

V&V Reference Report

L2 ASCDS Version : 10.4.3.1

Observation 17721 - L2 Version 1
Chandra X-Ray Center

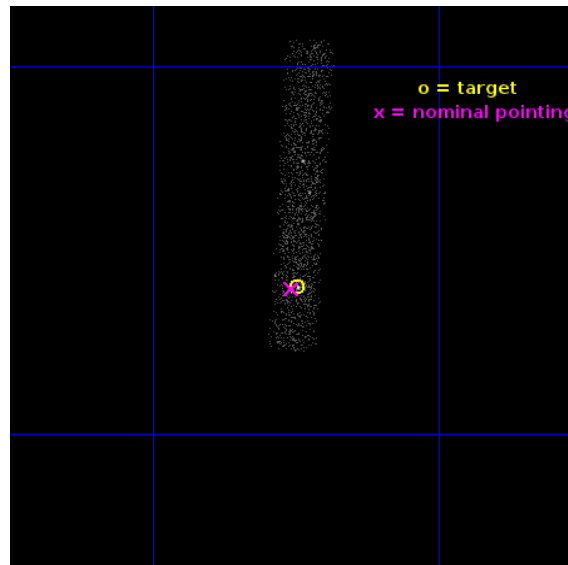
L2 Processing Date : Mar 13 2016

Contents

| | | |
|----------|-------------------------------|-----------|
| 1 | Front | 2 |
| 2 | OBI | 3 |
| 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 |
| A | Summary | 17 |
| A.1 | Status | 17 |
| A.2 | Comments | 17 |

1 Front

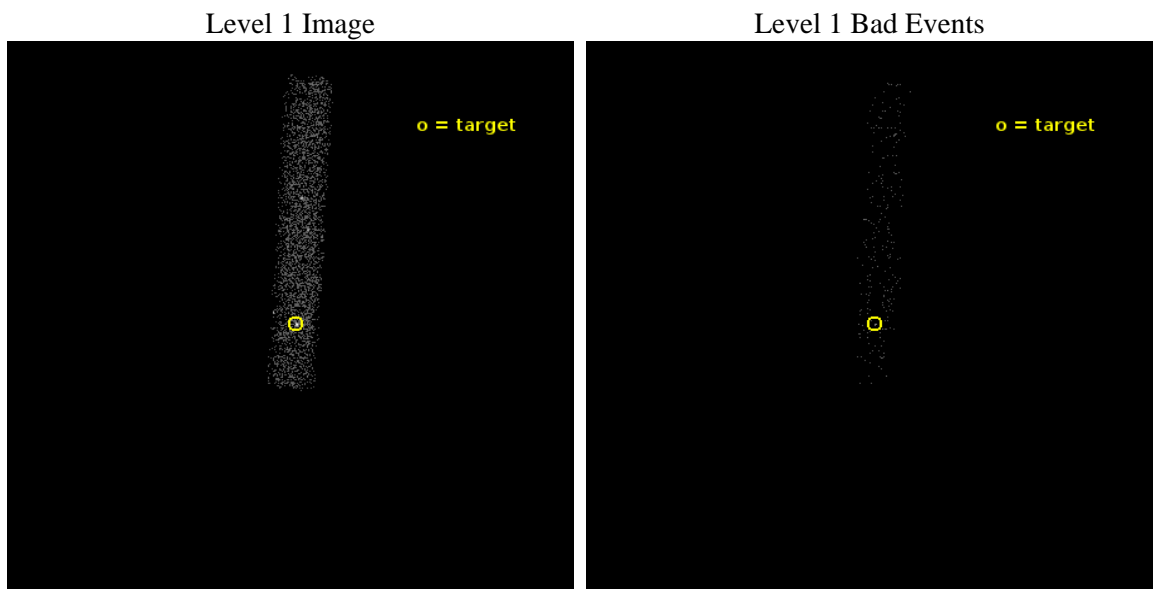
| | | |
|----------|---|---|
| seq_num | 201032 | Sequence number |
| obs_id | 17721 | Observation id |
| title | Phase-variable X-ray Emission in the Eccentric O9.5V Binary Sigma Orionis | Proposal title |
| observer | Prof Frederick Walter | Principal investigator |
| object | sigma Orionis | Source name |
| dtcycle | 0 | |
| cycle | P | events from which exps? Prim/Second/Both |
| ra_targ | 84.686667 | Observer's specified target RA [deg] |
| dec_targ | -2.600028 | Observer's specified target Dec [deg] |
| ra_nom | 84.689415163857 | Nominal RA [deg] |
| dec_nom | -2.6008147578608 | Nominal Dec [deg] |
| roll_nom | 273.20943502884 | Nominal Roll [deg] |
| revision | 1 | Processing version of data |
| ontime | 3569.4755795002 | Sum of GTIs [s] |
| livetime | 3237.3259382371 | Livetime [s] |
| ontime7 | 3569.4755795002 | Sum of GTIs [s] |
| l2events | 2892 | Number of level 2 events |



2 OBI

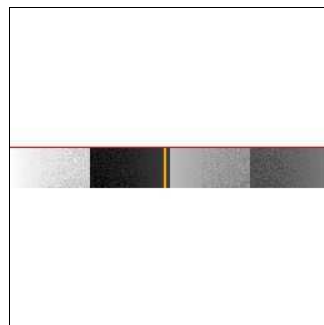
2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 7



2.1.3 Parameters

| | | | | | |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num | 1 | Obi number | sched_exp_time | 3500.000000 | [s] Scheduled observation exposure time |
| ascdsver | 10.4.3.1 | Processing system revision | ontime | 3569.4755795002 | Sum of GTIs [s] |
| caldsver | 4.7.0 | | ontime7 | 3569.4755795002 | Sum of GTIs [s] |
| date | 2016-03-13T05:39:24 | Date and time of file creation | l1events | 4977 | Number of level 1 events |
| revision | 1 | Processing version of data | | | |

2.1.4 Events

| | |
|-----------------|--------------|
| | ccd 7 |
| level 1 events | 4977 |
| rejected events | 1997 |
| rejected % | 40% |

