

KIC 010592163

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 010592163-01 | OBS | 7346.01 | 14.762895 | 133.774855 | 76773.9 | 6.638 | 3414.6 | 1899.7 | 1.03 | 5691 | 48.28 | 78.63 |
| 010592163-02 | OBS | No | 14.762878 | 143.709031 | 41170.0 | 4.832 | 1611.4 | 1460.5 | 1.03 | 5691 | 36.27 | 78.63 |
| 010592163-03 | OBS | No | 479.203800 | 372.970243 | 804.7 | 28.921 | 7.8 | 11.6 | 1.03 | 5691 | 3.10 | 0.76 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010592163-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE |
| 010592163-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 010592163-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

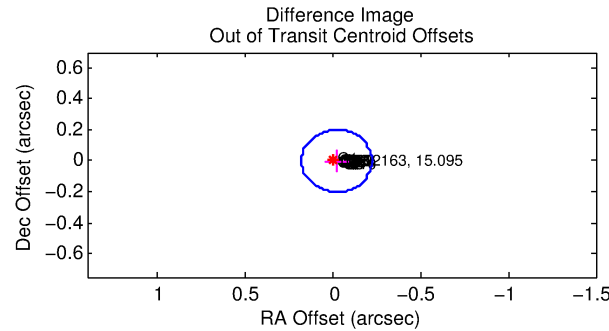
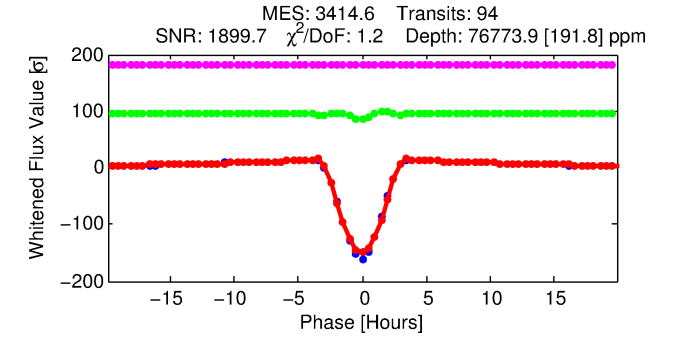
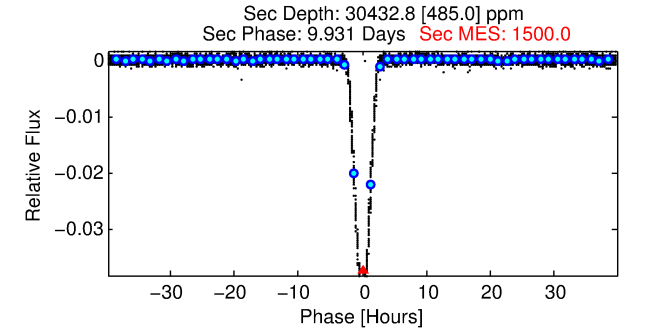
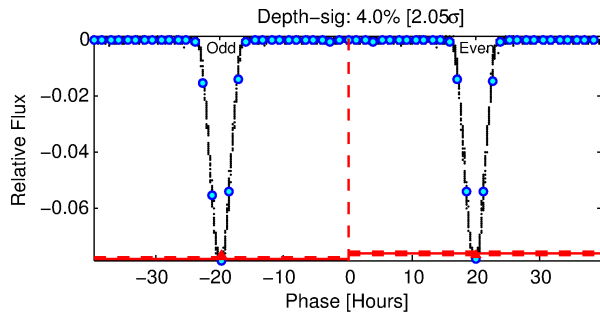
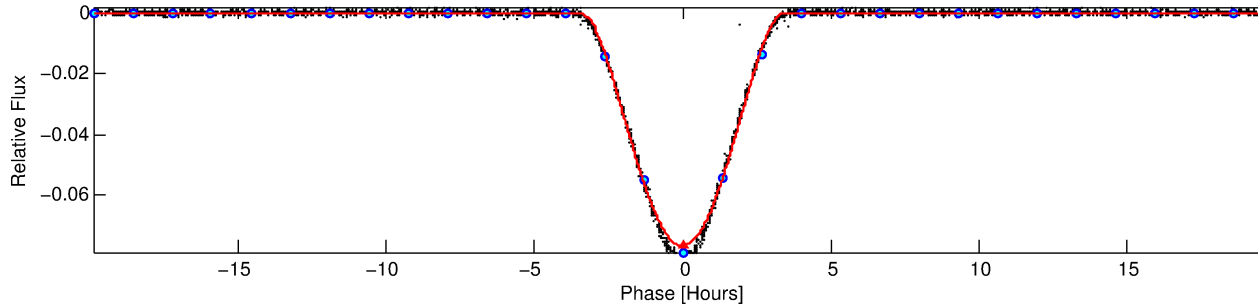
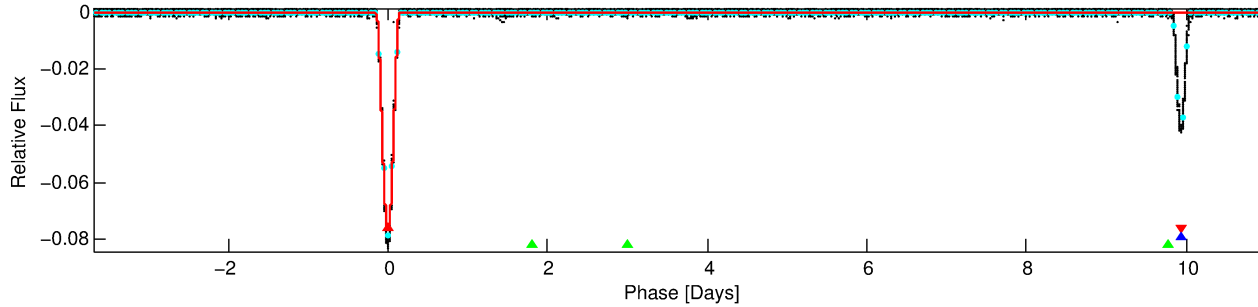
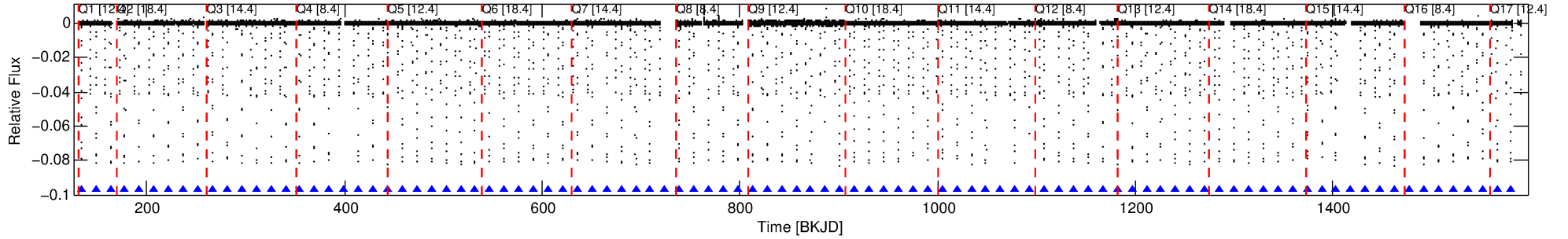
Ephemeris Match Information For 010592163-01

No Significant Match Found

DV One-Page Summary

KIC: 10592163 Candidate: 1 of 3 Period: 14.763 d
KOI: K07346.01 Corr: 0.992

Kp: 15.10 R*: 1.03 Rs Teff: 5691.0 K Logg: 4.35 Fe/H: -0.160



DV Fit Results:

Period = 14.76290 [0.00000] d
Epoch = 133.7749 [0.0001] BKJD
Rp/R* = 0.4291 [0.0364]
a/R* = 17.50 [0.06]
b = 0.99 [0.05]
Seff = 78.63 [27.57]
Teq = 759 [67] K
Rp = 48.28 [14.18] Re
a = 0.1127 [0.0263] AU
Ag = 91.26 [34.21] [2.64σ]
Teffp = 3629 [182] K [14.77σ]

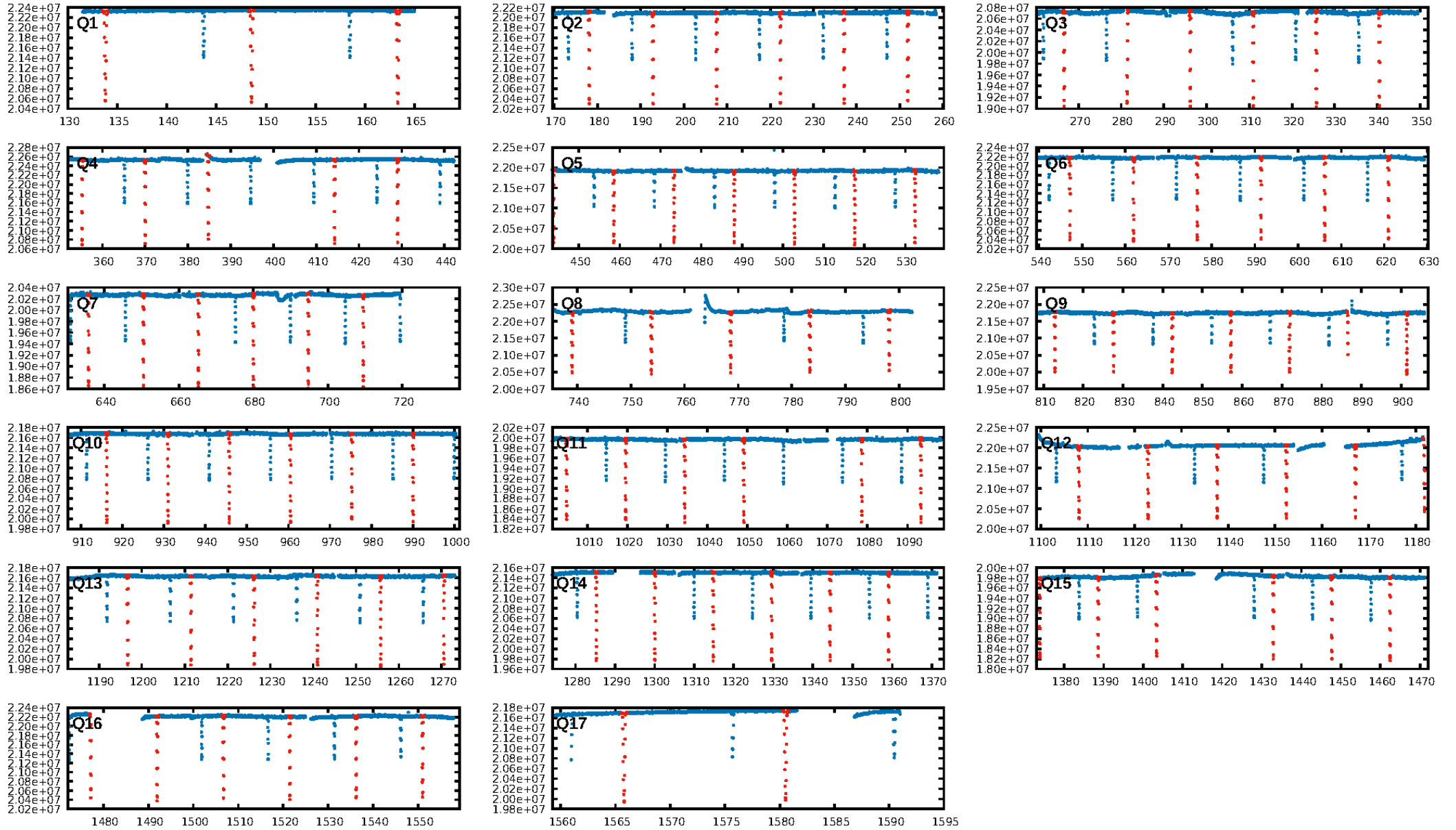
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [375.65σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [89/89]
GhostDiagnostic-chr: 2.612
Centroid-sig: 0.0%
Centroid-so: 0.099 arcsec [28.38σ]
OotOffset-rm: 0.022 arcsec [0.33σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.062 arcsec [0.92σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

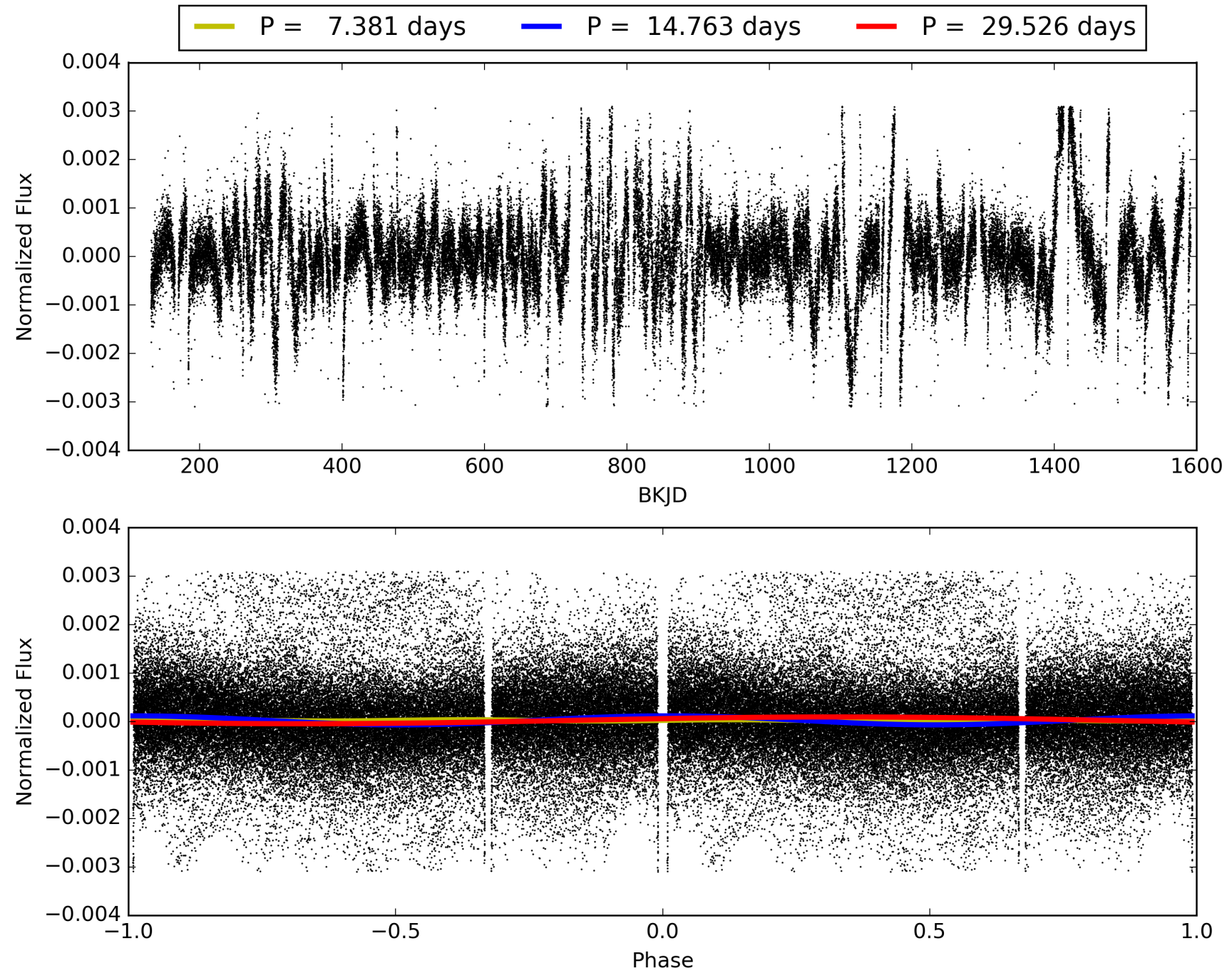
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:42:58 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010592163-01, PDC Light Curves

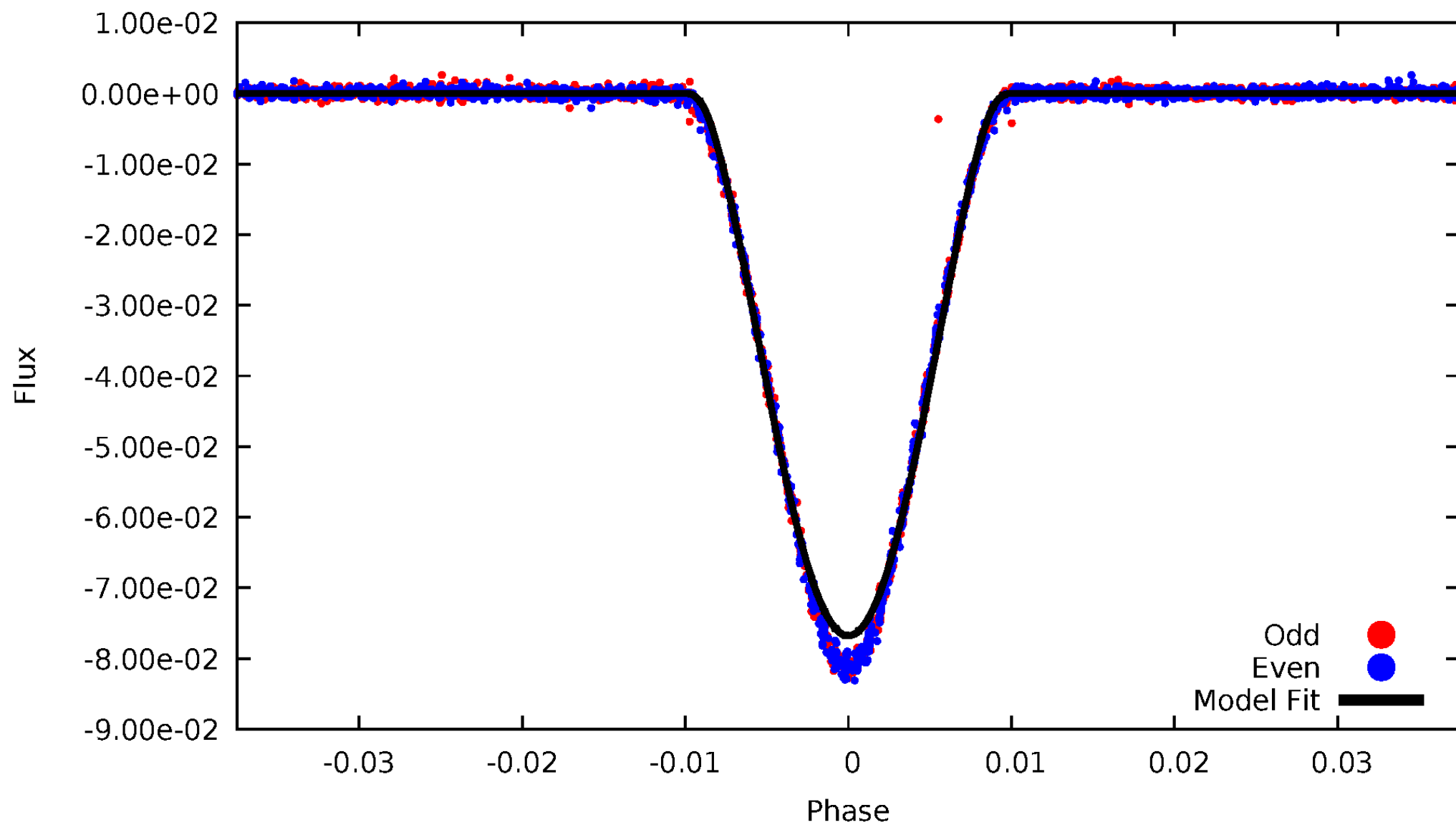


TCE 010592163-01



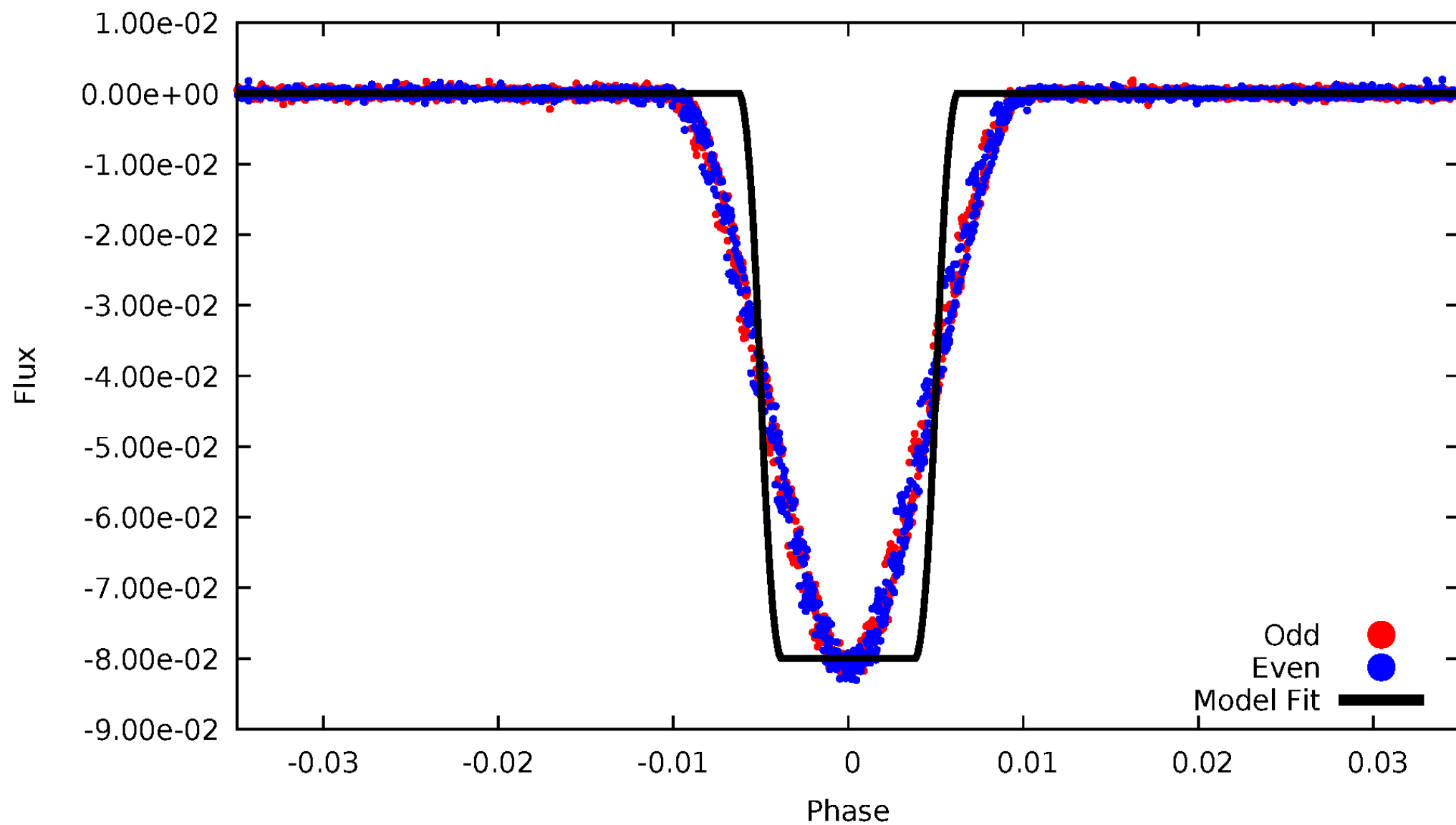
DV Odd/Even

TCE 010592163-01



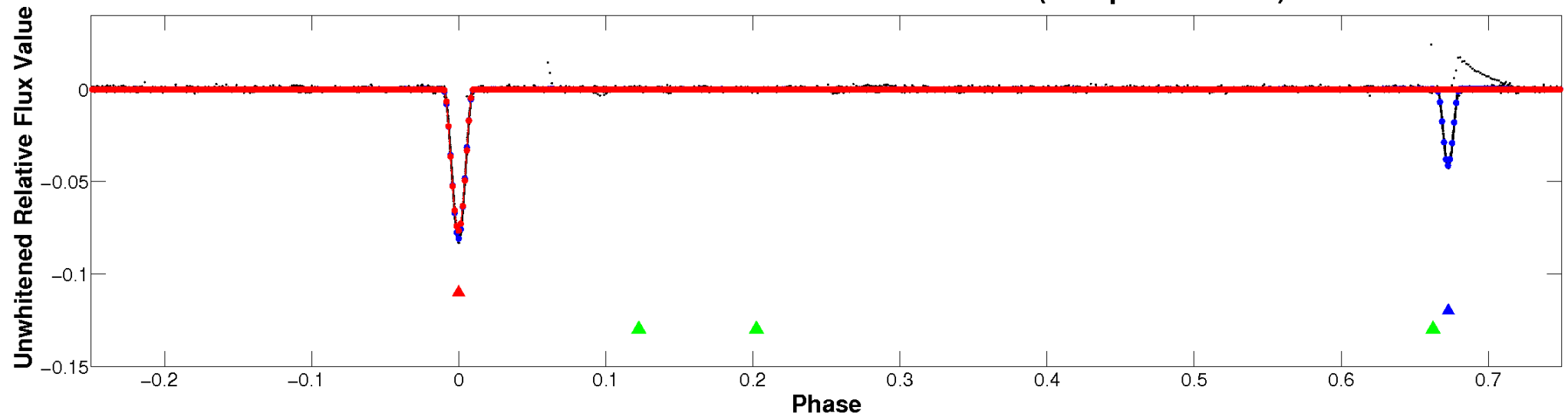
ALT Odd/Even

TCE 010592163-01

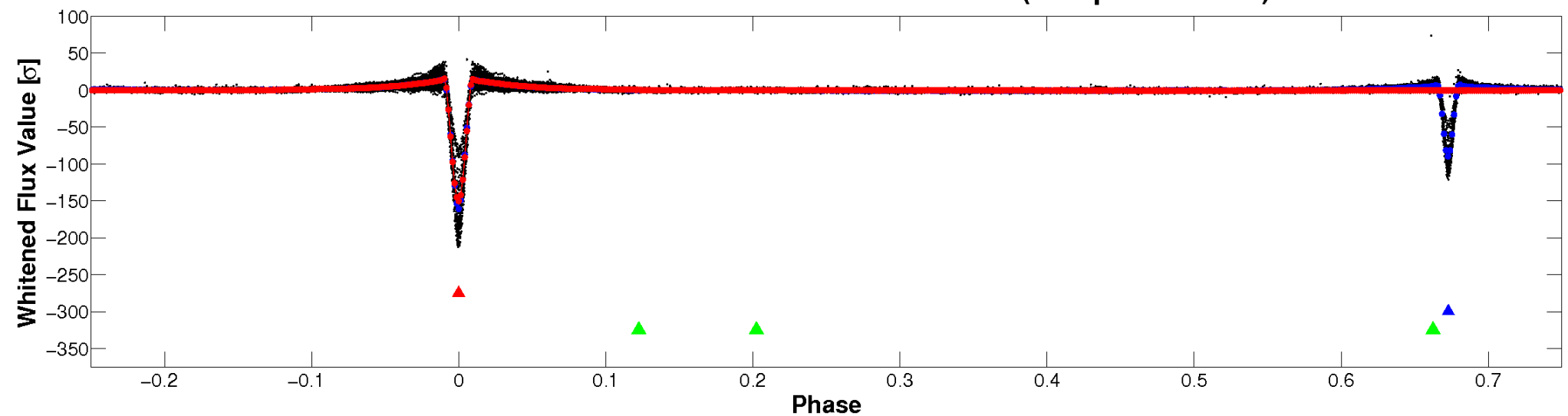


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

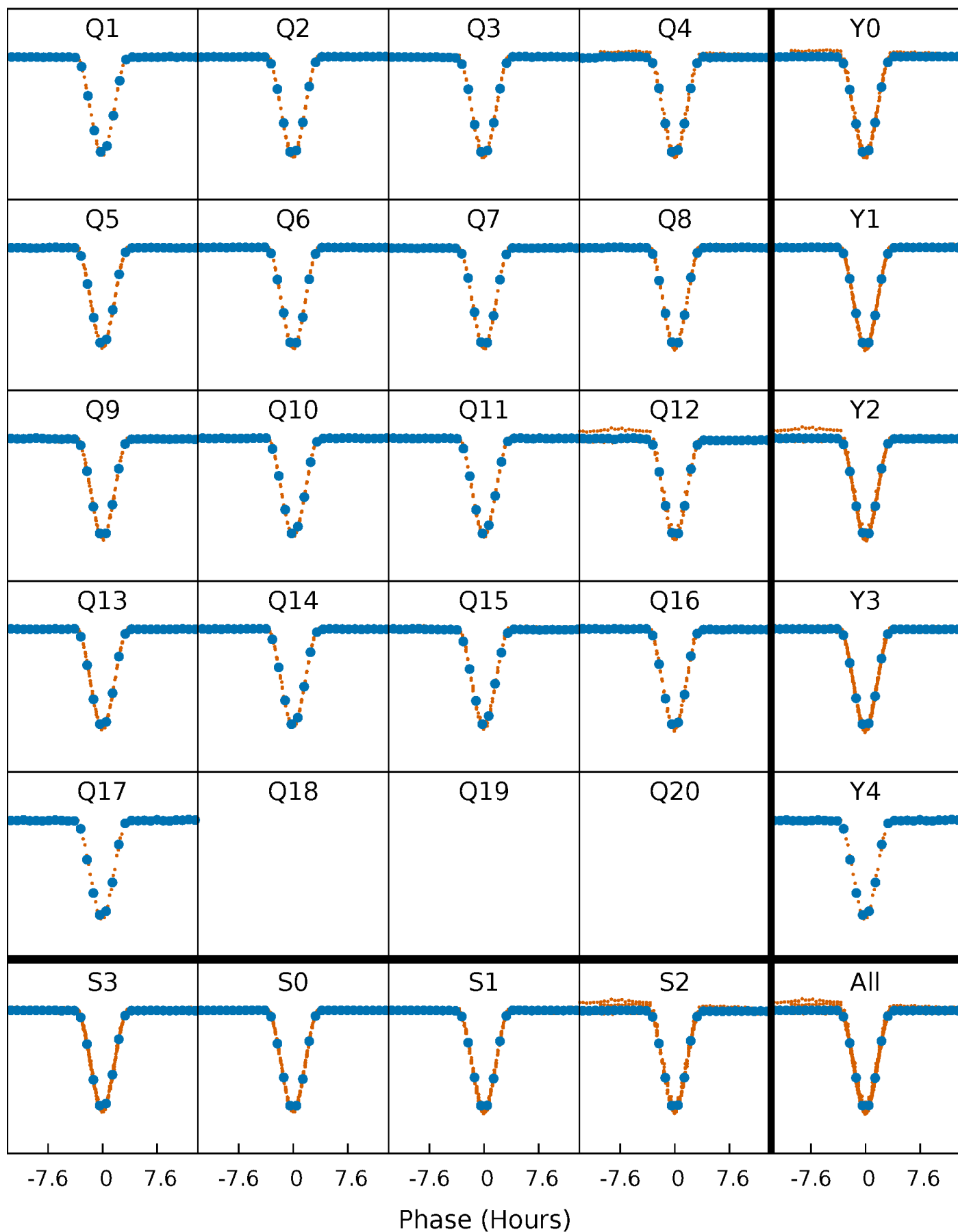


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



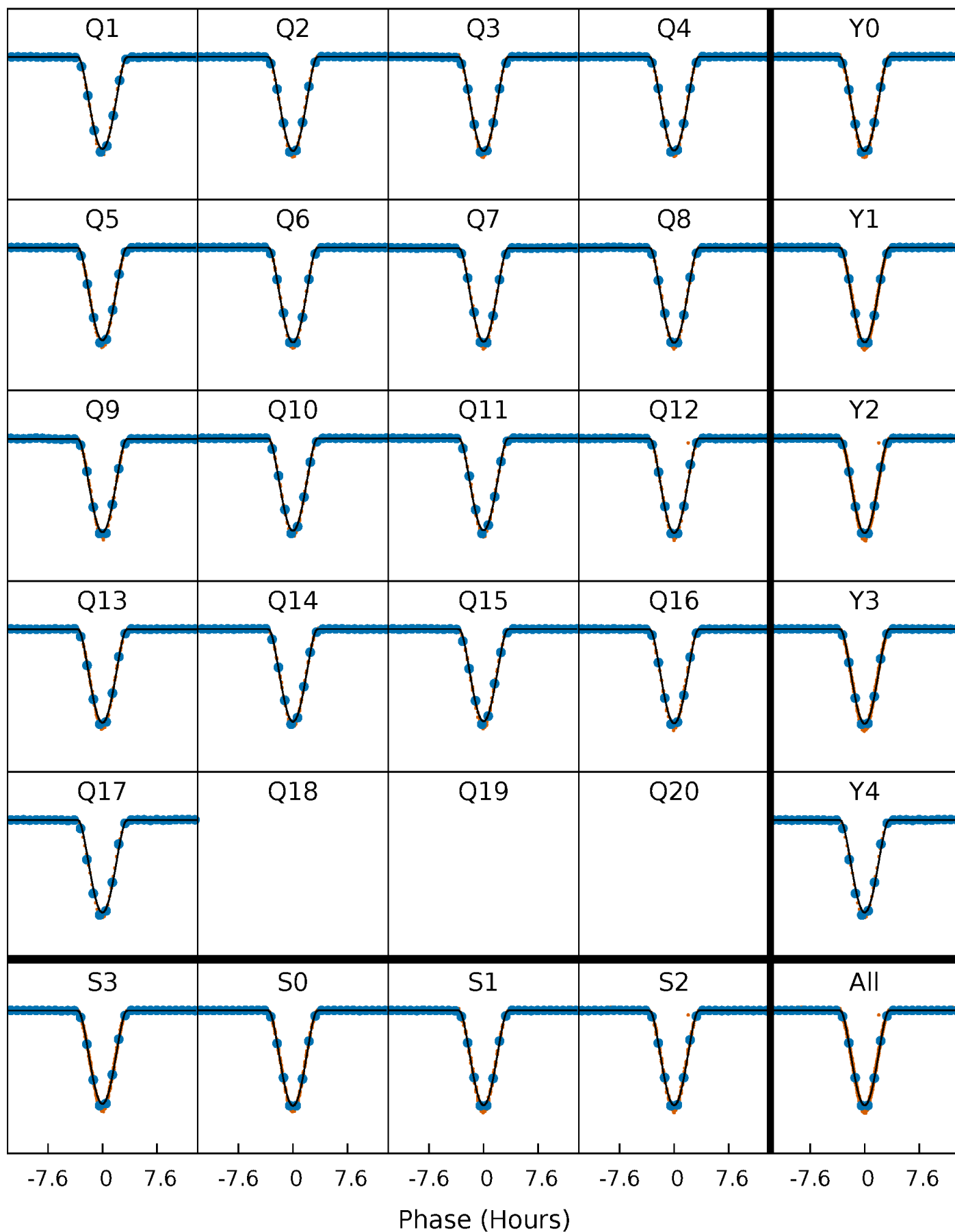
PDC Quarter-Phased Transit Curves

TCE 010592163-01 P= 14.762895 Days $T_0=133.774855$ (BKJD)



