# Data Validation (DV) Report
## for TESS ID 158561566
## Sectors 14 - 26

**This Data Validation Report was produced in the**
**TESS Science Processing Operations Center (SPOC) Pipeline**
**at NASA Ames Research Center**

**03-Aug-2020 00:06:11 Z**

# Contents

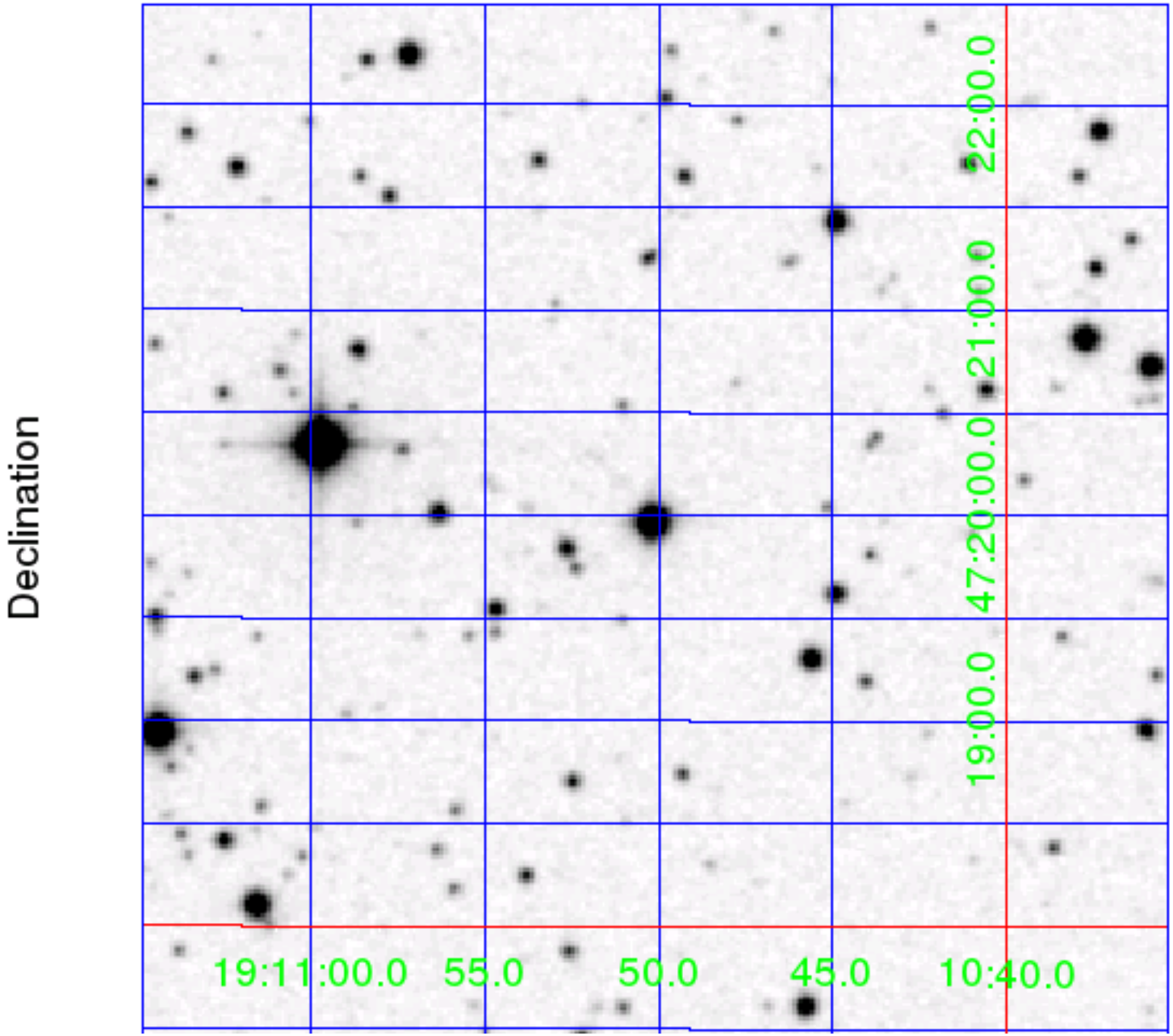
# 1 Summary

| Target Properties | Value | Uncertainty | Units | Provenance |
|---|---|---|---|---|
| Catalog ID | 158561566 | | | |
| TOI ID | 1267 | | | |
| TESS Name | - | | | |
| RA | 287.70881400 | 0 | degrees | TIC8 |
| Dec | 47.33305000 | 0 | degrees | TIC8 |
| Magnitude | 11.636 | 0.036 | | TIC8 |
| Radius | 2.001 | 0.103 | Solar radii | TIC8 |
| Effective Temperature | 6378 | 25 | Kelvin | TIC8 |
| log(g) | 4.438 | 0 | $cm/sec^2$ | Solar |
| [M/H] | 0.070 | 0.1 | Solar metallicity | TIC8 |
| Stellar Density | 1.000 | 0.000 | Solar density | Solar |
| Limb Darkening Coefficient 1 | 0.47636 | | | |
| Limb Darkening Coefficient 2 | 0.34395 | | | |
| Limb Darkening Coefficient 3 | -0.23625 | | | |
| Limb Darkening Coefficient 4 | 0.038611 | | | |
| Number of Planet Candidates | 1 | | | |
| TOI Model | csv-file-toi-catalog-07-29-20-edited.csv | | | |
| TESS Names Model | - | | | |
| External TCE Model | - | | | |
| Software Revision | spoc-5.0.5-20200728 | | | |
| Date Report Generated | 03-Aug-2020 00:06:11 Z | | | |

| Sector | Target Table | Camera/ CCD | Crowding Metric | Flux Fraction |
|---|---|---|---|---|
| 14 | 167 | 2:3 | 0.9553 | 0.8016 |
| 15 | 169 | 2:3 | 0.9271 | 0.7704 |
| 26 | 254 | 2:4 | 0.9439 | 0.8190 |

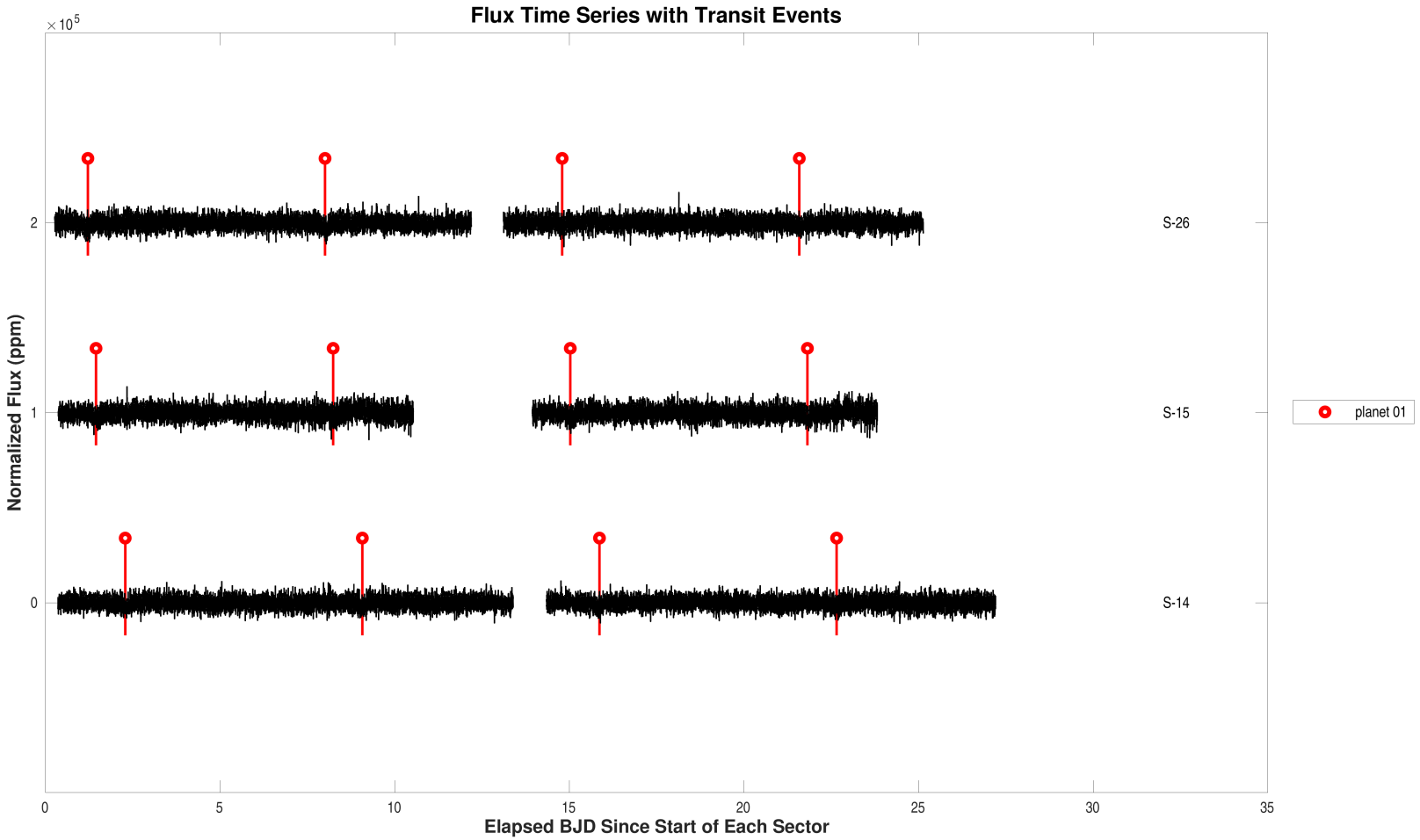
| Planet Candidate | TOI ID | TESS Name | TOI Correlation | Period (days) | Period Ratio | Epoch (BTJD) | Semi-major Axis (AU) | Radius (Re) | Seff | Teq (K) | False Alarm | Suspected EB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1267.01 | - | 0.96 | 6.790 | 1.00 | 1685.286 | 0.11 | 9.5 | 477.5 | 1192 | 1.28e-71 | false |

## 2 Survey Image

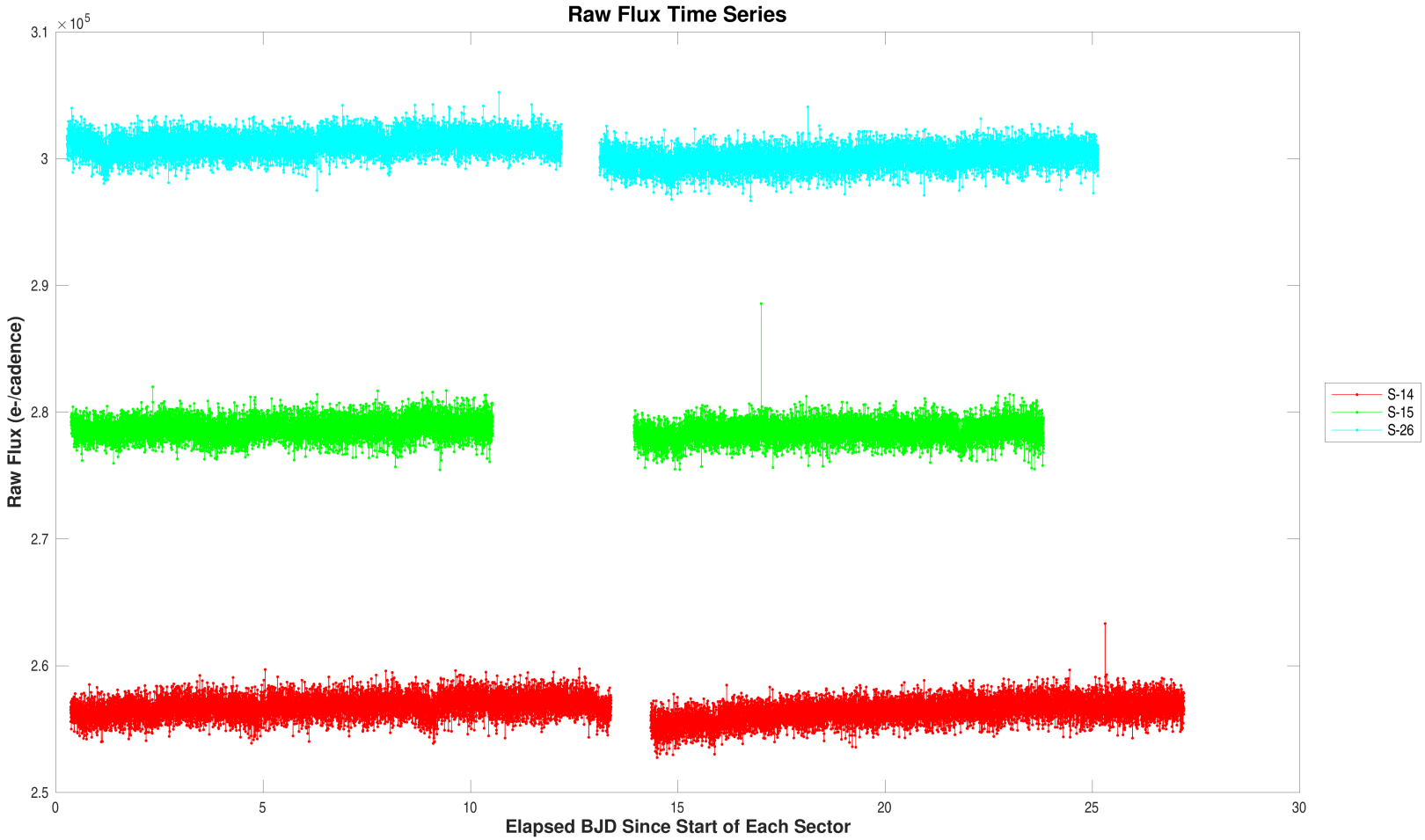



Digitized Sky Survey (DSS) red image. The 5' x 5' image is centered on the J2000 coordinates of target (158561566).

# 3 Flux Time Series




Summary plot of sector-stitched flux time series and transits for target 158561566, marked with DV fitted epoch/period (or TPS epoch/period if fit was not successful). Transits of identified planets are labeled with epoch BTJD and orbital period. For the data of sector 14, target table 167, start BJD is 2458683 and the vertical offset is 0 ppm. For the data of sector 15, target table 169, start BJD is 2458711 and the vertical offset is 100000 ppm. For the data of sector 26, target table 254, start BJD is 2459010 and the vertical offset is 200000 ppm.
Open `./summary-plots/0000000158561566-00-flux-dv-fit-14-167.fig`




Summary plot of raw flux time series. For the data of sector 14, target table 167, start BJD is 2458683 and the vertical offset is 0 electrons/cadence. For the data of sector 15, target table 169, start BJD is 2458711 and the vertical offset is 22000 electrons/cadence. For the data of sector 26, target table 254, start BJD is 2459010 and the vertical offset is 44000 electrons/cadence.
Open `./summary-plots/0000000158561566-00-raw-flux-14-167.fig`

# 4 Dashboards

## Planet Candidate 1

<table>
<tr>
<td rowspan="2">Model Fitter</td>
<td colspan="2">Stellar Radius<br>2.0 ± 0.1 Solar units</td>
<td rowspan="2">Core Aperture Correlation Statistic<br>Value = 18.96<br>Significance = 100.00%<br>Halo Aperture Correlation Statistic<br>Value = 4.21<br>Significance = 100.00%<br>Core/Halo Ratio<br>Ratio = 4.51</td>
<td rowspan="2">Ghost Diagnostic Test</td>
</tr>
<tr>
<td colspan="2">Period = 6.8 ± 0.0 days<br>Depth = 2189 ± 98 ppm<br>Planet Radius = 9.5 ± 0.9 Earth radii<br>Semi-major Axis = 0.1 ± 0.0 AU<br>Effective Stellar Flux = 477.5 ± 18.1<br>Equilibrium Temperature = 1192 ± 11 Kelvin<br>Chi-squared/DoF = 0.8<br>SNR = 22.2</td>
</tr>
<tr>
<td rowspan="2">Eclipsing Binary Discrimination Test</td>
<td colspan="2">Odd-Even Depth Comparison Statistic<br>Value = 2.26e-05<br>Significance = 99.62%</td>
<td>Offsets Relative to Out of Transit Centroid<br>Source RA Offset = 6.82e+00 ± 2.02e+01 arcsec (0.34 $\sigma$)<br>Source Dec Offset = 1.94e+00 ± 2.57e+00 arcsec (0.76 $\sigma$)<br>Source Offset Distance = 7.09e+00 ± 1.94e+01 arcsec (0.37 $\sigma$)<br>Offsets Relative to TIC Position<br>Source RA Offset = 7.17e+00 ± 2.54e+01 arcsec (0.28 $\sigma$)<br>Source Dec Offset = 2.14e+00 ± 2.70e+00 arcsec (0.79 $\sigma$)<br>Source Offset Distance = 7.48e+00 ± 2.41e+01 arcsec (0.31 $\sigma$)</td>
<td>Difference Image Centroid Offsets</td>
</tr>
<tr>
<td>Shorter Period Comparison Statistic<br>Value = $N/A$<br>Significance = $N/A$</td>
<td>Longer Period Comparison Statistic<br>Value = $N/A$<br>Significance = $N/A$</td>
<td>False Alarm = 1.28e-71<br>Transit Count = 52<br>Max Multiple Event Statistic = 18.7</td>
<td>Bootstrap Test</td>
</tr>
</table>

Summary of model fitter results and validation test results for target 158561566, planet candidate 1. In general, green denotes that the candidate is likely a planet, while red denotes that the candidate is unlikely to be a planet. Cyan denotes that no data is available. The color of the Model Fitter block is: green, when the SNR of the fit is greater than or equal to 10; yellow, if the SNR is greater than or equal to 7.1 but less than 10; red, if the SNR is less than 7.1 or if the fitter failed. The color of the Ghost Diagnostic Test and Eclipsing Binary Discrimination Test blocks are: green, when the significance is within 2-sigma; yellow, when the significance is between 2- and 3-sigma; red when the significance is greater than 3-sigma. The color of the Difference Image Centroid Offsets block is: green, when the max offset distance sigma is less than or equal to 2; yellow, when the max sigma is between 2 and 3; red when the max sigma is greater than 3. The color of the Bootstrap Test block is green whenever the false alarm probability is less than $10^{-12}$, low enough to limit the total number of false alarms from a four year mission to less than one. If the false alarm probability is greater than $10^{-12}$, the color of the Bootstrap Test block is: green, when the false alarm probability is less than or equal to the CCDF of a Gaussian distribution at the observed maximum multiple event statistic; yellow when the false alarm probability is between 1 and 2 times that of a Gaussian distribution at the max multiple event statistic; and red when the false alarm probability is more than 2 times that of a Gaussian distribution at the max multiple event statistic.

