Data Validation (DV) Report
for TESS ID 169461816
Sectors 14 - 15

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

23-Apr-2020 06:33:45 Z

Contents

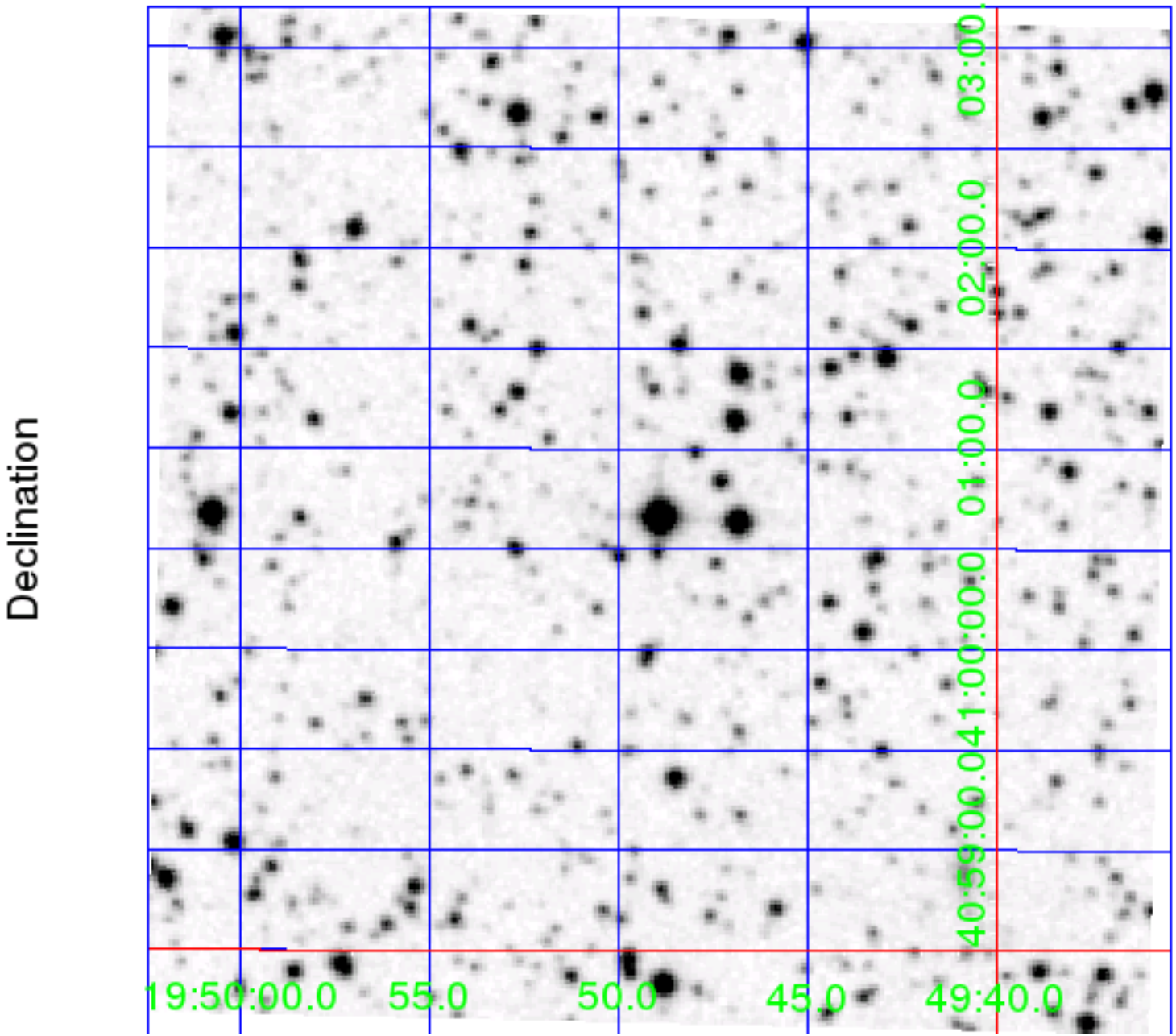
1 Summary

Target Properties	Value	Uncertainty	Units	Provenance
Catalog ID	169461816			
TOI ID	-			
TESS Name	-			
RA	297.45372285	0	degrees	TIC8
Dec	41.01100766	0	degrees	TIC8
Magnitude	10.931	0.0061		TIC8
Radius	1.491	0.067	Solar radii	TIC8
Effective Temperature	6779	106	Kelvin	TIC8
log(g)	4.254	0.088433	cm/sec^2	TIC8
[M/H]	0.081	0.0088569	Solar metallicity	TIC8
Stellar Density	0.439	0.091	Solar density	TIC8-Derived
Limb Darkening Coefficient 1	0.45874			
Limb Darkening Coefficient 2	0.51648			
Limb Darkening Coefficient 3	-0.55317			
Limb Darkening Coefficient 4	0.1846			
Number of Planet Candidates	4			
TOI Model	csv-file-toi-catalog-04-19-20-edited.csv			
TESS Names Model	-			
External TCE Model	-			
Software Revision	spoc-4.0.32-20200422			
Date Report Generated	23-Apr-2020 06:33:45 Z			

Sector	Target Table	Camera/ CCD	Crowding Metric	Flux Fraction
14	167	1:1	0.7586	0.8708
15	169	2:3	0.7758	0.8154

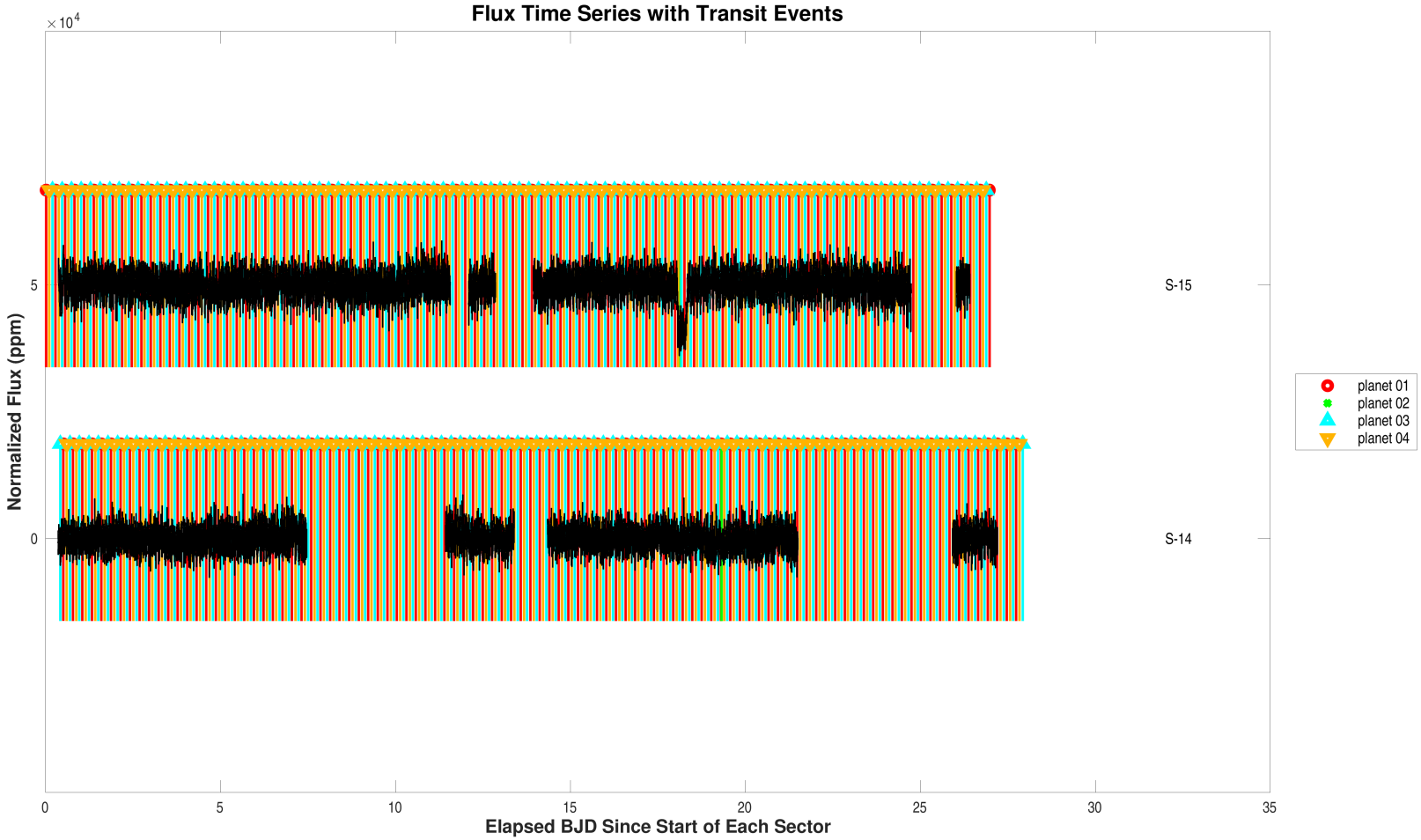
Planet Candidate	TOI ID	TESS Name	TOI Correlation	Period (days)	Period Ratio	Epoch (BTJD)	Semi-major Axis (AU)	Radius (Re)	Seff	Teq (K)	False Alarm	Suspected EB
1	-	-	-	0.272	1.00	1683.507	0.01	5.1	48436.1	3784	N/A	false
2	-	-	-	26.826	98.51	1702.319	0.20	20.8	106.5	819	N/A	false
3	-	-	-	0.272	1.00	1683.422	0.01	5.5	48445.0	3784	N/A	false
4	-	-	-	0.272	1.00	1683.603	0.01	6.5	48442.6	3784	N/A	false

2 Survey Image

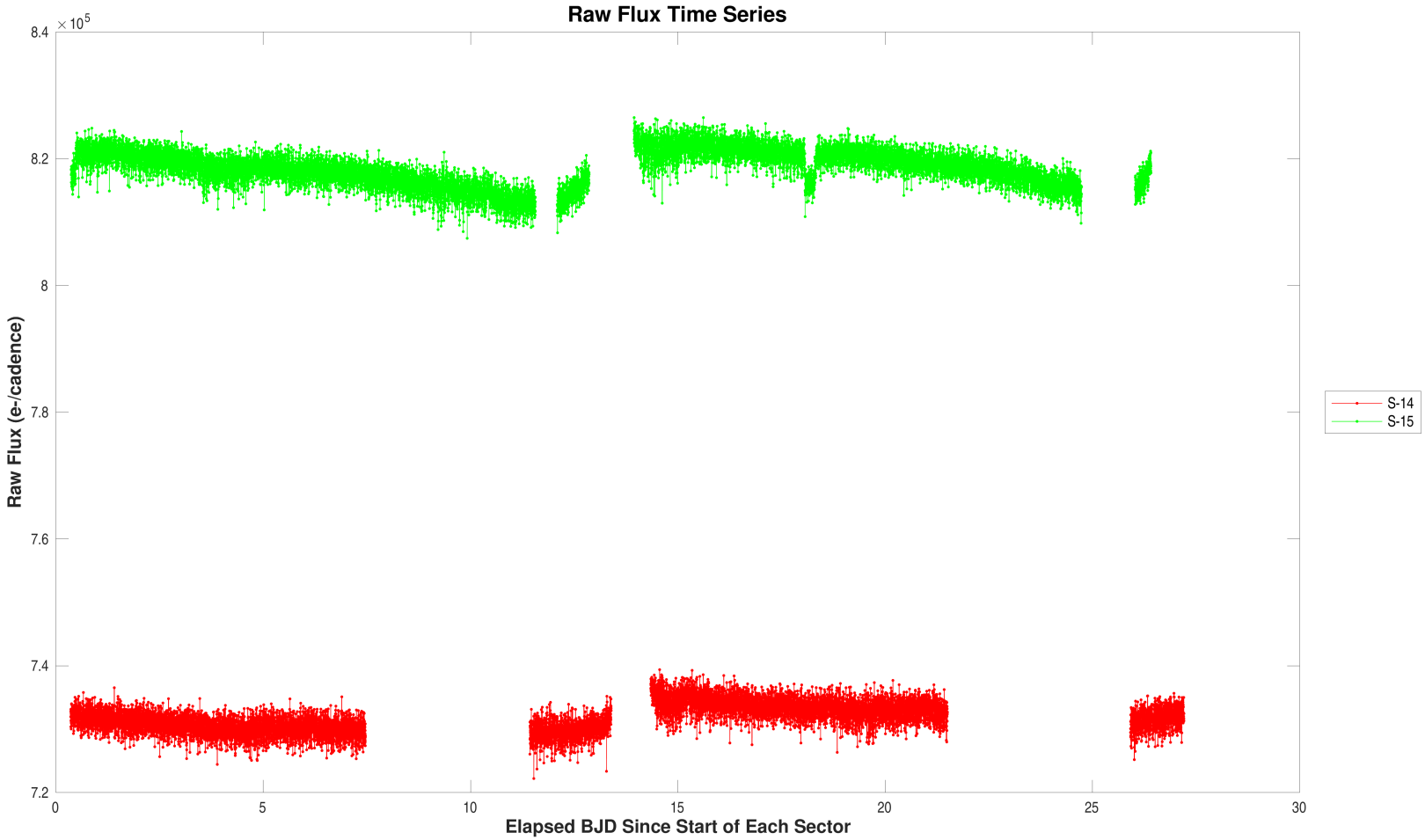


Digitized Sky Survey (DSS) red image. The 5' x 5' image is centered on the J2000 coordinates of target (169461816).

3 Flux Time Series



Summary plot of sector-stitched flux time series and transits for target 169461816, 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 50000 ppm.
Open `./summary-plots/0000000169461816-00-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 87000 electrons/cadence.
Open `./summary-plots/0000000169461816-00-raw-flux-14-167.fig`

4 Dashboards

Planet Candidate 1

<table>
<tr>
<td rowspan="2">Model Fitter</td>
<td colspan="2">Stellar Radius
1.5 ± 0.1 Solar units</td>
<td rowspan="2">Core Aperture Correlation Statistic
Value = 9.13
Significance = 100.00%

Halo Aperture Correlation Statistic
Value = 13.13
Significance = 100.00%

Core/Halo Ratio
Ratio = 0.70</td>
<td rowspan="2">Ghost Diagnostic Test</td>
</tr>
<tr>
<td colspan="2">Period = 0.3 ± 0.0 days
Depth = 1110 ± 90 ppm
Planet Radius = 5.1 ± 3.4 Earth radii
Semi-major Axis = 0.0 ± 0.0 AU
Effective Stellar Flux = 48436.1 ± 7387.2
Equilibrium Temperature = 3784 ± 144 Kelvin
Chi-squared/DoF = 0.8
SNR = 15.1</td>
</tr>
<tr>
<td rowspan="2">Eclipsing Binary Discrimination Test</td>
<td colspan="2">Odd-Even Depth Comparison Statistic
Value = 1.41e-18
Significance = 100.00%</td>
<td>Offsets Relative to Out of Transit Centroid
Source RA Offset = 2.41e+01 ± 2.55e+00 arcsec (9.45 σ)
Source Dec Offset = 4.82e+01 ± 2.62e+00 arcsec (18.38 σ)
Source Offset Distance = 5.39e+01 ± 2.61e+00 arcsec (20.66 σ)

Offsets Relative to TIC Position
Source RA Offset = 1.95e+01 ± 2.55e+00 arcsec (7.65 σ)
Source Dec Offset = 4.98e+01 ± 2.62e+00 arcsec (19.01 σ)
Source Offset Distance = 5.35e+01 ± 2.61e+00 arcsec (20.49 σ)</td>
<td>Difference Image Centroid Offsets</td>
</tr>
<tr>
<td>Shorter Period Comparison Statistic
Value = 4.71e-07
Significance = 0.05%</td>
<td>Longer Period Comparison Statistic
Value = 1.18e+04
Significance = 100.00%</td>
<td>False Alarm = N/A
Transit Count = N/A
Max Multiple Event Statistic = 11.4</td>
<td>Bootstrap Test</td>
</tr>
</table>

Summary of model fitter results and validation test results for target 169461816, 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.

Planet Candidate 2

<table>
<tr>
<td rowspan="2">Model Fitter</td>
<td colspan="2">Stellar Radius
1.5 ± 0.1 Solar units</td>
<td rowspan="2">Core Aperture Correlation Statistic
Value = 1.66
Significance = 95.17%
Halo Aperture Correlation Statistic
Value = 3.13
Significance = 99.91%
Core/Halo Ratio
Ratio = 0.53</td>
<td rowspan="2">Ghost Diagnostic Test</td>
</tr>
<tr>
<td colspan="2">Period = 26.8 ± 0.0 days
Depth = 7228 ± 505 ppm
Planet Radius = 20.8 ± 41.9 Earth radii
Semi-major Axis = 0.2 ± 0.0 AU
Effective Stellar Flux = 106.5 ± 16.2
Equilibrium Temperature = 819 ± 31 Kelvin
Chi-squared/DoF = 0.9
SNR = 19.8</td>
</tr>
<tr>
<td rowspan="2">Eclipsing Binary Discrimination Test</td>
<td colspan="2">Odd-Even Depth Comparison Statistic
Value = 5.03e+01
Significance = 0.00%</td>
<td>Offsets Relative to Out of Transit Centroid
Source RA Offset = 4.69e+00 ± 3.92e+00 arcsec (1.20 σ)
Source Dec Offset = -6.29e+00 ± 3.42e+01 arcsec (-0.18 σ)
Source Offset Distance = 7.85e+00 ± 2.57e+01 arcsec (0.31 σ)
Offsets Relative to TIC Position
Source RA Offset = -3.80e-02 ± 2.95e+00 arcsec (-0.01 σ)
Source Dec Offset = -4.71e+00 ± 2.02e+01 arcsec (-0.23 σ)
Source Offset Distance = 4.71e+00 ± 2.02e+01 arcsec (0.23 σ)</td>
<td>Difference Image Centroid Offsets</td>
</tr>
<tr>
<td>Shorter Period Comparison Statistic
Value = 1.18e+04
Significance = 100.00%</td>
<td>Longer Period Comparison Statistic
Value = N/A
Significance = N/A</td>
<td>False Alarm = N/A
Transit Count = N/A
Max Multiple Event Statistic = 20.2</td>
<td>Bootstrap Test</td>
</tr>
</table>

Summary of model fitter results and validation test results for target 169461816, planet candidate 2. 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.

Planet Candidate 3

<table>
<tr><td rowspan="2">Model Fitter</td><td colspan="2">Stellar Radius
1.5 ± 0.1 Solar units</td><td rowspan="2">Core Aperture Correlation Statistic
Value = 12.19
Significance = 100.00%
Halo Aperture Correlation Statistic
Value = 12.71
Significance = 100.00%
Core/Halo Ratio
Ratio = 0.96</td><td rowspan="2">Ghost Diagnostic Test</td></tr>
<tr><td colspan="2">Period = 0.3 ± 0.0 days
Depth = 1036 ± 77 ppm
Planet Radius = 5.5 ± 0.4 Earth radii
Semi-major Axis = 0.0 ± 0.0 AU
Effective Stellar Flux = 48445.0 ± 7388.5
Equilibrium Temperature = 3784 ± 144 Kelvin
Chi-squared/DoF = 0.8
SNR = 16.2</td></tr>
<tr><td rowspan="2">Eclipsing Binary Discrimination Test</td><td colspan="2">Odd-Even Depth Comparison Statistic
Value = 2.63e-01
Significance = 60.80%</td><td>Offsets Relative to Out of Transit Centroid
Source RA Offset = 2.47e+01 ± 2.55e+00 arcsec (9.69 σ)
Source Dec Offset = 4.86e+01 ± 2.62e+00 arcsec (18.57 σ)
Source Offset Distance = 5.45e+01 ± 2.60e+00 arcsec (20.94 σ)
Offsets Relative to TIC Position
Source RA Offset = 2.01e+01 ± 2.54e+00 arcsec (7.88 σ)
Source Dec Offset = 5.03e+01 ± 2.62e+00 arcsec (19.21 σ)
Source Offset Distance = 5.41e+01 ± 2.61e+00 arcsec (20.76 σ)</td><td>Difference Image Centroid Offsets</td></tr>
<tr><td>Shorter Period Comparison Statistic
Value = N/A
Significance = N/A</td><td>Longer Period Comparison Statistic
Value = 4.69e-08
Significance = 0.02%</td><td>False Alarm = N/A
Transit Count = N/A
Max Multiple Event Statistic = 12.7</td><td>Bootstrap Test</td></tr>
</table>

Summary of model fitter results and validation test results for target 169461816, planet candidate 3. 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.

Planet Candidate 4

<table>
<tr><td rowspan="2">Model Fitter</td><td colspan="2">Stellar Radius
1.5 ± 0.1 Solar units</td><td rowspan="2">Core Aperture Correlation Statistic
Value = 10.14
Significance = 100.00%
Halo Aperture Correlation Statistic
Value = 12.68
Significance = 100.00%
Core/Halo Ratio
Ratio = 0.80</td><td rowspan="2">Ghost Diagnostic Test</td></tr>
<tr><td colspan="2">Period = 0.3 ± 0.0 days
Depth = 1261 ± 157 ppm
Planet Radius = 6.5 ± 0.7 Earth radii
Semi-major Axis = 0.0 ± 0.0 AU
Effective Stellar Flux = 48442.6 ± 7388.2
Equilibrium Temperature = 3784 ± 144 Kelvin
Chi-squared/DoF = 1.0
SNR = 20.9</td></tr>
<tr><td rowspan="2">Eclipsing Binary Discrimination Test</td><td colspan="2">Odd-Even Depth Comparison Statistic
Value = 1.35e+00
Significance = 24.57%</td><td>Offsets Relative to Out of Transit Centroid
Source RA Offset = 5.91e+00 ± 2.57e+00 arcsec (2.30 σ)
Source Dec Offset = 3.44e+01 ± 2.64e+00 arcsec (13.03 σ)
Source Offset Distance = 3.49e+01 ± 2.64e+00 arcsec (13.23 σ)
Offsets Relative to TIC Position
Source RA Offset = 1.30e+00 ± 2.57e+00 arcsec (0.51 σ)
Source Dec Offset = 3.61e+01 ± 2.64e+00 arcsec (13.66 σ)
Source Offset Distance = 3.61e+01 ± 2.64e+00 arcsec (13.67 σ)</td><td>Difference Image Centroid Offsets</td></tr>
<tr><td>Shorter Period Comparison Statistic
Value = 4.69e-08
Significance = 0.02%</td><td>Longer Period Comparison Statistic
Value = 4.71e-07
Significance = 0.05%</td><td>False Alarm = N/A
Transit Count = N/A
Max Multiple Event Statistic = 15.6</td><td>Bootstrap Test</td></tr>
</table>

Summary of model fitter results and validation test results for target 169461816, planet candidate 4. 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

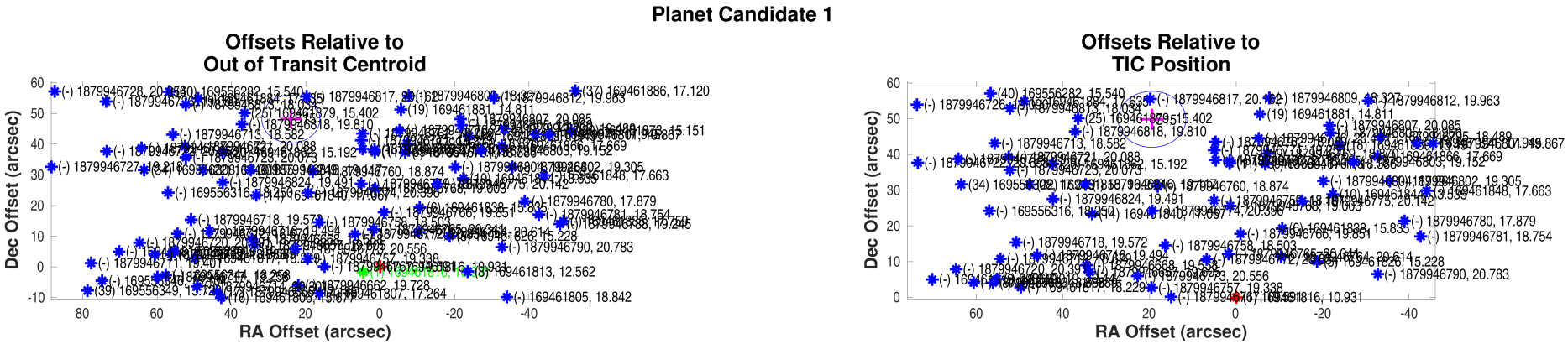
Multi-Sector Average PRF Fit of the Difference Images

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

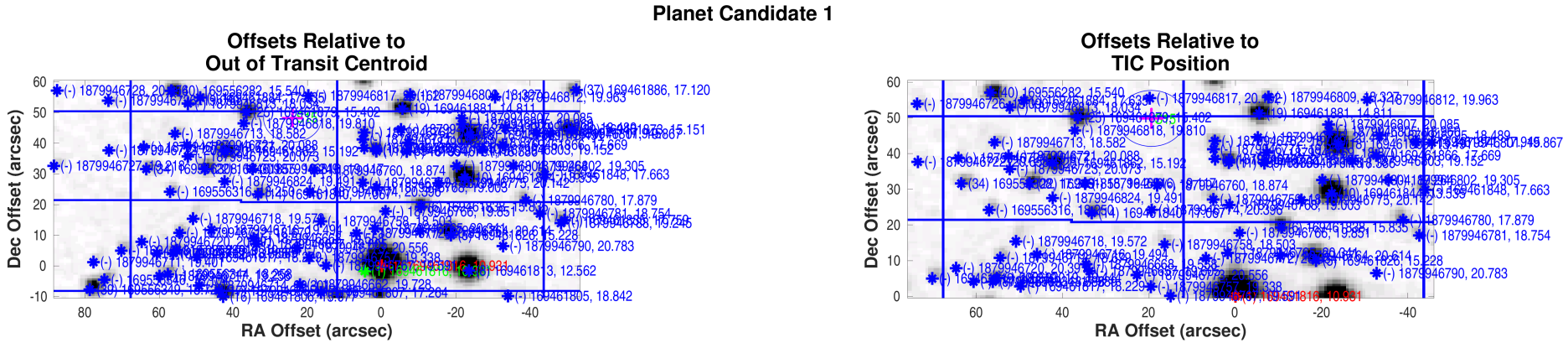
	RA	Dec	Units
Offset	$24.0705 \pm 2.55e+00$	$48.1815 \pm 2.62e+00$	arcseconds
Offset/σ	9.45	18.38	
Offset Distance	$53.8595 \pm 2.61e+00$		arcseconds
Offset Distance/σ	20.66		
3σ Radius	7.8210		arcseconds

Mean offset from the TIC RA and Dec

	RA	Dec	Units
Offset	$19.4744 \pm 2.55e+00$	$49.8470 \pm 2.62e+00$	arcseconds
Offset/σ	7.65	19.01	
Offset Distance	$53.5162 \pm 2.61e+00$		arcseconds
Offset Distance/σ	20.49		
3σ Radius	7.8355		arcseconds



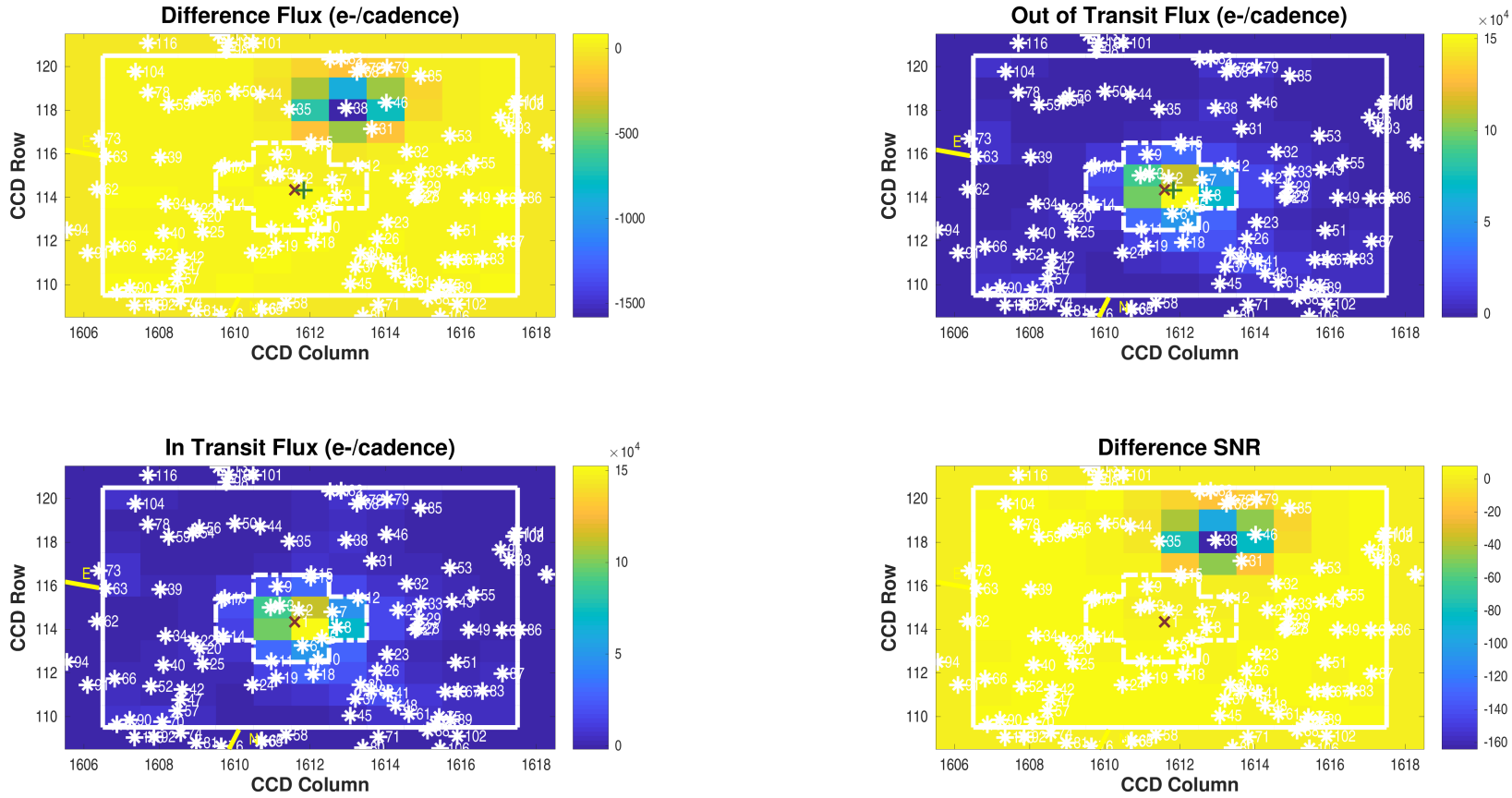
Difference image centroid offsets for target 169461816, planet candidate 1. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TC coordinates 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/0000000169461816-01-difference-image-centroid-offsets.fig`



Difference image centroid offsets for target 169461816, 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/0000000169461816-01-difference-image-centroid-offsets-survey.fig`

Difference Image Summary Metrics

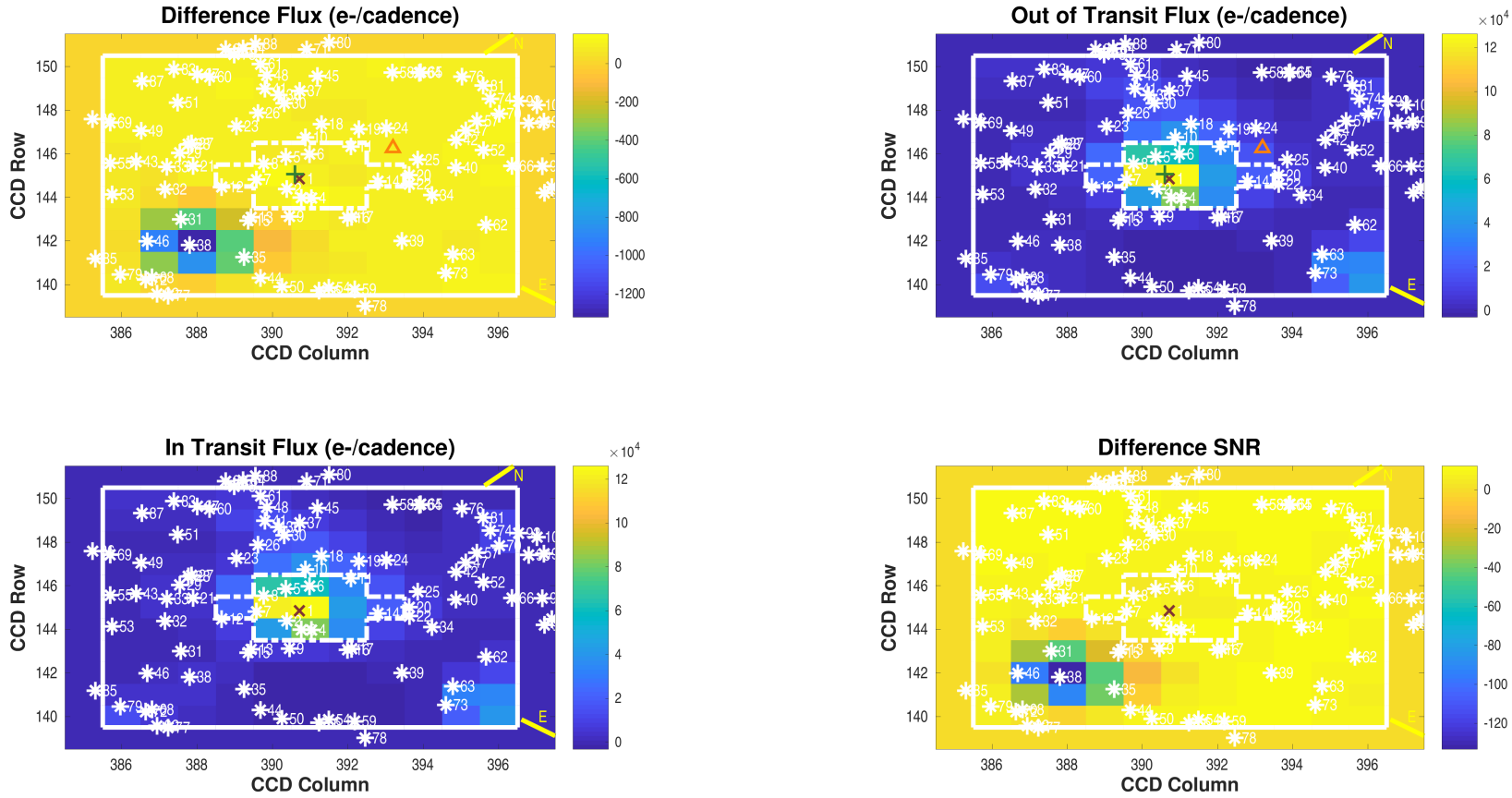
Number of Difference Images	Number of Metrics	Number of Good Metrics	Fraction of Good Metrics	Quality Threshold
2	1	0	0.0000	0.70



Difference image for target 169461816, 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 = 61; number of valid in-transit cadences = 736; number of in-transit cadence gaps = 6; number of valid out-of-transit cadences = 2354; number of out-of-transit cadence gaps = 23. Difference image quality metric = N/A. Transits used to compute this difference image are overlapped by those of other candidates on this target.
Open `./planet-01/difference-image/0000000169461816-01-difference-image-14-167.fig`

PRF Fit of the Difference Image

The out of transit image centroid and difference image centroid could not be calculated for target 169461816, planet candidate 1, in target table 167.



Difference image for target 169461816, 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 = 80; number of valid in-transit cadences = 965; number of in-transit cadence gaps = 8; number of valid out-of-transit cadences = 3083; number of out-of-transit cadence gaps = 37. Difference image quality metric = 0.10 (not good). Transits used to compute this difference image are overlapped by those of other candidates on this target. Open `./planet-01/difference-image/0000000169461816-01-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	$145.06 \pm 3.08e-05$	$390.60 \pm 3.78e-05$	pixels	$297.45205285 \pm 1.03e-06$	$41.01148451 \pm 1.00e-06$	degrees
Difference Image Centroid	$146.26 \pm 3.31e-02$	$393.20 \pm 3.68e-02$	pixels	$297.46091377 \pm 1.78e-04$	$41.02486824 \pm 2.19e-04$	degrees
Offset	$1.1982 \pm 3.31e-02$	$2.5973 \pm 3.68e-02$	pixels	$24.0705 \pm 4.88e-01$	$48.1815 \pm 7.90e-01$	arcseconds
Offset/σ	36.16	70.56		49.31	61.02	
Offset Distance	$2.8604 \pm 3.93e-02$		pixels	$53.8595 \pm 7.68e-01$		arcseconds
Offset Distance/σ	72.83			70.15		

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

	Row	Column	Units	RA	Dec	Units
TIC Reference Centroid	$144.85 \pm 1.70e-04$	$390.71 \pm 1.78e-04$	pixels	$297.45374485 \pm 0.00e+00$	$41.01102184 \pm 0.00e+00$	degrees
Difference Image Centroid	$146.26 \pm 3.31e-02$	$393.20 \pm 3.68e-02$	pixels	$297.46091377 \pm 1.78e-04$	$41.02486824 \pm 2.19e-04$	degrees
Offset	$1.4142 \pm 3.31e-02$	$2.4809 \pm 3.68e-02$	pixels	$19.4744 \pm 4.82e-01$	$49.8470 \pm 7.90e-01$	arcseconds
Offset/σ	42.68	67.39		40.38	63.13	
Offset Distance	$2.8556 \pm 3.94e-02$		pixels	$53.5162 \pm 7.80e-01$		arcseconds
Offset Distance/σ	72.42			68.64		

5.2 Planet Candidate 2

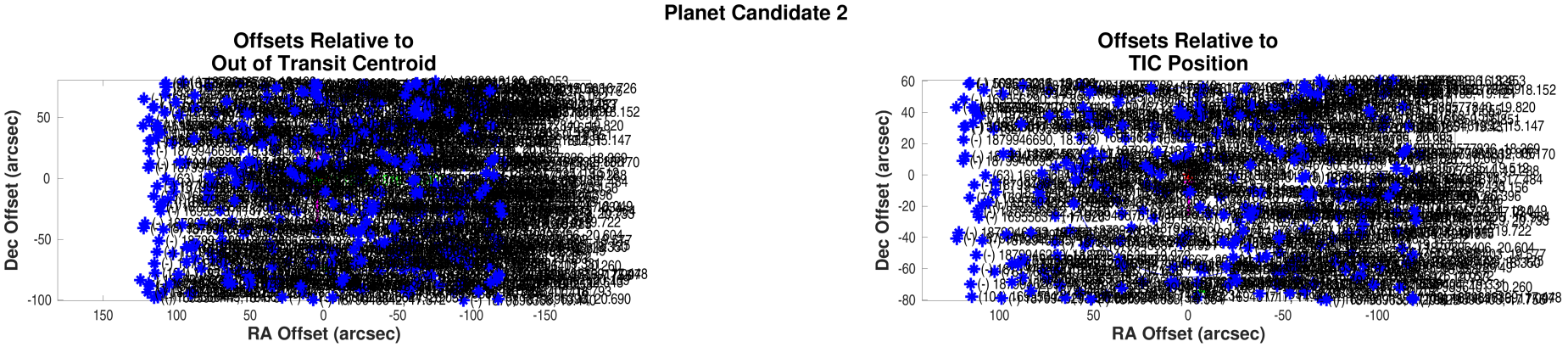
Multi-Sector Average PRF Fit of the Difference Images

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

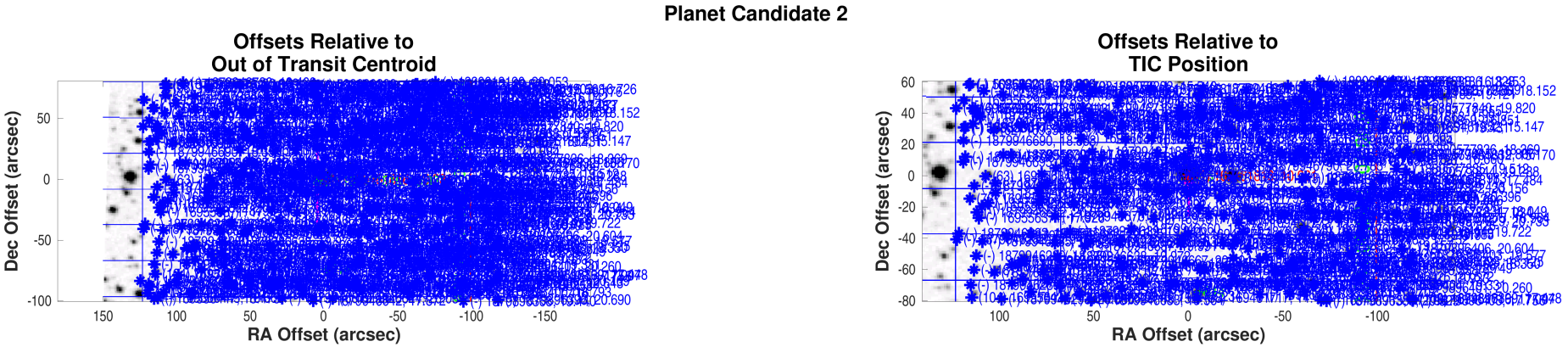
	RA	Dec	Units
Offset	$4.6948 \pm 3.92e+00$	$-6.2935 \pm 3.42e+01$	arcseconds
Offset/σ	1.20	−0.18	
Offset Distance	$7.8517 \pm 2.57e+01$		arcseconds
Offset Distance/σ	0.31		
3σ Radius	77.0193		arcseconds

Mean offset from the TIC RA and Dec

	RA	Dec	Units
Offset	$-0.0380 \pm 2.95e+00$	$-4.7096 \pm 2.02e+01$	arcseconds
Offset/σ	−0.01	−0.23	
Offset Distance	$4.7097 \pm 2.02e+01$		arcseconds
Offset Distance/σ	0.23		
3σ Radius	60.6670		arcseconds



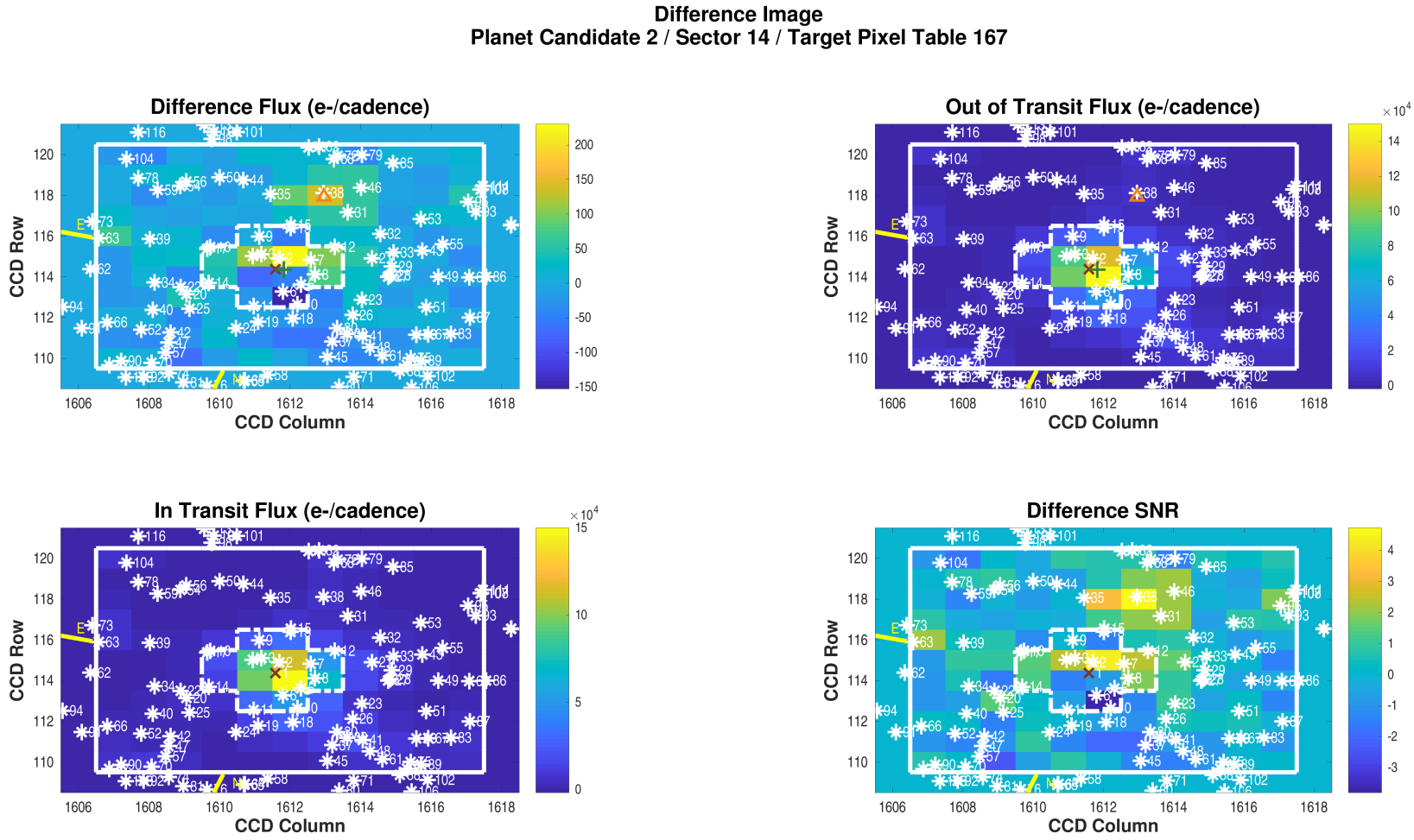
Difference image centroid offsets for target 169461816, planet candidate 2. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TC coordinates 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-02/difference-image/0000000169461816-02-difference-image-centroid-offsets.fig`



Difference image centroid offsets for target 169461816, planet candidate 2, 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-02/difference-image/0000000169461816-02-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
2	2	1	0.5000	0.70



Difference image for target 169461816, planet candidate 2, 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 = 1; number of valid in-transit cadences = 71; number of in-transit cadence gaps = 1; number of valid out-of-transit cadences = 354; number of out-of-transit cadence gaps = 5. Difference image quality metric = 0.43 (not good). Transits used to compute this difference image are overlapped by those of other candidates on this target.
Open `./planet-02/difference-image/0000000169461816-02-difference-image-14-167.fig`