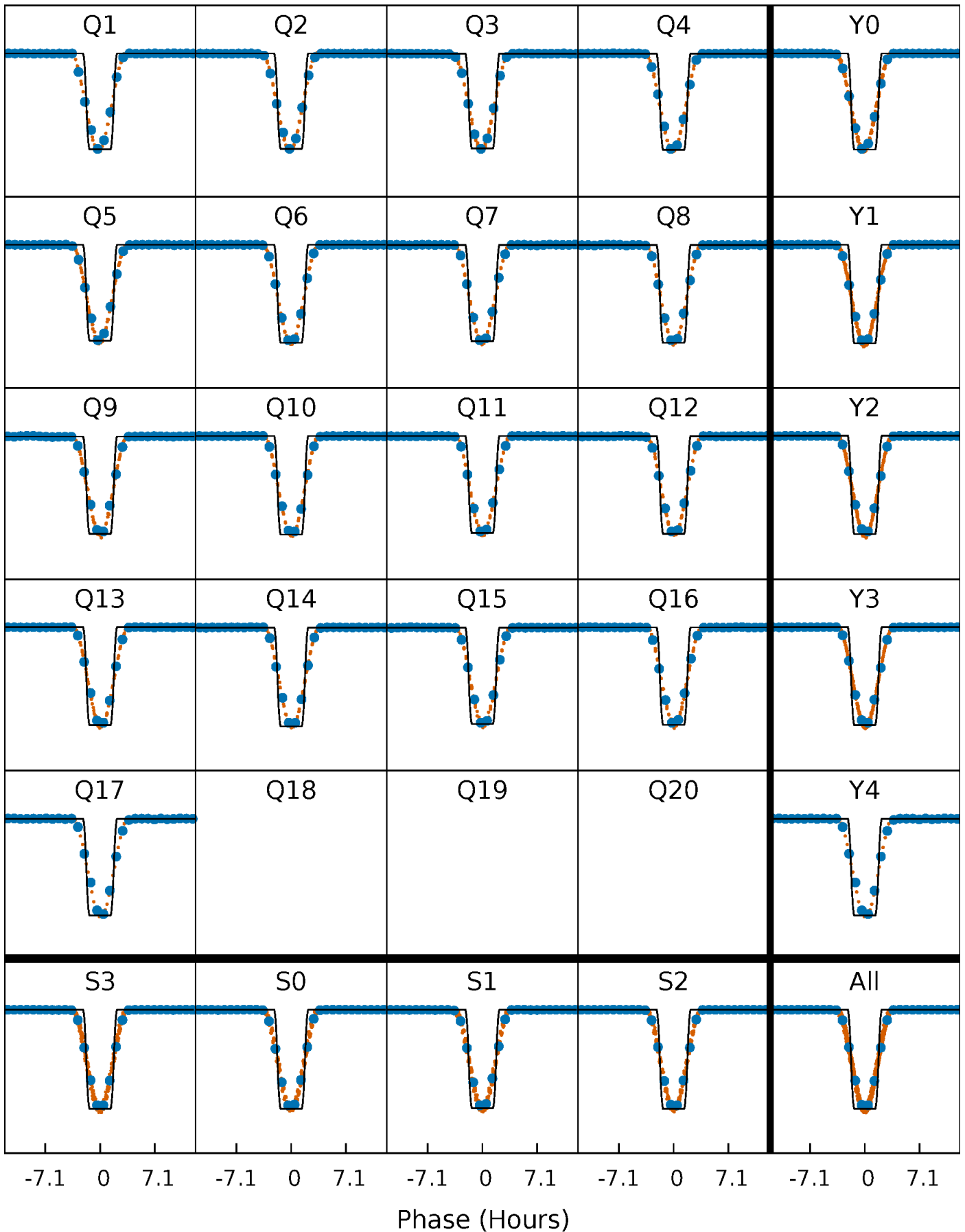
DV Quarter-Phased Transit Curves

TCE 010592163-01 P= 14.762895 Days $T_0=133.774855$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

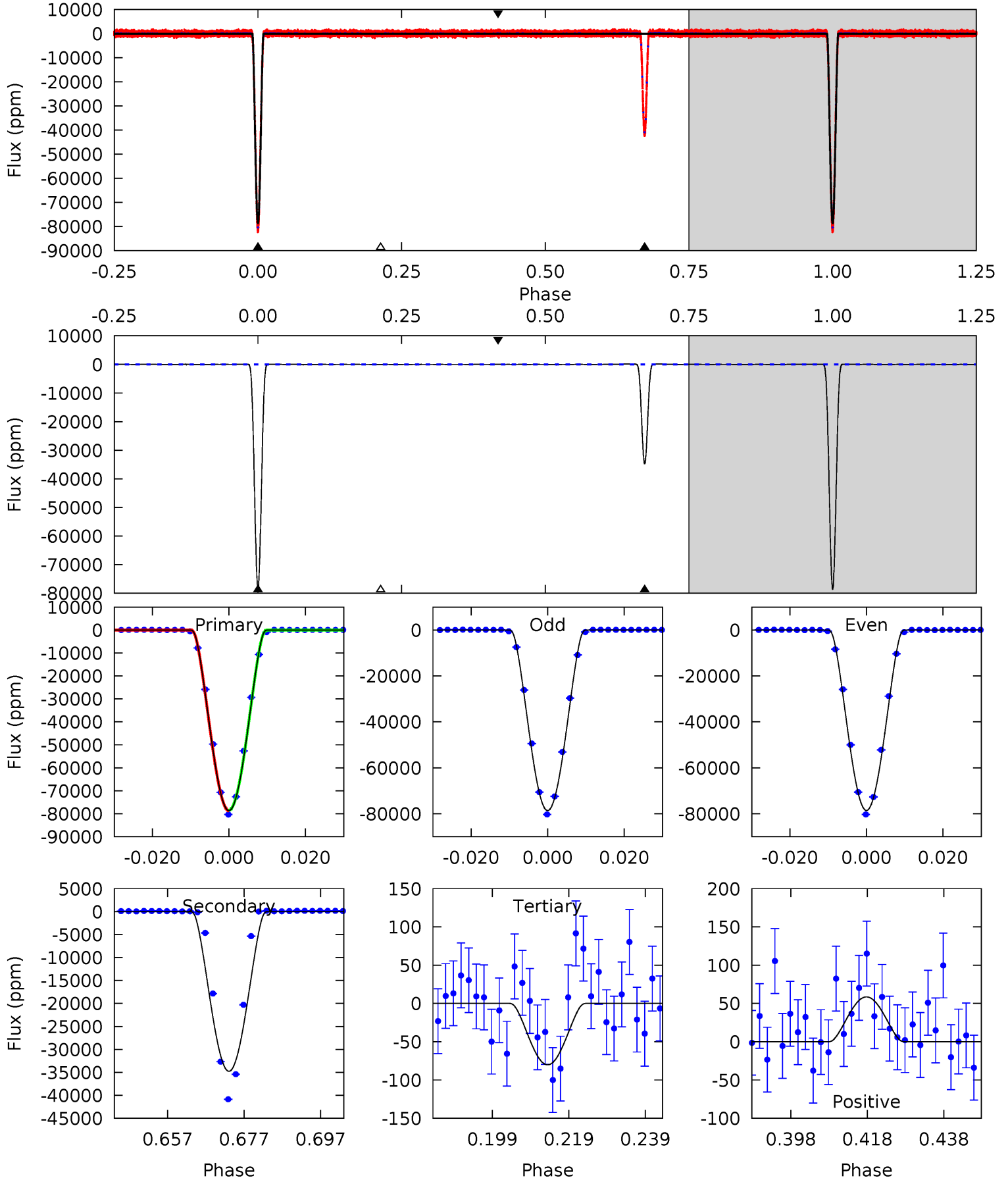
TCE 010592163-01 P= 14.762761 Days $T_0=133.780894$ (BKJD)



DV Model-Shift Uniqueness Test

010592163-01, P = 14.762895 Days, E = 119.011960 Days

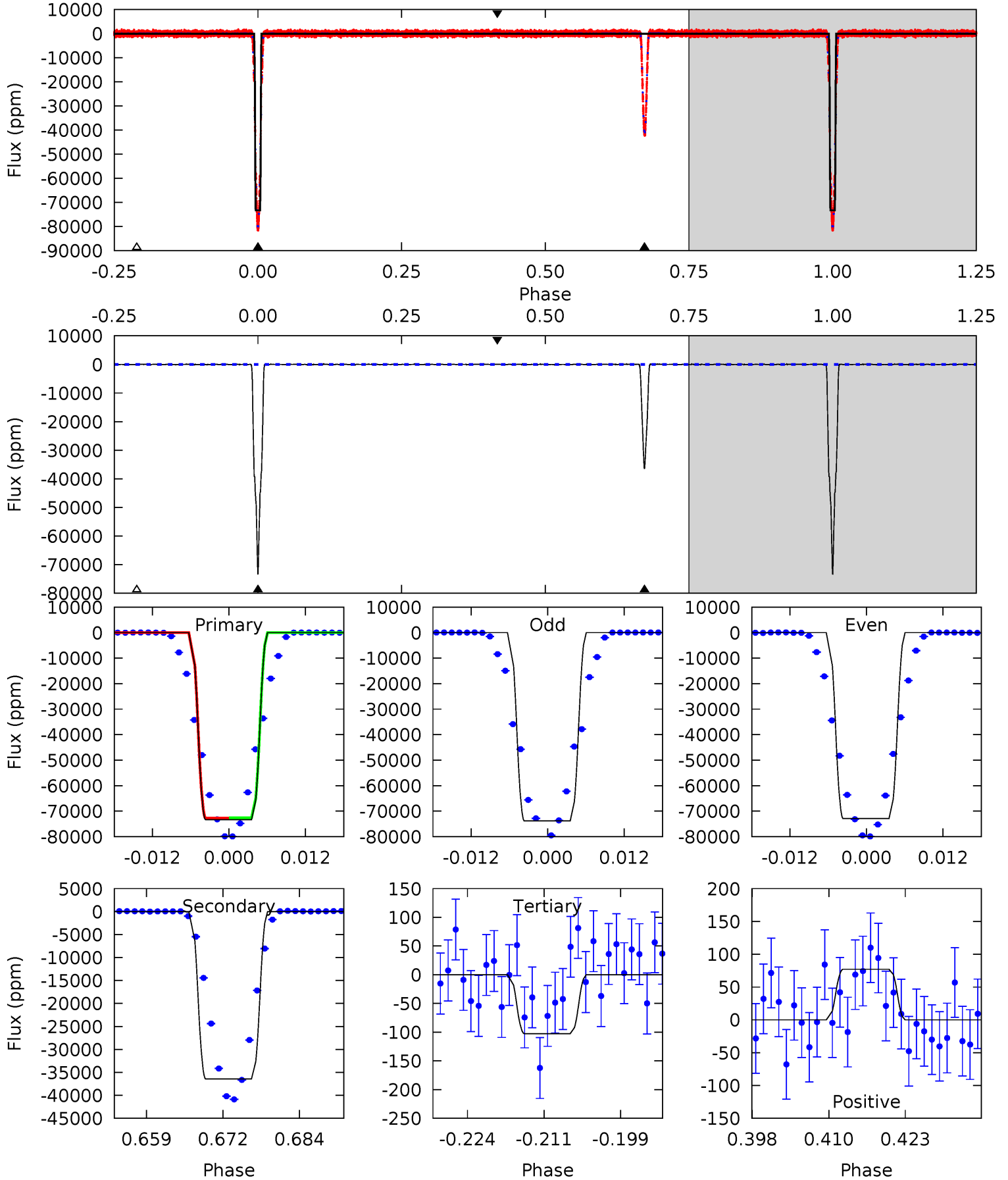
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 6553 | 2898 | 6.68 | 4.88 | 4.89 | 2.33 | 3.33 | 6546 | 6548 | 2891 | 2893 | 2.09 | 1.00 | 0.00 | 0 |



Alt Model-Shift Uniqueness Test

010592163-01, P = 14.762761 Days, E = 119.018133 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3409 | 1692 | 4.77 | 3.59 | 4.98 | 2.50 | 1.40 | 3404 | 3405 | 1687 | 1688 | 20.9 | 1.00 | 0.00 | 0.30 |



Stellar Parameters For KIC 010592163

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5691^{+152}_{-152} | $4.354^{+0.162}_{-0.180}$ | $-0.160^{+0.300}_{-0.300}$ | $1.031^{+0.290}_{-0.193}$ | $0.875^{+0.125}_{-0.073}$ | $1.125^{+0.861}_{-0.562}$ |
| | +3%/-3% | +4%/-4% | +188%/-188% | +28%/-19% | +14%/-8% | +77%/-50% |
| Source | PHO1 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010592163-01 / KOI 7346.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|-------------------------|----------------------|----------------------|--------------------|
| DV | -34770 ± 12 | $48.40^{+8.01}_{-7.38}$ | 1060^{+77}_{-69} | 4077^{+152}_{-143} | 108^{+40}_{-28} |
| Alt. | -36409 ± 22 | $31.83^{+6.78}_{-4.97}$ | 1065^{+76}_{-65} | 4835^{+302}_{-265} | 262^{+108}_{-81} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

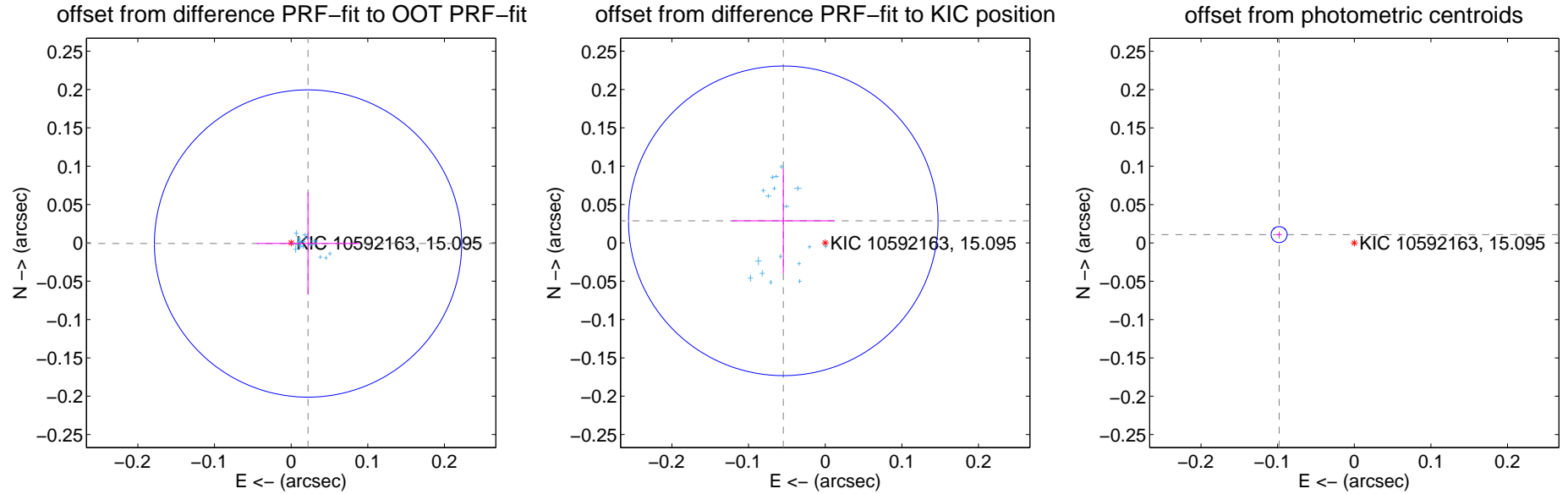
DV Centroid Data

Supplemental centroid analysis for 010592163-01. Kepler magnitude: 15.10. Transit SNR 1899.67

There are 17 quarters with good PRF difference image offsets

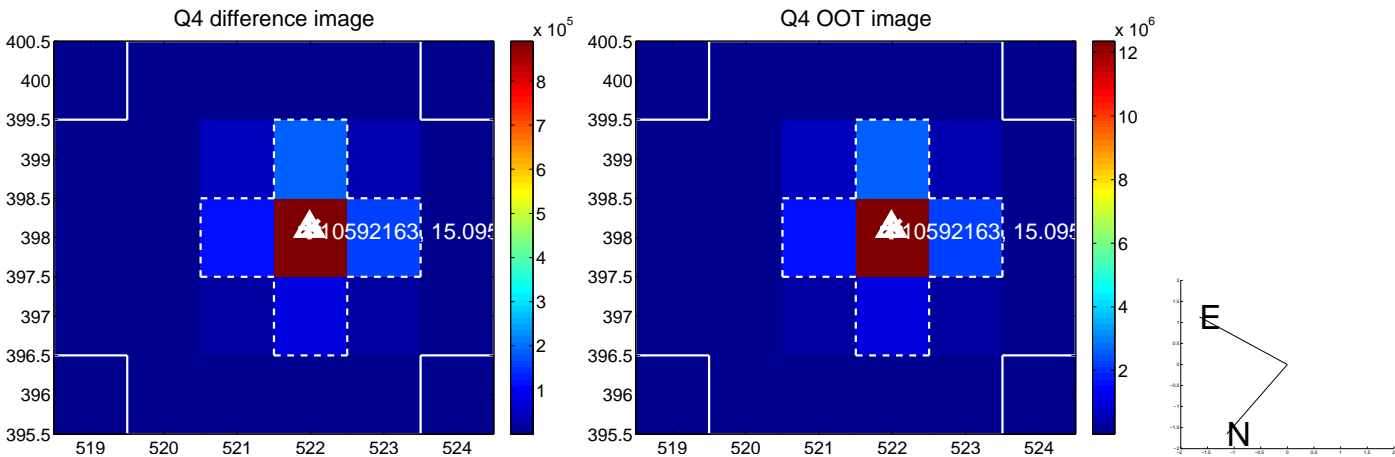
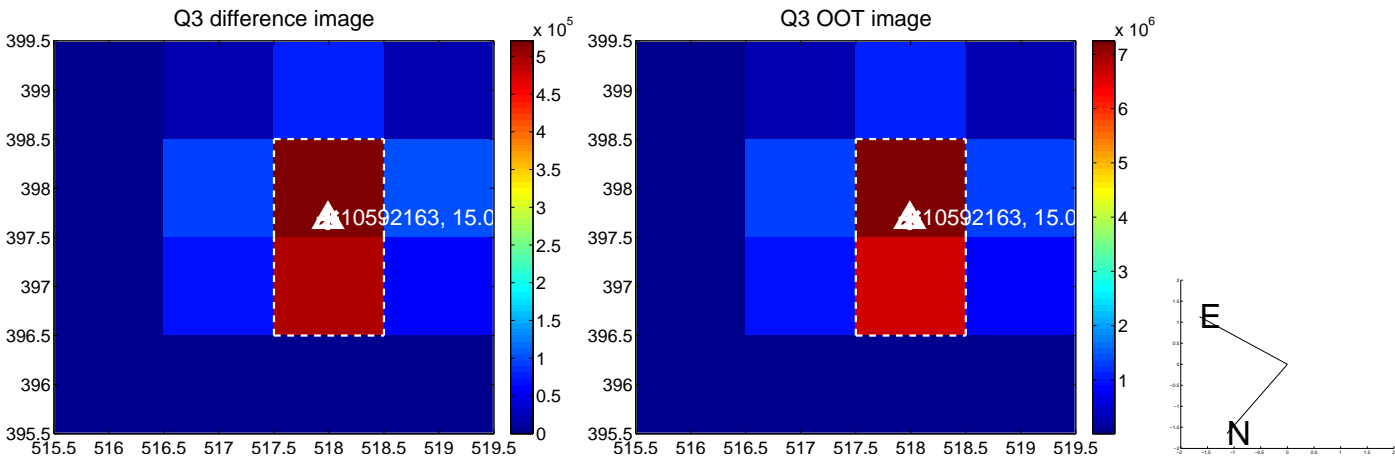
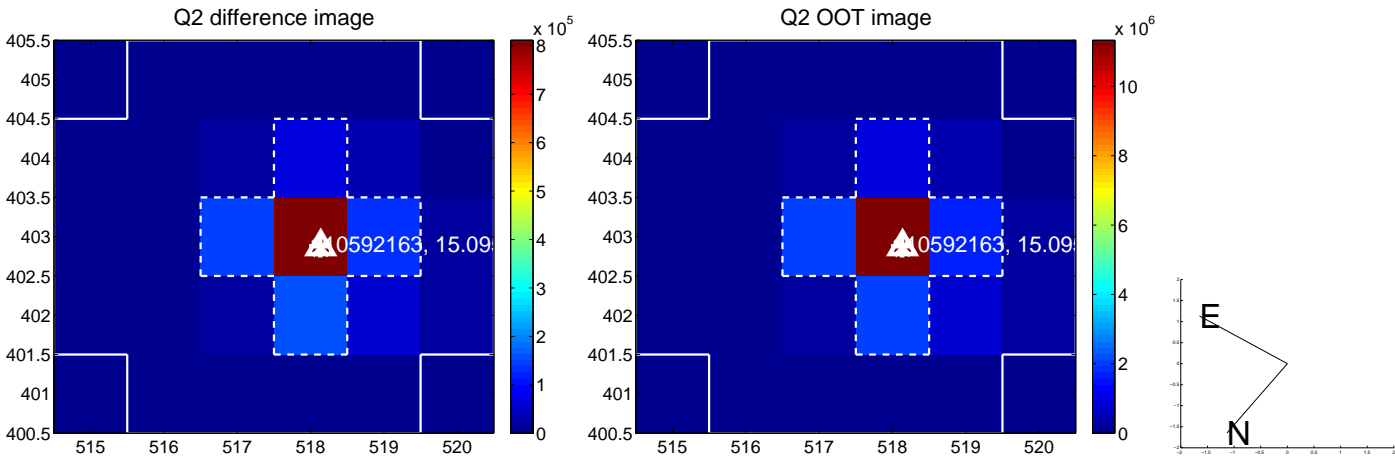
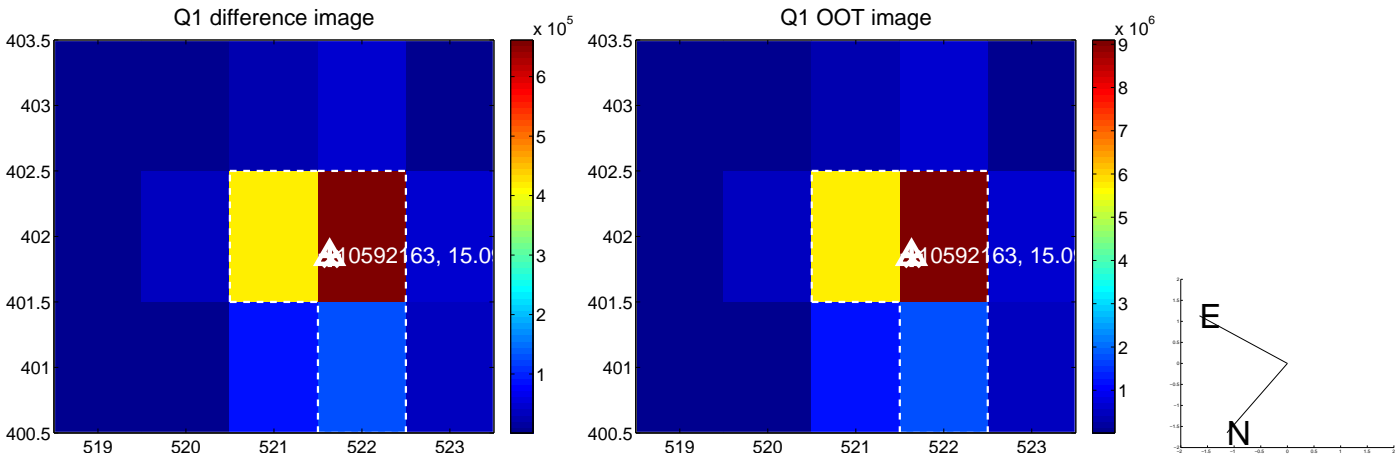
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.022 ± 0.067 | 0.33 | -0.022 ± 0.067 | -0.001 ± 0.067 |
| PRF-fit source offset from KIC position | 0.062 ± 0.067 | 0.92 | 0.055 ± 0.067 | 0.029 ± 0.068 |
| photometric centroid source offset | 0.10 ± 0.00 | 28.38 | 0.10 ± 0.00 | 0.01 ± 0.00 |