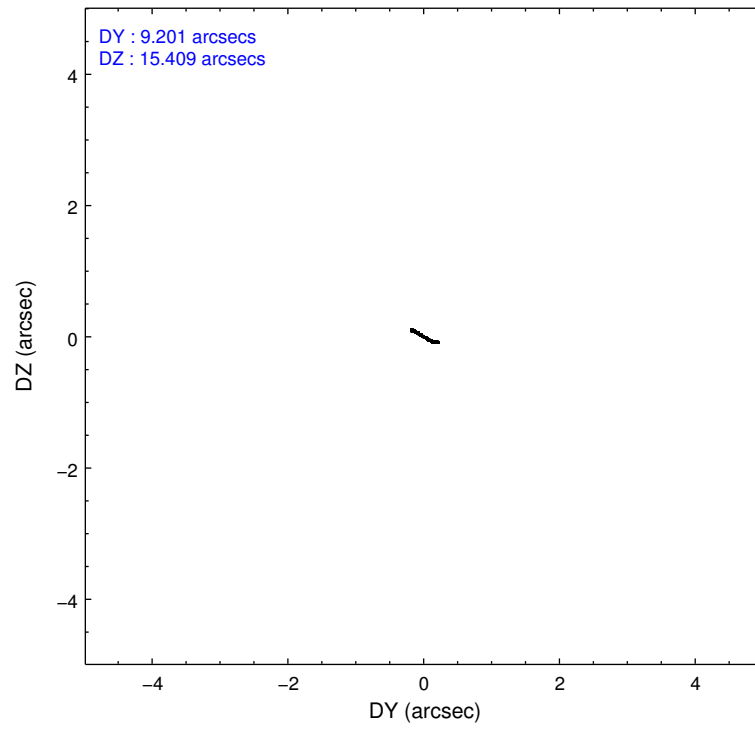
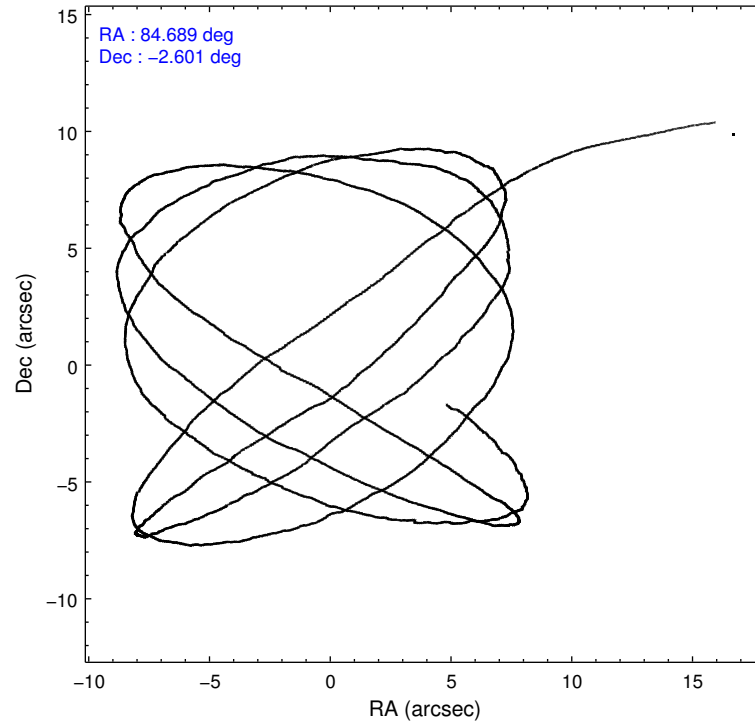
| | |
|----------------|--------------|
| | ccd 7 |
| grade 0 events | 570 |
| | 11% |
| grade 1 events | 15 |
| | 0% |
| grade 2 events | 600 |
| | 12% |
| grade 3 events | 372 |
| | 7% |
| grade 4 events | 390 |
| | 7% |
| grade 5 events | 417 |
| | 8% |
| grade 6 events | 1048 |
| | 21% |
| grade 7 events | 1565 |
| | 31% |

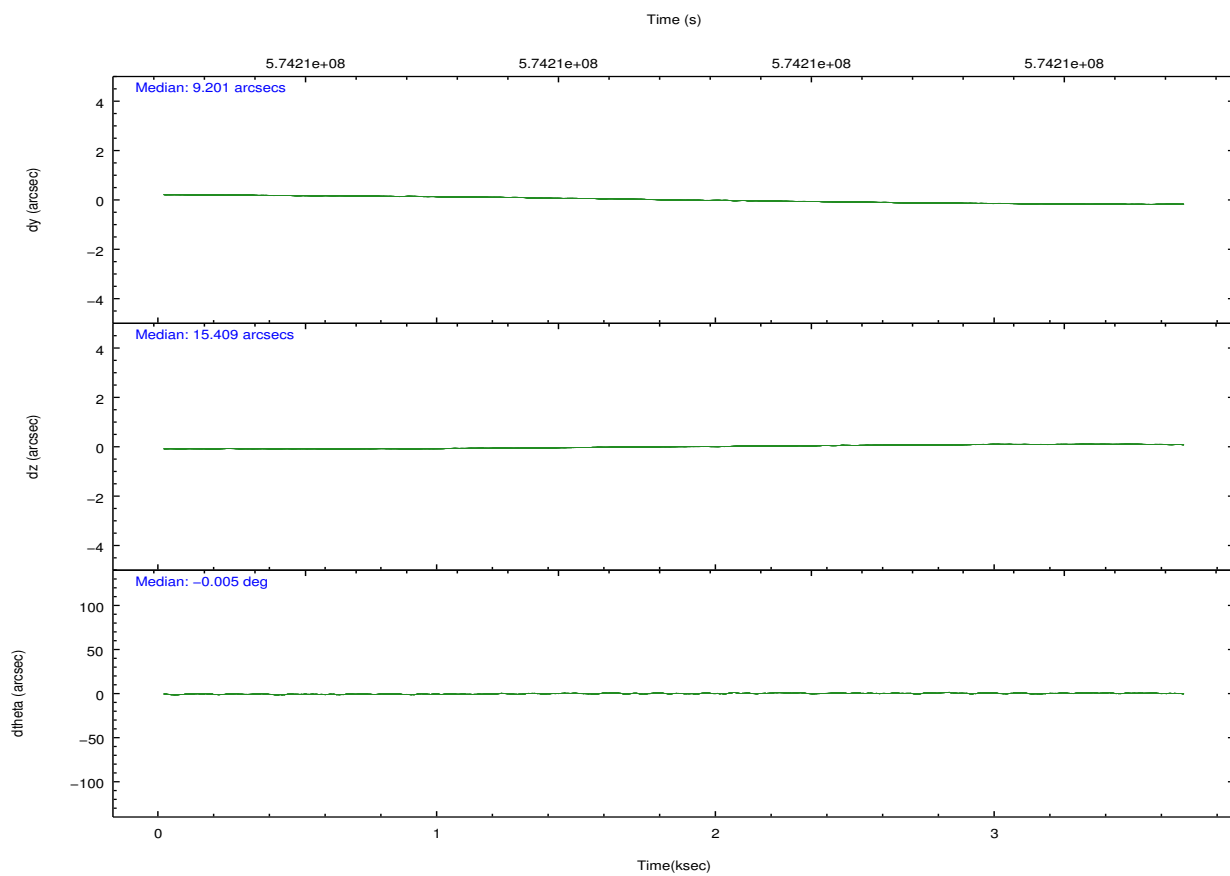
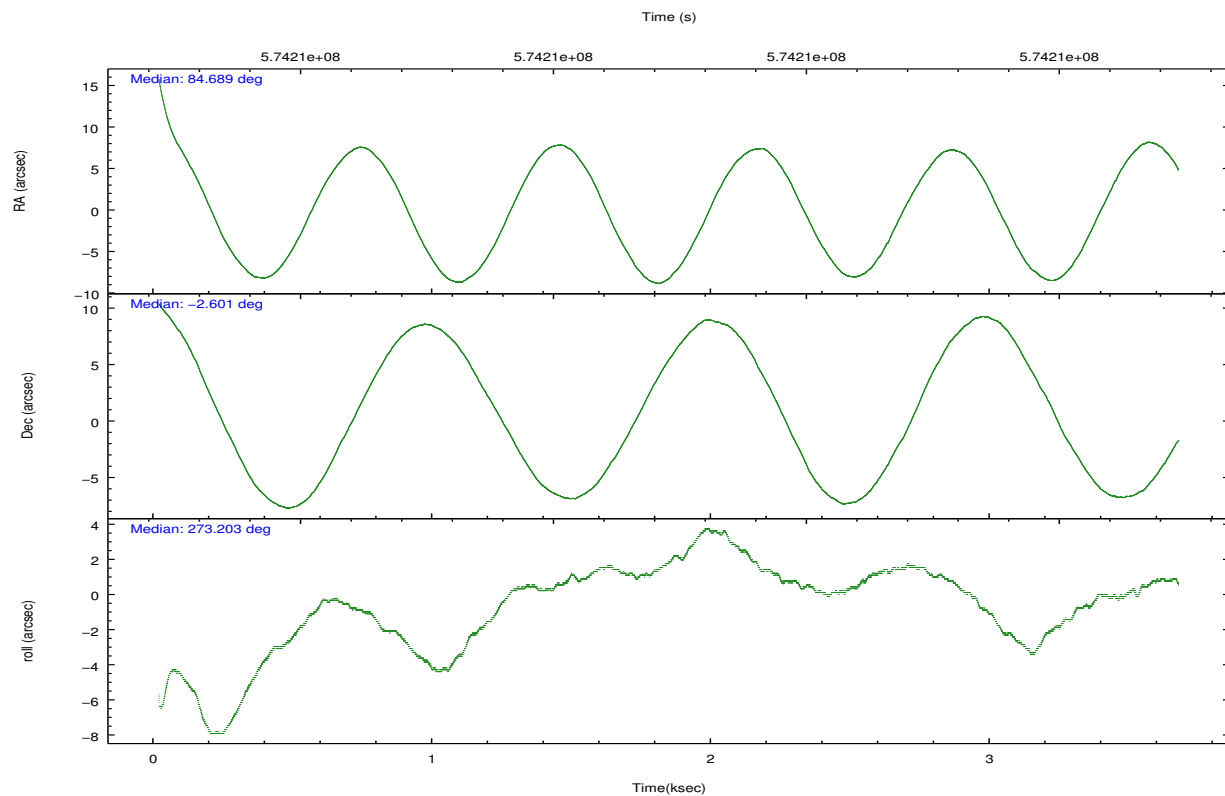
2.2 Compared Parameters