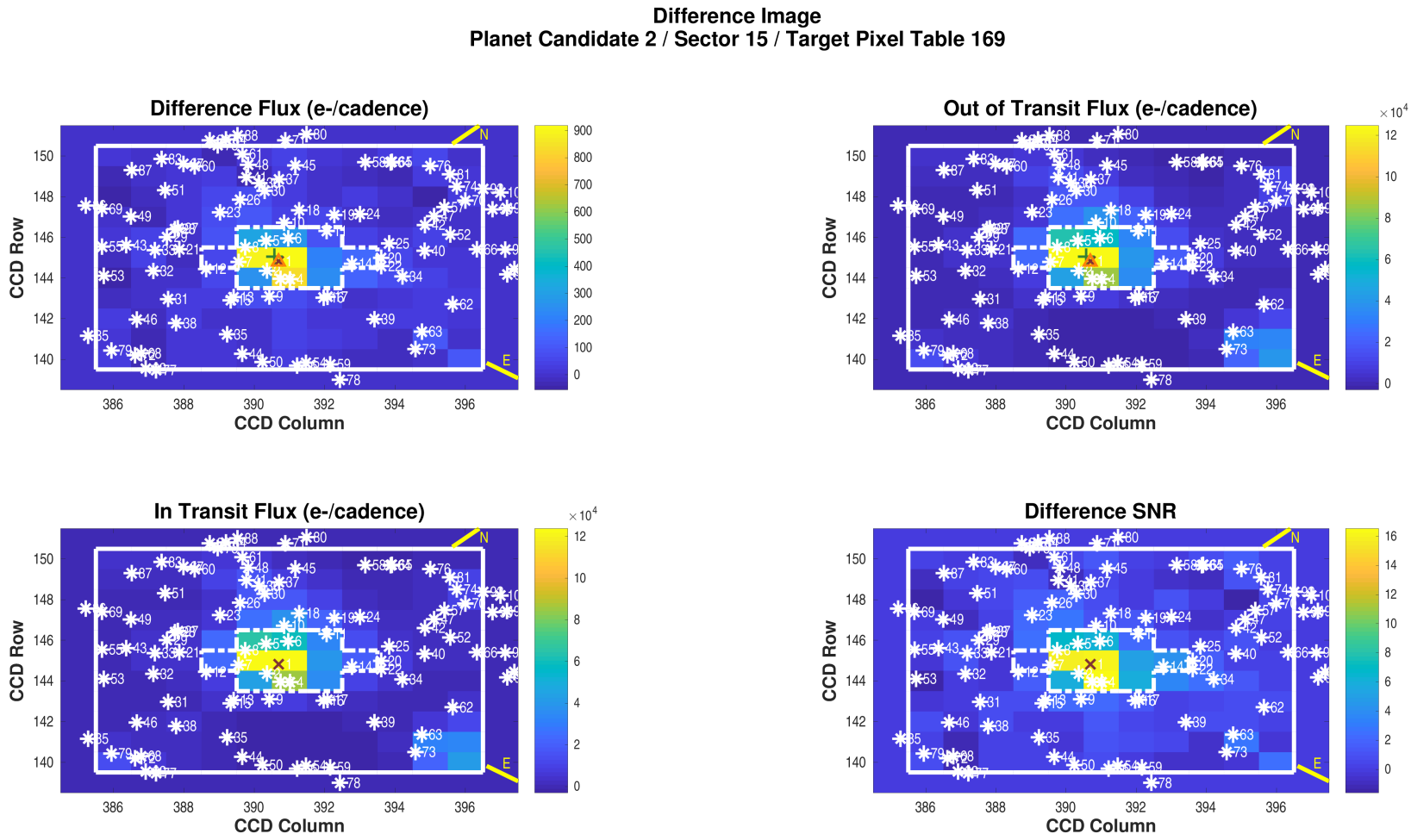
PRF Fit of the Difference Image

Offset from the PRF fit to the out of transit image

	Row	Column	Units	RA	Dec	Units
Out of Transit Image Centroid	$114.36 \pm 7.58e-05$	$1611.83 \pm 8.40e-05$	pixels	$297.45197639 \pm 9.22e-07$	$41.01072532 \pm 9.15e-07$	degrees
Difference Image Centroid	$117.93 \pm 1.58e-01$	$1612.96 \pm 1.53e-01$	pixels	$297.45148959 \pm 8.83e-04$	$40.99030007 \pm 8.94e-04$	degrees
Offset	$3.5723 \pm 1.58e-01$	$1.1344 \pm 1.53e-01$	pixels	$-1.3224 \pm 2.40e+00$	$-73.5309 \pm 3.22e+00$	arcseconds
Offset/σ	22.61	7.43		-0.55	-22.84	
Offset Distance	$3.7481 \pm 1.57e-01$		pixels	$73.5428 \pm 3.22e+00$		arcseconds
Offset Distance/σ	23.90			22.86		

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

	Row	Column	Units	RA	Dec	Units
TIC Reference Centroid	$114.37 \pm 1.42e-04$	$1611.59 \pm 1.37e-04$	pixels	$297.45374477 \pm 0.00e+00$	$41.01102178 \pm 0.00e+00$	degrees
Difference Image Centroid	$117.93 \pm 1.58e-01$	$1612.96 \pm 1.53e-01$	pixels	$297.45148959 \pm 8.83e-04$	$40.99030007 \pm 8.94e-04$	degrees
Offset	$3.5569 \pm 1.58e-01$	$1.3742 \pm 1.53e-01$	pixels	$-6.1262 \pm 2.40e+00$	$-74.5982 \pm 3.22e+00$	arcseconds
Offset/σ	22.51	9.00		-2.55	-23.17	
Offset Distance	$3.8131 \pm 1.57e-01$		pixels	$74.8493 \pm 3.20e+00$		arcseconds
Offset Distance/σ	24.36			23.36		



Difference image for target 169461816, planet candidate 2, 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 = 1; number of valid in-transit cadences = 72; number of in-transit cadence gaps = 1; number of valid out-of-transit cadences = 343; number of out-of-transit cadence gaps = 15. Difference image quality metric = 0.97 (good). Transits used to compute this difference image are overlapped by those of other candidates on this target.
Open `./planet-02/difference-image/0000000169461816-02-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	$145.04 \pm 9.26e-05$	$390.57 \pm 1.10e-04$	pixels	$297.45200374 \pm 1.14e-06$	$41.01150627 \pm 1.16e-06$	degrees
Difference Image Centroid	$144.79 \pm 3.64e-02$	$390.69 \pm 3.65e-02$	pixels	$297.45384017 \pm 1.95e-04$	$41.01088581 \pm 2.20e-04$	degrees
Offset	$-0.2518 \pm 3.64e-02$	$0.1115 \pm 3.65e-02$	pixels	$4.9886 \pm 5.30e-01$	$-2.2336 \pm 7.91e-01$	arcseconds
Offset/σ	-6.92	3.06		9.41	-2.82	
Offset Distance	$0.2754 \pm 3.44e-02$		pixels	$5.4658 \pm 5.76e-01$		arcseconds
Offset Distance/σ	8.01			9.49		

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

	Row	Column	Units	RA	Dec	Units
TIC Reference Centroid	$144.82 \pm 1.70e-04$	$390.69 \pm 1.77e-04$	pixels	$297.45374485 \pm 0.00e+00$	$41.01102184 \pm 0.00e+00$	degrees
Difference Image Centroid	$144.79 \pm 3.64e-02$	$390.69 \pm 3.65e-02$	pixels	$297.45384017 \pm 1.95e-04$	$41.01088581 \pm 2.20e-04$	degrees
Offset	$-0.0284 \pm 3.64e-02$	$-0.0073 \pm 3.65e-02$	pixels	$0.2589 \pm 5.30e-01$	$-0.4897 \pm 7.91e-01$	arcseconds
Offset/σ	-0.78	-0.20		0.49	-0.62	
Offset Distance	$0.0293 \pm 3.76e-02$		pixels	$0.5539 \pm 7.37e-01$		arcseconds
Offset Distance/σ	0.78			0.75		

5.3 Planet Candidate 3

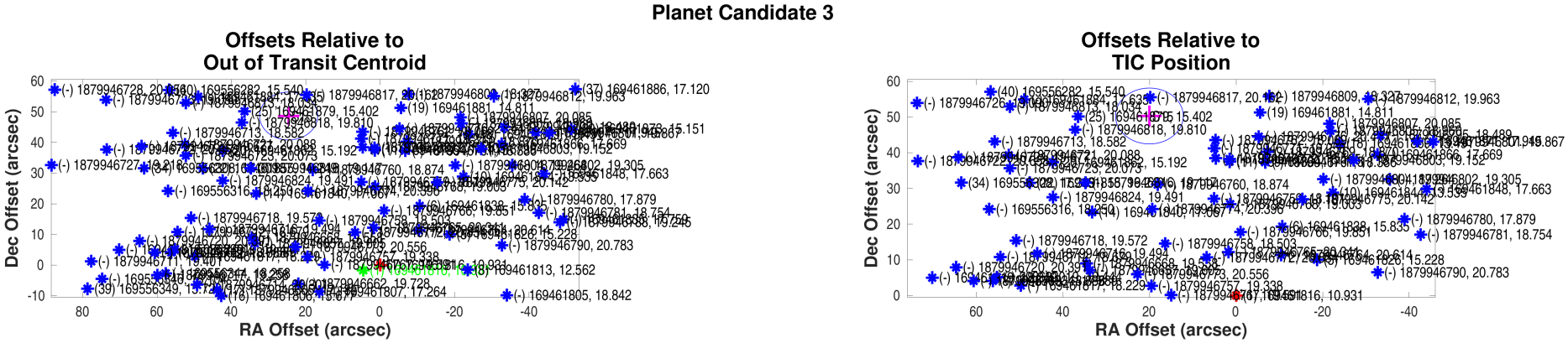
Multi-Sector Average PRF Fit of the Difference Images

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

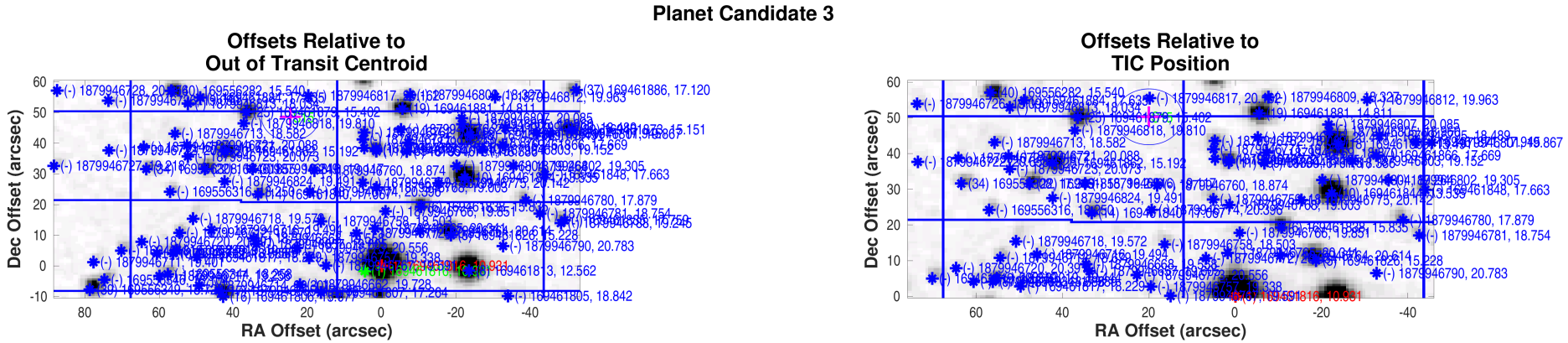
	RA	Dec	Units
Offset	$24.6605 \pm 2.55e+00$	$48.6149 \pm 2.62e+00$	arcseconds
Offset/σ	9.69	18.57	
Offset Distance	$54.5119 \pm 2.60e+00$		arcseconds
Offset Distance/σ	20.94		
3σ Radius	7.8094		arcseconds

Mean offset from the TIC RA and Dec

	RA	Dec	Units
Offset	$20.0612 \pm 2.54e+00$	$50.2860 \pm 2.62e+00$	arcseconds
Offset/σ	7.88	19.21	
Offset Distance	$54.1399 \pm 2.61e+00$		arcseconds
Offset Distance/σ	20.76		
3σ Radius	7.8233		arcseconds



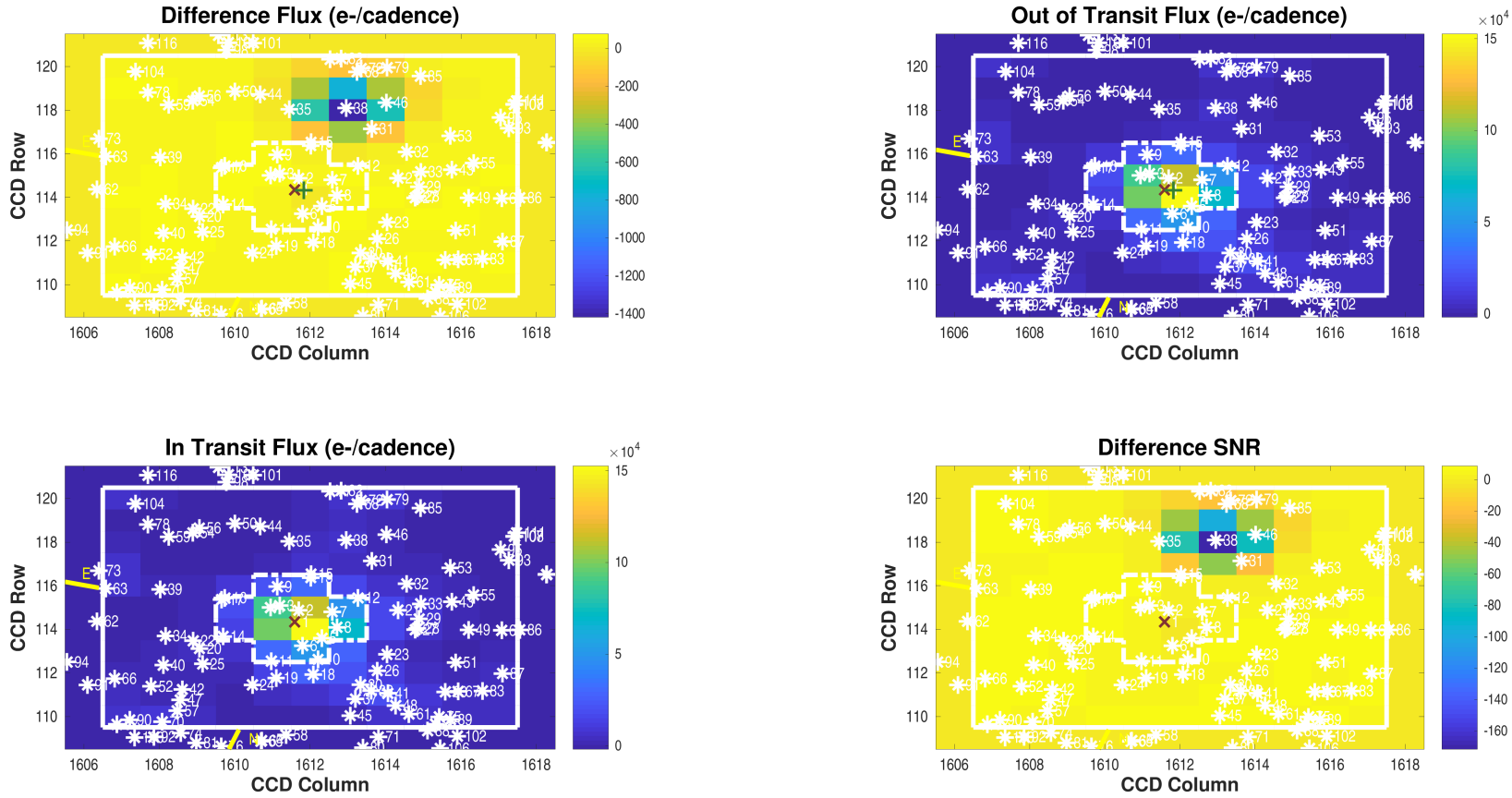
Difference image centroid offsets for target 169461816, planet candidate 3. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TC coordinates 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-03/difference-image/0000000169461816-03-difference-image-centroid-offsets.fig`



Difference image centroid offsets for target 169461816, planet candidate 3, 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-03/difference-image/0000000169461816-03-difference-image-centroid-offsets-survey.fig`

Difference Image Summary Metrics

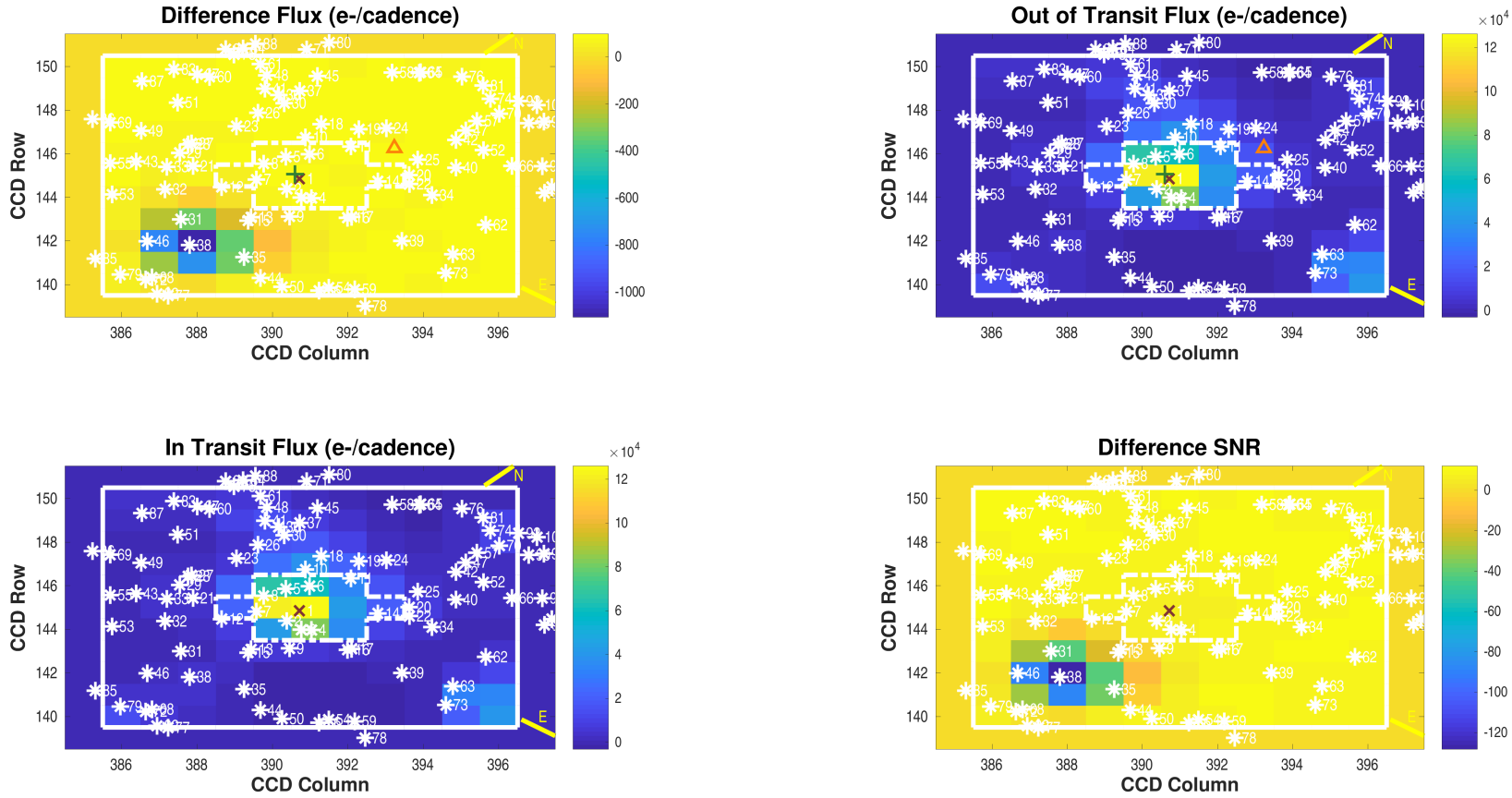
Number of Difference Images	Number of Metrics	Number of Good Metrics	Fraction of Good Metrics	Quality Threshold
2	1	0	0.0000	0.70



Difference image for target 169461816, planet candidate 3, 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 = 63; number of valid in-transit cadences = 993; number of in-transit cadence gaps = 11; number of valid out-of-transit cadences = 3355; number of out-of-transit cadence gaps = 28. Difference image quality metric = N/A. Transits used to compute this difference image are overlapped by those of other candidates on this target.
Open `./planet-03/difference-image/0000000169461816-03-difference-image-14-167.fig`

PRF Fit of the Difference Image

The out of transit image centroid and difference image centroid could not be calculated for target 169461816, planet candidate 3, in target table 167.



Difference image for target 169461816, planet candidate 3, 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 = 80; number of valid in-transit cadences = 1255; number of in-transit cadence gaps = 13; number of valid out-of-transit cadences = 4231; number of out-of-transit cadence gaps = 47. Difference image quality metric = 0.11 (not good). Transits used to compute this difference image are overlapped by those of other candidates on this target. Open `./planet-03/difference-image/0000000169461816-03-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	$145.07 \pm 2.63e-05$	$390.60 \pm 3.22e-05$	pixels	$297.45205171 \pm 1.02e-06$	$41.01148603 \pm 9.94e-07$	degrees
Difference Image Centroid	$146.26 \pm 3.21e-02$	$393.23 \pm 3.66e-02$	pixels	$297.46112980 \pm 1.74e-04$	$41.02499016 \pm 2.16e-04$	degrees
Offset	$1.1970 \pm 3.21e-02$	$2.6348 \pm 3.66e-02$	pixels	$24.6605 \pm 4.80e-01$	$48.6149 \pm 7.76e-01$	arcseconds
Offset/σ	37.29	72.02		51.38	62.64	
Offset Distance	$2.8940 \pm 3.89e-02$		pixels	$54.5119 \pm 7.59e-01$		arcseconds
Offset Distance/σ	74.43			71.83		

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

	Row	Column	Units	RA	Dec	Units
TIC Reference Centroid	$144.85 \pm 1.69e-04$	$390.71 \pm 1.78e-04$	pixels	$297.45374485 \pm 0.00e+00$	$41.01102184 \pm 0.00e+00$	degrees
Difference Image Centroid	$146.26 \pm 3.21e-02$	$393.23 \pm 3.66e-02$	pixels	$297.46112980 \pm 1.74e-04$	$41.02499016 \pm 2.16e-04$	degrees
Offset	$1.4133 \pm 3.21e-02$	$2.5185 \pm 3.66e-02$	pixels	$20.0612 \pm 4.74e-01$	$50.2860 \pm 7.76e-01$	arcseconds
Offset/σ	44.02	68.84		42.35	64.79	
Offset Distance	$2.8879 \pm 3.90e-02$		pixels	$54.1399 \pm 7.70e-01$		arcseconds
Offset Distance/σ	74.05			70.33		

5.4 Planet Candidate 4

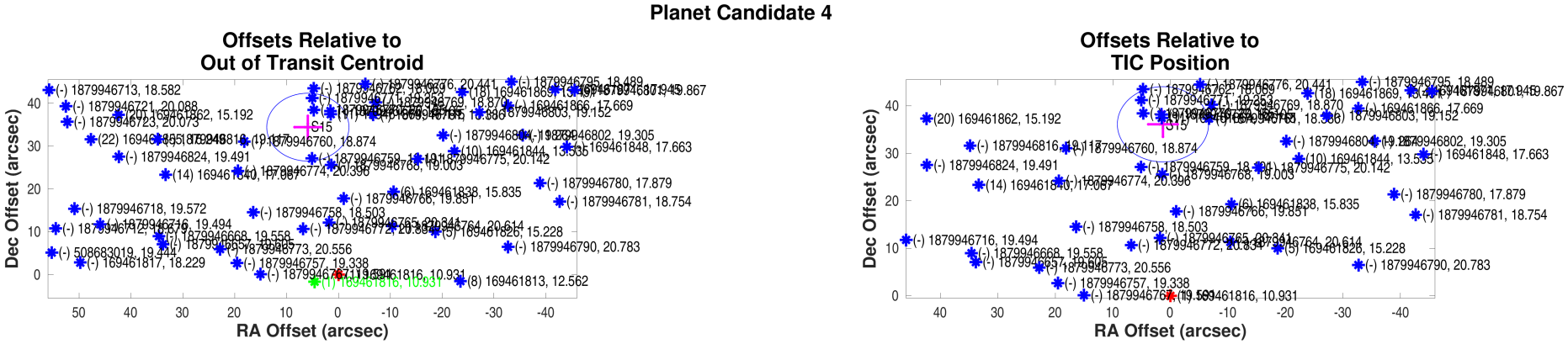
Multi-Sector Average PRF Fit of the Difference Images

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

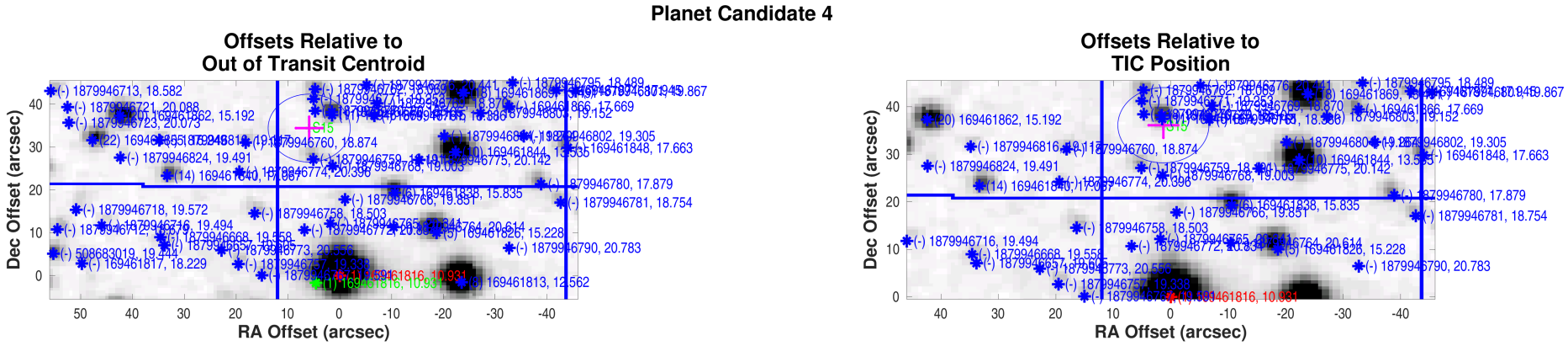
	RA	Dec	Units
Offset	$5.9078 \pm 2.57e+00$	$34.4365 \pm 2.64e+00$	arcseconds
Offset/σ	2.30	13.03	
Offset Distance	$34.9396 \pm 2.64e+00$		arcseconds
Offset Distance/σ	13.23		
3σ Radius	7.9242		arcseconds

Mean offset from the TIC RA and Dec

	RA	Dec	Units
Offset	$1.3033 \pm 2.57e+00$	$36.1175 \pm 2.64e+00$	arcseconds
Offset/σ	0.51	13.66	
Offset Distance	$36.1410 \pm 2.64e+00$		arcseconds
Offset Distance/σ	13.67		
3σ Radius	7.9303		arcseconds



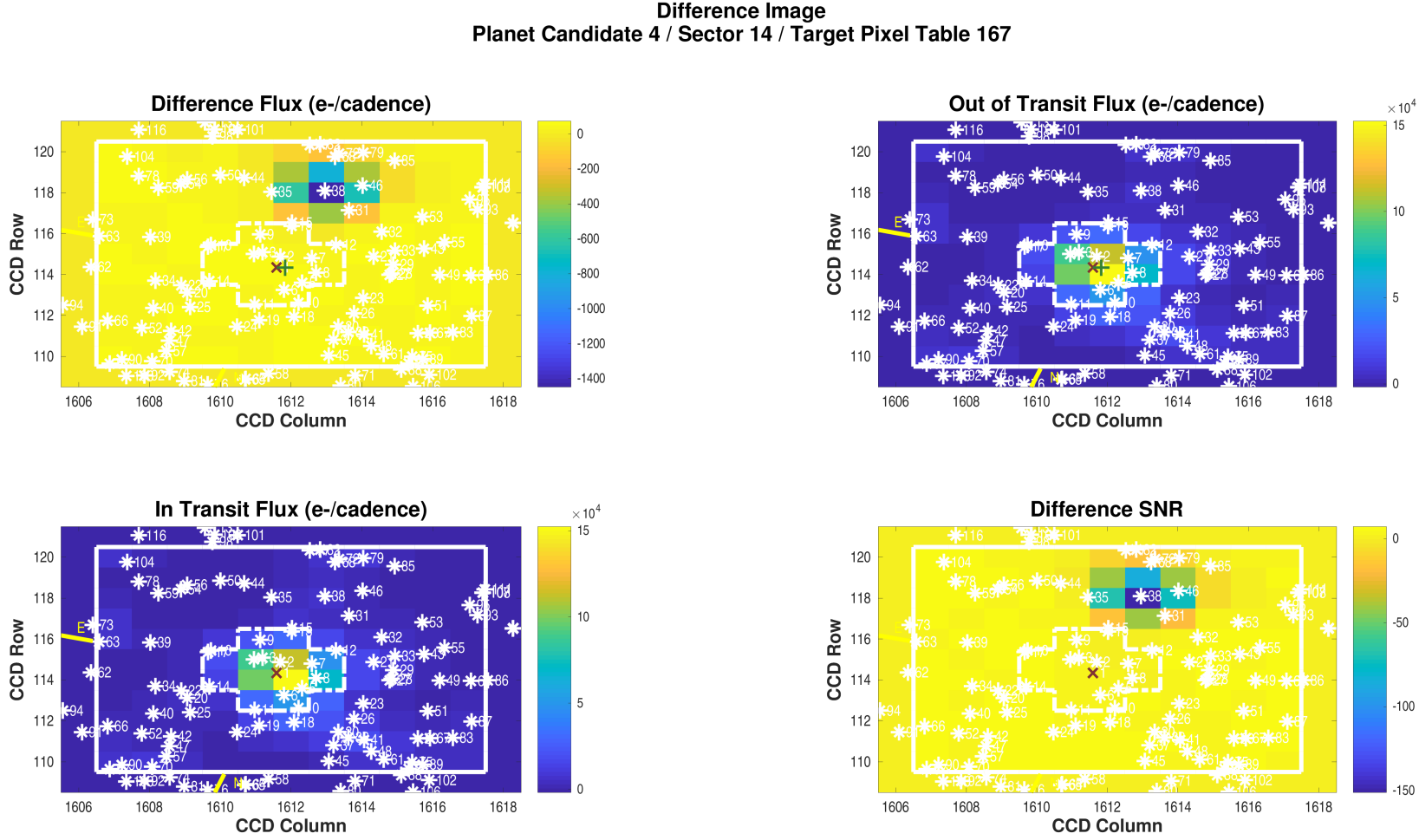
Difference image centroid offsets for target 169461816, planet candidate 4. Left: difference image PRF centroid offsets in RA and Dec with respect to the per sector out-of-transit centroids for the given target. Right: difference image PRF centroid offsets in RA and Dec with respect to the TC coordinates 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-04/difference-image/0000000169461816-04-difference-image-centroid-offsets.fig`



Difference image centroid offsets for target 169461816, planet candidate 4, 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-04/difference-image/0000000169461816-04-difference-image-centroid-offsets-survey.fig`

Difference Image Summary Metrics

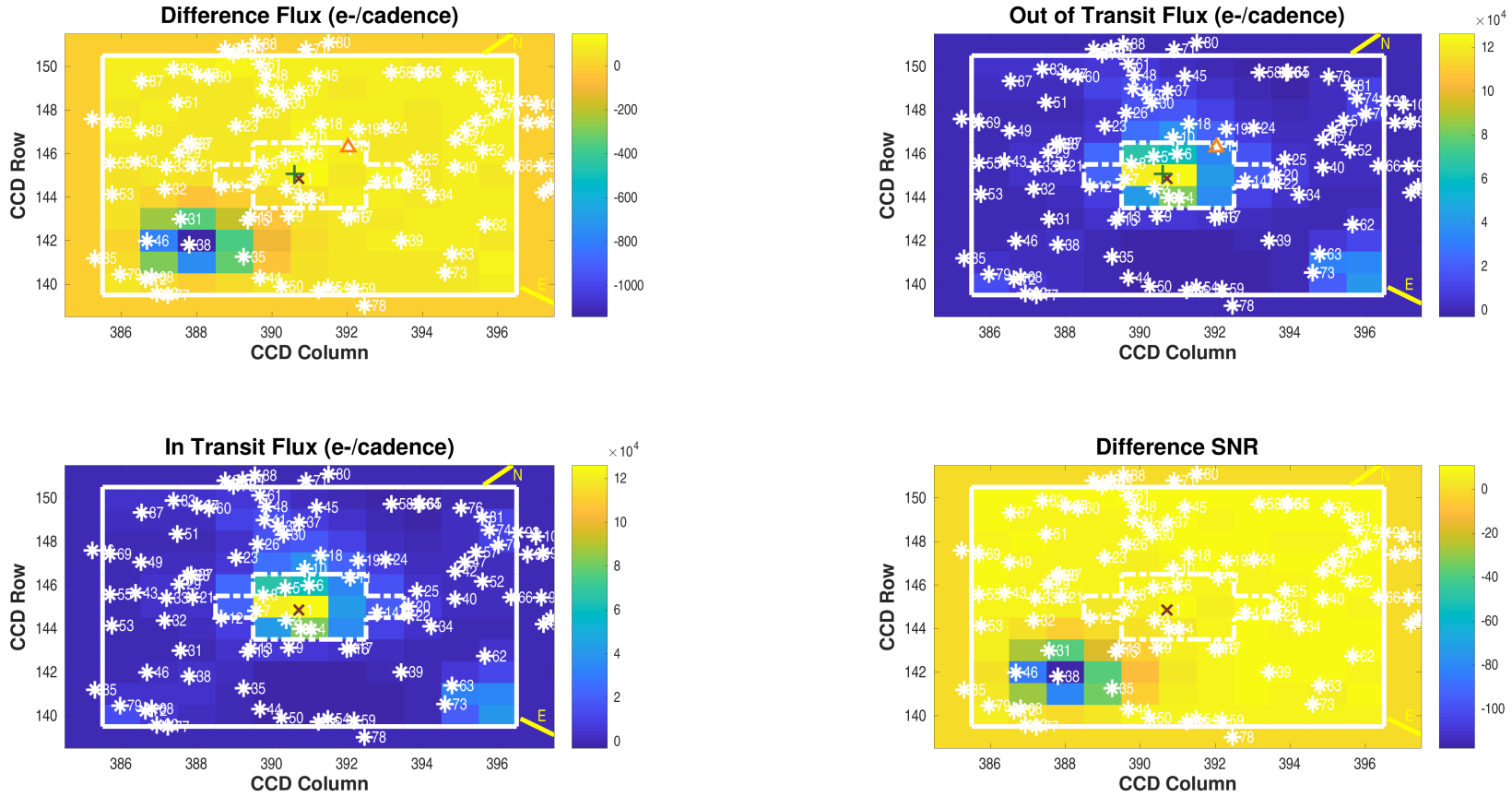
Number of Difference Images	Number of Metrics	Number of Good Metrics	Fraction of Good Metrics	Quality Threshold
2	1	0	0.0000	0.70



Difference image for target 169461816, planet candidate 4, 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 = 60; number of valid in-transit cadences = 687; number of in-transit cadence gaps = 9; number of valid out-of-transit cadences = 3324; number of out-of-transit cadence gaps = 53. Difference image quality metric = N/A. Transits used to compute this difference image are overlapped by those of other candidates on this target.
Open `./planet-04/difference-image/0000000169461816-04-difference-image-14-167.fig`

PRF Fit of the Difference Image

The out of transit image centroid and difference image centroid could not be calculated for target 169461816, planet candidate 4, in target table 167.



Difference image for target 169461816, planet candidate 4, 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 = 81; number of valid in-transit cadences = 932; number of in-transit cadence gaps = 14; number of valid out-of-transit cadences = 4498; number of out-of-transit cadence gaps = 56. Difference image quality metric = 0.11 (not good). Transits used to compute this difference image are overlapped by those of other candidates on this target. Open `./planet-04/difference-image/0000000169461816-04-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	$145.06 \pm 2.55e-05$	$390.60 \pm 3.13e-05$	pixels	$297.45204983 \pm 1.02e-06$	$41.01148878 \pm 9.94e-07$	degrees
Difference Image Centroid	$146.28 \pm 3.95e-02$	$392.02 \pm 4.00e-02$	pixels	$297.45422461 \pm 2.15e-04$	$41.02105448 \pm 2.39e-04$	degrees
Offset	$1.2194 \pm 3.95e-02$	$1.4274 \pm 4.00e-02$	pixels	$5.9078 \pm 5.83e-01$	$34.4365 \pm 8.59e-01$	arcseconds
Offset/σ	30.85	35.65		10.13	40.08	
Offset Distance	$1.8774 \pm 4.23e-02$		pixels	$34.9396 \pm 8.55e-01$		arcseconds
Offset Distance/σ	44.33			40.85		

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

	Row	Column	Units	RA	Dec	Units
TIC Reference Centroid	$144.85 \pm 1.70e-04$	$390.71 \pm 1.78e-04$	pixels	$297.45374485 \pm 0.00e+00$	$41.01102184 \pm 0.00e+00$	degrees
Difference Image Centroid	$146.28 \pm 3.95e-02$	$392.02 \pm 4.00e-02$	pixels	$297.45422461 \pm 2.15e-04$	$41.02105448 \pm 2.39e-04$	degrees
Offset	$1.4363 \pm 3.95e-02$	$1.3112 \pm 4.00e-02$	pixels	$1.3033 \pm 5.83e-01$	$36.1175 \pm 8.59e-01$	arcseconds
Offset/σ	36.33	32.75		2.23	42.03	
Offset Distance	$1.9448 \pm 4.23e-02$		pixels	$36.1410 \pm 8.60e-01$		arcseconds
Offset Distance/σ	45.97			42.05		

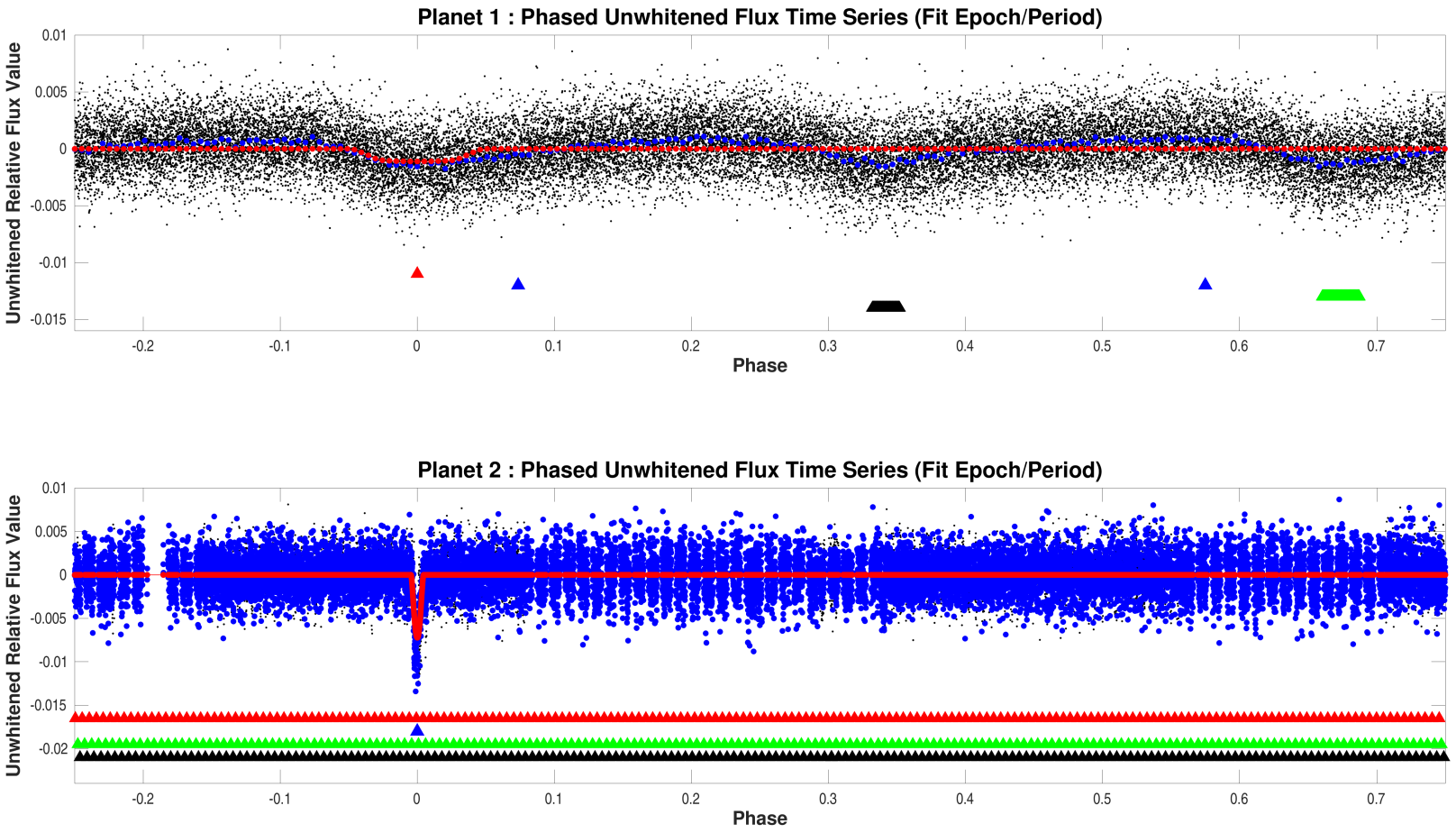
5.5 Difference Image TIC Key

Index	Catalog ID	Mag	RA (degrees)	Dec (degrees)	Distance (arcsec)
1	169461816	10.931	297.45374481	41.01102181	0.00
2	169461804	15.953	297.45409600	41.00809678	10.57
3	169461803	15.677	297.45820584	41.00778086	16.82
4	169461807	17.264	297.45978958	41.00861478	18.57
5	169461826	15.228	297.44687425	41.01380788	21.19
6	169461838	15.835	297.44983053	41.01638699	22.05
7	169461795	16.572	297.44749722	41.00708353	22.11
8	169461813	12.562	297.44508432	41.01059358	23.58
9	169461774	17.288	297.46054701	41.00334321	33.25
10	169461844	13.535	297.44552048	41.01903436	36.49
11	169461864	17.115	297.45429767	41.02143274	37.51
12	169461772	17.243	297.44395582	41.00267269	40.13
13	169461762	15.641	297.45502131	40.99979700	40.56
14	169461840	17.067	297.46601285	41.01750699	40.69
15	1879946652	17.158	297.45531125	40.99893625	43.72
16	169461806	15.677	297.46949452	41.00824396	43.94
17	1879946665	17.185	297.46993306	41.00877540	44.71
18	169461869	13.491	297.44495563	41.02286867	48.88
19	169461881	14.811	297.45170634	41.02526708	51.58
20	169461862	15.192	297.46935280	41.02138853	56.48
21	169461779	15.607	297.43506391	41.00393214	56.80
22	169461855	16.249	297.47131217	41.01979589	57.23
23	169461834	17.397	297.43278170	41.01497751	58.70
24	169461890	16.246	297.45557080	41.02788978	60.93
25	169461879	15.402	297.46719143	41.02494783	62.03
26	169461847	16.134	297.43304182	41.01928893	63.63
27	1879946792	17.376	297.42982295	41.00789952	65.95
28	169461802	16.274	297.42954647	41.00743474	66.99
29	169461786	17.100	297.43017043	41.00512714	67.46
30	169461873	15.151	297.43483018	41.02336670	67.93
31	169461738	16.998	297.44497437	40.99323049	68.34
32	169461757	15.861	297.43598786	40.99726602	69.13
33	169461769	14.672	297.43131287	41.00147322	69.96
34	169556308	17.309	297.47712777	41.01979706	70.94
35	169461733	16.355	297.46276098	40.99196477	72.85
36	169461877	16.252	297.43220518	41.02434452	75.66
37	169461886	17.120	297.43442023	41.02696418	77.78
38	169461717	14.426	297.45196880	40.98932219	78.27

Index	Catalog ID	Mag	RA (degrees)	Dec (degrees)	Distance (arcsec)
39	169556349	15.720	297.48273201	41.00887518	79.12
40	169556282	15.540	297.47464008	41.02687851	80.50
41	169461876	13.510	297.42875093	41.02425399	82.94
42	169461905	15.951	297.46858553	41.03190343	85.30
43	169461763	17.252	297.42557963	40.99969322	86.70
44	169461719	17.234	297.46979840	40.98962471	88.52
45	169461899	16.810	297.43376006	41.03118837	90.65
46	169461710	17.348	297.44482349	40.98630144	92.23
47	169461919	16.330	297.46794577	41.03449573	92.89
48	169461885	15.611	297.42605391	41.02684852	94.36
49	169461787	16.708	297.41956890	41.00569855	94.80
50	169556421	17.032	297.47494906	40.98997302	95.18
51	169461827	16.660	297.41878507	41.01403698	95.59
52	169556256	17.389	297.47489582	41.03247267	96.25
53	169461730	15.891	297.42925102	40.99164360	96.40
54	169556406	17.143	297.48208421	40.99393707	98.54
55	169461756	16.881	297.42207794	40.99713249	99.50
56	169556412	17.382	297.48133264	40.99253655	100.22
57	169461930	17.207	297.46744974	41.03721256	101.37
58	169461933	17.087	297.44416958	41.03845804	102.14
59	169556395	16.679	297.48633710	40.99592604	103.89
60	169461863	15.917	297.41787810	41.02149932	104.48
61	169461891	17.203	297.42264153	41.02834079	105.01
62	169556312	15.662	297.49173036	41.01917420	107.28
63	169556340	16.190	297.49328279	41.01094121	107.41
64	169461944	16.374	297.44826800	41.04082100	108.30
65	1879946854	16.880	297.44833672	41.04103807	109.05
66	169556257	17.037	297.48265518	41.03212484	109.27
67	169461859	16.851	297.41547766	41.02087621	109.84
68	169461696	16.448	297.45348660	40.98017033	111.07
69	169461782	17.034	297.41314519	41.00443509	112.81
70	169461942	17.140	297.46924164	41.04049122	114.14
71	169461921	16.148	297.42625261	41.03508539	114.38
72	169461693	17.455	297.45300867	40.97920566	114.56
73	169556354	17.235	297.49635958	41.00694839	116.69
74	169461948	16.295	297.46458117	41.04241125	116.77
75	169461888	16.328	297.41655871	41.02774743	117.60
76	169461952	16.805	297.45548410	41.04387536	118.37

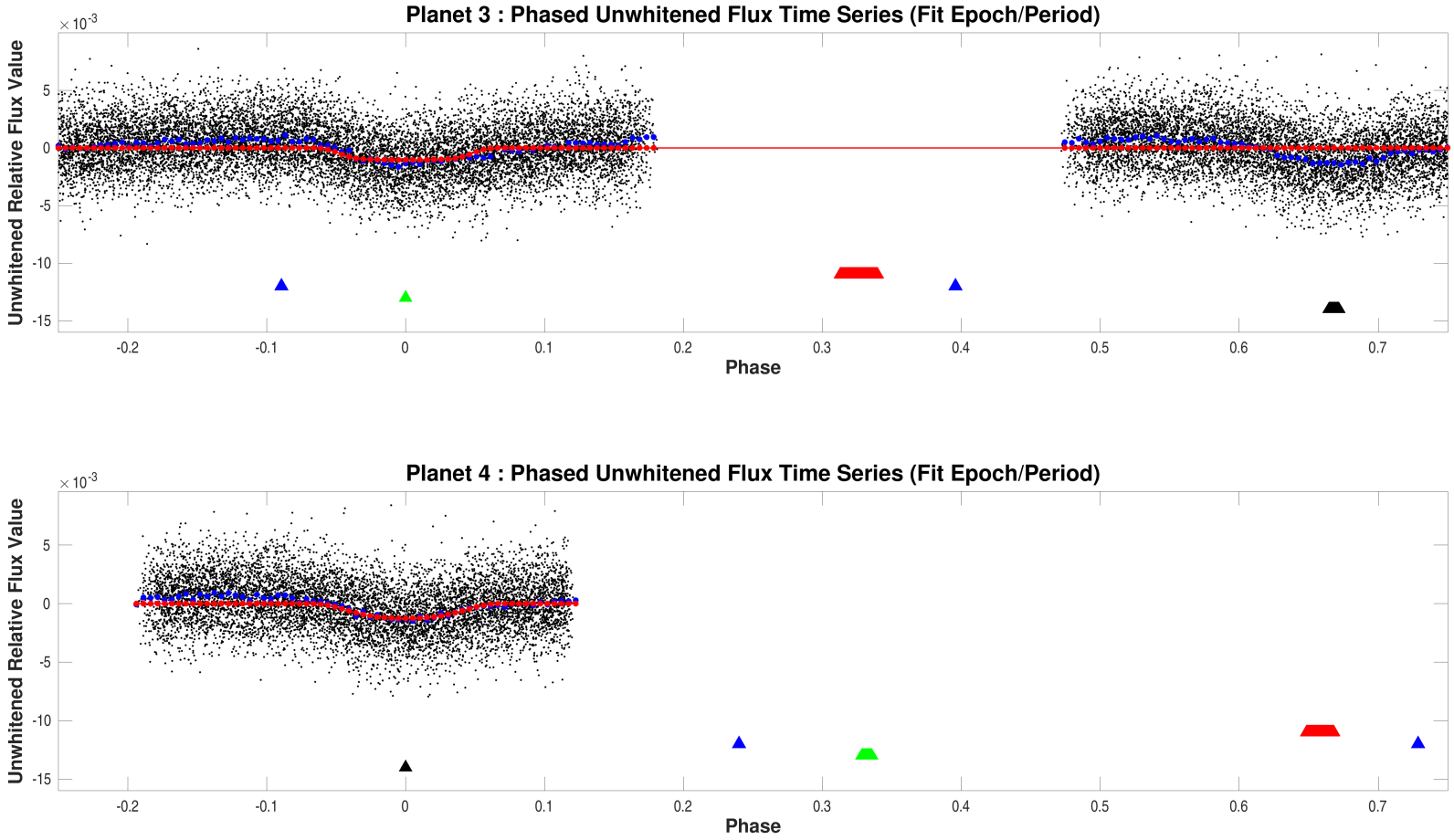
RA, Dec and Distances are corrected for proper motion. This table may not contain all of the objects shown.