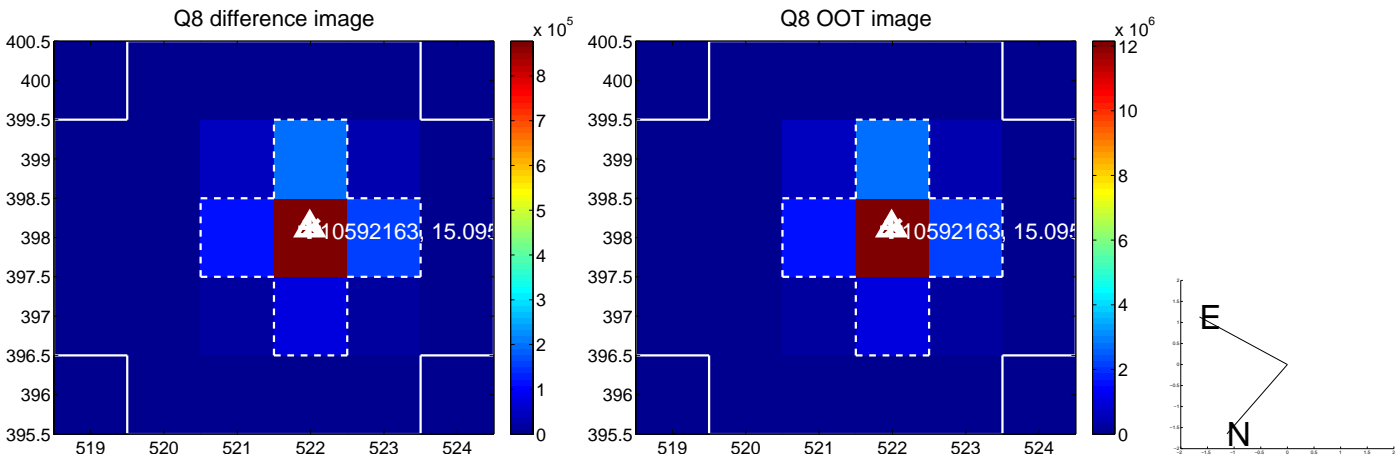
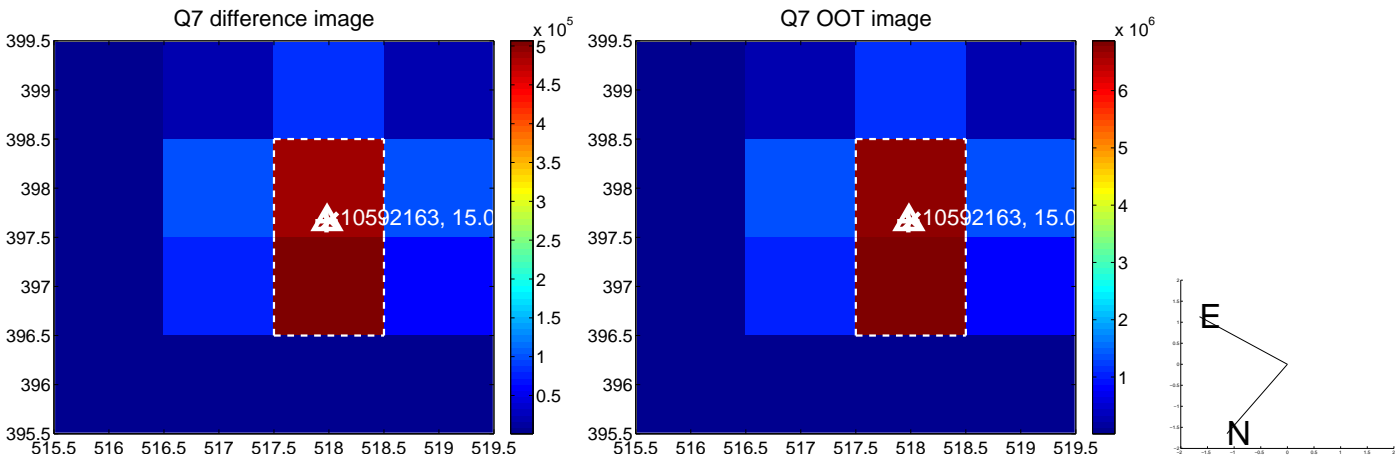
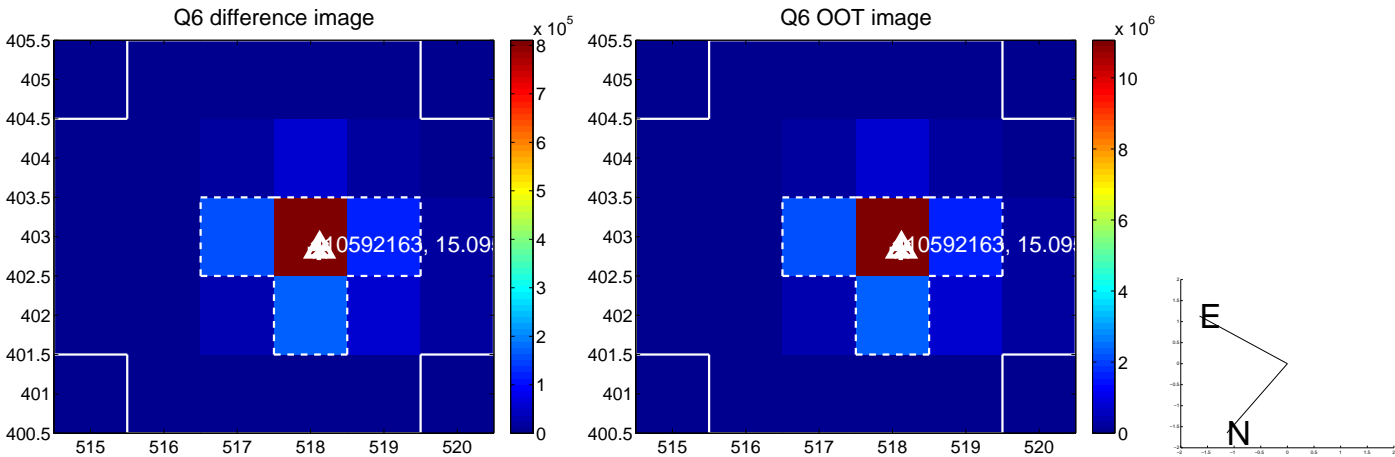
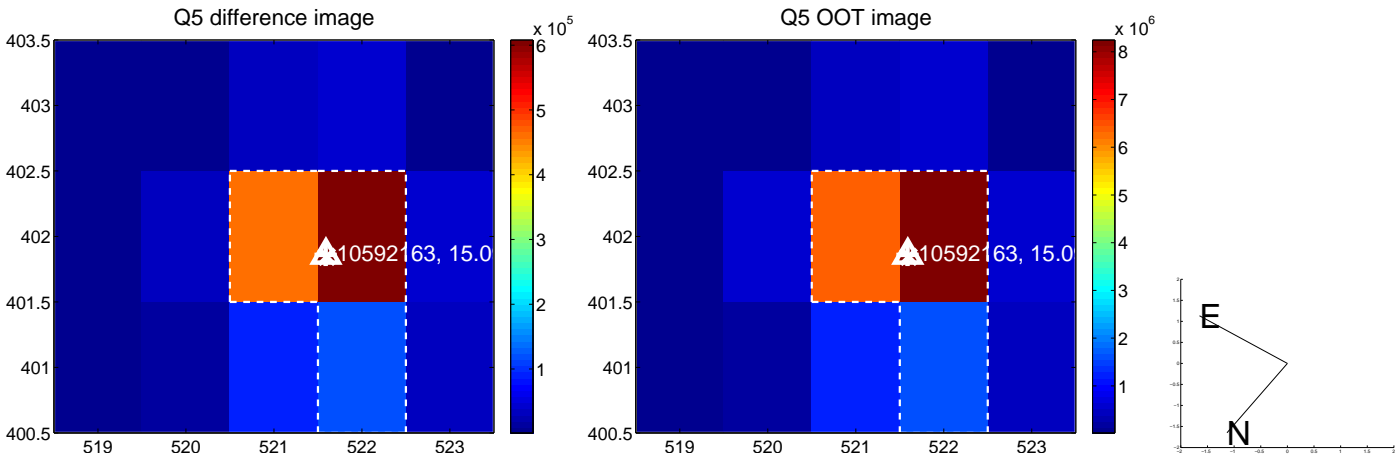


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

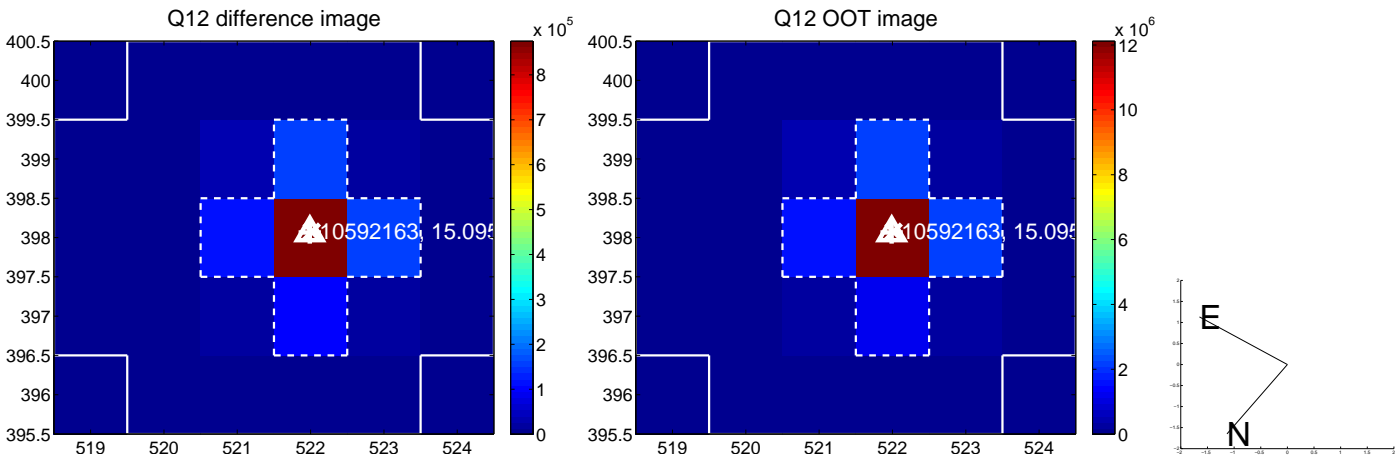
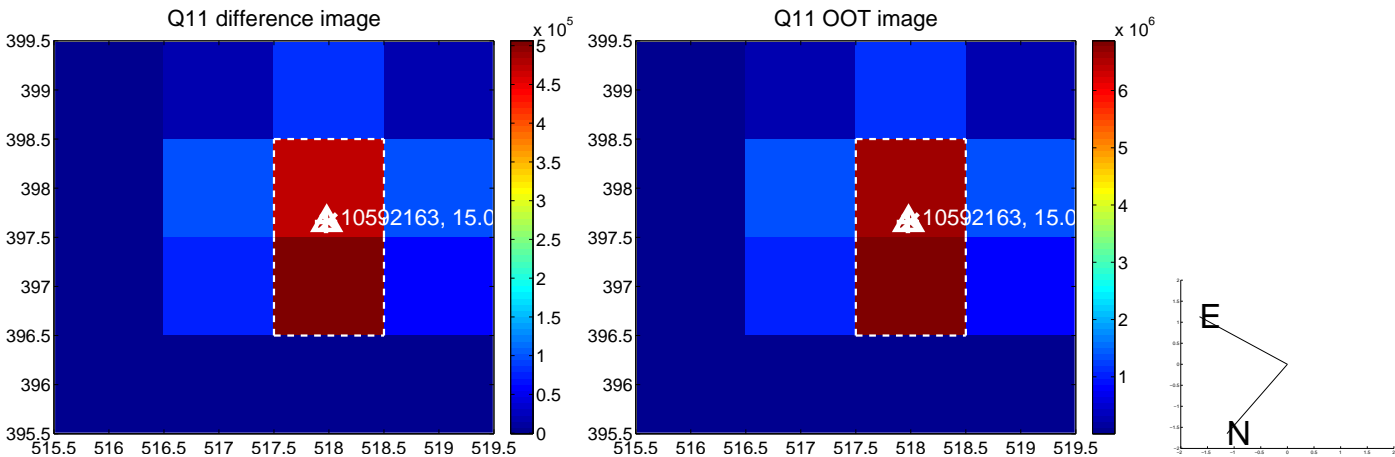
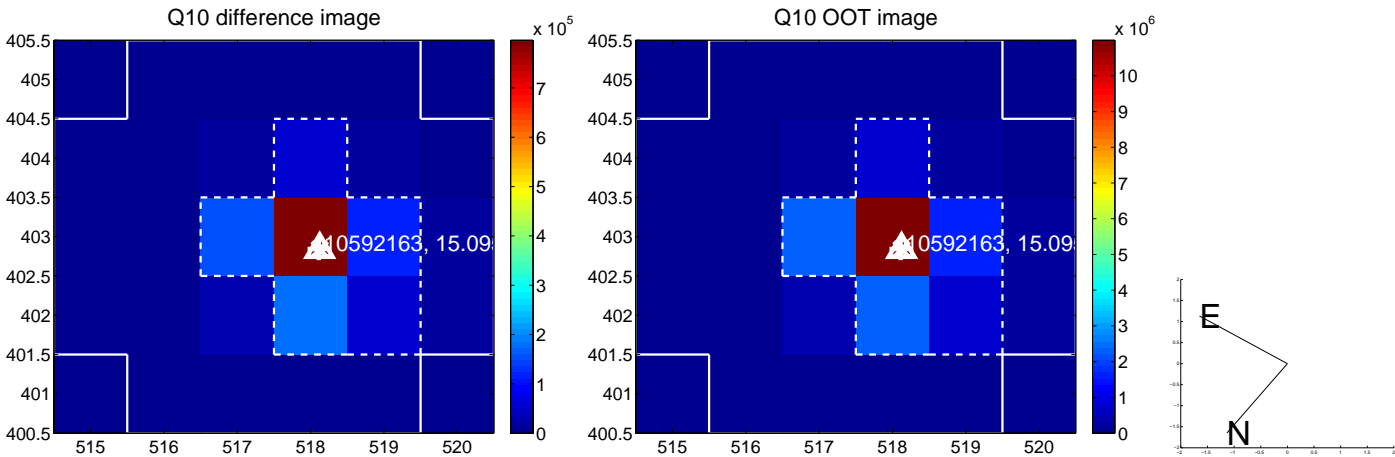
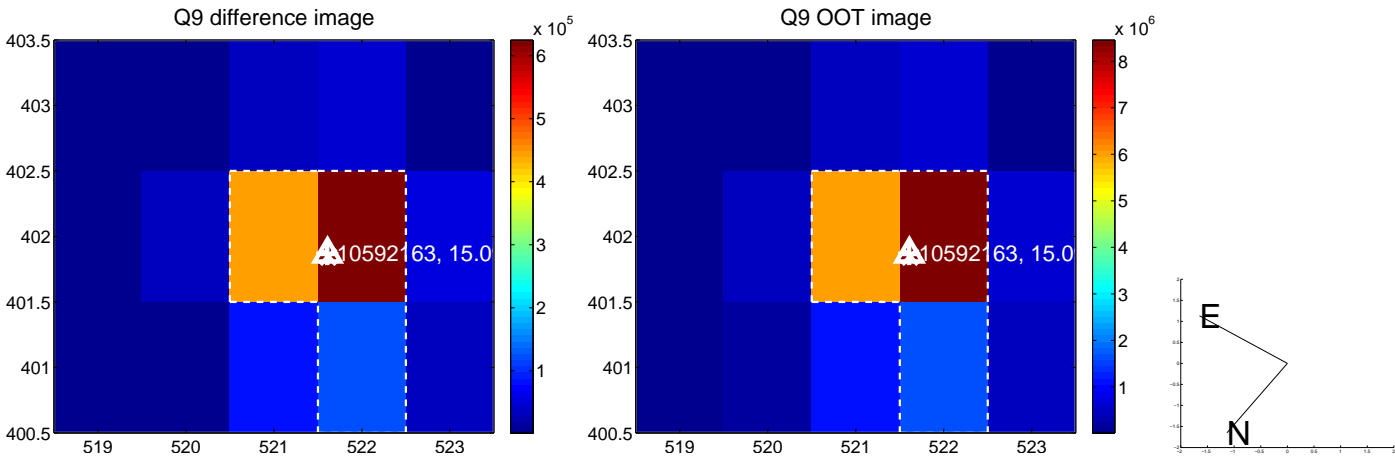
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



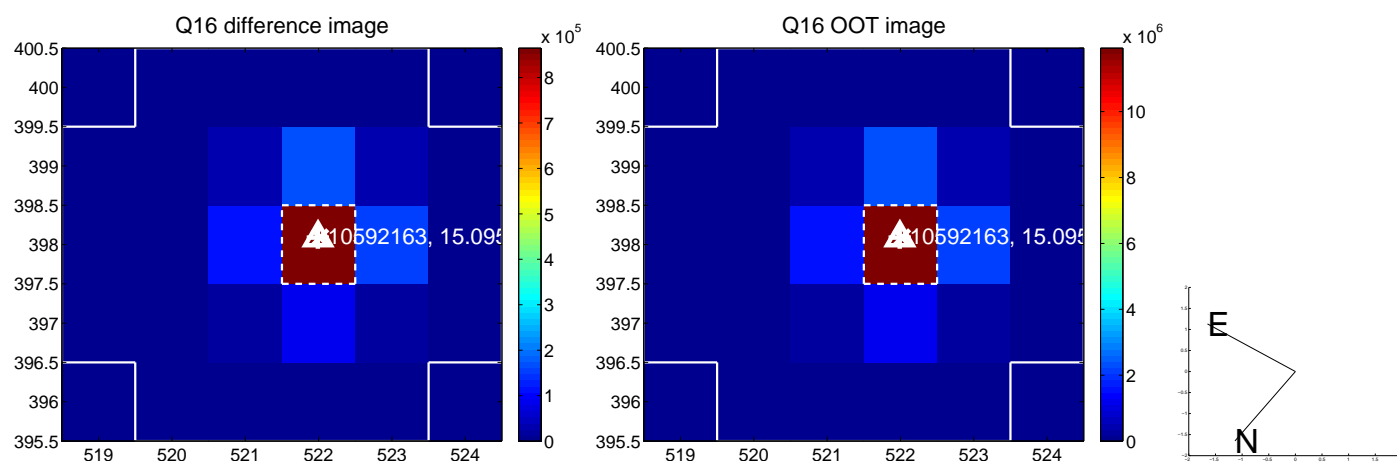
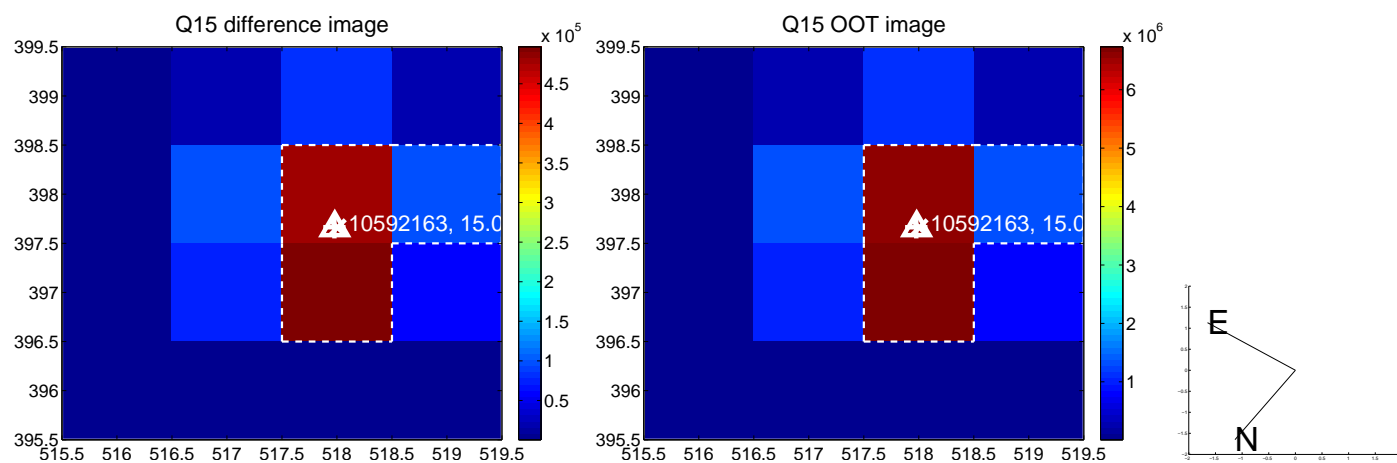
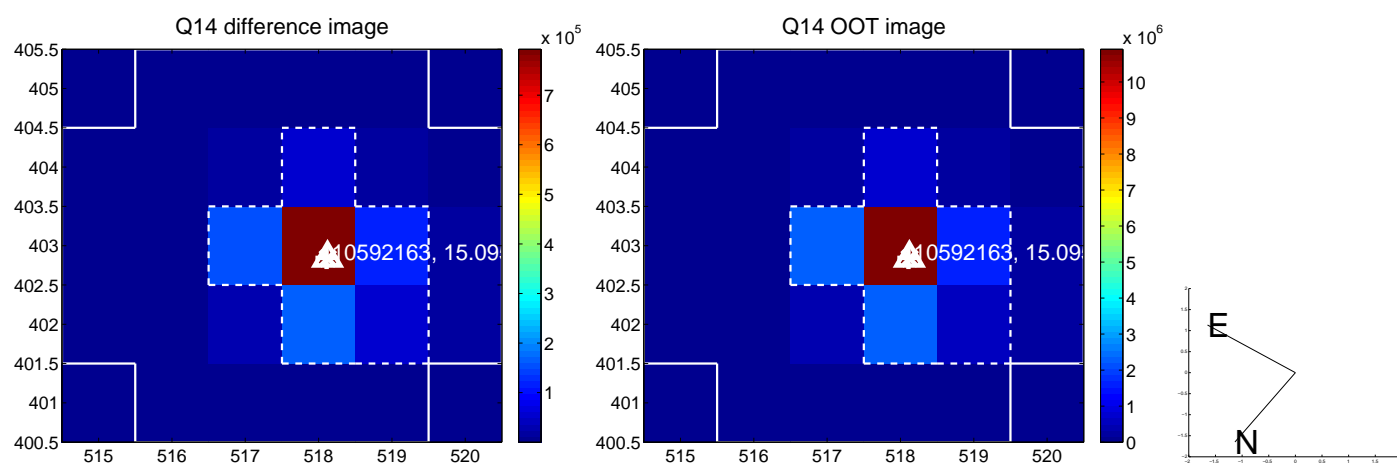
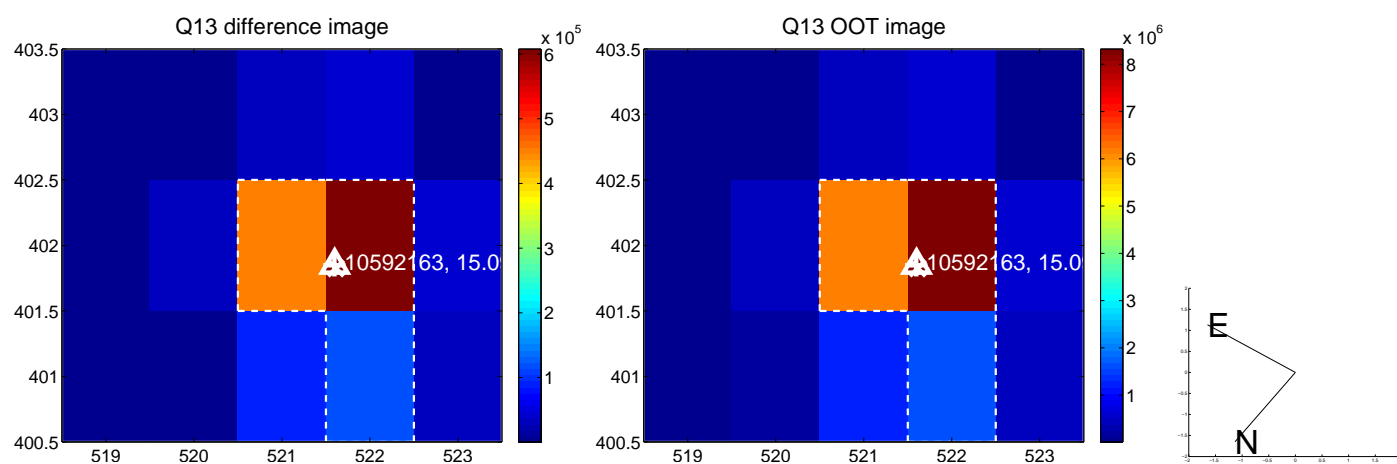
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



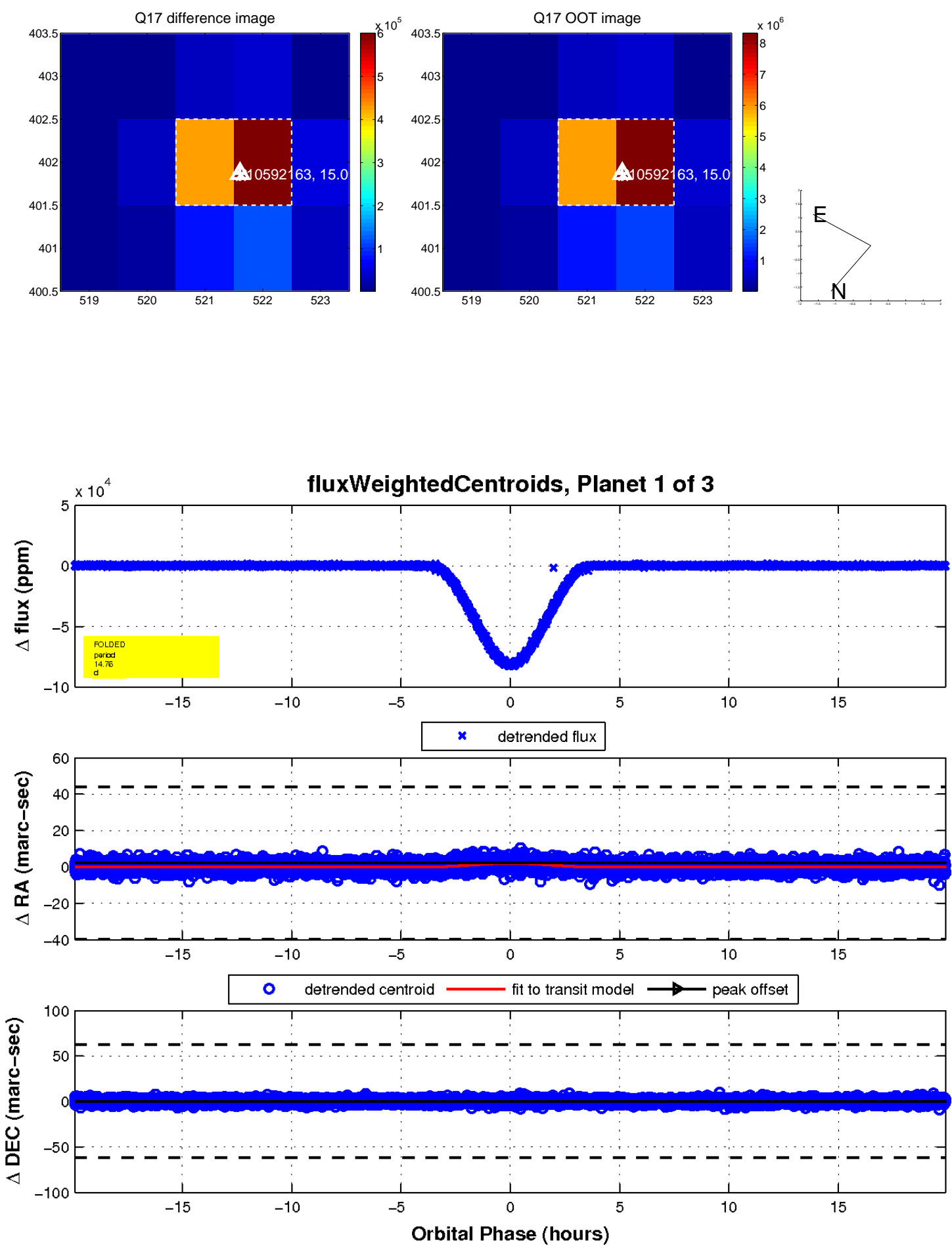
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

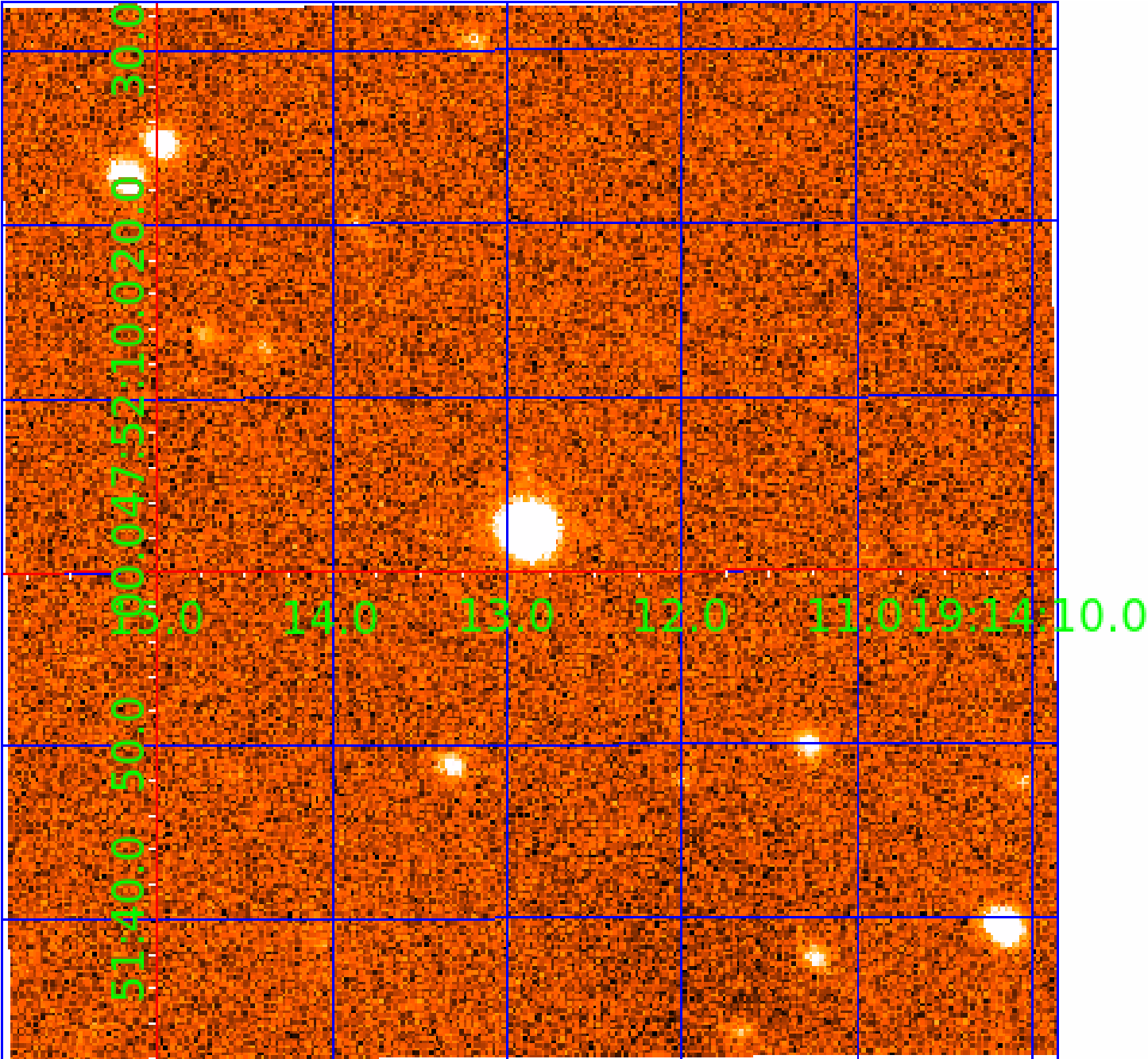


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010592163

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 010592163-01 | OBS | 7346.01 | 14.762895 | 133.774855 | 76773.9 | 6.638 | 3414.6 | 1899.7 | 1.03 | 5691 | 48.28 | 78.63 |
| 010592163-02 | OBS | No | 14.762878 | 143.709031 | 41170.0 | 4.832 | 1611.4 | 1460.5 | 1.03 | 5691 | 36.27 | 78.63 |
| 010592163-03 | OBS | No | 479.203800 | 372.970243 | 804.7 | 28.921 | 7.8 | 11.6 | 1.03 | 5691 | 3.10 | 0.76 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010592163-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE |
| 010592163-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 010592163-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