# 5 Pixel Level Diagnostics

To reduce clutter, the catalog IDs in the difference images have been replaced by indices representing distance from the target star. The mapping between the indices and the catalog IDs is found in a table at the end of this section.

## 5.1 Planet Candidate 1

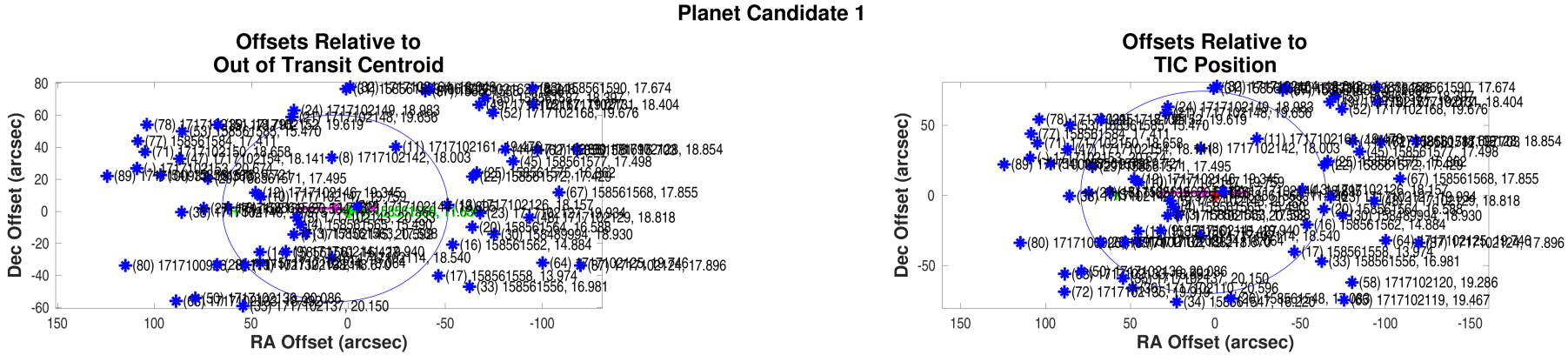
### Multi-Sector Average PRF Fit of the Difference Images

**Mean offset from the PRF fit to the out of transit image**

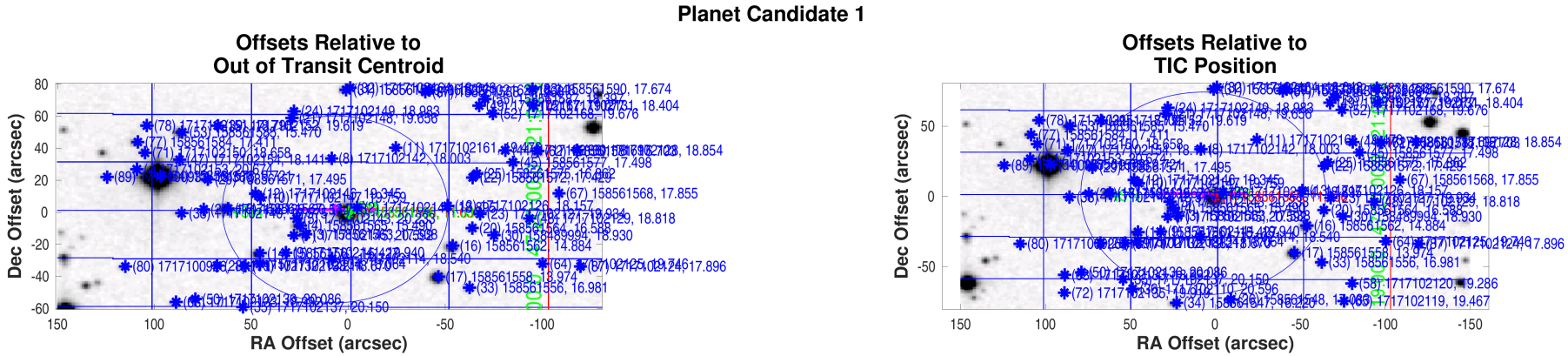
| | RA | Dec | Units |
|---|---|---|---|
| Offset | $6.8207 \pm 2.02e+01$ | $1.9448 \pm 2.57e+00$ | arcseconds |
| Offset/$\sigma$ | 0.34 | 0.76 | |
| Offset Distance | $7.0926 \pm 1.94e+01$ | | arcseconds |
| Offset Distance/$\sigma$ | 0.37 | | |
| 3$\sigma$ Radius | 58.2508 | | arcseconds |

**Mean offset from the TIC RA and Dec**

| | RA | Dec | Units |
|---|---|---|---|
| Offset | $7.1710 \pm 2.54e+01$ | $2.1388 \pm 2.70e+00$ | arcseconds |
| Offset/$\sigma$ | 0.28 | 0.79 | |
| Offset Distance | $7.4832 \pm 2.41e+01$ | | arcseconds |
| Offset Distance/$\sigma$ | 0.31 | | |
| 3$\sigma$ Radius | 72.1939 | | arcseconds |



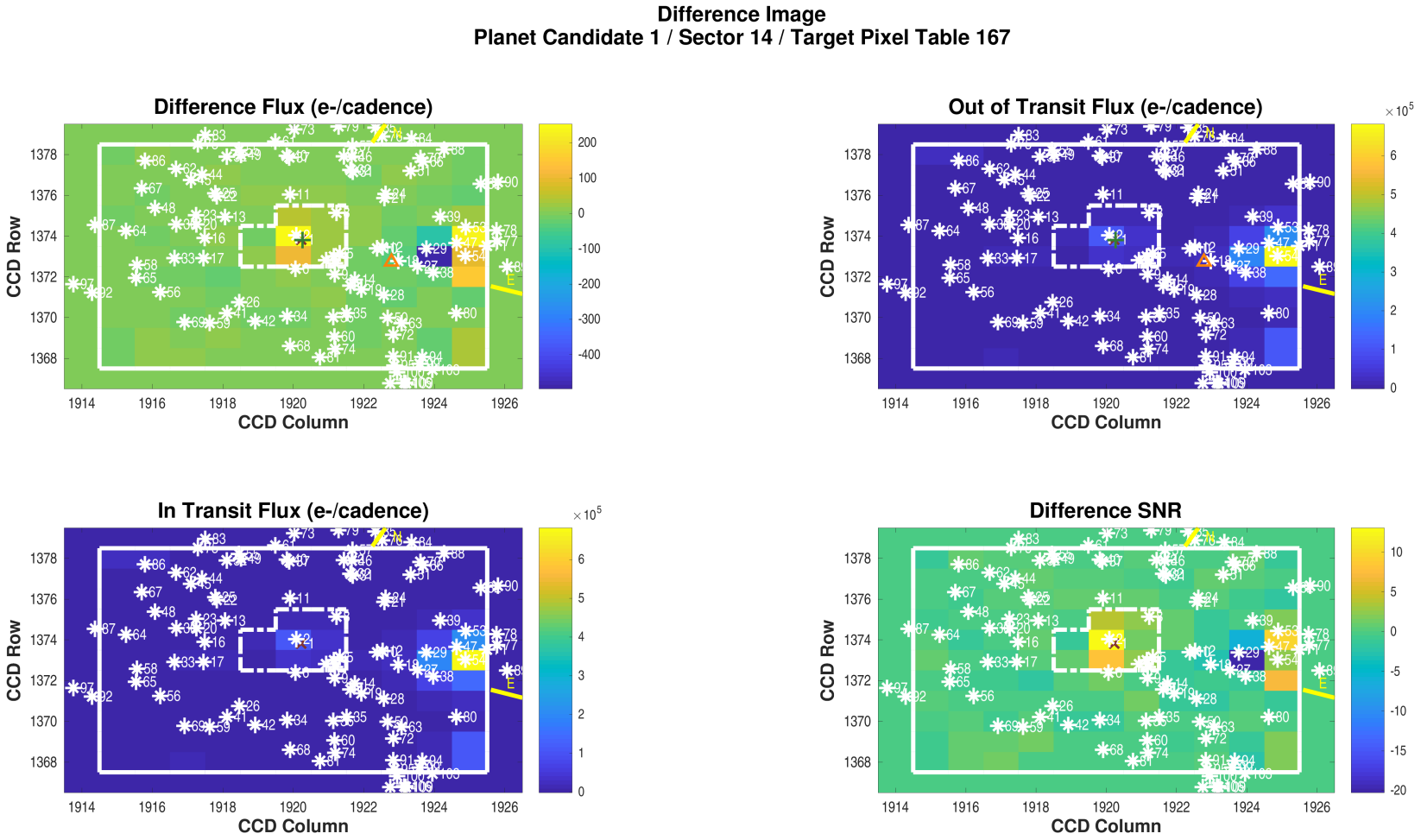

Difference image centroid offsets for target 158561566, planet candidate 1. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TC coordinates of the given target. Symbol key: green cross: per sector centroid offsets with 1-sigma error bars in RA and Dec; magenta cross: robust weighted mean offset over all sectors with 1-sigma error bars in RA and Dec; blue circle: 3-sigma radius of confusion for weighted mean offset; red asterisk: location of target star (out-of-transit centroid in left panel and TIC position in right panel); green asterisk: TIC location of target star with respect to out-of-transit centroid; blue asterisk: location of other TIC objects in the neighborhood. TIC ID and magnitude are noted in the text associated with each marked object. A constant error term of 2.5000 arcseconds has been added in quadrature to the computed uncertainty in the RA and Dec components of the robust mean offset.
Open `./planet-01/difference-image/0000000158561566-01-difference-image-centroid-offsets.fig`




Difference image centroid offsets for target 158561566, planet candidate 1, diplayed on survey image for given target. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TIC coordinates of the given target. Symbol key: green cross: per sector centroid offsets with 1-sigma error bars in RA and Dec; magenta cross: robust weighted mean offset over all sectors with 1-sigma error bars in RA and Dec; blue circle: 3-sigma radius of confusion for weighted mean offset; red asterisk: location of target star (out-of-transit centroid in left panel and TIC position in right panel); green asterisk: TIC location of target star with respect to out-of-transit centroid; blue asterisk: location of other TIC objects in the neighborhood. TIC ID and magnitude are noted in the text associated with each marked object. A constant error term of 2.5000 arcseconds has been added in quadrature to the computed uncertainty in the RA and Dec components of the robust mean offset.
Open `./planet-01/difference-image/0000000158561566-01-difference-image-centroid-offsets-survey.fig`

**Difference Image Summary Metrics**

| Number of Difference Images | Number of Metrics | Number of Good Metrics | Fraction of Good Metrics | Quality Threshold |
|---|---|---|---|---|
| 3 | 3 | 1 | 0.3333 | 0.70 |




Difference image for target 158561566, planet candidate 1, sector 14, target pixel table 167. Upper left: difference between mean flux out-of-transit and in-transit; upper right: mean out-of-transit flux; lower left: mean in-transit flux; lower right: difference between mean flux out-of-transit and in-transit after normalizing by the uncertainty in the difference for each pixel. The optimal aperture is outlined with a white dash-dotted line in each panel and the target mask is outlined with a solid white line. Symbol key: x: target position from TIC RA and Dec converted to CCD coordinates via motion polynomials; *: position of nearby TIC objects converted to CCD coordinates via motion polynomials; +: PRF-fit location of target from out-of-transit image; triangle: PRF-fit location of transit source from the difference image. Number of transits = 4; number of valid in-transit cadences = 617; number of in-transit cadence gaps = 7; number of valid out-of-transit cadences = 1414; number of out-of-transit cadence gaps = 30. Difference image quality metric = -0.16 (not good).
Open `./planet-01/difference-image/0000000158561566-01-difference-image-14-167.fig`

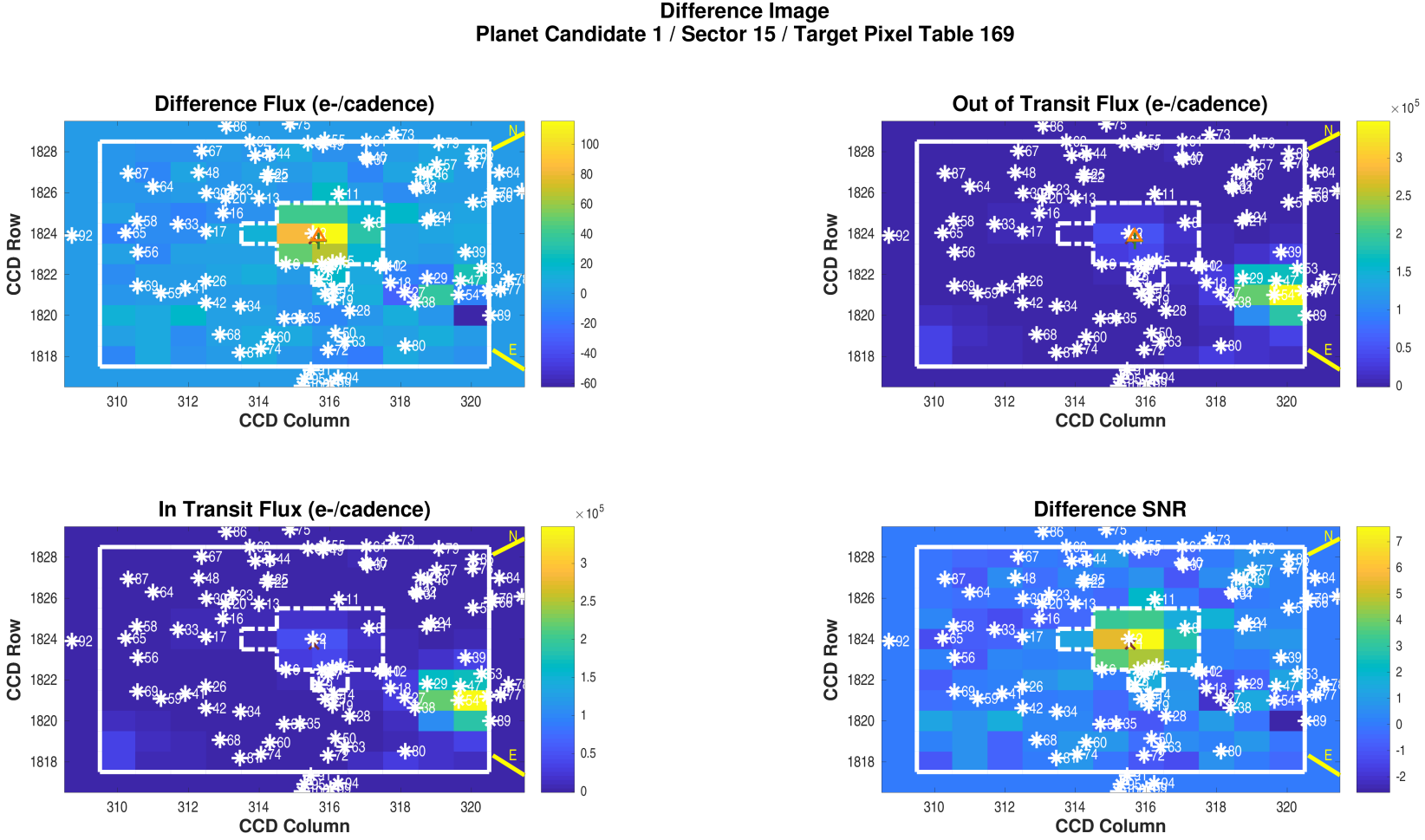
## PRF Fit of the Difference Image

**Offset from the PRF fit to the out of transit image**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| Out of Transit Image Centroid | $1373.80 \pm 6.66e-05$ | $1920.26 \pm 5.98e-05$ | pixels | $287.70917340 \pm 7.73e-07$ | $47.33303607 \pm 7.62e-07$ | degrees |
| Difference Image Centroid | $1372.74 \pm 1.30e-01$ | $1922.78 \pm 8.69e-02$ | pixels | $287.73282270 \pm 5.25e-04$ | $47.33307154 \pm 7.23e-04$ | degrees |
| Offset | $-1.0588 \pm 1.30e-01$ | $2.5217 \pm 8.69e-02$ | pixels | $57.7007 \pm 1.29e+00$ | $0.1277 \pm 2.60e+00$ | arcseconds |
| Offset/$\sigma$ | $-8.13$ | $29.01$ | | $44.65$ | $0.05$ | |
| Offset Distance | $2.7350 \pm 8.88e-02$ | | pixels | $57.7009 \pm 1.29e+00$ | | arcseconds |
| Offset Distance/$\sigma$ | $30.82$ | | | $44.70$ | | |