| Parameter | Planned | Actual |
|-----------------------------------|---------------------|----------------------|
| Instrument | ACIS | ACIS |
| Detector | ACIS-7 | ACIS-7 |
| Grating | NONE | NONE |
| Data mode | FAINT | FAINT |
| Observation mode | POINTING | POINTING |
| [deg] Pointing RA | 84.673947 | 84.68941516385739 |
| [deg] Pointing Dec | -2.577950 | -2.600814757860779 |
| [deg] Pointing Roll | 273.052124 | 273.2094350288405 |
| [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 |
| Phase constraints | Y | Y |
| [d] Phase period | 143.200000 | 143.200000 |
| [d] Phase epoch (MJD) | 57456.000000 | 57456.000000 |
| Phase start | 0.020000 | 0.020000 |
| Phase end | 0.030000 | 0.030000 |
| Phase start error | 0.010000 | 0.010000 |
| Phase end error | 0.010000 | 0.010000 |
| [s] Observation start time (MET) | 574205811.184000 | 574204797.9661 |
| Observation start date | 2016-03-12T21:35:43 | 2016-03-12T21:19:57 |
| [s] Observation end time (MET) | 574209311.184000 | 574210720.92893 |
| Observation end date | 2016-03-12T22:34:03 | 2016-03-12T22:58:40 |
| 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 | CUSTOM | 1/8 |
| Subarray start row | 449 | 449 |
| Subarray row count | 128 | 128 |
| Alternating exposures requested | N | N |
| [s] Primary exposure time | 0.000000 | 0.4 |