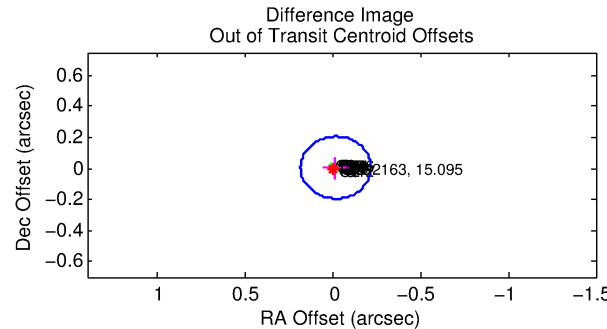
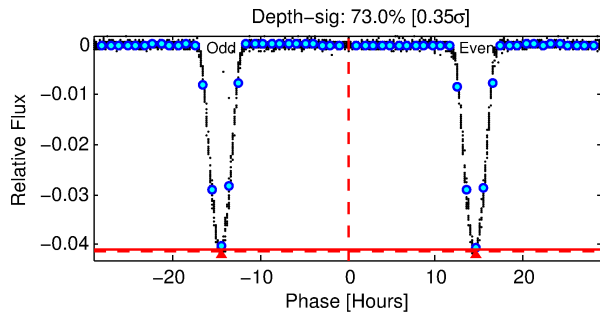
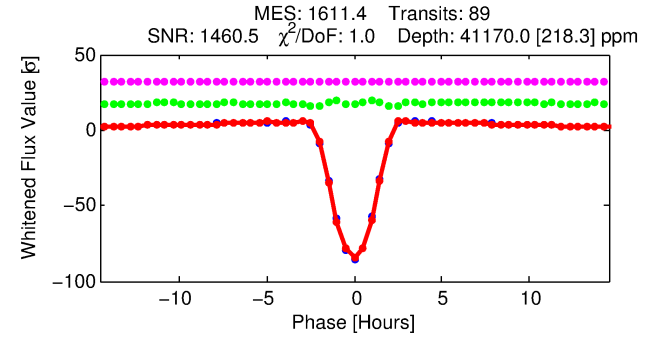
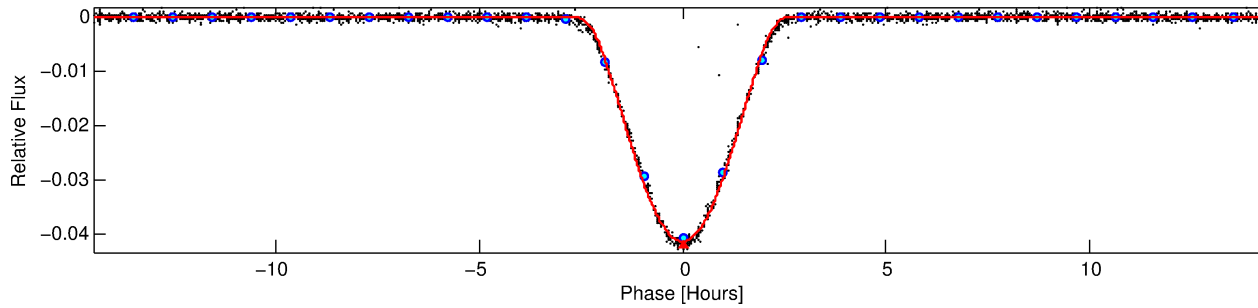
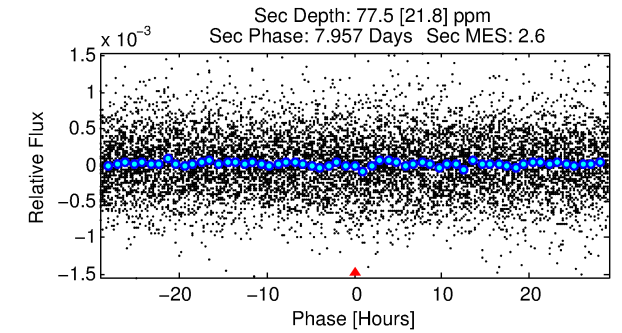
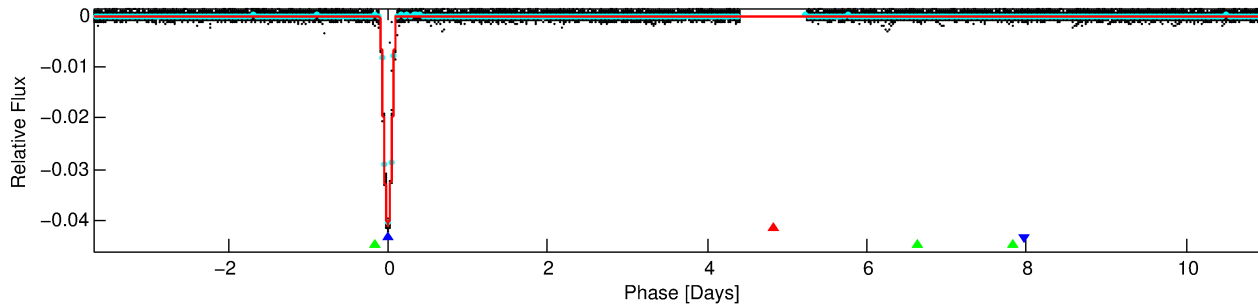
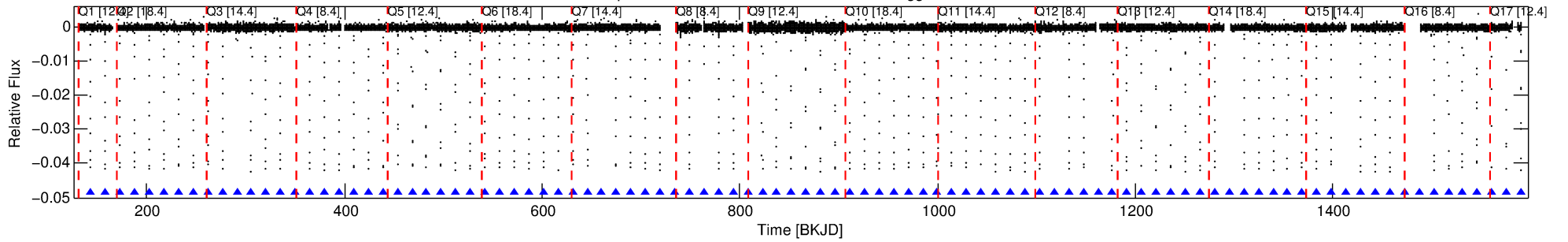
Ephemeris Match Information For 010592163-02

No Significant Match Found

DV One-Page Summary

KIC: 10592163 Candidate: 2 of 3 Period: 14.763 d
KOI: K07346 Corr: No Ephemeris Match

Kp: 15.10 R*: 1.03 Rs Teff: 5691.0 K Logg: 4.35 Fe/H: -0.160



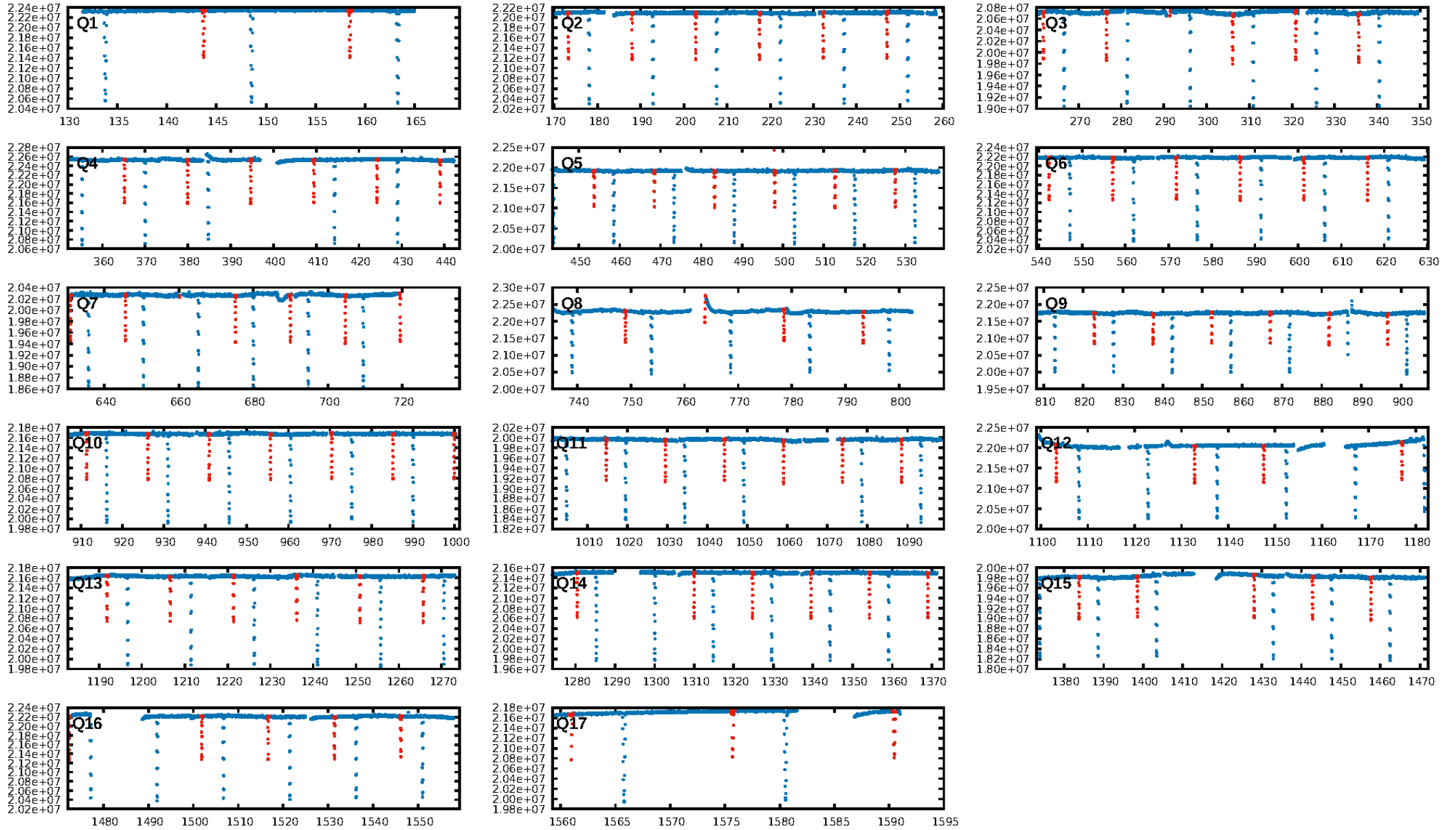
DV Fit Results:

Period = 14.76288 [0.00000] d
Epoch = 143.7090 [0.0001] BKJD
Rp/R* = 0.3224 [0.0228]
a/R* = 20.24 [0.04]
b = 1.00 [0.03]
Seff = 78.63 [27.57]
Teq = 759 [67] K
Rp = 36.27 [10.52] Re
a = 0.1127 [0.0263] AU
Ag = 0.41 [0.19] [-3.12σ]
Teffp = 940 [78] K [1.77σ]

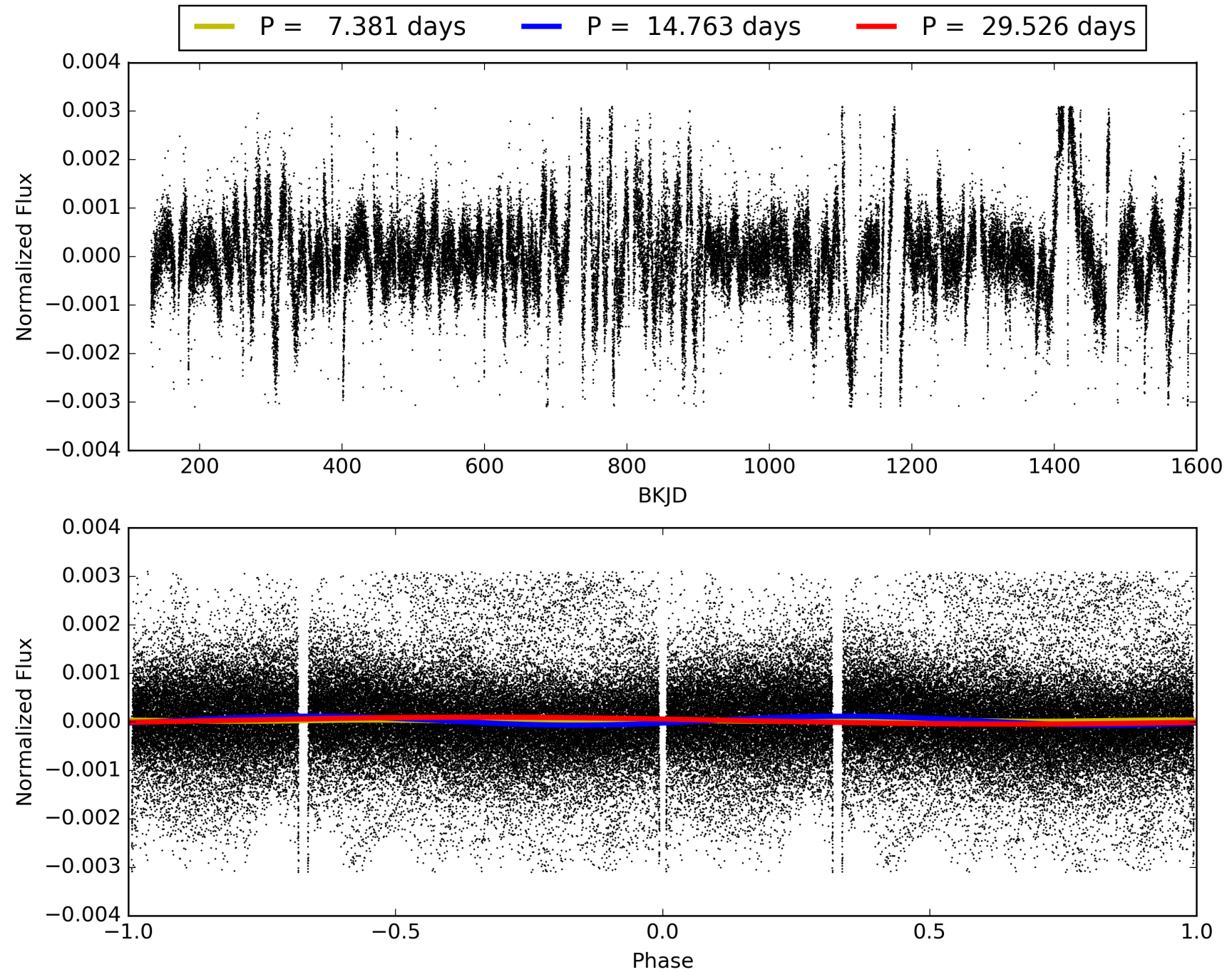
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [84/84]
GhostDiagnostic-chr: 2.857
Centroid-sig: 0.0%
Centroid-so: 0.108 arcsec [14.26σ]
OotOffset-rm: 0.017 arcsec [0.25σ]
KicOffset-rm: 0.066 arcsec [0.98σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010592163-02, PDC Light Curves

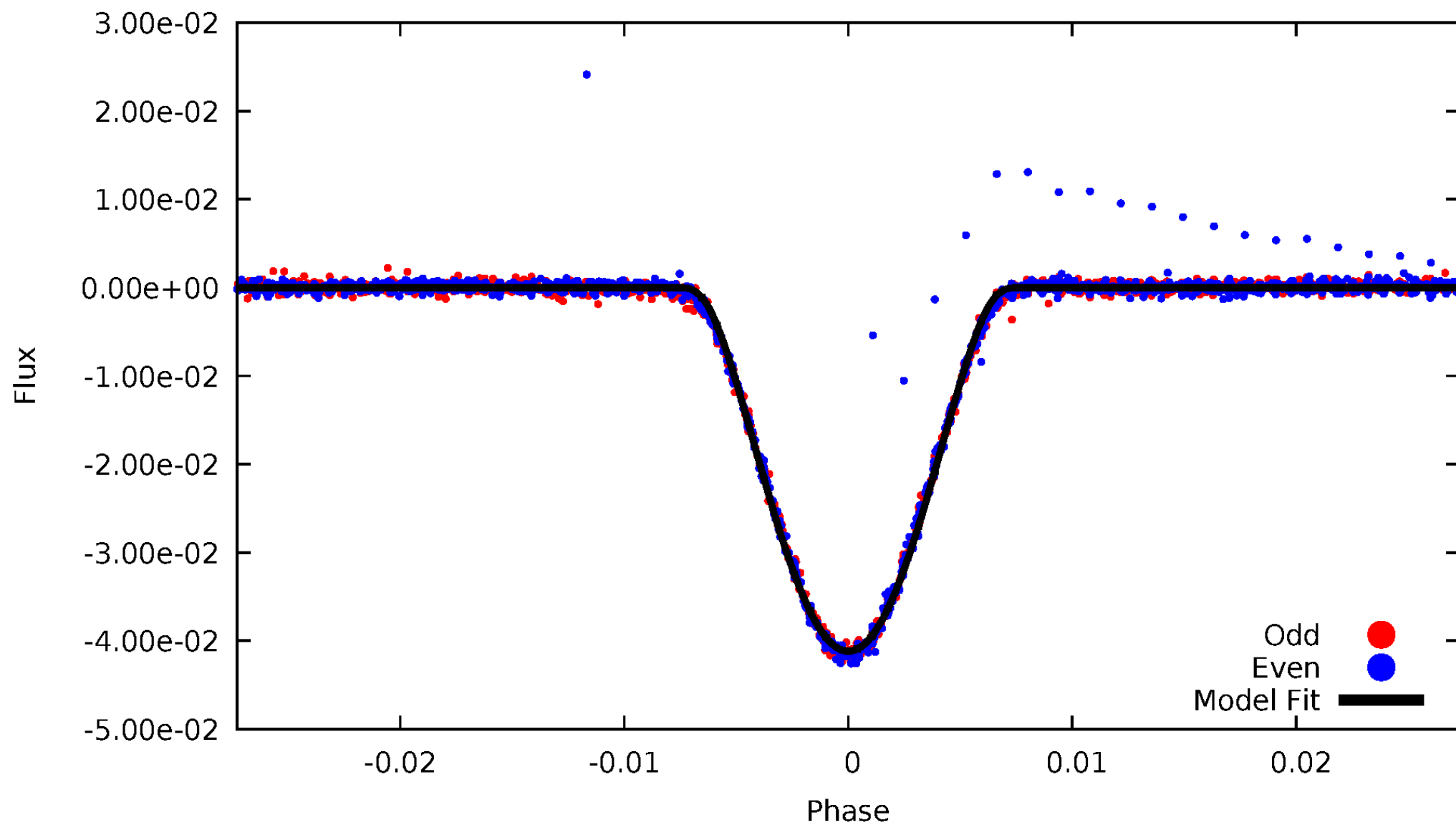


TCE 010592163-02



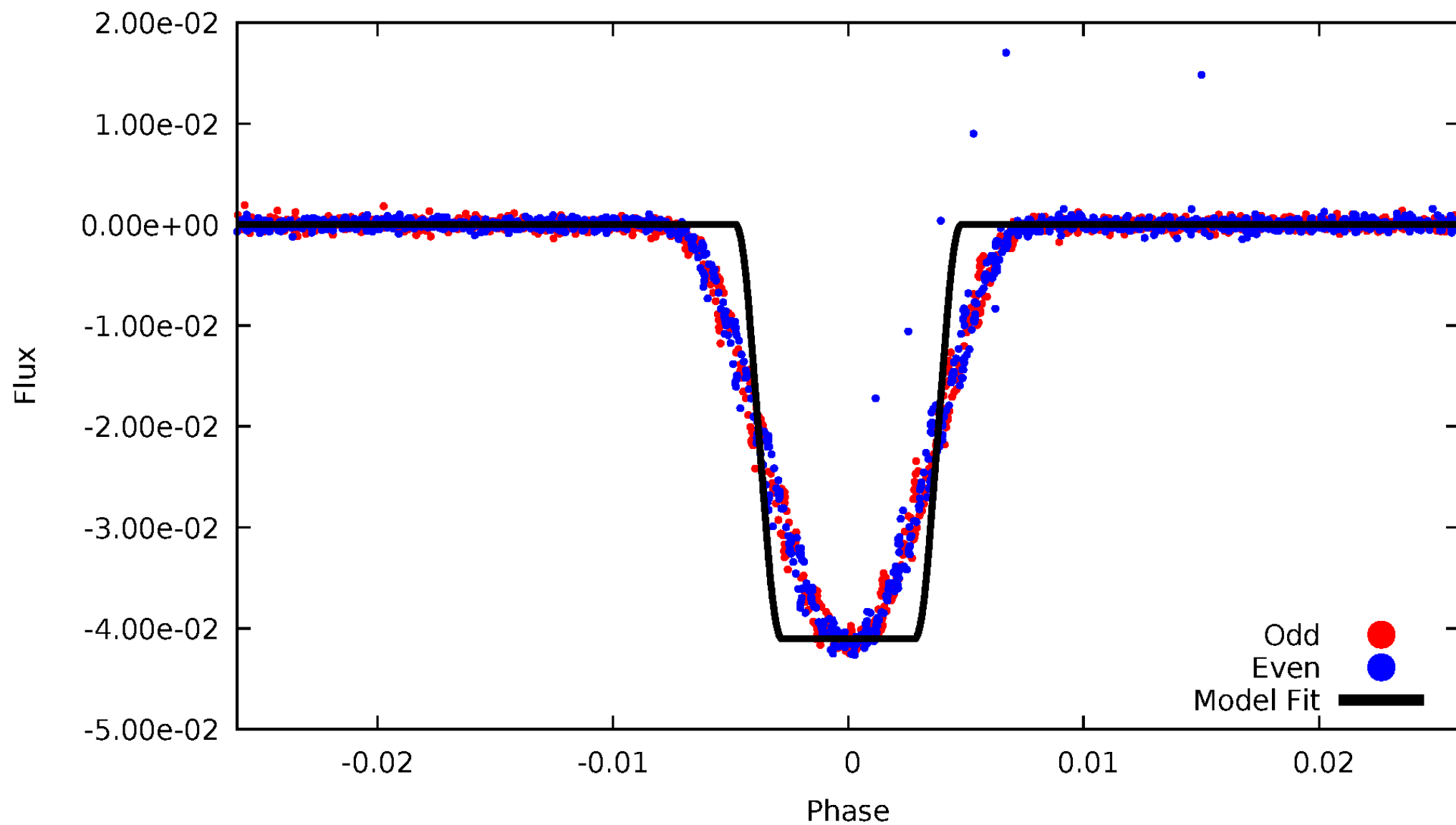
DV Odd/Even

TCE 010592163-02



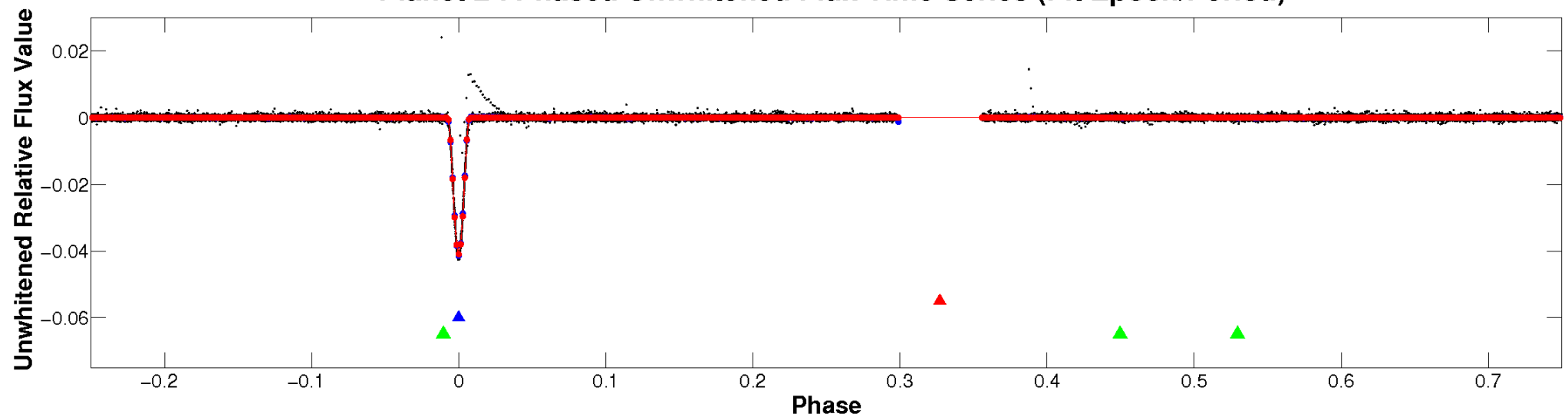
ALT Odd/Even

TCE 010592163-02

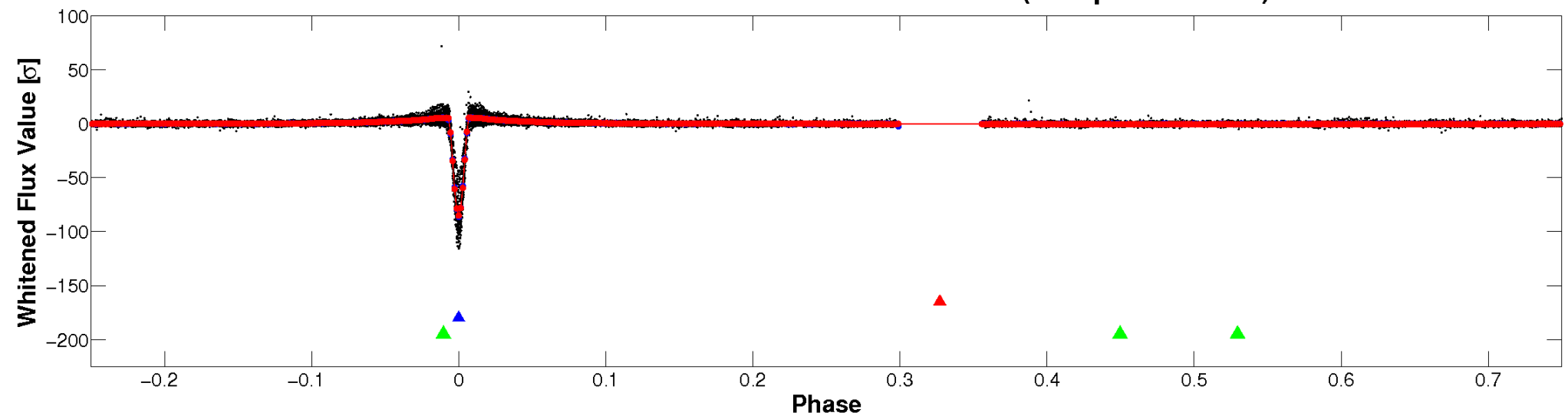


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

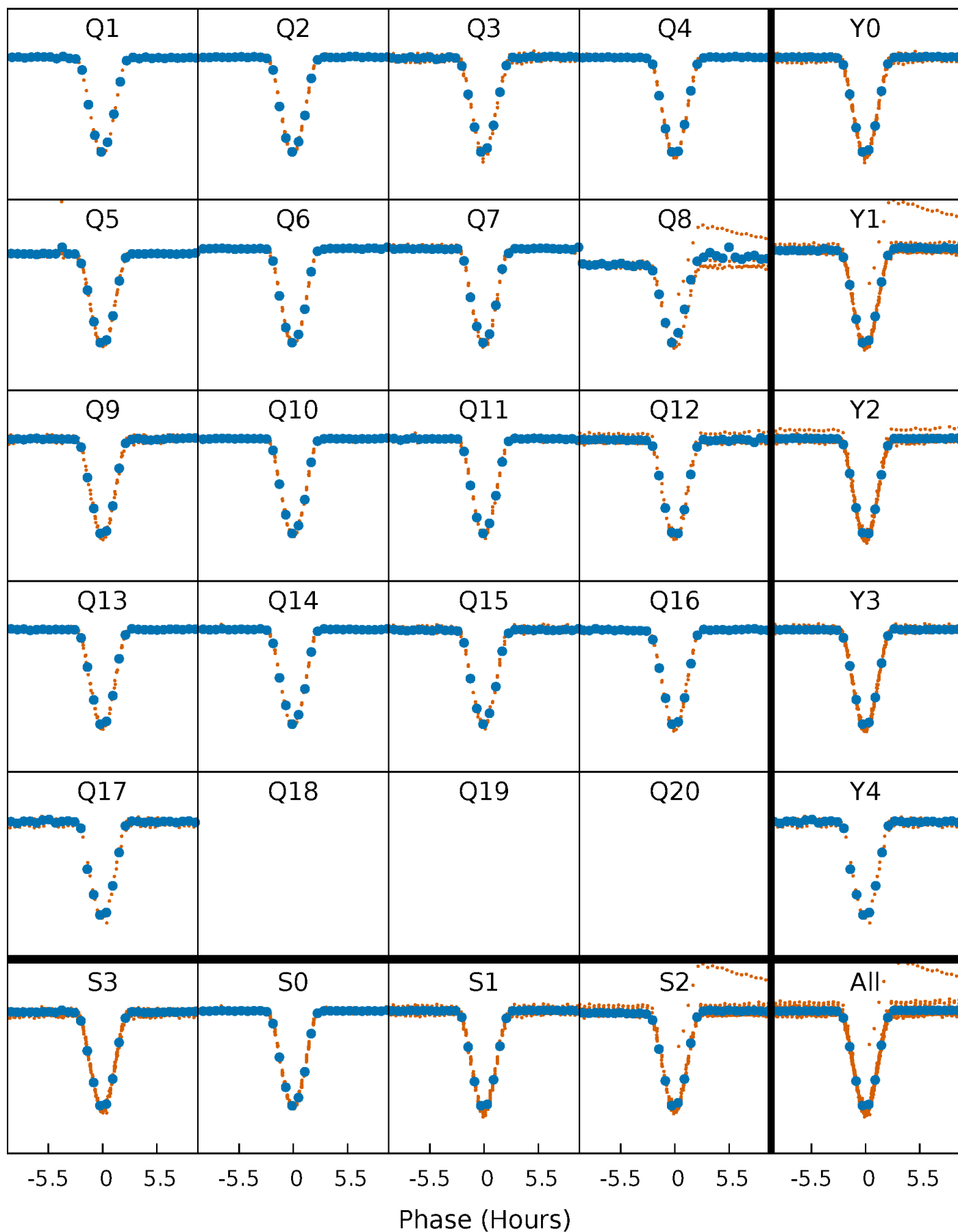


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



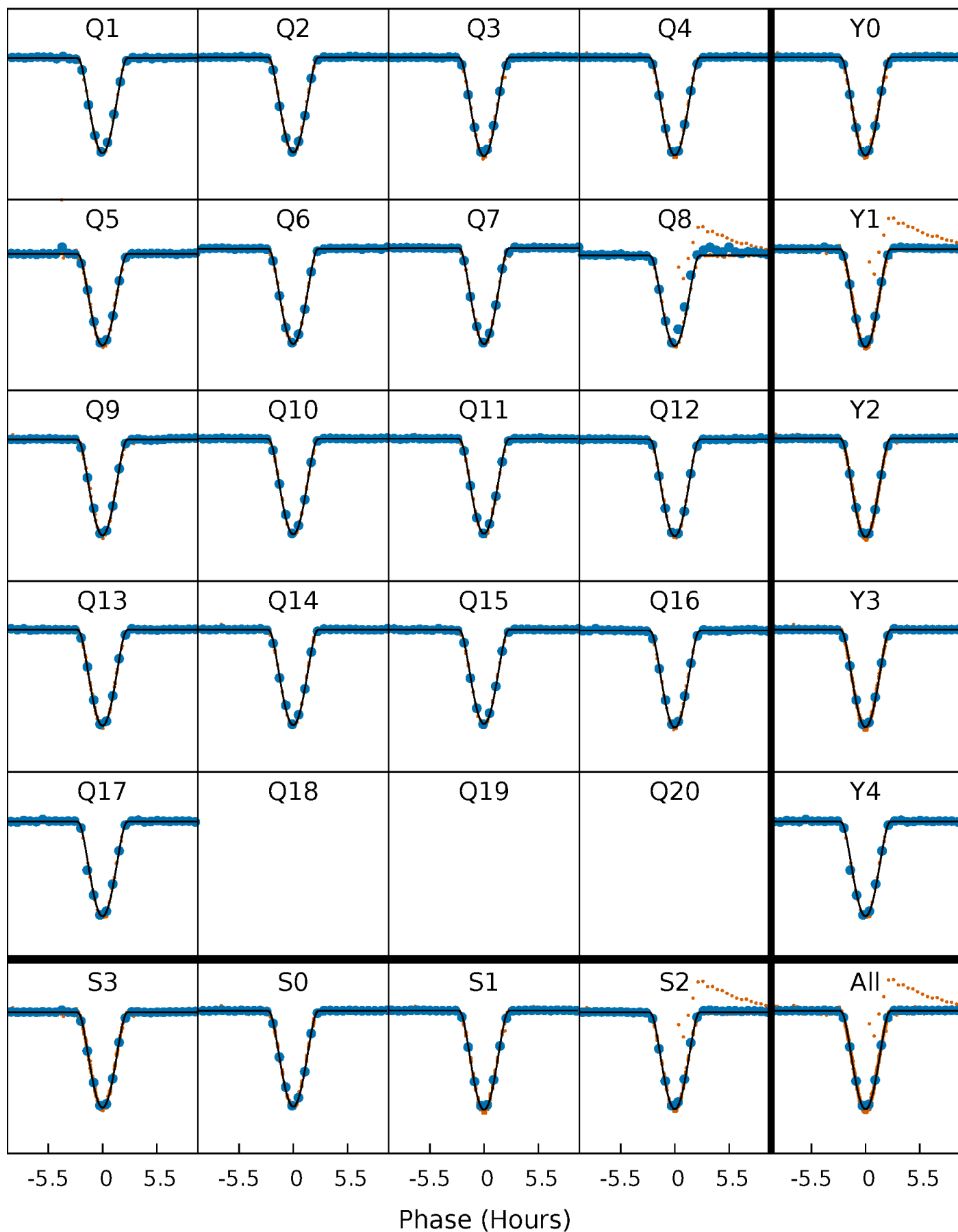
PDC Quarter-Phased Transit Curves

TCE 010592163-02 P= 14.762878 Days $T_0=143.709031$ (BKJD)



