

KIC 007918478

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007918478-01 | OBS | 4209.01 | 9.909150 | 133.096643 | 951.3 | 2.557 | 14.2 | 14.2 | 0.70 | 5396 | 2.51 | 54.62 |
| 007918478-02 | OBS | No | 1.891787 | 131.602317 | 154.5 | 10.884 | 10.2 | 8.6 | 0.70 | 5396 | 0.88 | 496.87 |
| 007918478-03 | OBS | No | 32.100461 | 155.140085 | 912.5 | 15.216 | 8.3 | 6.1 | 0.70 | 5396 | 2.45 | 11.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007918478-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007918478-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT |
| 007918478-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

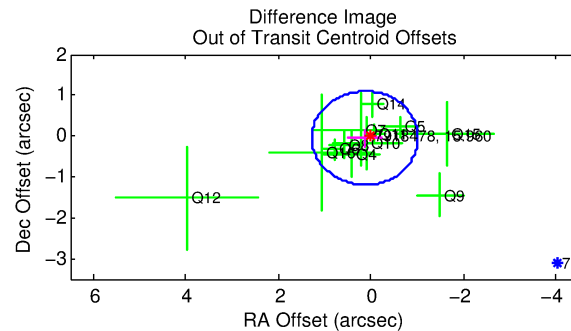
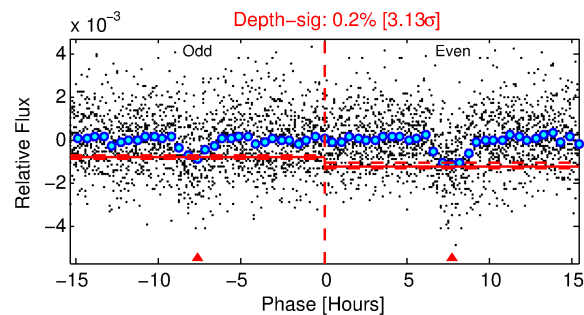
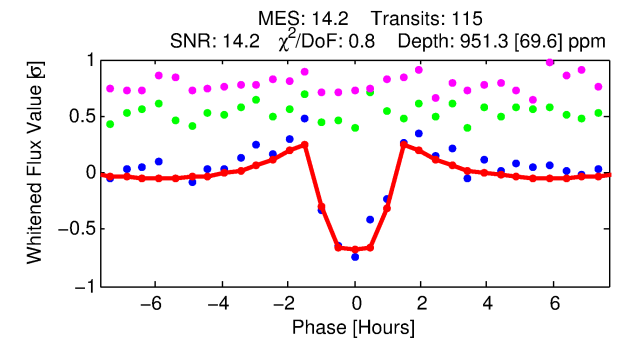
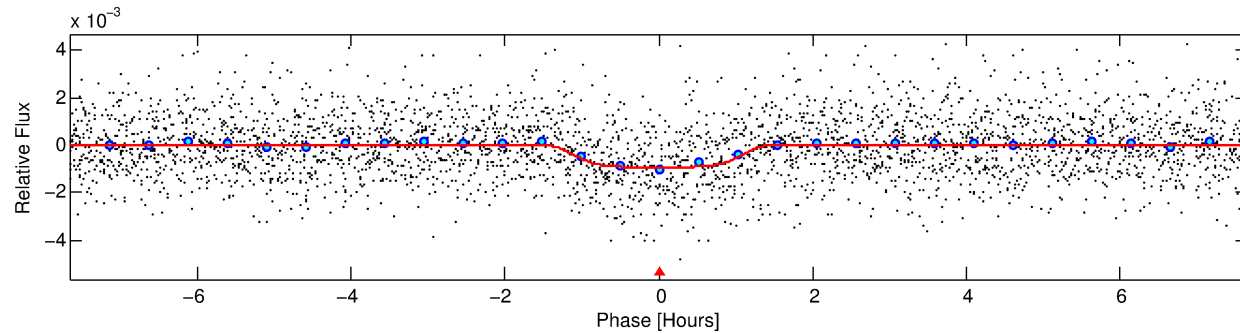
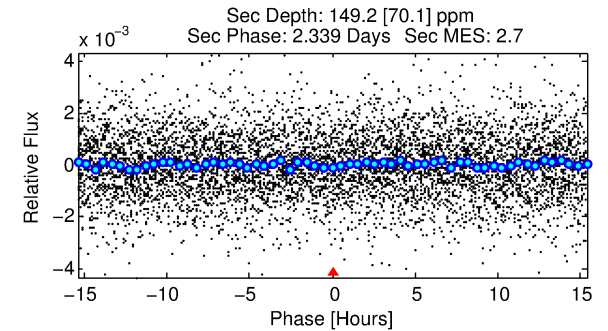
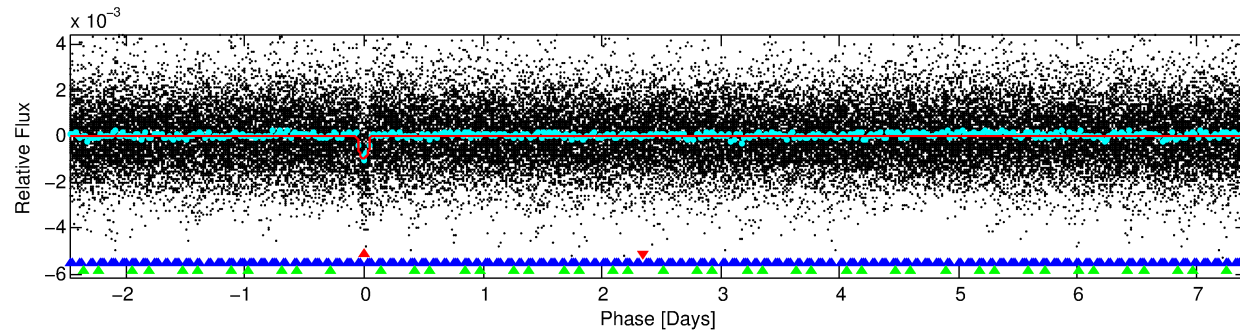
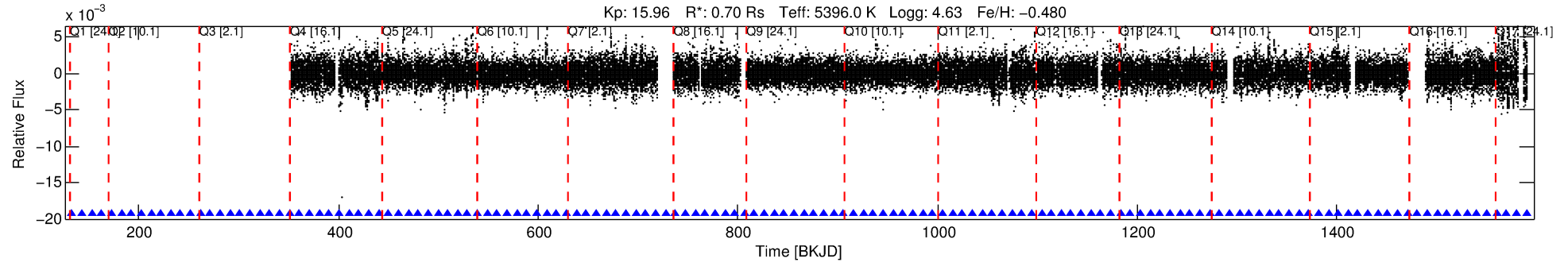
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007918478-01

