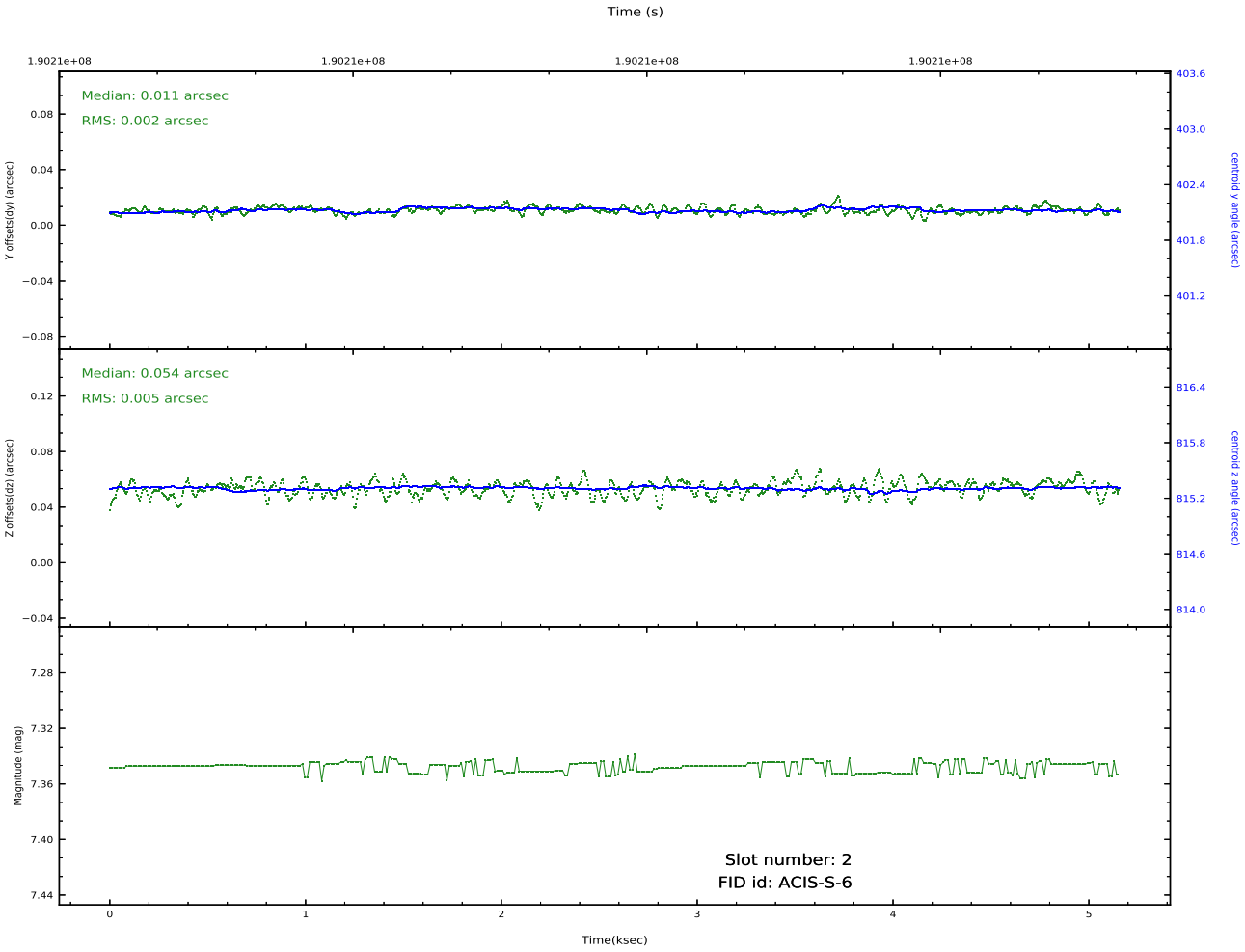

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.090 arcsec
Slot number: 1
FID id: ACIS-S-2
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)


Time (s)
Median: -0.079 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: -0.043 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS-S-2
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: 0.055 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS-S-6


Time (s)
Median: 0.011 arcsec
RMS: 0.002 arcsec
Y offsets(dy) (arcsec)
Median: 0.054 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (arcsec)
centroid y angle (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	David Huenemoerder
V&V Date (YYYY-MM-DD)	2020.09.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.16

A.2 Comments