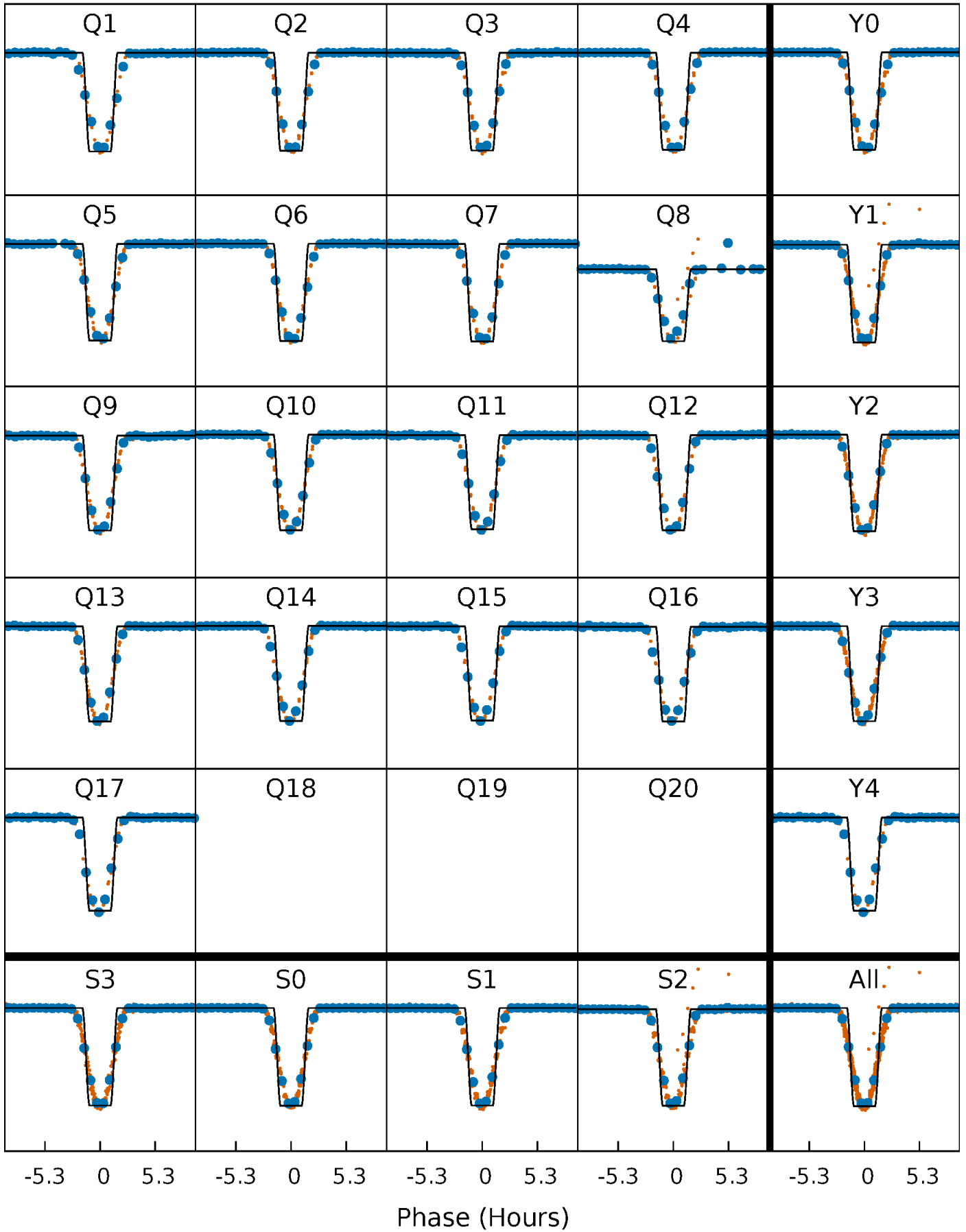
DV Quarter-Phased Transit Curves

TCE 010592163-02 P= 14.762878 Days $T_0=143.709031$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

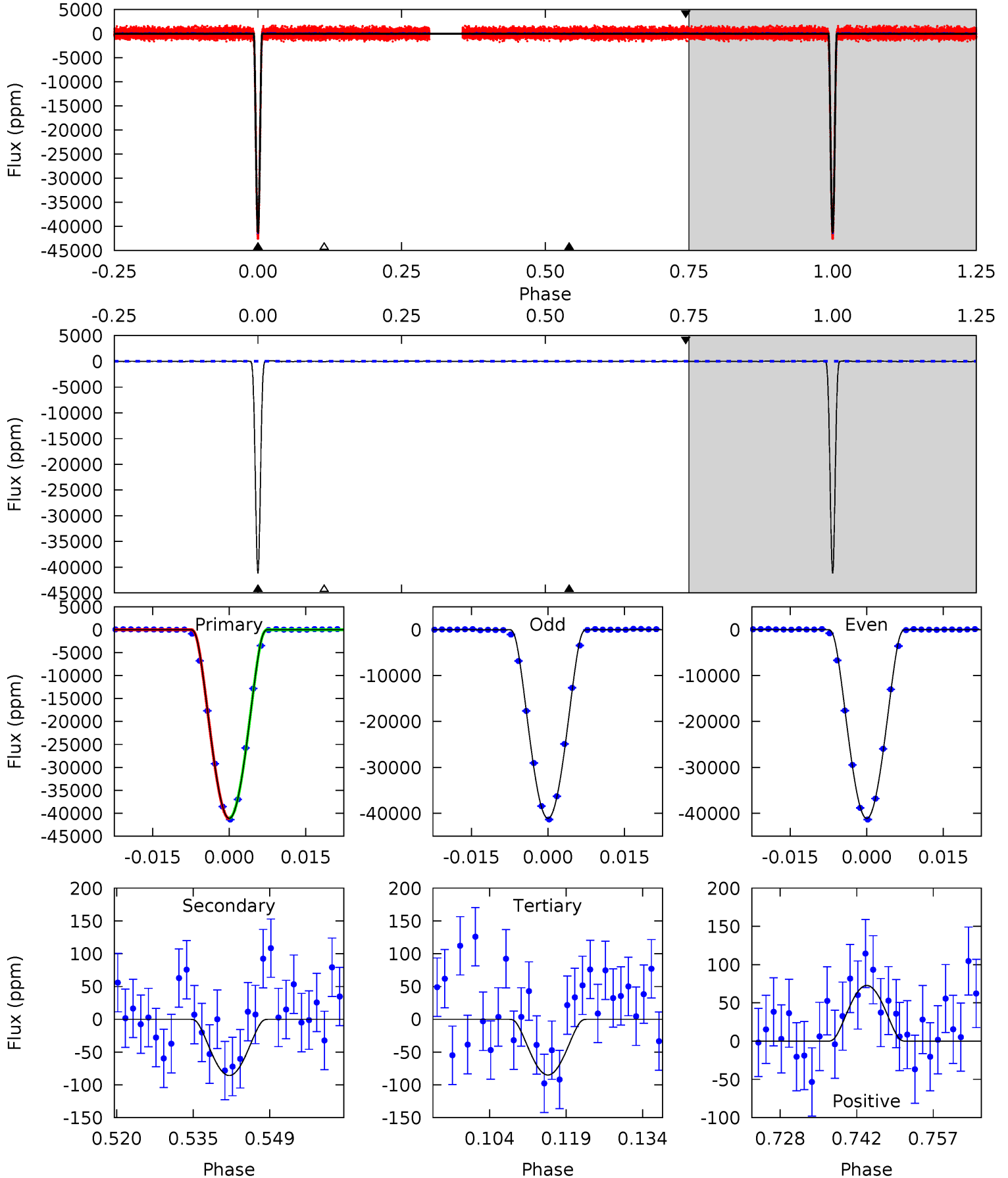
TCE 010592163-02 P= 14.762998 Days $T_0=143.702957$ (BKJD)



DV Model-Shift Uniqueness Test

010592163-02, P = 14.762878 Days, E = 128.946153 Days

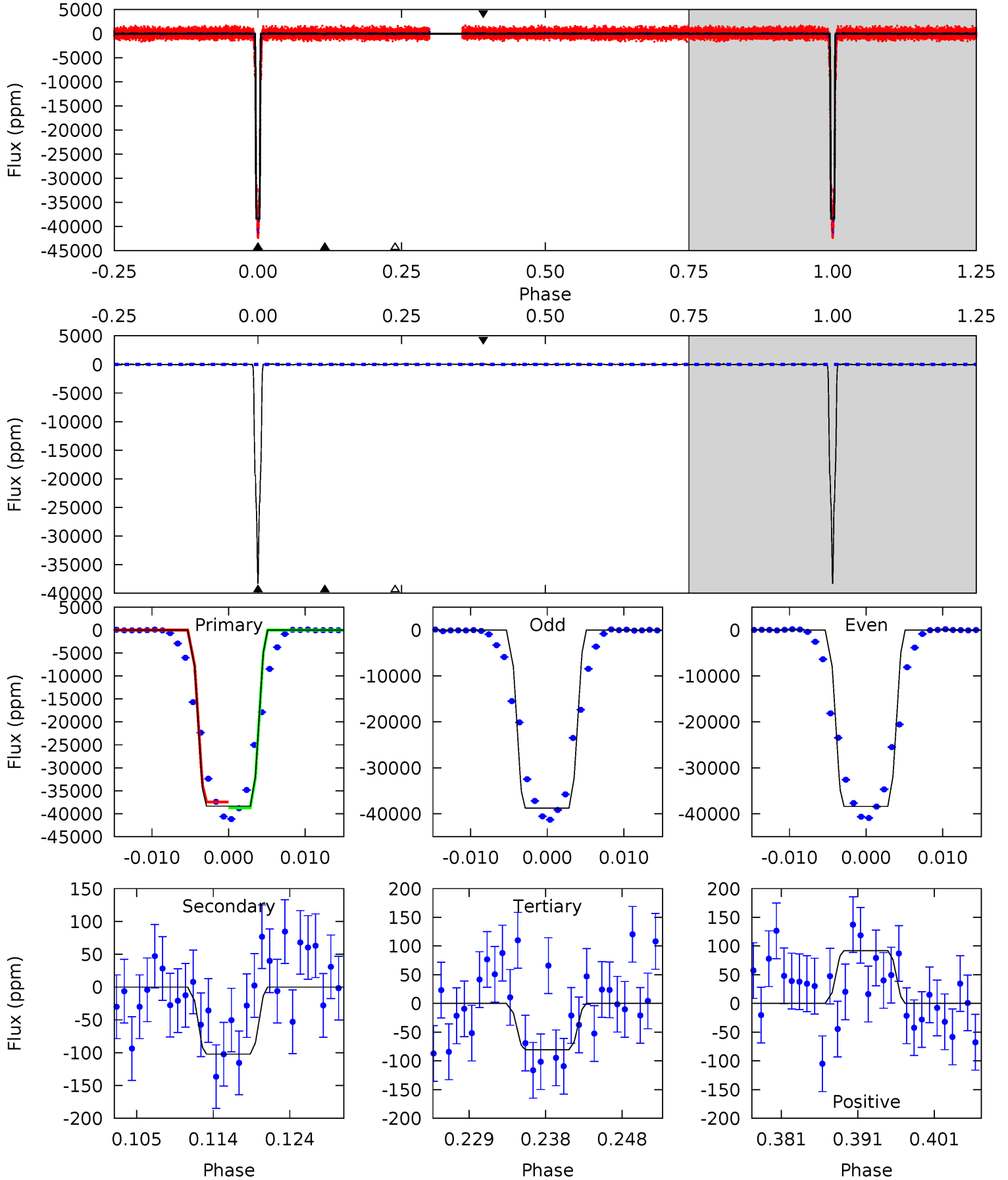
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3050 | 6.36 | 6.30 | 5.40 | 4.95 | 2.44 | 2.17 | 3044 | 3044 | 0.06 | 0.96 | 1.13 | 0.99 | 0.00 | 4.47 |



Alt Model-Shift Uniqueness Test

010592163-02, P = 14.762998 Days, E = 128.939959 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1731 | 4.61 | 3.63 | 4.15 | 5.04 | 2.59 | 1.26 | 1727 | 1726 | 0.98 | 0.46 | 8.26 | 0.99 | 0.00 | 28.2 |



Stellar Parameters For KIC 010592163

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5691^{+152}_{-152} | $4.354^{+0.162}_{-0.180}$ | $-0.160^{+0.300}_{-0.300}$ | $1.031^{+0.290}_{-0.193}$ | $0.875^{+0.125}_{-0.073}$ | $1.125^{+0.861}_{-0.562}$ |
| | +3%/-3% | +4%/-4% | +188%/-188% | +28%/-19% | +14%/-8% | +77%/-50% |
| Source | PHO1 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010592163-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|-------------------------|--------------------|----------------------|---------------------------|
| DV | -86 ± 13 | $36.31^{+5.84}_{-4.17}$ | 1067^{+67}_{-67} | 1772^{+101}_{-229} | $0.449^{+0.156}_{-0.124}$ |
| Alt. | -102 ± 22 | $22.98^{+4.47}_{-3.59}$ | 1064^{+77}_{-68} | 2152^{+98}_{-107} | $1.346^{+0.654}_{-0.458}$ |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming A=0.3)

A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

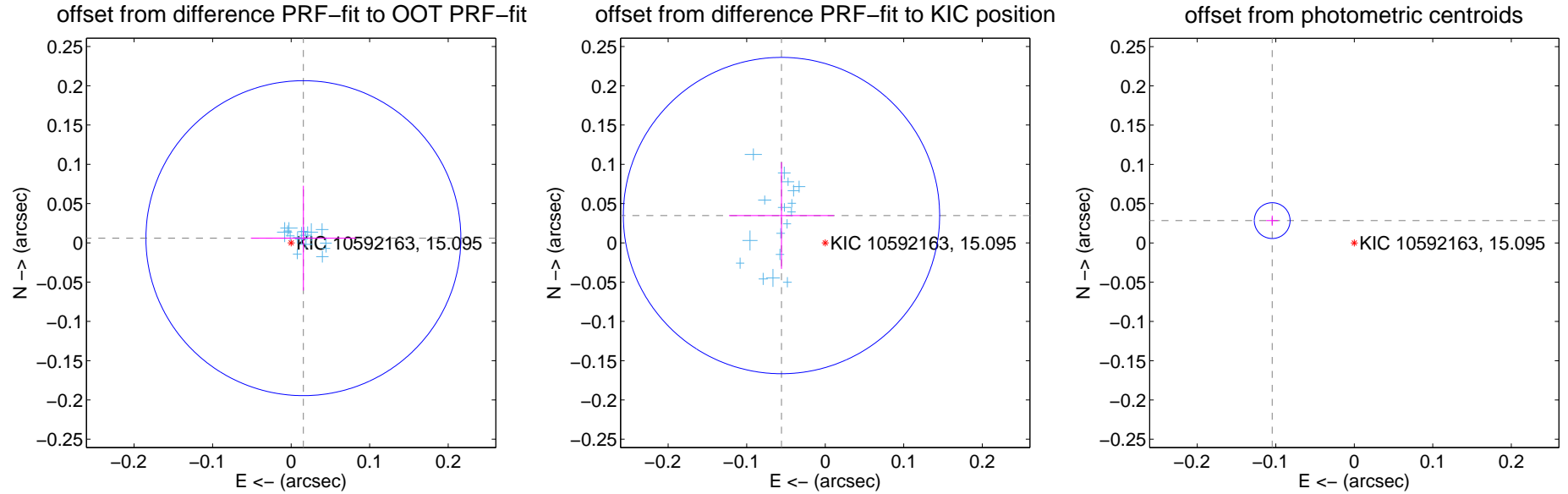
DV Centroid Data

Supplemental centroid analysis for 010592163-02. Kepler magnitude: 15.10. Transit SNR 1460.55

There are 17 quarters with good PRF difference image offsets

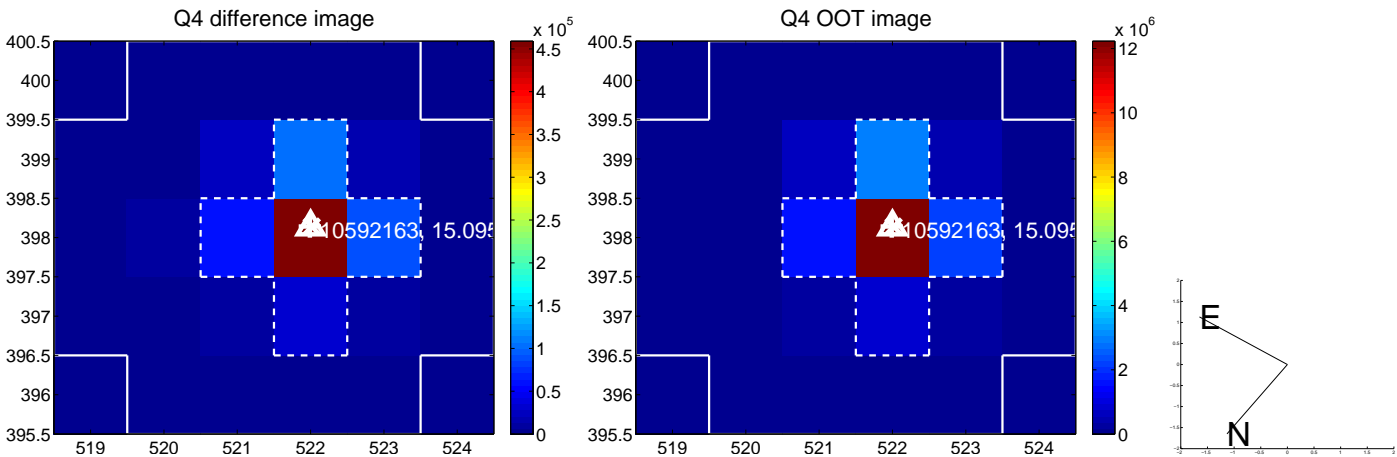
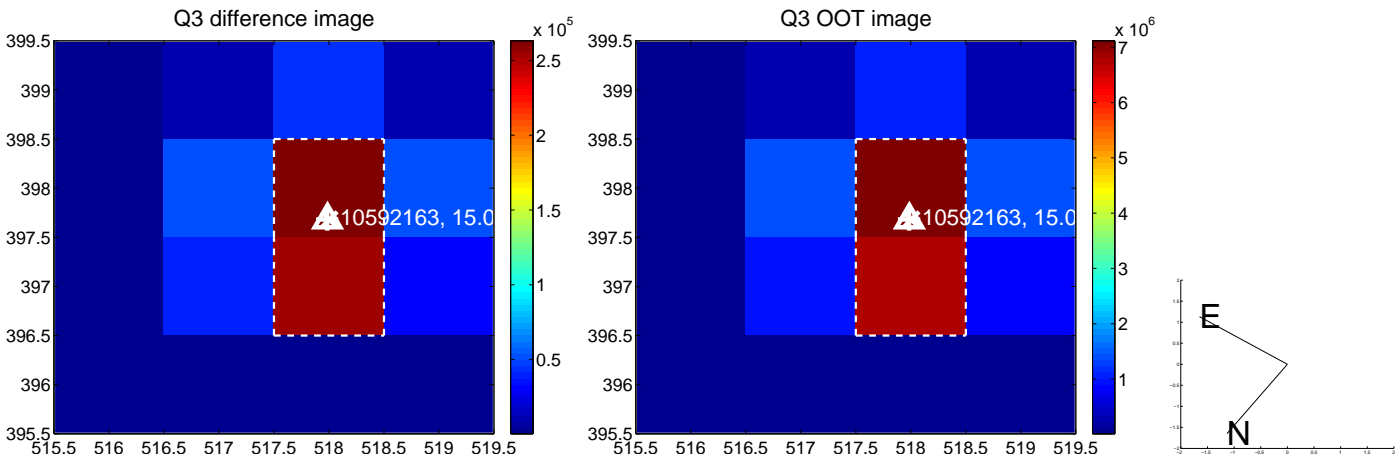
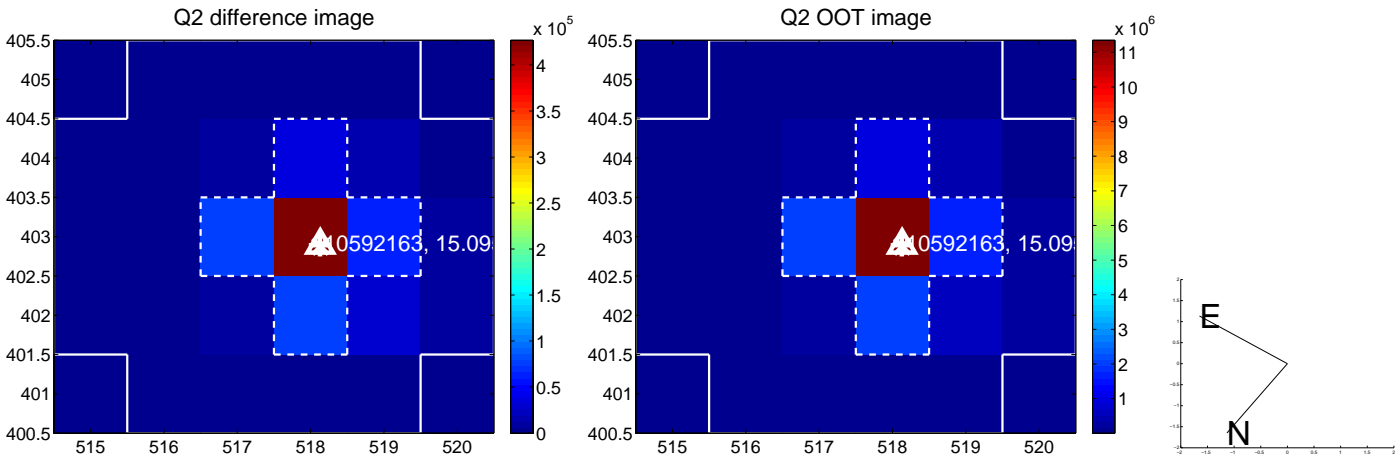
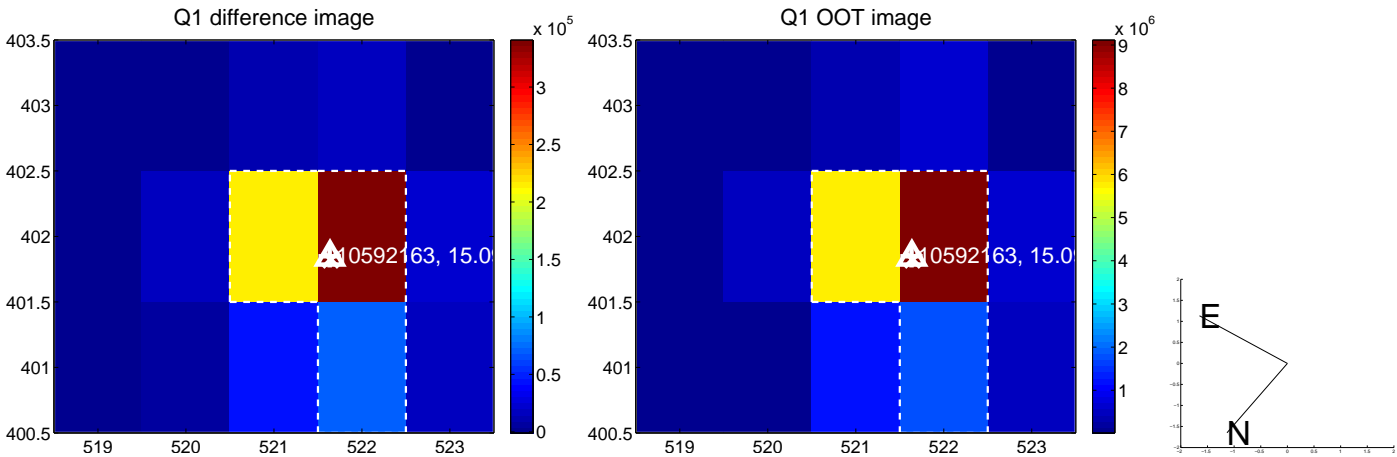
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.017 ± 0.067 | 0.25 | -0.016 ± 0.067 | 0.006 ± 0.067 |
| PRF-fit source offset from KIC position | 0.066 ± 0.067 | 0.98 | 0.056 ± 0.067 | 0.035 ± 0.068 |
| photometric centroid source offset | 0.11 ± 0.01 | 14.26 | 0.10 ± 0.01 | 0.03 ± 0.01 |

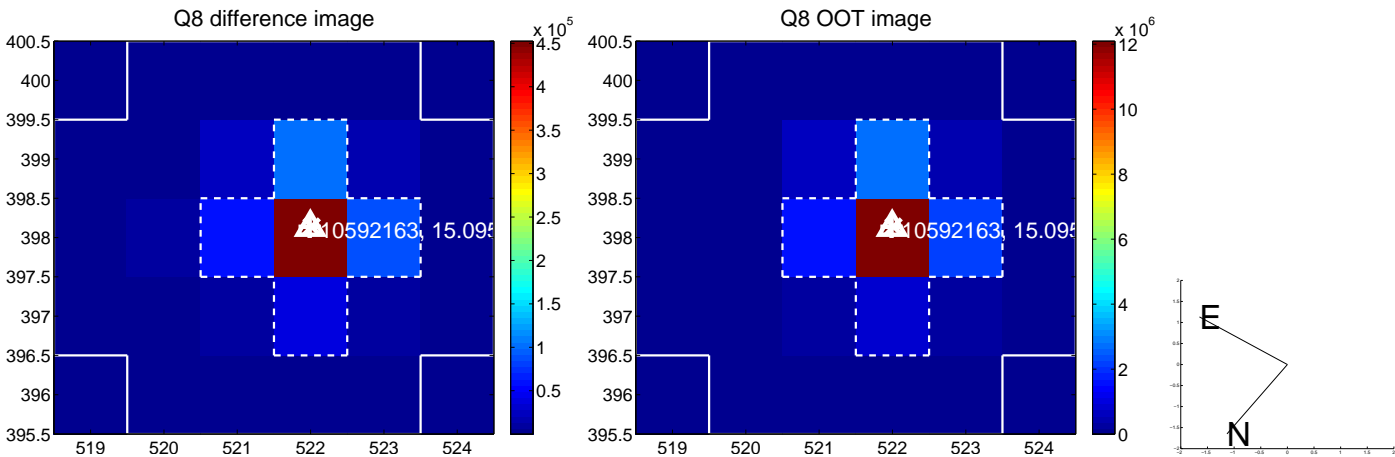
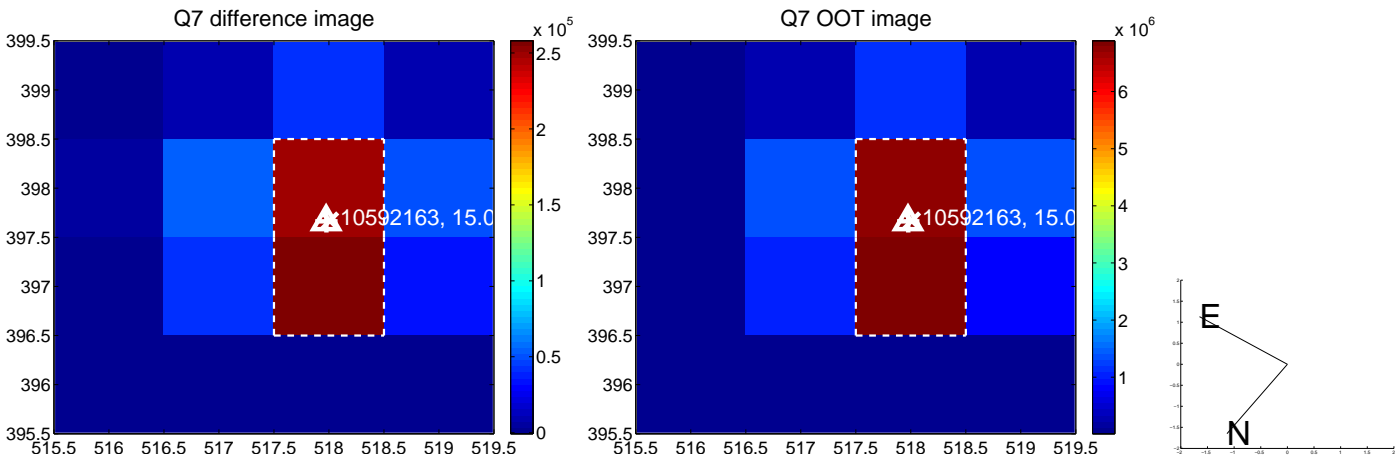
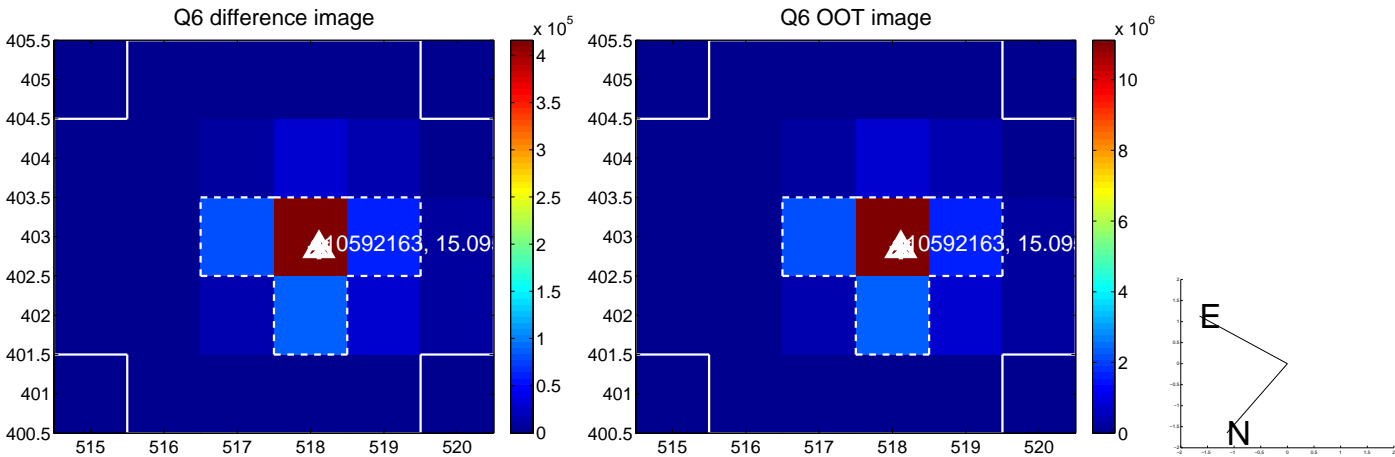
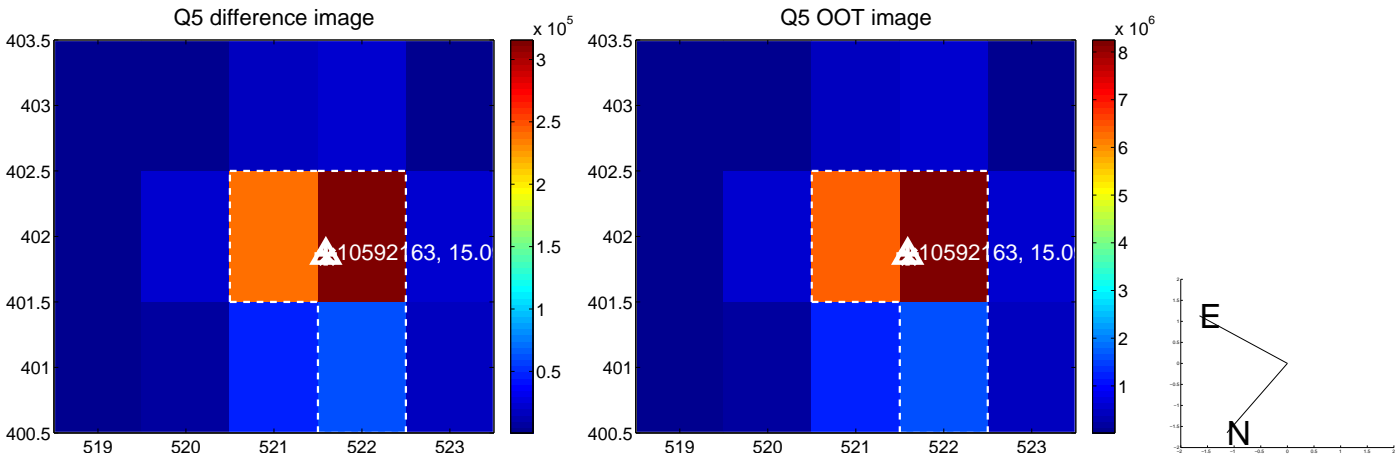