No Significant Match Found

DV One-Page Summary

KIC: 7918478 Candidate: 1 of 3 Period: 9.909 d
KOI: K04209.01 Corr: 0.968



DV Fit Results:

Period = 9.90915 [0.00004] d
Epoch = 133.0966 [0.0036] BKJD
Rp/R* = 0.0328 [0.0070]
a/R* = 16.66 [14.60]
b = 0.87 [0.26]
Seff = 54.62 [13.26]
Teff = 693 [42] K
Rp = 2.51 [0.68] Re
a = 0.0828 [0.0115] AU
Ag = 89.08 [59.02] [1.49σ]
Teffp = 3293 [534] K [4.85σ]

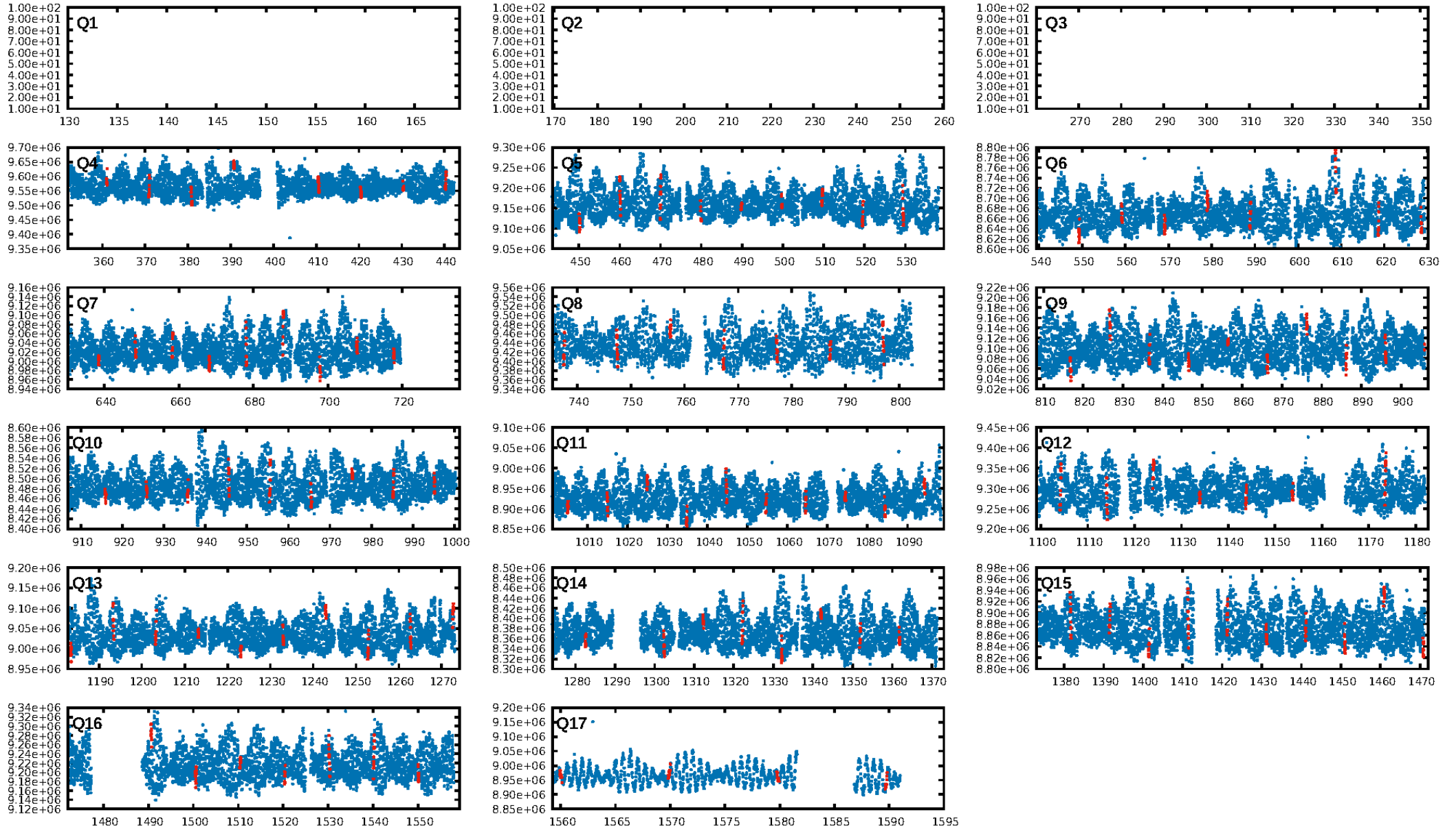
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.21σ]