**Offset from the TIC RA and Dec converted to pixels via motion polynomials**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| TIC Reference Centroid | $1373.82 \pm 1.18e-04$ | $1920.22 \pm 1.19e-04$ | pixels | $287.70881400 \pm 0.00e+00$ | $47.33305000 \pm 0.00e+00$ | degrees |
| Difference Image Centroid | $1372.74 \pm 1.30e-01$ | $1922.78 \pm 8.69e-02$ | pixels | $287.73282270 \pm 5.25e-04$ | $47.33307154 \pm 7.23e-04$ | degrees |
| Offset | $-1.0772 \pm 1.30e-01$ | $2.5591 \pm 8.69e-02$ | pixels | $58.5776 \pm 1.28e+00$ | $0.0775 \pm 2.60e+00$ | arcseconds |
| Offset/$\sigma$ | $-8.27$ | $29.43$ | | $45.74$ | $0.03$ | |
| Offset Distance | $2.7766 \pm 8.88e-02$ | | pixels | $58.5776 \pm 1.28e+00$ | | arcseconds |
| Offset Distance/$\sigma$ | $31.28$ | | | $45.77$ | | |




Difference image for target 158561566, planet candidate 1, sector 15, target pixel table 169. Upper left: difference between mean flux out-of-transit and in-transit; upper right: mean out-of-transit flux; lower left: mean in-transit flux; lower right: difference between mean flux out-of-transit and in-transit after normalizing by the uncertainty in the difference for each pixel. The optimal aperture is outlined with a white dash-dotted line in each panel and the target mask is outlined with a solid white line. Symbol key: x: target position from TIC RA and Dec converted to CCD coordinates via motion polynomials; *: position of nearby TIC objects converted to CCD coordinates via motion polynomials; +: PRF-fit location of target from out-of-transit image; triangle: PRF-fit location of transit source from the difference image. Number of transits = 4; number of valid in-transit cadences = 615; number of in-transit cadence gaps = 6; number of valid out-of-transit cadences = 1425; number of out-of-transit cadence gaps = 15. Difference image quality metric = 0.84 (good).
Open `./planet-01/difference-image/0000000158561566-01-difference-image-15-169.fig`

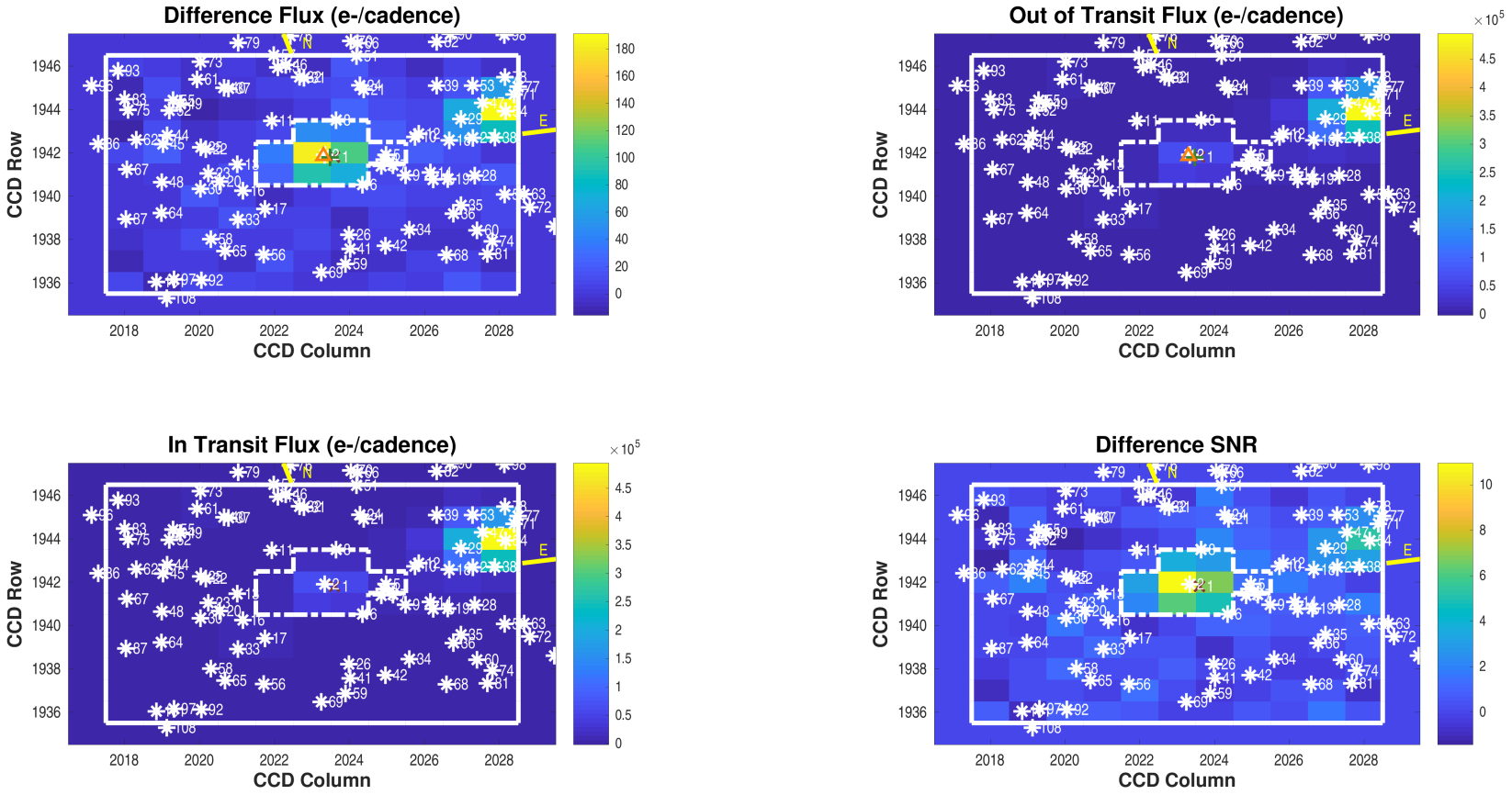
## PRF Fit of the Difference Image

**Offset from the PRF fit to the out of transit image**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| Out of Transit Image Centroid | $1823.64 \pm 9.36e-05$ | $315.68 \pm 8.29e-05$ | pixels | $287.71019082 \pm 1.13e-06$ | $47.33320311 \pm 1.14e-06$ | degrees |
| Difference Image Centroid | $1823.85 \pm 9.21e-02$ | $315.68 \pm 8.19e-02$ | pixels | $287.70883790 \pm 4.70e-04$ | $47.33396835 \pm 5.23e-04$ | degrees |
| Offset | $0.2083 \pm 9.21e-02$ | $-0.0067 \pm 8.19e-02$ | pixels | $-3.3009 \pm 1.15e+00$ | $2.7549 \pm 1.88e+00$ | arcseconds |
| Offset/$\sigma$ | 2.26 | $-0.08$ | | $-2.88$ | 1.46 | |
| Offset Distance | $0.2085 \pm 9.17e-02$ | | pixels | $4.2995 \pm 1.56e+00$ | | arcseconds |
| Offset Distance/$\sigma$ | 2.27 | | | 2.75 | | |

**Offset from the TIC RA and Dec converted to pixels via motion polynomials**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| TIC Reference Centroid | $1823.74 \pm 1.82e-04$ | $315.55 \pm 1.74e-04$ | pixels | $287.70881400 \pm 0.00e+00$ | $47.33305000 \pm 0.00e+00$ | degrees |
| Difference Image Centroid | $1823.85 \pm 9.21e-02$ | $315.68 \pm 8.19e-02$ | pixels | $287.70883790 \pm 4.70e-04$ | $47.33396835 \pm 5.23e-04$ | degrees |
| Offset | $0.1057 \pm 9.21e-02$ | $0.1260 \pm 8.19e-02$ | pixels | $0.0583 \pm 1.15e+00$ | $3.3061 \pm 1.88e+00$ | arcseconds |
| Offset/$\sigma$ | 1.15 | 1.54 | | 0.05 | 1.76 | |
| Offset Distance | $0.1645 \pm 9.10e-02$ | | pixels | $3.3066 \pm 1.88e+00$ | | arcseconds |
| Offset Distance/$\sigma$ | 1.81 | | | 1.76 | | |




Difference image for target 158561566, planet candidate 1, sector 26, target pixel table 254. Upper left: difference between mean flux out-of-transit and in-transit; upper right: mean out-of-transit flux; lower left: mean in-transit flux; lower right: difference between mean flux out-of-transit and in-transit after normalizing by the uncertainty in the difference for each pixel. The optimal aperture is outlined with a white dash-dotted line in each panel and the target mask is outlined with a solid white line. Symbol key: x: target position from TIC RA and Dec converted to CCD coordinates via motion polynomials; *: position of nearby TIC objects converted to CCD coordinates via motion polynomials; +: PRF-fit location of target from out-of-transit image; triangle: PRF-fit location of transit source from the difference image. Number of transits = 4; number of valid in-transit cadences = 618; number of in-transit cadence gaps = 5; number of valid out-of-transit cadences = 1436; number of out-of-transit cadence gaps = 7. Difference image quality metric = 0.69 (not good).
Open `./planet-01/difference-image/0000000158561566-01-difference-image-26-254.fig`

## PRF Fit of the Difference Image

**Offset from the PRF fit to the out of transit image**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| Out of Transit Image Centroid | $1941.79 \pm 7.64e-05$ | $2023.47 \pm 6.77e-05$ | pixels | $287.70782562 \pm 3.03e-06$ | $47.33308287 \pm 2.01e-06$ | degrees |
| Difference Image Centroid | $1941.85 \pm 5.78e-02$ | $2023.30 \pm 5.30e-02$ | pixels | $287.70657279 \pm 3.02e-04$ | $47.33363262 \pm 3.31e-04$ | degrees |
| Offset | $0.0618 \pm 5.78e-02$ | $-0.1744 \pm 5.30e-02$ | pixels | $-3.0567 \pm 7.37e-01$ | $1.9791 \pm 1.19e+00$ | arcseconds |
| Offset/$\sigma$ | 1.07 | −3.29 | | −4.15 | 1.66 | |
| Offset Distance | $0.1850 \pm 5.44e-02$ | | pixels | $3.6415 \pm 8.98e-01$ | | arcseconds |
| Offset Distance/$\sigma$ | 3.40 | | | 4.06 | | |

**Offset from the TIC RA and Dec converted to pixels via motion polynomials**

| | Row | Column | Units | RA | Dec | Units |
|---|---|---|---|---|---|---|
| TIC Reference Centroid | $1941.81 \pm 3.43e-04$ | $2023.60 \pm 5.27e-04$ | pixels | $287.70881400 \pm 0.00e+00$ | $47.33305000 \pm 0.00e+00$ | degrees |
| Difference Image Centroid | $1941.85 \pm 5.78e-02$ | $2023.30 \pm 5.30e-02$ | pixels | $287.70657279 \pm 3.02e-04$ | $47.33363262 \pm 3.31e-04$ | degrees |
| Offset | $0.0419 \pm 5.78e-02$ | $-0.2956 \pm 5.30e-02$ | pixels | $-5.4682 \pm 7.37e-01$ | $2.0974 \pm 1.19e+00$ | arcseconds |
| Offset/$\sigma$ | 0.73 | −5.57 | | −7.42 | 1.76 | |
| Offset Distance | $0.2985 \pm 5.35e-02$ | | pixels | $5.8567 \pm 8.11e-01$ | | arcseconds |
| Offset Distance/$\sigma$ | 5.58 | | | 7.22 | | |

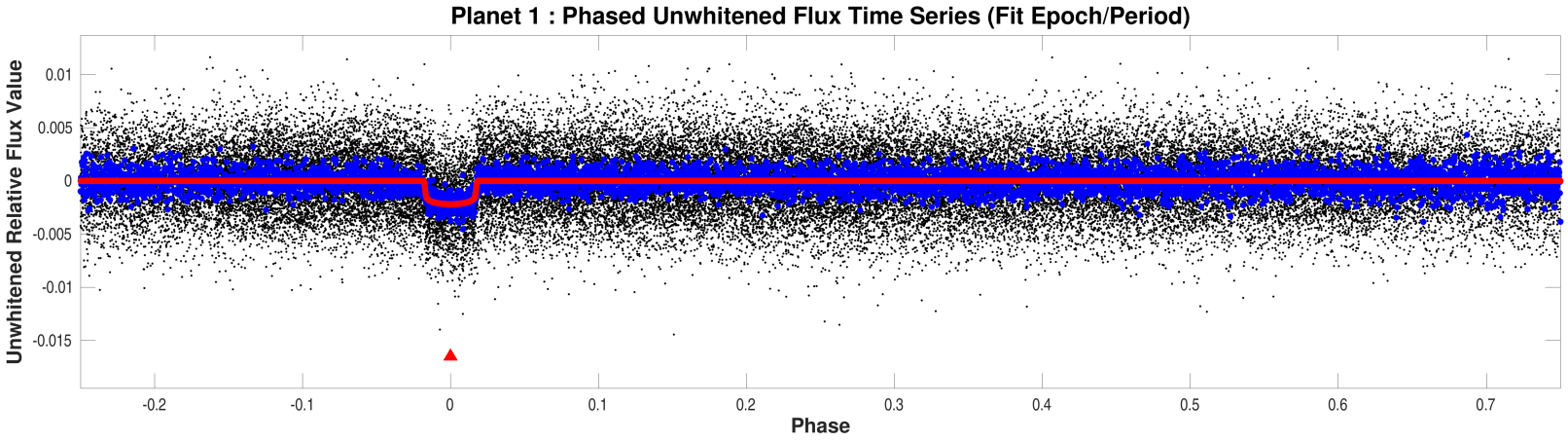
## 5.2 Difference Image TIC Key

| Index | Catalog ID | Mag | RA (degrees) | Dec (degrees) | Distance (arcsec) |
|---|---|---|---|---|---|
| 1 | 158561566 | 11.636 | 287.70881400 | 47.33305000 | 0.00 |
| 2 | 1717102144 | 18.895 | 287.70697587 | 47.33391677 | 5.46 |
| 3 | 158561563 | 17.538 | 287.71782618 | 47.32925193 | 25.89 |
| 4 | 158561565 | 15.490 | 287.71895856 | 47.33078256 | 26.06 |
| 5 | 1717102143 | 20.233 | 287.71978683 | 47.33198747 | 27.04 |
| 6 | 1717102114 | 18.540 | 287.71229476 | 47.32504923 | 30.03 |
| 7 | 1717102145 | 20.592 | 287.72032892 | 47.32906562 | 31.54 |
| 8 | 1717102142 | 18.003 | 287.71233908 | 47.34241538 | 34.80 |
| 9 | 1717102141 | 19.940 | 287.72206313 | 47.32608853 | 40.90 |
| 10 | 1717102147 | 19.759 | 287.72739117 | 47.33565411 | 46.28 |
| 11 | 1717102161 | 19.476 | 287.69880345 | 47.34426322 | 47.18 |
| 12 | 1717102146 | 19.345 | 287.72843308 | 47.33631643 | 49.29 |
| 13 | 1717102126 | 18.157 | 287.68782152 | 47.33419356 | 51.38 |
| 14 | 158561561 | 15.427 | 287.72750240 | 47.32600259 | 52.18 |
| 15 | 1717102134 | 18.064 | 287.72750152 | 47.32413479 | 55.76 |
| 16 | 158561562 | 14.884 | 287.68673499 | 47.32728423 | 57.73 |
| 17 | 158561558 | 13.974 | 287.68976298 | 47.32191906 | 61.37 |
| 18 | 158561567 | 14.748 | 287.73425882 | 47.33370484 | 62.13 |
| 19 | 1717102138 | 18.670 | 287.73062059 | 47.32380952 | 62.75 |
| 20 | 158561564 | 16.588 | 287.68262162 | 47.33034172 | 64.64 |
| 21 | 1717102148 | 19.656 | 287.72075263 | 47.34941721 | 65.73 |
| 22 | 158561572 | 17.429 | 287.68253237 | 47.33909088 | 67.71 |
| 23 | 1717102127 | 19.934 | 287.68097283 | 47.33278580 | 67.93 |
| 24 | 1717102149 | 18.983 | 287.72032228 | 47.35058236 | 69.08 |
| 25 | 158561575 | 16.862 | 287.68168086 | 47.33976962 | 70.48 |
| 26 | 158561548 | 17.083 | 287.70510274 | 47.31265830 | 73.97 |
| 27 | 1717102139 | 20.534 | 287.73942789 | 47.33358619 | 74.72 |
| 28 | 1717102132 | 19.211 | 287.73656789 | 47.32382609 | 75.42 |
| 29 | 158561571 | 17.495 | 287.73856027 | 47.33878827 | 75.46 |
| 30 | 158489994 | 18.930 | 287.67802673 | 47.32909460 | 76.45 |
| 31 | 158561589 | 16.833 | 287.70929404 | 47.35429586 | 76.49 |
| 32 | 1717102164 | 18.048 | 287.70843533 | 47.35464958 | 77.76 |
| 33 | 158561556 | 16.981 | 287.68318438 | 47.32002578 | 78.16 |
| 34 | 158561547 | 16.220 | 287.71819459 | 47.31200562 | 79.14 |
| 35 | 1717102137 | 20.150 | 287.73111117 | 47.31666678 | 80.24 |
| 36 | 1717102110 | 20.596 | 287.72879708 | 47.31474394 | 81.98 |
| 37 | 158561588 | 17.268 | 287.69257089 | 47.35395076 | 85.04 |
| 38 | 1717102140 | 18.575 | 287.74406292 | 47.33292243 | 86.00 |