6 Phased Light Curves



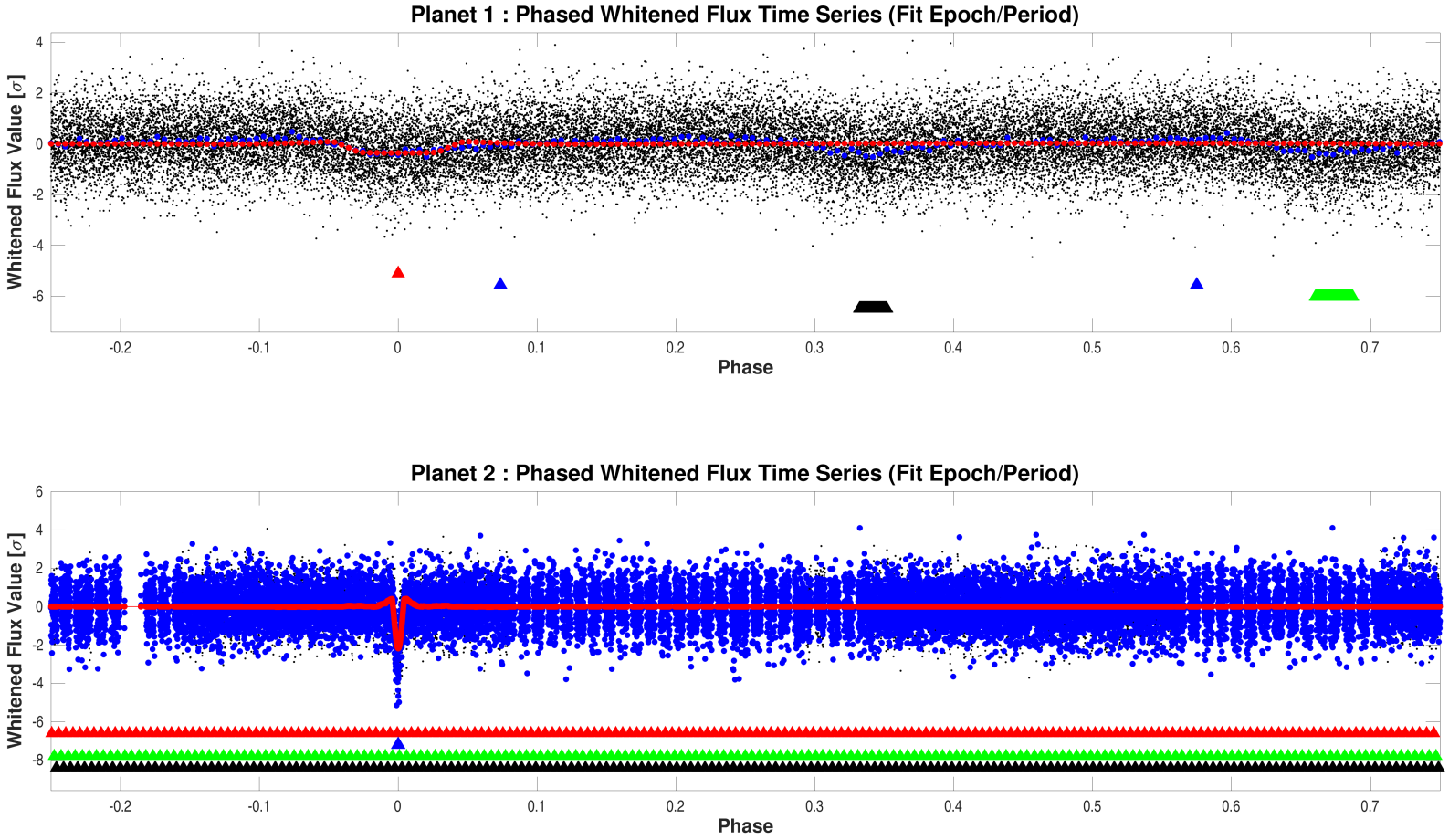
Phased unwhitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased unwhitened flux time series 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/0000000169461816-01-phased-unwhitened-flux-time-series.fig`

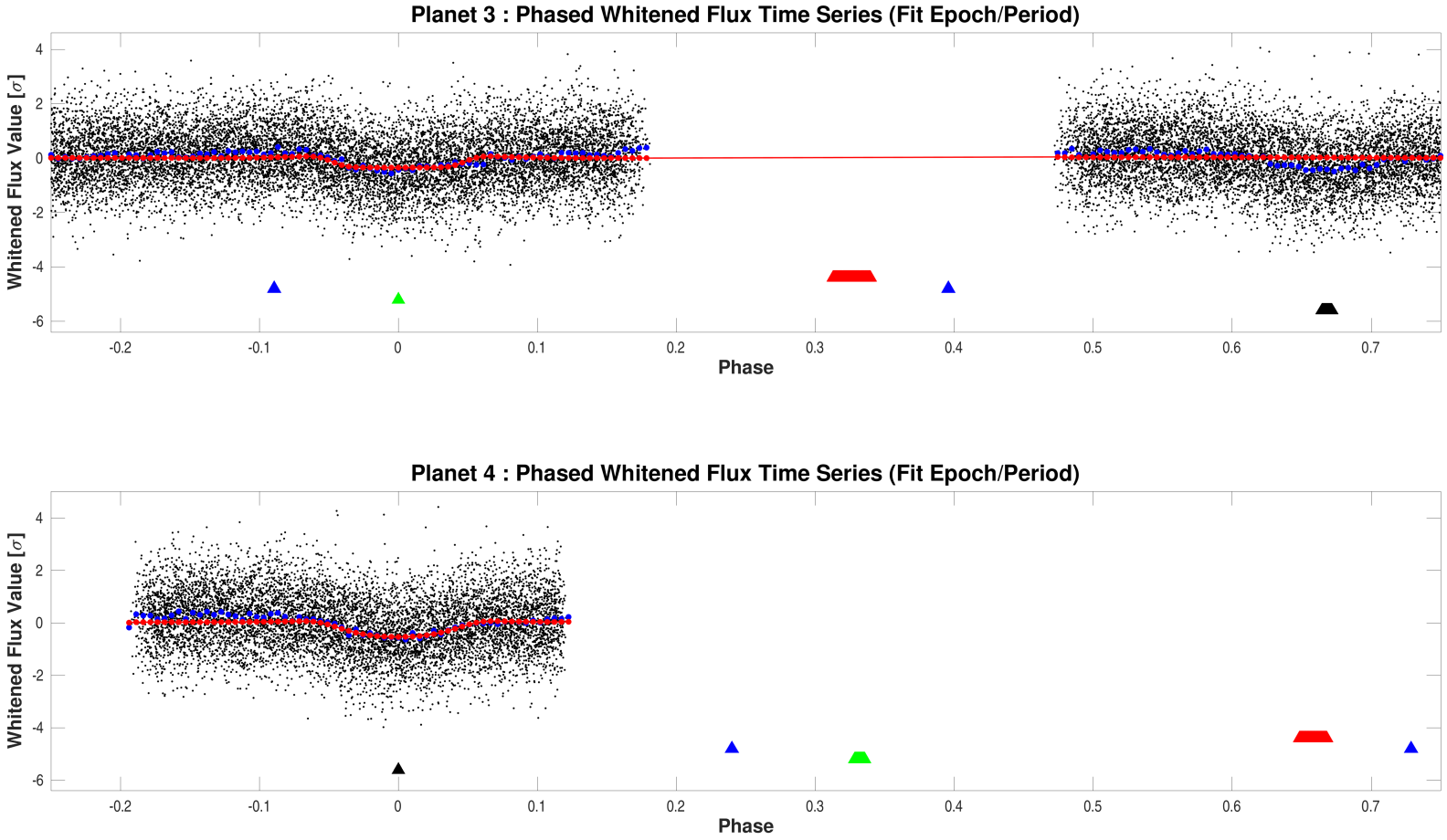


Phased unwhitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased unwhitened flux time series 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.

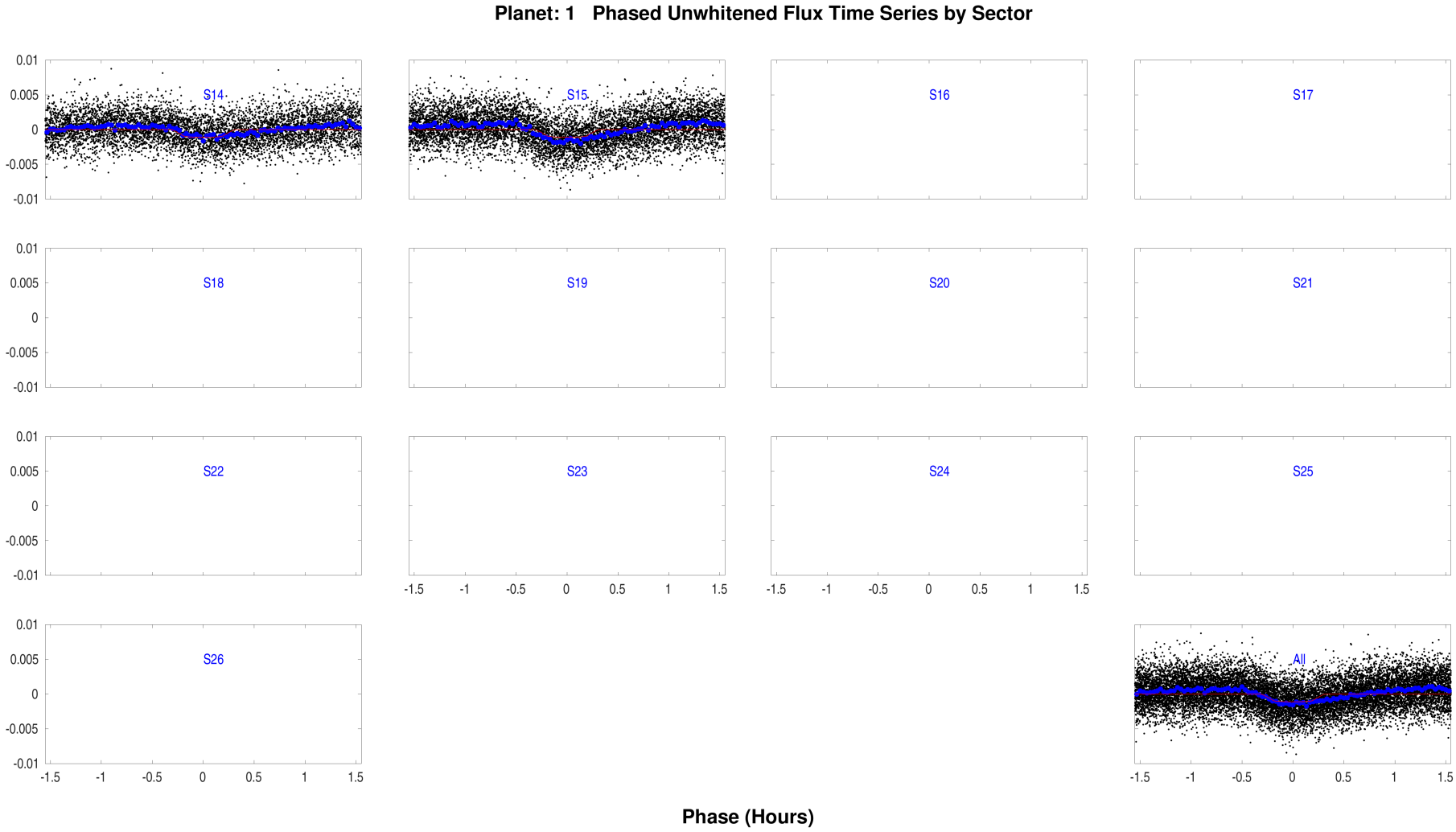
Open `./summary-plots/0000000169461816-03-phased-unwhitened-flux-time-series.fig`



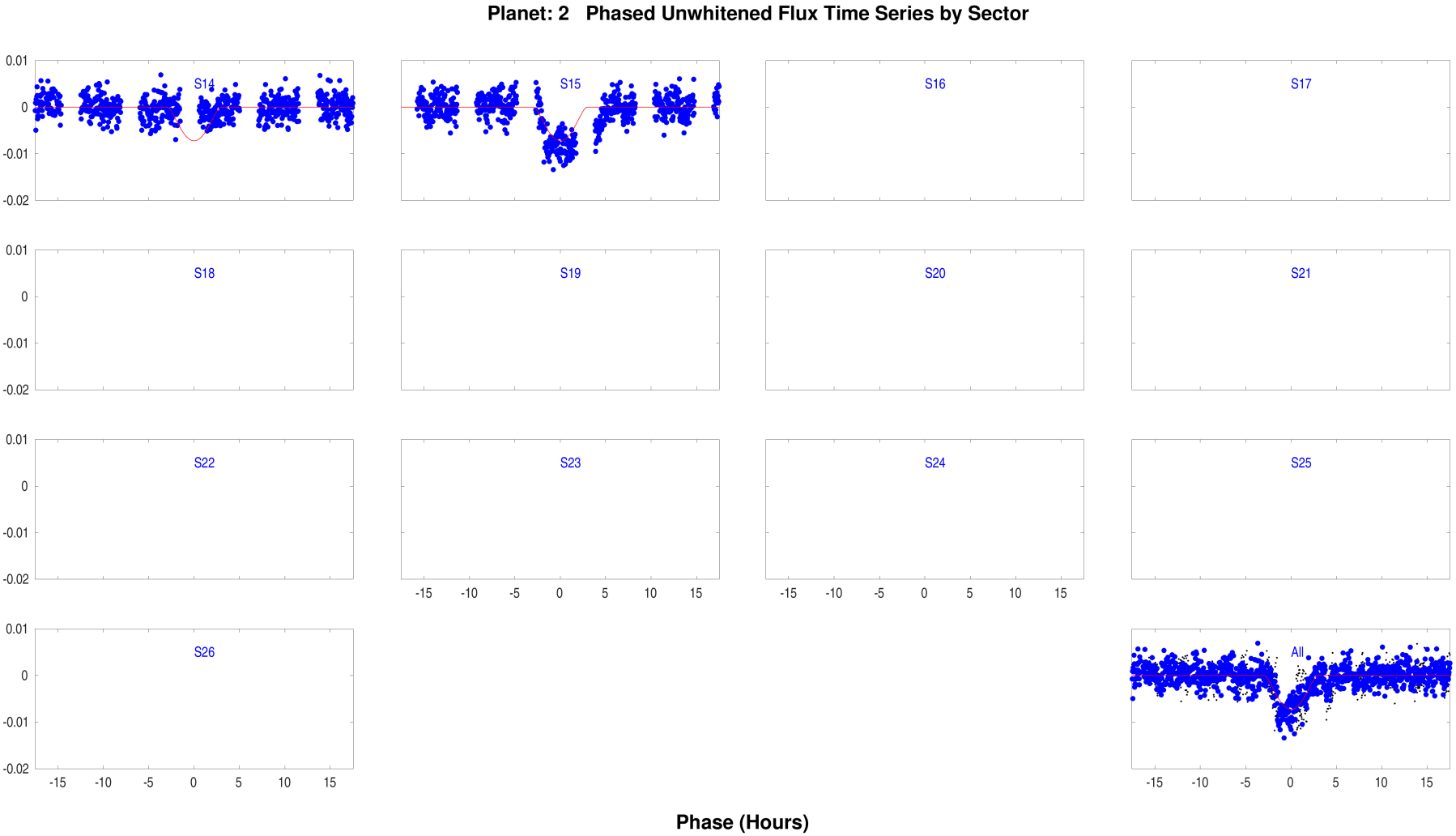
Phased whitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased whitened flux time series 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/0000000169461816-01-phased-whitened-flux-time-series.fig`



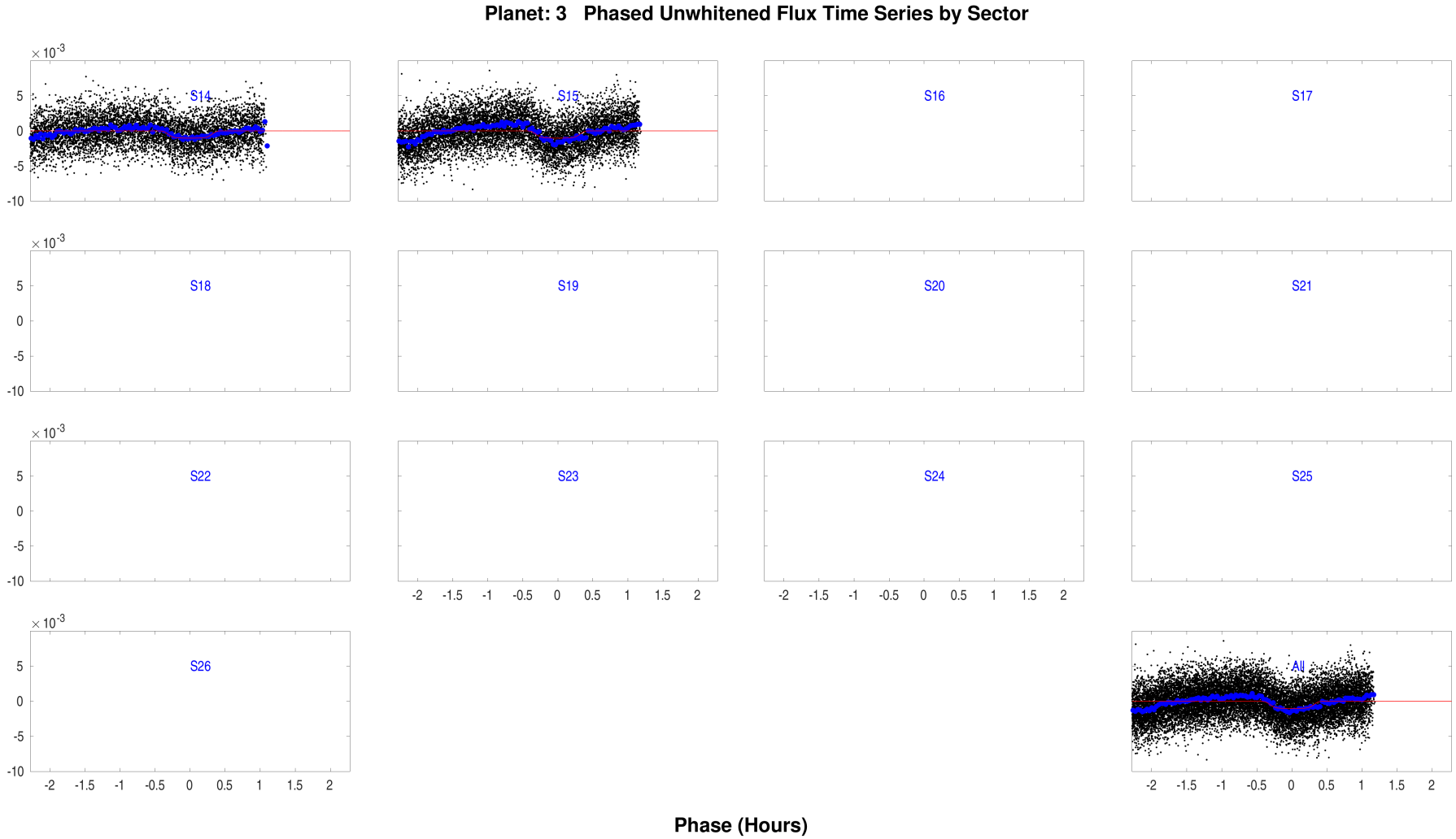
Phased whitened flux time series is plotted in black dots. When all transits fit completed with full or secondary convergence, the phase is determined with the fitted epoch and period; otherwise, the phase is determined with the TPS epoch and period. The values of the phased whitened flux time series 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/0000000169461816-03-phased-whitened-flux-time-series.fig`



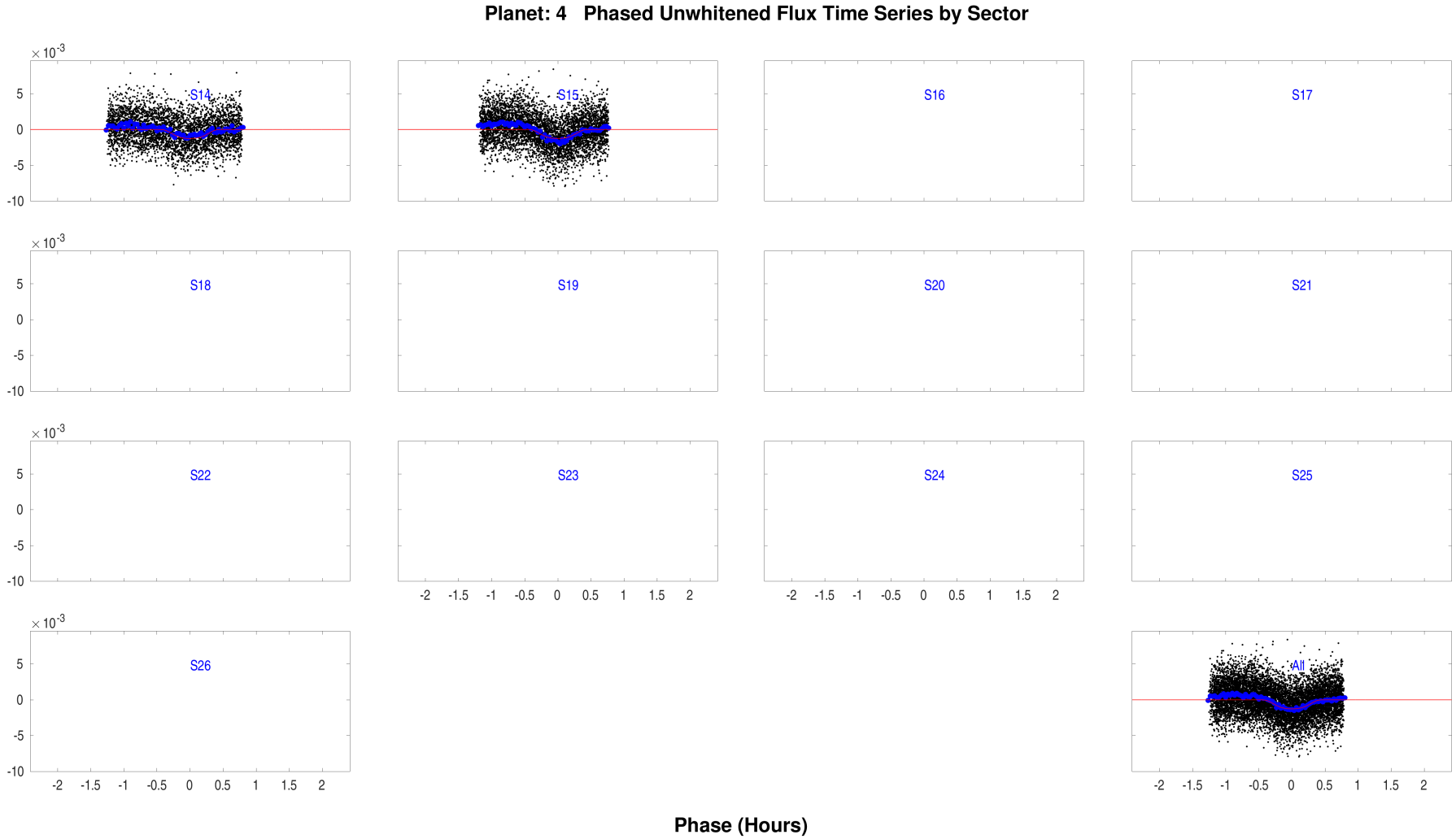
Phased unwhitened flux time series by sector for target 169461816, planet candidate 1. Period = 0.27234 days; transit epoch = 1683.5074 BTJD.
Open `./summary-plots/0000000169461816-01-phased-unwhitened-flux-time-series-by-sector.fig`



Phased unwhitened flux time series by sector for target 169461816, planet candidate 2. Period = 26.8256 days; transit epoch = 1702.3188 BTJD.
Open `./summary-plots/0000000169461816-02-phased-unwhitened-flux-time-series-by-sector.fig`



Phased unwhitened flux time series by sector for target 169461816, planet candidate 3. Period = 0.2723 days; transit epoch = 1683.4223 BTJD.
Open `./summary-plots/0000000169461816-03-phased-unwhitened-flux-time-series-by-sector.fig`



Phased unwhitened flux time series by sector for target 169461816, planet candidate 4. Period = 0.27231 days; transit epoch = 1683.6032 BTJD.
Open `./summary-plots/0000000169461816-04-phased-unwhitened-flux-time-series-by-sector.fig`

7 Planet Candidate 1

7.1 Model Fitter: All Transits

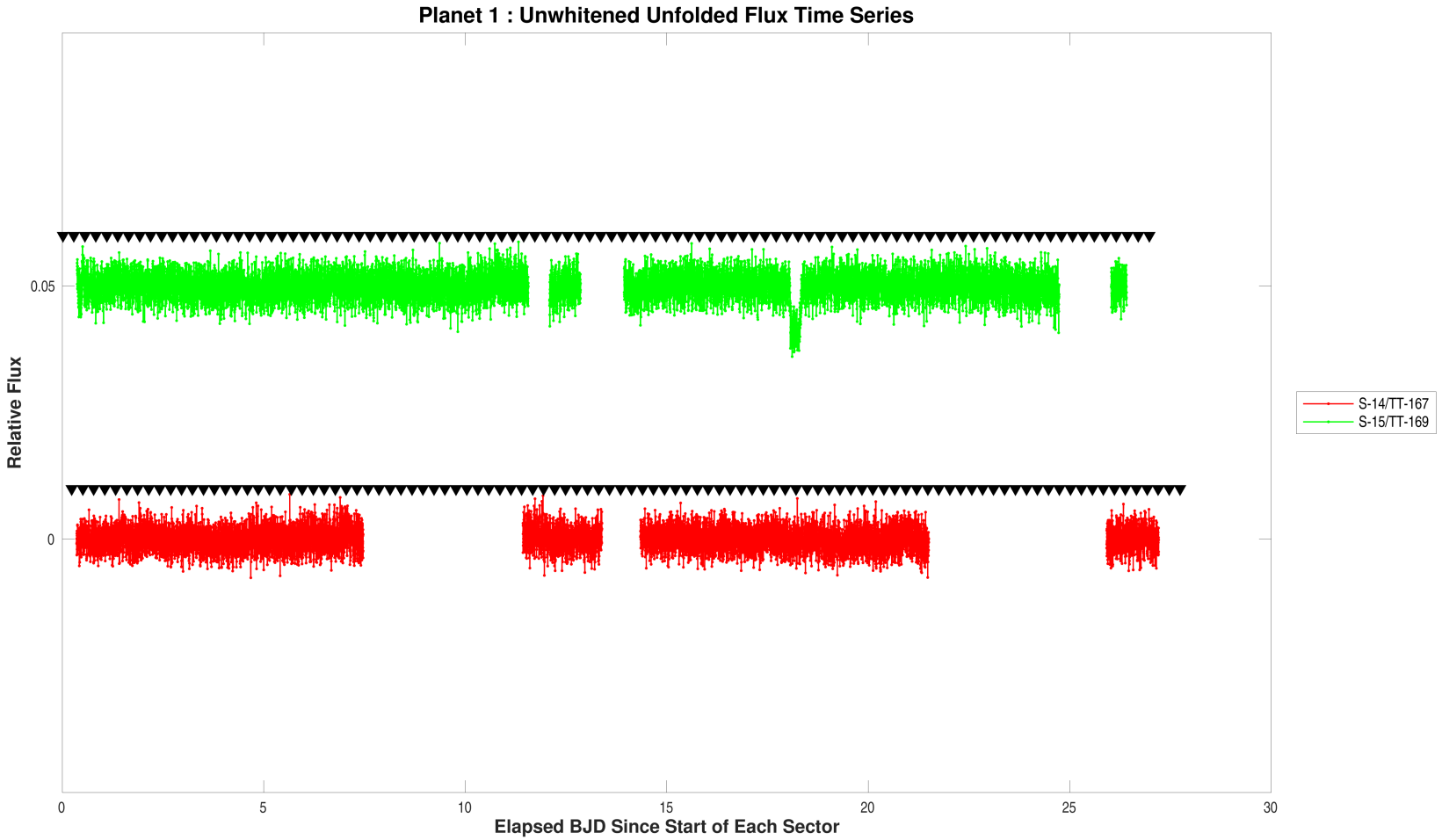
Model Characteristic	Name
Transit Model	mandel-agol_geometric_transit_model
Limb Darkening Model	claret_tess_nonlinear_limb_darkening_model

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.5067029	TJD
Orbital Period	0.2723054	days
Maximum SES	8.8	
Maximum MES	11.4	
Robust Statistic	13.2	
Chi Square Goodness of Fit Statistic (DoF)	1932.5 (2180)	
Chi Square2 Statistic (DoF)	173.8 (161.2)	
Threshold for Desired PFA		

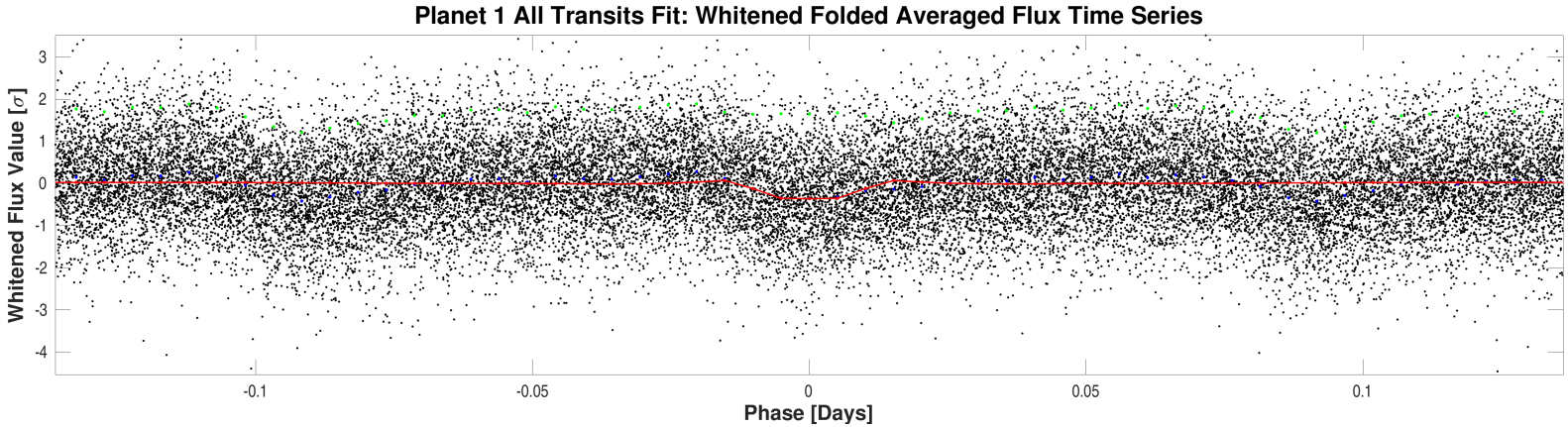
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	15.1		
Orbital Period	0.2723372	7.8606e-06	days
Transit Epoch	1683.5074480	3.9619e-04	BTJD
Impact Parameter	0.3000	1.4314e+01	
Planet Radius to Star Radius Ratio	0.0315204	2.0989e-02	
Semi-major Axis to Star Radius Ratio	4.0250	1.7736e+01	
Planet Radius	5.1311	3.4245e+00	Earth radii
Semi-major Axis	0.0093	6.9147e-04	AU
Effective Stellar Flux	48436.1106	7.3872e+03	Goldilocks
Equilibrium Temperature	3784	1.4427e+02	Kelvin
Stellar Density	11.8119	1.5615e+02	Solar density
Transit Depth	1110	9.0443e+01	ppm
Transit Duration	0.5169	1.6538e-01	hours
Transit Ingress Duration	0.0176	1.7785e-01	hours
Eccentricity	0.0000	0.0000e+00	
Peri Longitude	0.0000	0.0000e+00	degrees
Model Chi Square Statistic (DoF)	11014.8 (13603.0)		
Model Chi Square Goodness of Fit Statistic (DoF)	1611.7 (2806)		
Model Chi Square2 Statistic (DoF)	112.3 (148)		

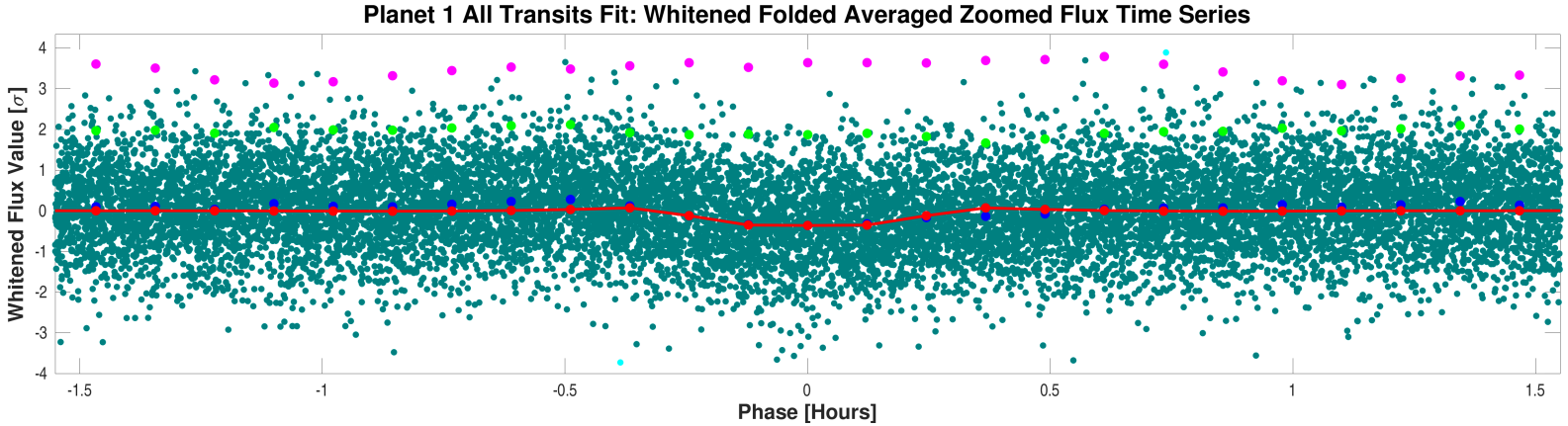
DoF: Degrees of Freedom



Flux time series for CatId 169461816, 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 0.05. 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/0000000169461816-01-all-unwhitened-14-167.fig`



Folded flux time series for CatId 169461816, 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/0000000169461816-01-all-whitened.fig`

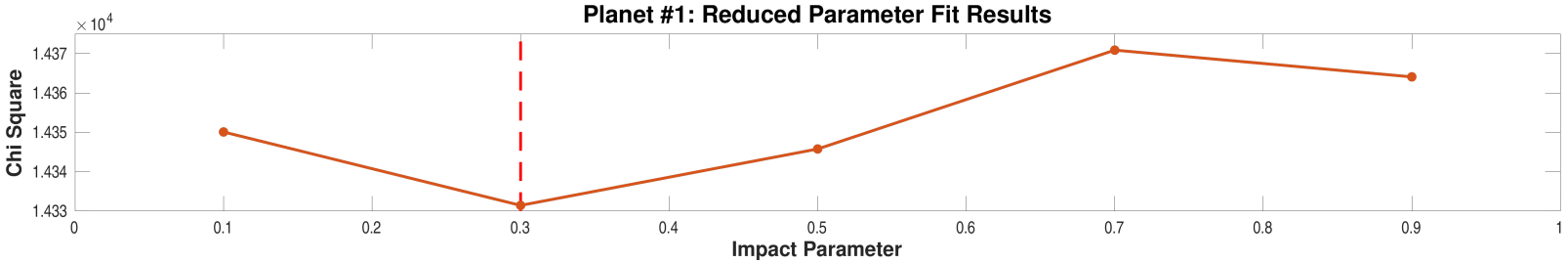


Folded flux time series for CatId 169461816, Planet candidate 1 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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/0000000169461816-01-all-whitened-zoomed.fig`

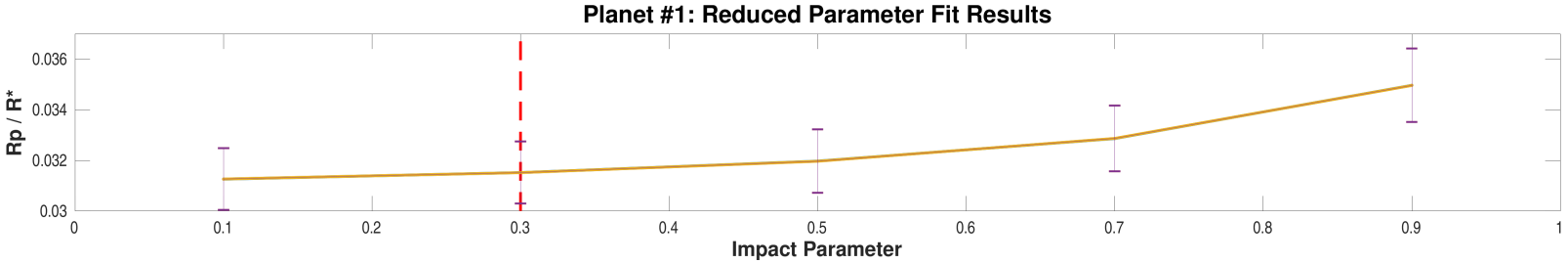
7.2 Model Fitter: Reduced Parameter Fit Results

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	15.7	14350.1	0.0312623	1.2207e-03	4.1815	1.5559e-01	1105	8.5765e+01	0.5161	1.9465e-02
0.30	15.8	14331.4	0.0315204	1.2260e-03	4.0250	1.4877e-01	1110	8.5815e+01	0.5169	1.9448e-02
0.50	15.8	14345.8	0.0319740	1.2505e-03	3.7148	1.3773e-01	1111	8.6393e+01	0.5155	1.9670e-02
0.70	15.7	14370.9	0.0328654	1.3008e-03	3.1738	1.1742e-01	1112	8.7520e+01	0.5157	2.0181e-02
0.90	15.3	14364.1	0.0349691	1.4487e-03	2.1377	7.7326e-02	1101	9.0513e+01	0.5549	2.4246e-02

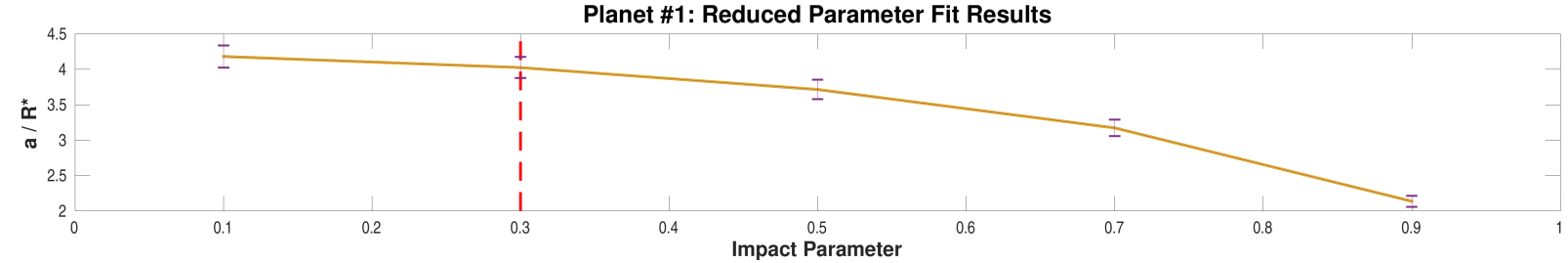
Highlighted row is the best reduced-parameter model fit.



Model chi squares of reduced parameter fits vs. impact parameter for CatId 169461816, 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/0000000169461816-01-reduced-fits-chi-square.fig`



Ratios of planet radius to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, 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/0000000169461816-01-reduced-fits-rp-over-rstar.fig`



Ratios of semimajor axis to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, 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/0000000169461816-01-reduced-fits-a-over-rstar.fig`

7.3 Model Fitter: Trapezoidal Fit Results

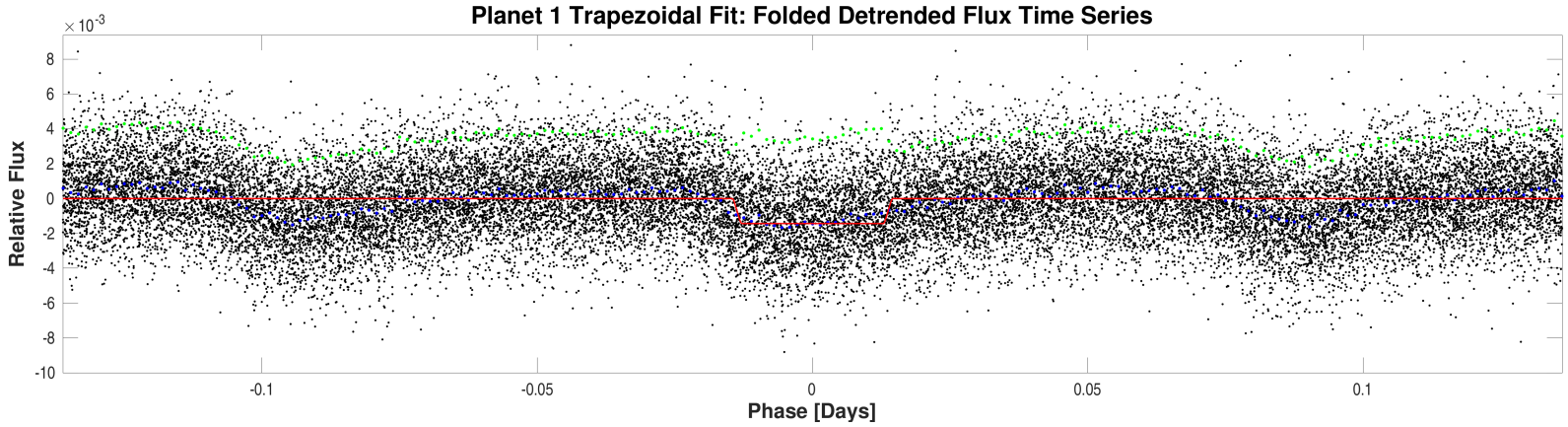
Model Characteristic	Name
Transit Model	trapezoidal_model
Limb Darkening Model	

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.5067029	TJD
Orbital Period	0.2723054	days
Maximum SES	8.8	
Maximum MES	11.4	
Robust Statistic	13.2	
Chi Square Goodness of Fit Statistic (DoF)	1932.5 (2180)	
Chi Square2 Statistic (DoF)	173.8 (161.2)	
Threshold for Desired PFA		

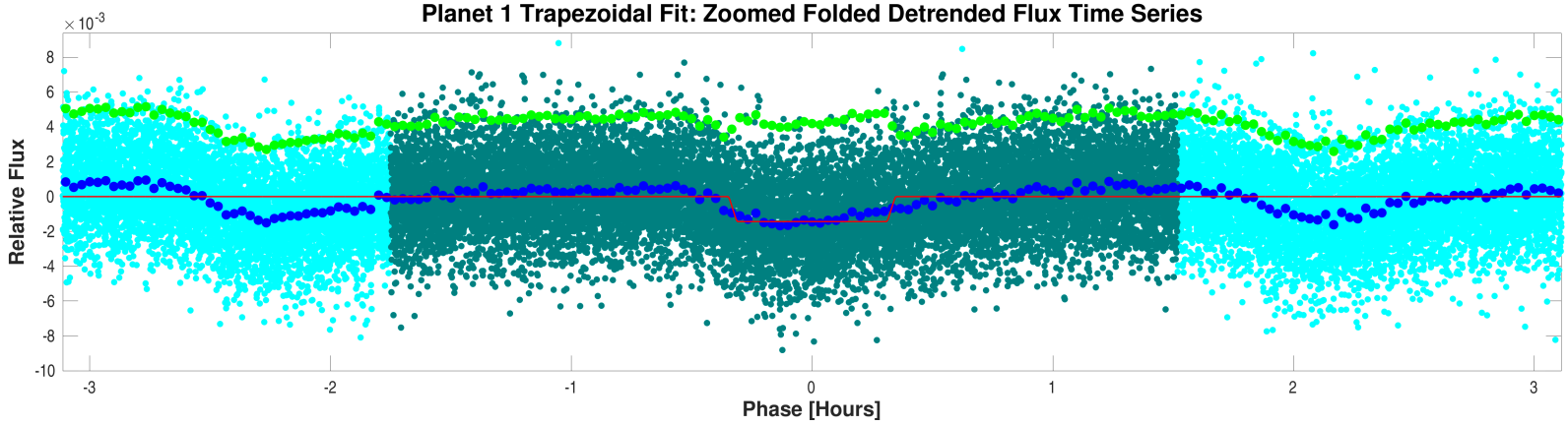
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	29.9		
Orbital Period	0.2723054		days
Transit Epoch	1683.5142881		BTJD
Transit Depth	1435		ppm
Transit Duration	1.0372		hours
Transit Ingress Duration	0.3790		hours
Model Chi Square Statistic (DoF)	29290.1 (14426)		

DoF: Degrees of Freedom



Folded detrended flux time series for CatId 169461816, Planet candidate 1 and folded trapezoidal model light curve.
Open `./planet-01/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-01-all-trapezoidal.fig`



Zoomed folded detrended flux time series for CatId 169461816, Planet candidate 1 and folded trapezoidal model light curve.
Open `./planet-01/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-01-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	0.27231		days		
Transit Duration	0.5		hours		
Maximum MES	11.4				
Secondary Phase	0.18481		days		
Secondary MES	13.6				
Minimum Phase	0.15876		days		
Minimum MES	-8.6				
Median MES	-1.8				
MAD MES	4.0288				
Robust Statistic	13.0				
Secondary Depth	984.7	6.9980e+01	ppm		
Geometric Albedo	1.8	2.3968e+00		0.3286	37.12
Planet Effective Temperature	6764	2.2578e+03	Kelvin	1.3174	9.39

7.4.2 Eclipsing Binary Discrimination Test

Result	Value	Value in Sigmas	Significance (%)
Odd Even Transit Depth Comparison Statistic	1.4072e-18	0.0000	100.00
Shorter Period Comparison Statistic	4.7100e-07	0.0007	0.05
Longer Period Comparison Statistic	1.1817e+04	108.7055	100.00