2.3 Aspect



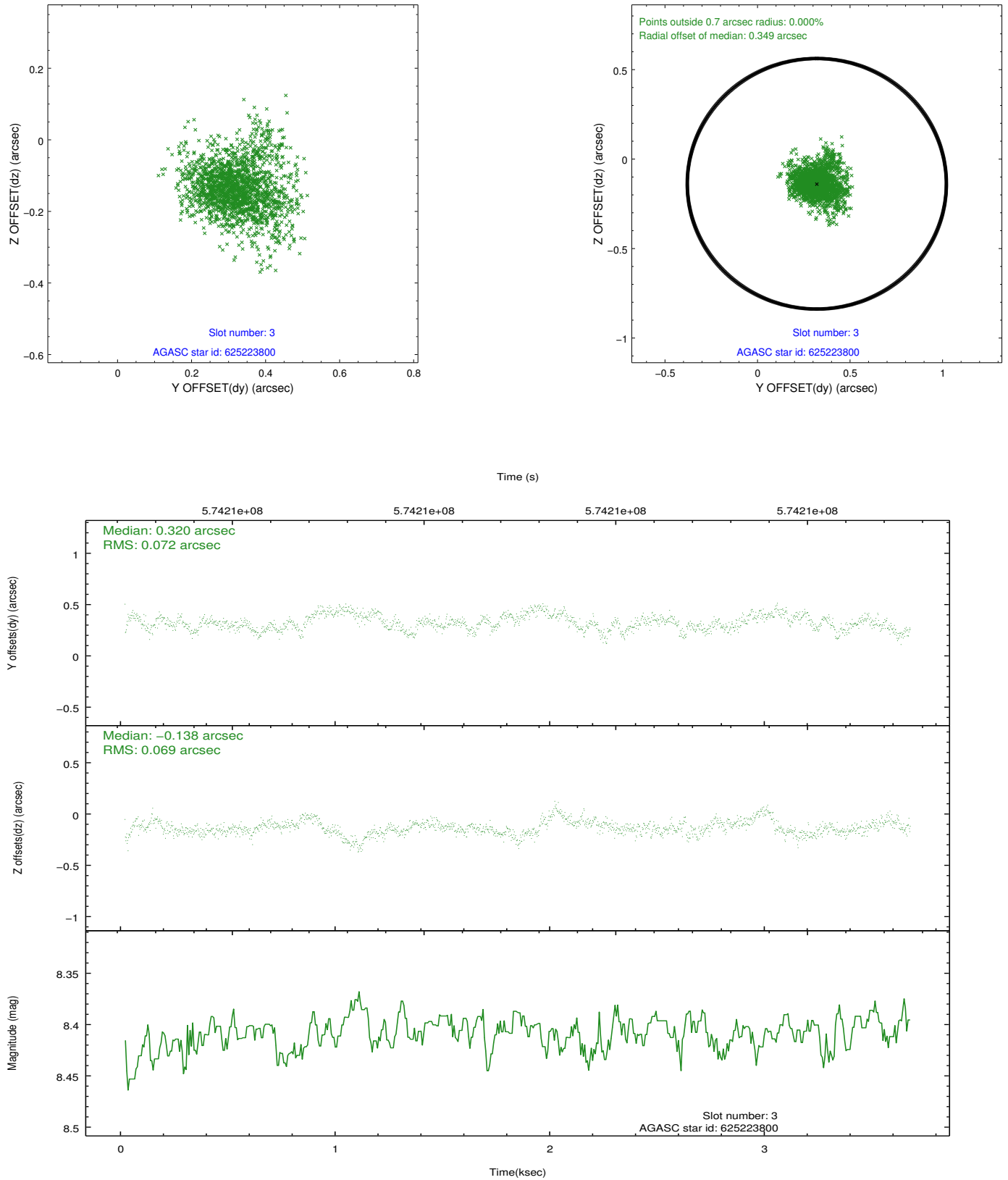


Slot Statistics

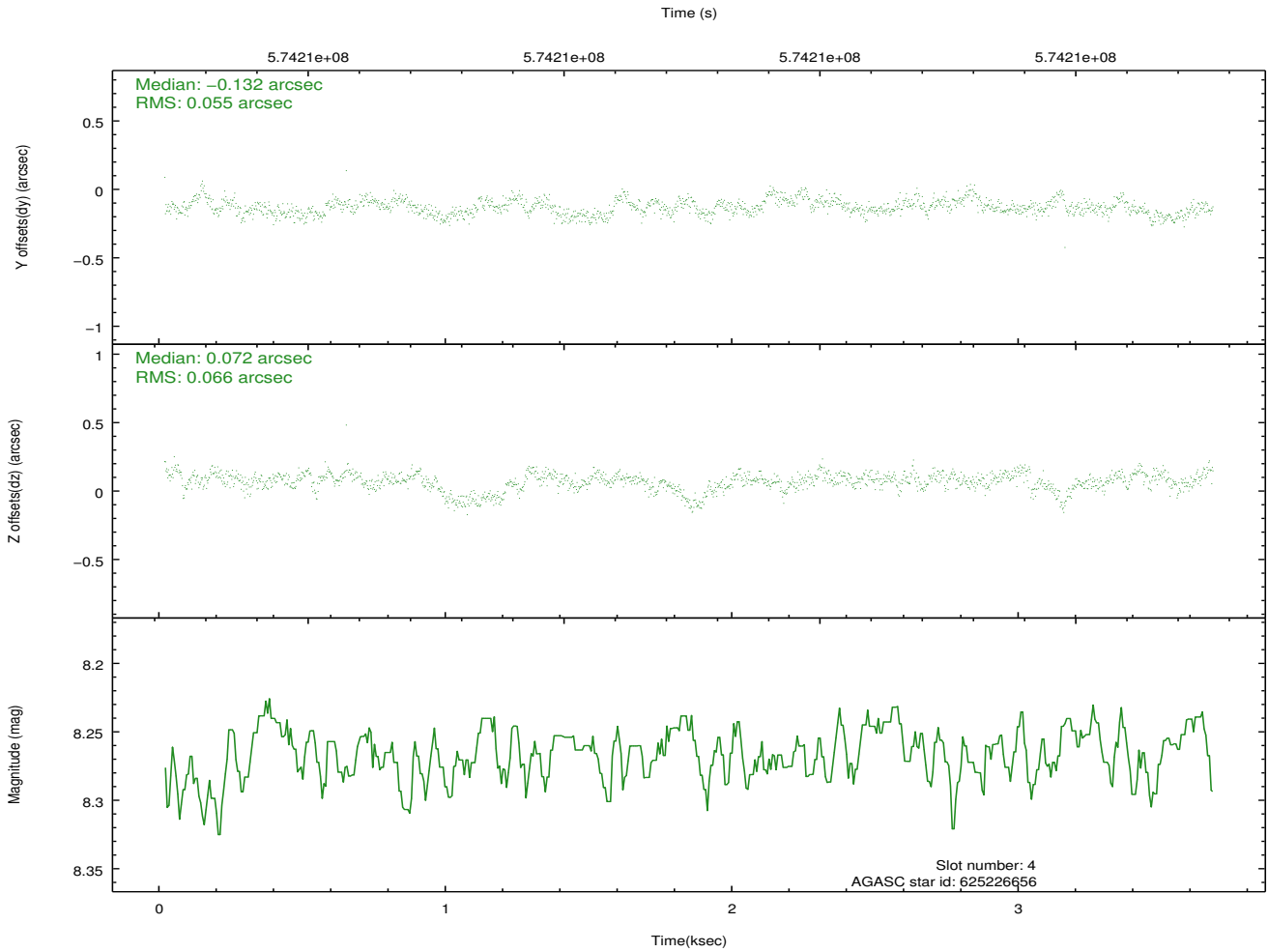
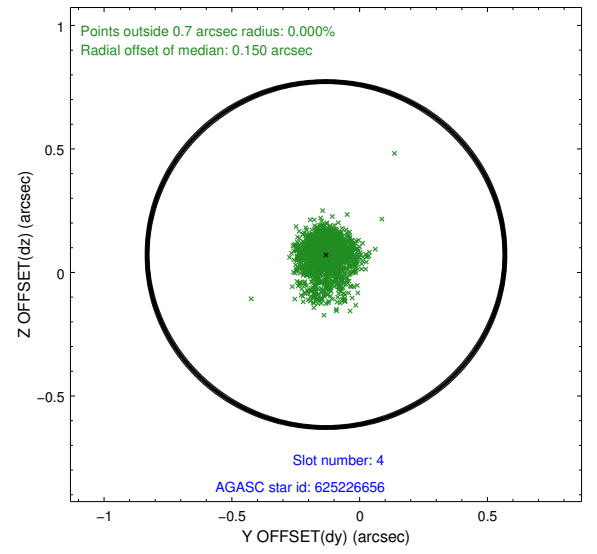
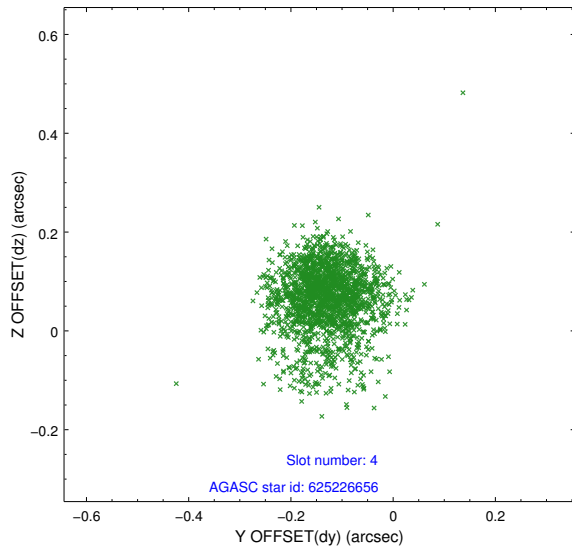
| slot | status | used | id | mag | n_pts | med_dy | med_dz | dr1 | dr2 | ra | dec | mean_y | mean_z |
|------|--------|------|-----------|------|-------|--------|--------|-------|-------|-----------|-----------|----------|----------|
| 0 | FID | | ACIS-S-2 | 7.13 | 893 | -0.143 | -0.061 | 0.007 | 0.012 | 0.000000 | 0.000000 | -762.13 | -1736.88 |
| 1 | FID | | ACIS-S-4 | 7.23 | 893 | 0.386 | 0.086 | 0.007 | 0.010 | 0.000000 | 0.000000 | 2150.86 | 170.03 |
| 2 | FID | | ACIS-S-5 | 7.24 | 893 | -0.274 | -0.016 | 0.007 | 0.011 | 0.000000 | 0.000000 | -1812.93 | 165.47 |
| 3 | GUIDE | used | 625223800 | 8.41 | 1786 | 0.320 | -0.138 | 0.104 | 0.179 | 84.220234 | -2.967062 | 1312.72 | -1703.65 |
| 4 | GUIDE | used | 625226656 | 8.27 | 1784 | -0.132 | 0.072 | 0.087 | 0.157 | 84.127450 | -1.983827 | -2239.45 | -1850.98 |
| 5 | GUIDE | used | 625352888 | 8.99 | 1786 | -0.063 | -0.049 | 0.104 | 0.172 | 85.235702 | -2.833055 | 1023.57 | 1967.10 |
| 6 | GUIDE | used | 625354096 | 6.76 | 1786 | -0.106 | -0.006 | 0.163 | 0.481 | 85.155401 | -2.825234 | 981.65 | 1682.32 |
| 7 | GUIDE | used | 625220768 | 8.36 | 1783 | -0.018 | 0.125 | 0.095 | 0.154 | 84.347465 | -2.083660 | -1838.45 | -1077.33 |

2.4 Star Slots

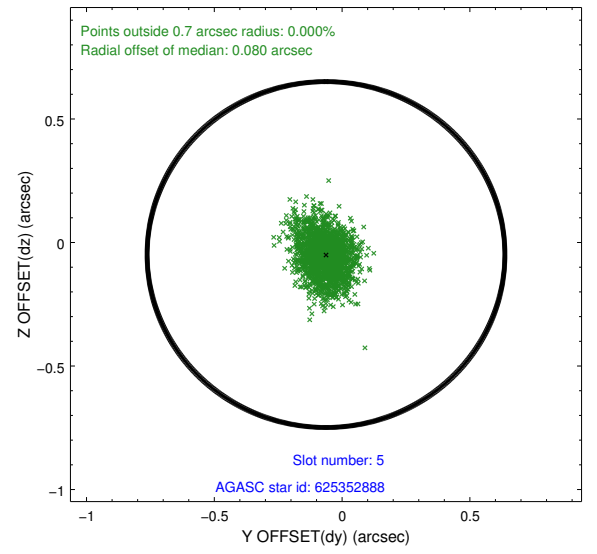
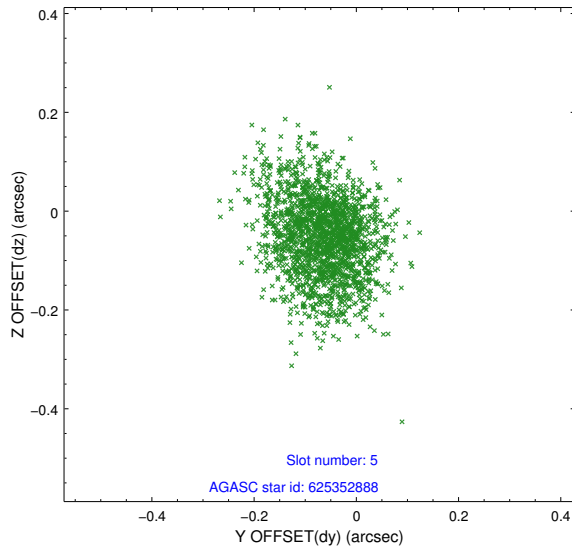
2.4.1 Slot 3