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

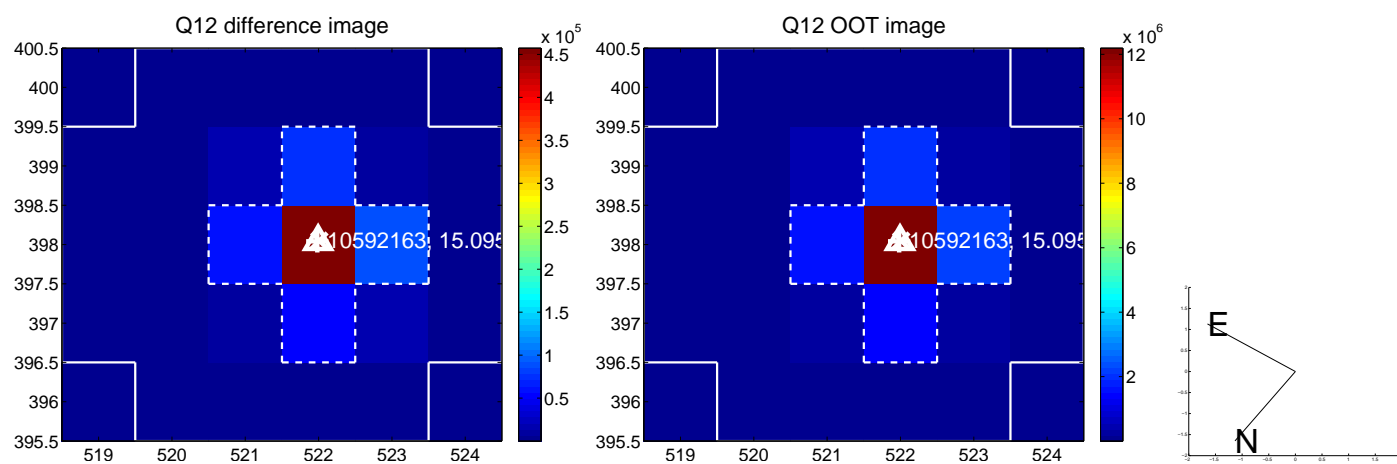
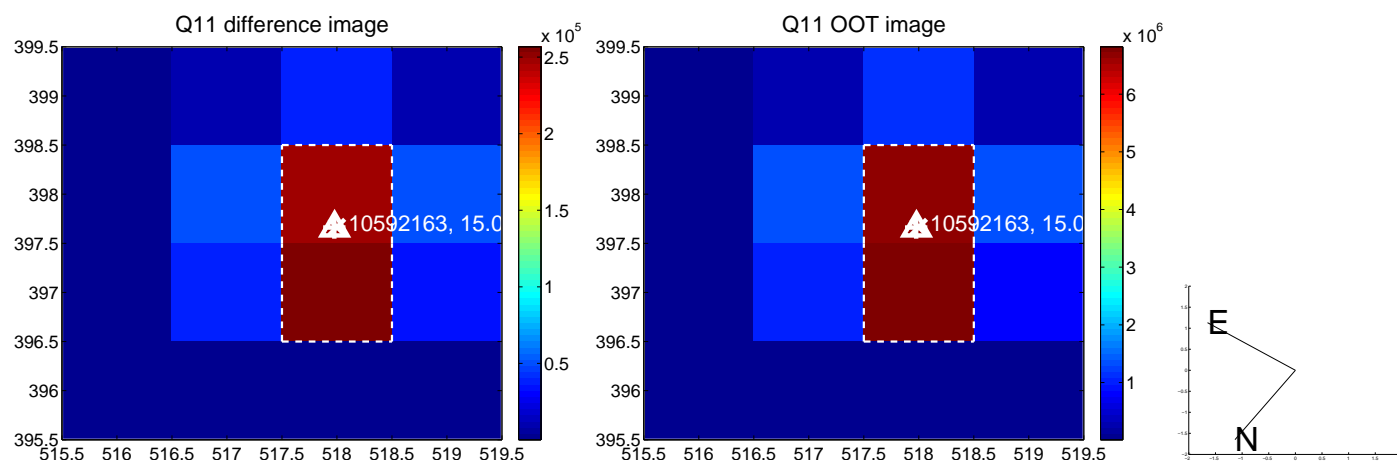
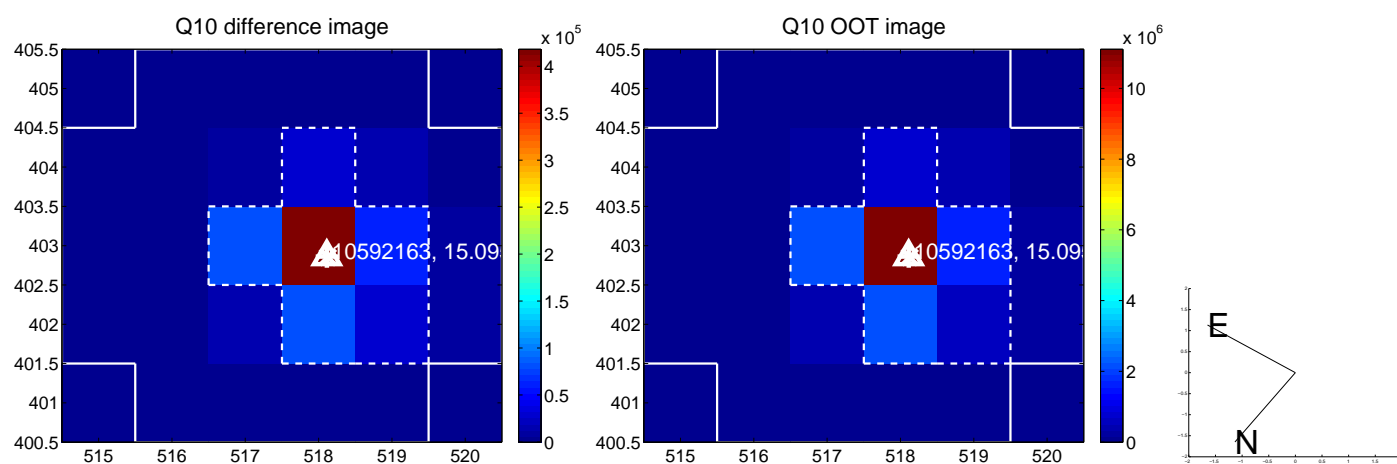
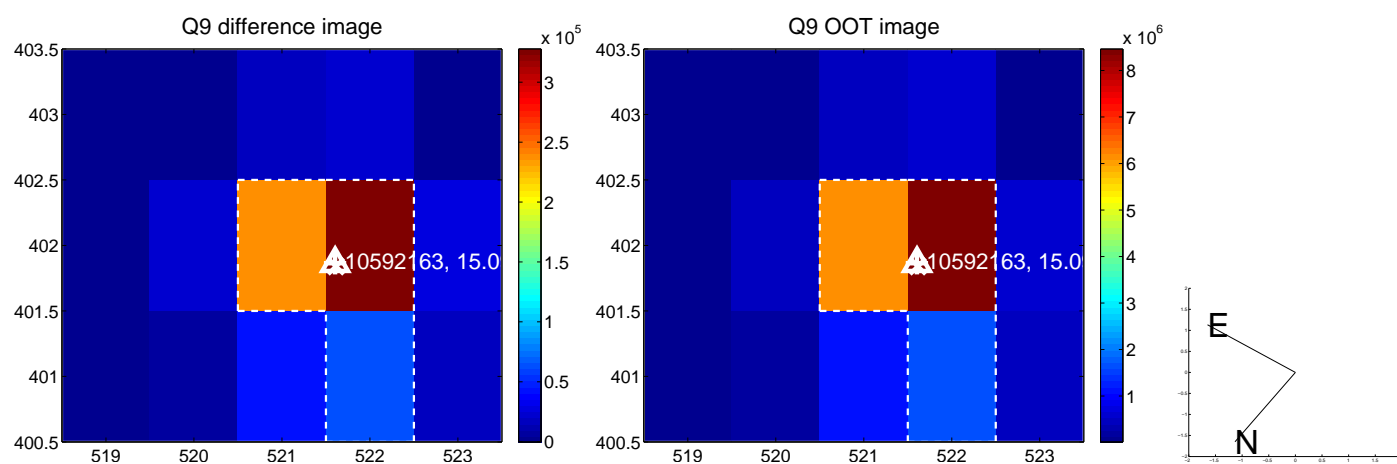
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



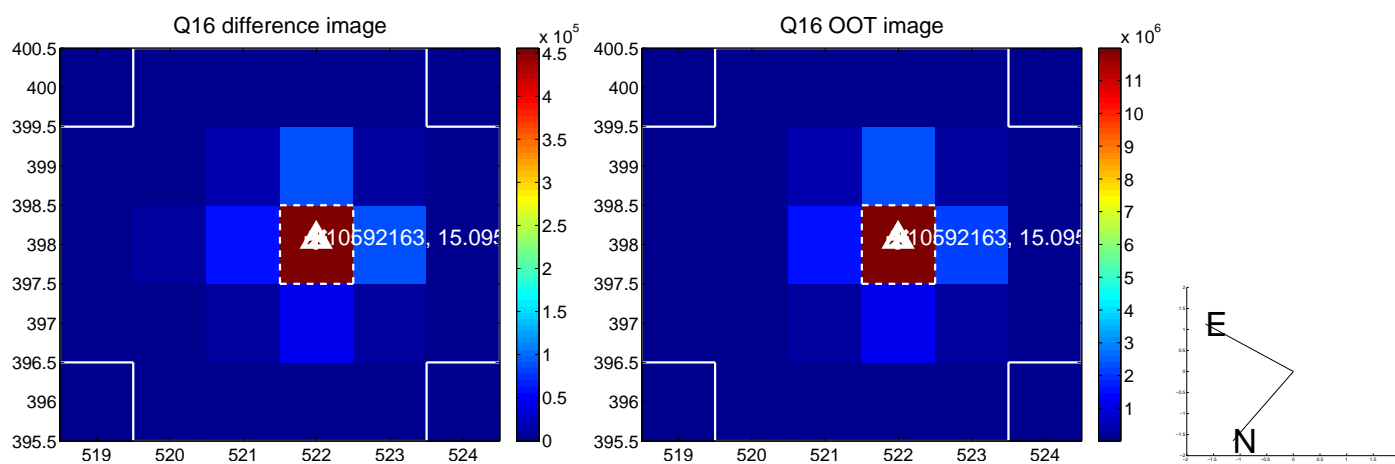
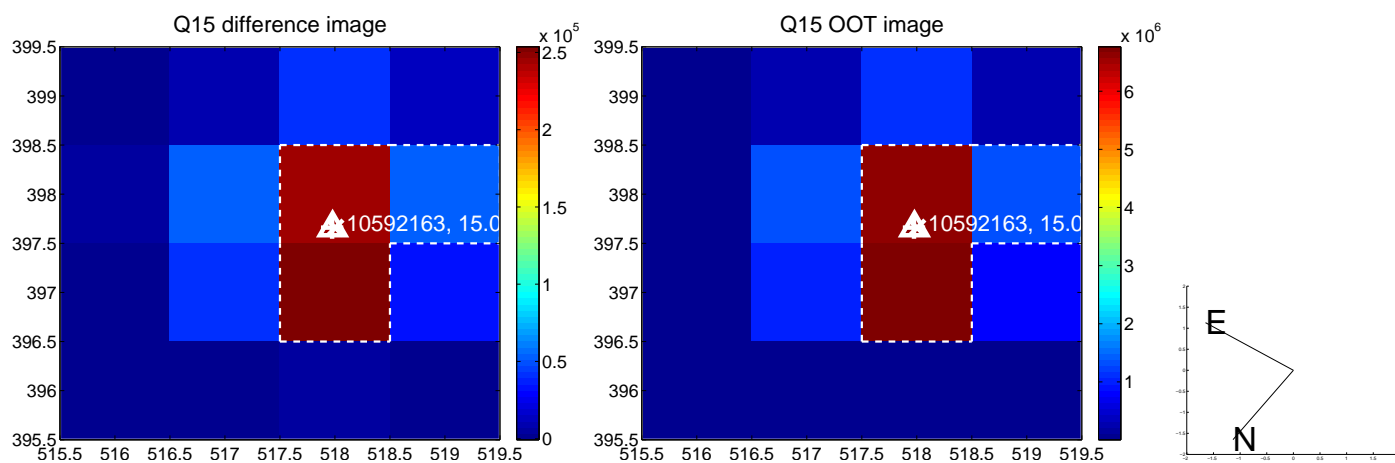
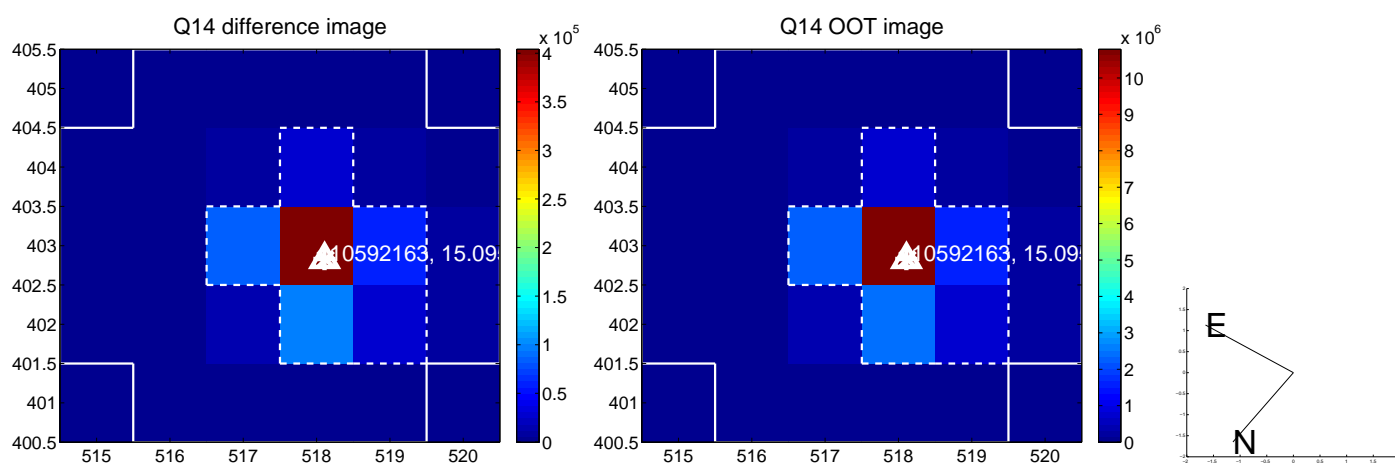
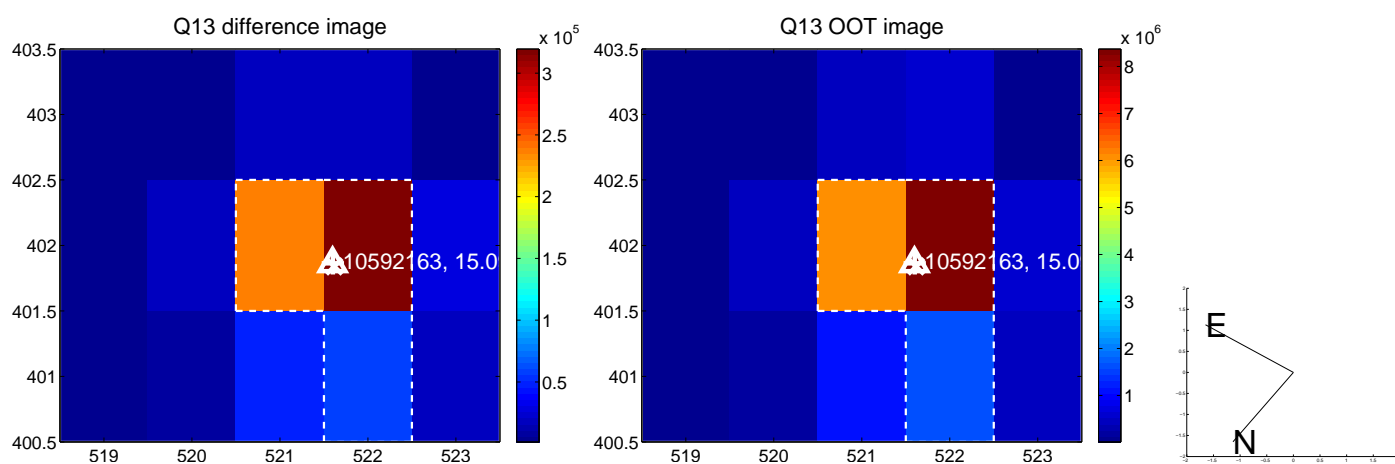
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



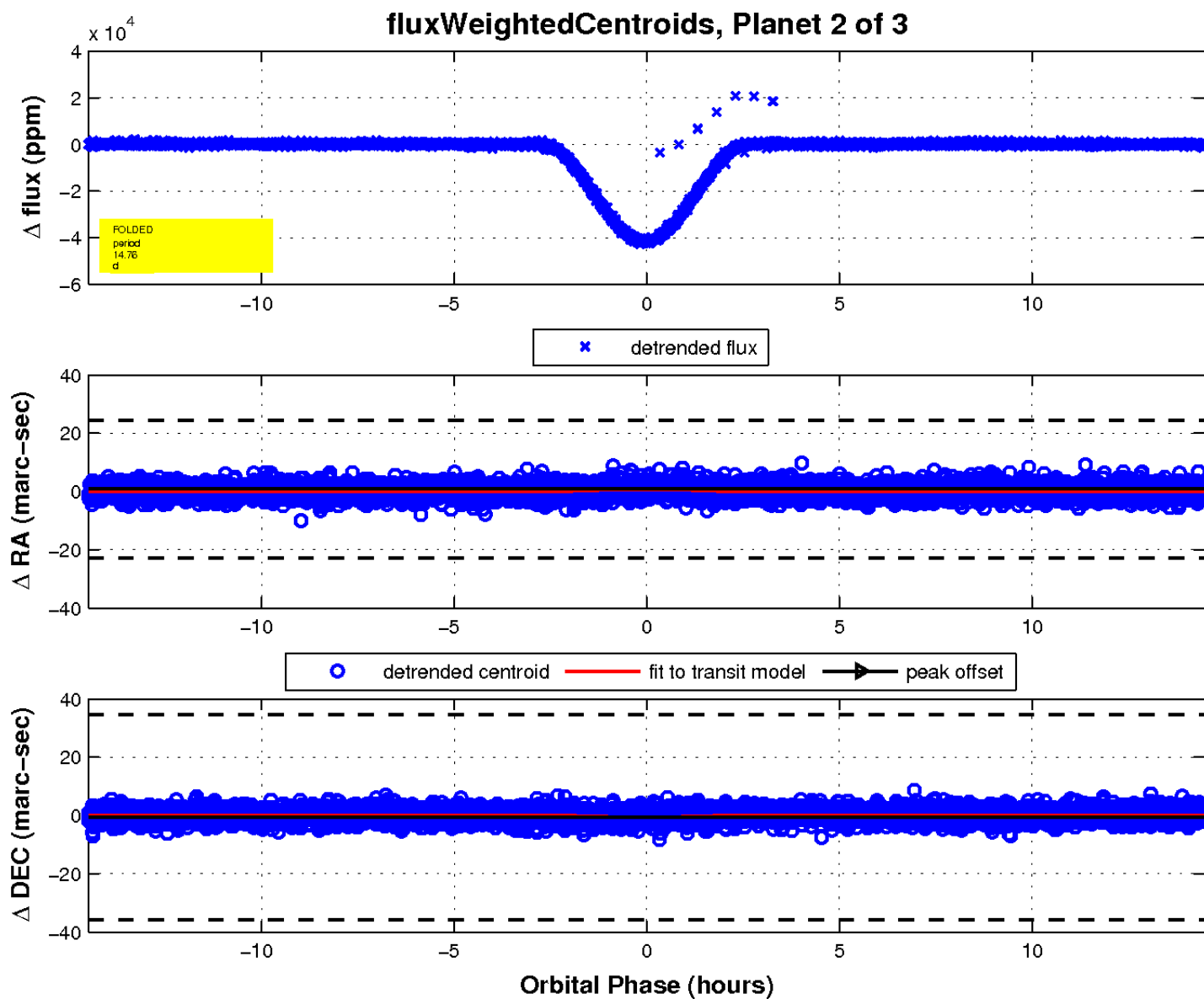
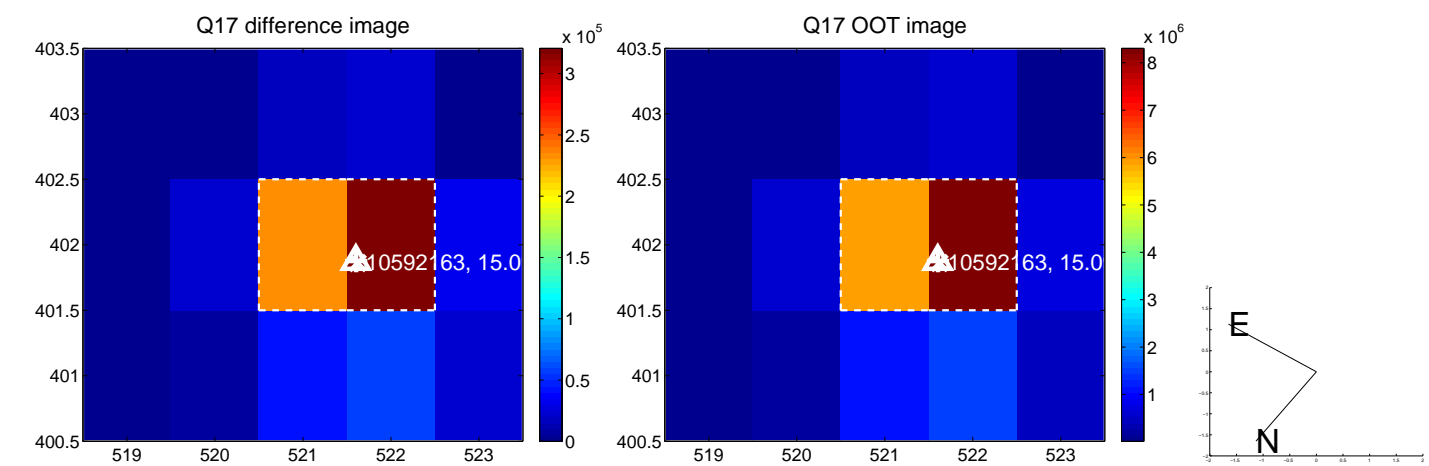
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value

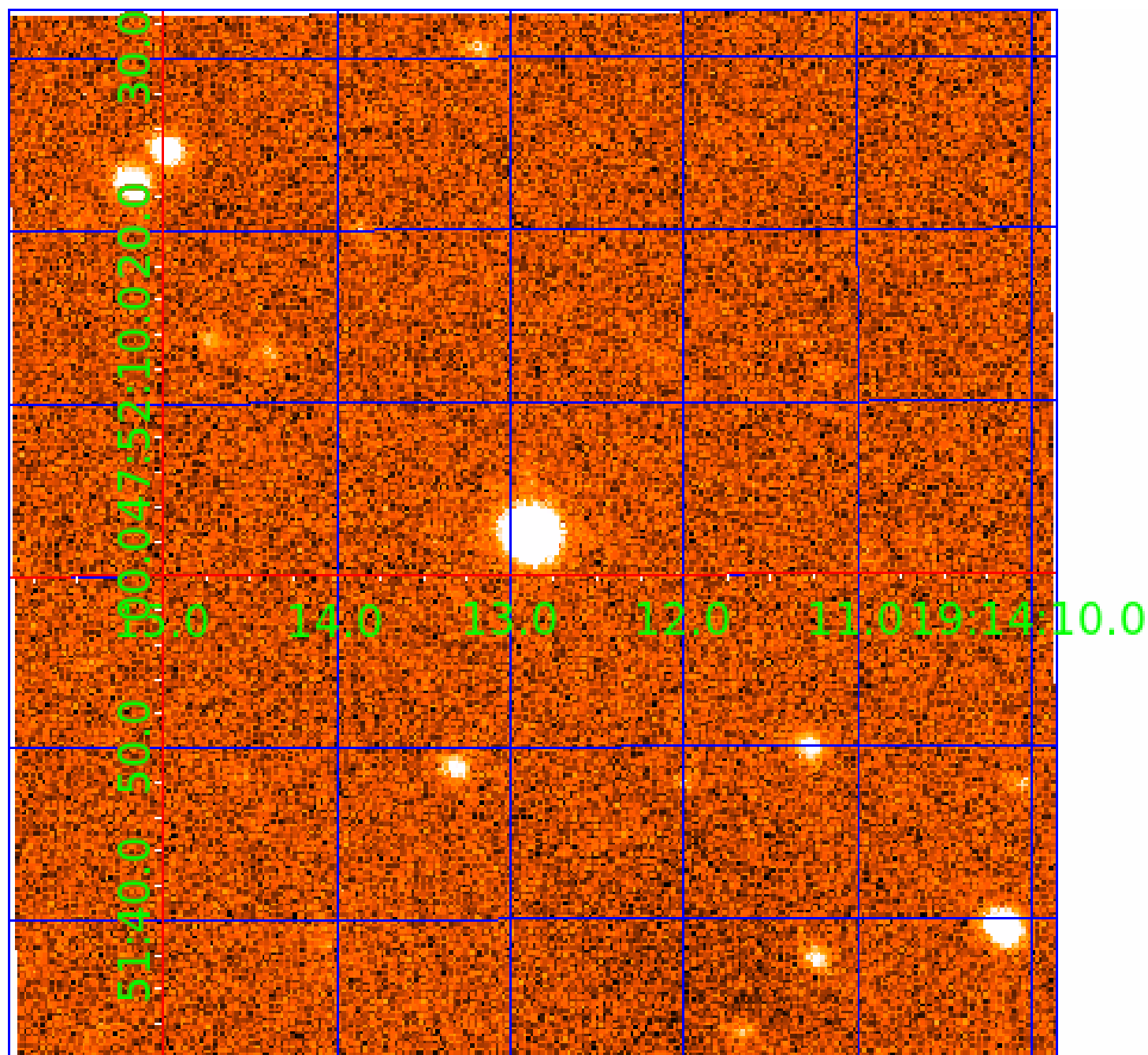


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010592163

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 010592163-01 | OBS | 7346.01 | 14.762895 | 133.774855 | 76773.9 | 6.638 | 3414.6 | 1899.7 | 1.03 | 5691 | 48.28 | 78.63 |
| 010592163-02 | OBS | No | 14.762878 | 143.709031 | 41170.0 | 4.832 | 1611.4 | 1460.5 | 1.03 | 5691 | 36.27 | 78.63 |
| 010592163-03 | OBS | No | 479.203800 | 372.970243 | 804.7 | 28.921 | 7.8 | 11.6 | 1.03 | 5691 | 3.10 | 0.76 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010592163-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE |
| 010592163-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 010592163-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