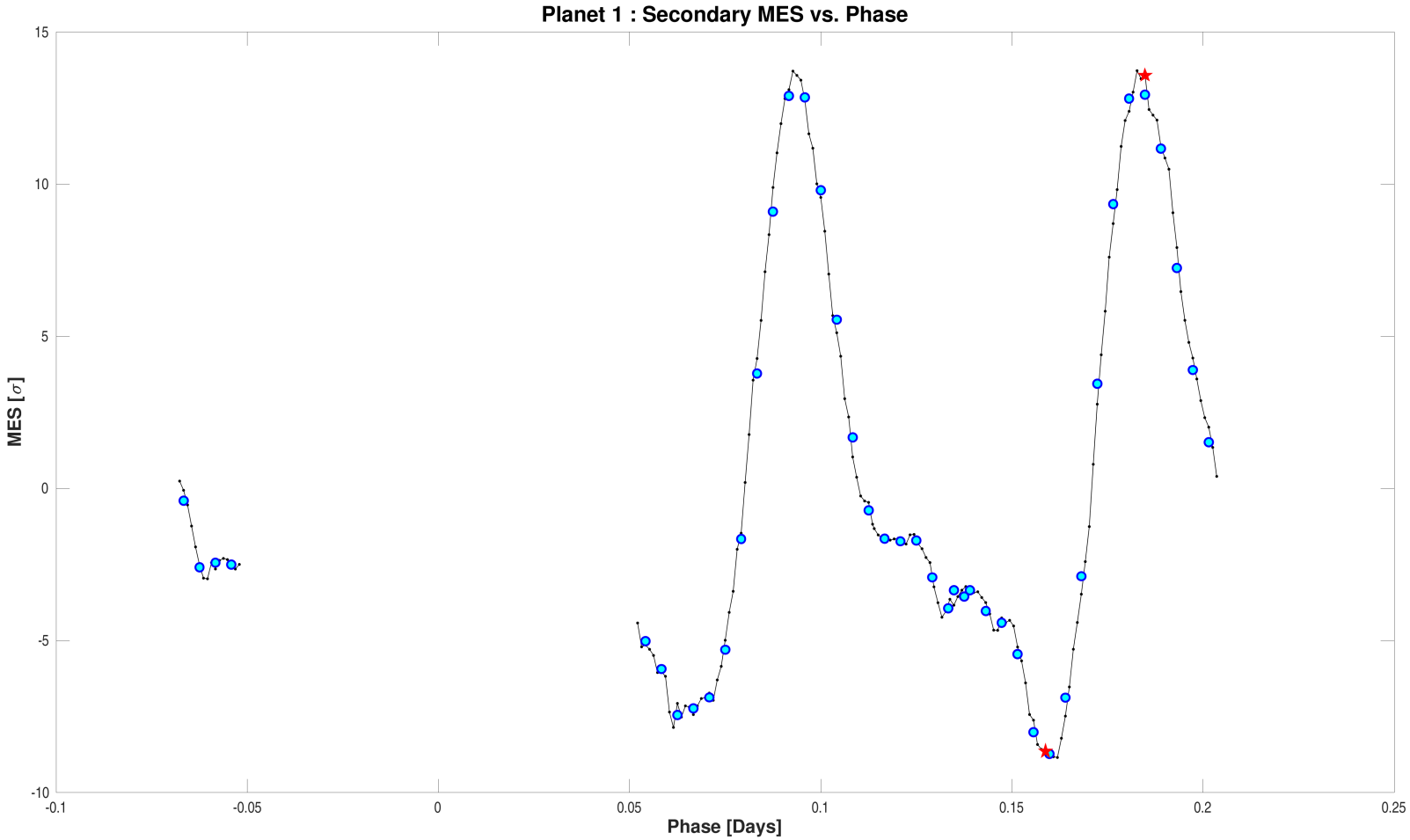
7.4.3 Bootstrap Test

```
No bootstrap results available.
```

7.4.4 Ghost Diagnostic Test

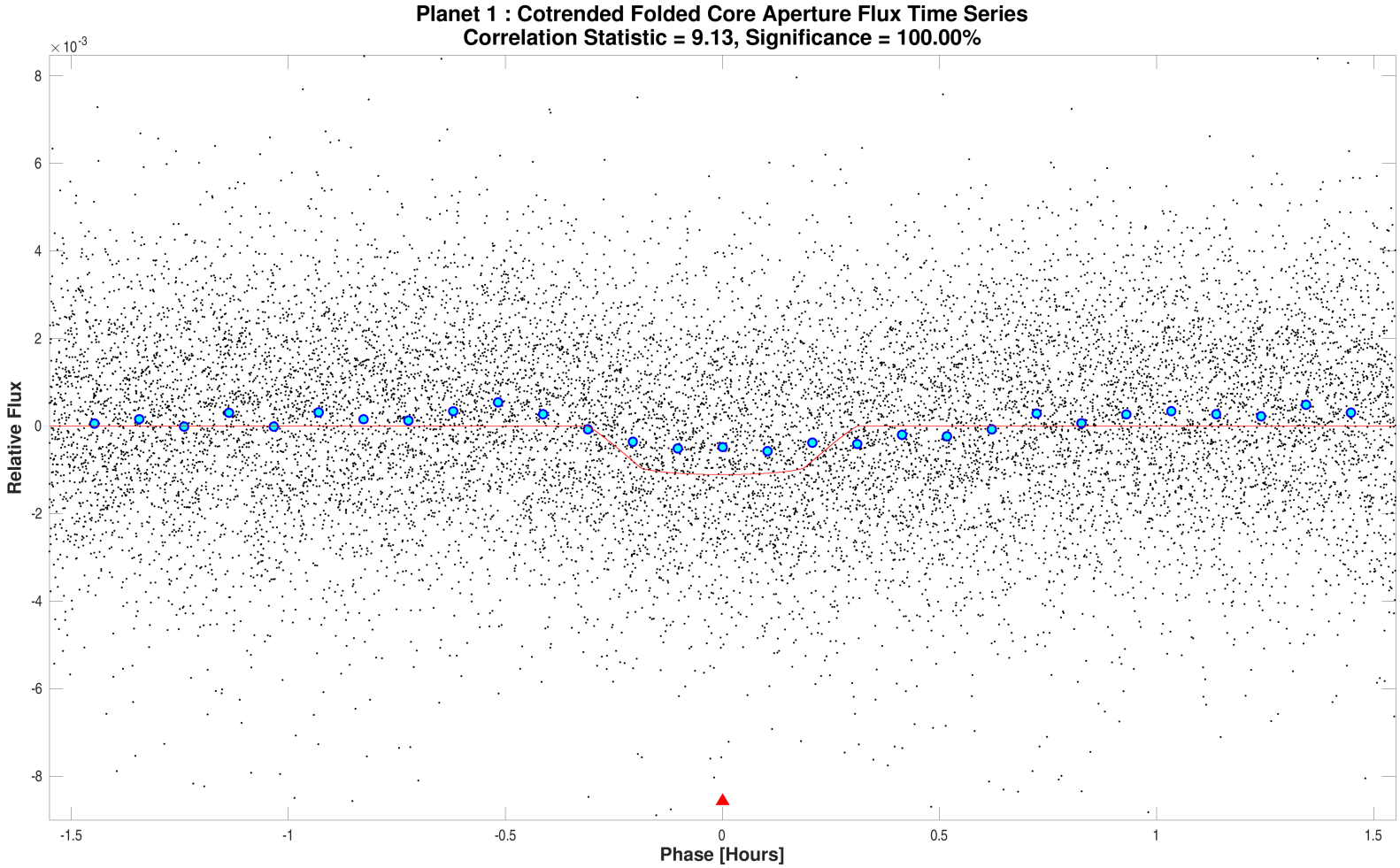
Result	Value	Significance (%)
Maximum MES	11.4	
SNR	15.1	
Core Aperture Statistic	9.1346e+00	100.00
Halo Aperture Statistic	1.3128e+01	100.00
Ratio of Core/Halo Aperture Statistics	6.9580e-01	

7.4.5 Validation Test Figures



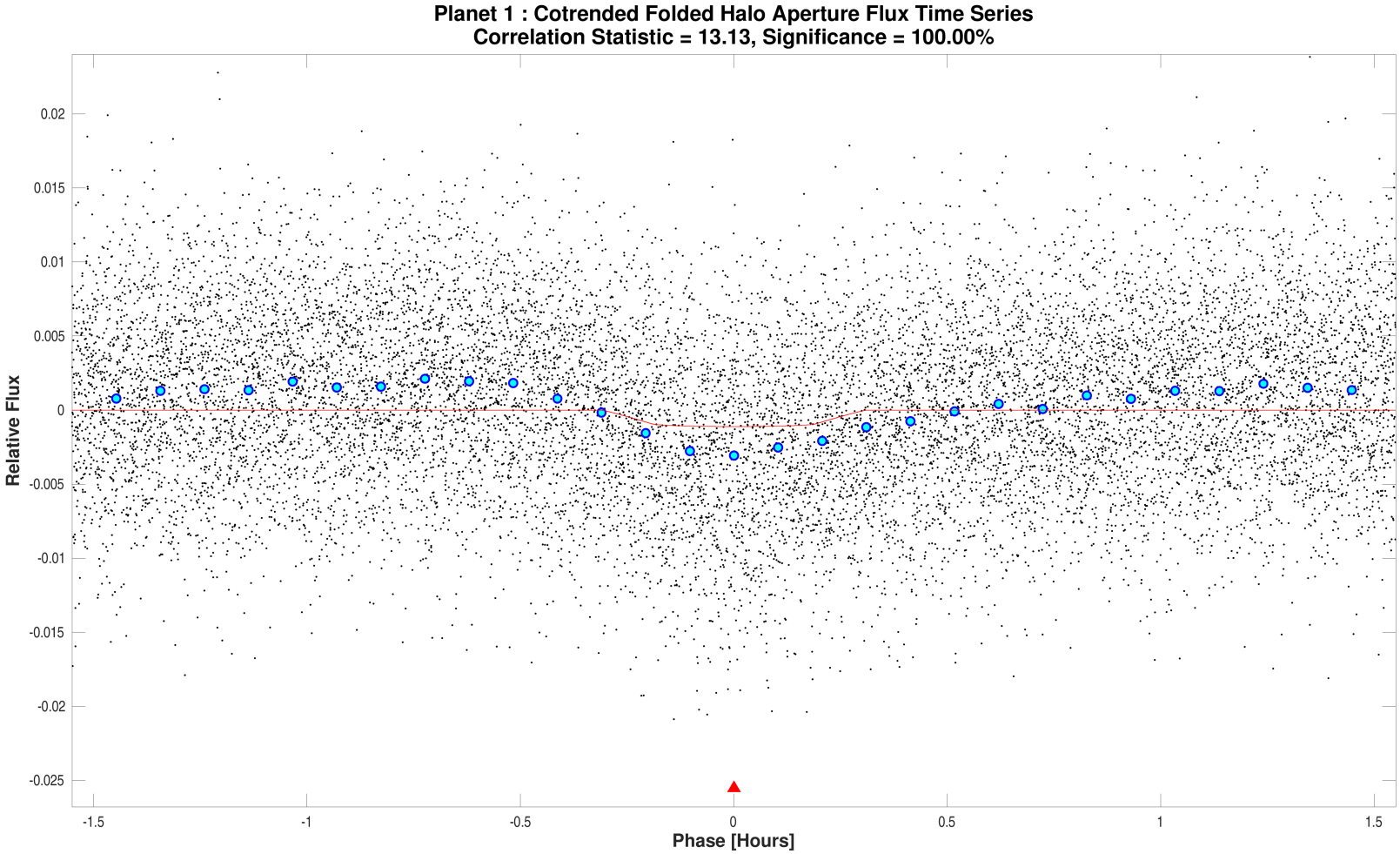
The primary event has been set to zero and both the max and min of the resulting MES vs. Phase are marked with a red star. The best matched pulse duration in hours is 0.5. The maximum secondary MES and corresponding phase are 13.5756 and 0.18481 days respectively. The minimum secondary MES and corresponding phase are -8.6429 and 0.15876 days respectively.
Open `./planet-01/report-summary/0000000169461816-01-weak-secondary-diagnostic.fig`

No figures named 0000000169461816-01-bootstrap-false-alarm.fig are available.



Optical ghost diagnostic core aperture flux time series for target 169461816, 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/0000000169461816-01-core-unwhitened-cotrended-zoomed-model.fig`



Optical ghost diagnostic halo aperture flux time series for target 169461816, 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/0000000169461816-01-halo-unwhitened-cotrended-zoomed-model.fig`

8 Planet Candidate 2

8.1 Model Fitter: All Transits

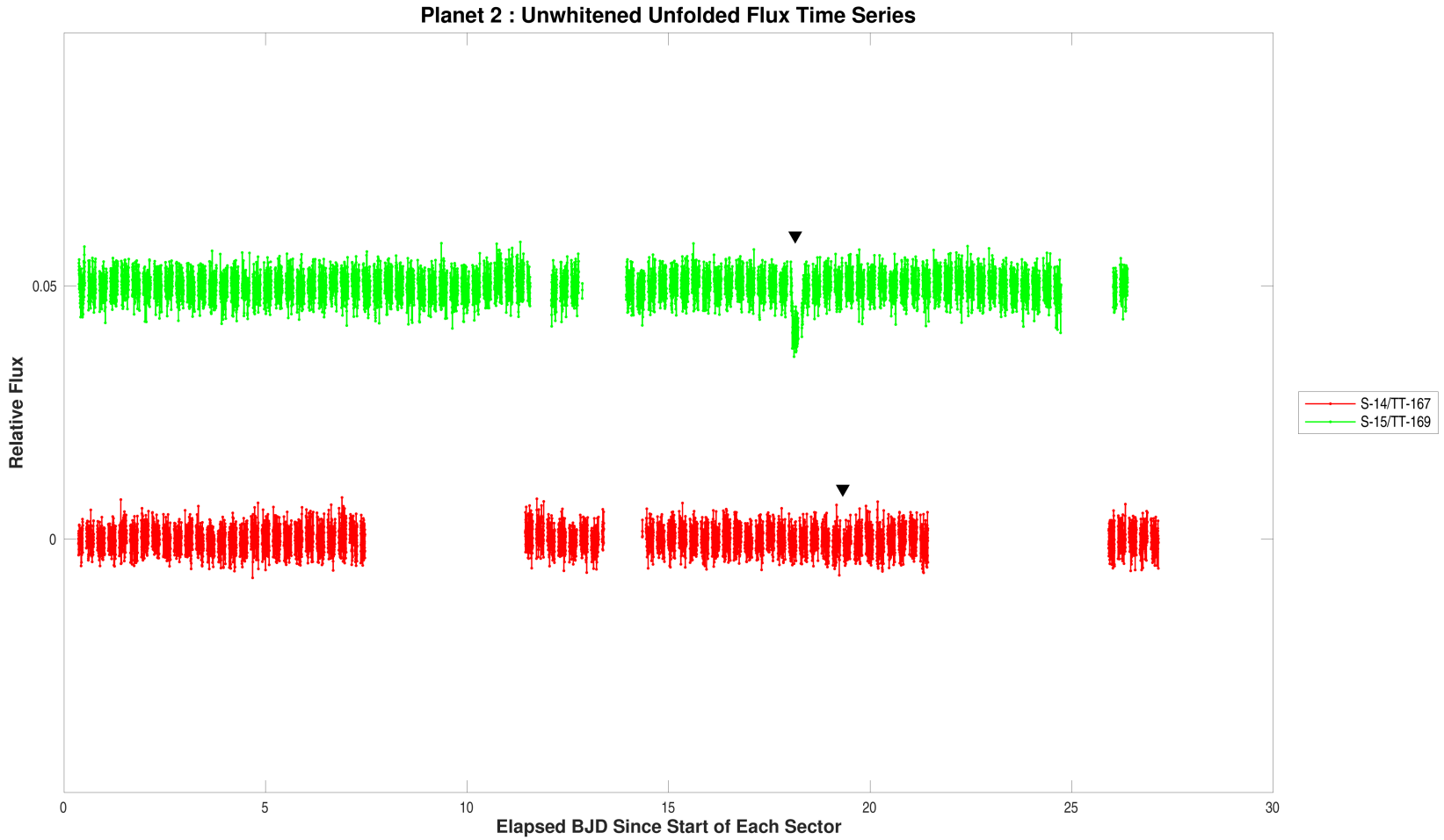
Model Characteristic	Name
Transit Model	mandel-agol_geometric_transit_model
Limb Darkening Model	claret_tess_nonlinear_limb_darkening_model

TCE Parameter	Value	Units
Trial Transit Pulse Duration	4.5	hours
Transit Epoch	1702.4080836	TJD
Orbital Period	26.7319330	days
Maximum SES	25.5	
Maximum MES	20.2	
Robust Statistic	19.1	
Chi Square Goodness of Fit Statistic (DoF)	477.1 (234)	
Chi Square2 Statistic (DoF)	242.8 (37.2)	
Threshold for Desired PFA		

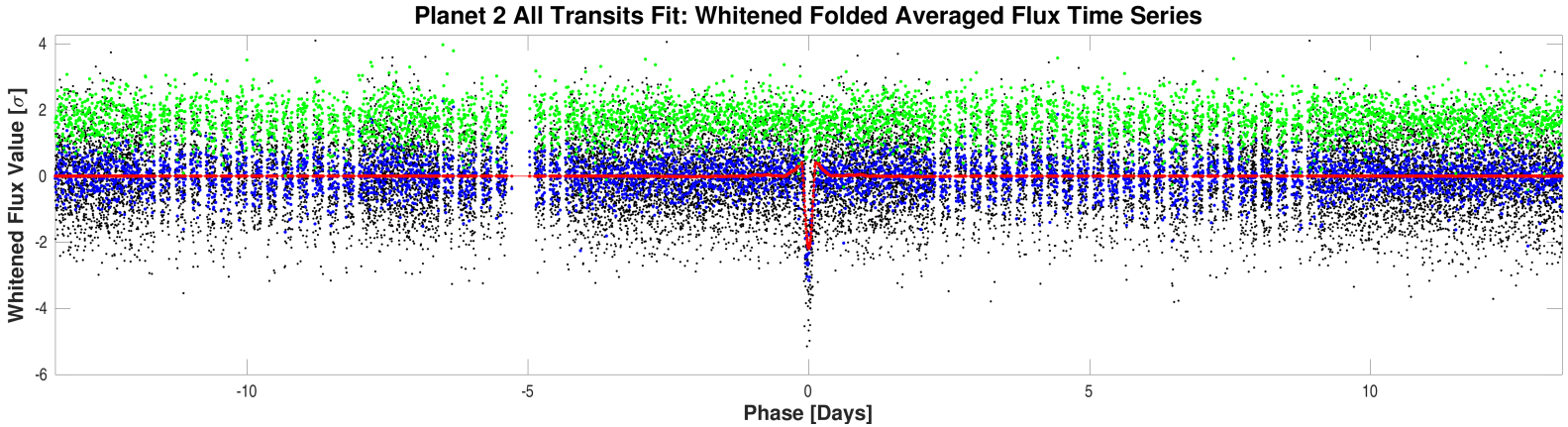
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	19.8		
Orbital Period	26.8255800	5.9255e-03	days
Transit Epoch	1702.3187533	3.9484e-03	BTJD
Impact Parameter	0.9895	3.8813e-01	
Planet Radius to Star Radius Ratio	0.1276450	2.5749e-01	
Semi-major Axis to Star Radius Ratio	19.0088	7.5525e+00	
Planet Radius	20.7790	4.1927e+01	Earth radii
Semi-major Axis	0.1988	1.4748e-02	AU
Effective Stellar Flux	106.4747	1.6239e+01	Goldilocks
Equilibrium Temperature	819	3.1238e+01	Kelvin
Stellar Density	0.1282	1.5285e-01	Solar density
Transit Depth	7228	5.0493e+02	ppm
Transit Duration	5.8396	5.2621e-01	hours
Transit Ingress Duration	2.9198	2.6310e-01	hours
Eccentricity	0.0000	0.0000e+00	
Peri Longitude	0.0000	0.0000e+00	degrees
Model Chi Square Statistic (DoF)	920.8 (998.0)		
Model Chi Square Goodness of Fit Statistic (DoF)	172.9 (356)		
Model Chi Square2 Statistic (DoF)	53.1 (1)		

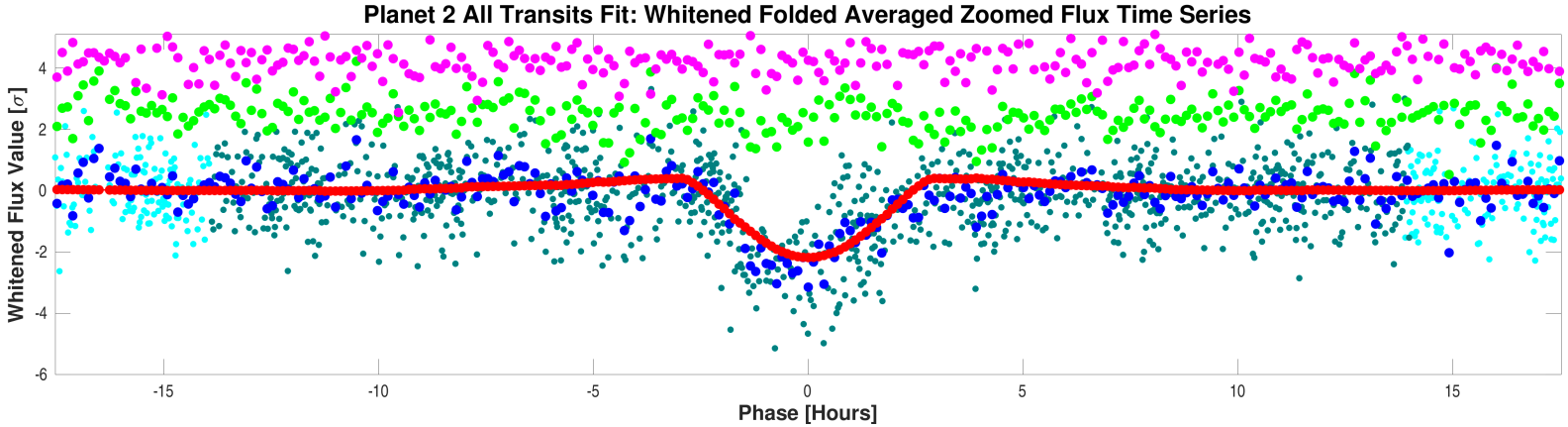
DoF: Degrees of Freedom



Flux time series for CatId 169461816, Planet candidate 2 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 0.05. Transit event markers indicate the location of transits of the given planet candidate. All transits fit completed with full convergence.
Open `./planet-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-unwhitened-14-167.fig`



Folded flux time series for CatId 169461816, Planet candidate 2 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-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-whitened.fig`

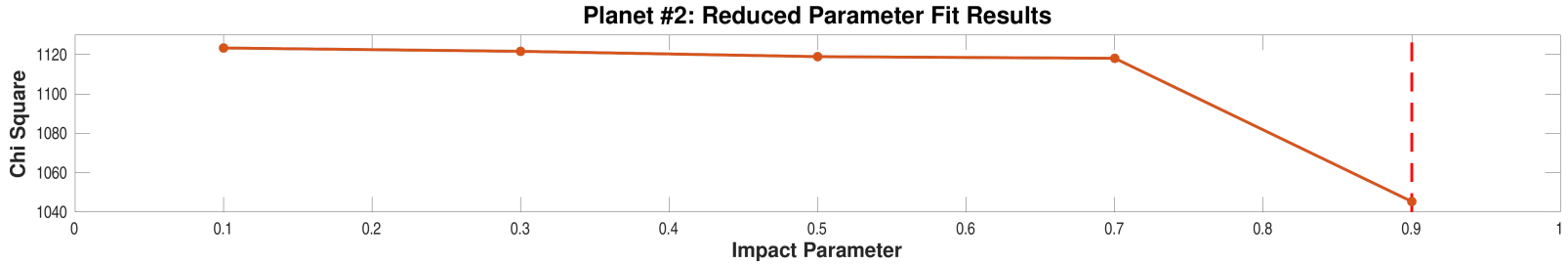


Folded flux time series for CatId 169461816, Planet candidate 2 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-whitened-zoomed.fig`

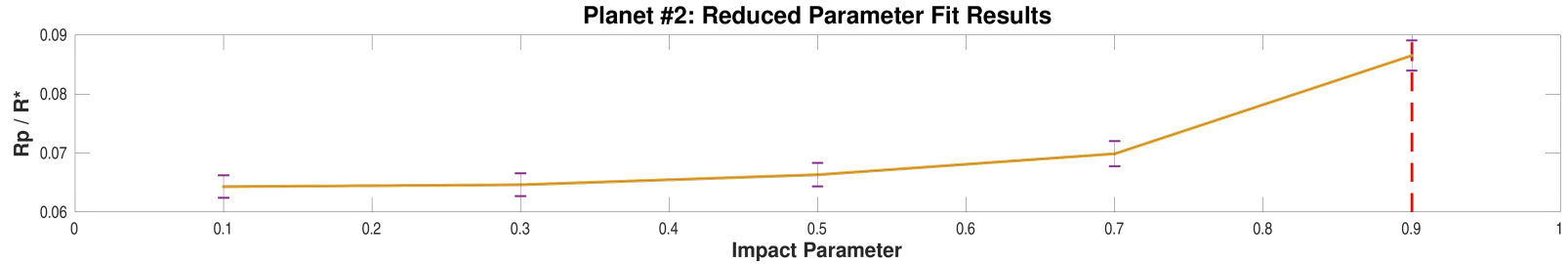
8.2 Model Fitter: Reduced Parameter Fit Results

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	19.1	1123.3	0.0643077	1.9194e-03	47.4198	5.1069e+00	4686	2.7803e+02	4.5658	4.8548e-01
0.30	19.1	1121.7	0.0646175	1.9284e-03	47.1614	5.0889e+00	4675	2.7686e+02	4.4247	4.5632e-01
0.50	19.3	1119.0	0.0663165	1.9902e-03	37.0674	3.9520e+00	4791	2.8298e+02	5.1957	5.0386e-01
0.70	19.7	1118.1	0.0698717	2.1353e-03	29.9373	3.1603e+00	5038	2.9571e+02	5.5314	4.7961e-01
0.90	21.3	1045.3	0.0864969	2.5715e-03	23.0951	1.0348e+00	6678	3.8965e+02	5.4048	2.2747e-01

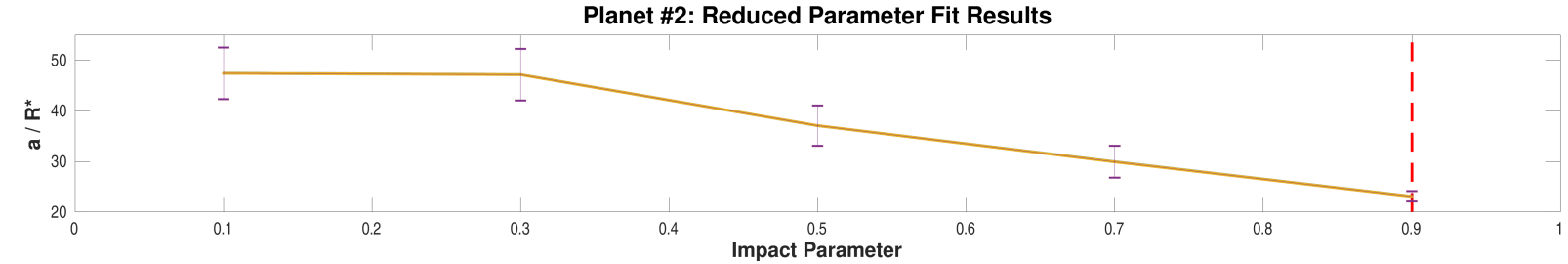
Highlighted row is the best reduced-parameter model fit.



Model chi squares of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 2. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-02/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-02-reduced-fits-chi-square.fig`



Ratios of planet radius to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 2. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-02/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-02-reduced-fits-rp-over-rstar.fig`



Ratios of semimajor axis to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 2. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-02/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-02-reduced-fits-a-over-rstar.fig`

8.3 Model Fitter: Trapezoidal Fit Results

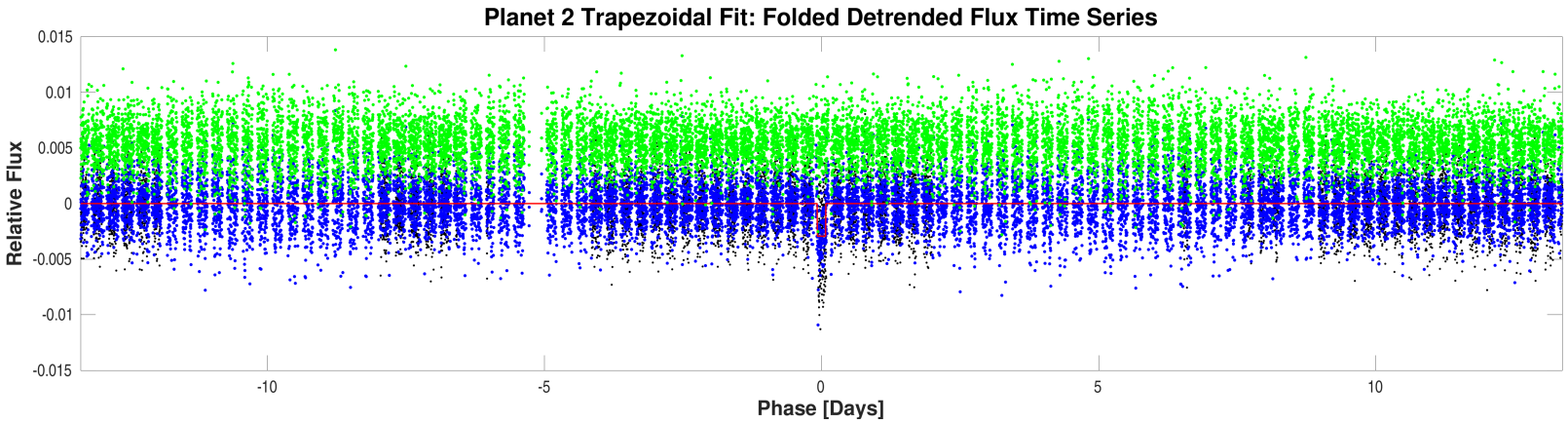
Model Characteristic	Name
Transit Model	trapezoidal_model
Limb Darkening Model	

TCE Parameter	Value	Units
Trial Transit Pulse Duration	4.5	hours
Transit Epoch	1702.4080836	TJD
Orbital Period	26.7319330	days
Maximum SES	25.5	
Maximum MES	20.2	
Robust Statistic	19.1	
Chi Square Goodness of Fit Statistic (DoF)	477.1 (234)	
Chi Square2 Statistic (DoF)	242.8 (37.2)	
Threshold for Desired PFA		

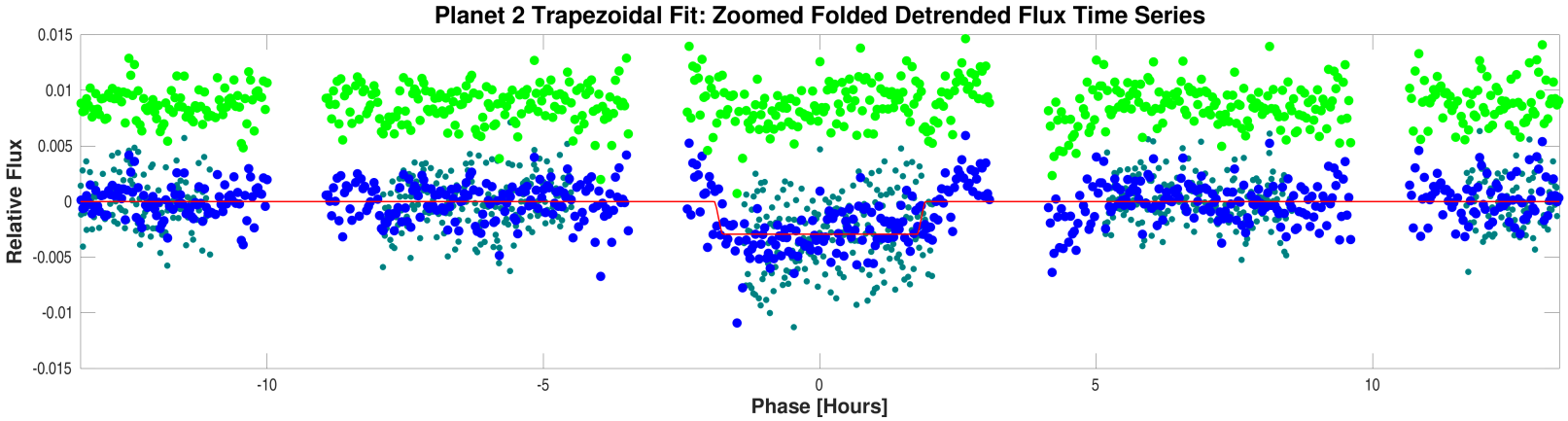
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	19.1		
Orbital Period	26.7319330		days
Transit Epoch	1702.3998132		BTJD
Transit Depth	2933		ppm
Transit Duration	4.4586		hours
Transit Ingress Duration	0.7894		hours
Model Chi Square Statistic (DoF)	20381.4 (1397)		

DoF: Degrees of Freedom



Folded detrended flux time series for CatId 169461816, Planet candidate 2 and folded trapezoidal model light curve.
Open `./planet-02/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-02-all-trapezoidal.fig`



Zoomed folded detrended flux time series for CatId 169461816, Planet candidate 2 and folded trapezoidal model light curve.
Open `./planet-02/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-02-all-trapezoidal-zoomed.fig`

8.4 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.

8.4.1 Weak Secondary Test

Result	Value	Uncertainty	Units	Statistic in Sigmas	Significance (%)
Orbital Period	26.7319		days		
Transit Duration	4.5		hours		
Maximum MES	20.2				
Secondary Phase	19.9375		days		
Secondary MES	2.6				
Minimum Phase	12.0111		days		
Minimum MES	-2.6				
Median MES	0.0				
MAD MES	0.56029				
Robust Statistic	1.7				
Secondary Depth	452.0	2.4707e+02	ppm		
Geometric Albedo	22.8	9.2716e+01		0.2347	40.72
Planet Effective Temperature	2767	2.8164e+03	Kelvin	0.6914	24.47

8.4.2 Eclipsing Binary Discrimination Test

Result	Value	Value in Sigmas	Significance (%)
Odd Even Transit Depth Comparison Statistic	5.0316e+01	7.0934	0.00
Shorter Period Comparison Statistic	1.1817e+04	108.7055	100.00

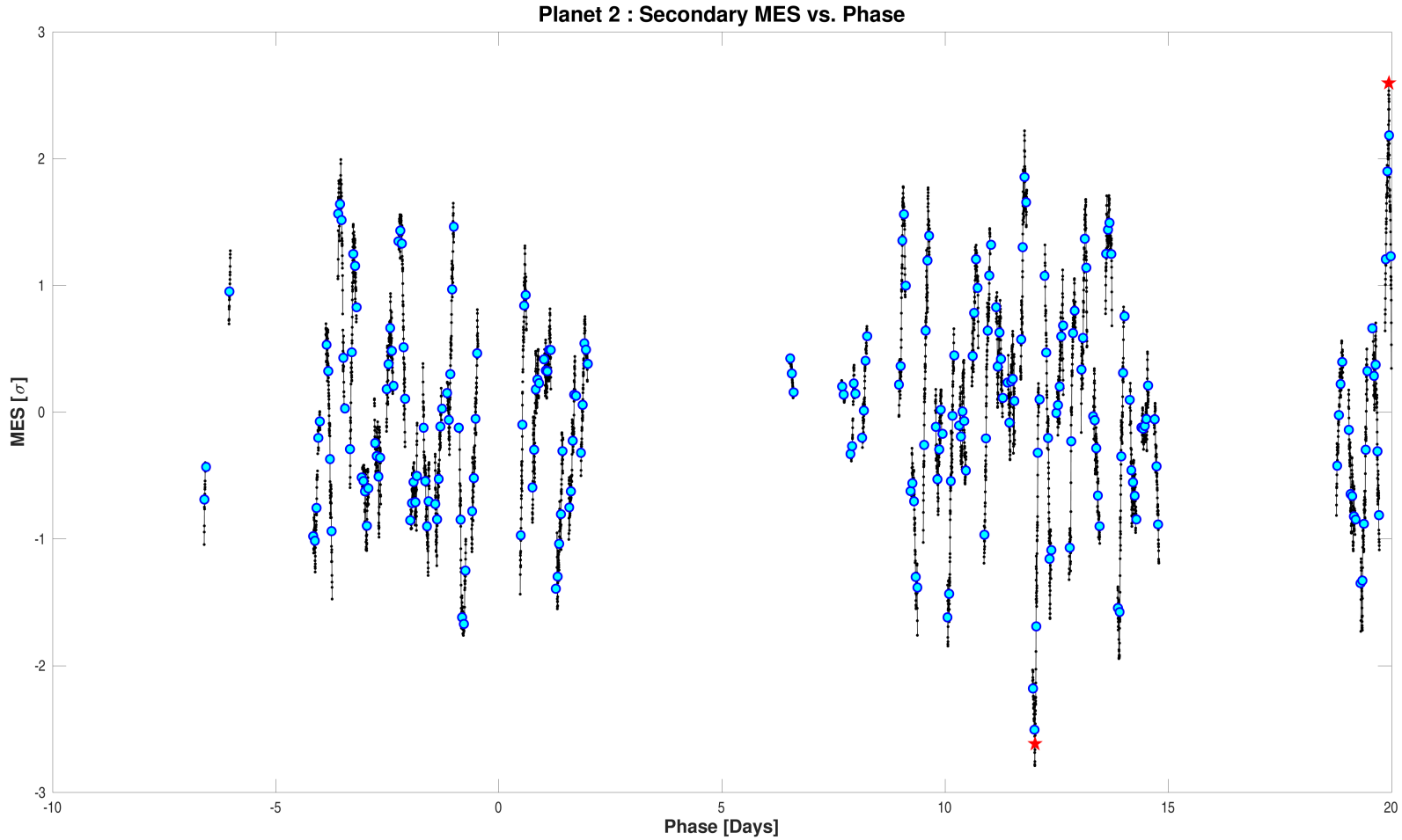
8.4.3 Bootstrap Test

```
No bootstrap results available.
```

8.4.4 Ghost Diagnostic Test

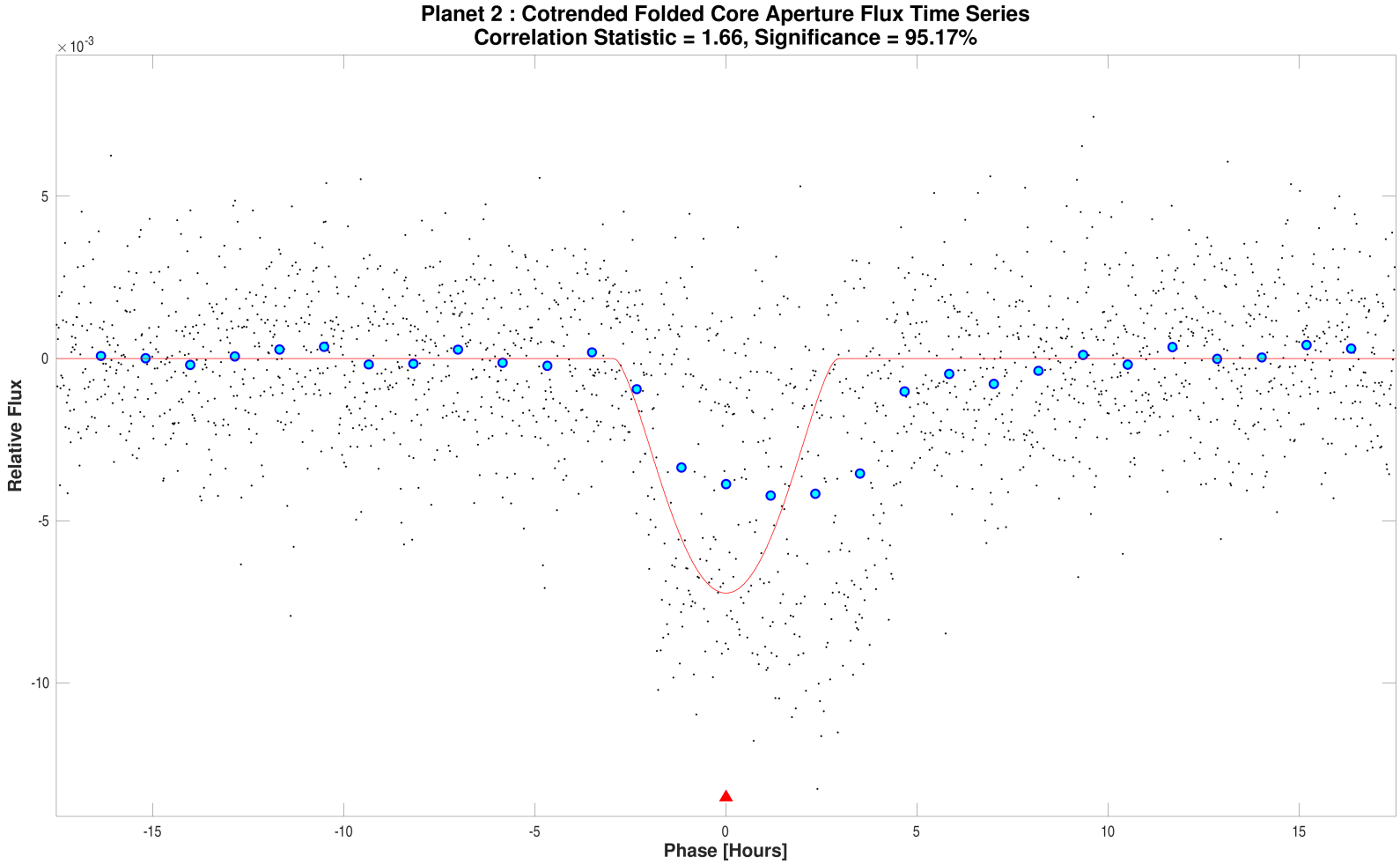
Result	Value	Significance (%)
Maximum MES	20.2	
SNR	19.8	
Core Aperture Statistic	1.6618e+00	95.17
Halo Aperture Statistic	3.1265e+00	99.91
Ratio of Core/Halo Aperture Statistics	5.3153e-01	

8.4.5 Validation Test Figures



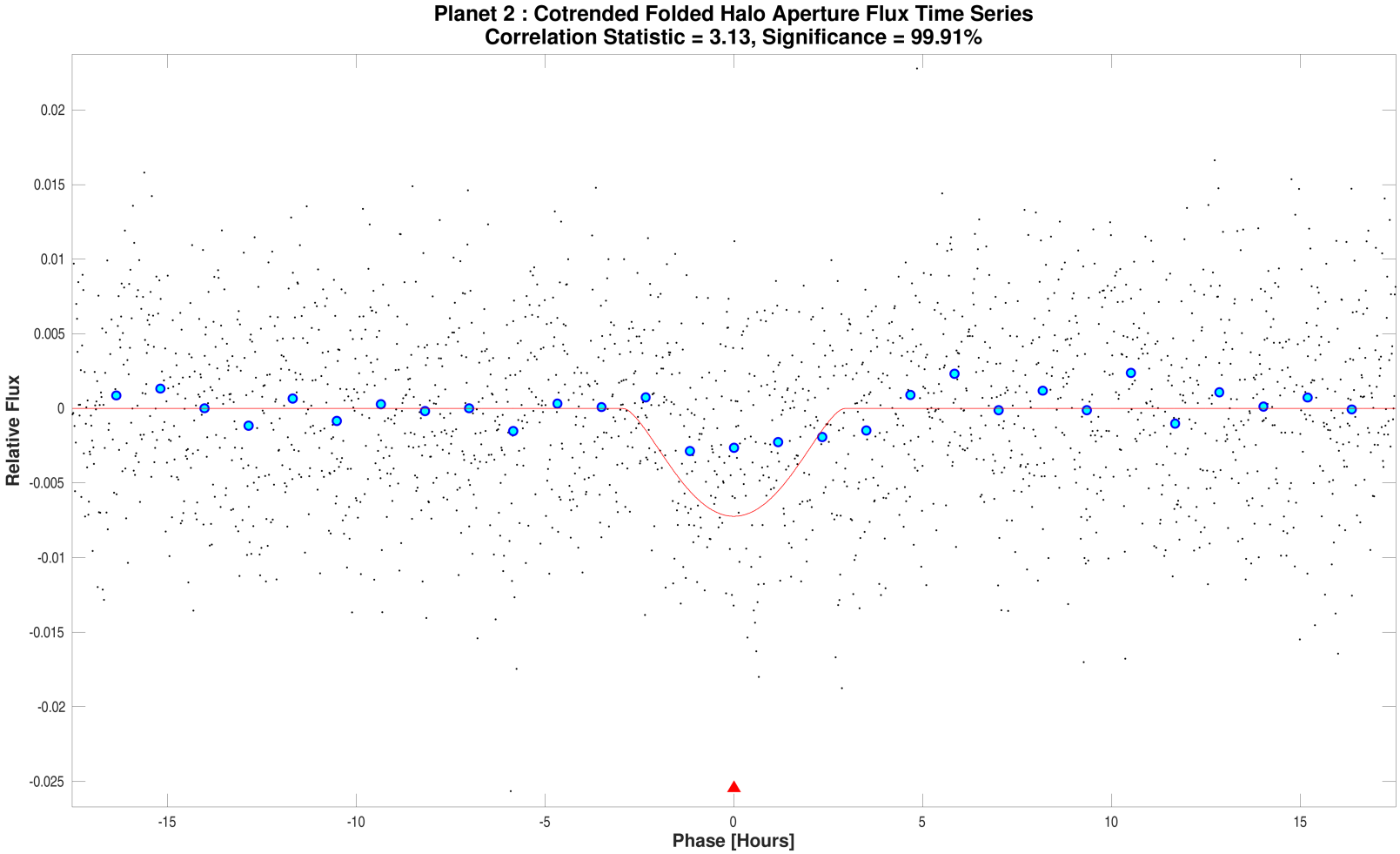
The primary event has been set to zero and both the max and min of the resulting MES vs. Phase are marked with a red star. The best matched pulse duration in hours is 4.5. The maximum secondary MES and corresponding phase are 2.5983 and 19.9375 days respectively. The minimum secondary MES and corresponding phase are -2.6153 and 12.0111 days respectively.
Open `./planet-02/report-summary/0000000169461816-02-weak-secondary-diagnostic.fig`

No figures named 0000000169461816-02-bootstrap-false-alarm.fig are available.