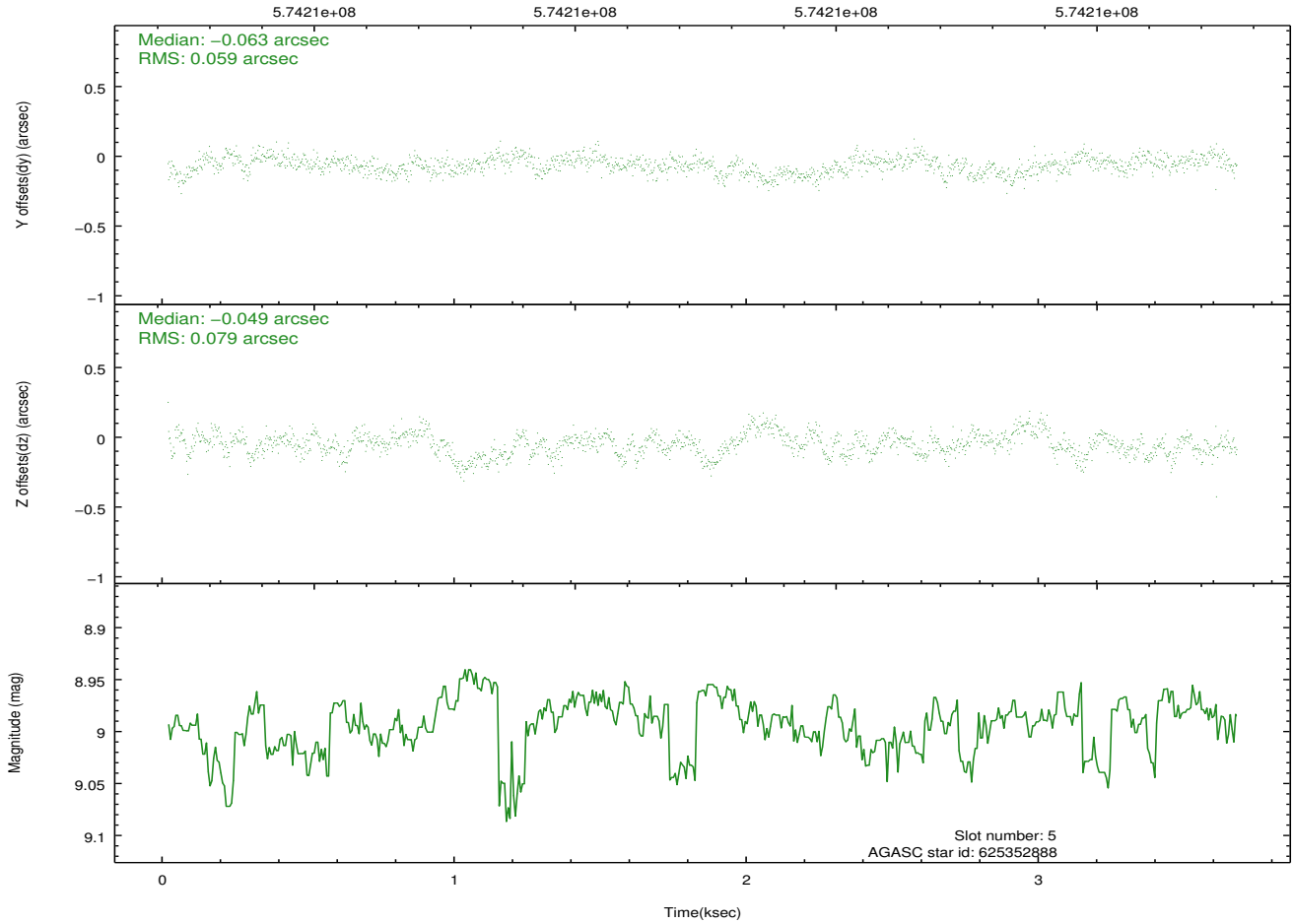
2.4.2 Slot 4



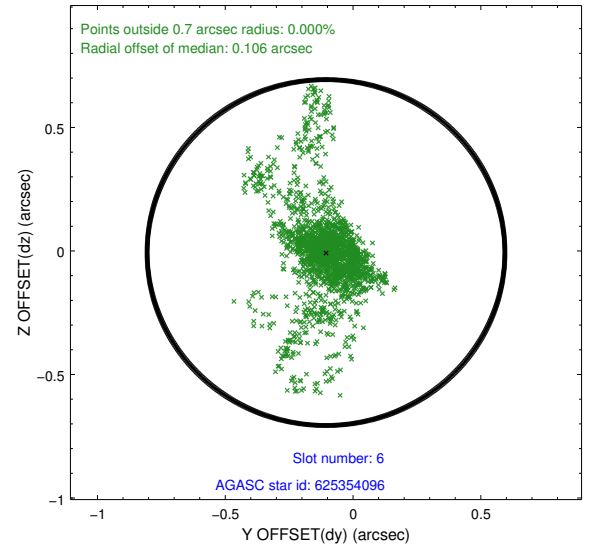
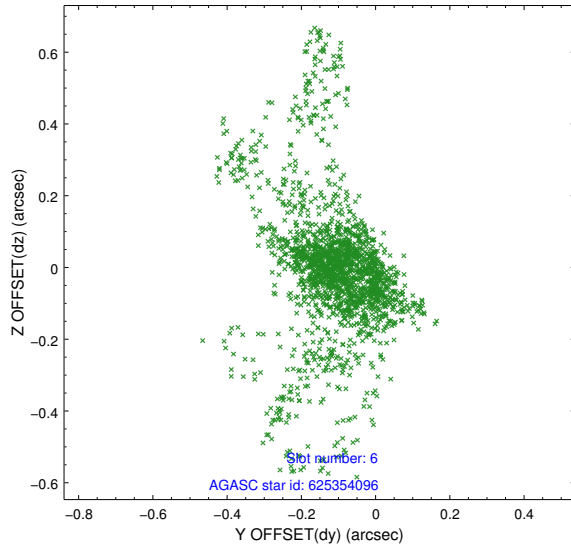
2.4.3 Slot 5