LongPeriod-sig: 100.0% [34.52σ]
ModelChiSquare2-sig: 97.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.62e-30
RollingBand-fgt: 1.00 [111/111]
GhostDiagnostic-chr: 17.35
Centroid-sig: 26.4%
Centroid-so: 1.273 arcsec [1.99σ]
OotOffset-rm: 0.140 arcsec [0.37σ]
KicOffset-rm: 0.357 arcsec [0.98σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [14/14]

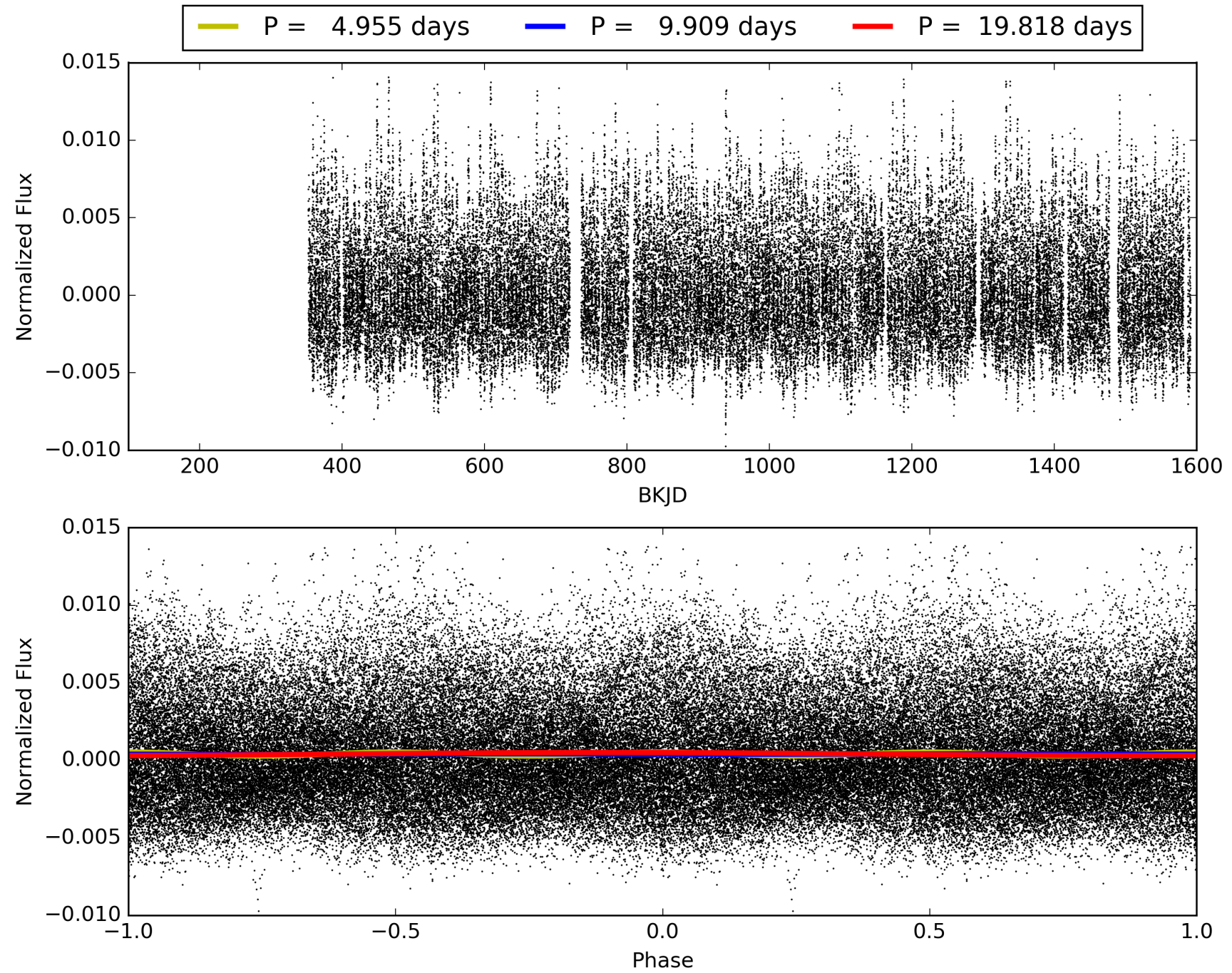
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:58:08 Z