Optical ghost diagnostic core aperture flux time series for target 169461816, planet candidate 2. 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-02/ghost-diagnostic-results/0000000169461816-02-core-unwhitened-cotrended-zoomed-model.fig`



Optical ghost diagnostic halo aperture flux time series for target 169461816, planet candidate 2. 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-02/ghost-diagnostic-results/0000000169461816-02-halo-unwhitened-cotrended-zoomed-model.fig`

9 Planet Candidate 3

9.1 Model Fitter: All Transits

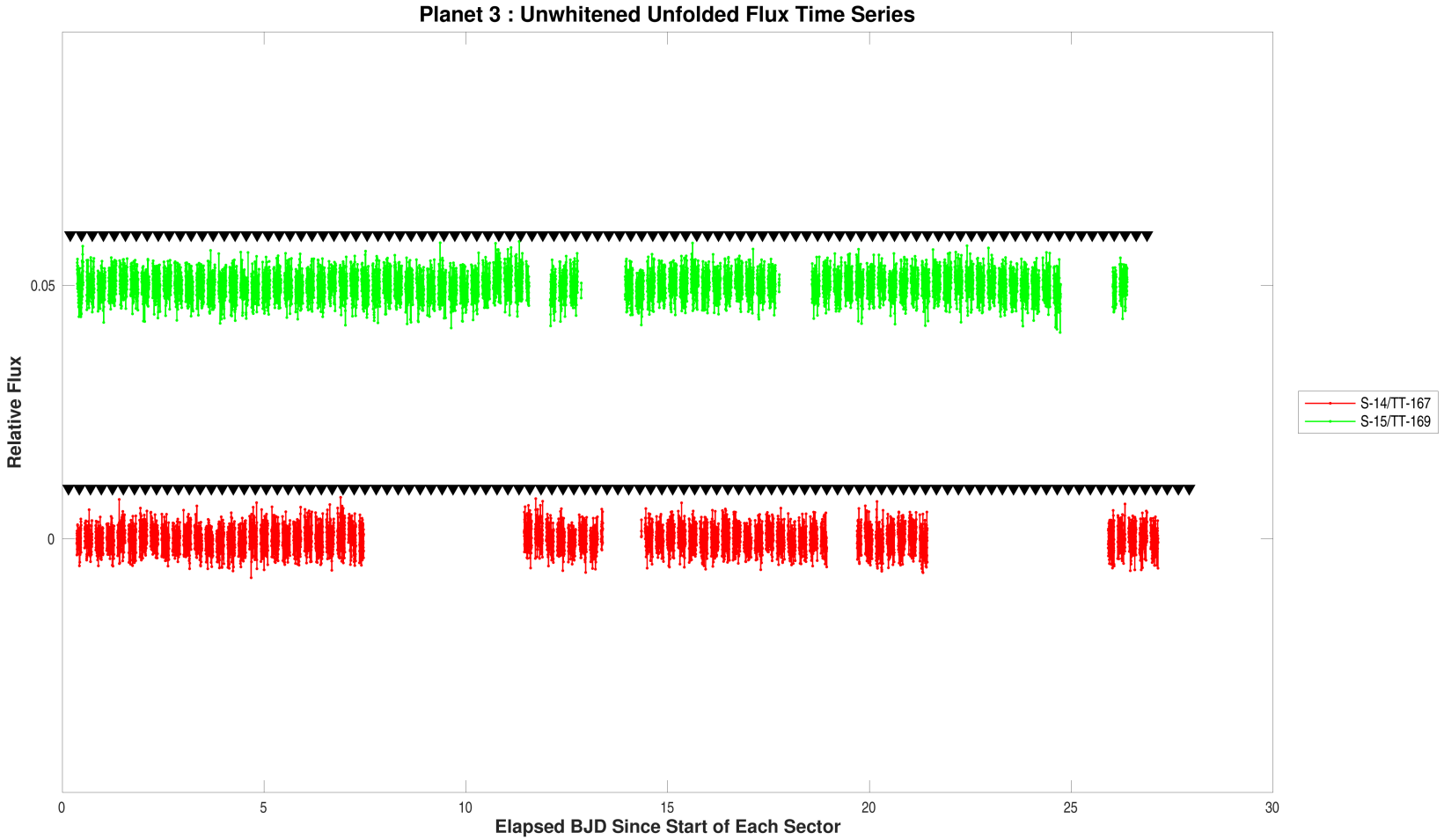
Model Characteristic	Name
Transit Model	mandel-agol_geometric_transit_model
Limb Darkening Model	claret_tess_nonlinear_limb_darkening_model

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.4192029	TJD
Orbital Period	0.2723054	days
Maximum SES	4.6	
Maximum MES	12.7	
Robust Statistic	13.8	
Chi Square Goodness of Fit Statistic (DoF)	1897.4 (2110)	
Chi Square2 Statistic (DoF)	106.1 (161.7)	
Threshold for Desired PFA		

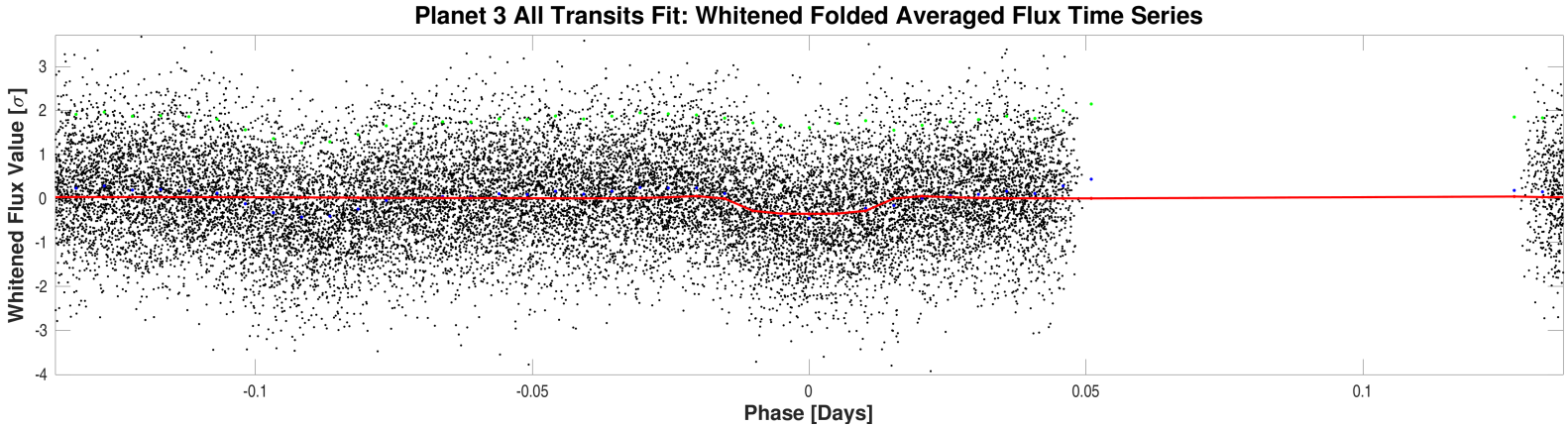
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	16.2		
Orbital Period	0.2722998	8.7366e-06	days
Transit Epoch	1683.4222976	5.1834e-04	BTJD
Impact Parameter	0.9052	7.3646e-02	
Planet Radius to Star Radius Ratio	0.0340082	2.2896e-03	
Semi-major Axis to Star Radius Ratio	1.6668	3.9076e-01	
Planet Radius	5.5361	4.4807e-01	Earth radii
Semi-major Axis	0.0093	6.9141e-04	AU
Effective Stellar Flux	48444.9614	7.3885e+03	Goldilocks
Equilibrium Temperature	3784	1.4427e+02	Kelvin
Stellar Density	0.8391	5.9012e-01	Solar density
Transit Depth	1036	7.7467e+01	ppm
Transit Duration	0.7595	8.8629e-02	hours
Transit Ingress Duration	0.1267	1.0363e-01	hours
Eccentricity	0.0000	0.0000e+00	
Peri Longitude	0.0000	0.0000e+00	degrees
Model Chi Square Statistic (DoF)	11286.4 (13296.9)		
Model Chi Square Goodness of Fit Statistic (DoF)	2267.6 (3784)		
Model Chi Square2 Statistic (DoF)	69.1 (144)		

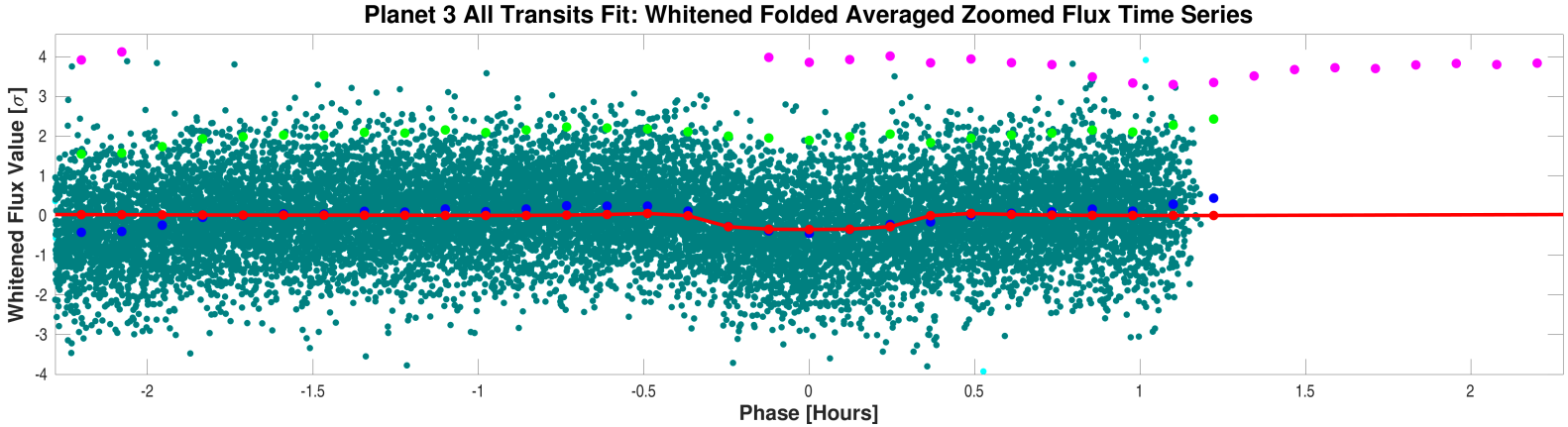
DoF: Degrees of Freedom



Flux time series for CatId 169461816, Planet candidate 3 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 0.05. Transit event markers indicate the location of transits of the given planet candidate. All transits fit completed with full convergence.
Open `./planet-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-unwhitened-14-167.fig`



Folded flux time series for CatId 169461816, Planet candidate 3 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-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-whitened.fig`

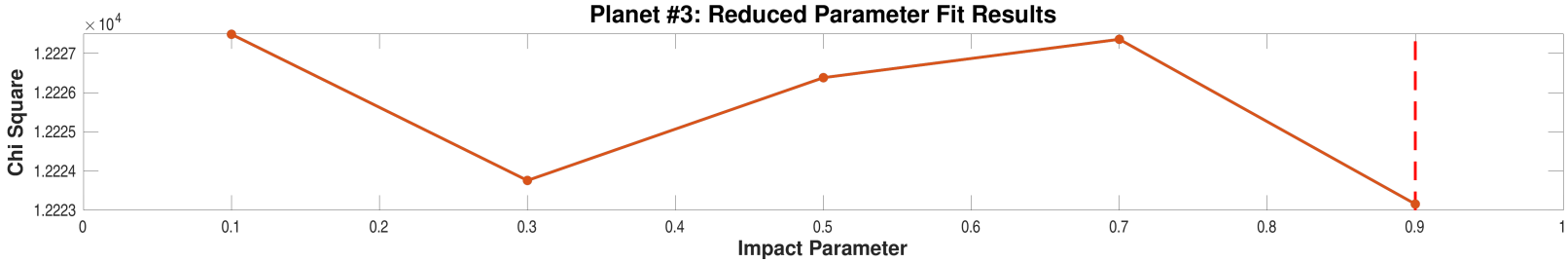


Folded flux time series for CatId 169461816, Planet candidate 3 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-whitened-zoomed.fig`

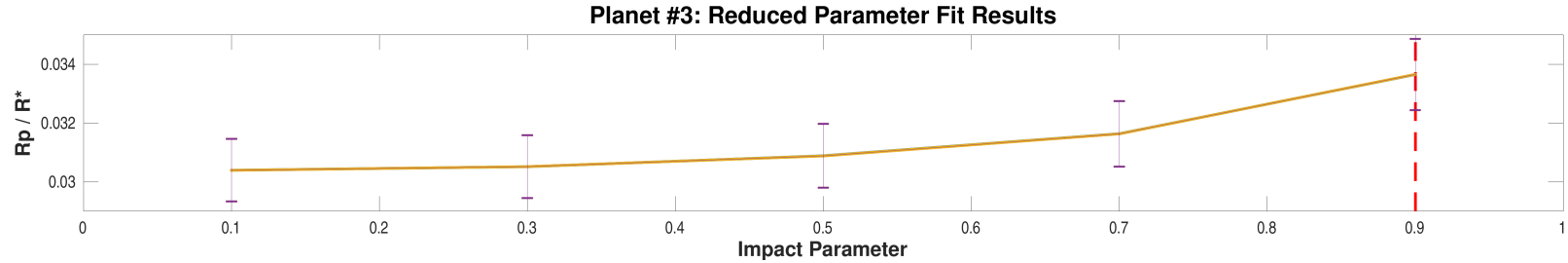
9.2 Model Fitter: Reduced Parameter Fit Results

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	17.2	12227.5	0.0303944	1.0606e-03	3.3875	1.1805e-01	1045	7.2541e+01	0.6402	2.2896e-02
0.30	17.1	12223.8	0.0305155	1.0657e-03	3.2493	1.1217e-01	1041	7.2308e+01	0.6442	2.2997e-02
0.50	17.1	12226.4	0.0308855	1.0824e-03	2.9719	1.0167e-01	1038	7.2331e+01	0.6508	2.3471e-02
0.70	17.1	12227.4	0.0316352	1.1154e-03	2.5022	8.3216e-02	1032	7.2352e+01	0.6677	2.4632e-02
0.90	16.9	12223.2	0.0336496	1.2118e-03	1.6768	4.8817e-02	1021	7.3016e+01	0.7646	3.1899e-02

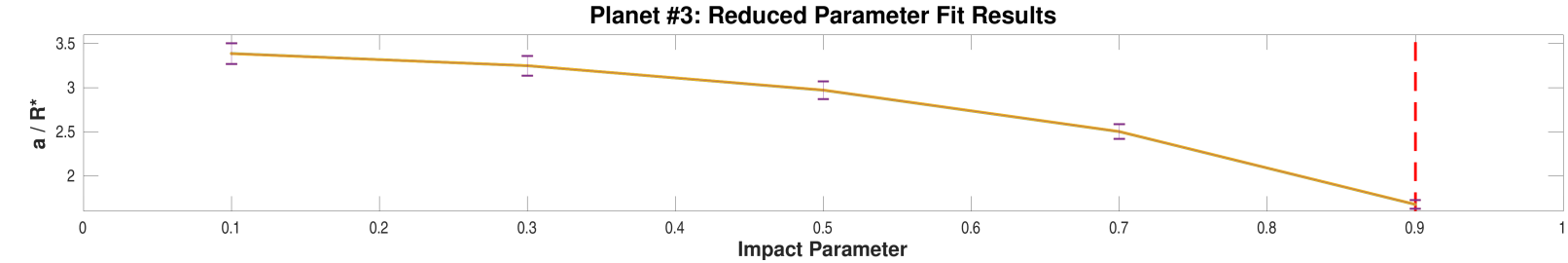
Highlighted row is the best reduced-parameter model fit.



Model chi squares of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 3. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-03/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-03-reduced-fits-chi-square.fig`



Ratios of planet radius to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 3. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-03/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-03-reduced-fits-rp-over-rstar.fig`



Ratios of semimajor axis to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 3. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-03/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-03-reduced-fits-a-over-rstar.fig`

9.3 Model Fitter: Trapezoidal Fit Results

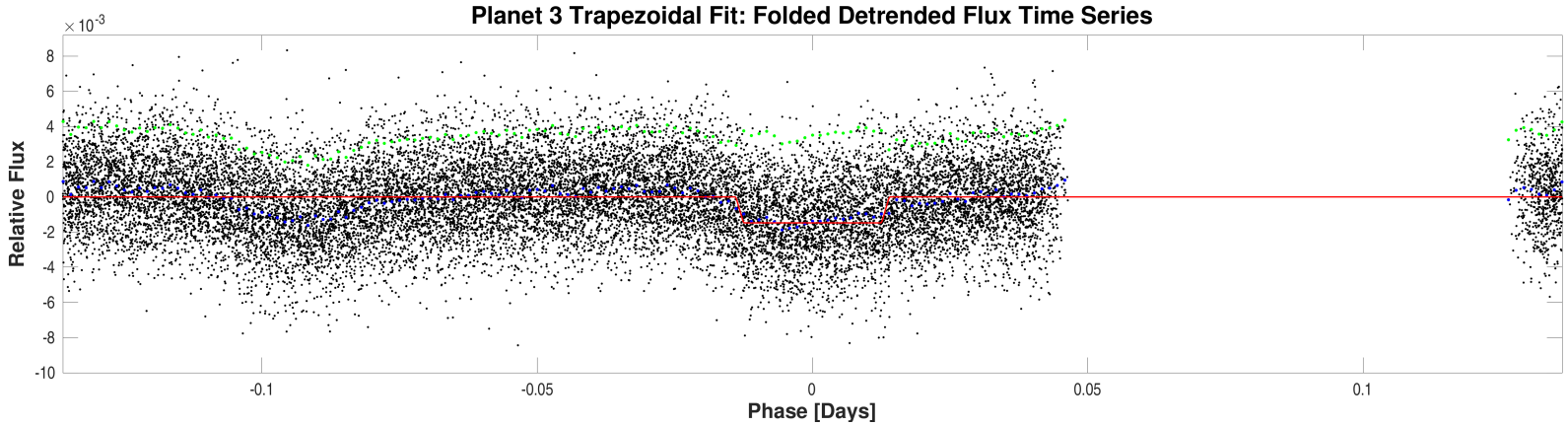
Model Characteristic	Name
Transit Model	trapezoidal_model
Limb Darkening Model	

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.4192029	TJD
Orbital Period	0.2723054	days
Maximum SES	4.6	
Maximum MES	12.7	
Robust Statistic	13.8	
Chi Square Goodness of Fit Statistic (DoF)	1897.4 (2110)	
Chi Square2 Statistic (DoF)	106.1 (161.7)	
Threshold for Desired PFA		

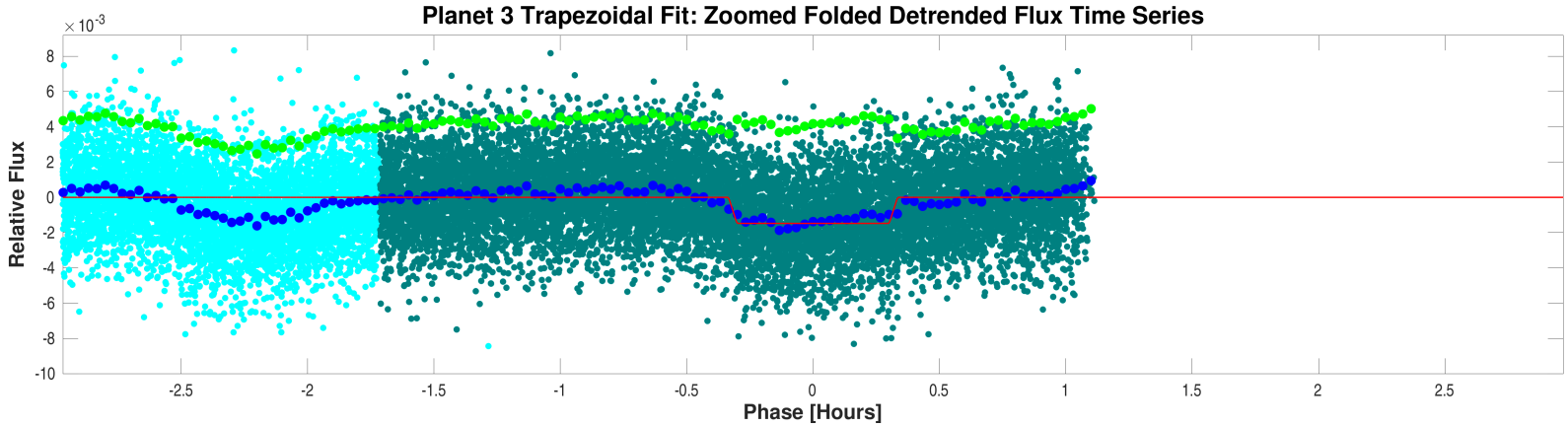
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	29.6		
Orbital Period	0.2723054		days
Transit Epoch	1683.4241301		BTJD
Transit Depth	1478		ppm
Transit Duration	0.9892		hours
Transit Ingress Duration	0.3539		hours
Model Chi Square Statistic (DoF)	19424.8 (11786)		

DoF: Degrees of Freedom



Folded detrended flux time series for CatId 169461816, Planet candidate 3 and folded trapezoidal model light curve.
Open `./planet-03/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-03-all-trapezoidal.fig`



Zoomed folded detrended flux time series for CatId 169461816, Planet candidate 3 and folded trapezoidal model light curve.
Open `./planet-03/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-03-all-trapezoidal-zoomed.fig`

9.4 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.

9.4.1 Weak Secondary Test

Result	Value	Uncertainty	Units	Statistic in Sigmas	Significance (%)
Orbital Period	0.27231		days		
Transit Duration	0.5		hours		
Maximum MES	12.7				
Secondary Phase	0.18125		days		
Secondary MES	15.9				
Minimum Phase	0.14896		days		
Minimum MES	-8.3				
Median MES	-1.8				
MAD MES	5.1313				
Robust Statistic	15.8				
Secondary Depth	1113.7	6.4382e+01	ppm		
Geometric Albedo	1.7	3.5070e-01		2.0995	1.79
Planet Effective Temperature	6716	2.6761e+02	Kelvin	9.6430	0.00

9.4.2 Eclipsing Binary Discrimination Test

Result	Value	Value in Sigmas	Significance (%)
Odd Even Transit Depth Comparison Statistic	2.6307e-01	0.5129	60.80
Longer Period Comparison Statistic	4.6927e-08	0.0002	0.02

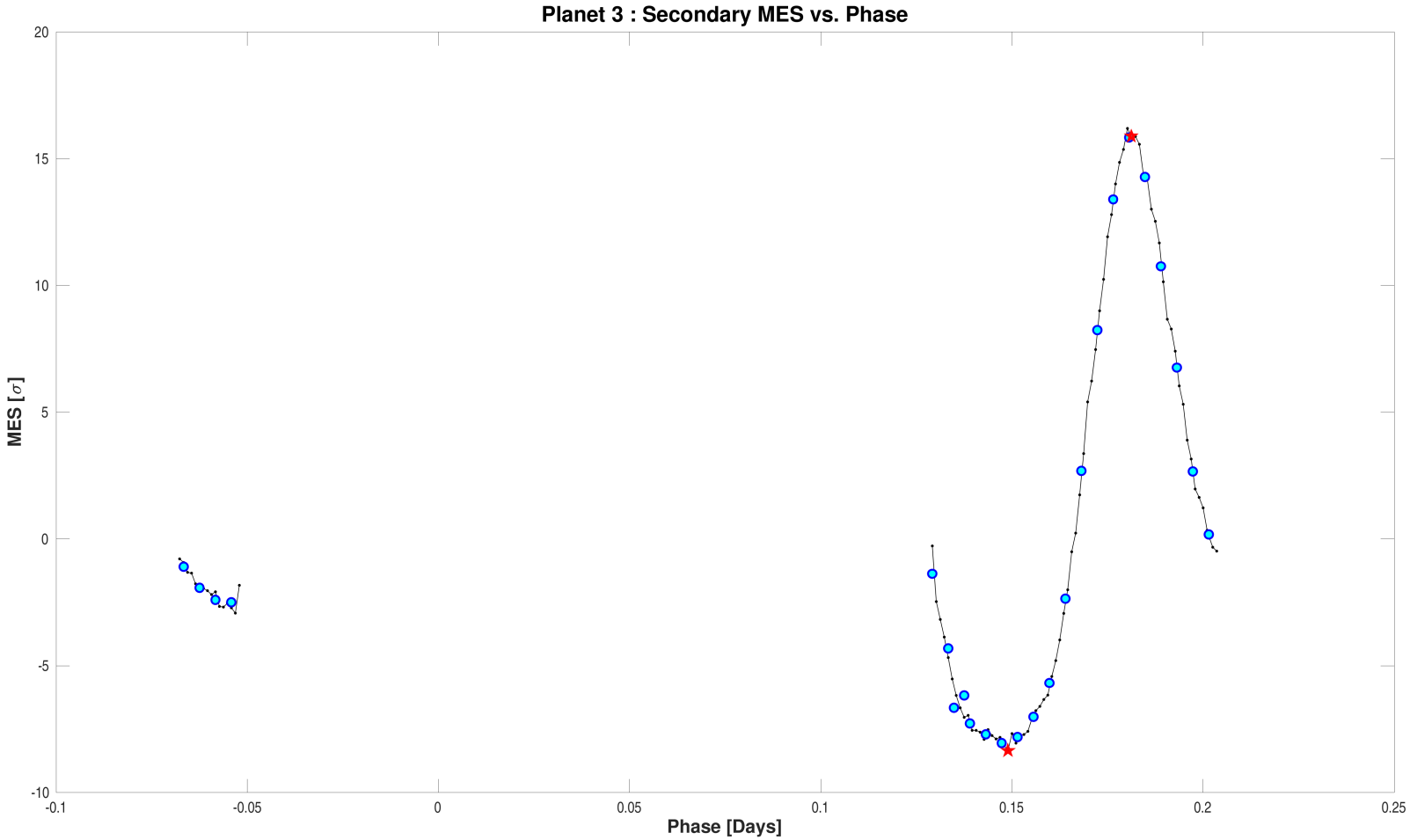
9.4.3 Bootstrap Test

```
No bootstrap results available.
```

9.4.4 Ghost Diagnostic Test

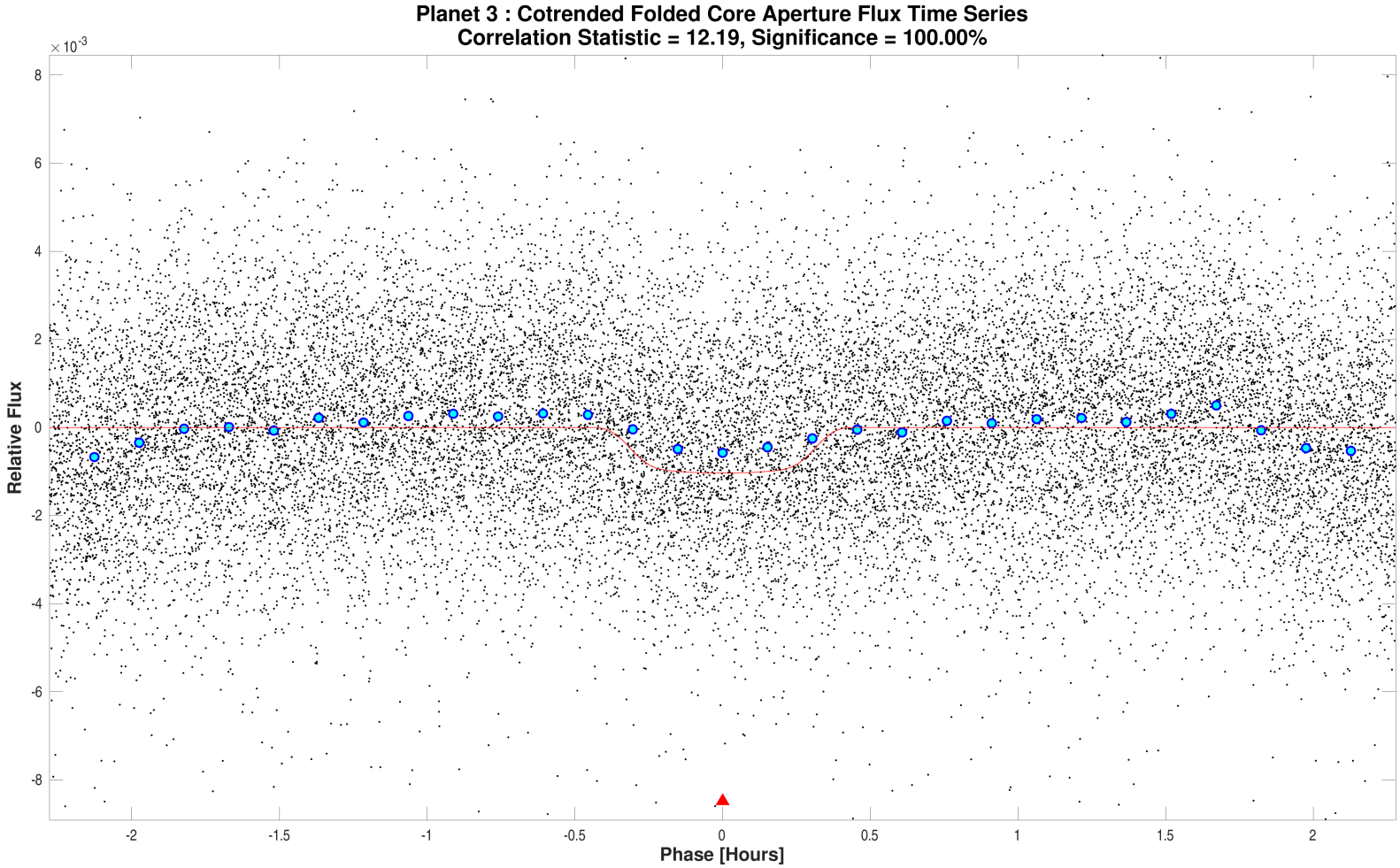
Result	Value	Significance (%)
Maximum MES	12.7	
SNR	16.2	
Core Aperture Statistic	1.2190e+01	100.00
Halo Aperture Statistic	1.2715e+01	100.00
Ratio of Core/Halo Aperture Statistics	9.5871e-01	

9.4.5 Validation Test Figures



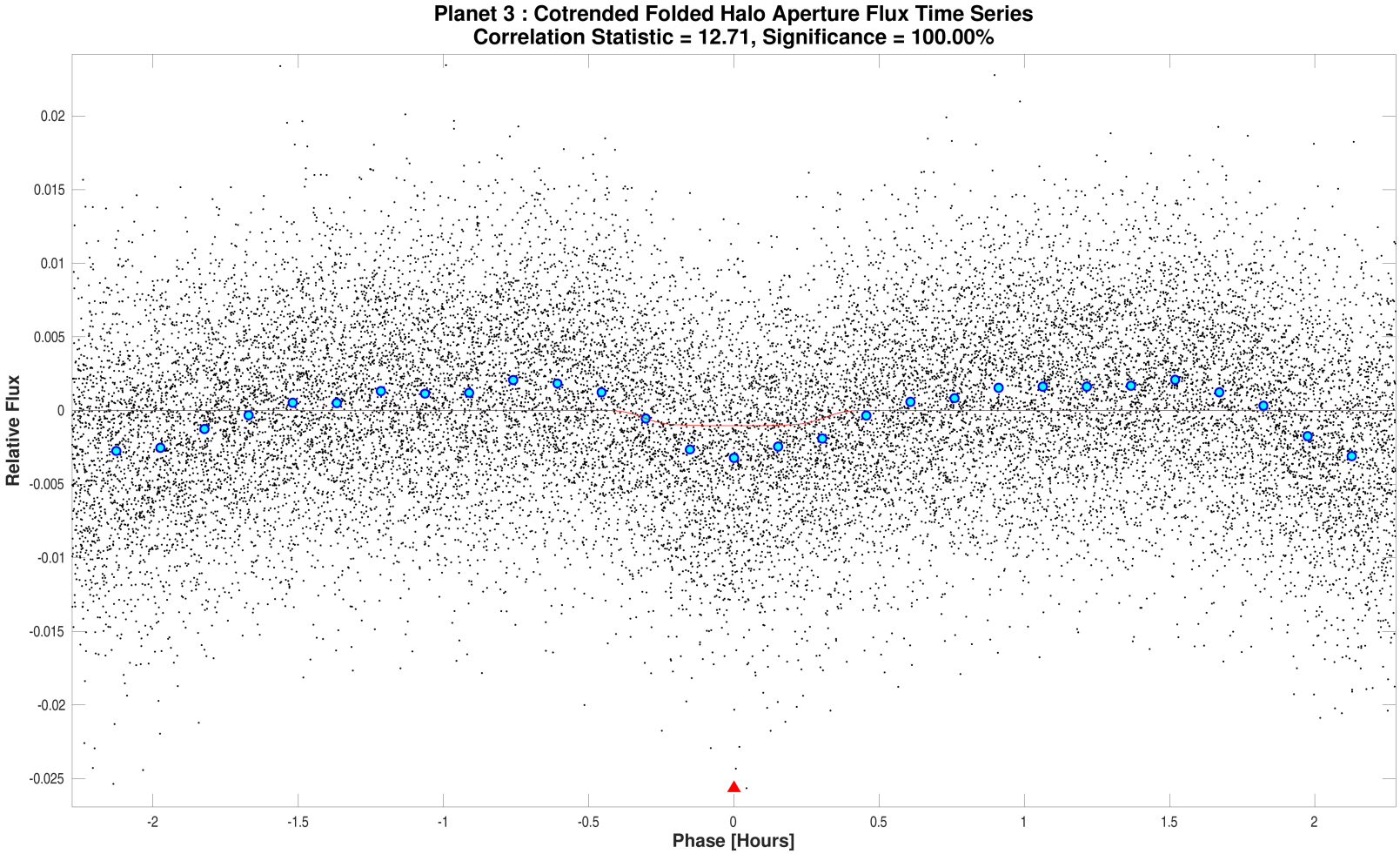
The primary event has been set to zero and both the max and min of the resulting MES vs. Phase are marked with a red star. The best matched pulse duration in hours is 0.5. The maximum secondary MES and corresponding phase are 15.898 and 0.18125 days respectively. The minimum secondary MES and corresponding phase are -8.3425 and 0.14896 days respectively.
Open `./planet-03/report-summary/0000000169461816-03-weak-secondary-diagnostic.fig`

No figures named 0000000169461816-03-bootstrap-false-alarm.fig are available.



Optical ghost diagnostic core aperture flux time series for target 169461816, planet candidate 3. 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-03/ghost-diagnostic-results/0000000169461816-03-core-unwhitened-cotrended-zoomed-model.fig`



Optical ghost diagnostic halo aperture flux time series for target 169461816, planet candidate 3. 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-03/ghost-diagnostic-results/0000000169461816-03-halo-unwhitened-cotrended-zoomed-model.fig`

10 Planet Candidate 4

10.1 Model Fitter: All Transits

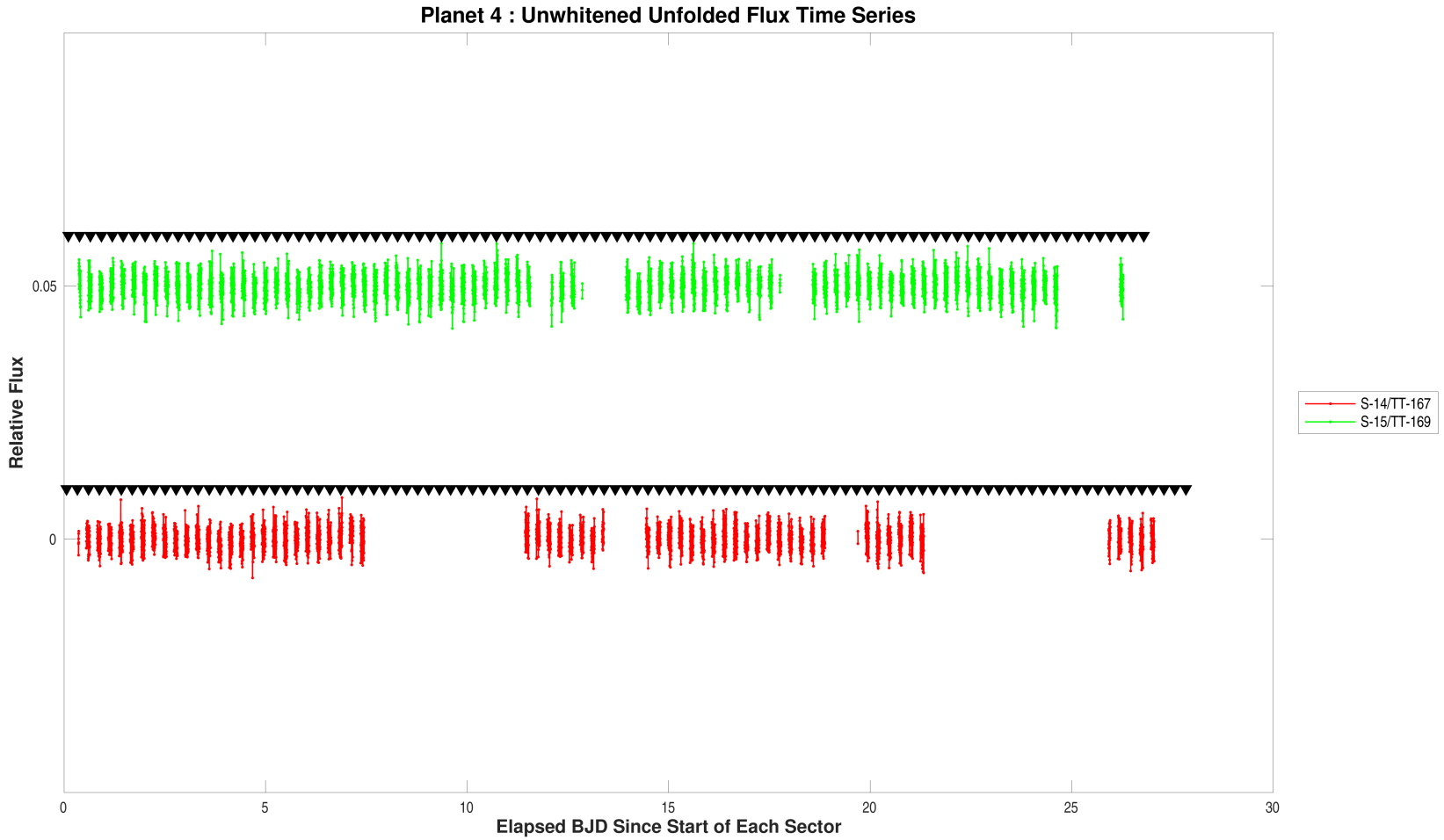
Model Characteristic	Name
Transit Model	mandel-agol_geometric_transit_model
Limb Darkening Model	claret_tess_nonlinear_limb_darkening_model

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.5983696	TJD
Orbital Period	0.2723264	days
Maximum SES	4.8	
Maximum MES	15.6	
Robust Statistic	19.3	
Chi Square Goodness of Fit Statistic (DoF)	2318.6 (2070)	
Chi Square2 Statistic (DoF)	196.6 (173.1)	
Threshold for Desired PFA		

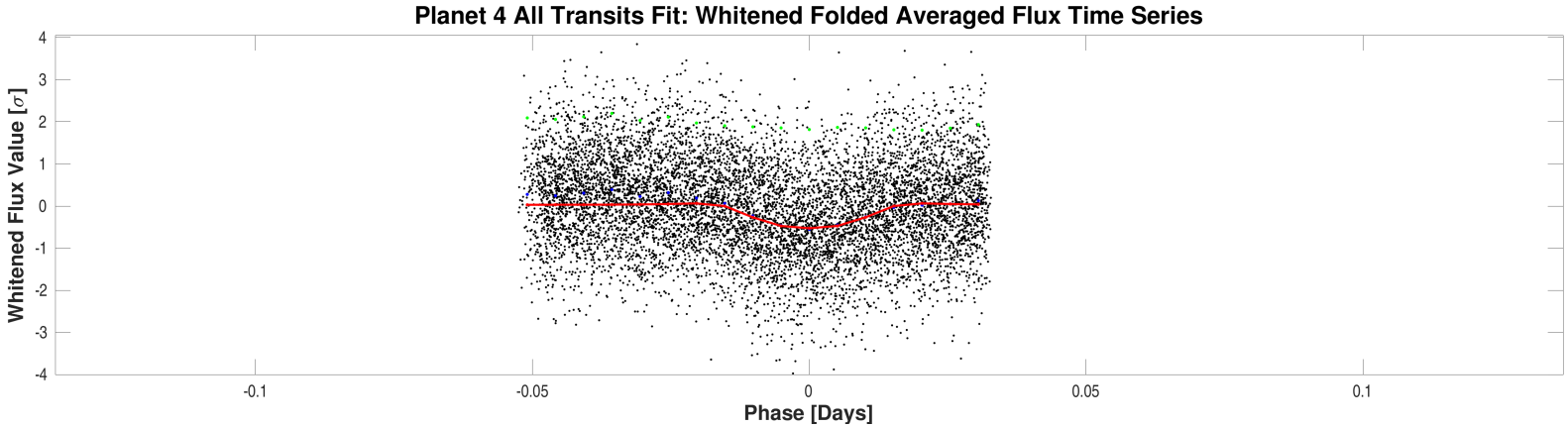
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	20.9		
Orbital Period	0.2723098	7.8834e-06	days
Transit Epoch	1683.6032419	5.7024e-04	BTJD
Impact Parameter	0.9605	1.5468e-02	
Planet Radius to Star Radius Ratio	0.0399369	3.7506e-03	
Semi-major Axis to Star Radius Ratio	1.4287	9.2516e-02	
Planet Radius	6.5012	6.7681e-01	Earth radii
Semi-major Axis	0.0093	6.9142e-04	AU
Effective Stellar Flux	48442.5932	7.3882e+03	Goldilocks
Equilibrium Temperature	3784	1.4427e+02	Kelvin
Stellar Density	0.5284	1.0264e-01	Solar density
Transit Depth	1261	1.5691e+02	ppm
Transit Duration	0.8041	5.6991e-02	hours
Transit Ingress Duration	0.4020	2.8496e-02	hours
Eccentricity	0.0000	0.0000e+00	
Peri Longitude	0.0000	0.0000e+00	degrees
Model Chi Square Statistic (DoF)	7374.0 (7589.3)		
Model Chi Square Goodness of Fit Statistic (DoF)	2713.5 (3982)		
Model Chi Square2 Statistic (DoF)	133.6 (144)		

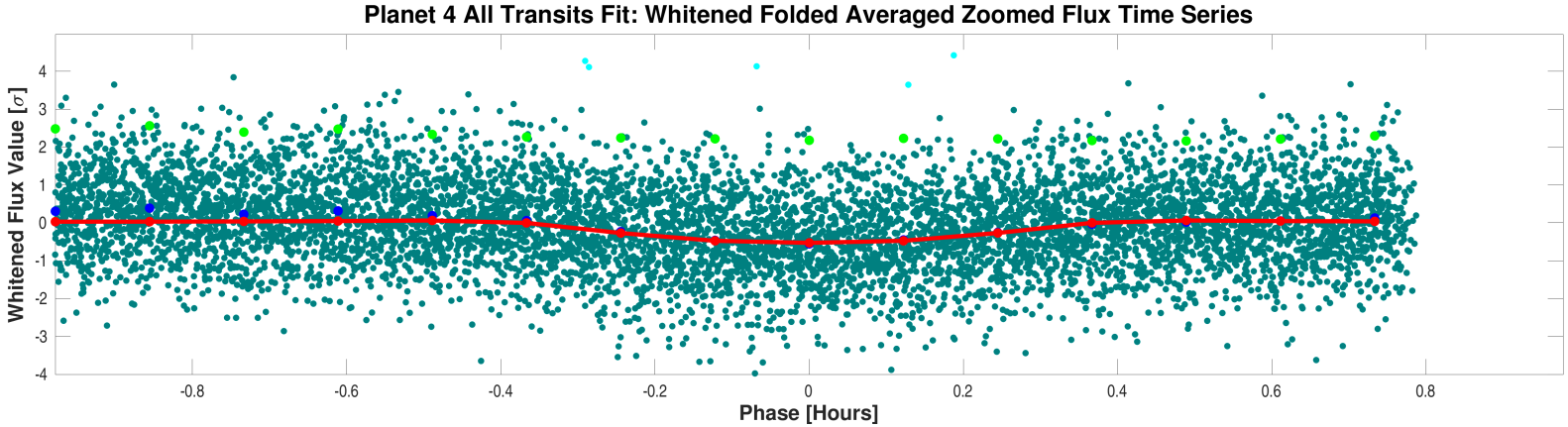
DoF: Degrees of Freedom



Flux time series for CatId 169461816, Planet candidate 4 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 0.05. Transit event markers indicate the location of transits of the given planet candidate. All transits fit completed with full convergence.
Open `./planet-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-unwhitened-14-167.fig`



Folded flux time series for CatId 169461816, Planet candidate 4 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-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-whitened.fig`

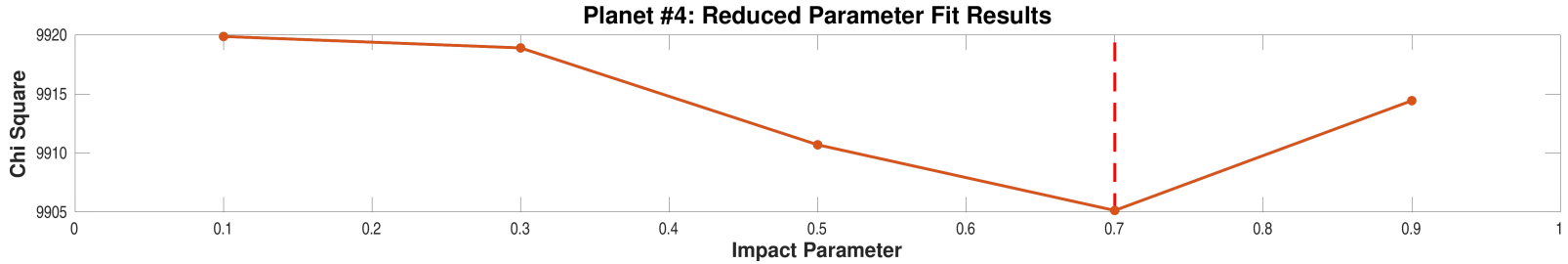


Folded flux time series for CatId 169461816, Planet candidate 4 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-whitened-zoomed.fig`

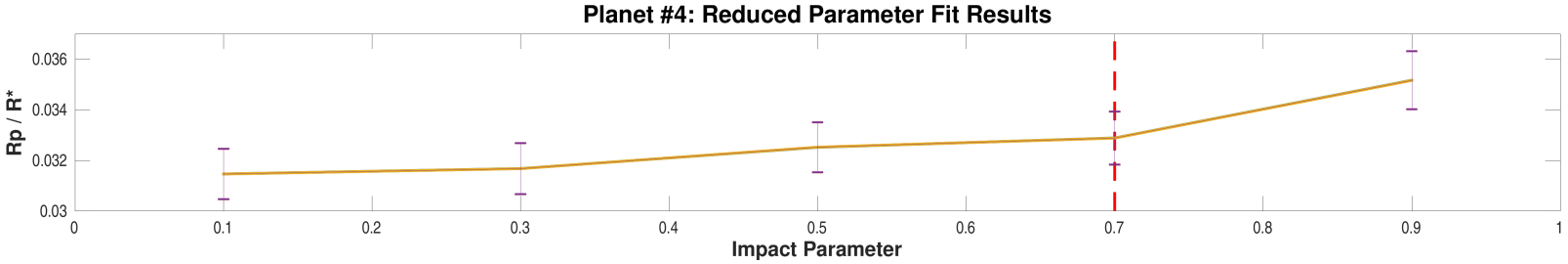
10.2 Model Fitter: Reduced Parameter Fit Results

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	21.1	9919.9	0.0314665	9.9780e-04	3.6312	1.2357e-01	1120	7.0614e+01	0.5966	2.0719e-02
0.30	21.1	9918.9	0.0316795	1.0067e-03	3.5140	1.1921e-01	1122	7.0867e+01	0.5946	2.0705e-02
0.50	21.8	9910.7	0.0325196	9.8768e-04	3.1798	9.6380e-02	1150	6.9462e+01	0.6071	1.9212e-02
0.70	21.1	9905.1	0.0328889	1.0481e-03	2.6797	8.7809e-02	1115	7.0645e+01	0.6200	2.2137e-02
0.90	21.0	9914.4	0.0351705	1.1501e-03	1.8067	5.3300e-02	1115	7.2358e+01	0.6919	2.7286e-02

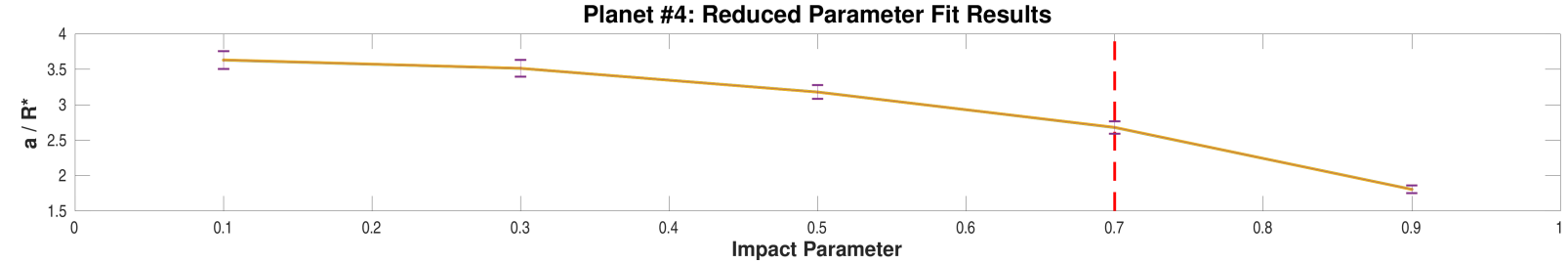
Highlighted row is the best reduced-parameter model fit.