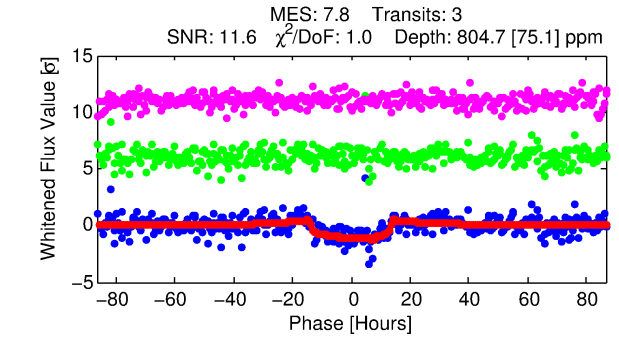
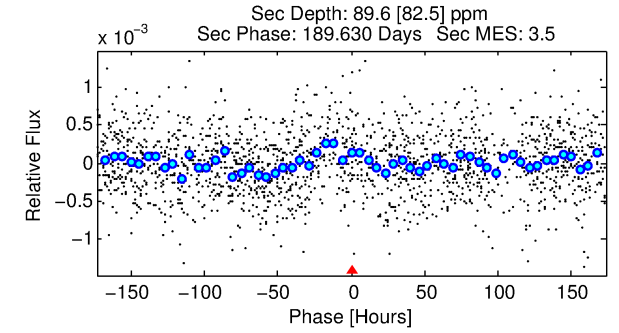
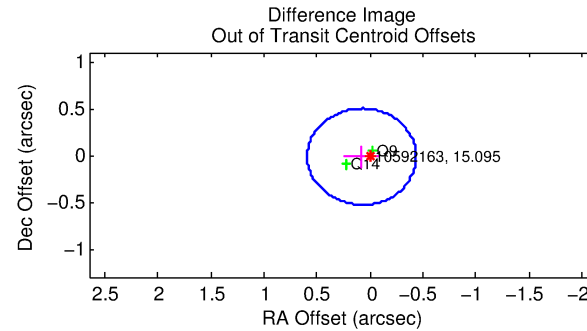
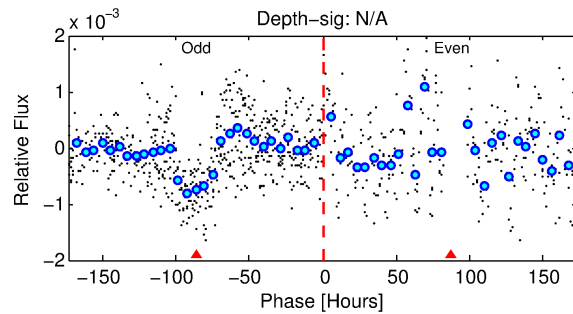
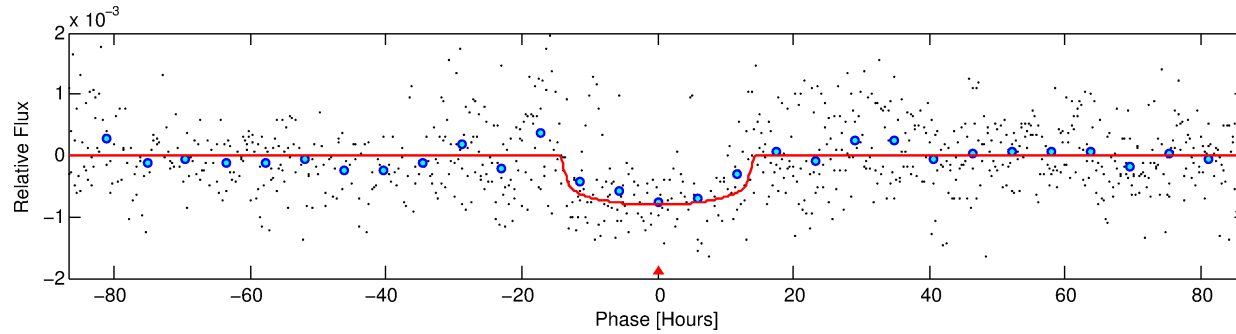
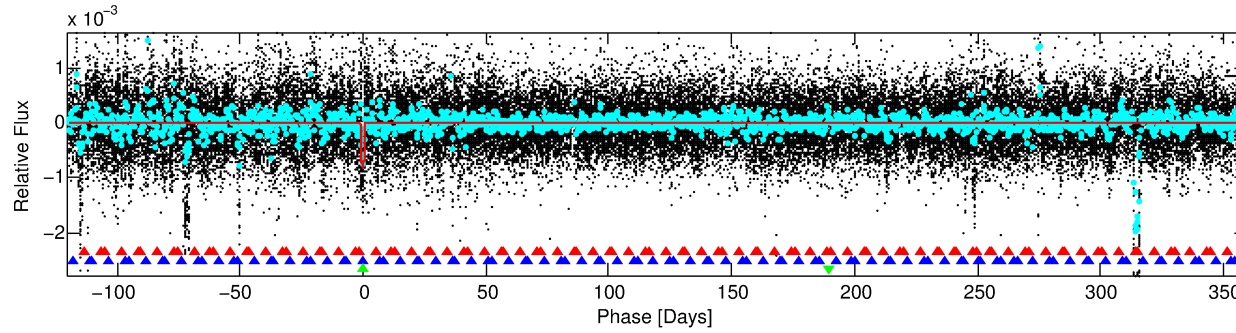
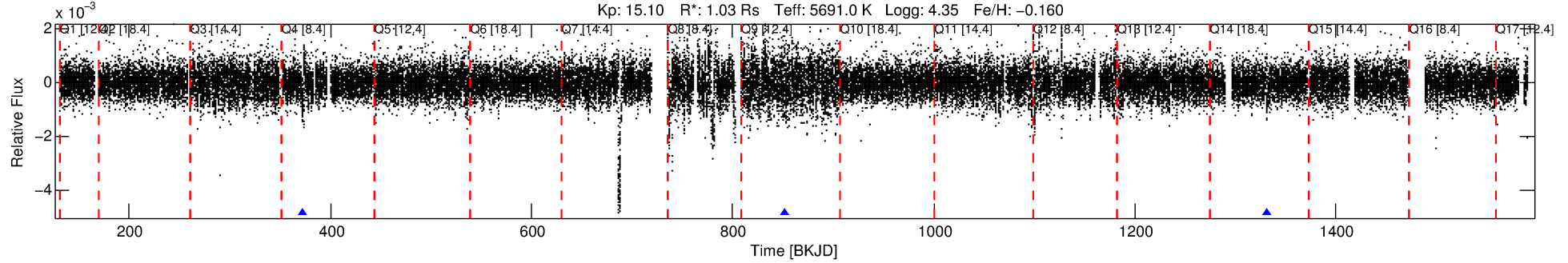
Ephemeris Match Information For 010592163-03

No Significant Match Found

DV One-Page Summary

KIC: 10592163 Candidate: 3 of 3 Period: 479.204 d
KOI: K07346 Corr: No Ephemeris Match

Kp: 15.10 R*: 1.03 Rs Teff: 5691.0 K Logg: 4.35 Fe/H: -0.160



DV Fit Results:

Period = 479.20380 [0.01366] d
Epoch = 372.9702 [0.0189] BKJD
Rp/R* = 0.0276 [0.0032]
a/R* = 97.42 [45.07]
b = 0.68 [0.37]
Seff = 0.76 [0.27]
Teq = 238 [21] K
Rp = 3.10 [0.95] Re
a = 1.1470 [0.2671] AU
Ag = 6734.40 [6778.75] [0.99σ]
Teffp = 3334 [796] K [3.89σ]

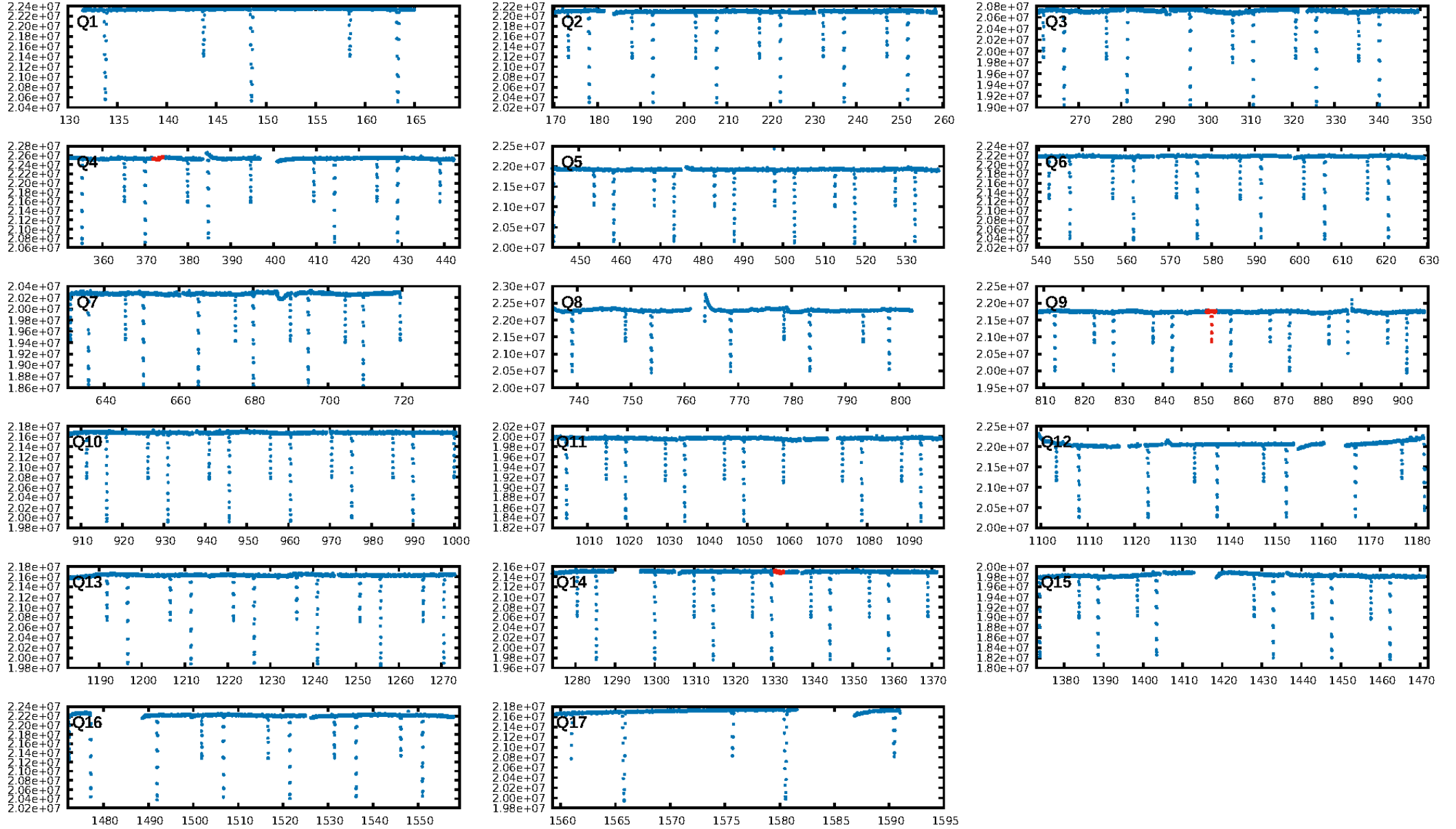
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [375.65σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.12e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.691
Centroid-sig: 12.4%
Centroid-so: 1.245 arcsec [1.62σ]
OotOffset-rm: 0.080 arcsec [0.47σ]
KicOffset-rm: 0.148 arcsec [0.93σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

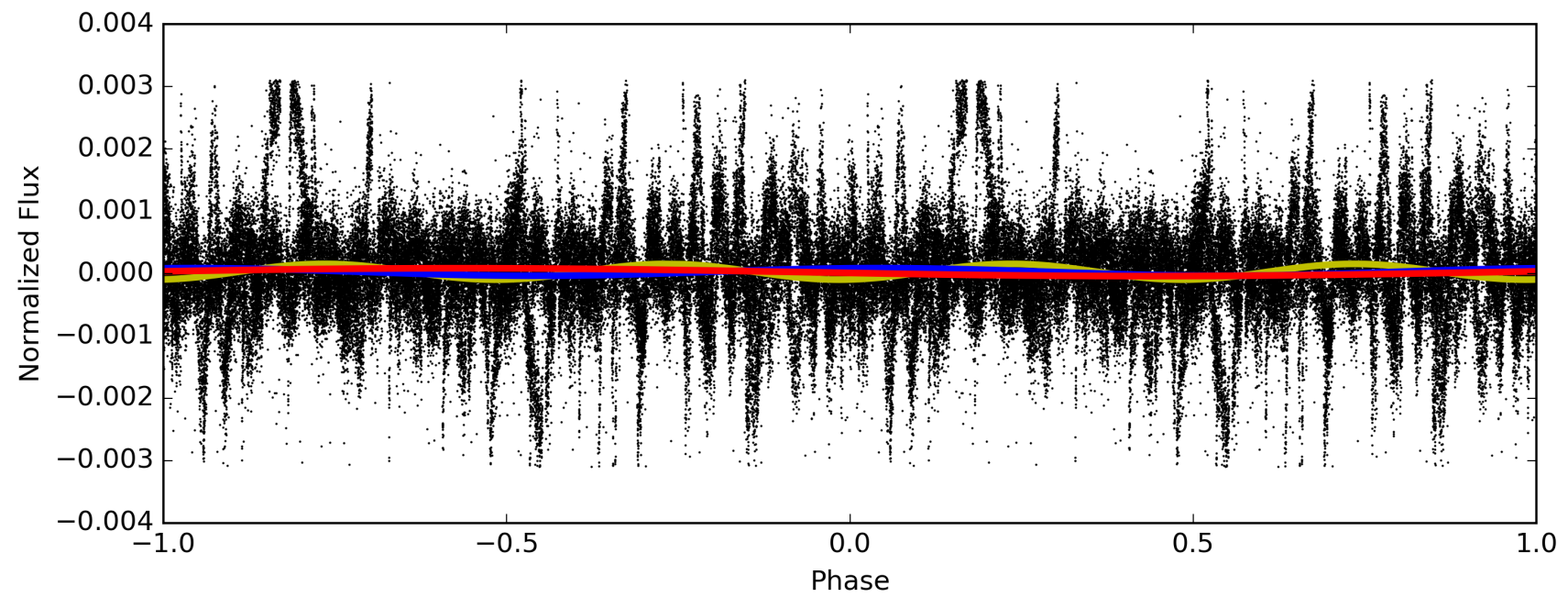
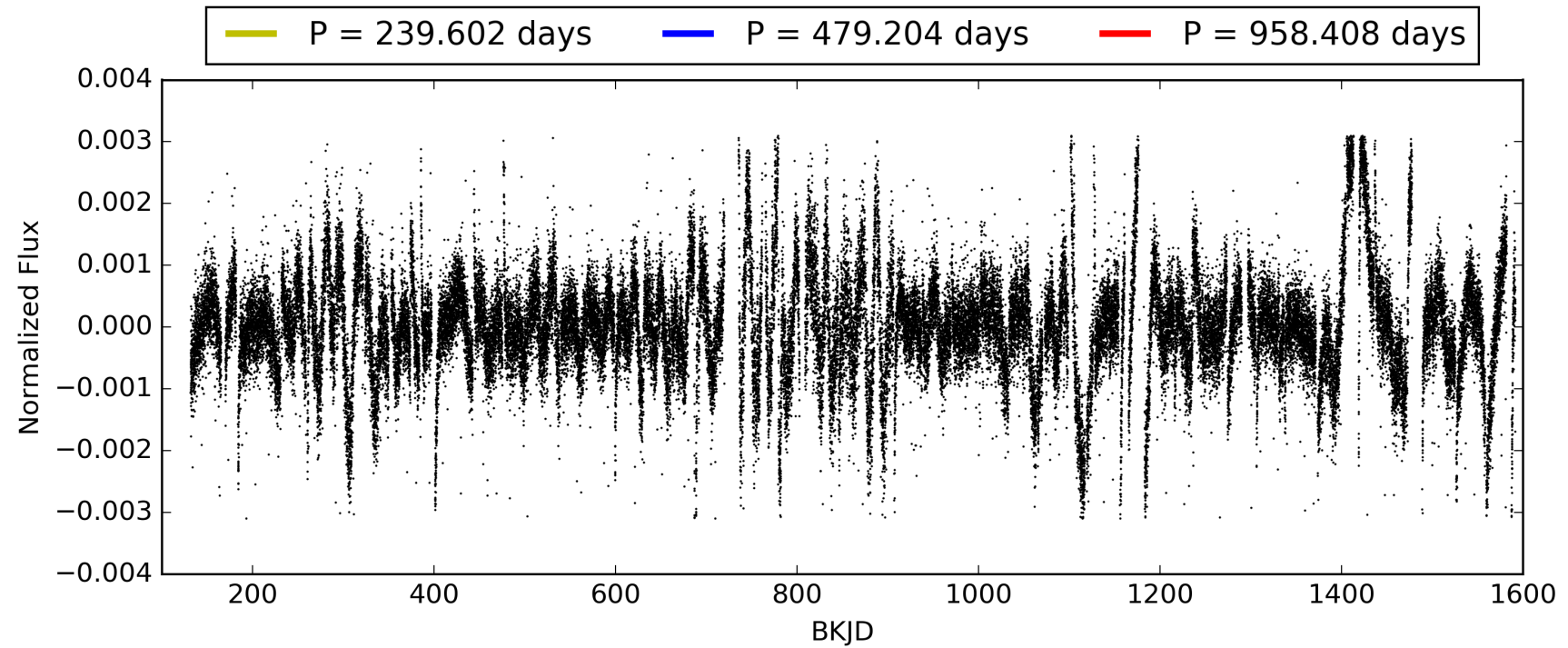
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:43:10 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010592163-03, PDC Light Curves

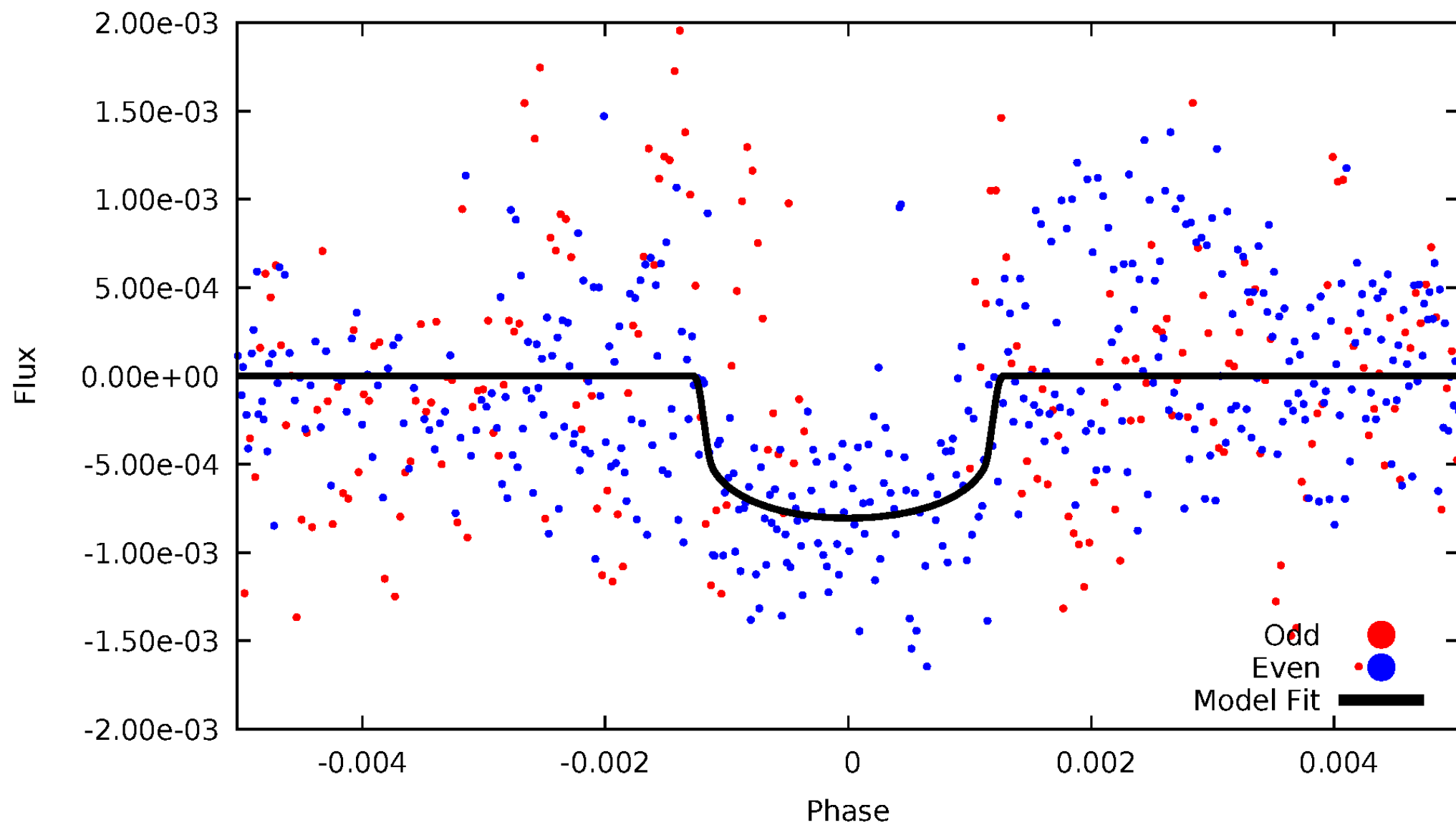


TCE 010592163-03



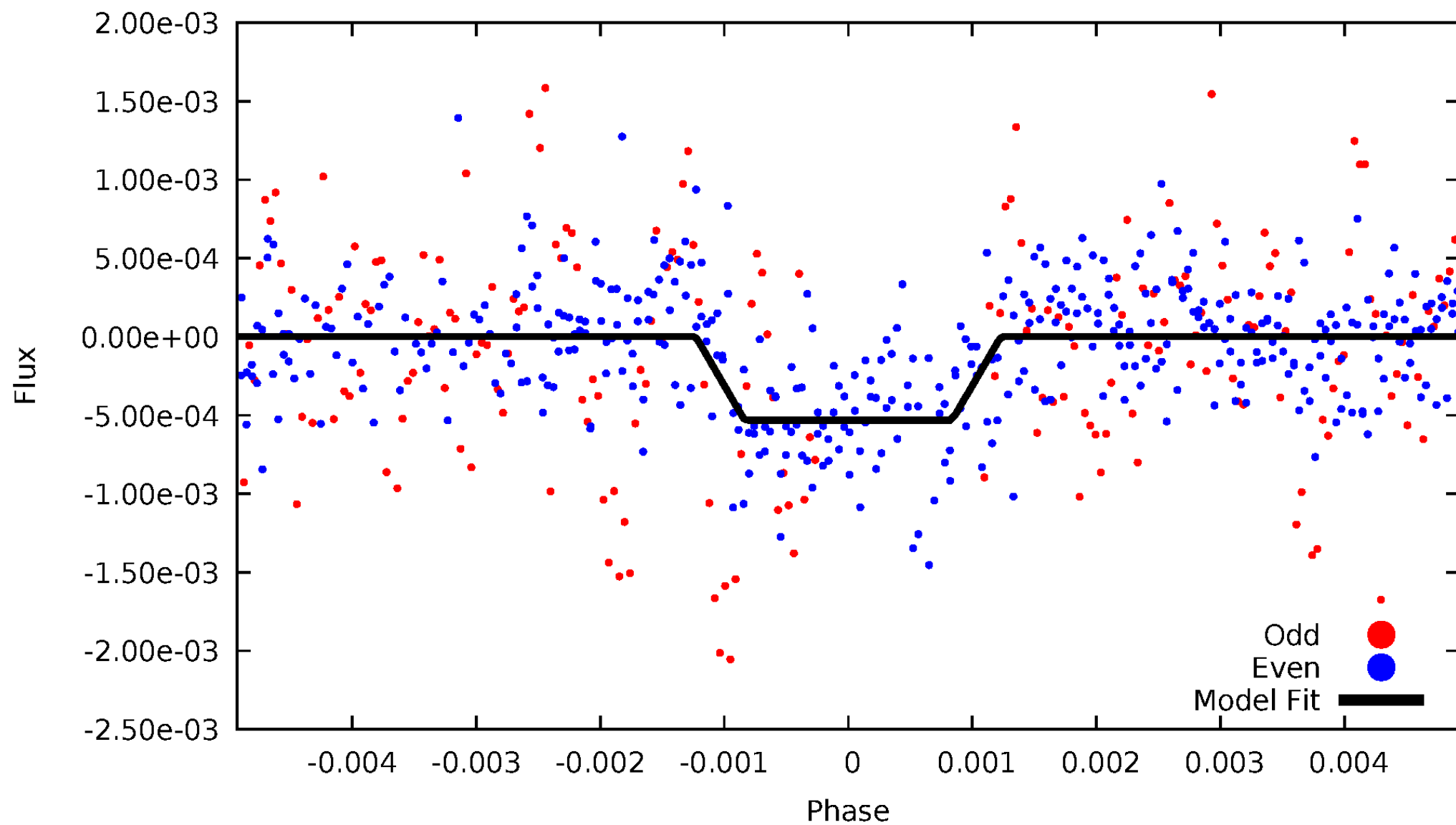
DV Odd/Even

TCE 010592163-03



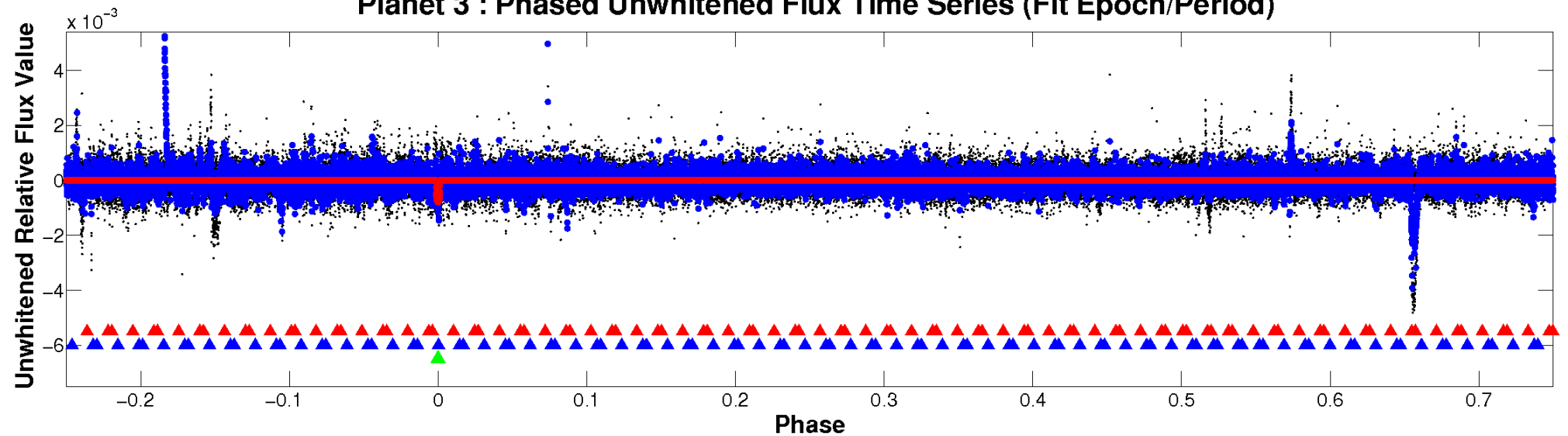
ALT Odd/Even

TCE 010592163-03

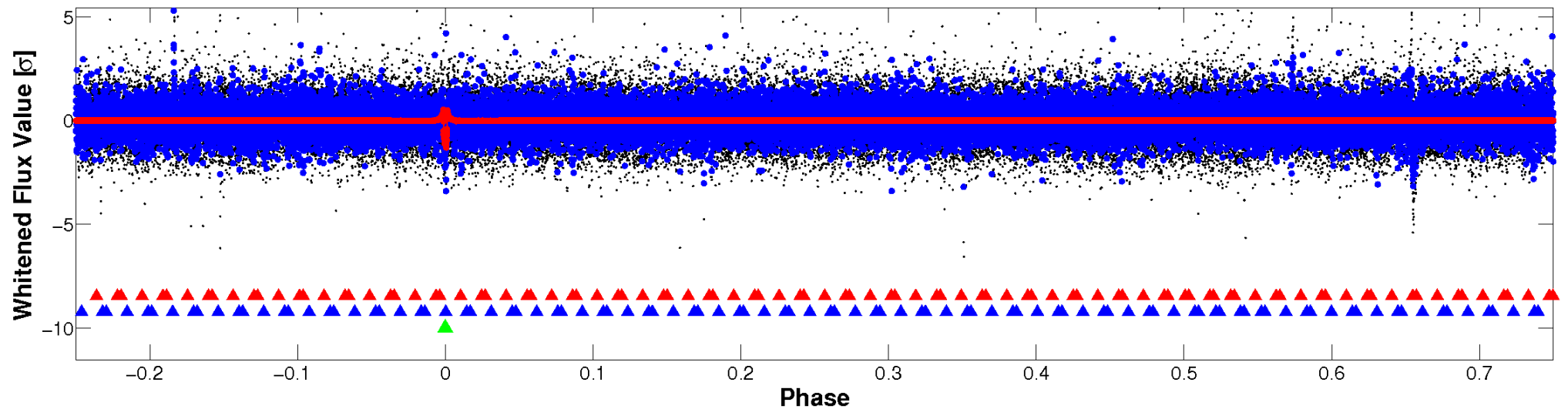


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

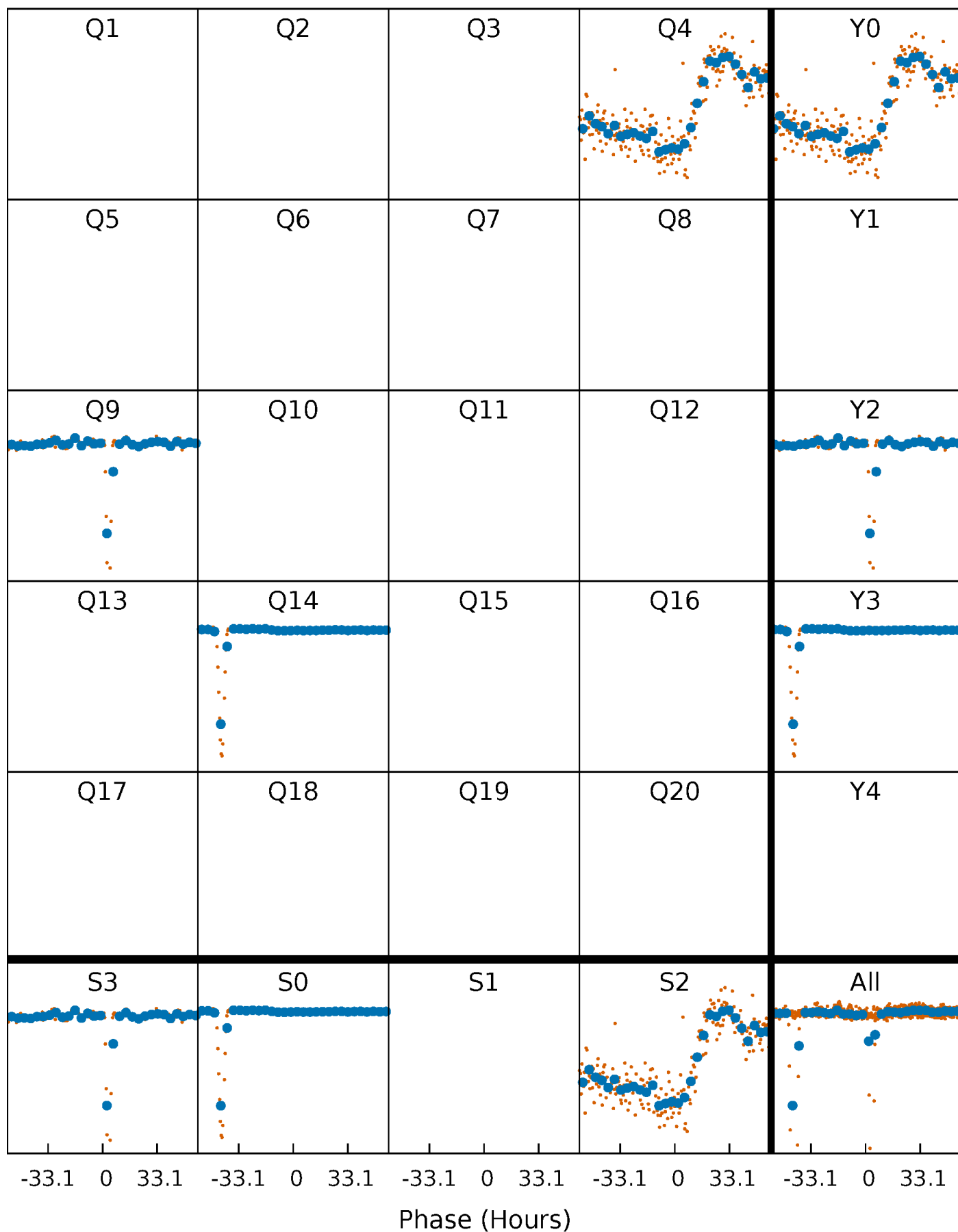


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010592163-03 P=479.203800 Days $T_0=372.970243$ (BKJD)