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

TCE 007918478-01, PDC Light Curves

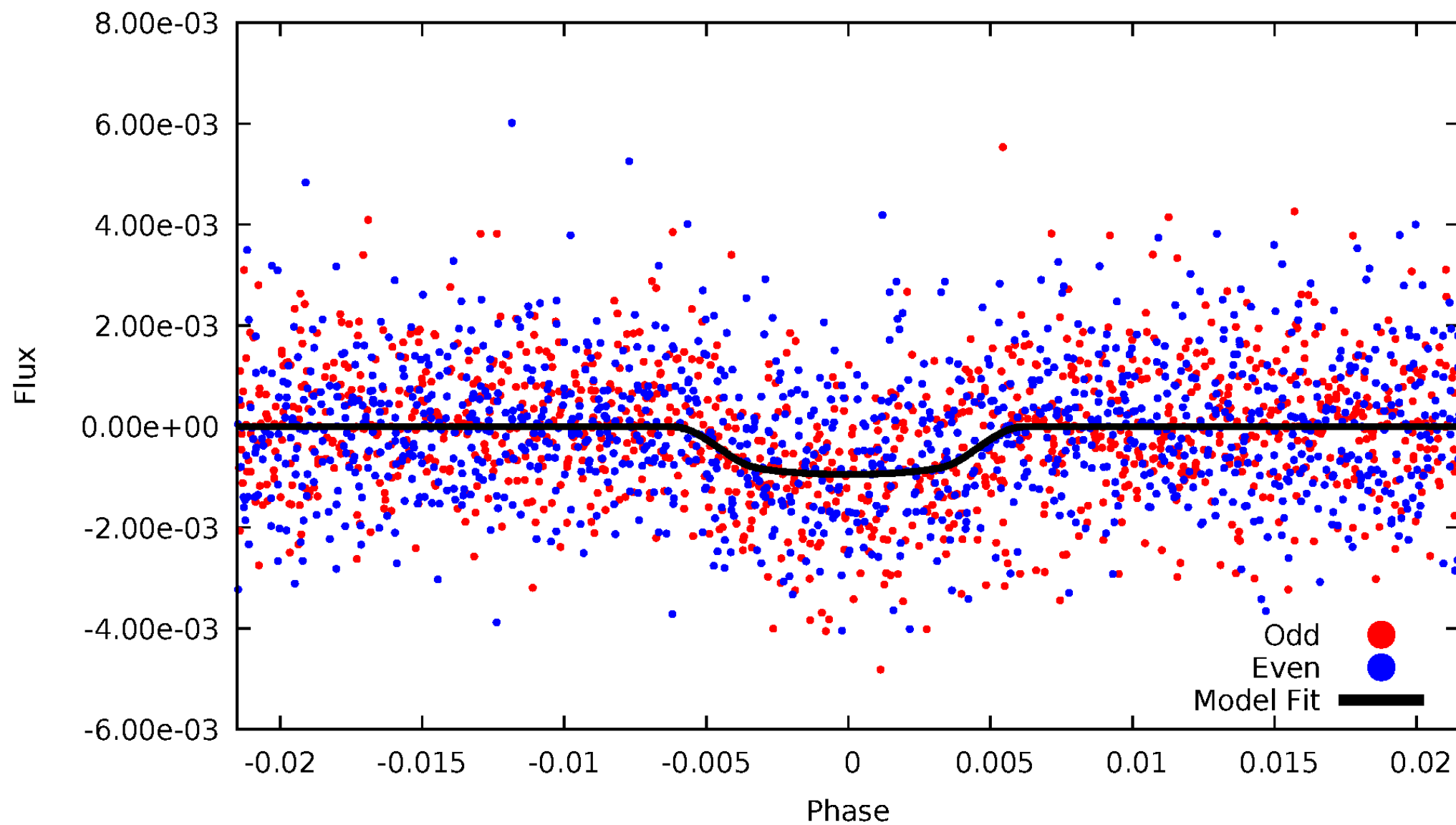


TCE 007918478-01