Model chi squares of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 4. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-04/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-04-reduced-fits-chi-square.fig`



Ratios of planet radius to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 4. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-04/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-04-reduced-fits-rp-over-rstar.fig`



Ratios of semimajor axis to star radius of reduced parameter fits vs. impact parameter for CatId 169461816, Planet candidate 4. The fit result with the minimum chi square is marked with a dashed line in the plot.
Open `./planet-04/planet-search-and-model-fitting-results/reduced-parameter-fits/0000000169461816-04-reduced-fits-a-over-rstar.fig`

10.3 Model Fitter: Trapezoidal Fit Results

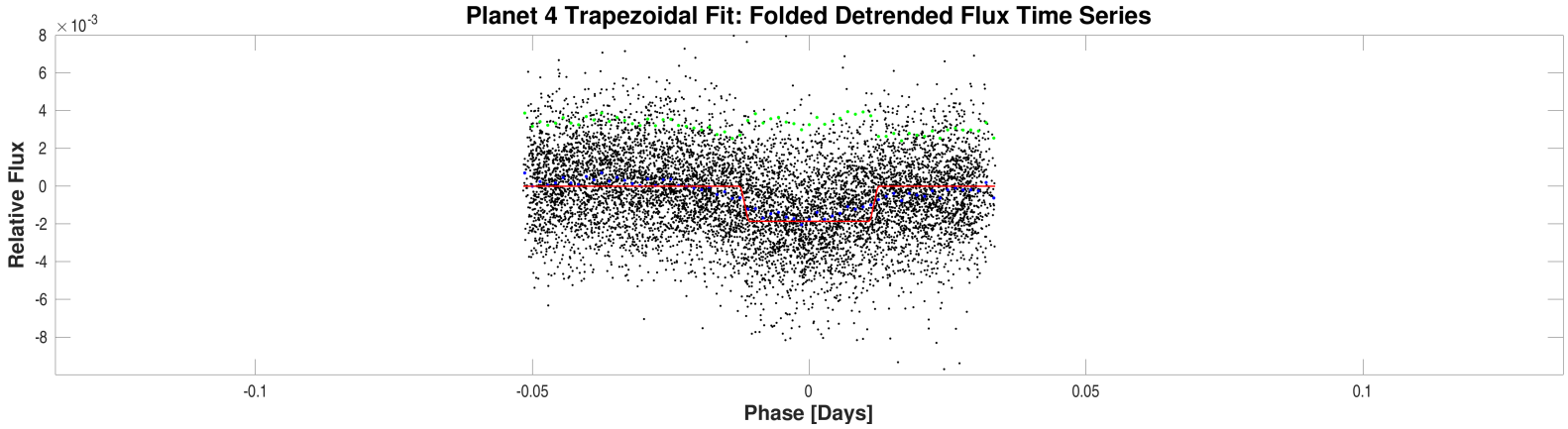
Model Characteristic	Name
Transit Model	trapezoidal_model
Limb Darkening Model	

TCE Parameter	Value	Units
Trial Transit Pulse Duration	0.5	hours
Transit Epoch	1683.5983696	TJD
Orbital Period	0.2723264	days
Maximum SES	4.8	
Maximum MES	15.6	
Robust Statistic	19.3	
Chi Square Goodness of Fit Statistic (DoF)	2318.6 (2070)	
Chi Square2 Statistic (DoF)	196.6 (173.1)	
Threshold for Desired PFA		

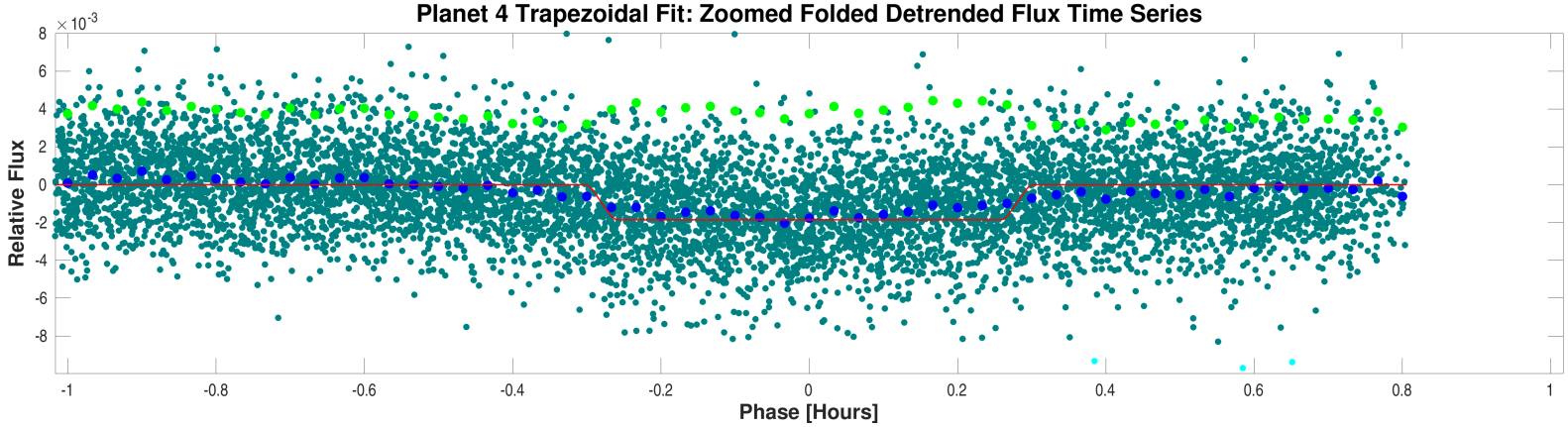
DoF: Degrees of Freedom

Parameter	Value	Uncertainty	Units
SNR	31.1		
Orbital Period	0.2723264		days
Transit Epoch	1683.6023589		BTJD
Transit Depth	1859		ppm
Transit Duration	1.0962		hours
Transit Ingress Duration	0.5352		hours
Model Chi Square Statistic (DoF)	8894.7 (8312)		

DoF: Degrees of Freedom



Folded detrended flux time series for CatId 169461816, Planet candidate 4 and folded trapezoidal model light curve.
Open `./planet-04/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-04-all-trapezoidal.fig`



Zoomed folded detrended flux time series for CatId 169461816, Planet candidate 4 and folded trapezoidal model light curve.
Open `./planet-04/planet-search-and-model-fitting-results/trapezoidal-model-fit/0000000169461816-04-all-trapezoidal-zoomed.fig`

10.4 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.

10.4.1 Weak Secondary Test

```
No weak secondary test results available.
```

10.4.2 Eclipsing Binary Discrimination Test

Result	Value	Value in Sigmas	Significance (%)
Odd Even Transit Depth Comparison Statistic	1.3474e+00	1.1608	24.57
Shorter Period Comparison Statistic	4.6927e-08	0.0002	0.02
Longer Period Comparison Statistic	4.7100e-07	0.0007	0.05

10.4.3 Bootstrap Test

```
No bootstrap results available.
```

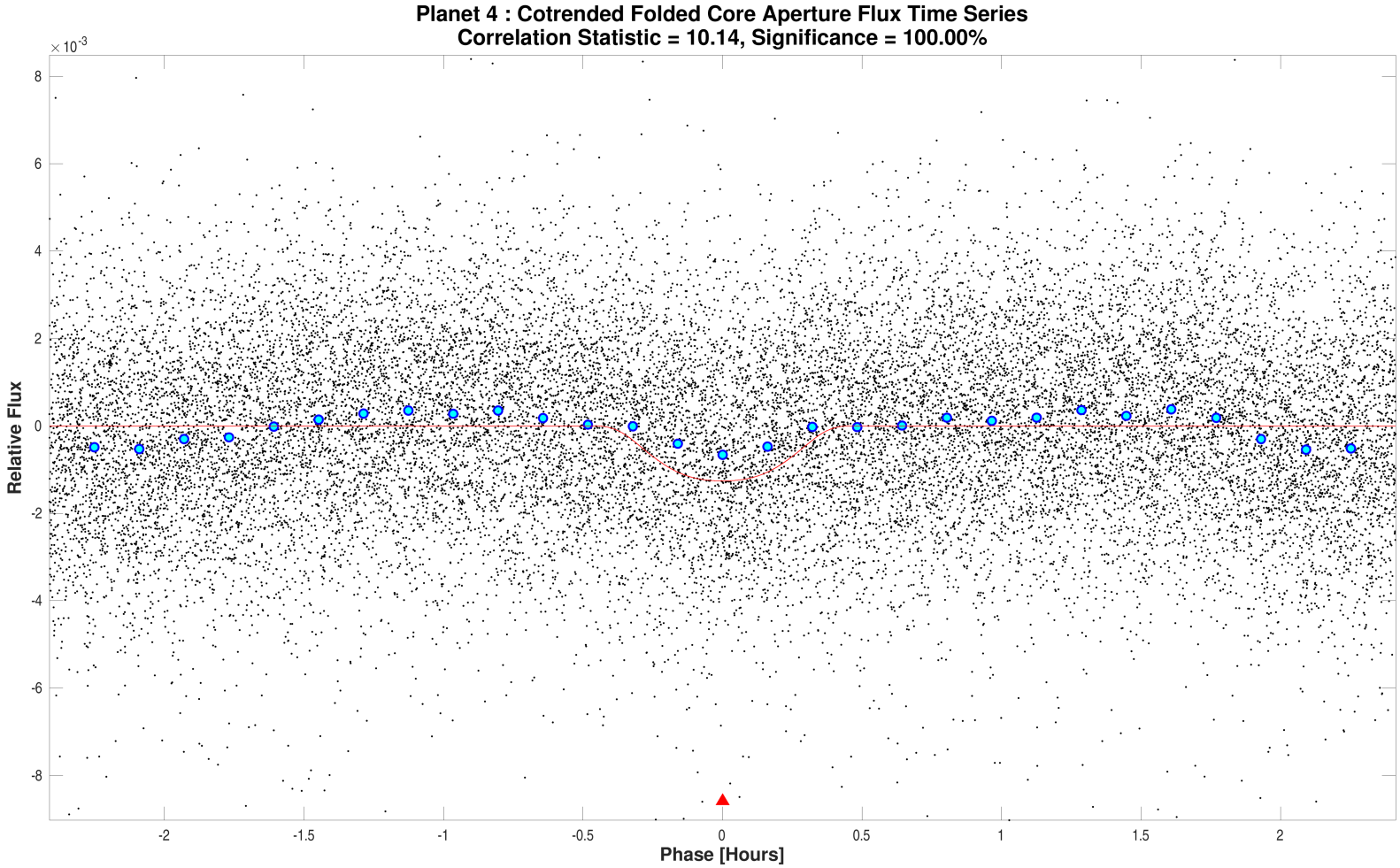
10.4.4 Ghost Diagnostic Test

Result	Value	Significance (%)
Maximum MES	15.6	
SNR	20.9	
Core Aperture Statistic	1.0138e+01	100.00
Halo Aperture Statistic	1.2685e+01	100.00
Ratio of Core/Halo Aperture Statistics	7.9924e-01	

10.4.5 Validation Test Figures

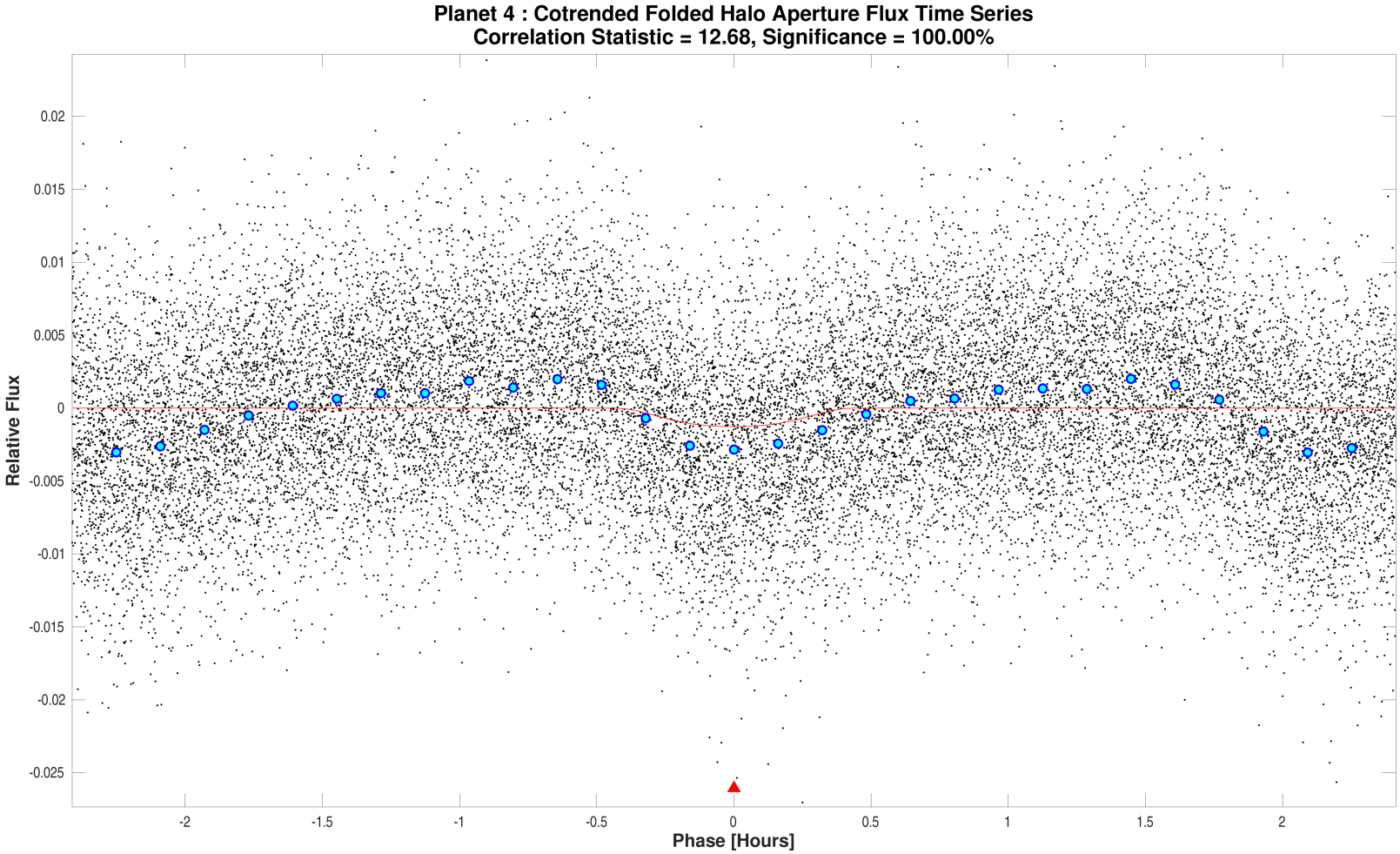
No figures named 0000000169461816-04-weak-secondary-diagnostic.fig are available.

No figures named 0000000169461816-04-bootstrap-false-alarm.fig are available.



Optical ghost diagnostic core aperture flux time series for target 169461816, planet candidate 4. 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-04/ghost-diagnostic-results/0000000169461816-04-core-unwhitened-cotrended-zoomed-model.fig`

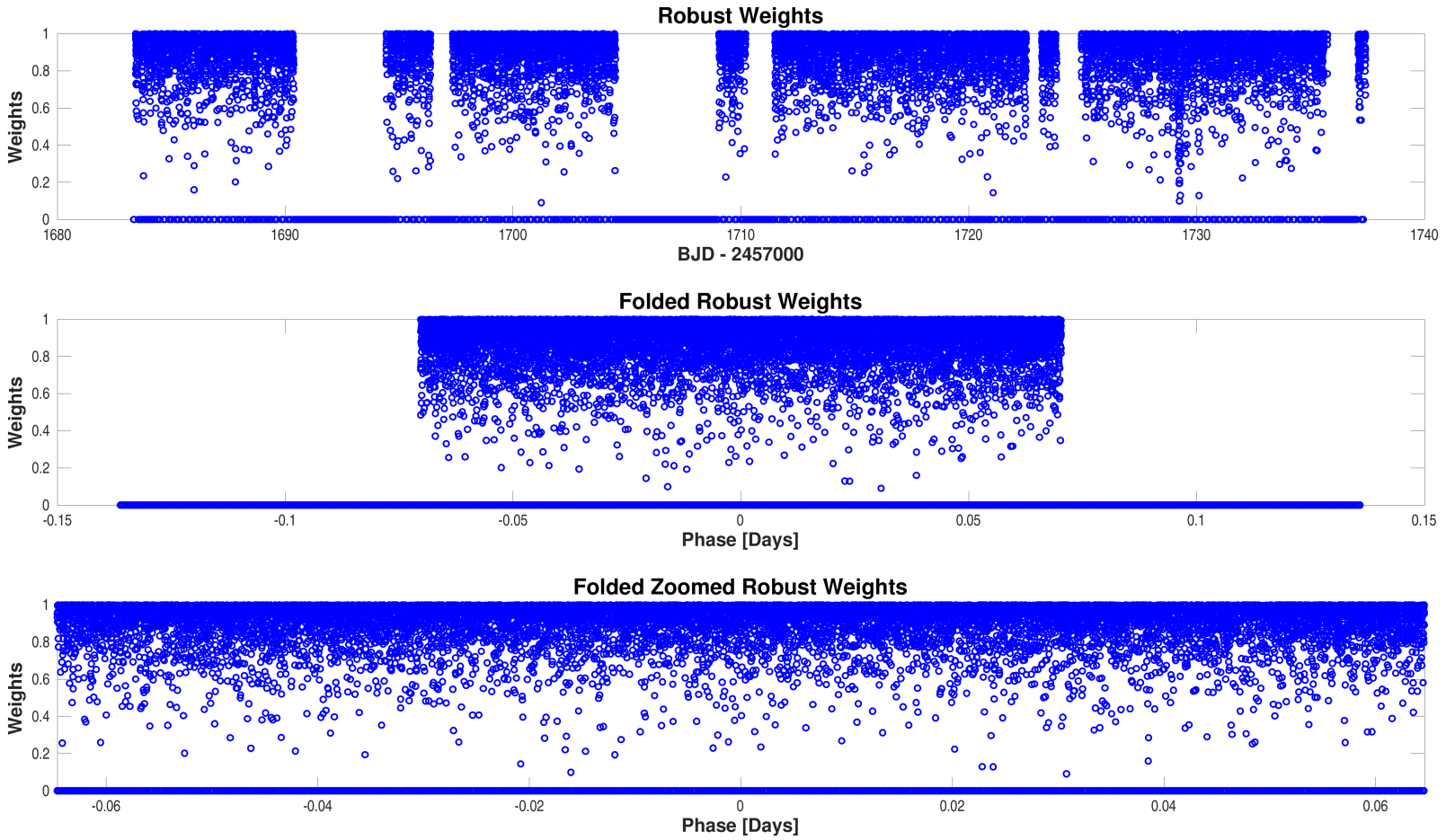


Optical ghost diagnostic halo aperture flux time series for target 169461816, planet candidate 4. The unwhitened time series is phase folded at the orbital period associated with the planet candidate and centered on the epoch of the first transit. The time series was first cotrended against spacecraft 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.

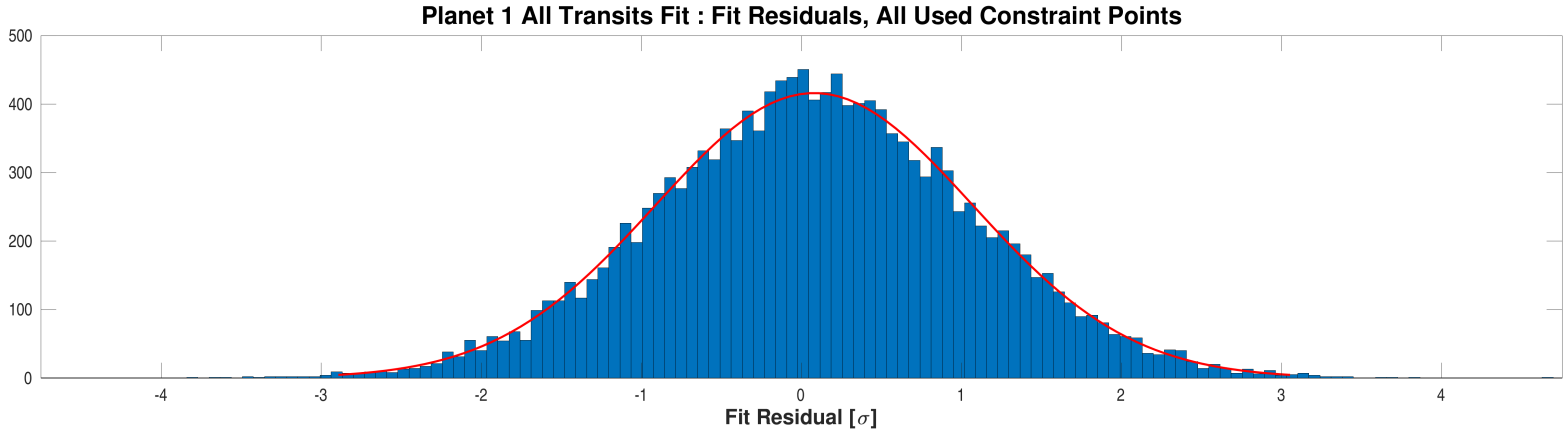
Open `./planet-04/ghost-diagnostic-results/0000000169461816-04-halo-unwhitened-cotrended-zoomed-model.fig`

Appendix A Planet Candidate 1

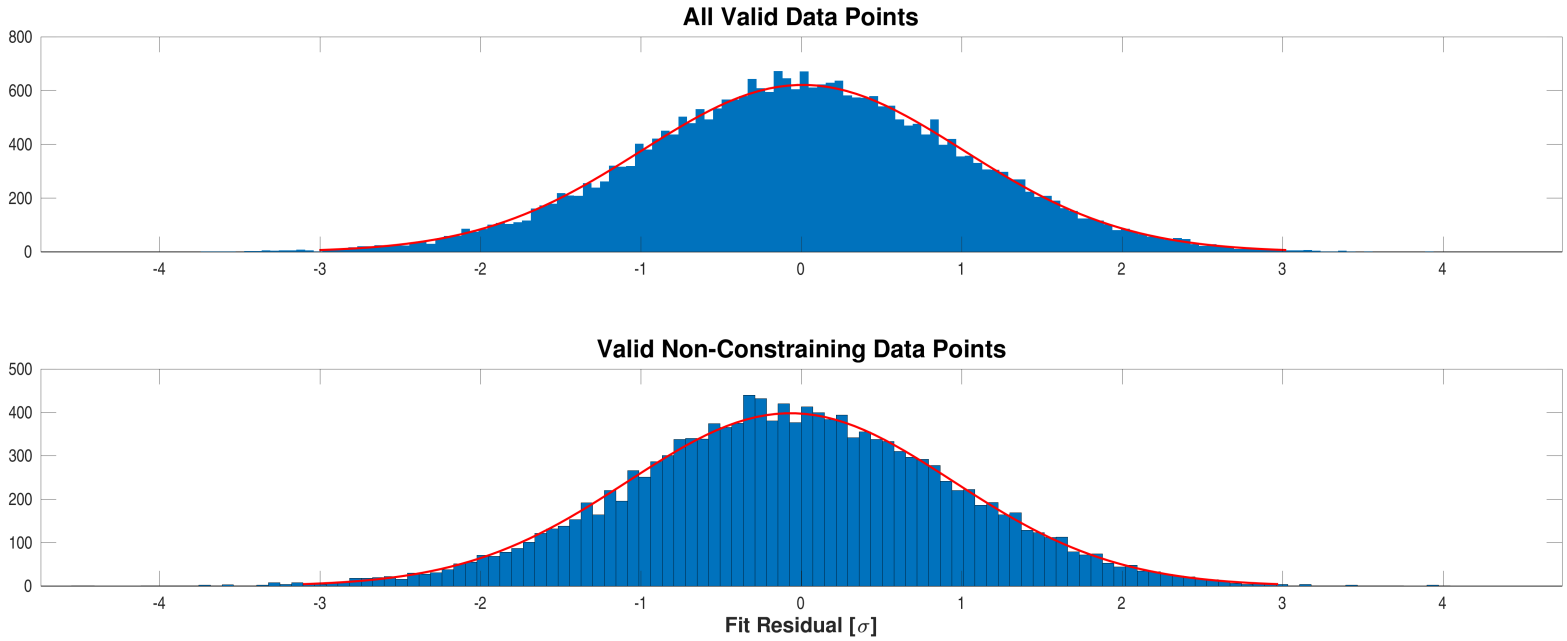
A.1 Model Fitter: All Transits



Robust weights distribution for CatId 169461816, 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/0000000169461816-01-all-robust-weights.fig`



Fit residuals distribution for CatId 169461816, 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/0000000169461816-01-all-histo-used.fig`

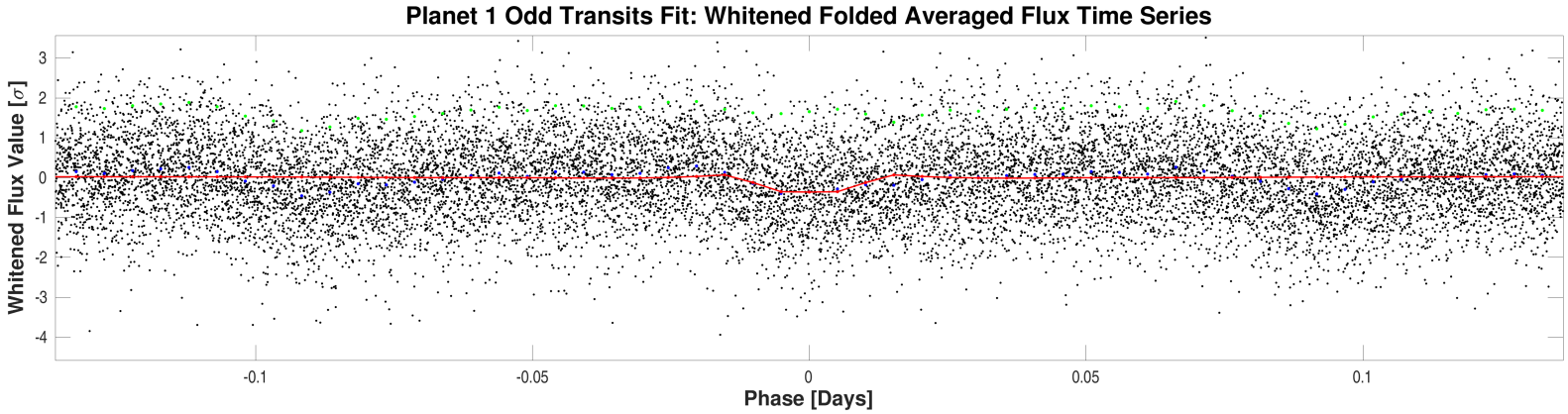


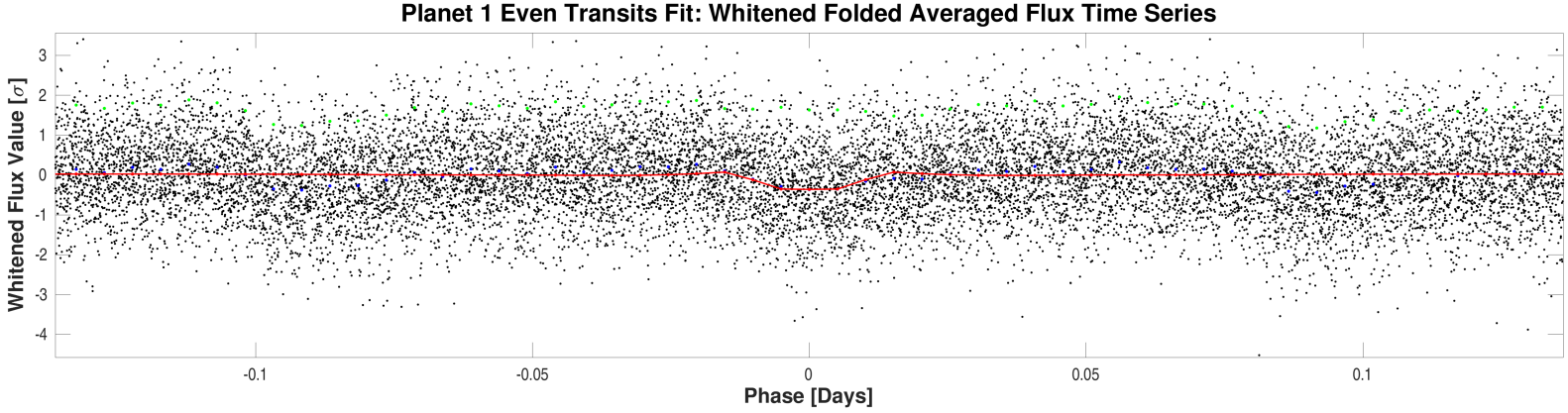
Fit residuals distribution for CatId 169461816, Planet candidate 1. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-01-all-histo-all-and-unused.fig`

A.2 Model Fitter: Odd & Even Transits

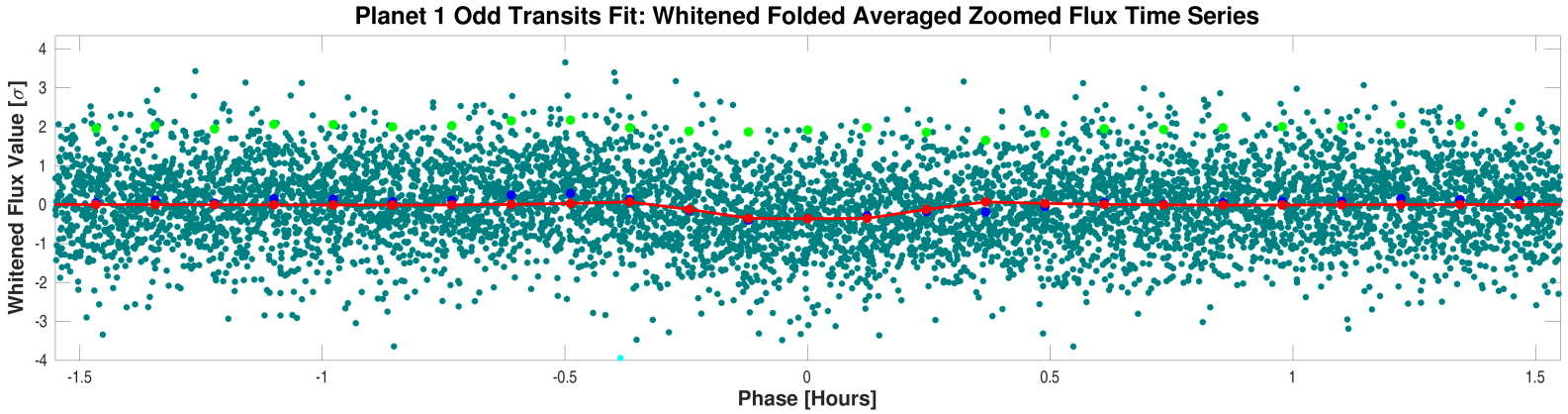
Parameter	Odd Transits Value	Odd Transits Uncertainty	Even Transits Value	Even Transits Uncertainty	Units	Difference / ‖Uncertainty‖
SNR	10.5		10.8			
Orbital Period	0.2723372	1.1292e-05	0.2723372	1.0901e-05	days	4.0318e-10
Transit Epoch	1683.5074480	5.7032e-04	1683.7797852	5.4971e-04	BTJD	2.1437e-10
Impact Parameter	0.3000	2.0760e+01	0.3000	2.0022e+01		2.4134e-12
Planet Radius to Star Radius Ratio	0.0315204	3.0399e-02	0.0315204	2.9389e-02		1.5710e-11
Semi-major Axis to Star Radius Ratio	4.0250	2.5738e+01	4.0250	2.4796e+01		3.0900e-12
Planet Radius	5.1311	4.9540e+00	5.1311	4.7897e+00	Earth radii	1.5693e-11
Semi-major Axis	0.0093	6.9147e-04	0.0093	6.9147e-04	AU	1.4724e-13
Effective Stellar Flux	48436.1106	7.3872e+03	48436.1106	7.3872e+03	Goldilocks	1.4347e-13
Equilibrium Temperature	3784	1.4427e+02	3784	1.4427e+02	Kelvin	1.4488e-13
Stellar Density	11.8119	2.2659e+02	11.8119	2.1830e+02	Solar density	3.0917e-12
Transit Depth	1110	1.2786e+02	1110	1.2607e+02	ppm	1.1862e-09
Transit Duration	0.5169	2.4169e-01	0.5169	2.2959e-01	hours	7.4492e-11
Transit Ingress Duration	0.0176	2.5799e-01	0.0176	2.4873e-01	hours	7.2752e-13
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)	11022.2 (13597.8)		11022.2 (13597.8)			

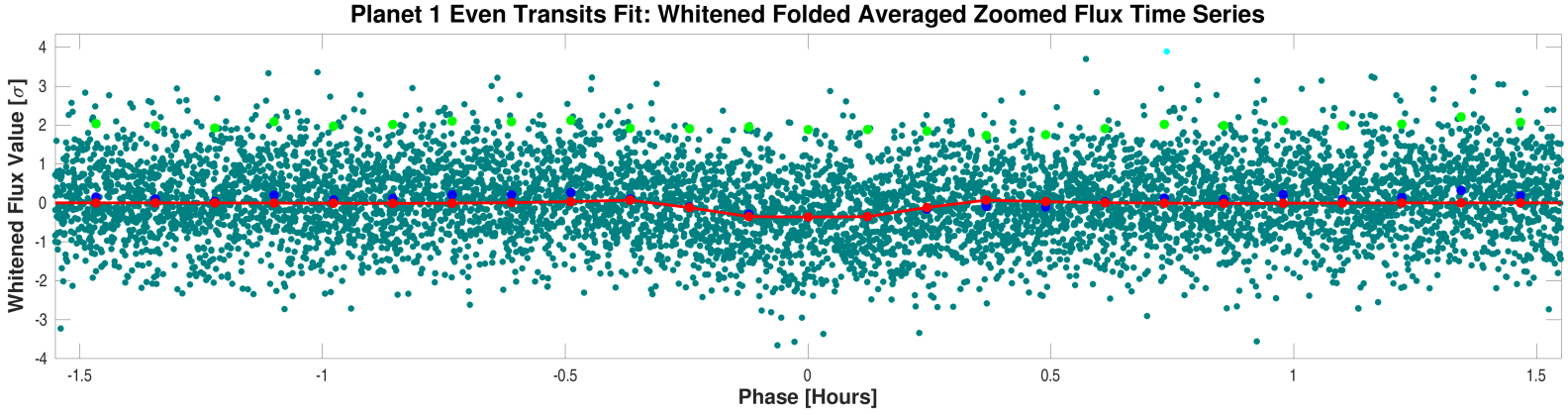
DoF: Degrees of Freedom



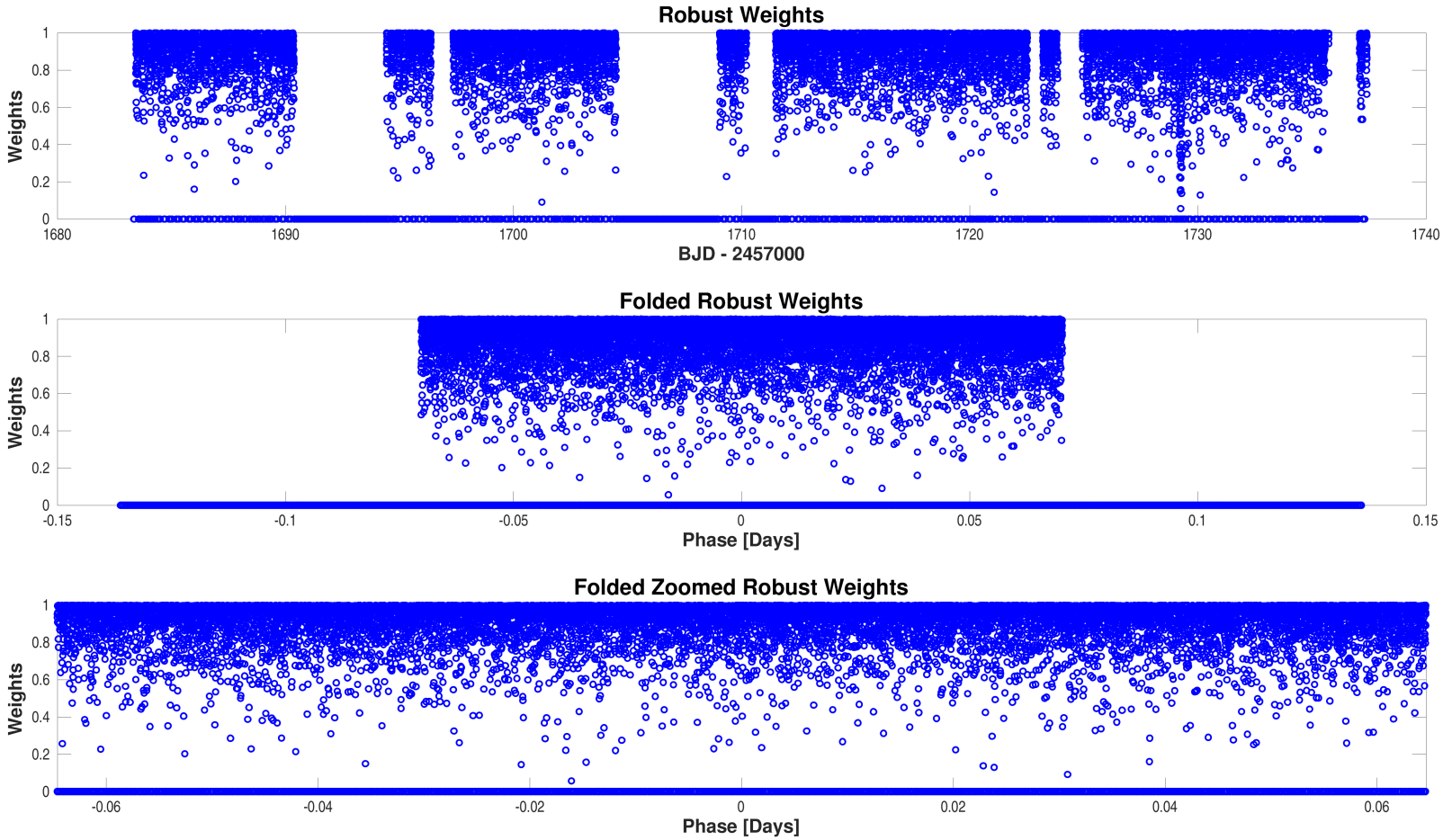


Folded flux time series for CatId 169461816, Planet candidate 1 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light 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/0000000169461816-01-odd-even-whitened.fig`

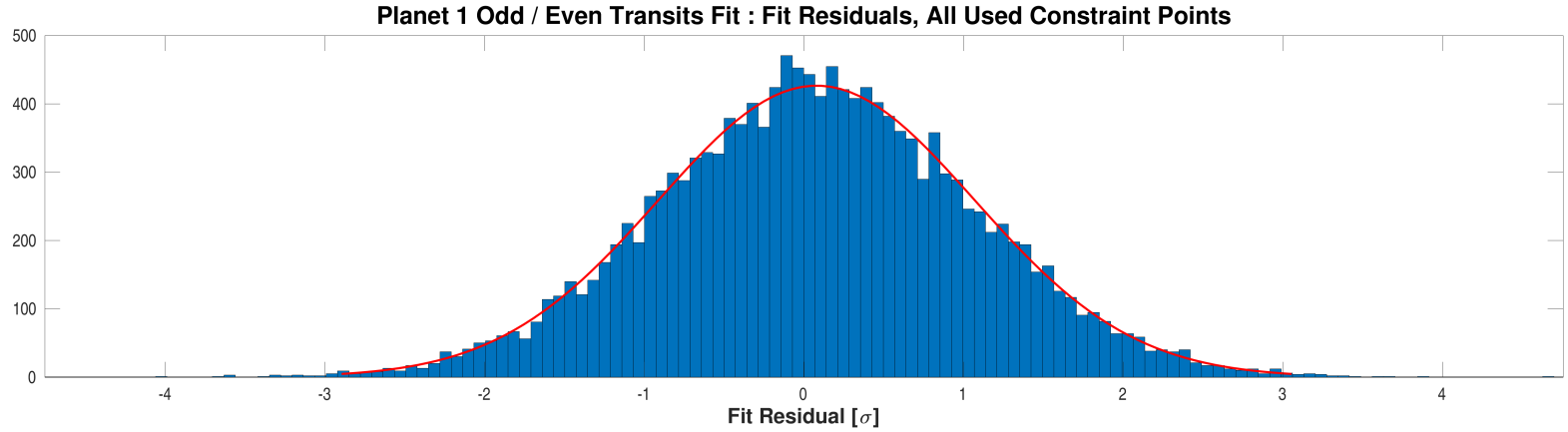




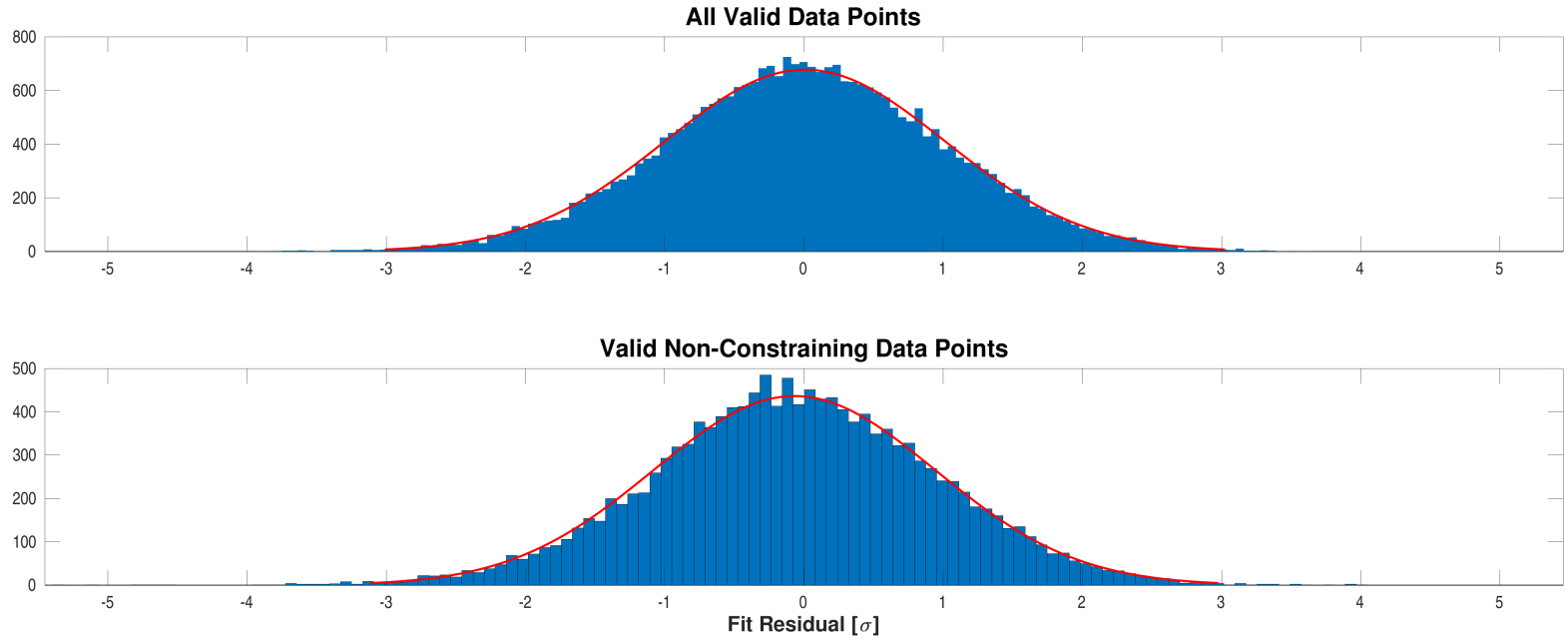
Folded flux time series for CatId 169461816, Planet candidate 1 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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/0000000169461816-01-odd-even-whitened-zoomed.fig`



Robust weights distribution for CatId 169461816, 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/0000000169461816-01-odd-even-robust-weights.fig`

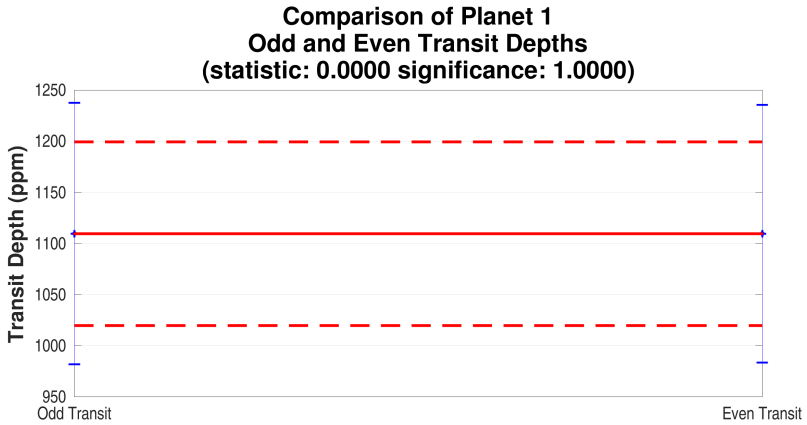


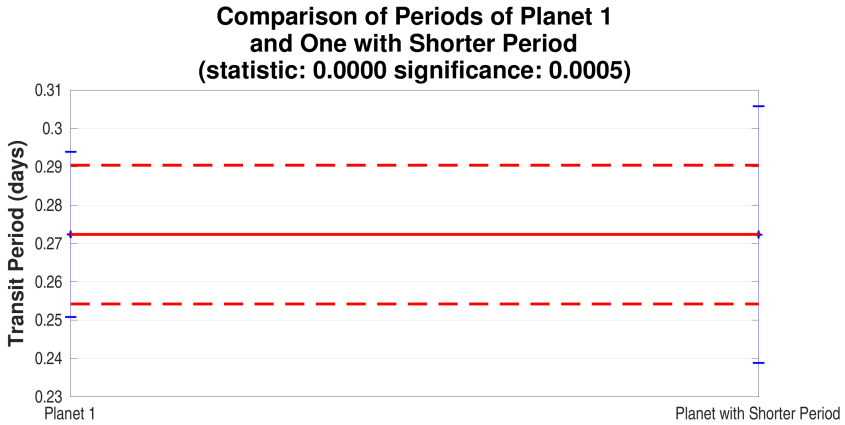
Fit residuals distribution for CatId 169461816, Planet candidate 1. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-01-odd-even-histo-used.fig`

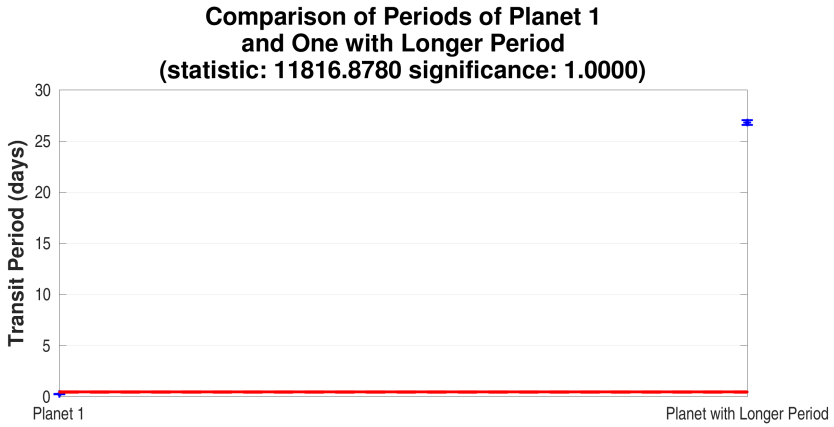


Fit residuals distribution for CatId 169461816, Planet candidate 1. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-01/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-01-odd-even-histo-all-and-unused.fig`