| Index | Catalog ID | Mag | RA (degrees) | Dec (degrees) | Distance (arcsec) |
|---|---|---|---|---|---|
| 39 | 1717102152 | 19.619 | 287.73642332 | 47.34808833 | 86.42 |
| 40 | 1717102162 | 18.748 | 287.69167431 | 47.35427479 | 87.10 |
| 41 | 1717102113 | 20.076 | 287.70411634 | 47.30896957 | 87.44 |
| 42 | 1717102112 | 20.070 | 287.71180475 | 47.30864977 | 88.14 |
| 43 | 1717102163 | 20.597 | 287.70468189 | 47.35778617 | 89.62 |
| 44 | 1717102130 | 18.697 | 287.67564114 | 47.34382705 | 89.76 |
| 45 | 158561577 | 17.498 | 287.67400595 | 47.34172240 | 90.48 |
| 46 | 1717102165 | 19.499 | 287.70654859 | 47.35818659 | 90.66 |
| 47 | 1717102154 | 18.141 | 287.74449742 | 47.34221175 | 93.10 |
| 48 | 1717102129 | 18.818 | 287.67050181 | 47.33201840 | 93.55 |
| 49 | 1717102167 | 19.077 | 287.68116511 | 47.35157543 | 94.86 |
| 50 | 1717102136 | 20.086 | 287.74118811 | 47.31802949 | 95.72 |
| 51 | 1717102158 | 19.924 | 287.72220233 | 47.35824386 | 96.40 |
| 52 | 1717102168 | 19.676 | 287.67826091 | 47.35017389 | 96.73 |
| 53 | 158561585 | 15.470 | 287.74393413 | 47.34697030 | 99.27 |
| 54 | 158561573 | 9.721 | 287.74857709 | 47.33936100 | 99.64 |
| 55 | 158561587 | 18.397 | 287.67992989 | 47.35268842 | 99.82 |
| 56 | 1717102118 | 19.013 | 287.68556010 | 47.31019687 | 99.94 |
| 57 | 158561597 | 16.458 | 287.70491487 | 47.36105425 | 101.26 |
| 58 | 1717102120 | 19.286 | 287.67583720 | 47.31584907 | 101.53 |
| 59 | 1717102111 | 18.639 | 287.70183667 | 47.30523413 | 101.57 |
| 60 | 158561543 | 17.709 | 287.73224947 | 47.30970540 | 101.65 |
| 61 | 158561592 | 13.913 | 287.68676594 | 47.35726814 | 102.45 |
| 62 | 158561581 | 15.703 | 287.66880022 | 47.34371048 | 104.90 |
| 63 | 1717102133 | 18.992 | 287.74524309 | 47.31751345 | 105.02 |
| 64 | 1717102125 | 19.746 | 287.66771972 | 47.32413534 | 105.27 |
| 65 | 1717102119 | 19.467 | 287.67777890 | 47.31236559 | 106.20 |
| 66 | 1717102157 | 20.562 | 287.72345620 | 47.36150226 | 108.48 |
| 67 | 158561568 | 17.855 | 287.66427294 | 47.33637674 | 109.33 |
| 68 | 158561536 | 16.547 | 287.72377436 | 47.30436672 | 109.52 |
| 69 | 1717102104 | 19.906 | 287.69604243 | 47.30385135 | 109.64 |
| 70 | 158561602 | 16.615 | 287.72229704 | 47.36224424 | 110.13 |
| 71 | 1717102150 | 18.658 | 287.75182114 | 47.34339971 | 111.35 |
| 72 | 1717102135 | 19.919 | 287.74528858 | 47.31397763 | 112.40 |
| 73 | 1717102170 | 18.993 | 287.68901171 | 47.36166214 | 113.77 |
| 74 | 158561538 | 17.546 | 287.73451194 | 47.30644670 | 114.47 |
| 75 | 1717102131 | 18.404 | 287.66966541 | 47.35159170 | 116.53 |
| 76 | 1717102172 | 19.425 | 287.71007693 | 47.36548646 | 116.81 |

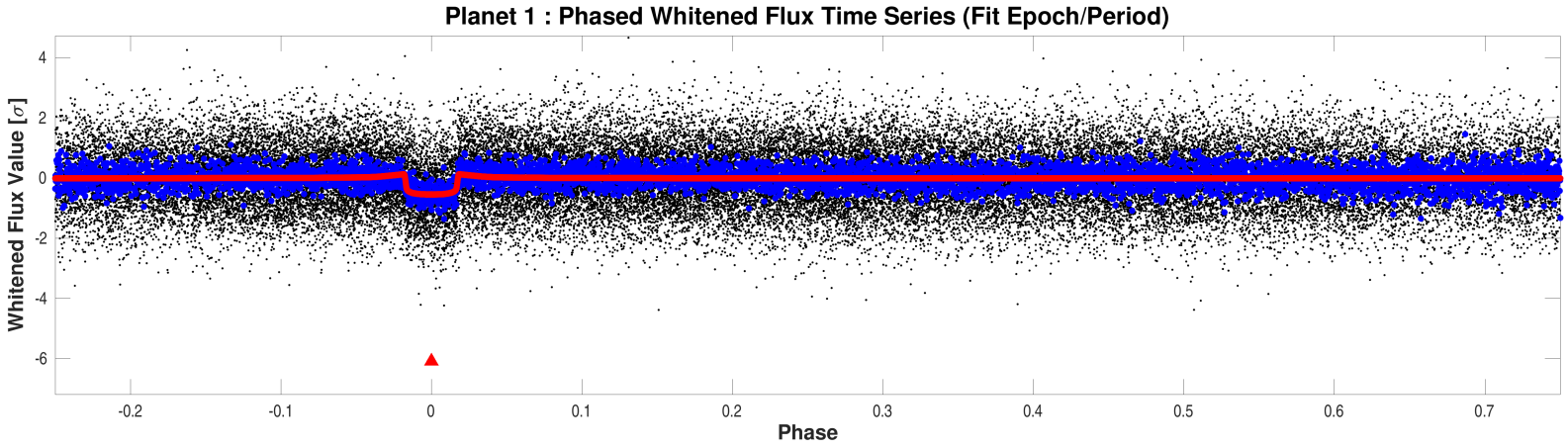
RA, Dec and Distances are corrected for proper motion. This table may not contain all of the objects shown.

# 6 Phased Light Curves

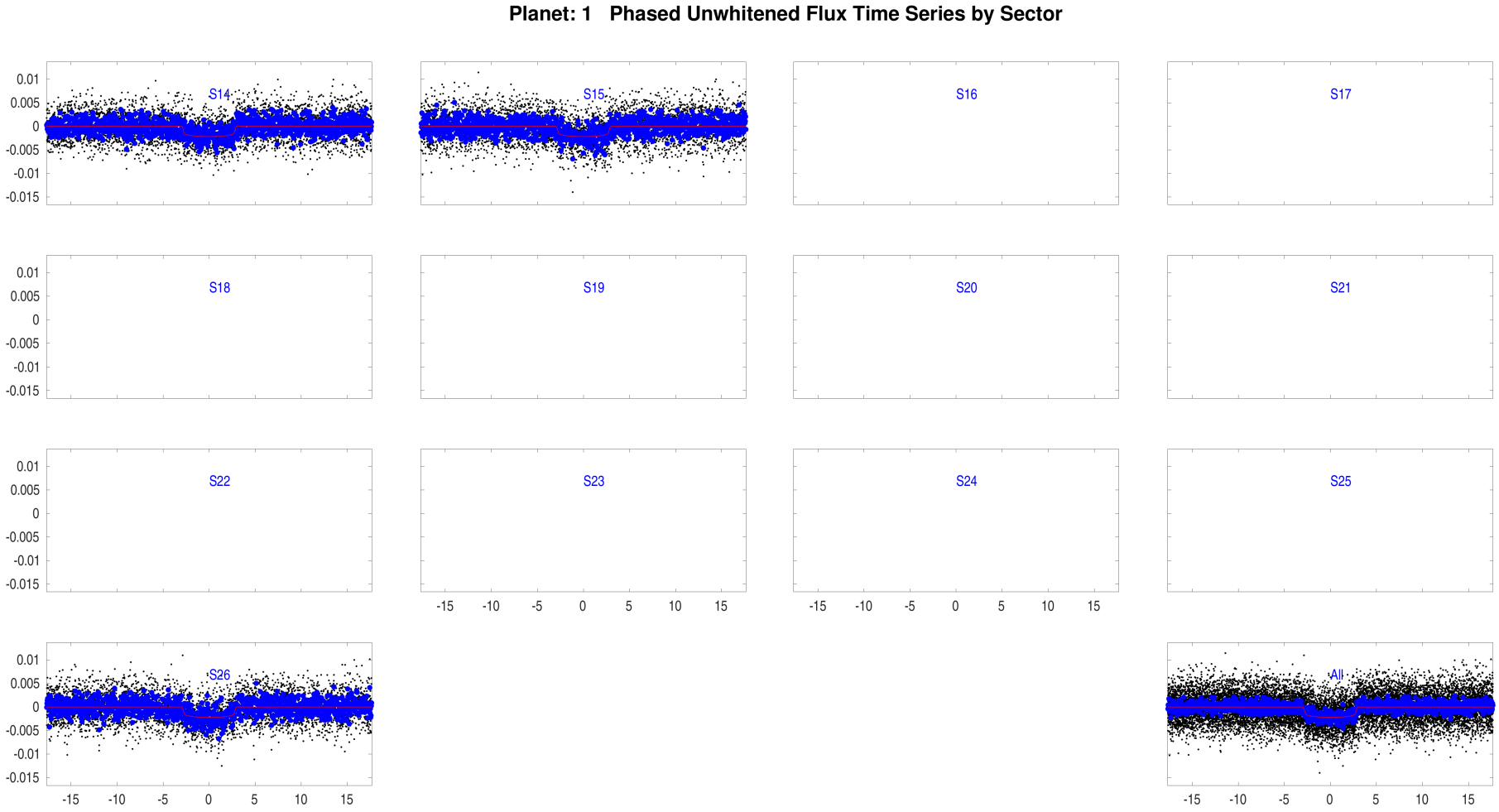



Phased unwhitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased unwhitened flux time series averaged in one cadence wide bins are plotted in bigger blue dots. When all transits fit completes with full or secondary convergence, the averaged values of the phased unwhitened fitted model light curve are plotted in red dots. Transit event markers in different colors indicate the locations of the transits of all planet candidates. The transits of the same planet candidate are labeled with the markers of the same color, for example, blue markers for transits of plane candidate #1, red markers for transits of planet candidate #2, etc.

Open `./summary-plots/0000000158561566-01-phased-unwhitened-flux-time-series.fig`




Phased whitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased whitened flux time series averaged in one cadence wide bins are plotted in bigger blue dots. When all transits fit completes with full or secondary convergence, the averaged values of the phased whitened fitted model light curve are plotted in red dots. Transit event markers in different colors indicate the locations of the transits of all planet candidates. The transits of the same planet candidate are labeled with the markers of the same color, for example, blue markers for transits of plane candidate #1, red markers for transits of planet candidate #2, etc.
Open `./summary-plots/0000000158561566-01-phased-whitened-flux-time-series.fig`




Phased unwhitened flux time series by sector for target 158561566, planet candidate 1. Period = 6.7901 days; transit epoch = 1685.2858 BTJD.
Open `./summary-plots/0000000158561566-01-phased-unwhitened-flux-time-series-by-sector.fig`

# 7 Planet Candidate 1

## 7.1 Model Fitter: All Transits

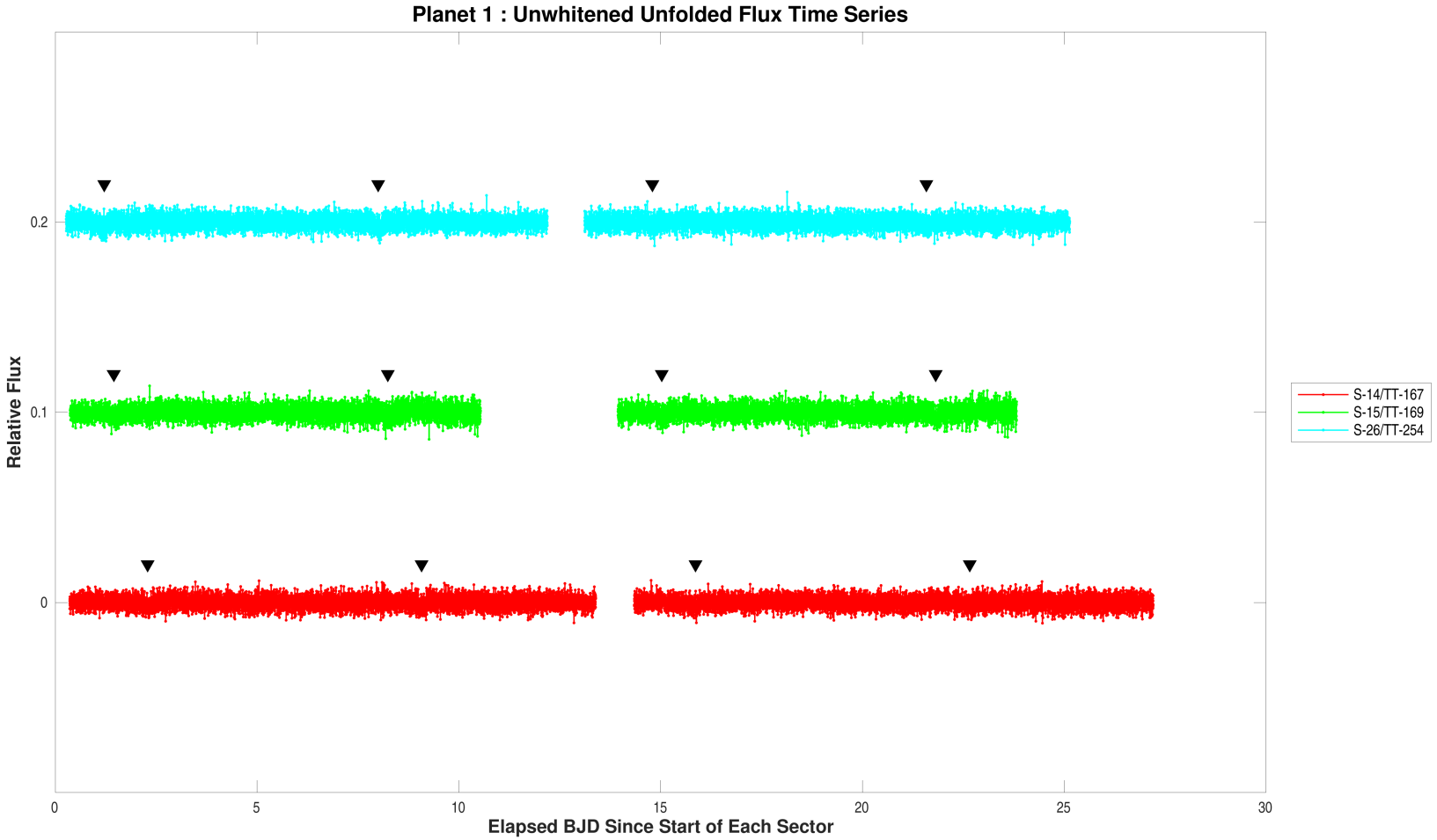
| Model Characteristic | Name |
|---|---|
| Transit Model | mandel-agol_geometric_transit_model |
| Limb Darkening Model | claret_tess_nonlinear_limb_darkening_model |

| TCE Parameter | Value | Units |
|---|---|---|
| Trial Transit Pulse Duration | 6.0 | hours |
| Transit Epoch | 1685.2810076 | TJD |
| Orbital Period | 6.7902632 | days |
| Maximum SES | 6.7 | |
| Maximum MES | 18.7 | |
| Robust Statistic | 22.1 | |
| Chi Square Goodness of Fit Statistic (DoF) | 2277.3 (2138) | |
| Chi Square2 Statistic (DoF) | 9.3 (56.2) | |
| Threshold for Desired PFA | | |