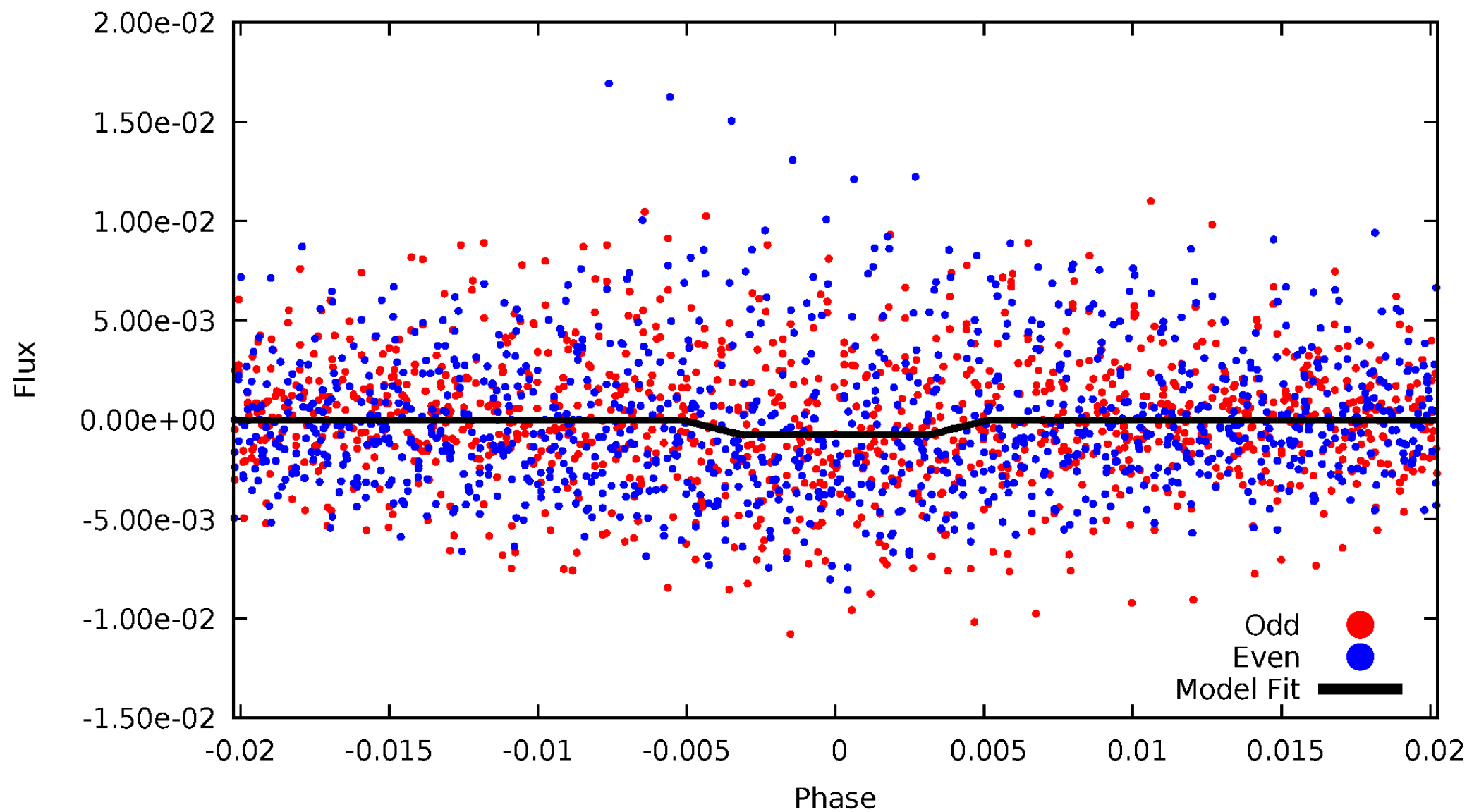
DV Odd/Even

TCE 007918478-01



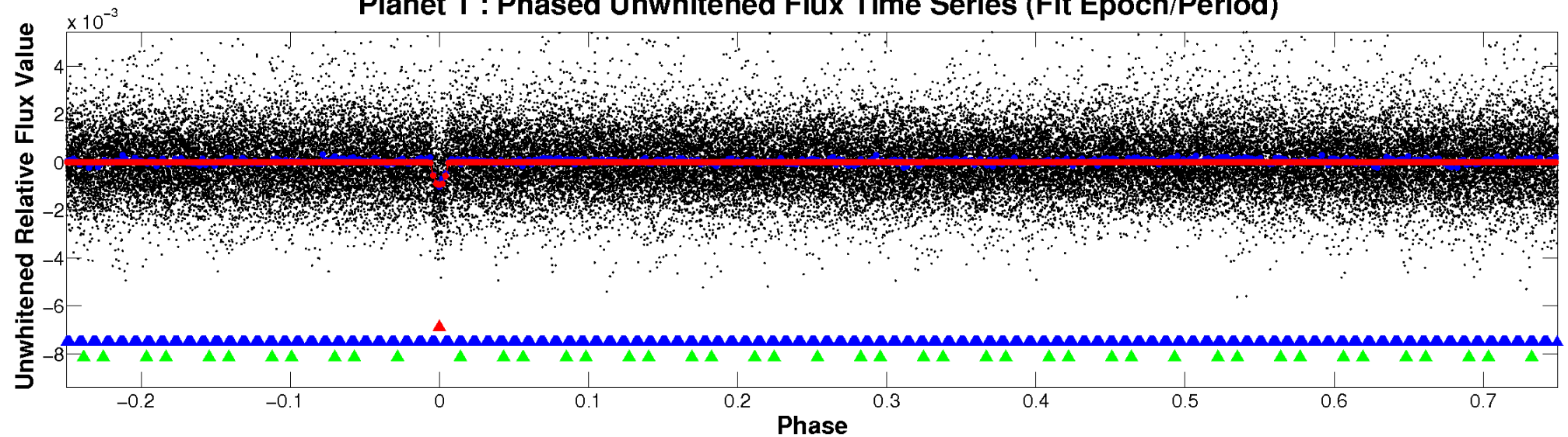
ALT Odd/Even

TCE 007918478-01

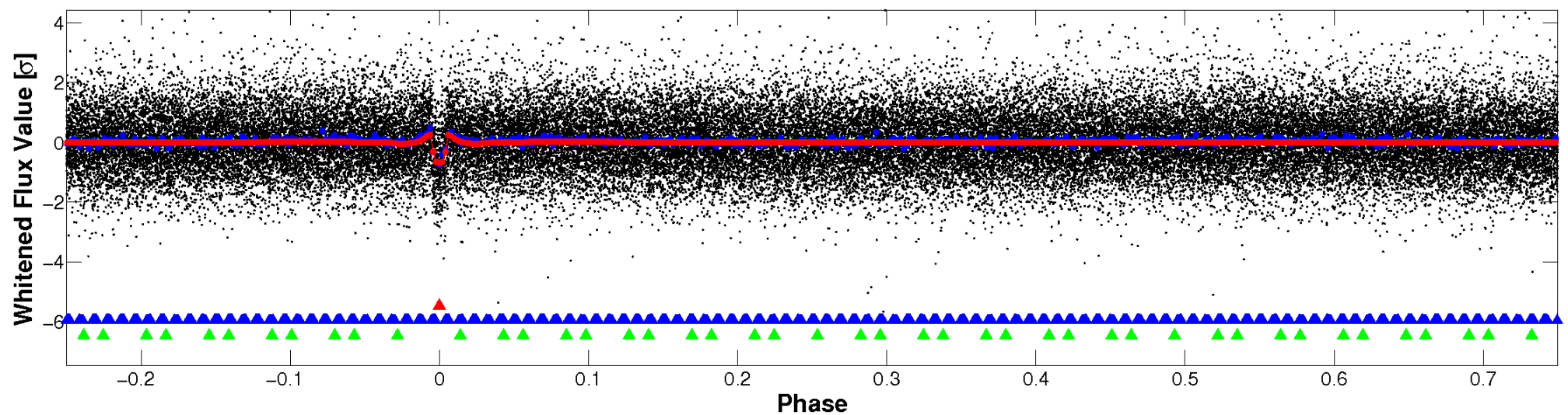