A.3 Eclipsing Binary Discrimination Test



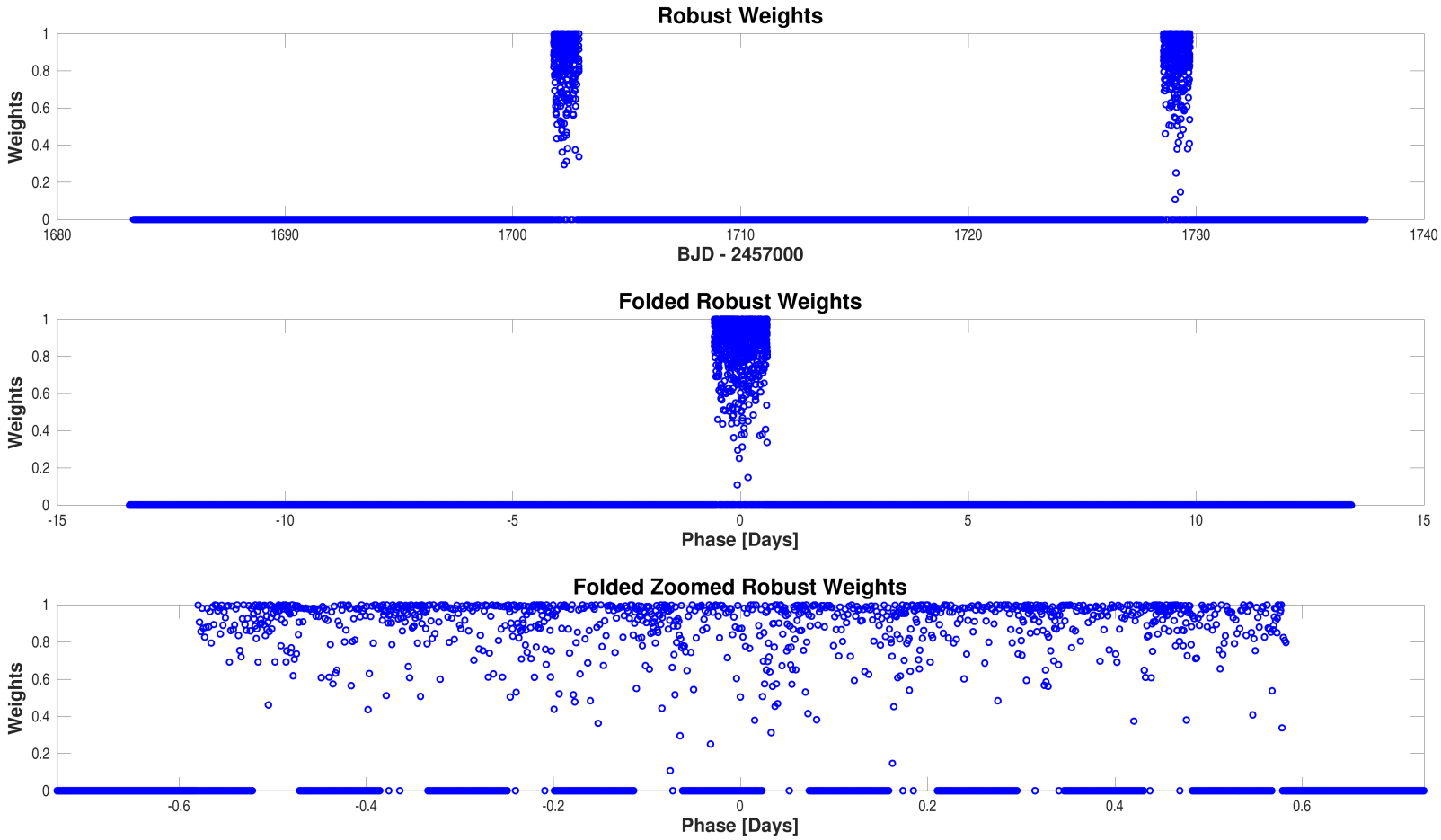




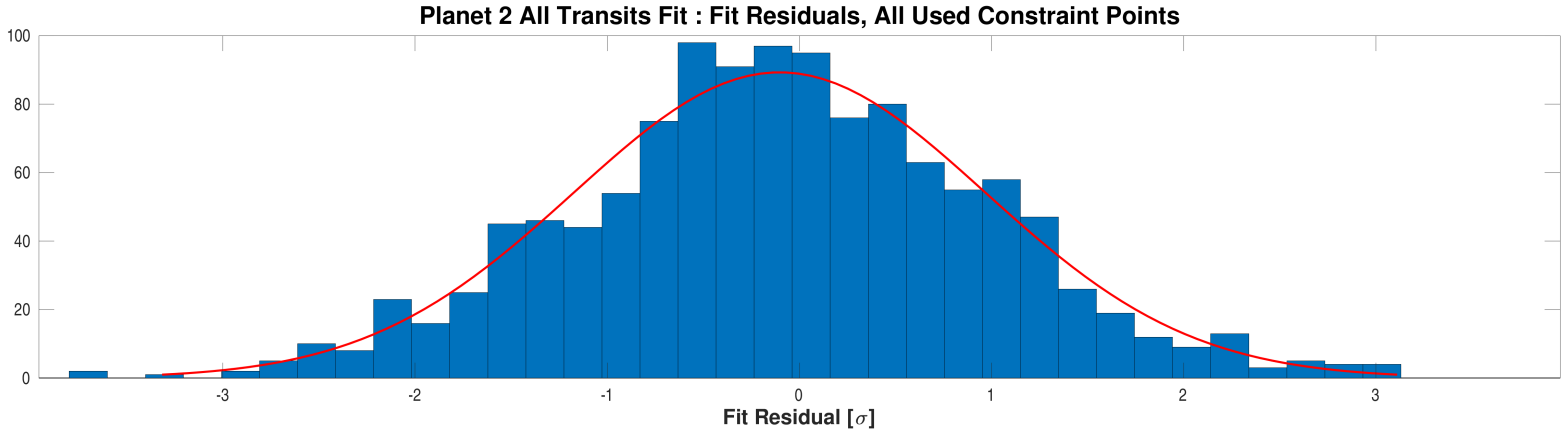
Top-left: Diagnostic plot of Odd/Even Transit Depth Test for catId 169461816, planet 1. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Top-right: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 1 and the planet with shorter period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Bottom-left: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 1 and the planet with longer period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary.
Open `./planet-01/binary-discrimination-test-results/0000000169461816-01-eclipsing-binary-discrimination-tests.fig`

Appendix B Planet Candidate 2

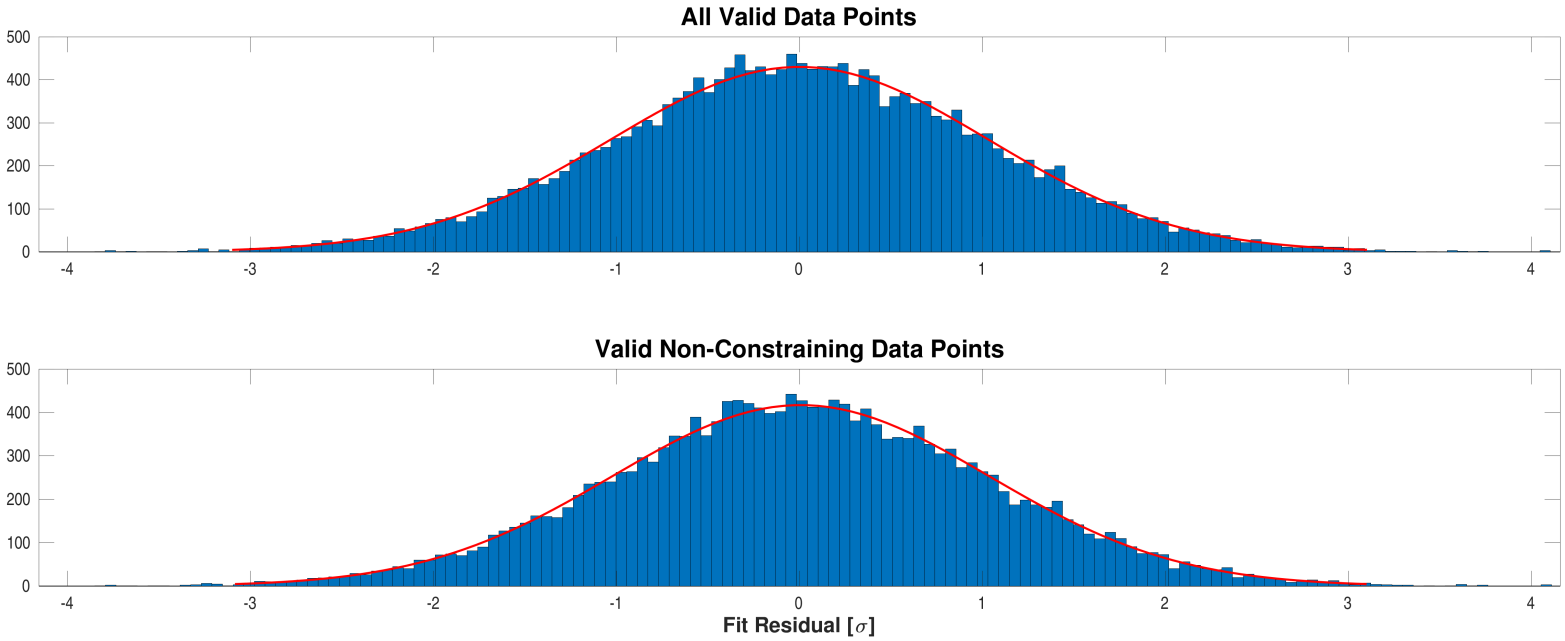
B.1 Model Fitter: All Transits



Robust weights distribution for CatId 169461816, Planet candidate 2. 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-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-robust-weights.fig`



Fit residuals distribution for CatId 169461816, Planet candidate 2. 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-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-histo-used.fig`

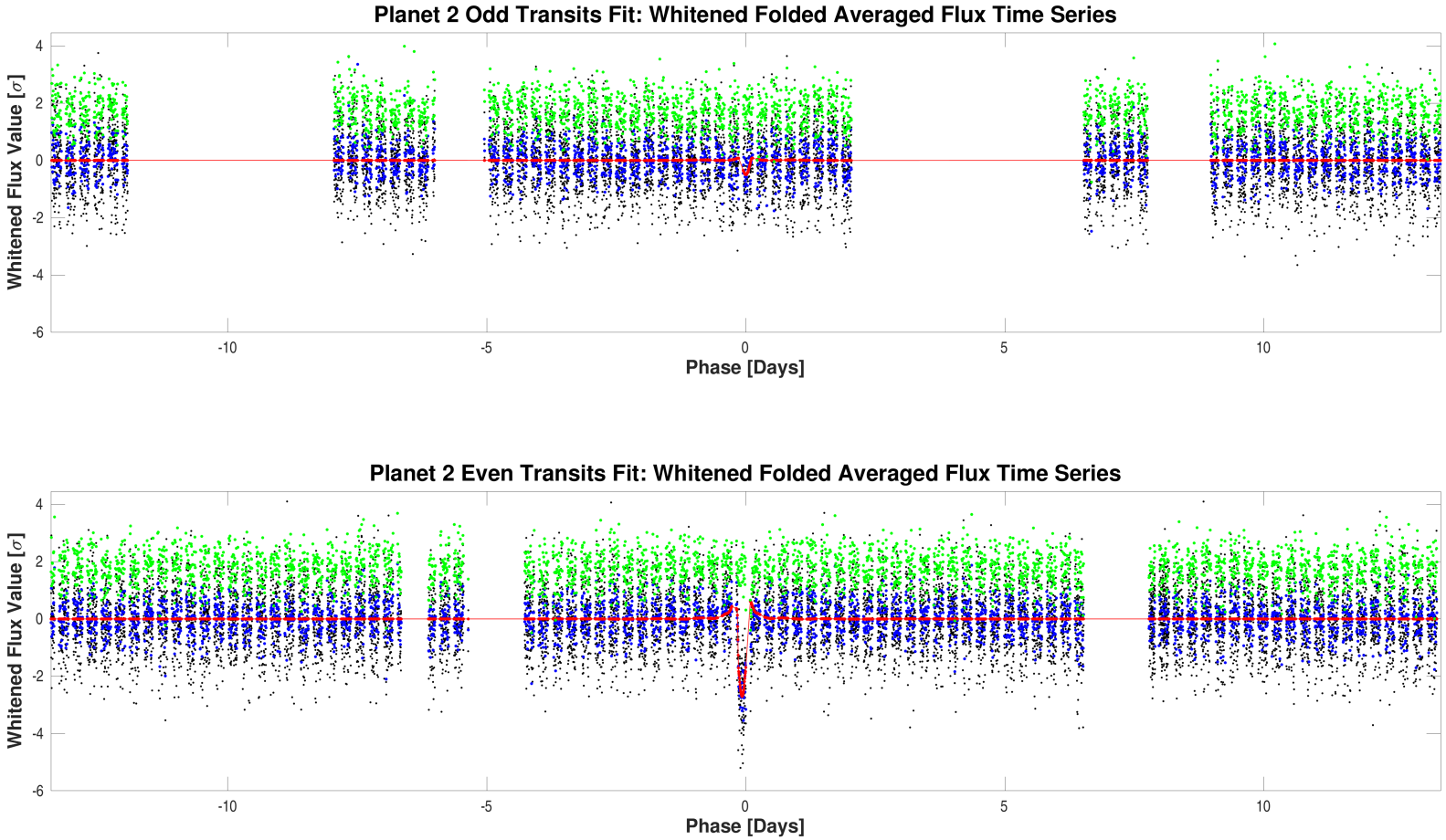


Fit residuals distribution for CatId 169461816, Planet candidate 2. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-02/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-02-all-histo-all-and-unused.fig`

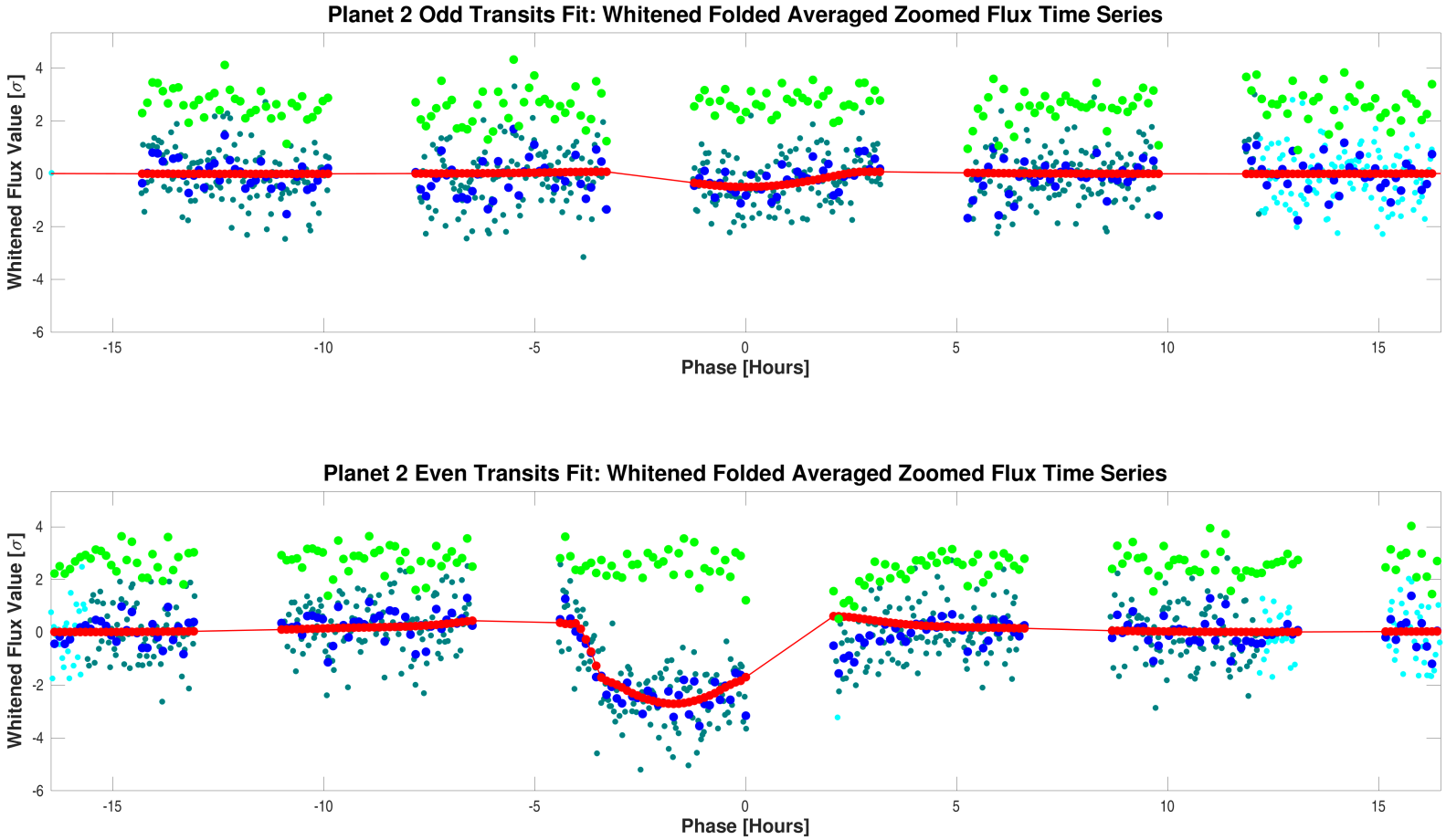
B.2 Model Fitter: Odd & Even Transits

Parameter	Odd Transits Value	Odd Transits Uncertainty	Even Transits Value	Even Transits Uncertainty	Units	Difference / Uncertainty
SNR	3.9		23.0			
Orbital Period	26.8210564	0.0000e+00	26.8210564	0.0000e+00	days	
Transit Epoch	1702.3948981	2.8247e-02	1729.1442828	4.2365e-03	BTJD	2.6677e+00
Impact Parameter	0.9792	4.3367e-01	0.6820	1.5426e-01		6.4557e-01
Planet Radius to Star Radius Ratio	0.0518938	2.2778e-01	0.0901036	3.3522e-03		1.6773e-01
Semi-major Axis to Star Radius Ratio	14.3873	2.4615e+01	37.6325	7.8718e+00		8.9946e-01
Planet Radius	8.4477	3.7082e+01	14.6677	8.5554e-01	Earth radii	1.6769e-01
Semi-major Axis	0.1988	1.4746e-02	0.1988	1.4746e-02	AU	0.0000e+00
Effective Stellar Flux	106.4986	1.6243e+01	106.4986	1.6243e+01	Goldilocks	0.0000e+00
Equilibrium Temperature	819	3.1240e+01	819	3.1240e+01	Kelvin	0.0000e+00
Stellar Density	0.0556	2.8548e-01	0.9953	6.2461e-01	Solar density	1.3684e+00
Transit Depth	1543	8.9664e+02	8428	3.7182e+02	ppm	7.0934e+00
Transit Duration	5.4869	3.4090e+00	4.6313	3.8986e-01	hours	2.4935e-01
Transit Ingress Duration	2.7434	1.7045e+00	0.6757	2.9761e-01	hours	1.1950e+00
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)	836.7 (1000.3)		836.7 (1000.3)			

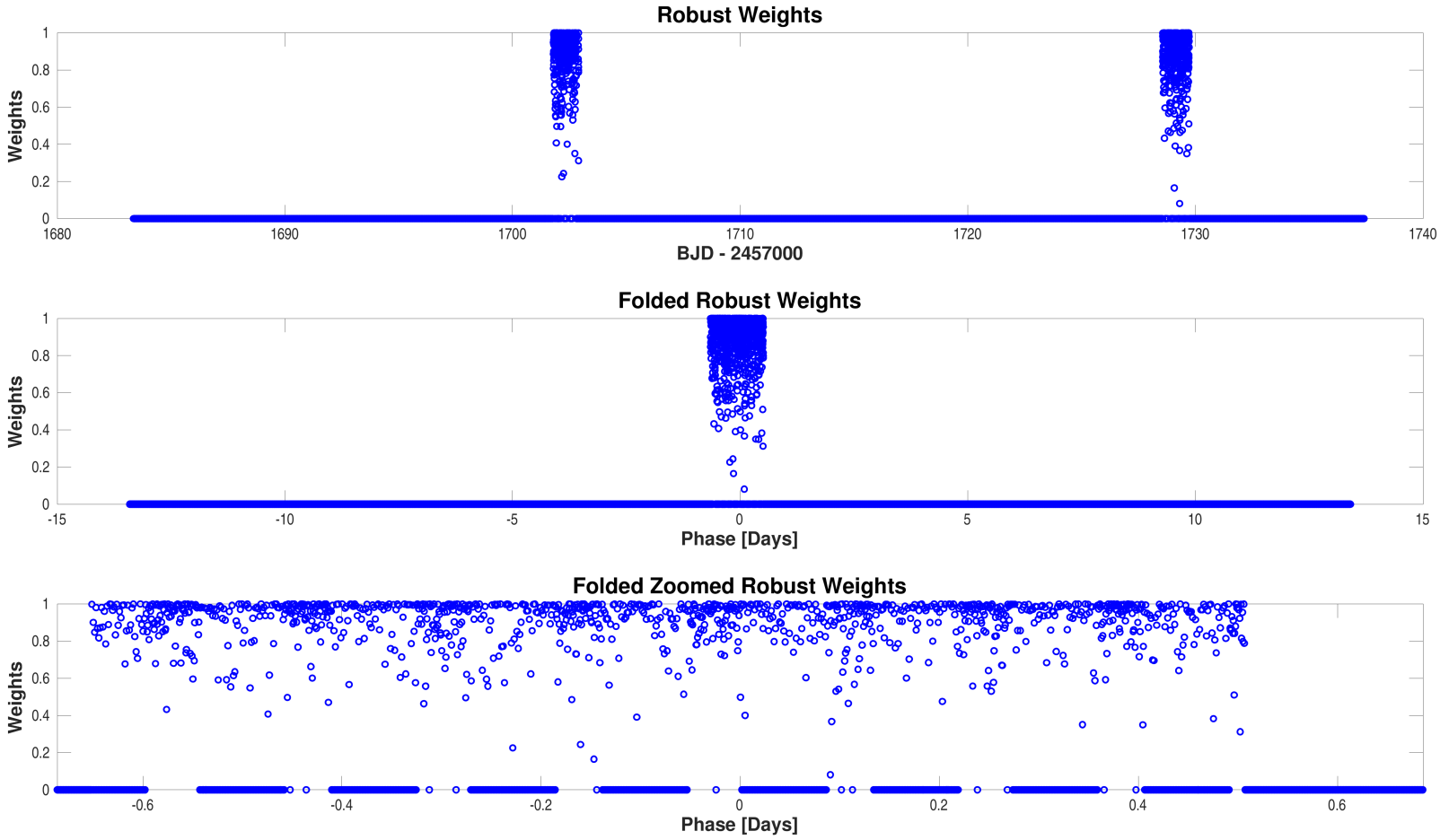
DoF: Degrees of Freedom



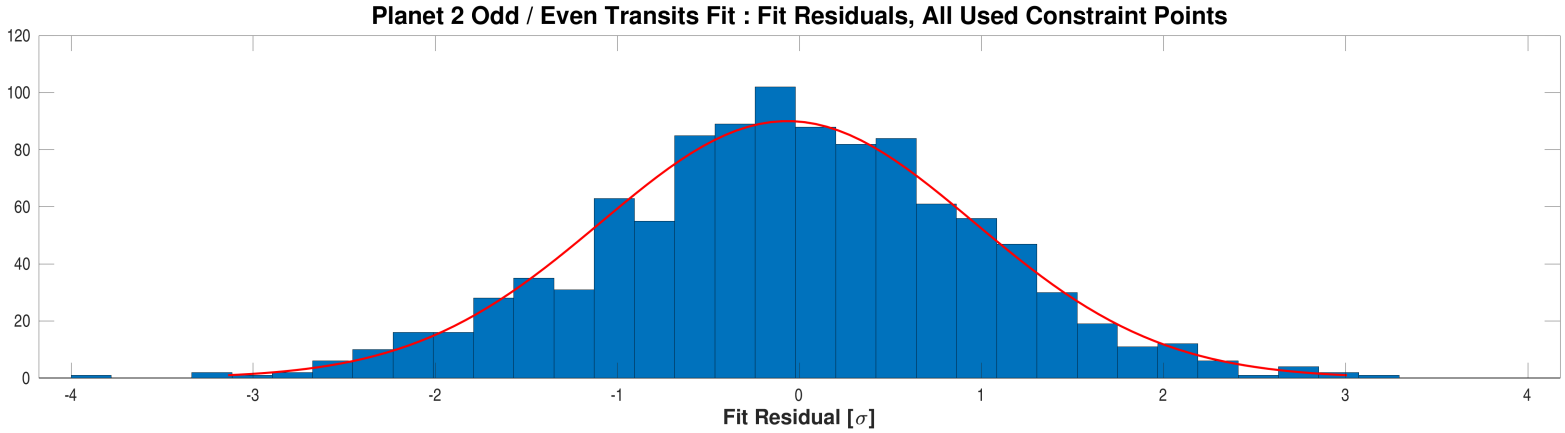
Folded flux time series for CatId 169461816, Planet candidate 2 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light 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-02/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-02-odd-even-whitened.fig`



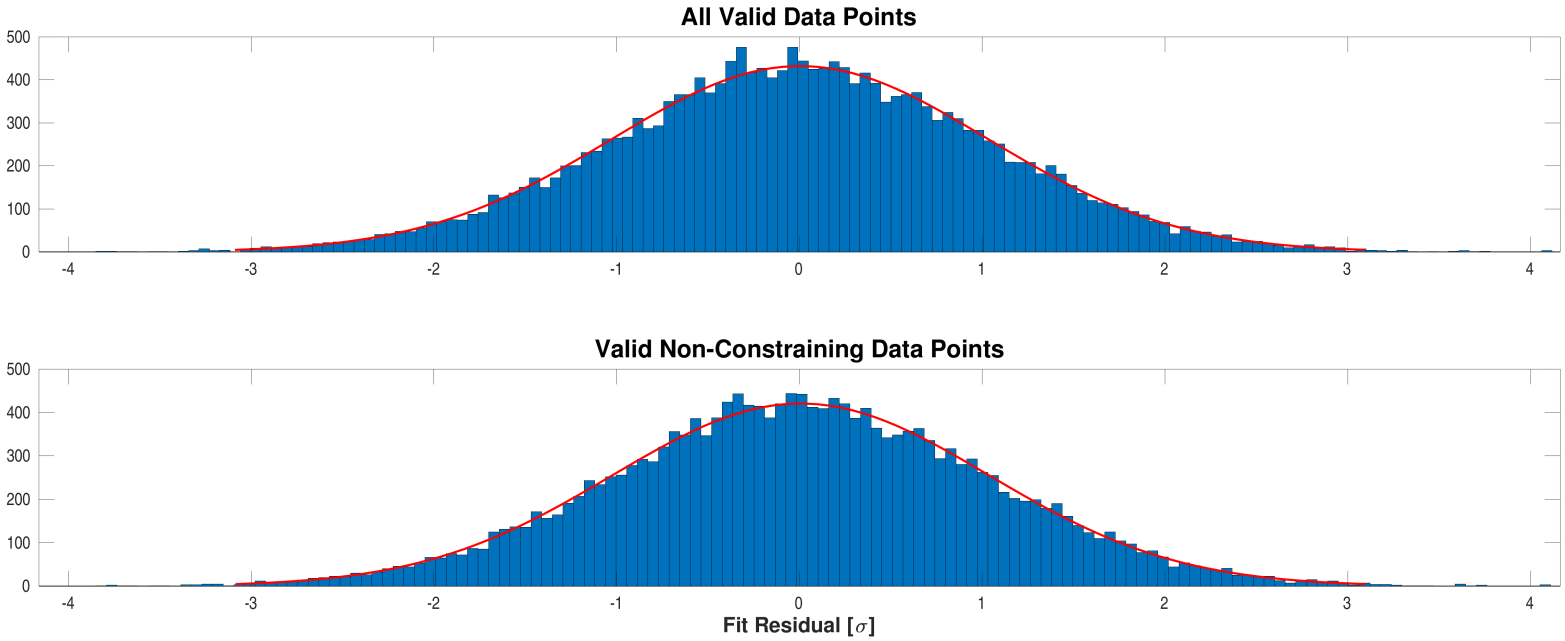
Folded flux time series for CatId 169461816, Planet candidate 2 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-02/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-02-odd-even-whitened-zoomed.fig`



Robust weights distribution for CatId 169461816, Planet candidate 2. 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-02/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-02-odd-even-robust-weights.fig`

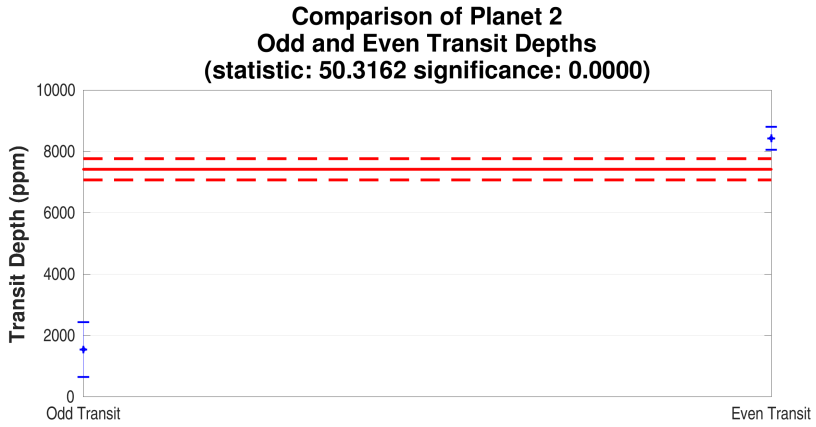


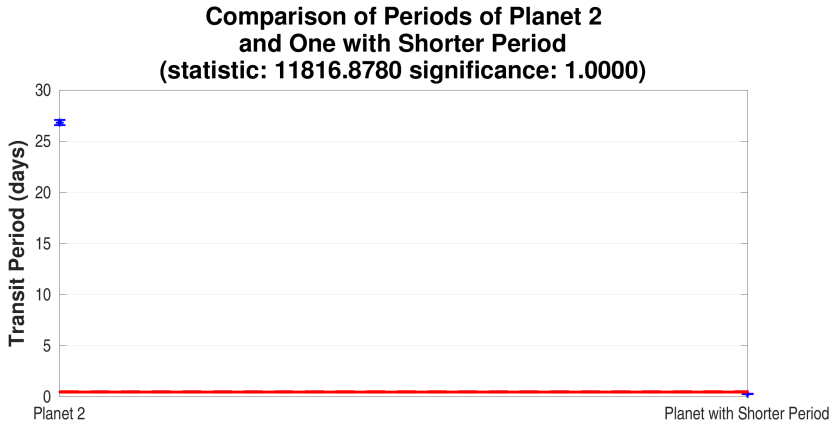
Fit residuals distribution for CatId 169461816, Planet candidate 2. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-02/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-02-odd-even-histo-used.fig`



Fit residuals distribution for CatId 169461816, Planet candidate 2. 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-02/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-02-odd-even-histo-all-and-unused.fig`

B.3 Eclipsing Binary Discrimination Test

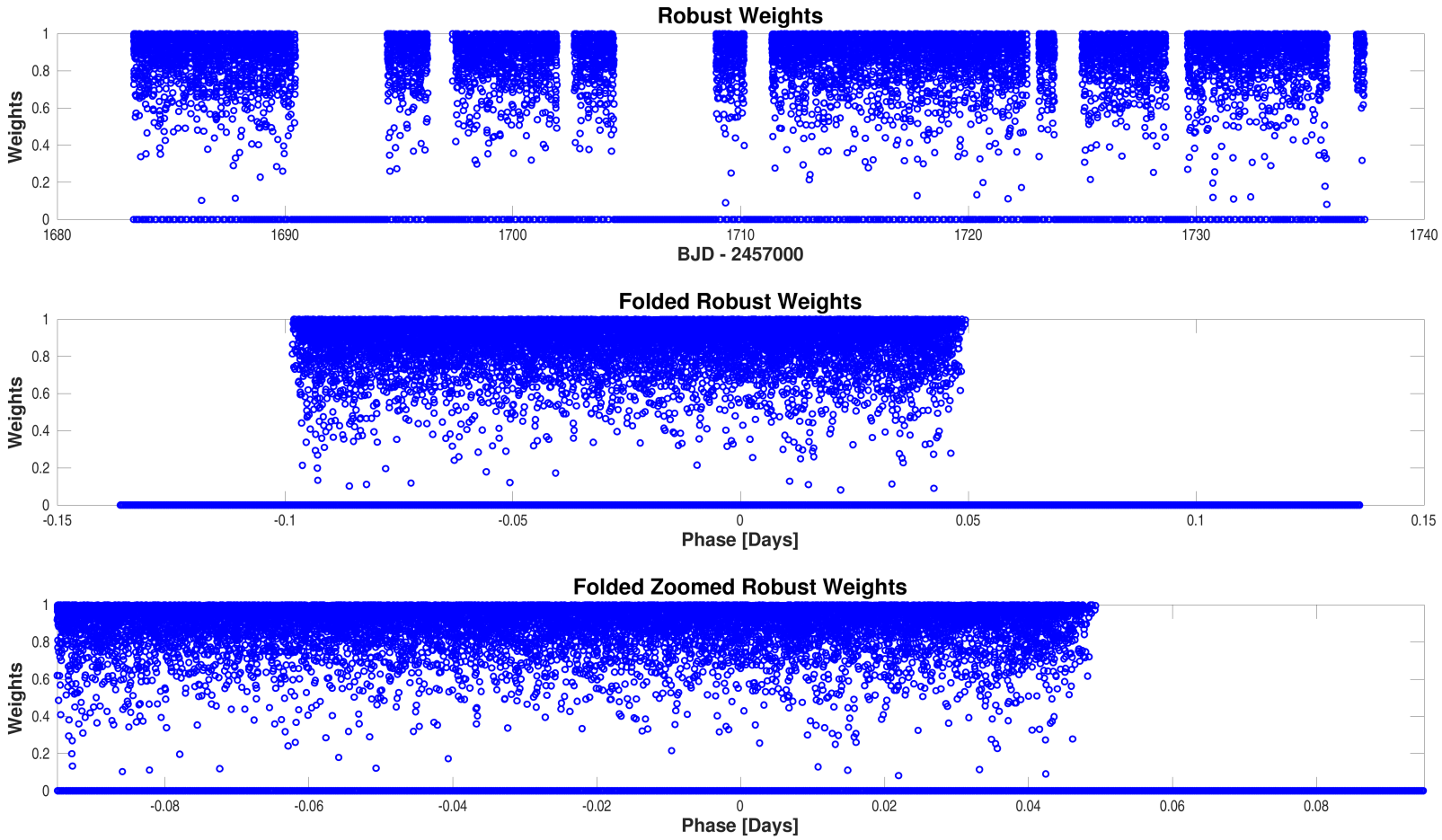




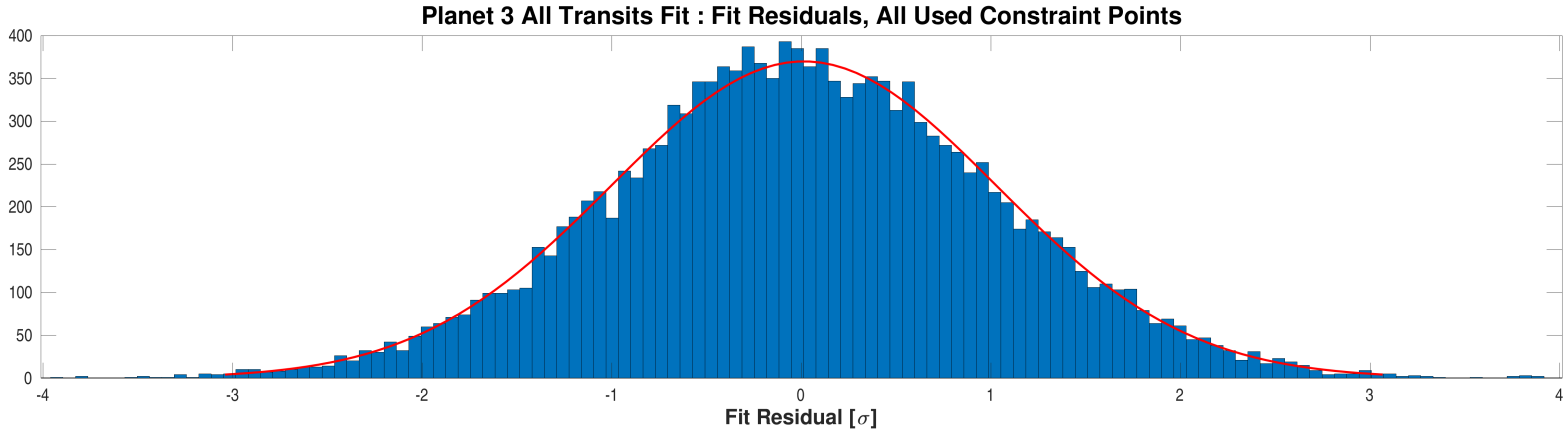
Top-left: Diagnostic plot of Odd/Even Transit Depth Test for catId 169461816, planet 2. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Top-right: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 2 and the planet with shorter period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary.
Open `./planet-02/binary-discrimination-test-results/0000000169461816-02-eclipsing-binary-discrimination-tests.fig`

Appendix C Planet Candidate 3

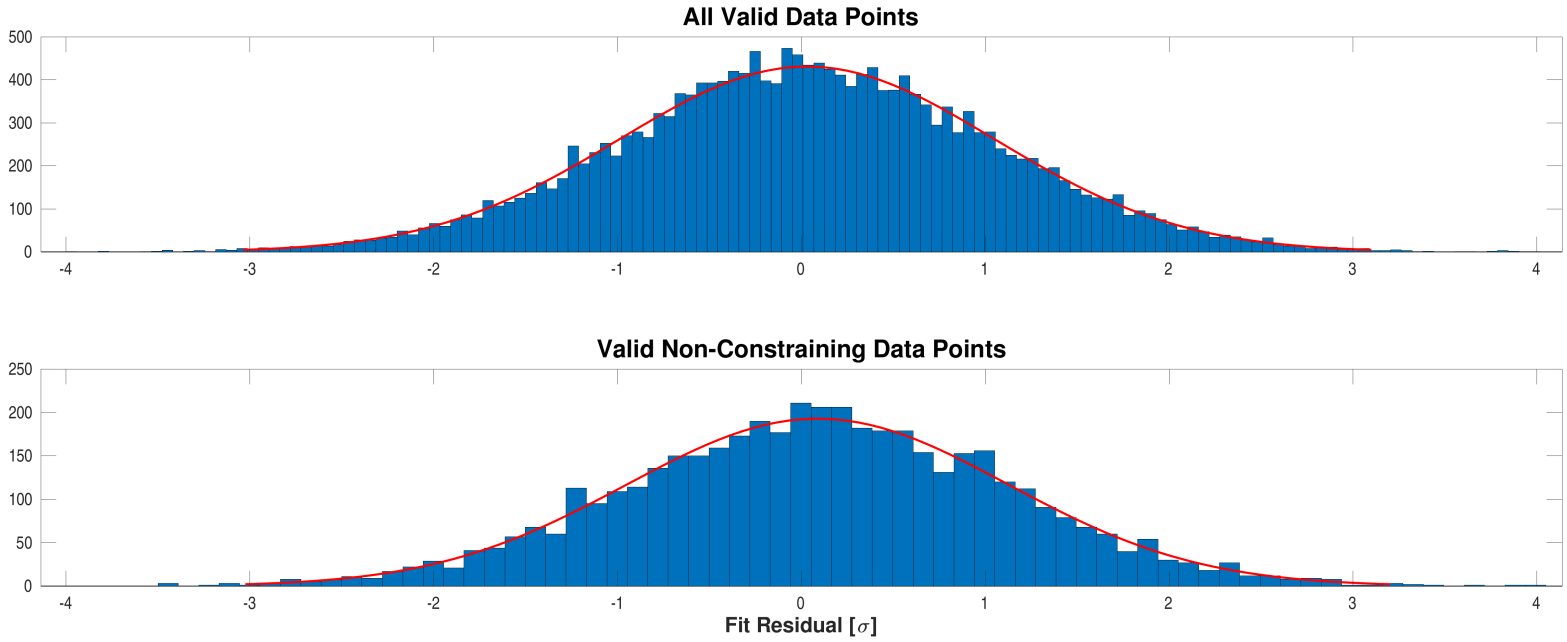
C.1 Model Fitter: All Transits



Robust weights distribution for CatId 169461816, Planet candidate 3. 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-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-robust-weights.fig`



Fit residuals distribution for CatId 169461816, Planet candidate 3. 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-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-histo-used.fig`

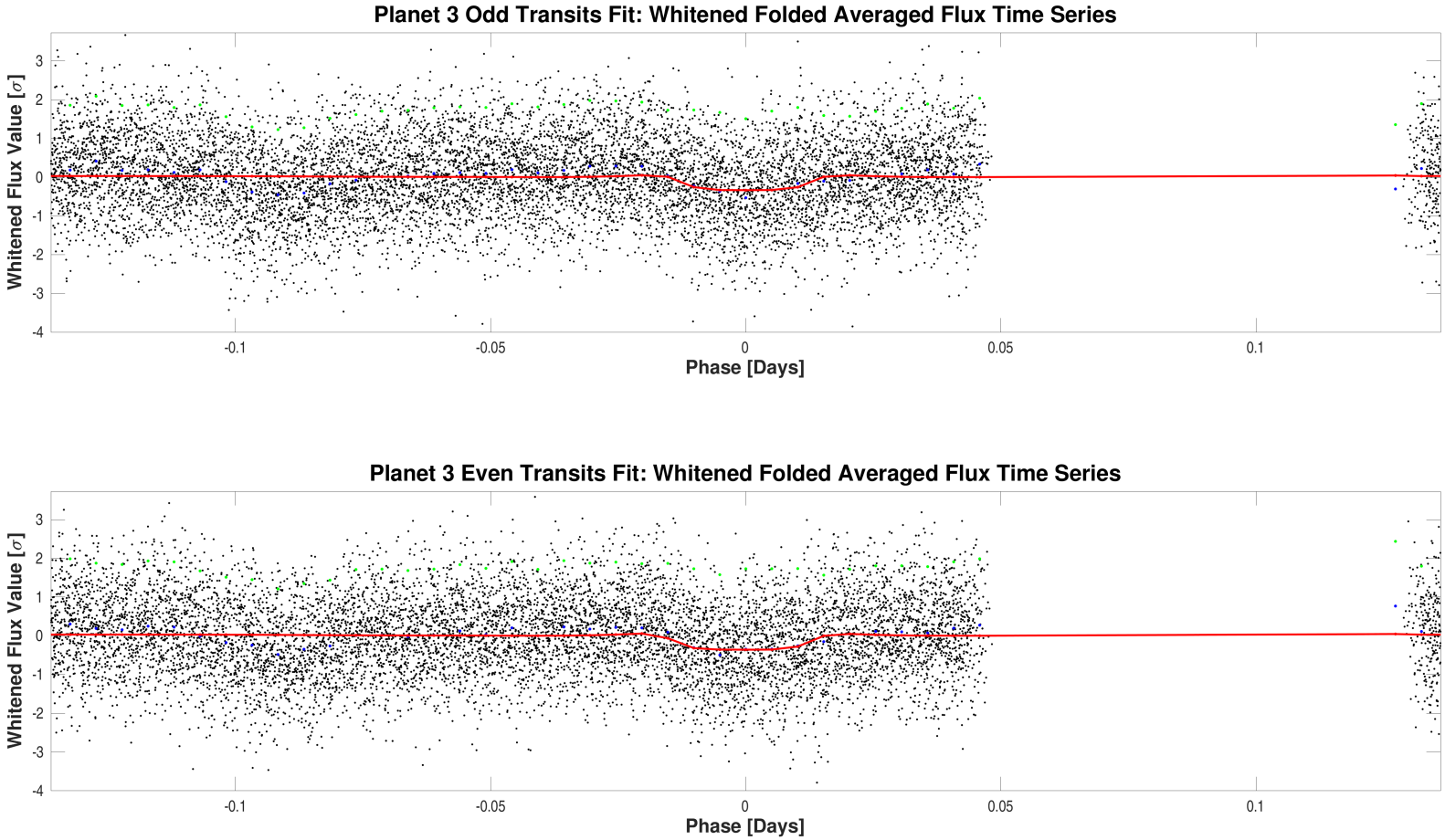


Fit residuals distribution for CatId 169461816, Planet candidate 3. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-03/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-03-all-histo-all-and-unused.fig`

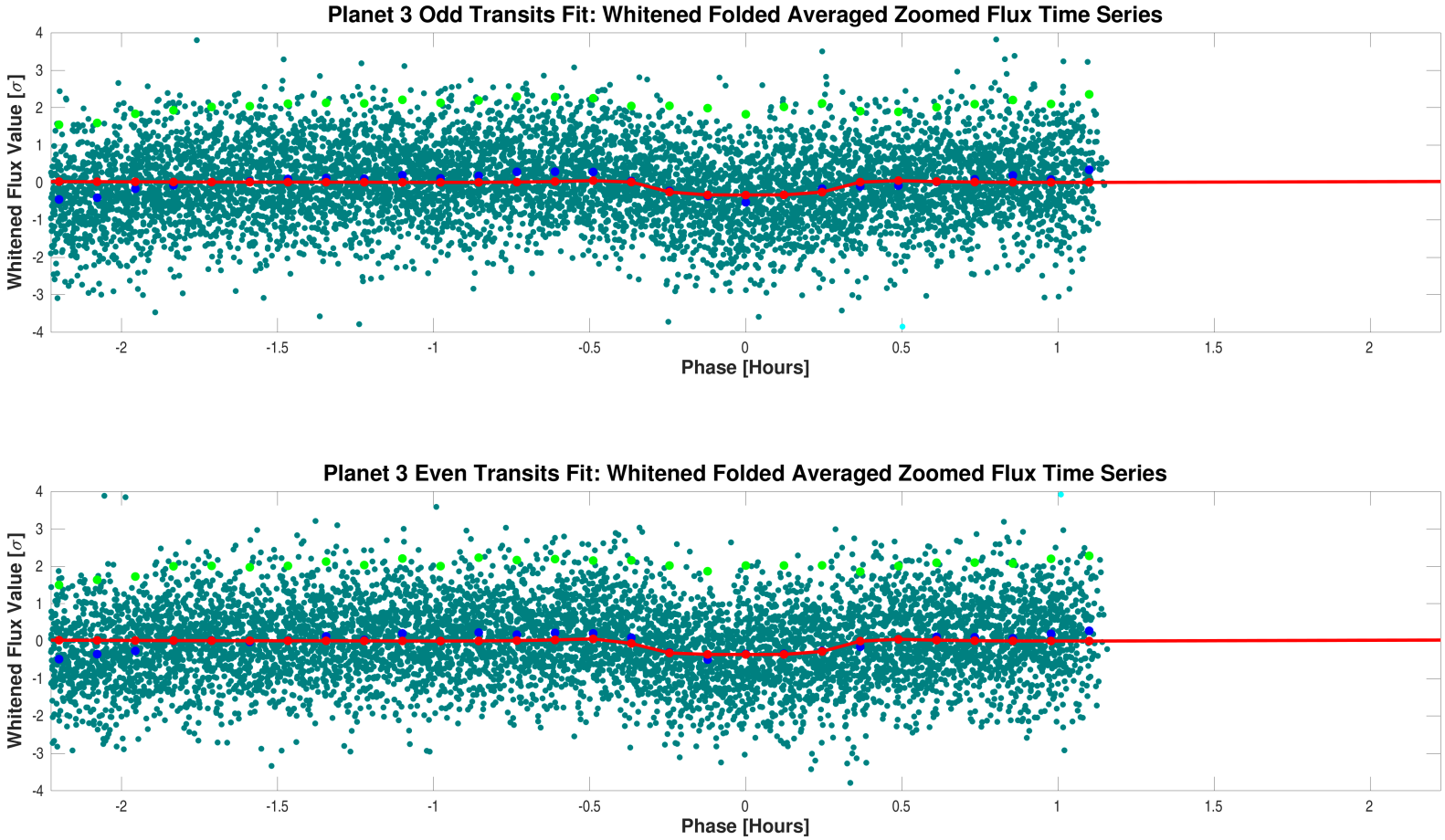
C.2 Model Fitter: Odd & Even Transits

Parameter	Odd Transits Value	Odd Transits Uncertainty	Even Transits Value	Even Transits Uncertainty	Units	Difference / Uncertainty
SNR	10.9		12.0			
Orbital Period	0.2723071	1.2689e-05	0.2722917	1.2046e-05	days	8.7747e-01
Transit Epoch	1683.4219275	7.5671e-04	1683.6950636	7.0999e-04	BTJD	8.0588e-01
Impact Parameter	0.9092	1.0393e-01	0.9000	1.0795e-01		6.1323e-02
Planet Radius to Star Radius Ratio	0.0333905	3.2995e-03	0.0344477	3.1276e-03		2.3254e-01
Semi-major Axis to Star Radius Ratio	1.6750	5.8270e-01	1.6592	5.3629e-01		1.9968e-02
Planet Radius	5.4356	5.9002e-01	5.6077	5.6804e-01	Earth radii	2.1013e-01
Semi-major Axis	0.0093	6.9142e-04	0.0093	6.9139e-04	AU	3.5825e-04
Effective Stellar Flux	48443.2504	7.3883e+03	48446.8922	7.3888e+03	Goldilocks	3.4854e-04
Equilibrium Temperature	3784	1.4427e+02	3784	1.4427e+02	Kelvin	3.4854e-04
Stellar Density	0.8514	8.8856e-01	0.8276	8.0252e-01	Solar density	1.9873e-02
Transit Depth	993	1.0816e+02	1070	1.0406e+02	ppm	5.1290e-01
Transit Duration	0.7419	1.2936e-01	0.7791	1.2264e-01	hours	2.0860e-01
Transit Ingress Duration	0.1261	1.5258e-01	0.1259	1.4214e-01	hours	1.2406e-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)	11286.0 (13293.9)		11286.0 (13293.9)			