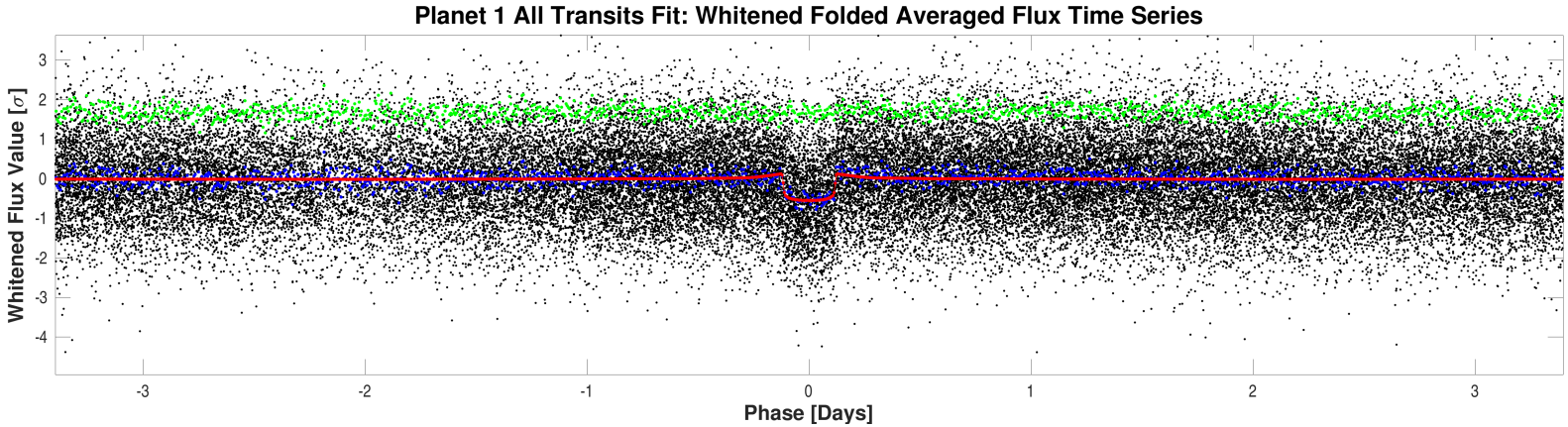
DoF: Degrees of Freedom

| Parameter | Value | Uncertainty | Units |
|---|---|---|---|
| SNR | 22.2 | | |
| Orbital Period | 6.7901231 | 7.2644e-05 | days |
| Transit Epoch | 1685.2857955 | 2.0258e-03 | BTJD |
| Impact Parameter | 0.0205 | 2.4011e+01 | |
| Planet Radius to Star Radius Ratio | 0.0437003 | 3.4931e-03 | |
| Semi-major Axis to Star Radius Ratio | 9.2219 | 4.4784e+00 | |
| Planet Radius | 9.5447 | 9.0869e-01 | Earth radii |
| Semi-major Axis | 0.1115 | 3.8434e-03 | AU |
| Effective Stellar Flux | 477.5267 | 1.8086e+01 | Goldilocks |
| Equilibrium Temperature | 1192 | 1.1289e+01 | Kelvin |
| Stellar Density | 0.2285 | 3.3294e-01 | Solar density |
| Transit Depth | 2189 | 9.7971e+01 | ppm |
| Transit Duration | 5.8822 | 2.6150e-01 | hours |
| Transit Ingress Duration | 0.2473 | 2.6264e-01 | hours |
| Eccentricity | 0.0000 | 0.0000e+00 | |
| Peri Longitude | 0.0000 | 0.0000e+00 | degrees |
| Model Chi Square Statistic (DoF) | 8184.4 (9831.4) | | |
| Model Chi Square Goodness of Fit Statistic (DoF) | 1301.8 (2154) | | |
| Model Chi Square2 Statistic (DoF) | 6.0 (11) | | |

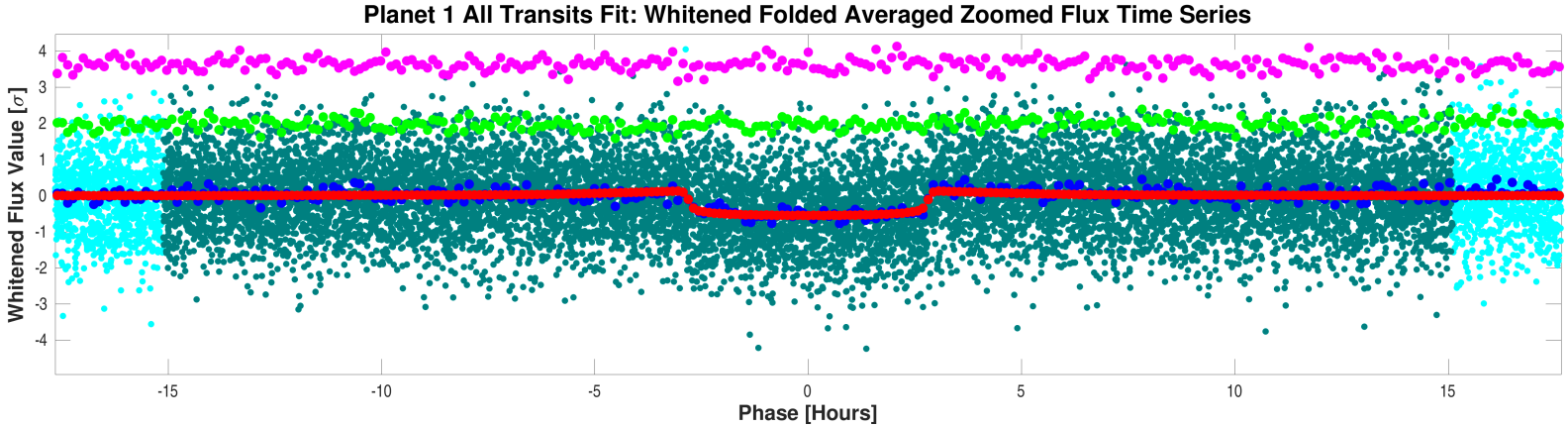
DoF: Degrees of Freedom




Flux time series for CatId 158561566, Planet candidate 1 in the unwhitened domain. For the data of Sector-14/TargetTableId-167, start BJD is 2458683 and the vertical offset is 0. For the data of Sector-15/TargetTableId-169, start BJD is 2458711 and the vertical offset is 0.1. For the data of Sector-26/TargetTableId-254, start BJD is 2459010 and the vertical offset is 0.2. Transit event markers indicate the location of transits of the given planet candidate. All transits fit completed with full convergence. Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-unwhitened-14-167.fig`




Folded flux time series for CatId 158561566, Planet candidate 1 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light curve of the all transits fit; the green dots are the averaged folded fit residuals, vertically offset for clarity. All transits fit completed with full convergence.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-whitened.fig`

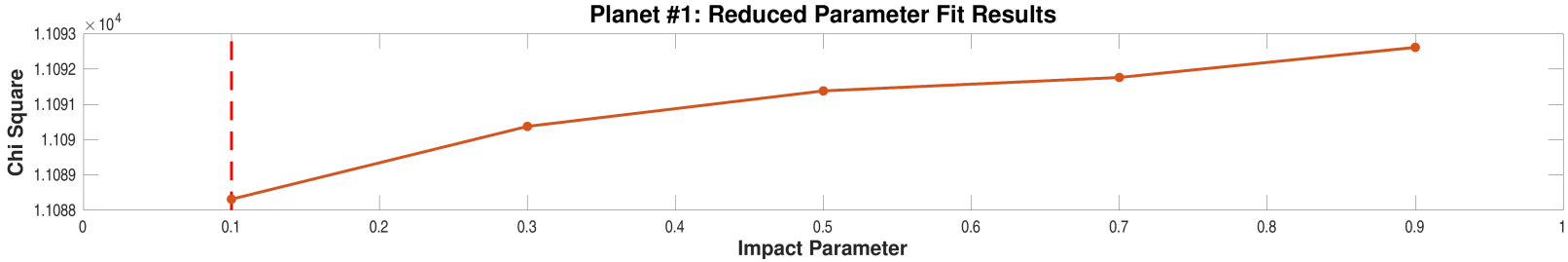



Folded flux time series for CatId 158561566, Planet candidate 1 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the fitted model light curve of the all transits fit; the green dots are the averaged folded fit residuals, vertically offset for clarity. Magenta dots are the averaged values of the folded flux time series, with a phase shift of 0.5 relative to the blue dots, vertically offset for clarity. All transits fit completed with full convergence.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-whitened-zoomed.fig`

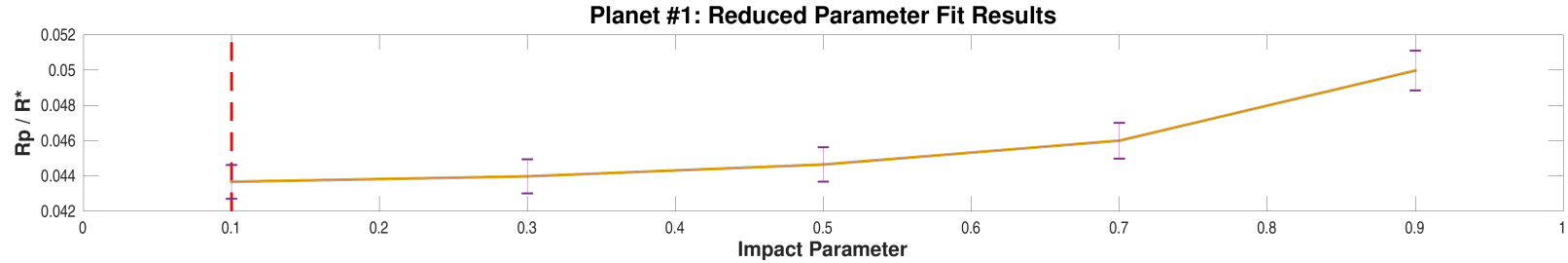
## 7.2 Model Fitter: Reduced Parameter Fit Results

| Impact Parameter | SNR | Model Chi Square | Planet Radius to Star Radius | Uncert | Semi-major Axis to Star Radius | Uncert | Transit Depth (ppm) | Uncert | Transit Duration (hours) | Uncert |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.10 | 23.2 | 11088.3 | 0.0436702 | 9.5655e-04 | 9.1760 | 1.2140e-01 | 2183 | 9.5151e+01 | 5.8858 | 7.7905e-02 |
| 0.30 | 23.2 | 11090.4 | 0.0439774 | 9.6399e-04 | 8.8130 | 1.1994e-01 | 2186 | 9.5326e+01 | 5.9018 | 8.0423e-02 |
| 0.50 | 23.2 | 11091.4 | 0.0446497 | 9.8123e-04 | 8.0102 | 1.1648e-01 | 2187 | 9.5634e+01 | 5.9645 | 8.7039e-02 |
| 0.70 | 23.1 | 11091.8 | 0.0459991 | 1.0164e-03 | 6.6244 | 1.1036e-01 | 2189 | 9.6194e+01 | 6.1348 | 1.0316e-01 |
| 0.90 | 22.9 | 11092.6 | 0.0499708 | 1.1311e-03 | 4.2118 | 9.5255e-02 | 2227 | 9.9892e+01 | 6.8376 | 1.5999e-01 |

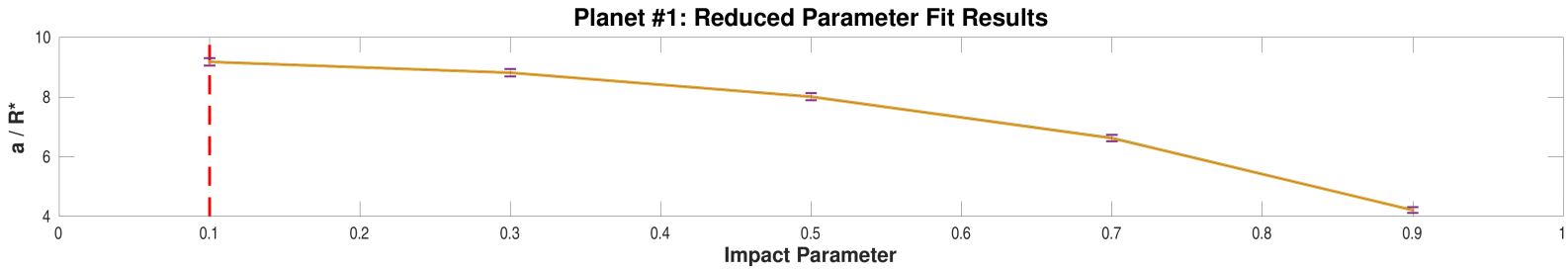
Highlighted row is the best reduced-parameter model fit.




Model chi squares of reduced parameter fits vs. impact parameter for CatId 158561566, Planet candidate 1. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-01/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000158561566-01-reduced-fits-chi-square.fig`




Ratios of planet radius to star radius of reduced parameter fits vs. impact parameter for CatId 158561566, Planet candidate 1. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-01/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000158561566-01-reduced-fits-rp-over-rstar.fig`




Ratios of semimajor axis to star radius of reduced parameter fits vs. impact parameter for CatId 158561566, Planet candidate 1. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-01/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000158561566-01-reduced-fits-a-over-rstar.fig`

## 7.3 Model Fitter: Trapezoidal Fit Results

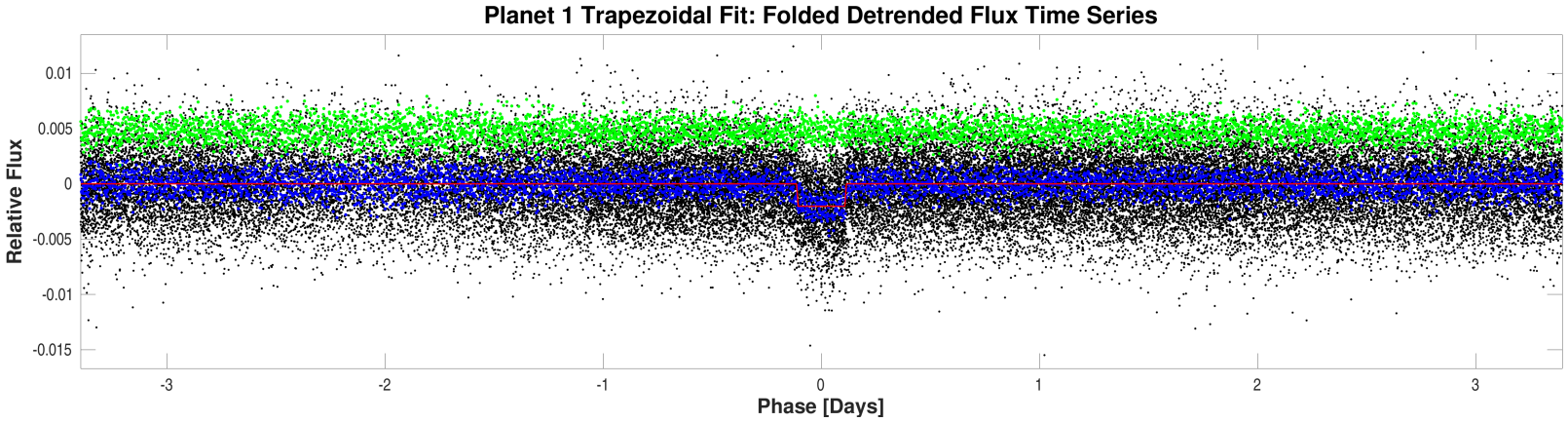
| Model Characteristic | Name |
|---|---|
| Transit Model | trapezoidal_model |
| Limb Darkening Model | |

| TCE Parameter | Value | Units |
|---|---|---|
| Trial Transit Pulse Duration | 6.0 | hours |
| Transit Epoch | 1685.2810076 | TJD |
| Orbital Period | 6.7902632 | days |
| Maximum SES | 6.7 | |
| Maximum MES | 18.7 | |
| Robust Statistic | 22.1 | |
| Chi Square Goodness of Fit Statistic (DoF) | 2277.3 (2138) | |
| Chi Square2 Statistic (DoF) | 9.3 (56.2) | |
| Threshold for Desired PFA | | |

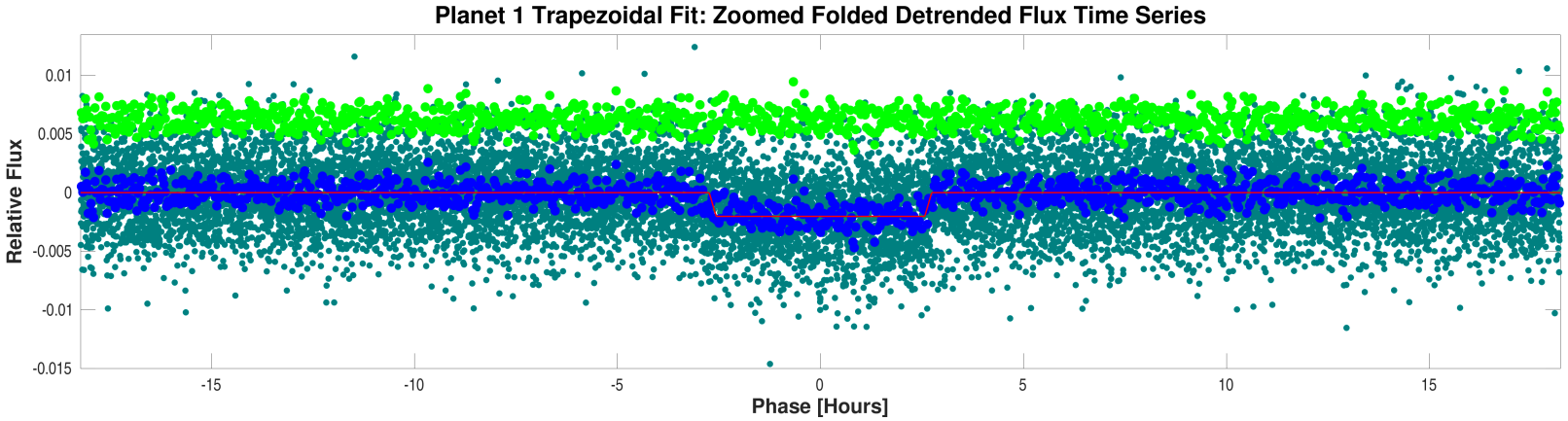
DoF: Degrees of Freedom

| Parameter | Value | Uncertainty | Units |
|---|---|---|---|
| SNR | 28.5 | | |
| Orbital Period | 6.7902632 | | days |
| Transit Epoch | 1685.2882123 | | BTJD |
| Transit Depth | 2027 | | ppm |
| Transit Duration | 6.0737 | | hours |
| Transit Ingress Duration | 0.7660 | | hours |
| Model Chi Square Statistic (DoF) | 51343.3 (17021) | | |

DoF: Degrees of Freedom




Folded detrended flux time series for CatId 158561566, Planet candidate 1 and folded trapezoidal model light curve.
Open `./planet-01/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000158561566-01-all-trapezoidal.fig`




Zoomed folded detrended flux time series for CatId 158561566, Planet candidate 1 and folded trapezoidal model light curve.
Open `./planet-01/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000158561566-01-all-trapezoidal-zoomed.fig`

## 7.4 Validation Tests

The Centroid Test and Eclipsing Binary Discrimination Test are chi-squared hypothesis tests. For these tests, a significance of 100% favors a planet, while 0% indicates an unlikely planet.