Non-Whitened Vs. Whitened Light Curve

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

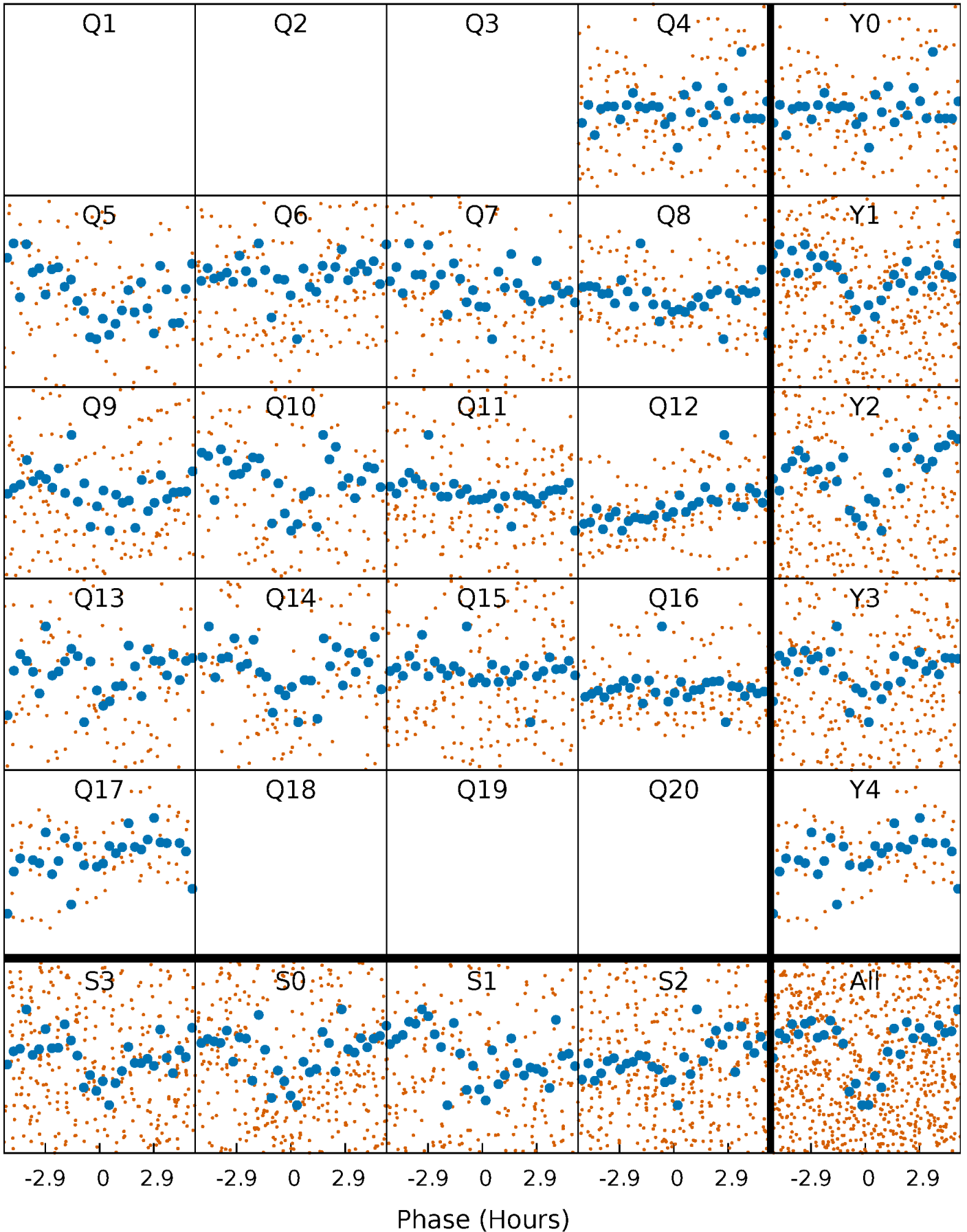


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