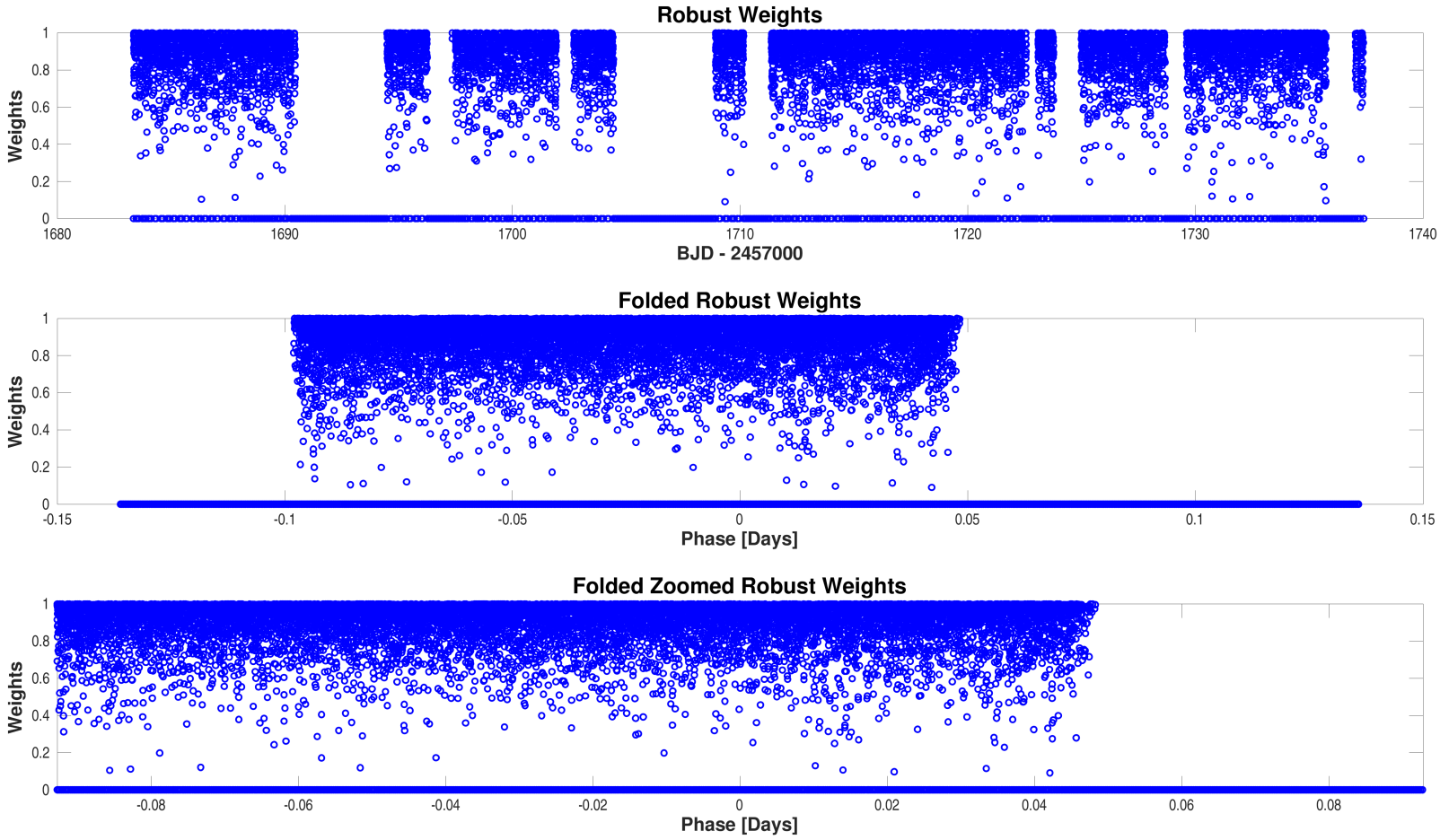
DoF: Degrees of Freedom



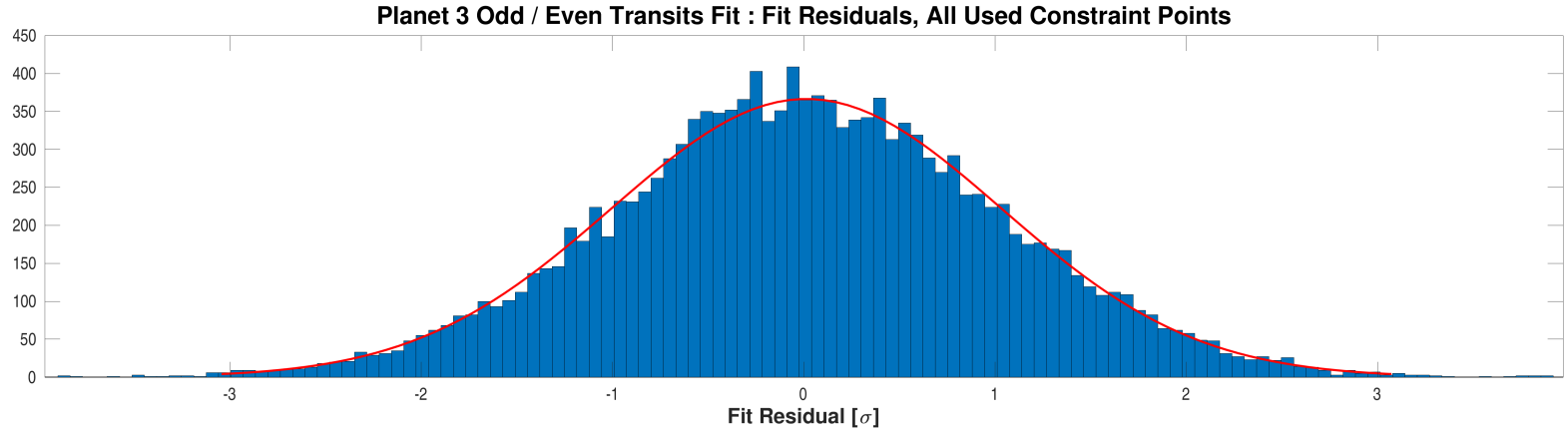
Folded flux time series for CatId 169461816, Planet candidate 3 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light 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-03/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-03-odd-even-whitened.fig`



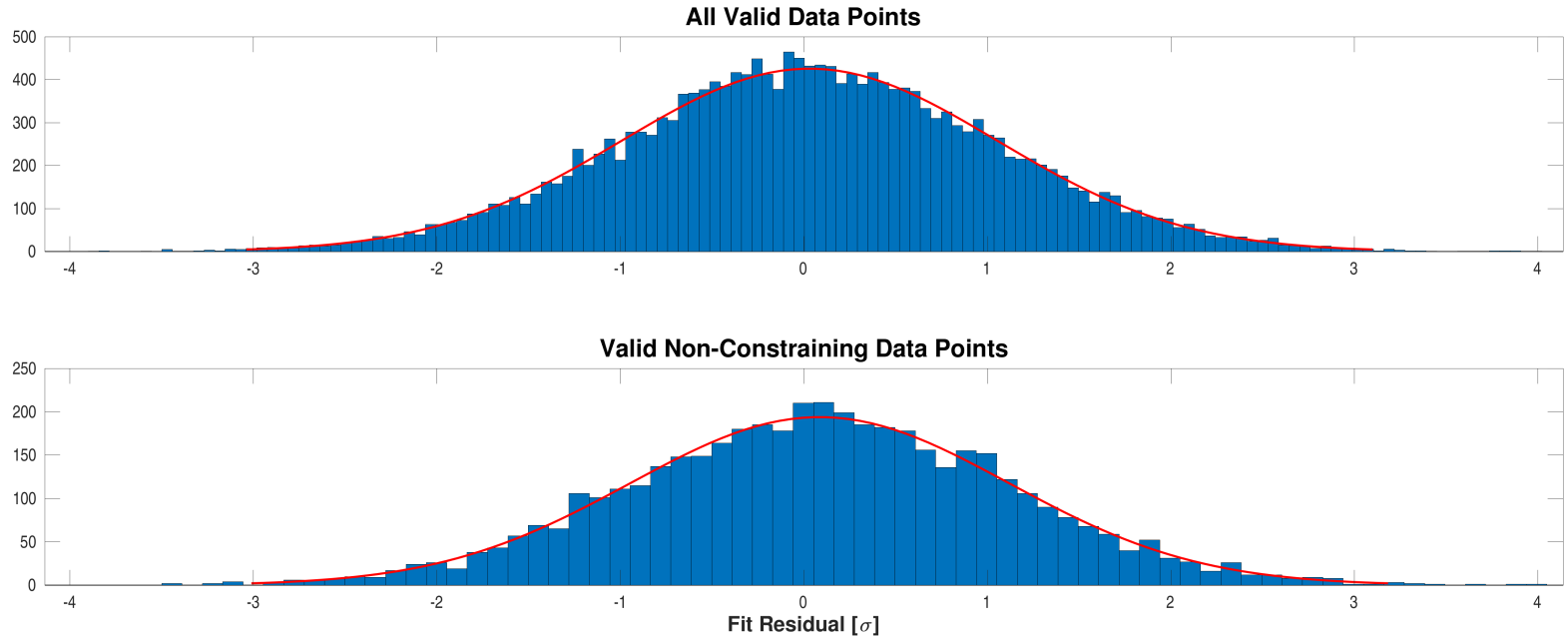
Folded flux time series for CatId 169461816, Planet candidate 3 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-03/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-03-odd-even-whitened-zoomed.fig`



Robust weights distribution for CatId 169461816, Planet candidate 3. 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-03/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-03-odd-even-robust-weights.fig`

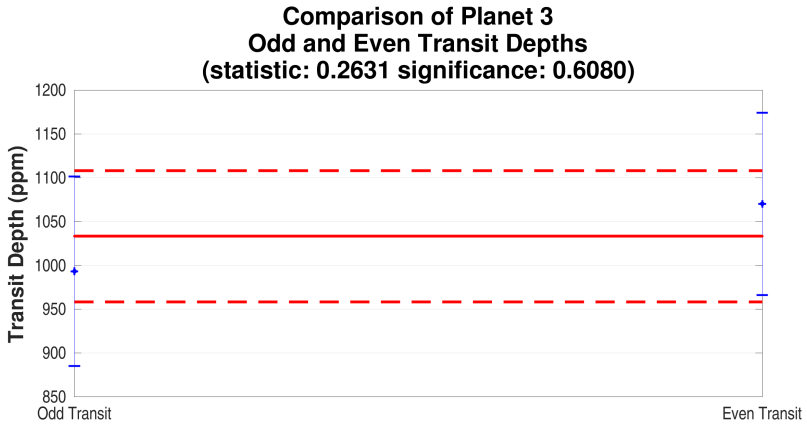


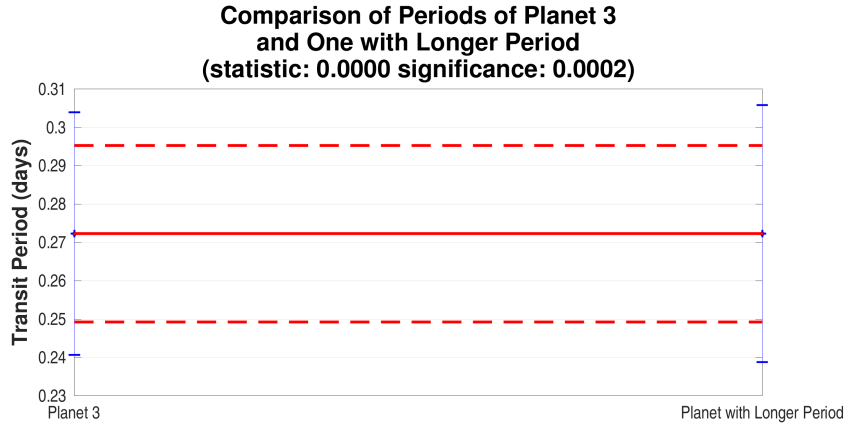
Fit residuals distribution for CatId 169461816, Planet candidate 3. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-03/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-03-odd-even-histo-used.fig`



Fit residuals distribution for CatId 169461816, Planet candidate 3. 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-03/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-03-odd-even-histo-all-and-unused.fig`

C.3 Eclipsing Binary Discrimination Test

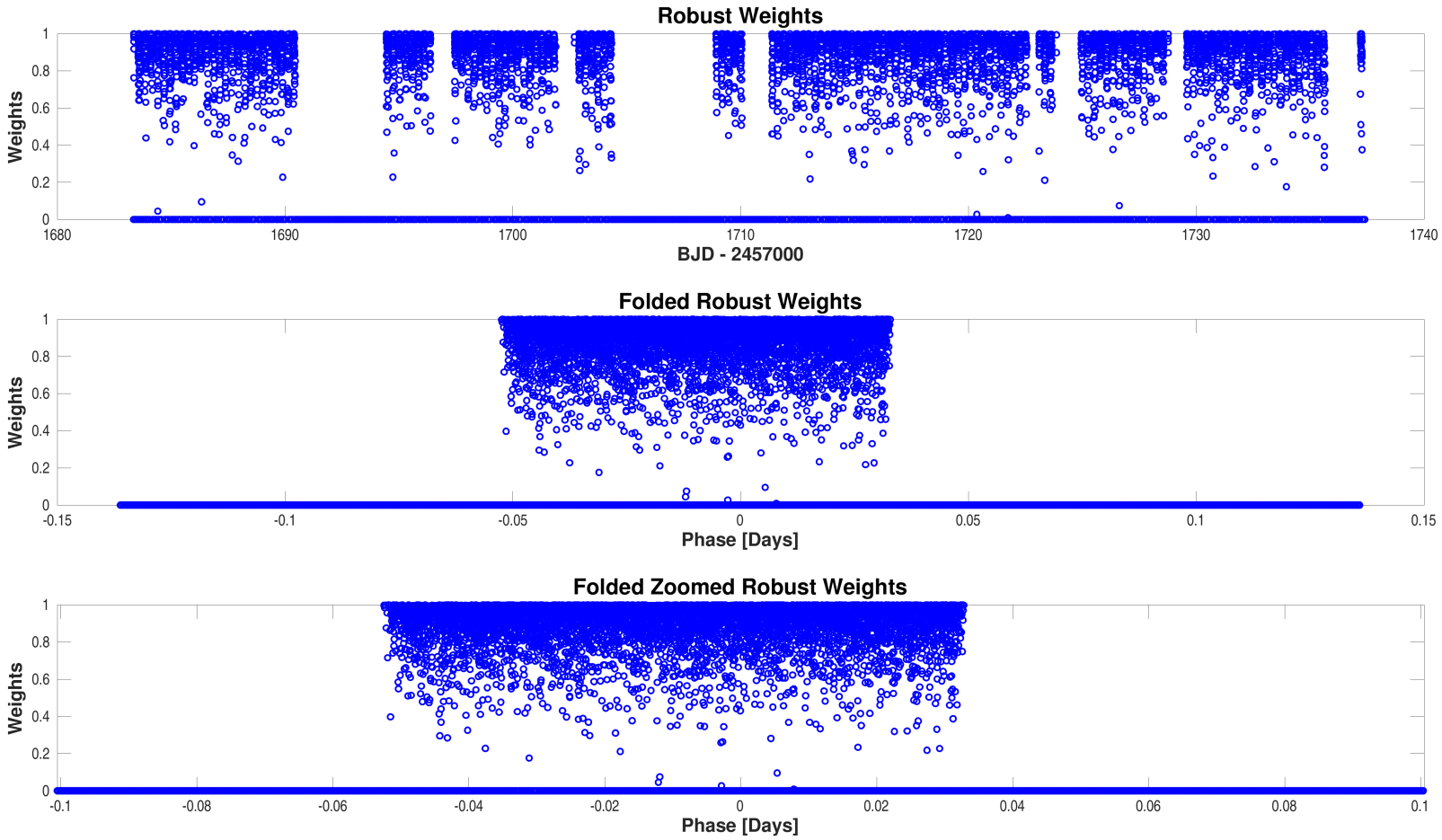




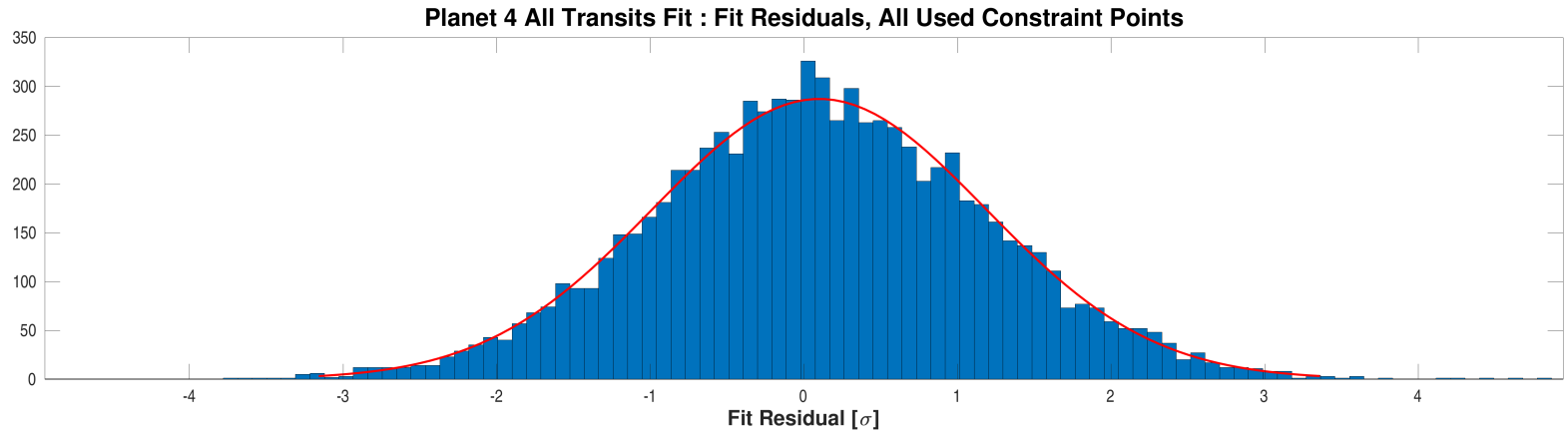
Top-left: Diagnostic plot of Odd/Even Transit Depth Test for catId 169461816, planet 3. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Bottom-left: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 3 and the planet with longer period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary.
Open `./planet-03/binary-discrimination-test-results/0000000169461816-03-eclipsing-binary-discrimination-tests.fig`

Appendix D Planet Candidate 4

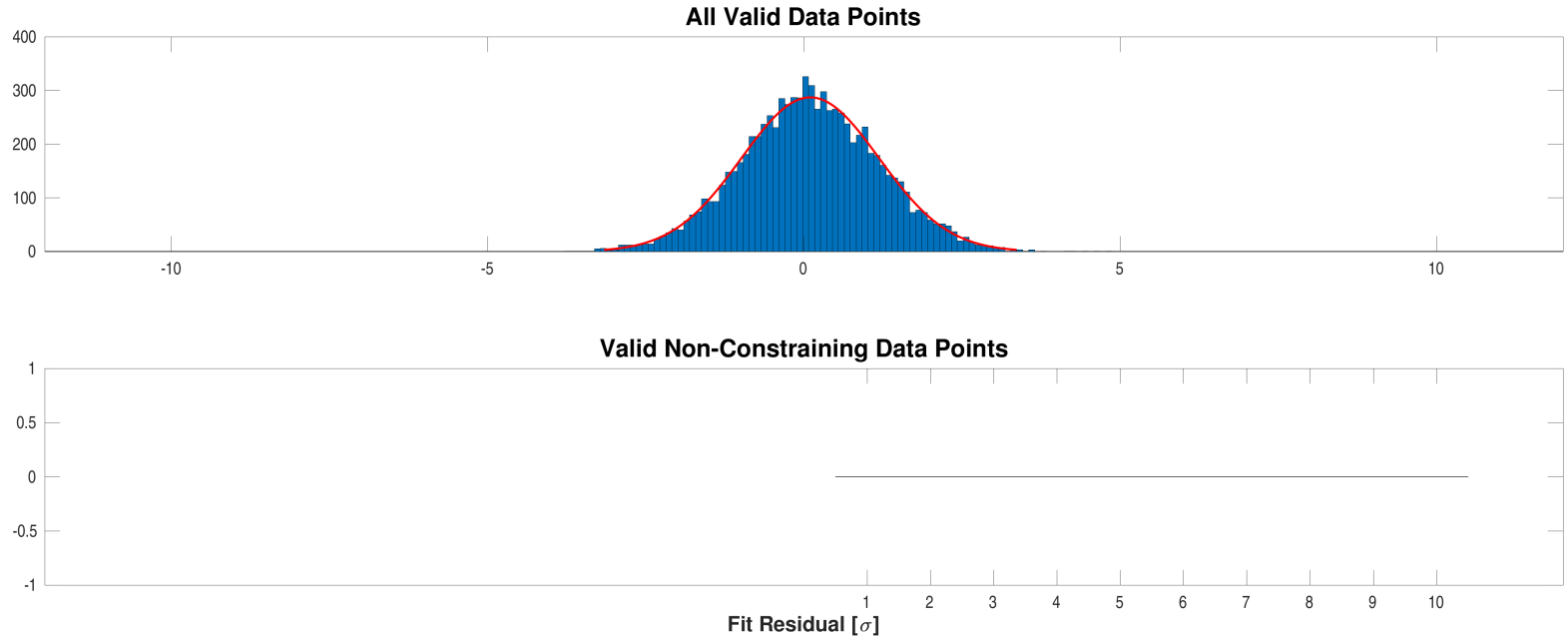
D.1 Model Fitter: All Transits



Robust weights distribution for CatId 169461816, Planet candidate 4. 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-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-robust-weights.fig`



Fit residuals distribution for CatId 169461816, Planet candidate 4. 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-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-histo-used.fig`

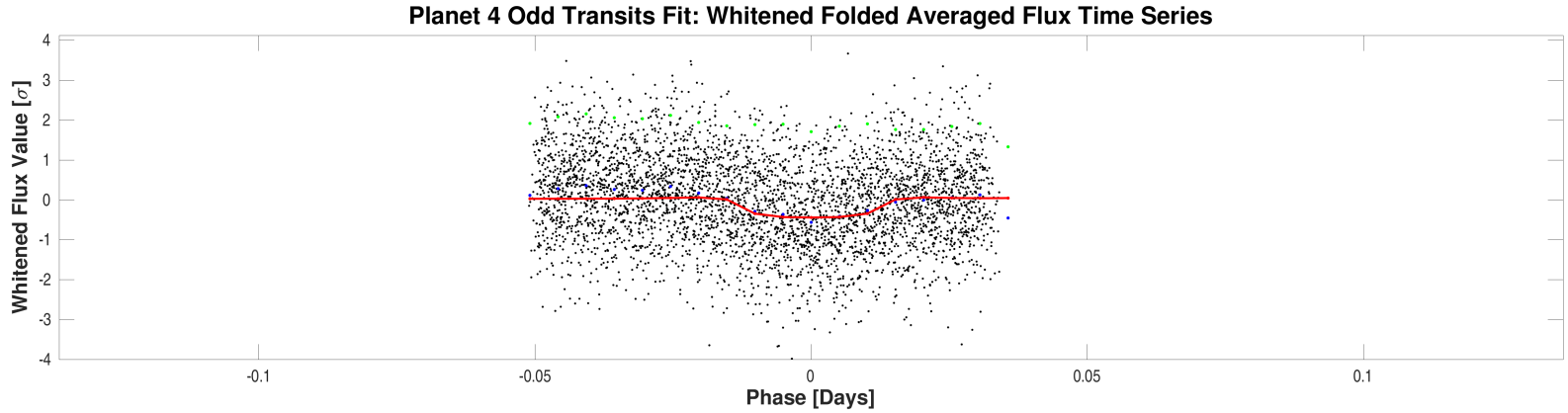


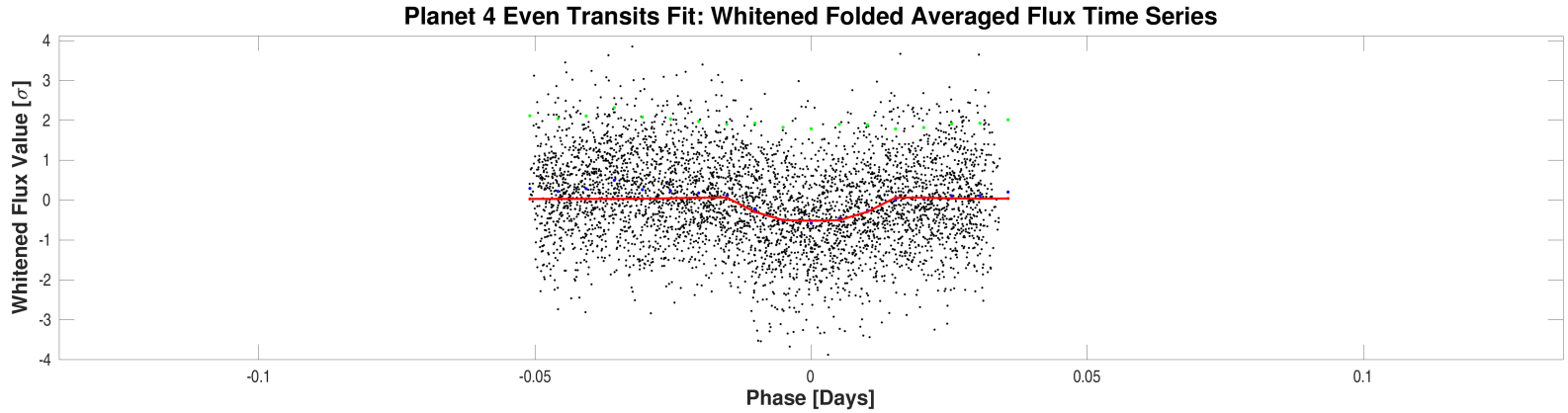
Fit residuals distribution for CatId 169461816, Planet candidate 4. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-04/planet-search-and-model-fitting-results/all-transits-fit/0000000169461816-04-all-histo-all-and-unused.fig`

D.2 Model Fitter: Odd & Even Transits

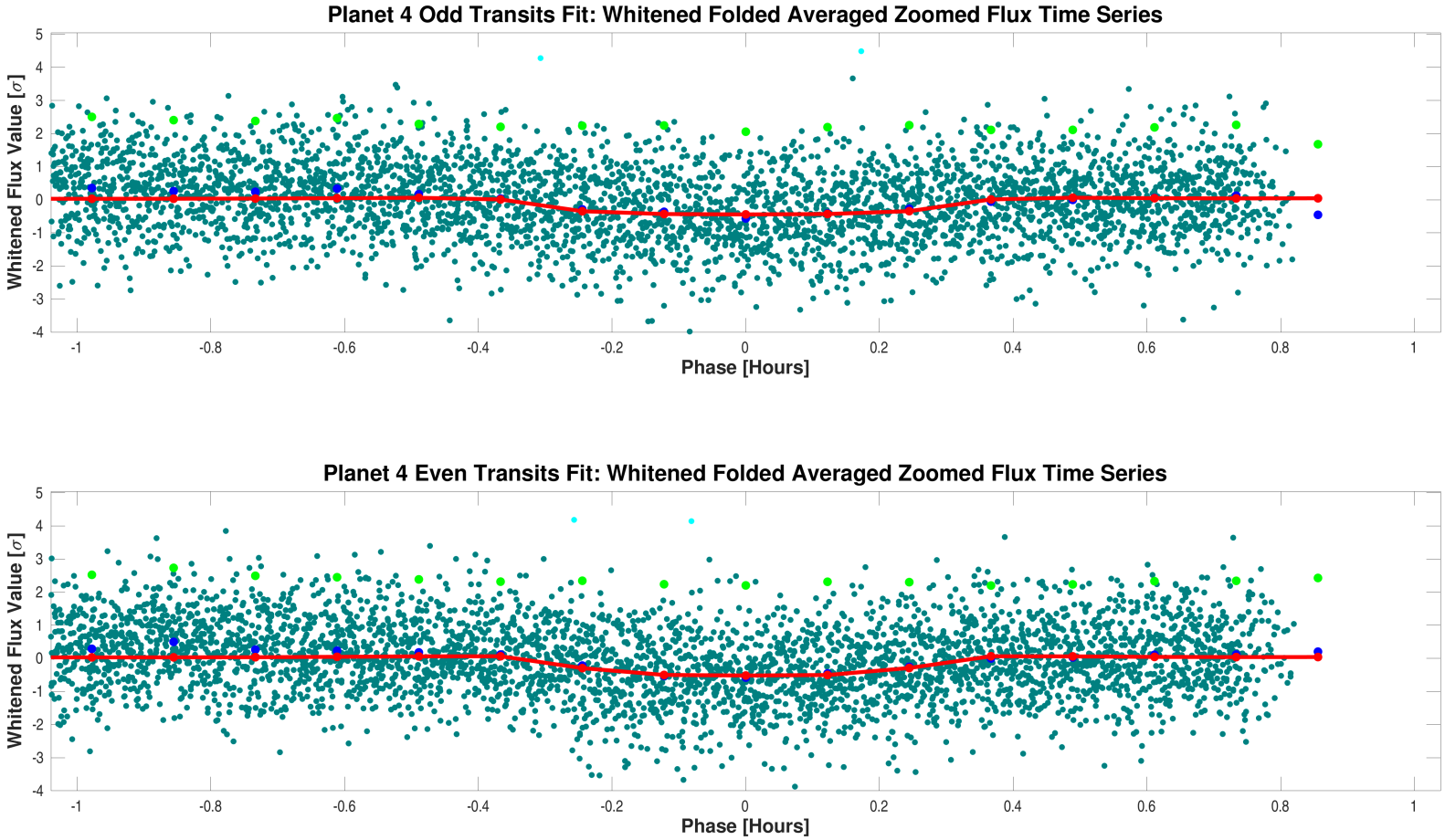
Parameter	Odd Transits Value	Odd Transits Uncertainty	Even Transits Value	Even Transits Uncertainty	Units	Difference / Uncertainty
SNR	15.8		14.0			
Orbital Period	0.2723247	1.0531e-05	0.2723203	8.8180e-06	days	3.1829e-01
Transit Epoch	1683.6017835	6.2130e-04	1683.8745379	5.0854e-04	BTJD	5.5370e-01
Impact Parameter	0.7316	1.4346e+00	0.7048	1.7603e+00		1.1810e-02
Planet Radius to Star Radius Ratio	0.0324904	1.0313e-02	0.0347398	1.2022e-02		1.4201e-01
Semi-major Axis to Star Radius Ratio	2.4024	4.4579e+00	2.7878	5.9531e+00		5.1830e-02
Planet Radius	5.2890	1.6956e+00	5.6552	1.9735e+00	Earth radii	1.4074e-01
Semi-major Axis	0.0093	6.9145e-04	0.0093	6.9144e-04	AU	1.0201e-04
Effective Stellar Flux	48439.0766	7.3876e+03	48440.1134	7.3878e+03	Goldilocks	9.9242e-05
Equilibrium Temperature	3784	1.4427e+02	3784	1.4427e+02	Kelvin	9.9242e-05
Stellar Density	2.5118	1.3983e+01	3.9253	2.5146e+01	Solar density	4.9129e-02
Transit Depth	1075	9.7391e+01	1241	1.0567e+02	ppm	1.1608e+00
Transit Duration	0.6741	2.0337e-01	0.5923	1.9119e-01	hours	2.9308e-01
Transit Ingress Duration	0.0455	2.1974e-01	0.0392	2.0686e-01	hours	2.0731e-02
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)	7402.4 (7589.9)		7402.4 (7589.9)			

DoF: Degrees of Freedom

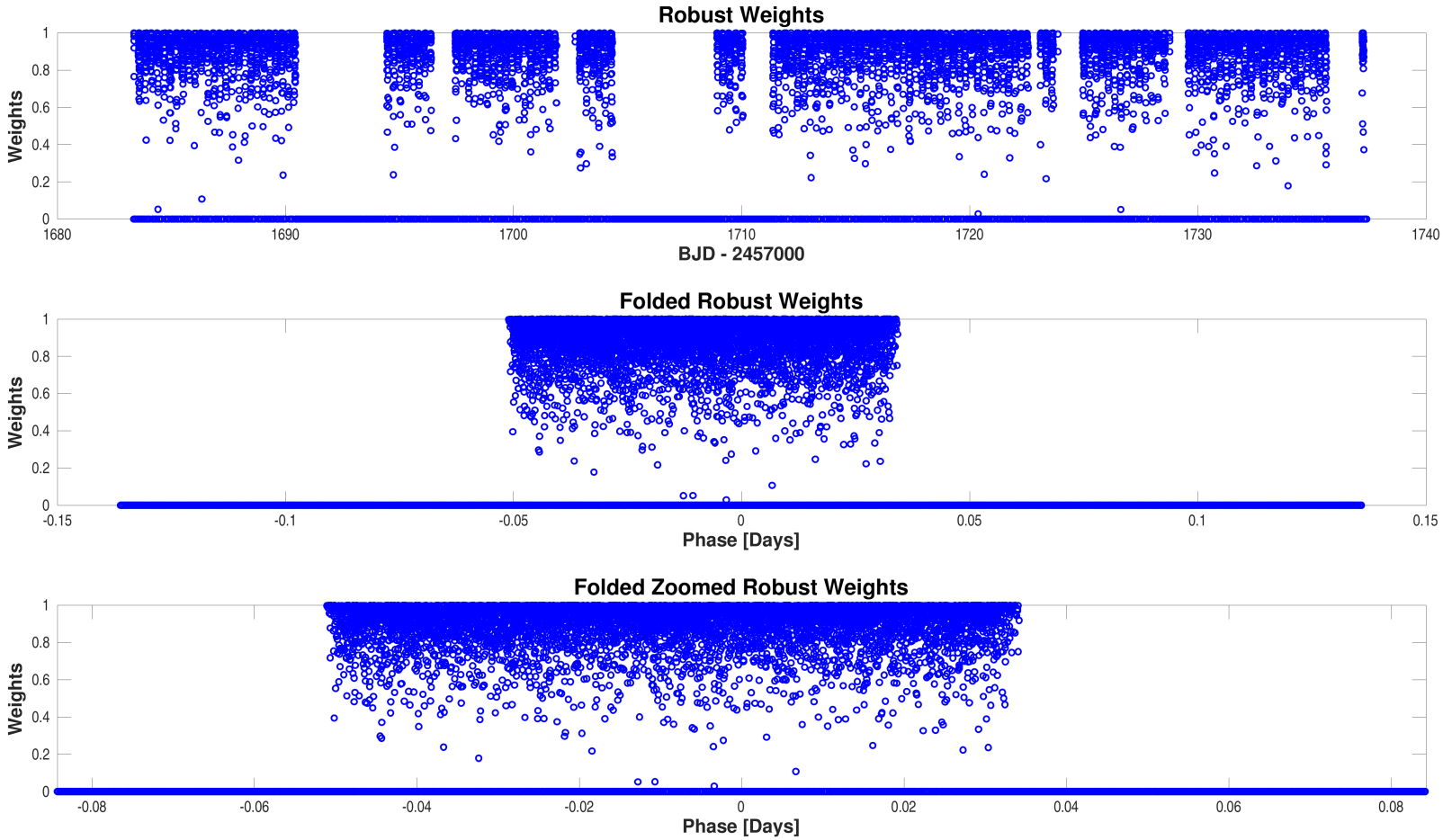




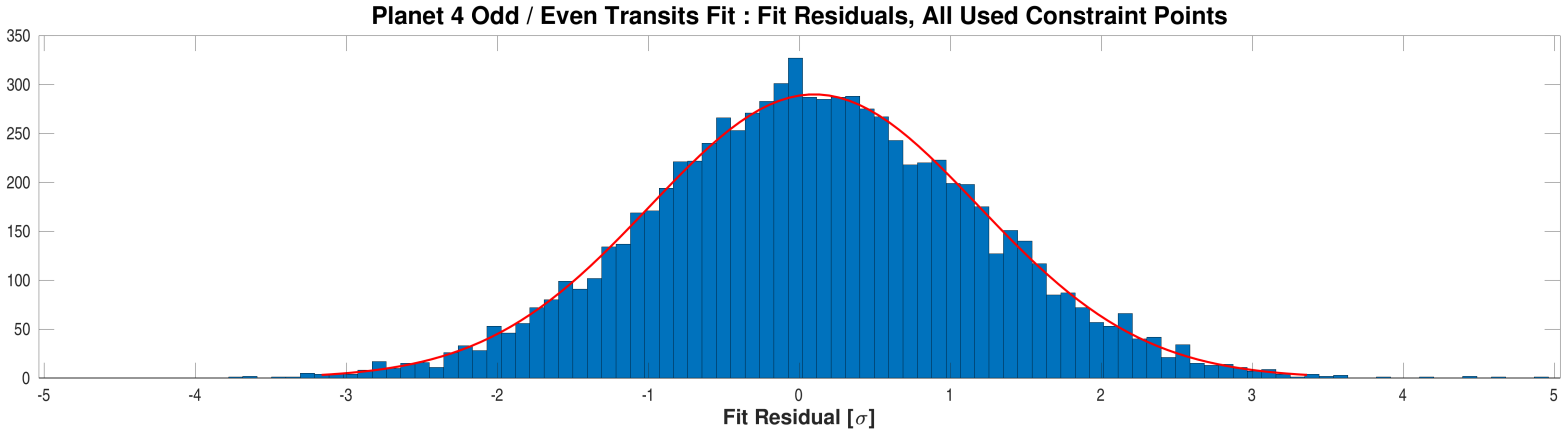
Folded flux time series for CatId 169461816, Planet candidate 4 in the whitened domain is plotted in black dots. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged values of the folded flux time series; the red dots represent the averaged values of the folded model light 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-04/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-04-odd-even-whitened.fig`



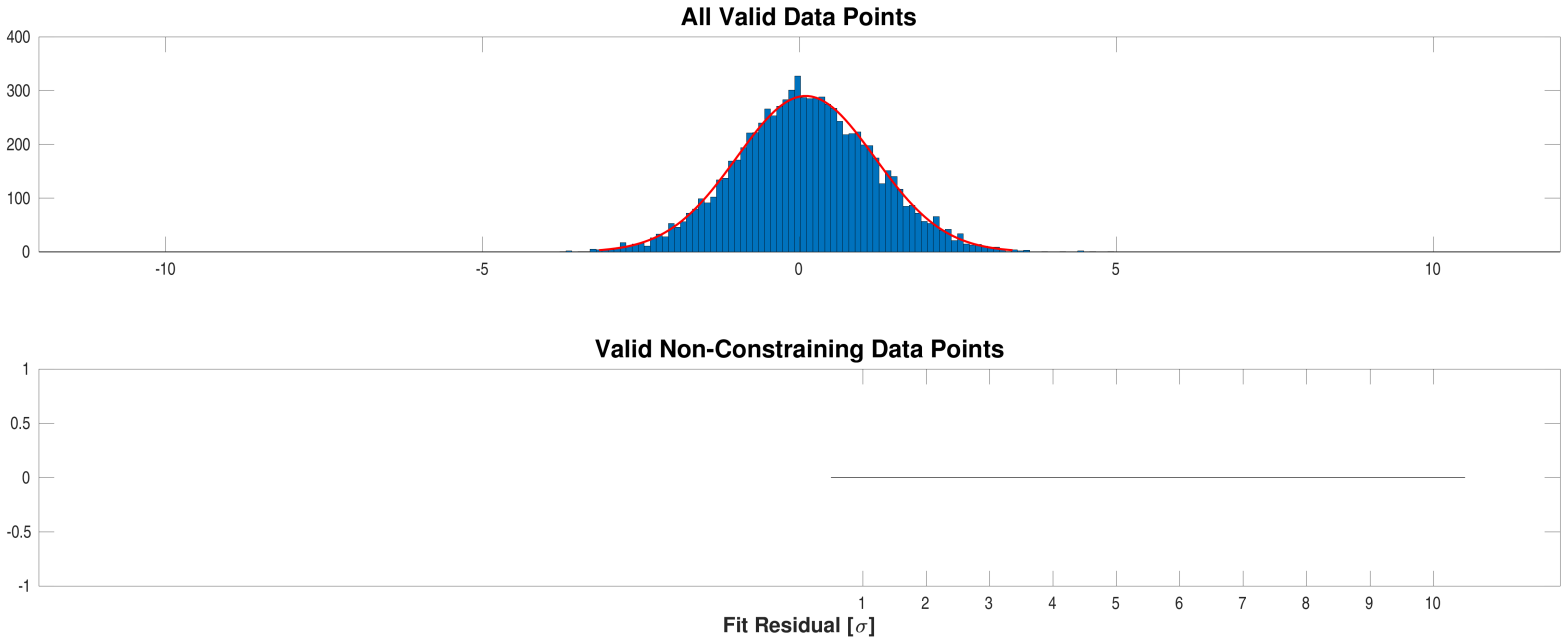
Folded flux time series for CatId 169461816, Planet candidate 4 in the whitened domain, zoomed on the transit. The flux data whose robust weights are larger/smaller than 0.1 are plotted in dark green/cyan dots, respectively. Values are averaged into 1 cadence wide bins. The blue dots represent the averaged 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-04/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-04-odd-even-whitened-zoomed.fig`



Robust weights distribution for CatId 169461816, Planet candidate 4. 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-04/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-04-odd-even-robust-weights.fig`

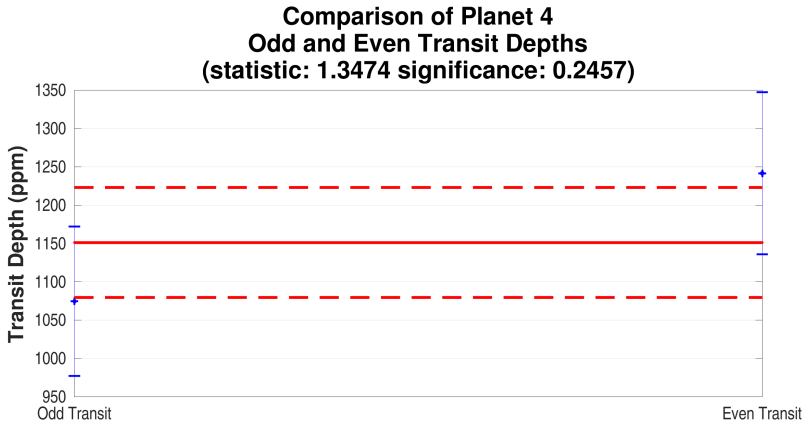


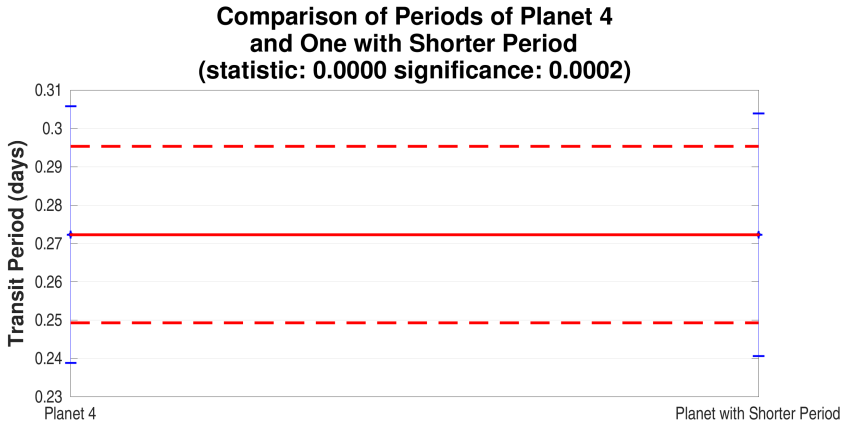
Fit residuals distribution for CatId 169461816, Planet candidate 4. Only the valid data points used to constrain the fit are shown here. A Gaussian fit to the histogram is shown in red.
Open `./planet-04/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-04-odd-even-histo-used.fig`

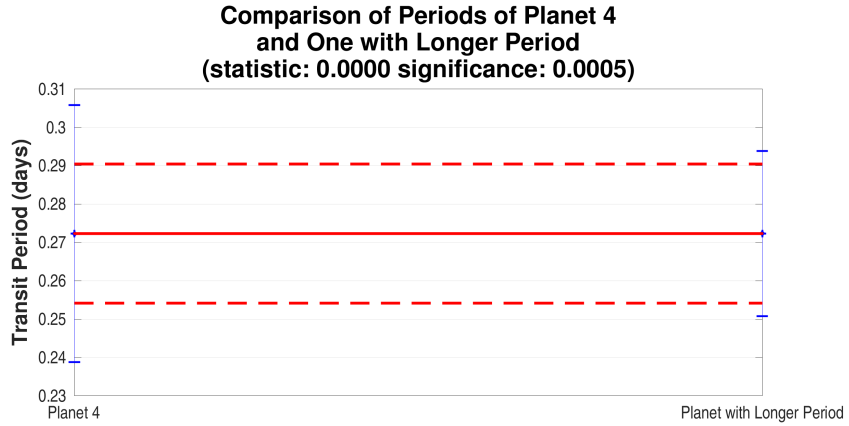


Fit residuals distribution for CatId 169461816, Planet candidate 4. Top plot: all valid data. Bottom plot: valid data not used to constrain fit (due to distance from a transit). Gaussian fits to the histograms are shown in red.
Open `./planet-04/planet-search-and-model-fitting-results/odd-even-transits-fit/0000000169461816-04-odd-even-histo-all-and-unused.fig`

D.3 Eclipsing Binary Discrimination Test







Top-left: Diagnostic plot of Odd/Even Transit Depth Test for catId 169461816, planet 4. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Top-right: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 4 and the planet with shorter period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary. Bottom-left: Diagnostic plot of Orbital Period Test for catId 169461816. Orbital periods of planet 4 and the planet with longer period are compared. A significance level close to 1/0 favors a transiting planet/an eclipsing binary.
Open `./planet-04/binary-discrimination-test-results/0000000169461816-04-eclipsing-binary-discrimination-tests.fig`

Appendix E Alerts

Time	Severity	Message
1962.7695	warning	Weak secondary diagnostic results are unavailable, identifier = dv:performPlanetSearchAndModelFitting:weakSecondaryResultsUnavailable (target=1, catId=169461816, planet=4, component=planet-search)
1962.7697	warning	Additional-planet search algorithm failed, identifier = tps:validateTpsInputStructure:noValidCadences (target=1, catId=169461816, planet=4, component=Multi-planet-search)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S14 (target=1, catId=169461816, planet=1, targetTable=167, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S15 (target=1, catId=169461816, planet=1, targetTable=169, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S14 (target=1, catId=169461816, planet=2, targetTable=167, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S15 (target=1, catId=169461816, planet=2, targetTable=169, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S14 (target=1, catId=169461816, planet=3, targetTable=167, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S15 (target=1, catId=169461816, planet=3, targetTable=169, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S14 (target=1, catId=169461816, planet=4, targetTable=167, component=generateDvDifferenceImages)
1962.7702	warning	Not excluding transits that overlap those of another candidate in S15 (target=1, catId=169461816, planet=4, targetTable=169, component=generateDvDifferenceImages)
1962.7729	warning	Null statistics are empty! Will not proceed with bootstrap (target=1, catId=169461816, planet=1, component=bootstrap)
1962.7729	warning	Null statistics are empty! Will not proceed with bootstrap (target=1, catId=169461816, planet=2, component=bootstrap)
1962.7729	warning	Null statistics are empty! Will not proceed with bootstrap (target=1, catId=169461816, planet=3, component=bootstrap)
1962.7729	warning	Null statistics are empty! Will not proceed with bootstrap (target=1, catId=169461816, planet=4, component=bootstrap)