### 7.4.1 Weak Secondary Test

| Result | Value | Uncertainty | Units | Statistic in Sigmas | Significance (%) |
|---|---|---|---|---|---|
| Orbital Period | 6.7903 | | days | | |
| Transit Duration | 6 | | hours | | |
| Maximum MES | 18.7 | | | | |
| Secondary Phase | 3.7792 | | days | | |
| Secondary MES | 1.5 | | | | |
| Minimum Phase | -0.87083 | | days | | |
| Minimum MES | -2.7 | | | | |
| Median MES | -0.1 | | | | |
| MAD MES | 0.66472 | | | | |
| Robust Statistic | 1.0 | | | | |
| Secondary Depth | 146.0 | 1.3823e+02 | ppm | | |
| Geometric Albedo | 11.0 | 1.0527e+01 | | 0.9460 | 17.21 |
| Planet Effective Temperature | 3354 | 8.0506e+02 | Kelvin | 2.6848 | 0.36 |

### 7.4.2 Eclipsing Binary Discrimination Test

| Result | Value | Value in Sigmas | Significance (%) |
|---|---|---|---|
| Odd Even Transit Depth Comparison Statistic | 2.2604e-05 | 0.0048 | 99.62 |

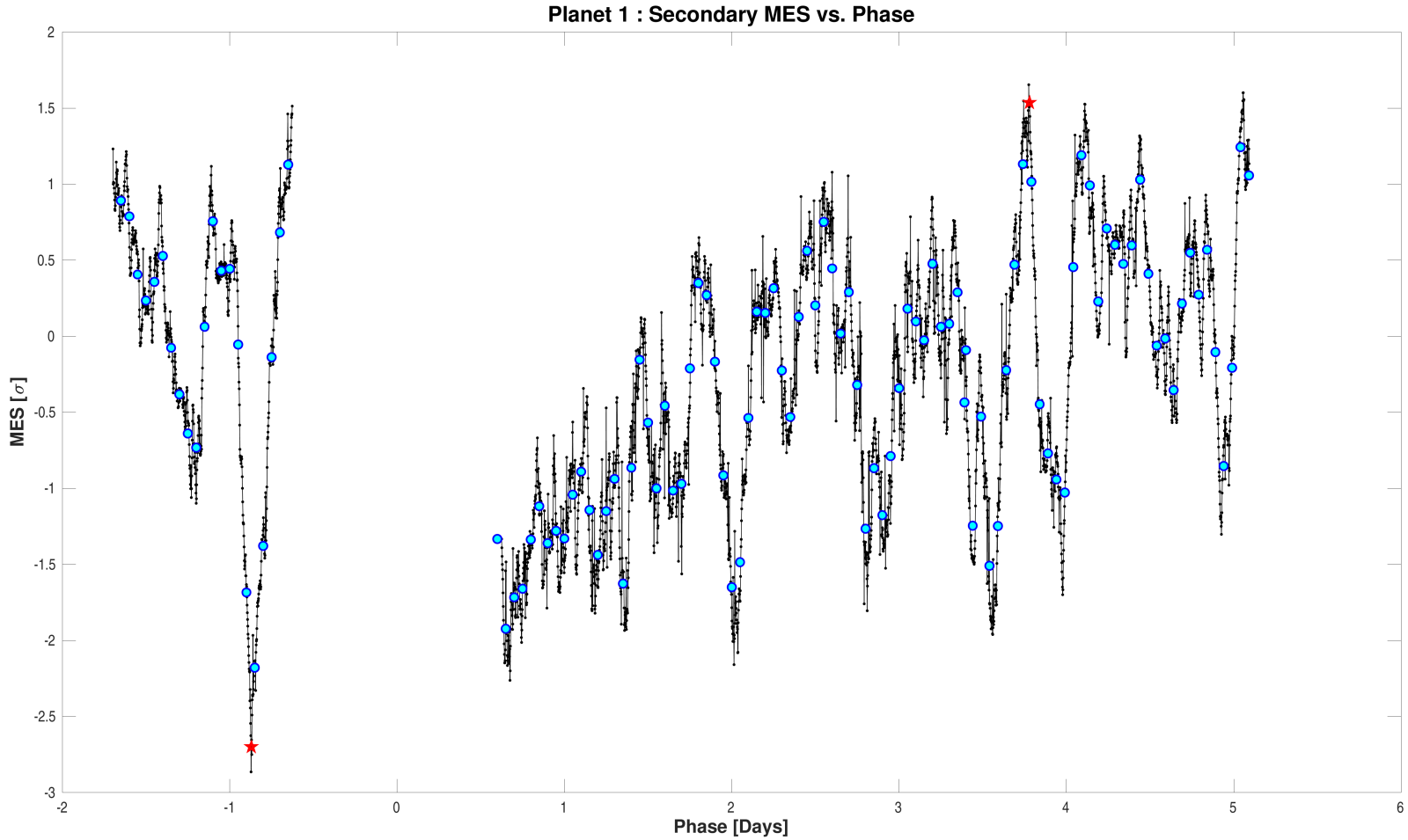
### 7.4.3 Bootstrap Test

| Result | Value |
|---|---|
| False Alarm Probability | 1.2823e-71 |
| Bootstrap Threshold for Desired PFA | 7.4 |
| MES Mean | -0.05 |
| MES Standard Deviation | 1.05 |
| Transit Count | 52 |

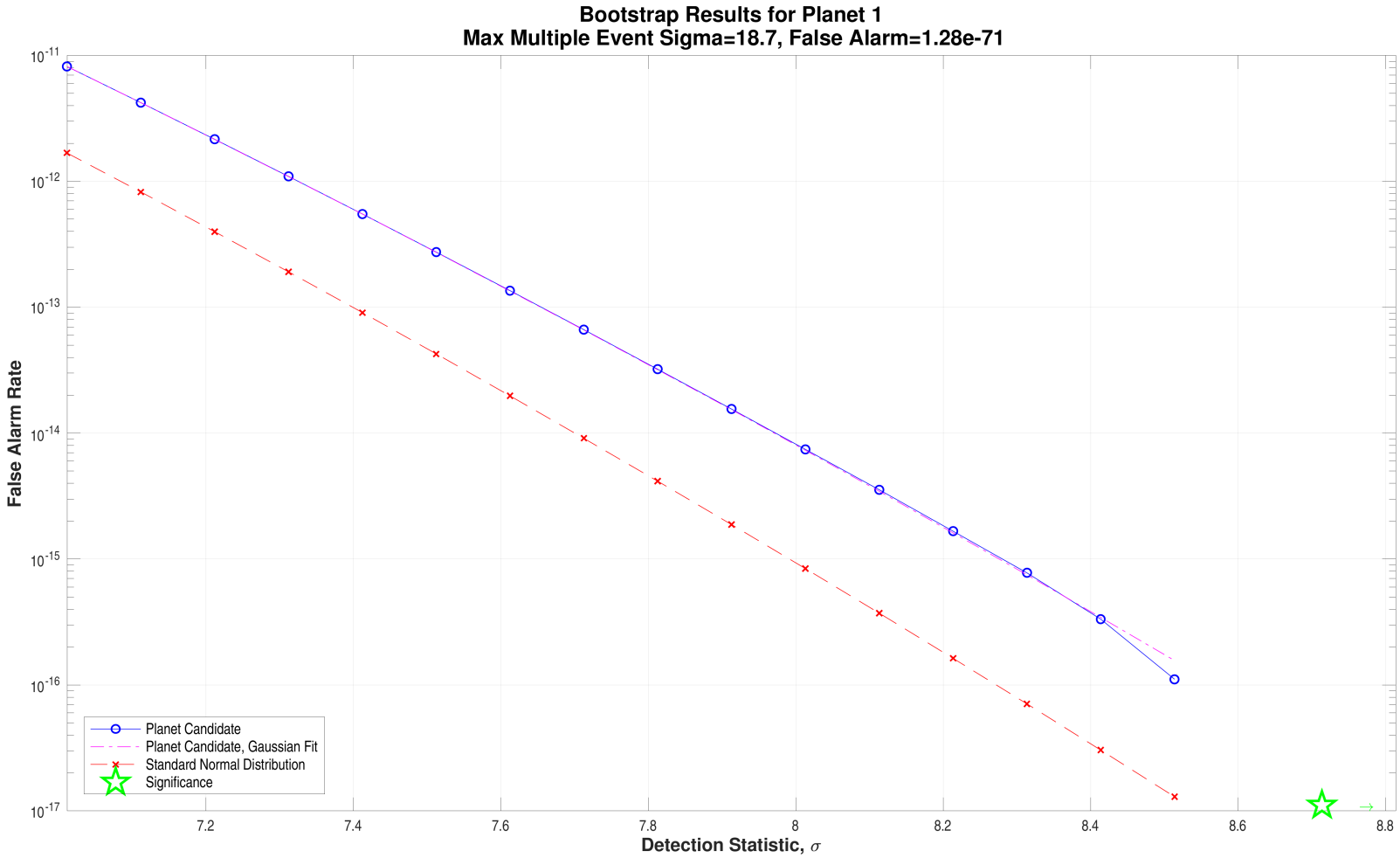
### 7.4.4 Ghost Diagnostic Test

| Result | Value | Significance (%) |
|---|---|---|
| Maximum MES | 18.7 | |
| SNR | 22.2 | |
| Core Aperture Statistic | 1.8963e+01 | 100.00 |
| Halo Aperture Statistic | 4.2081e+00 | 100.00 |
| Ratio of Core/Halo Aperture Statistics | 4.5064e+00 | |

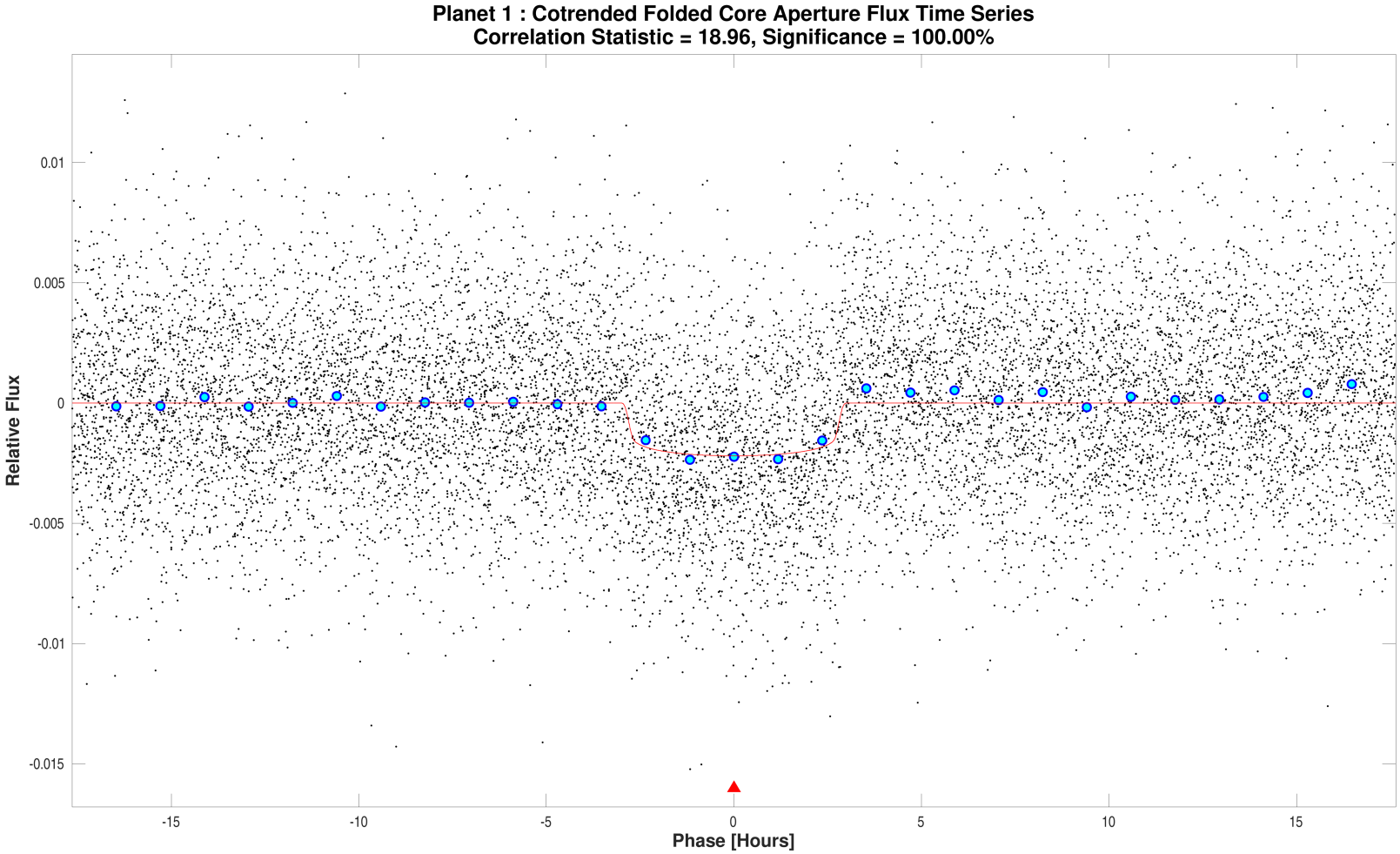
### 7.4.5 Validation Test Figures




The primary event has been set to zero and both the max and min of the resulting MES vs. Phase are marked with a red star. The best matched pulse duration in hours is 6. The maximum secondary MES and corresponding phase are 1.5366 and 3.7792 days respectively. The minimum secondary MES and corresponding phase are -2.6996 and -0.87083 days respectively.
Open `./planet-01/report-summary/0000000158561566-01-weak-secondary-diagnostic.fig`

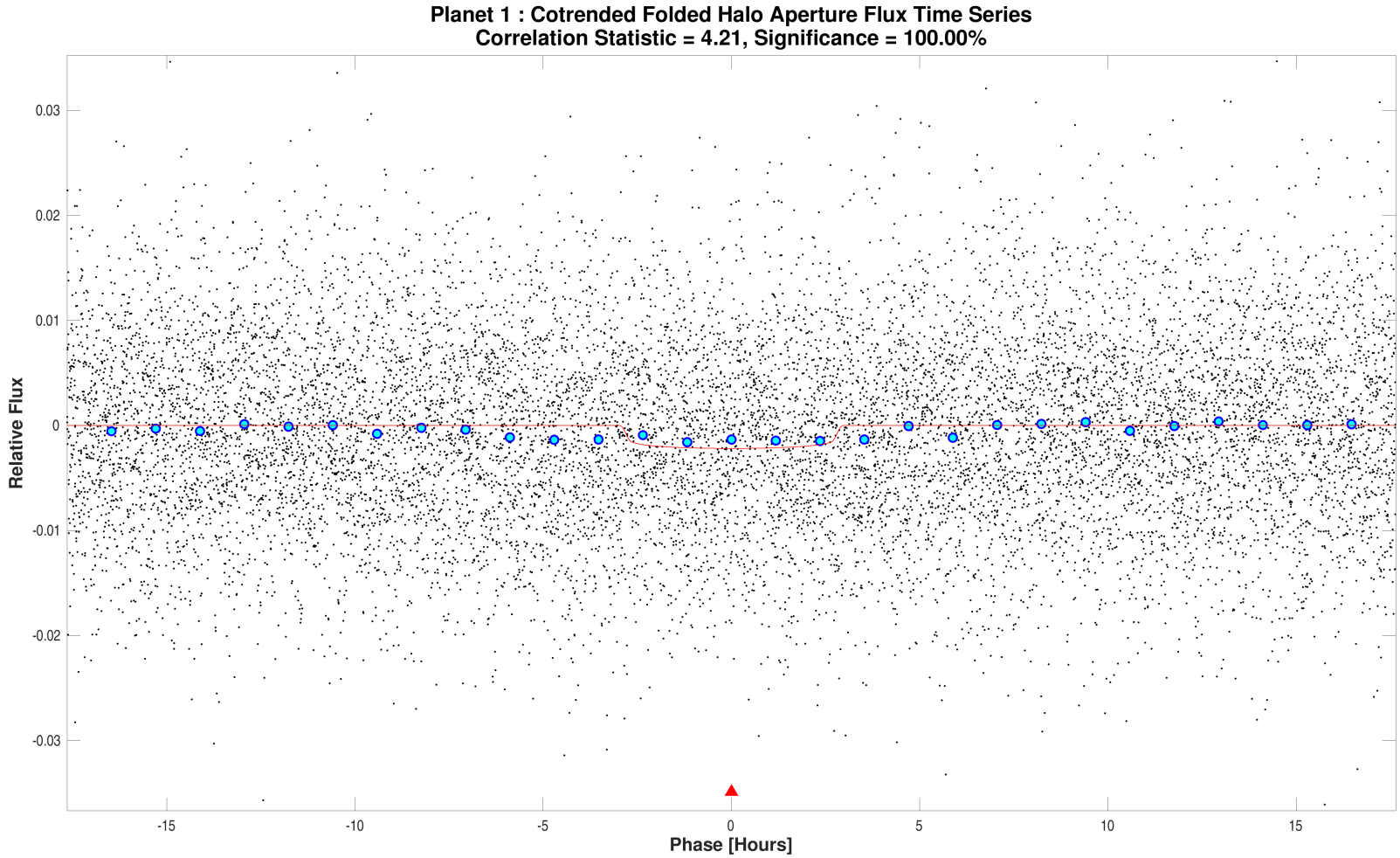



Bootstrap results for target 158561566, planet 1. Cumulative sum of the probabilities (derived from the histogram of counts) from upper tail to the search transit threshold; false alarm probability is indicated by the star. The Gaussian equivalent threshold for this false alarm probability is 17.8567. The threshold on this distribution that achieves the same false alarm rate as a 7.1 sigma threshold on a Gaussian distribution is 7.3986.
Open `./planet-01/bootstrap-results/0000000158561566-01-bootstrap-false-alarm.fig`




Optical ghost diagnostic core aperture flux time series for target 158561566, planet candidate 1. The unwhitened time series is phase folded at the orbital period associated with the planet candidate and centered on the epoch of the first transit. The time series was first cotrended against spacecraft engineering data, motion proxies, and/or cotrending basis vectors (CBVs) to remove systematic effects. Flux time series data represent the mean per pixel flux in the core or haloaperture; phase folded data points are shown in the figure with black dots. Binned and averaged phase folded flux values are marked with filled blue circles. The unwhitened transit model light curve is displayed in the figure with a red line. The value and significance of the core aperture correlation statistic are displayed in the figure title if the statistic was successfully computed.