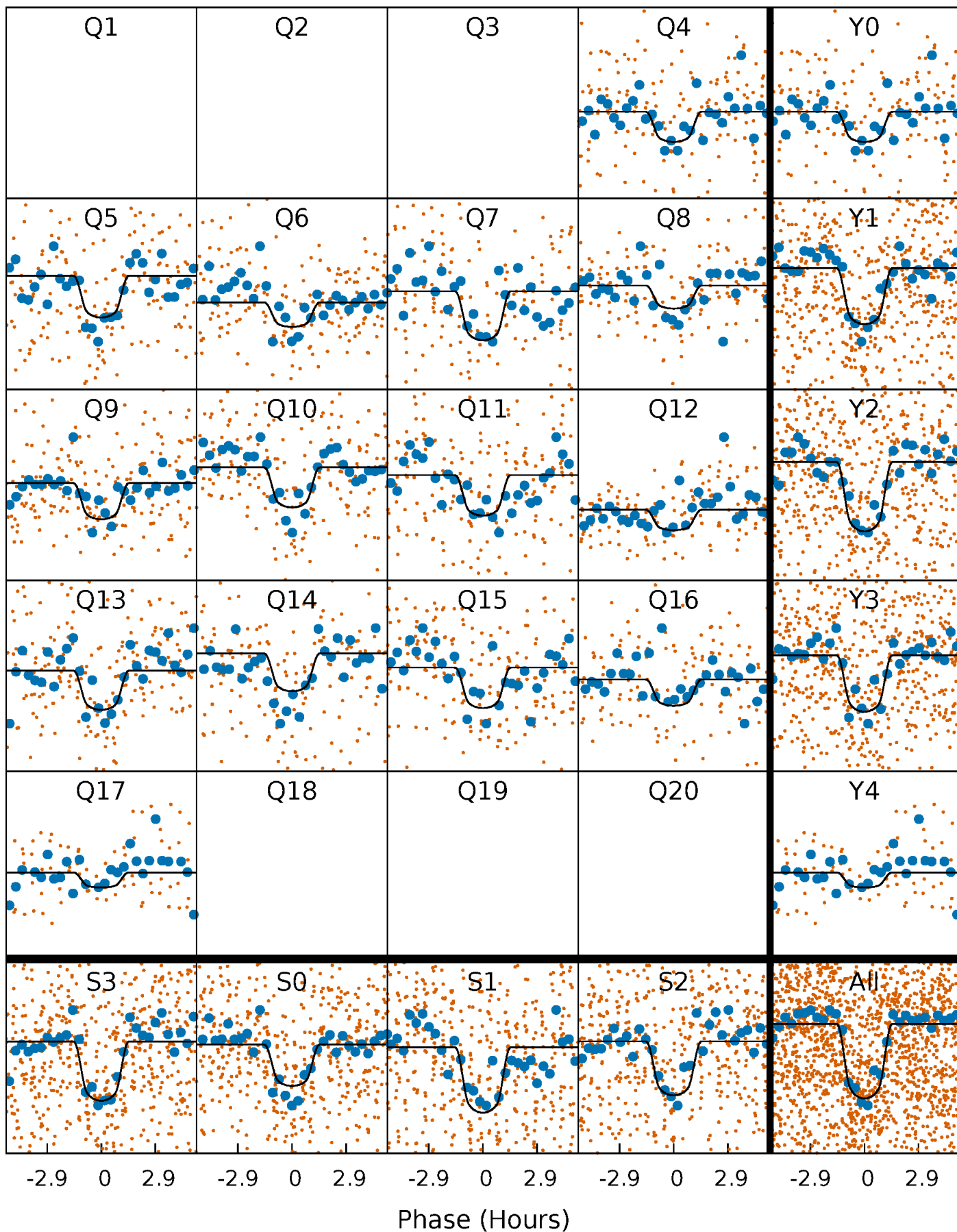
PDC Quarter-Phased Transit Curves

TCE 007918478-01 P= 9.909150 Days $T_0=133.096643$ (BKJD)