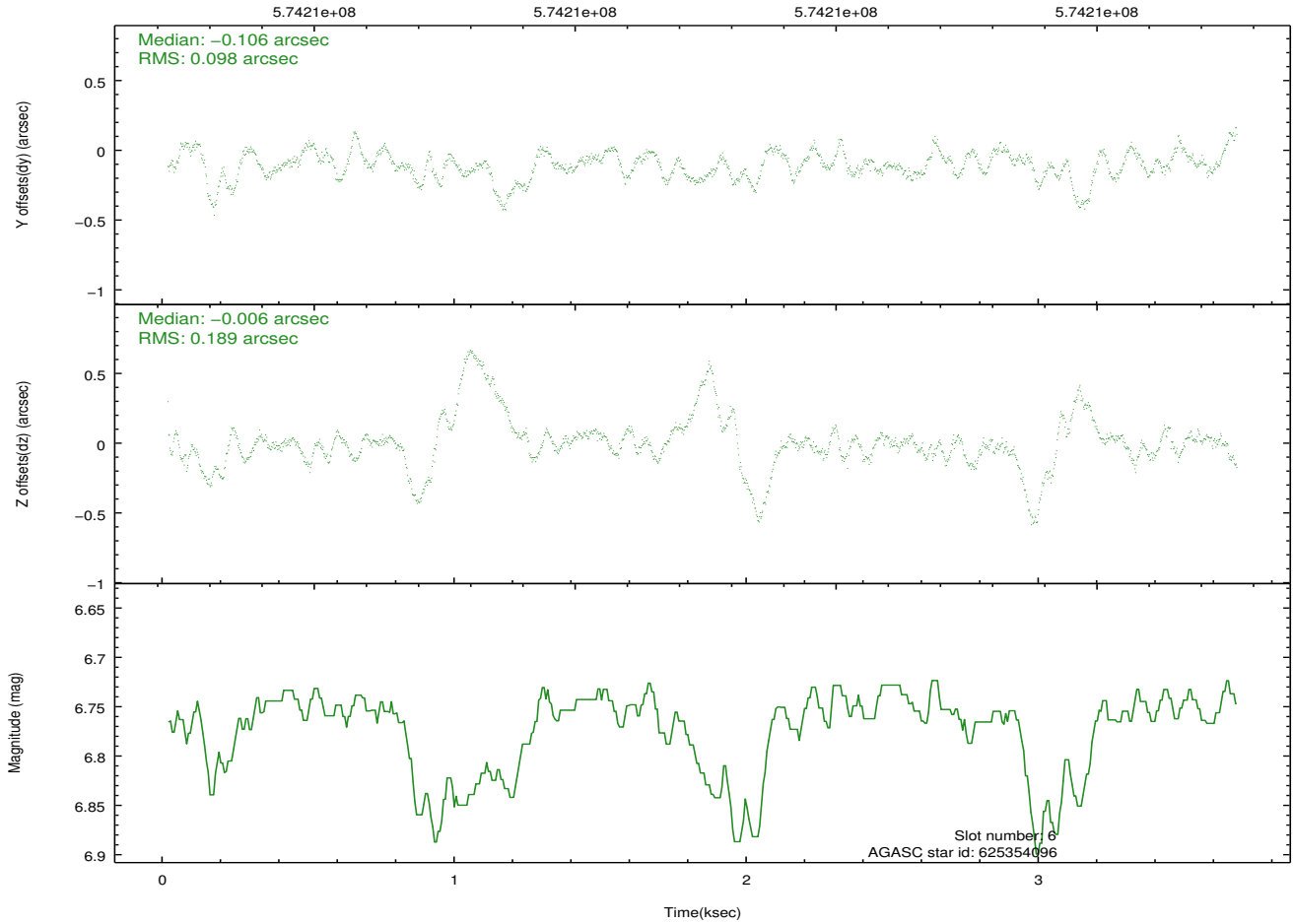
Time (s)



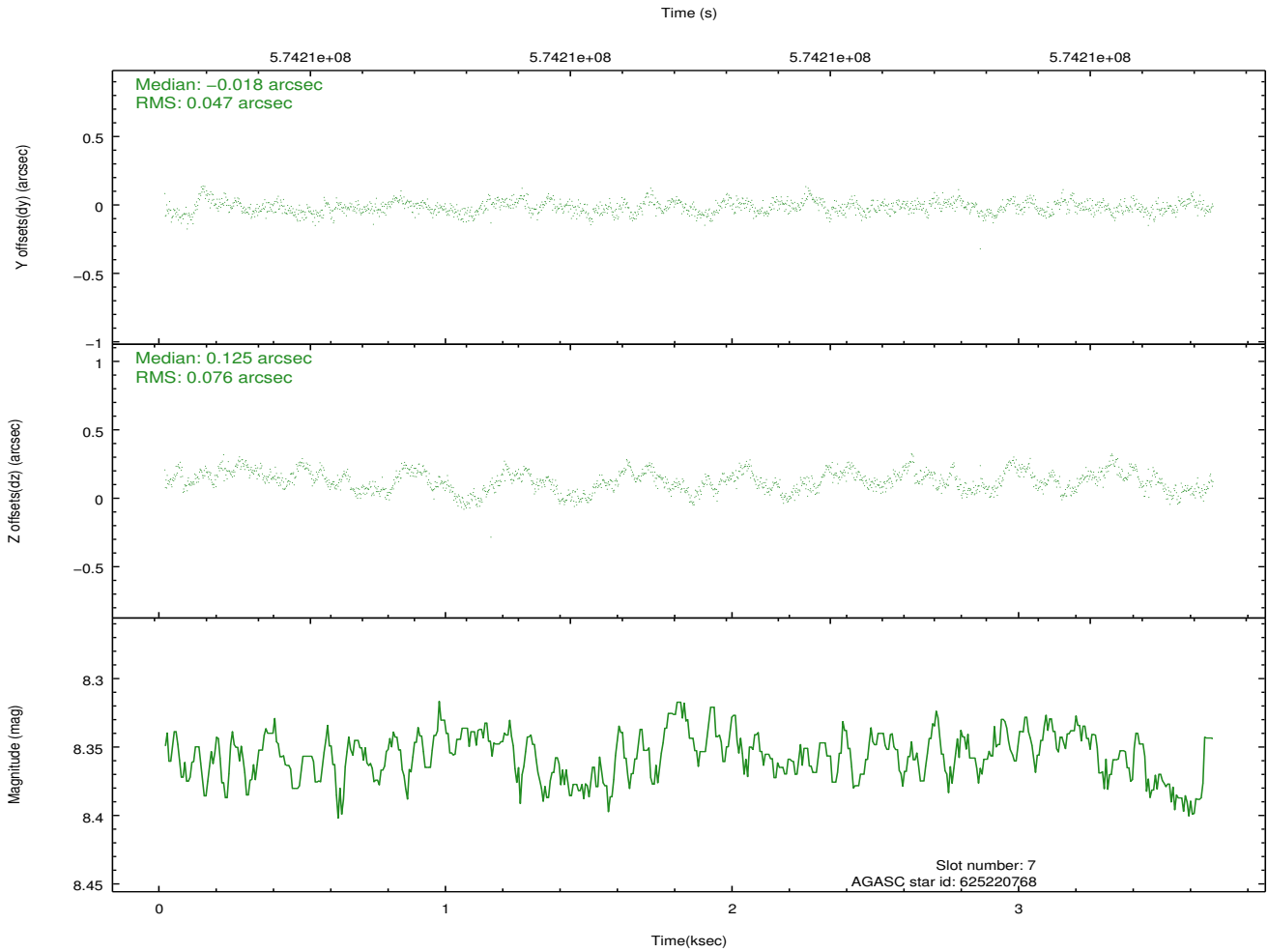
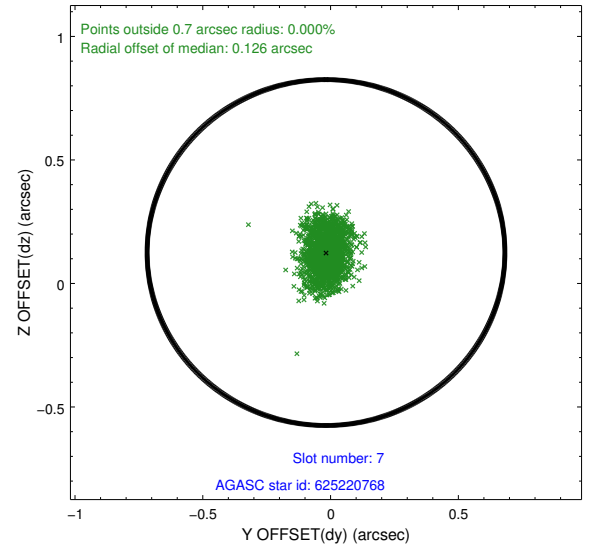
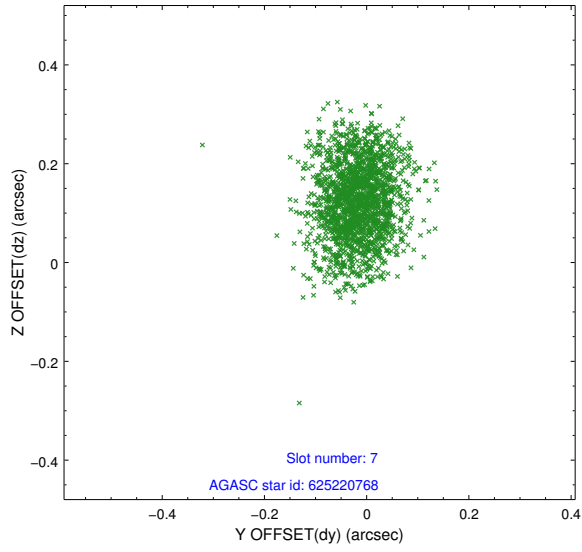
2.4.4 Slot 6