Open `./planet-01/ghost-diagnostic-results/0000000158561566-01-core-unwhitened-cotrended-zoomed-model.fig`

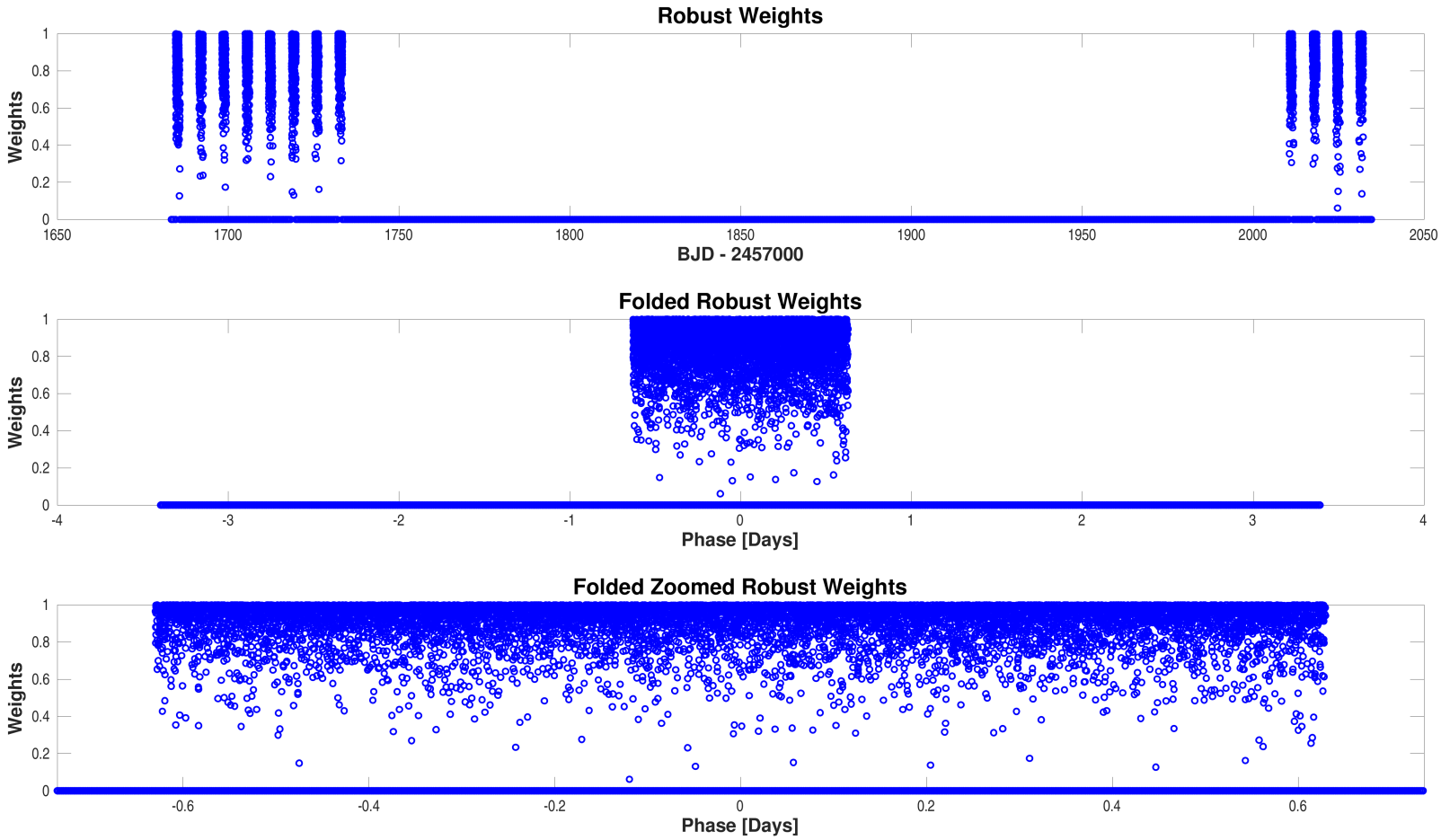



Optical ghost diagnostic halo aperture flux time series for target 158561566, planet candidate 1. The unwhitened time series is phase folded at the orbital period associated with the planet candidate and centered on the epoch of the first transit. The time series was first cotrended against spacecraft engineering data, motion proxies, and/or cotrending basis vectors (CBVs) to remove systematic effects. Flux time series data represent the mean per pixel flux in the core or haloaperture; phase folded data points are shown in the figure with black dots. Binned and averaged phase folded flux values are marked with filled blue circles. The unwhitened transit model light curve is displayed in the figure with a red line. The value and significance of the halo aperture correlation statistic are displayed in the figure title if the statistic was successfully computed.

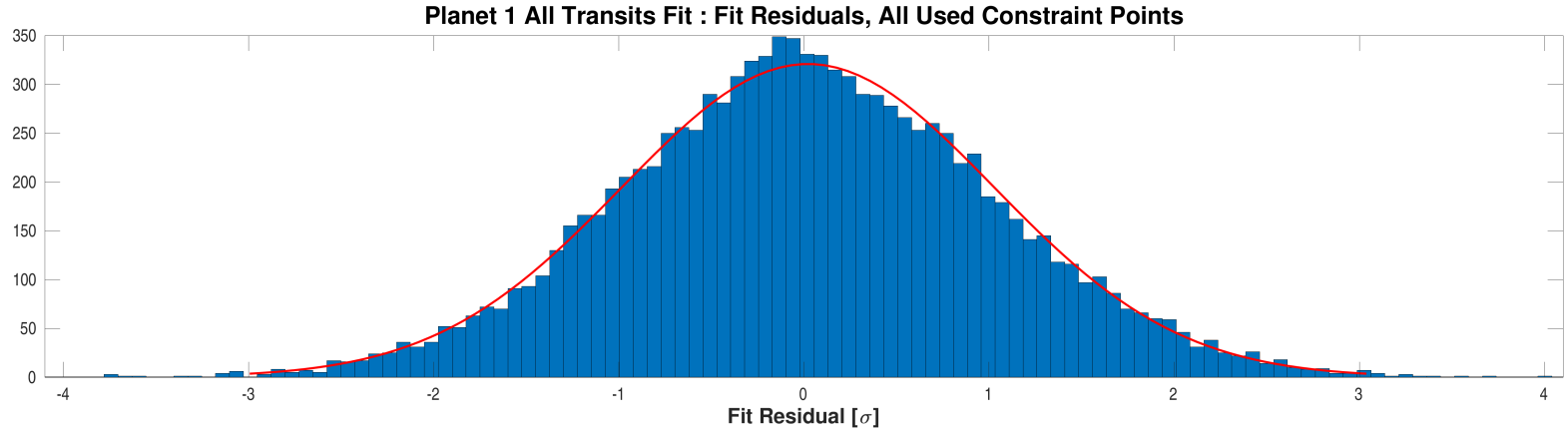
Open `./planet-01/ghost-diagnostic-results/0000000158561566-01-halo-unwhitened-cotrended-zoomed-model.fig`

# Appendix A Planet Candidate 1

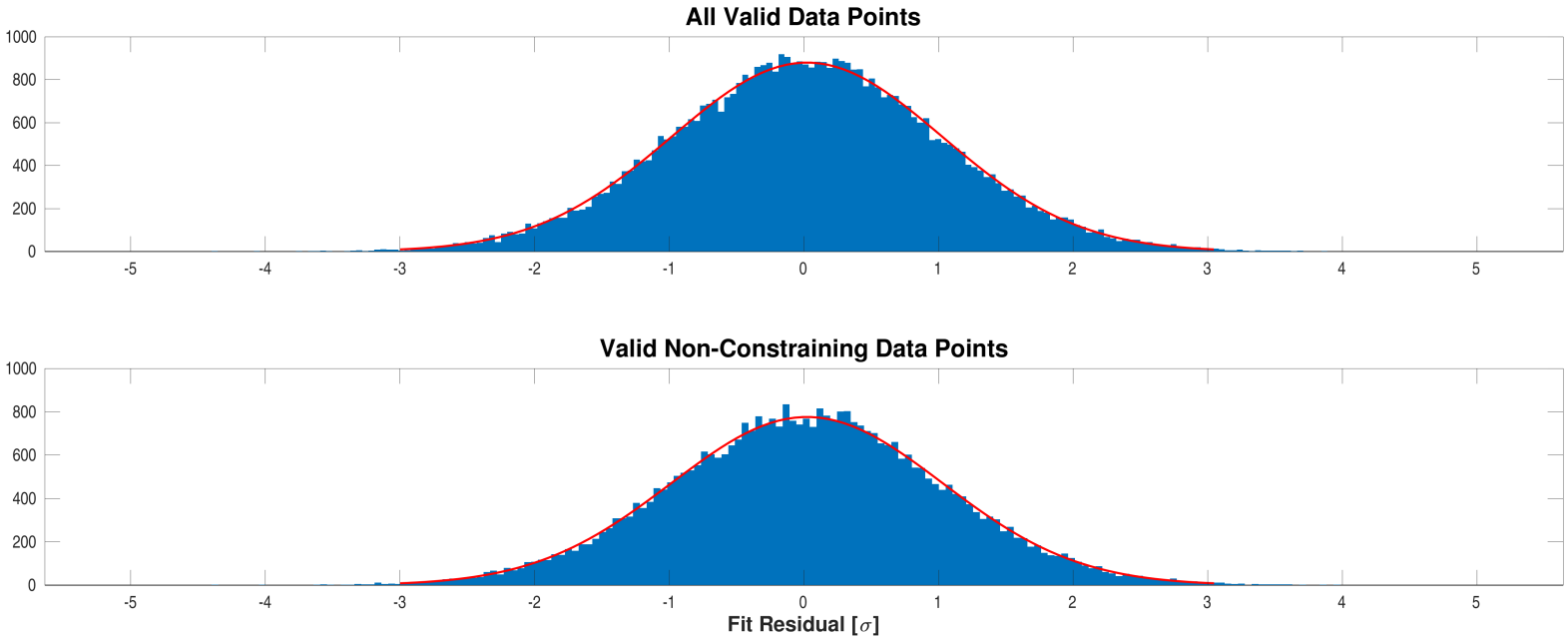
## A.1 Model Fitter: All Transits




Robust weights distribution for CatId 158561566, Planet candidate 1. Top plot: all data points. Middle plot: all data points, folded per the fitted period and epoch. Bottom plot: all data points, folded and zoomed.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-robust-weights.fig`




Fit residuals distribution for CatId 158561566, Planet candidate 1. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-histo-used.fig`

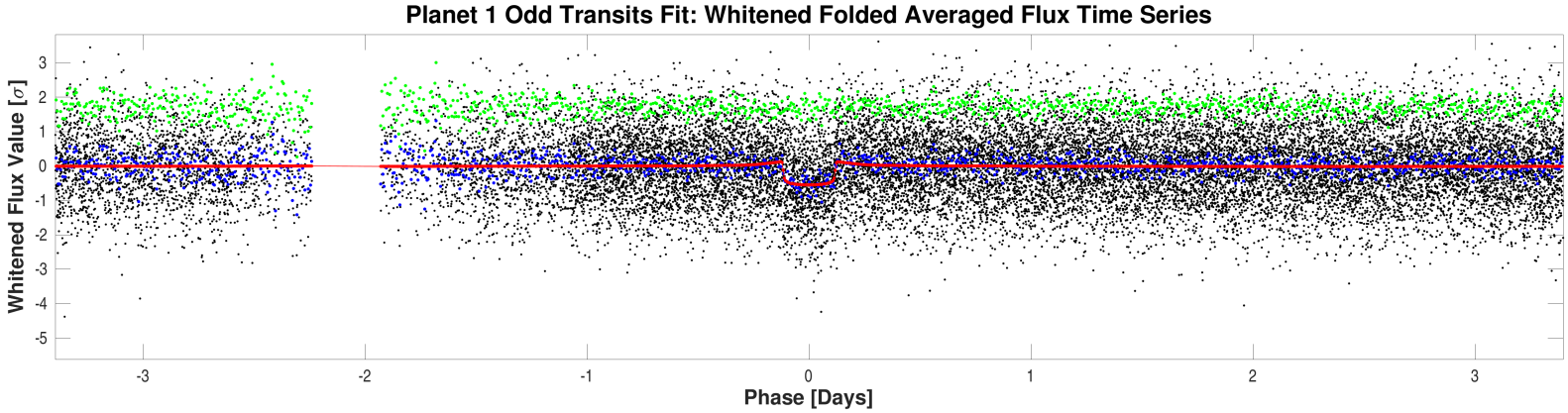


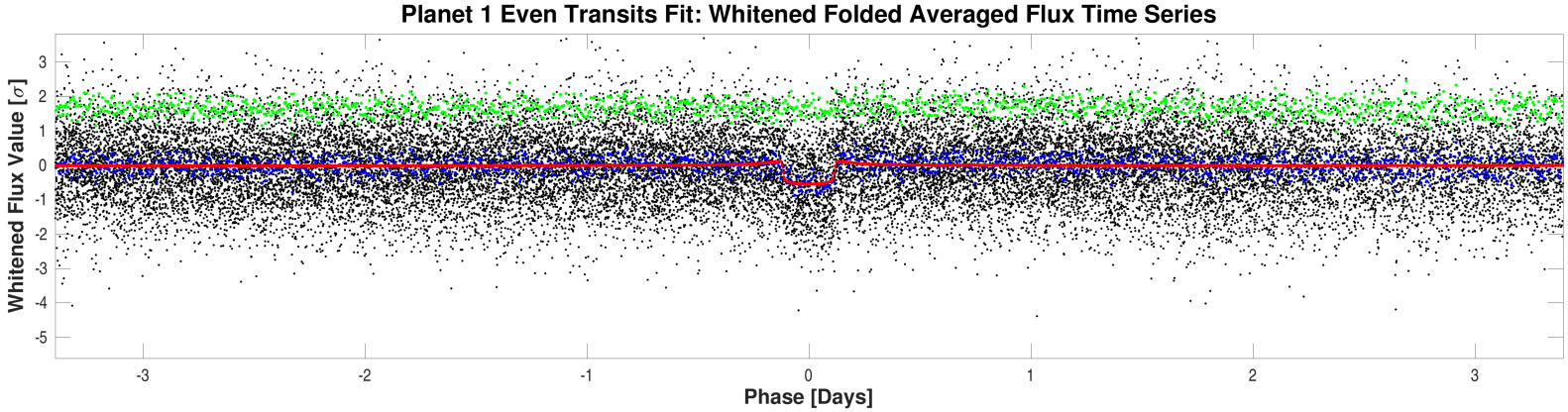

Fit residuals distribution for CatId 158561566, Planet candidate 1. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000158561566-01-all-histo-all-and-unused.fig`