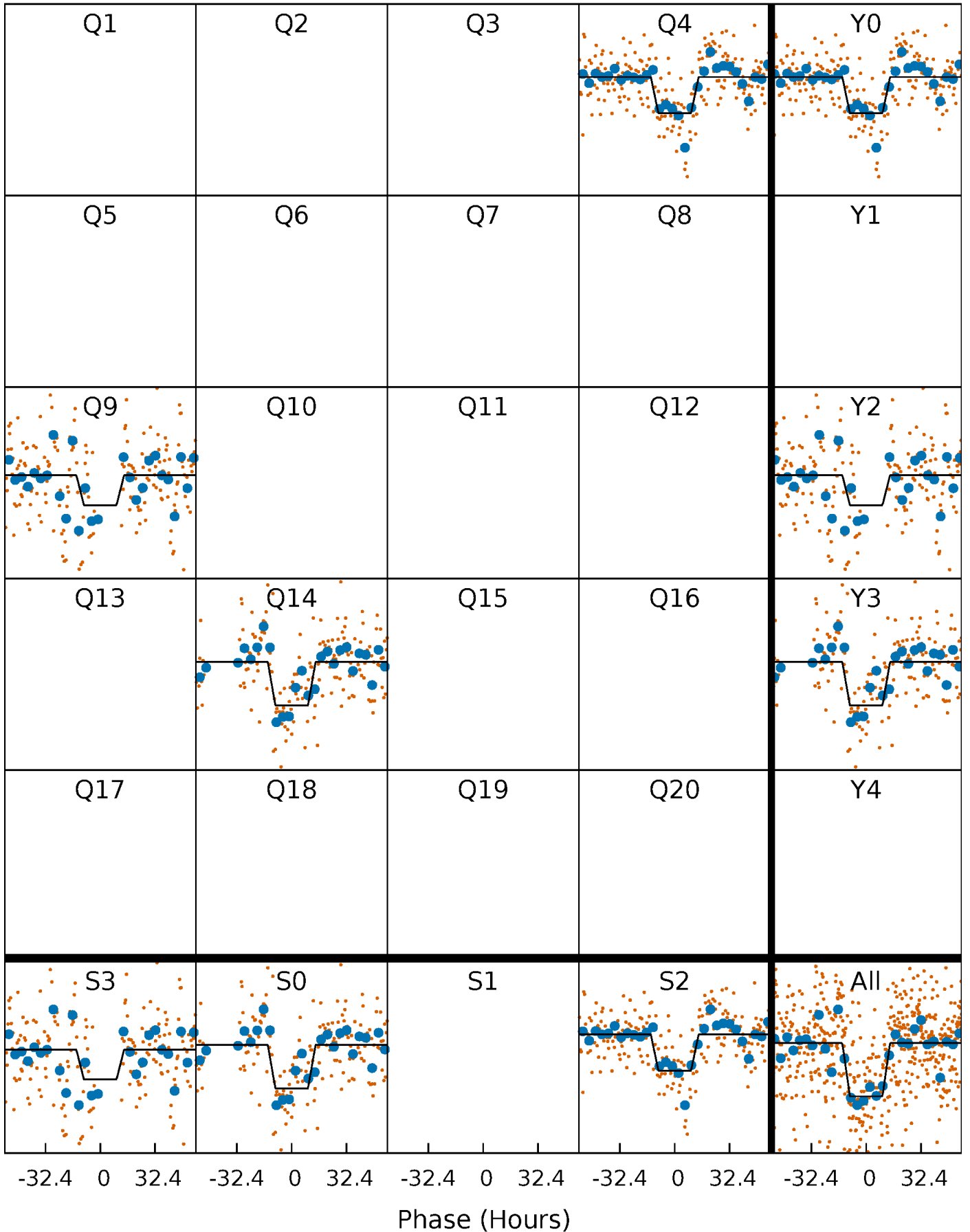
DV Quarter-Phased Transit Curves

TCE 010592163-03 $P=479.203800$ Days $T_0=372.970243$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

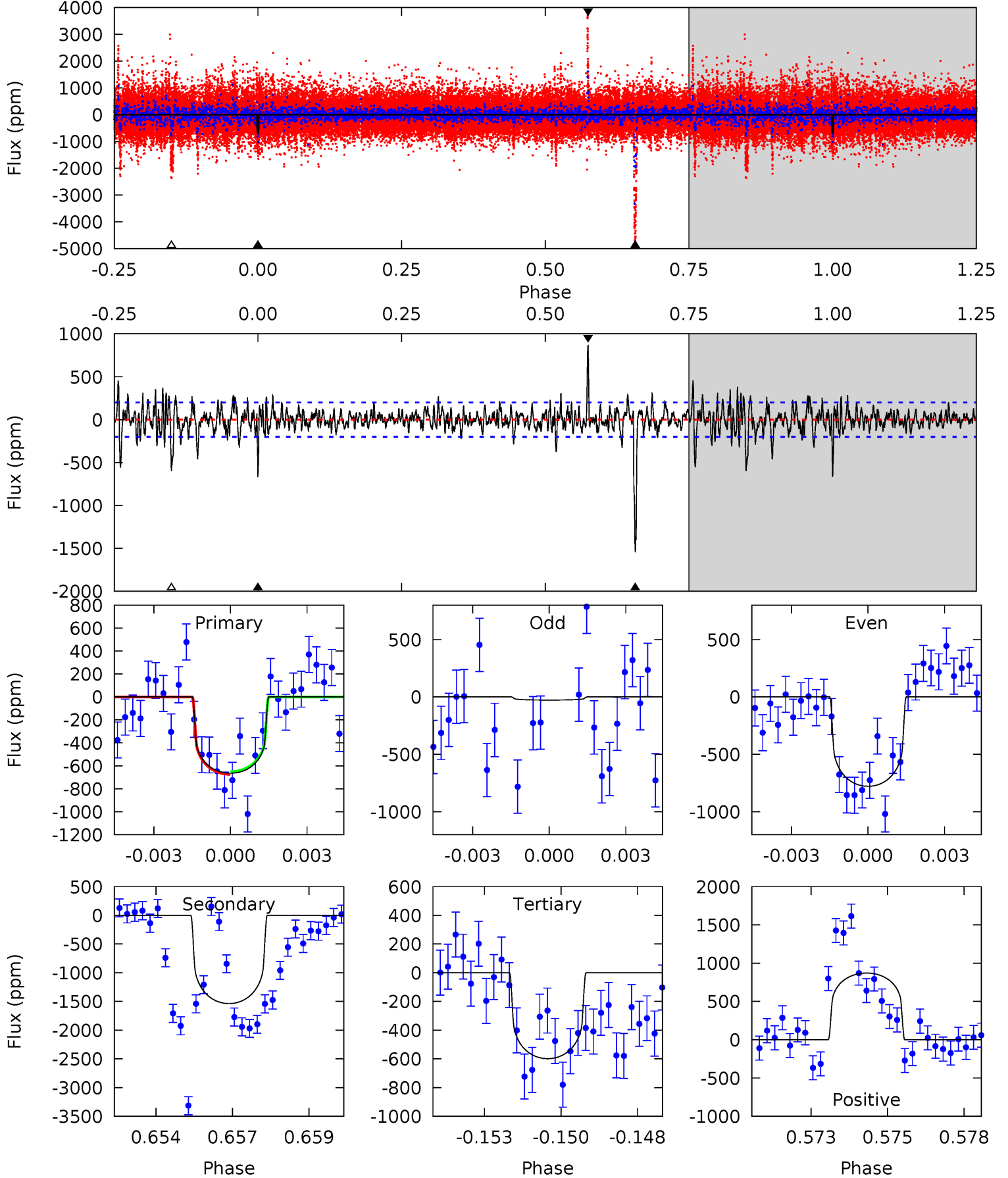
TCE 010592163-03 P=479.160171 Days $T_0=372.968575$ (BKJD)



DV Model-Shift Uniqueness Test

010592163-03, P = 479.203800 Days, E = 372.970243 Days

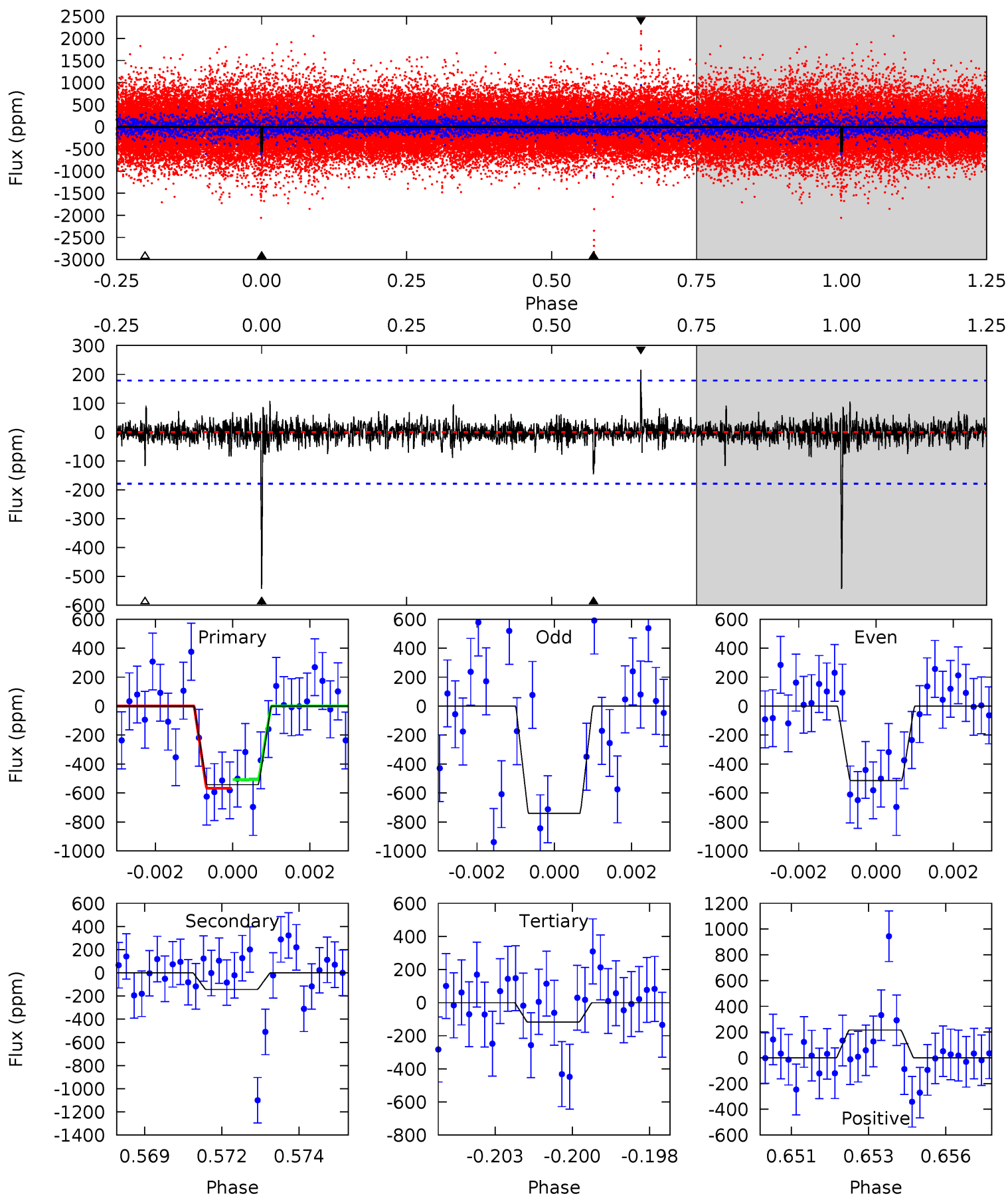
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.5 | 40.6 | 15.8 | 23.0 | 5.28 | 3.02 | 3.07 | 1.74 | -5.46 | 24.8 | 17.6 | 6.53 | 0.75 | 0.36 | 0.31 |



Alt Model-Shift Uniqueness Test

010592163-03, P = 479.160171 Days, E = 372.968575 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.1 | 4.26 | 3.48 | 6.39 | 5.29 | 3.03 | 0.71 | 12.6 | 9.68 | 0.78 | -2.13 | 2.55 | 1.08 | 0.28 | 0.89 |



Stellar Parameters For KIC 010592163

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5691^{+152}_{-152} | $4.354^{+0.162}_{-0.180}$ | $-0.160^{+0.300}_{-0.300}$ | $1.031^{+0.290}_{-0.193}$ | $0.875^{+0.125}_{-0.073}$ | $1.125^{+0.861}_{-0.562}$ |
| | +3%/-3% | +4%/-4% | +188%/-188% | +28%/-19% | +14%/-8% | +77%/-50% |
| Source | PHO1 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010592163-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|----------------|------------------------|-------------------|----------------------|----------------------------|
| DV | -1537 ± 38 | $3.12^{+0.59}_{-0.55}$ | 331^{+23}_{-20} | 6792^{+542}_{-458} | 115639^{+50149}_{-33540} |
| Alt. | -144 ± 34 | $2.62^{+0.53}_{-0.47}$ | 334^{+22}_{-20} | 4308^{+382}_{-296} | 14876^{+8792}_{-5557} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

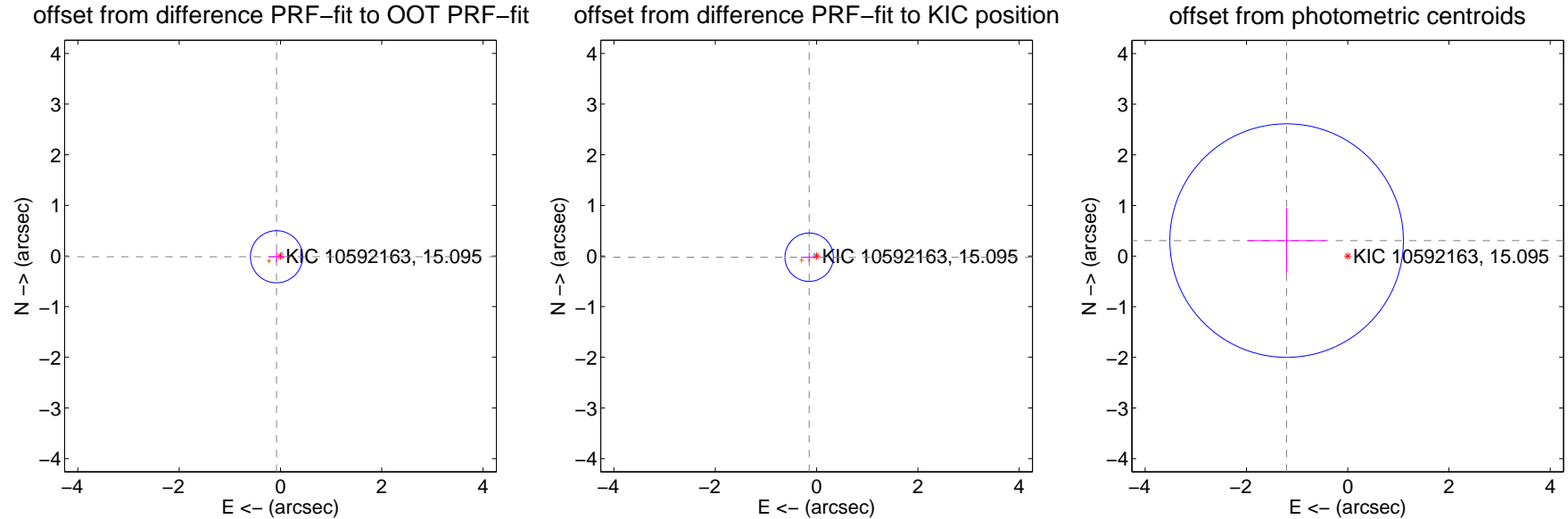
DV Centroid Data

Supplemental centroid analysis for 010592163-03. Kepler magnitude: 15.10. Transit SNR 11.58

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.080 ± 0.171 | 0.47 | 0.079 ± 0.159 | -0.014 ± 0.111 |
| PRF-fit source offset from KIC position | 0.148 ± 0.159 | 0.93 | 0.147 ± 0.160 | -0.023 ± 0.093 |
| photometric centroid source offset | 1.25 ± 0.77 | 1.62 | 1.21 ± 0.78 | 0.31 ± 0.64 |



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

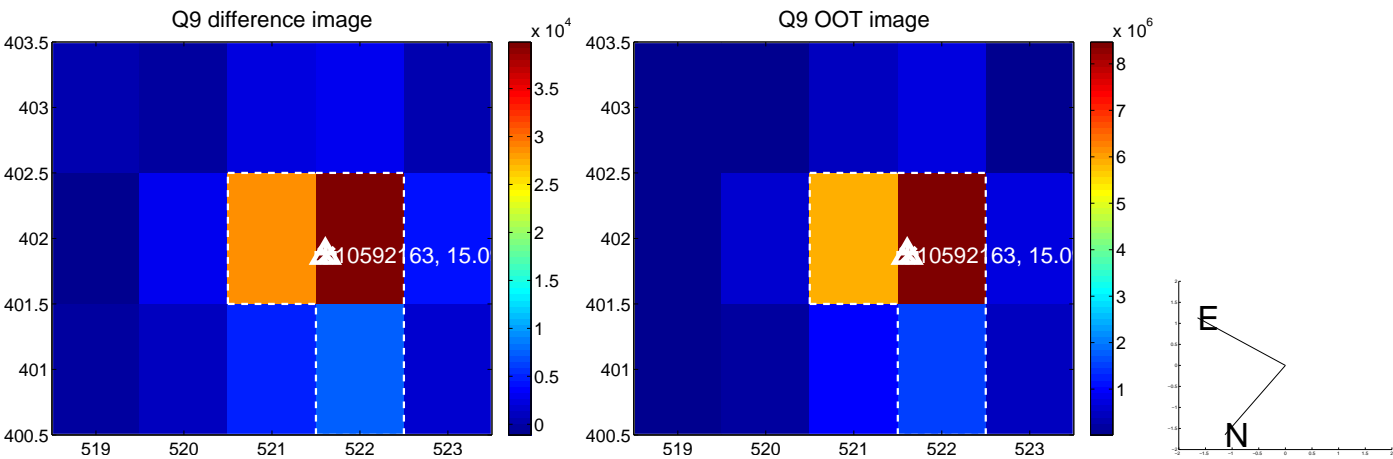
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



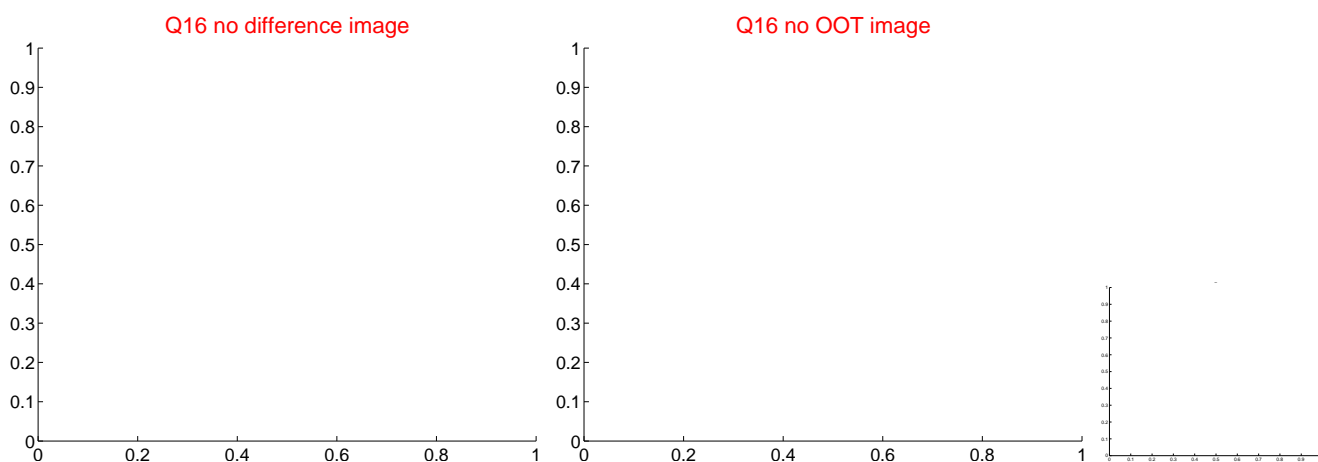
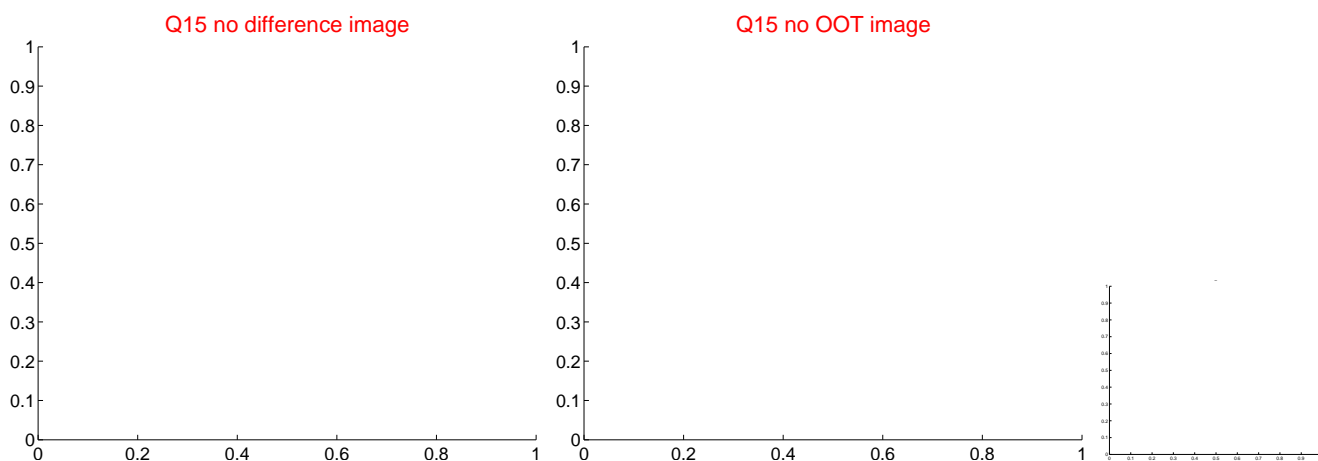
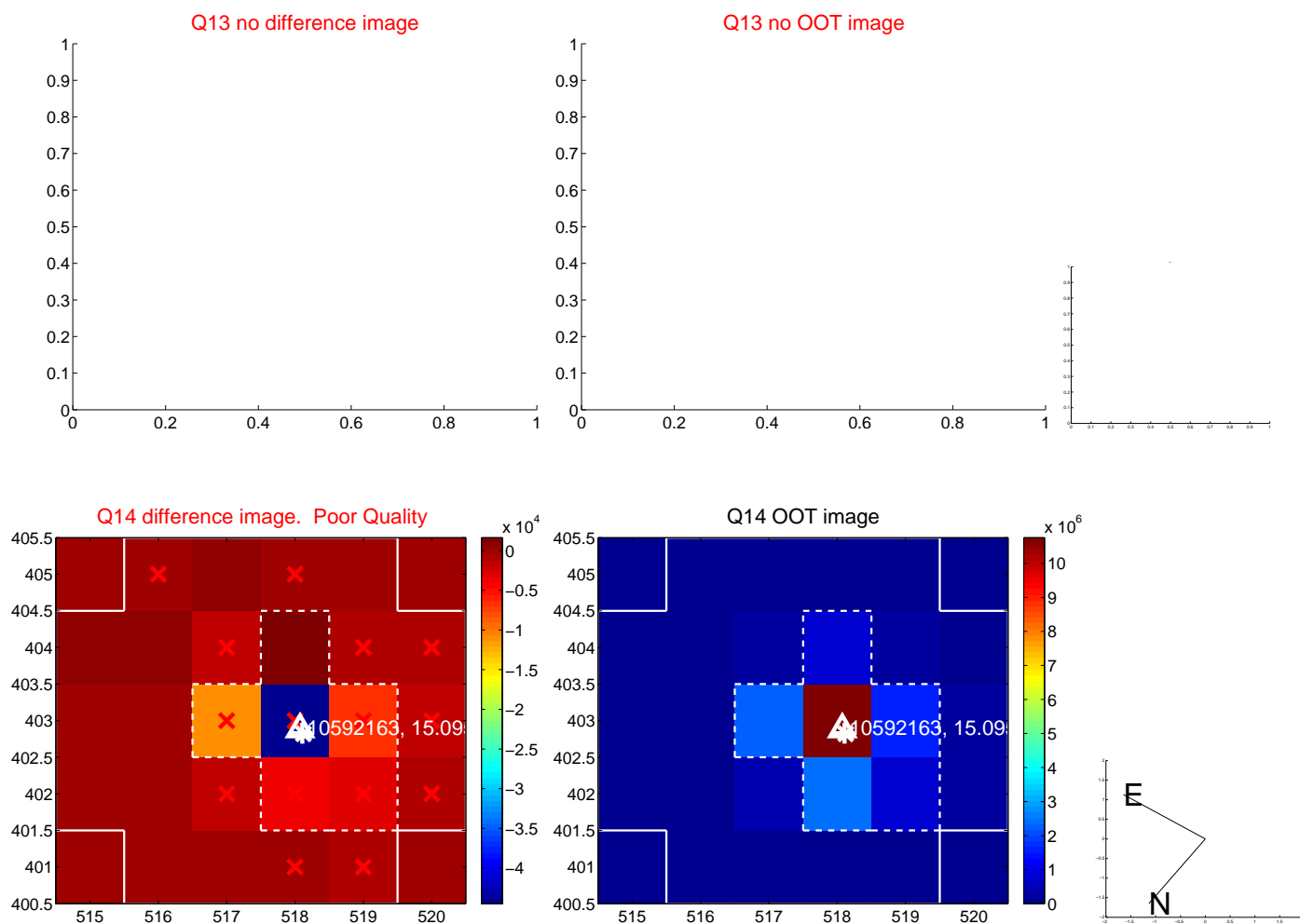
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



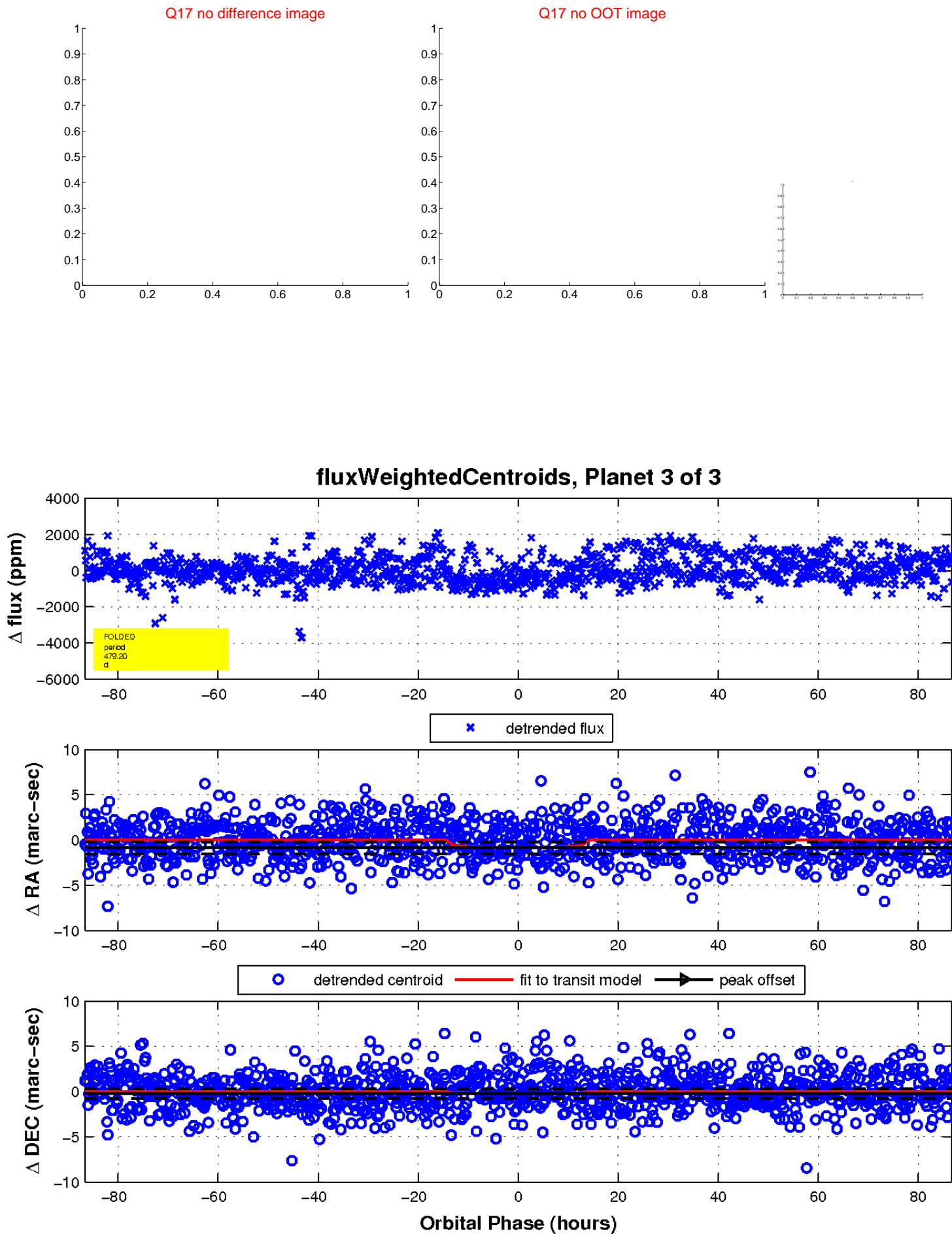
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