Time (s)

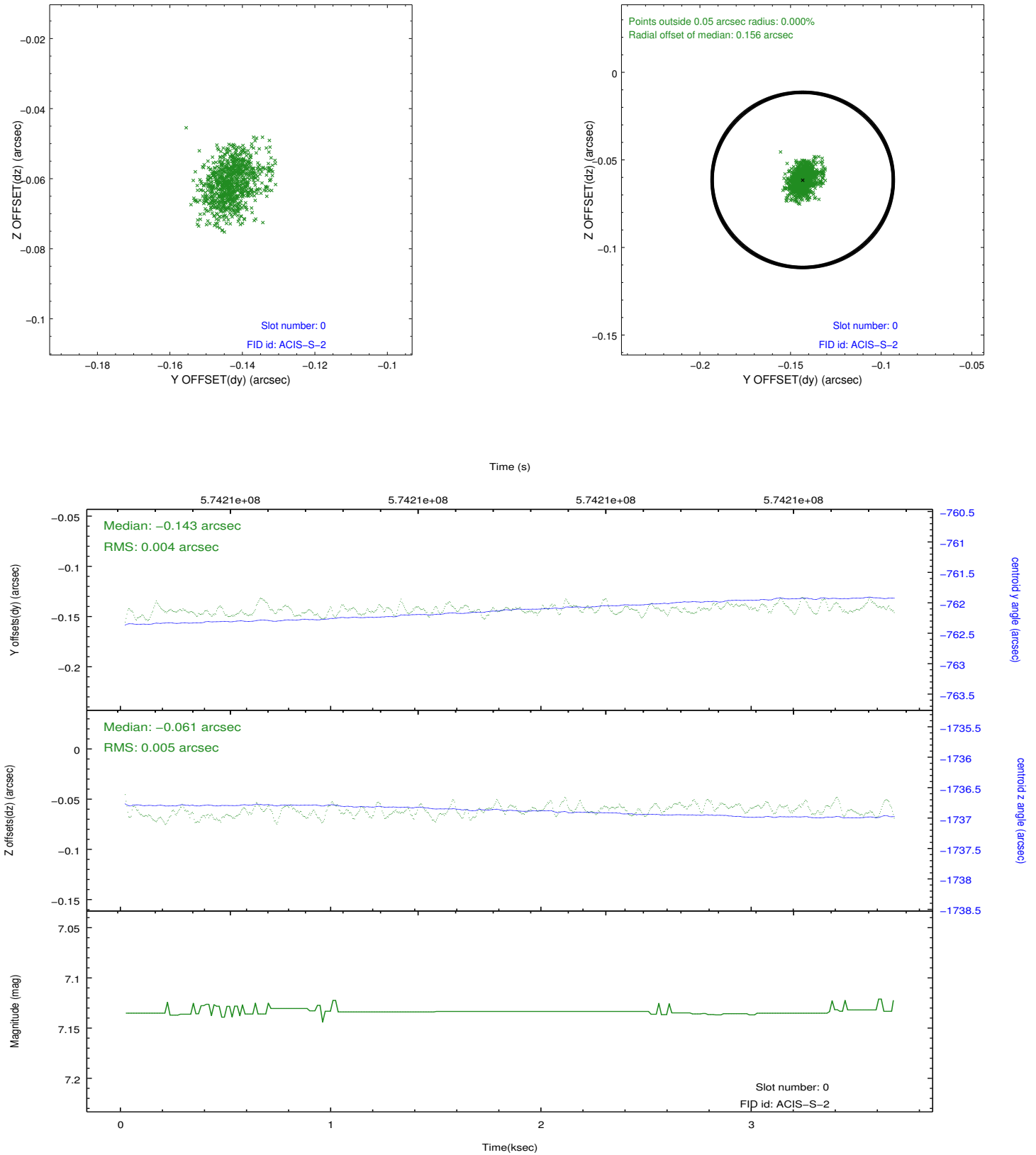


2.4.5 Slot 7

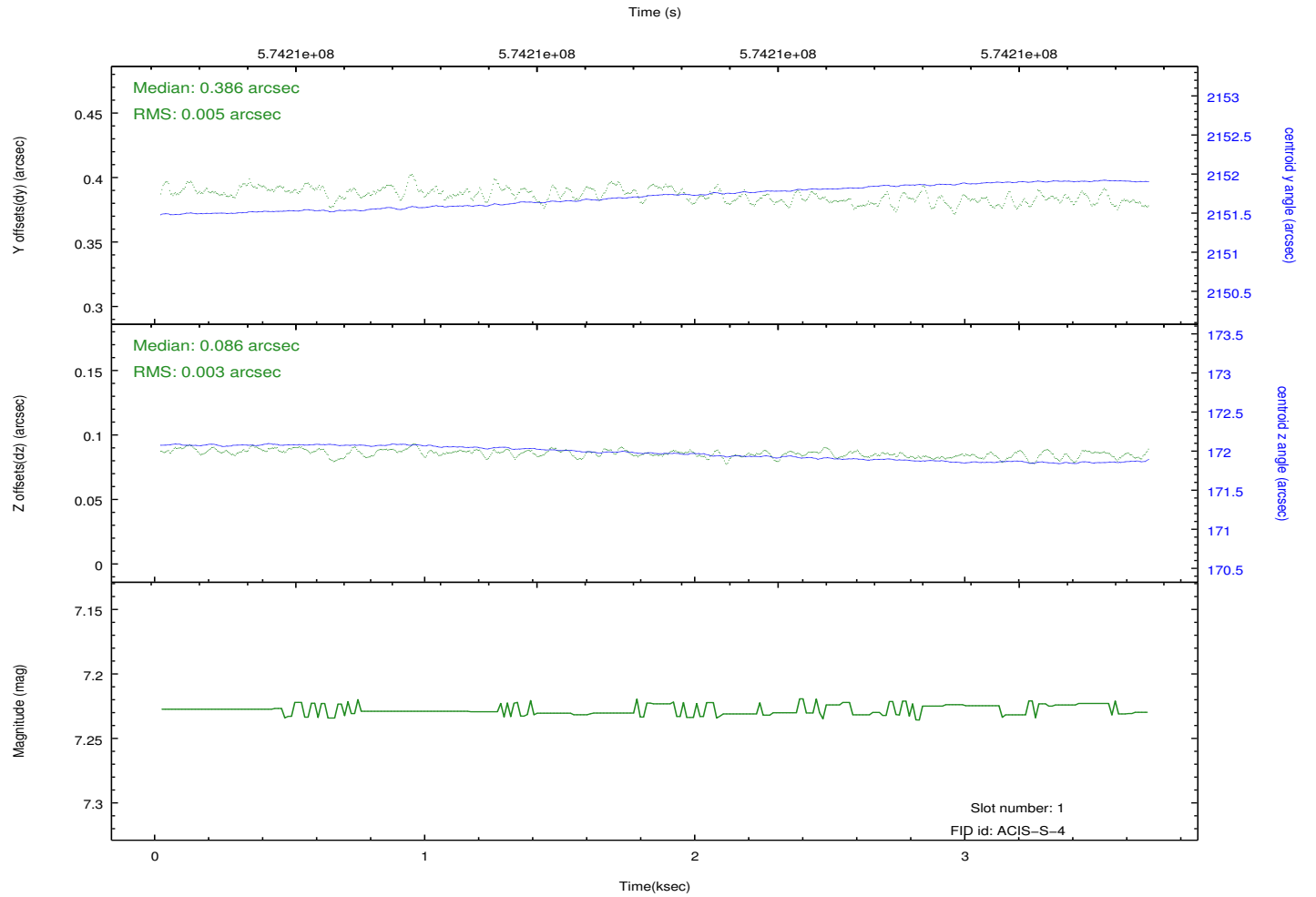
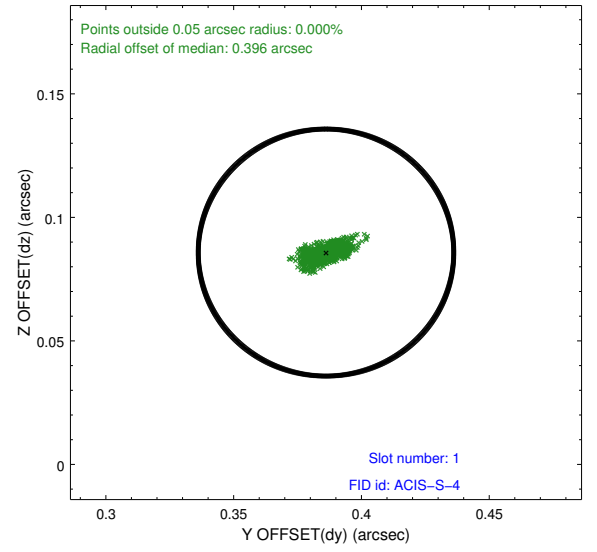
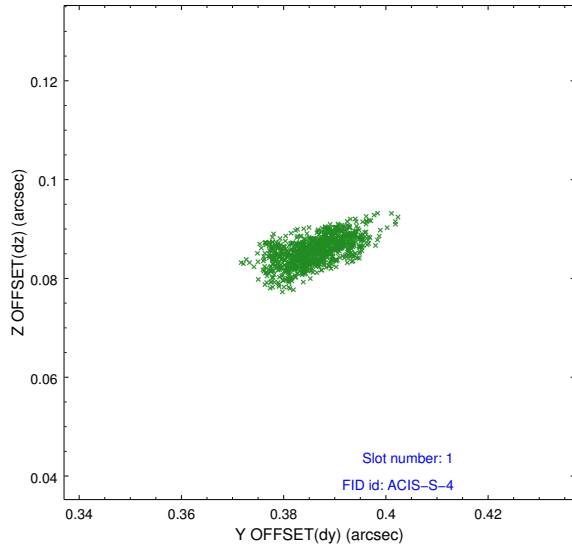


2.5 FID Slots

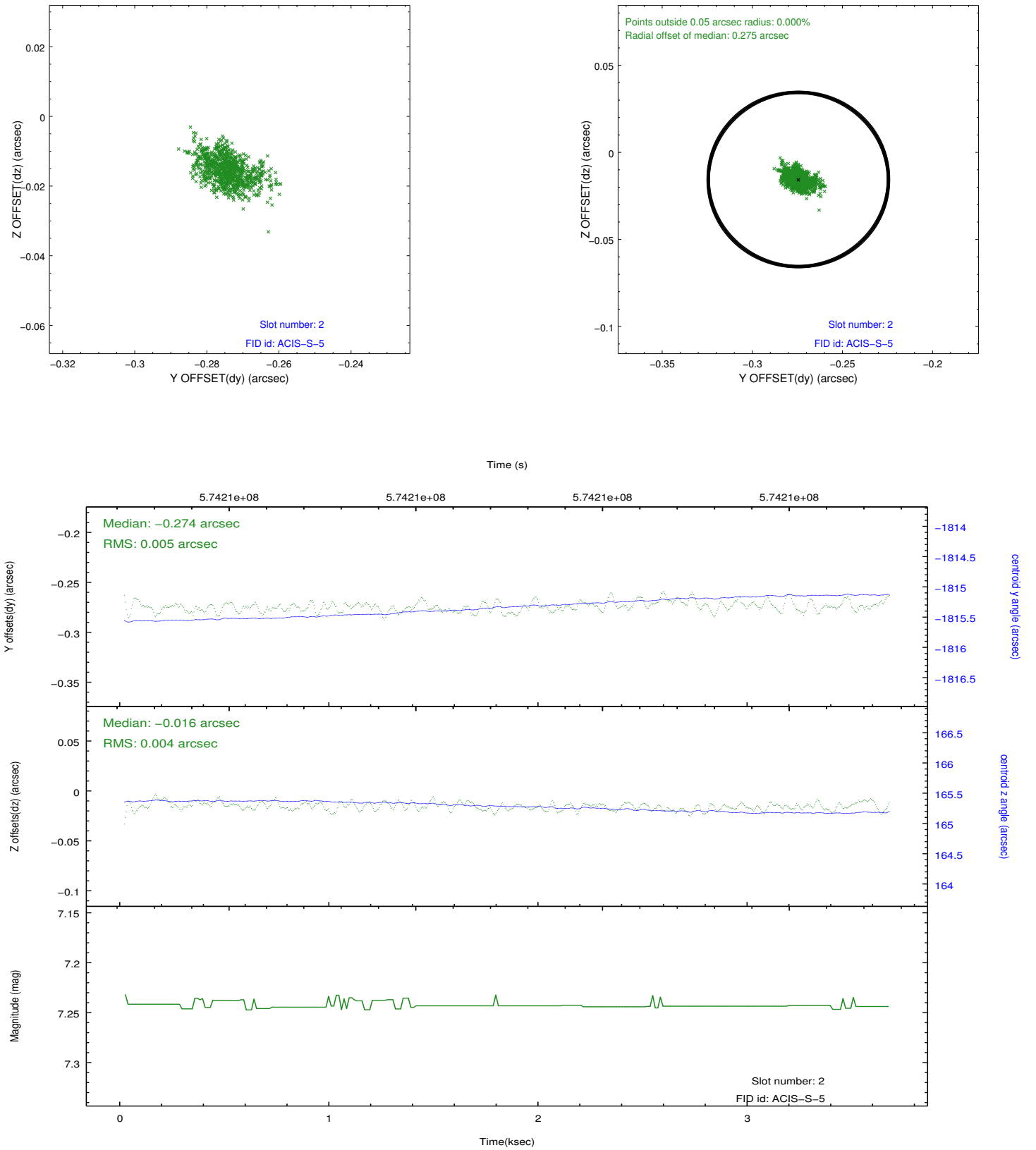
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

| | |
|----------------------------|-----------------|
| V&V Scientist | Beth Sundheim |
| V&V Date (YYYY-MM-DD) | 2016.03.13 |
| V&V Edition | 1 |
| V&V Disposition and Status | OK |
| V&V Charge Time | 3.5694755795002 |

A.2 Comments

Phase constraint OK.