## A.2 Model Fitter: Odd & Even Transits

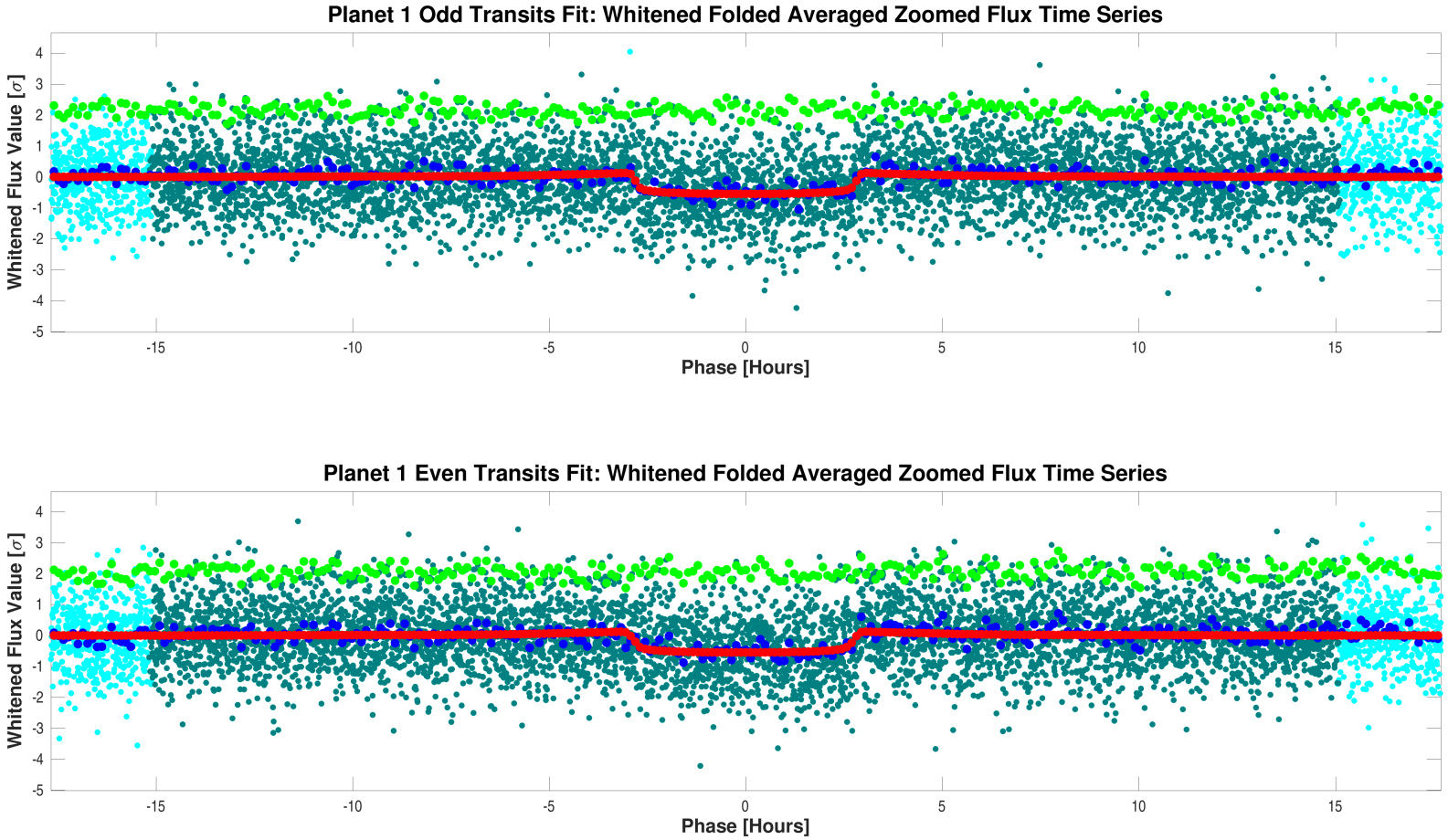
| Parameter | Odd Transits Value | Odd Transits Uncertainty | Even Transits Value | Even Transits Uncertainty | Units | Difference / Uncertainty |
|---|---|---|---|---|---|---|
| SNR | 15.7 | | 15.7 | | | |
| Orbital Period | 6.7902001 | 1.0251e-04 | 6.7900615 | 1.0323e-04 | days | 9.5261e-01 |
| Transit Epoch | 1685.2850792 | 2.7840e-03 | 1692.0755123 | 2.8909e-03 | BTJD | 7.7221e-02 |
| Impact Parameter | 0.0568 | 1.1924e+01 | 0.0100 | 7.1655e+01 | | 6.4438e-04 |
| Planet Radius to Star Radius Ratio | 0.0437148 | 4.8271e-03 | 0.0437136 | 5.0658e-03 | | 1.7391e-04 |
| Semi-major Axis to Star Radius Ratio | 9.1961 | 6.1600e+00 | 9.2255 | 6.5134e+00 | | 3.2757e-03 |
| Planet Radius | 9.5479 | 1.1642e+00 | 9.5477 | 1.2116e+00 | Earth radii | 1.5819e-04 |
| Semi-major Axis | 0.1115 | 3.8434e-03 | 0.1115 | 3.8434e-03 | AU | 2.7907e-04 |
| Effective Stellar Flux | 477.5194 | 1.8086e+01 | 477.5324 | 1.8086e+01 | Goldilocks | 5.0808e-04 |
| Equilibrium Temperature | 1192 | 1.1289e+01 | 1192 | 1.1289e+01 | Kelvin | 5.0808e-04 |
| Stellar Density | 0.2266 | 4.5539e-01 | 0.2288 | 4.8462e-01 | Solar density | 3.2891e-03 |
| Transit Depth | 2190 | 1.3751e+02 | 2191 | 1.3795e+02 | ppm | 4.7543e-03 |
| Transit Duration | 5.8914 | 3.6342e-01 | 5.8808 | 3.7824e-01 | hours | 2.0181e-02 |
| Transit Ingress Duration | 0.2485 | 3.6394e-01 | 0.2473 | 3.8179e-01 | hours | 2.2761e-03 |
| Eccentricity | 0.0000 | 0.0000e+00 | 0.0000 | 0.0000e+00 | | |
| Peri Longitude | 0.0000 | 0.0000e+00 | 0.0000 | 0.0000e+00 | degrees | |
| Model Chi Square Statistic (DoF) | 8182.8 (9825.6) | | 8182.8 (9825.6) | | | |

DoF: Degrees of Freedom

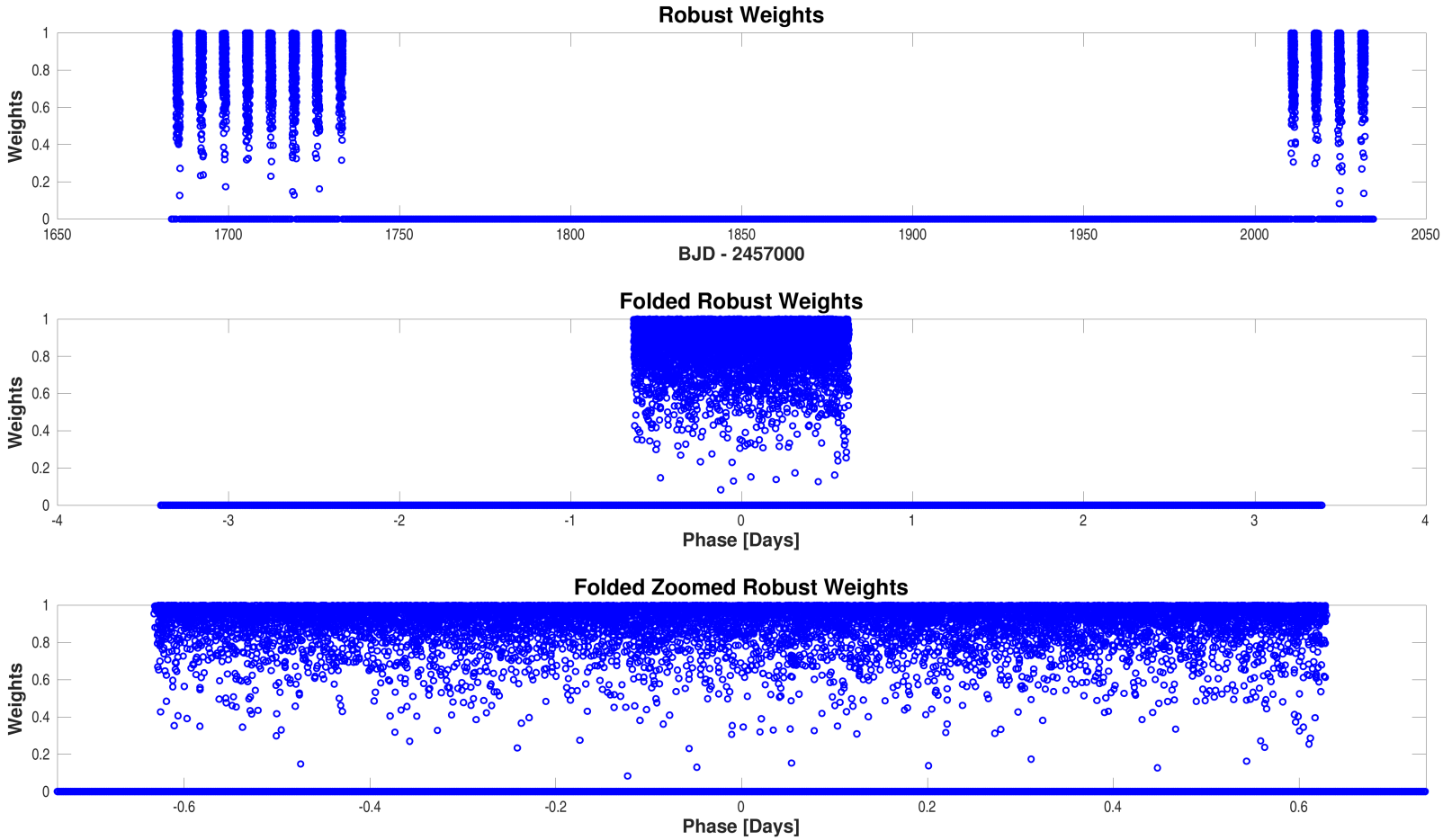


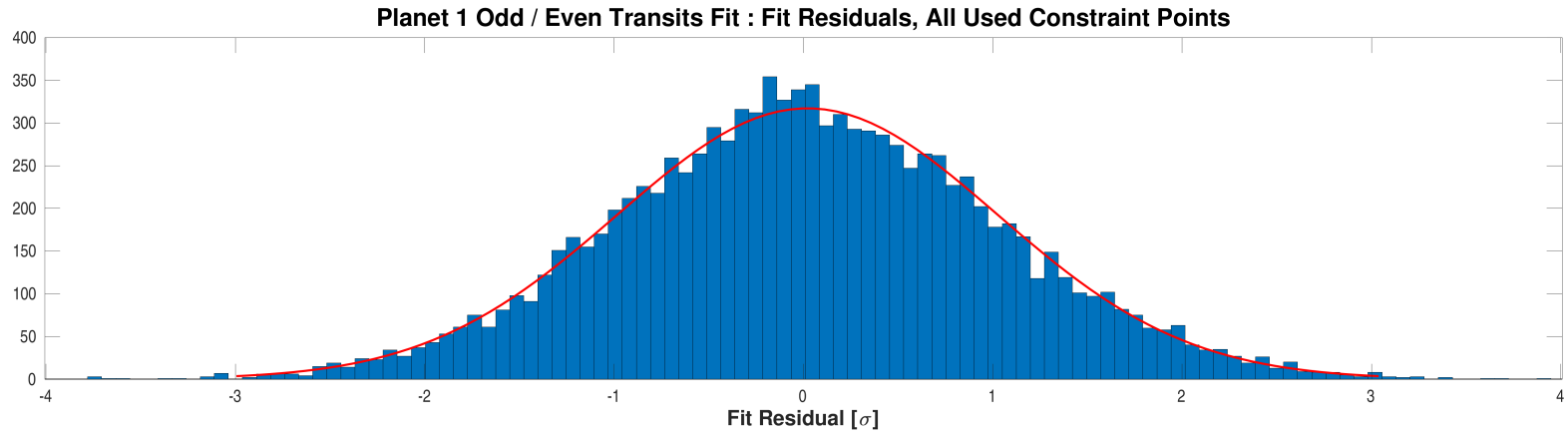

Folded flux time series for CatId 158561566, Planet candidate 1 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light curve of the odd/even transits fit; the green dots are the averaged folded fit residuals, vertically offset for clarity. Odd-even transits fit completed with full convergence.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000158561566-01-odd-even-whitened.fig`



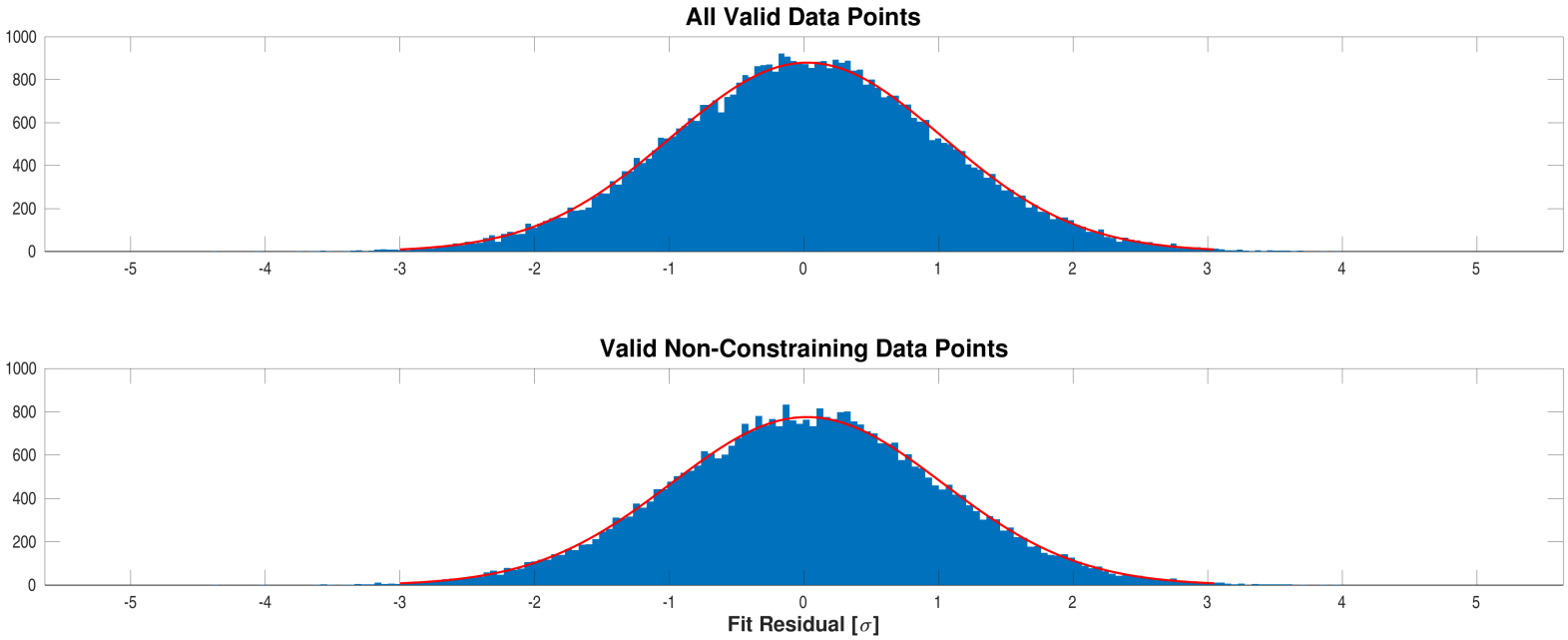

Folded flux time series for CatId 158561566, Planet candidate 1 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the fitted model light curve of the odd/even transits fit; the green dots are the averaged folded fit residuals, vertically offset for clarity. Magenta dots are the averaged values of the folded flux time series, with a phase shift of 0.5 relative to the blue dots, vertically offset for clarity. Odd-even transits fit completed with full convergence.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000158561566-01-odd-even-whitened-zoomed.fig`




Robust weights distribution for CatId 158561566, Planet candidate 1. Top plot: all data points. Middle plot: all data points, folded per the fitted period and epoch. Bottom plot: all data points, folded and zoomed.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000158561566-01-odd-even-robust-weights.fig`

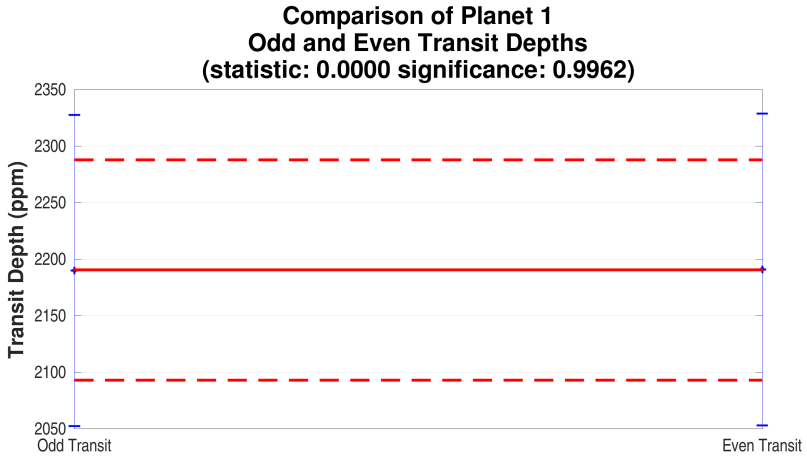



Fit residuals distribution for CatId 158561566, Planet candidate 1. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000158561566-01-odd-even-histo-used.fig`




Fit residuals distribution for CatId 158561566, Planet candidate 1. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000158561566-01-odd-even-histo-all-and-unused.fig`

## A.3 Eclipsing Binary Discrimination Test




Top-left: Diagnostic plot of Odd/Even Transit Depth Test for catId 158561566, planet 1. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Open `./planet-01/binary-discrimination-test-results/0000000158561566-01-eclipsing-binary-discrimination-tests.fig`

# Appendix B Alerts

This target did not trigger any alerts.