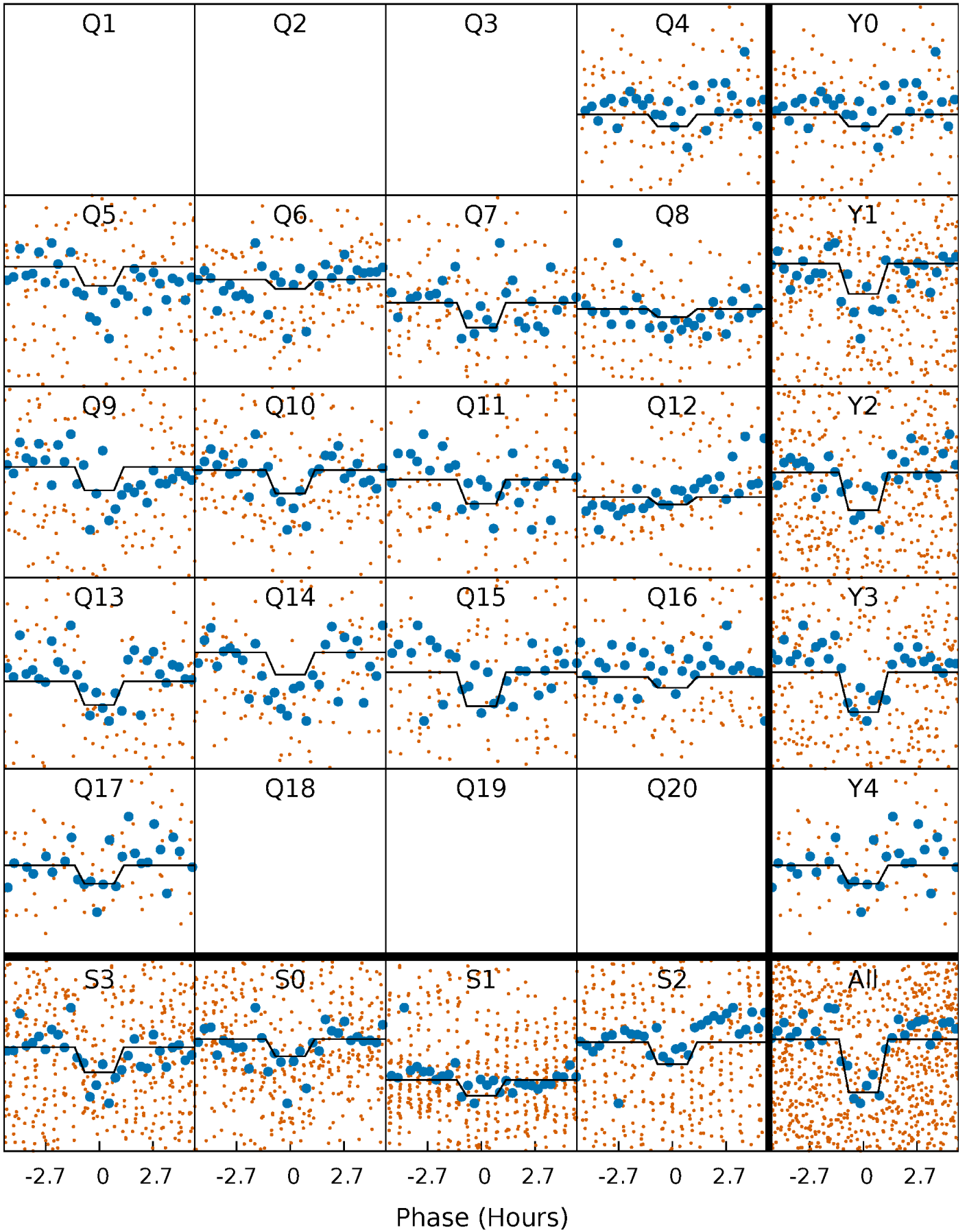
DV Quarter-Phased Transit Curves

TCE 007918478-01 P= 9.909150 Days $T_0=133.096643$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

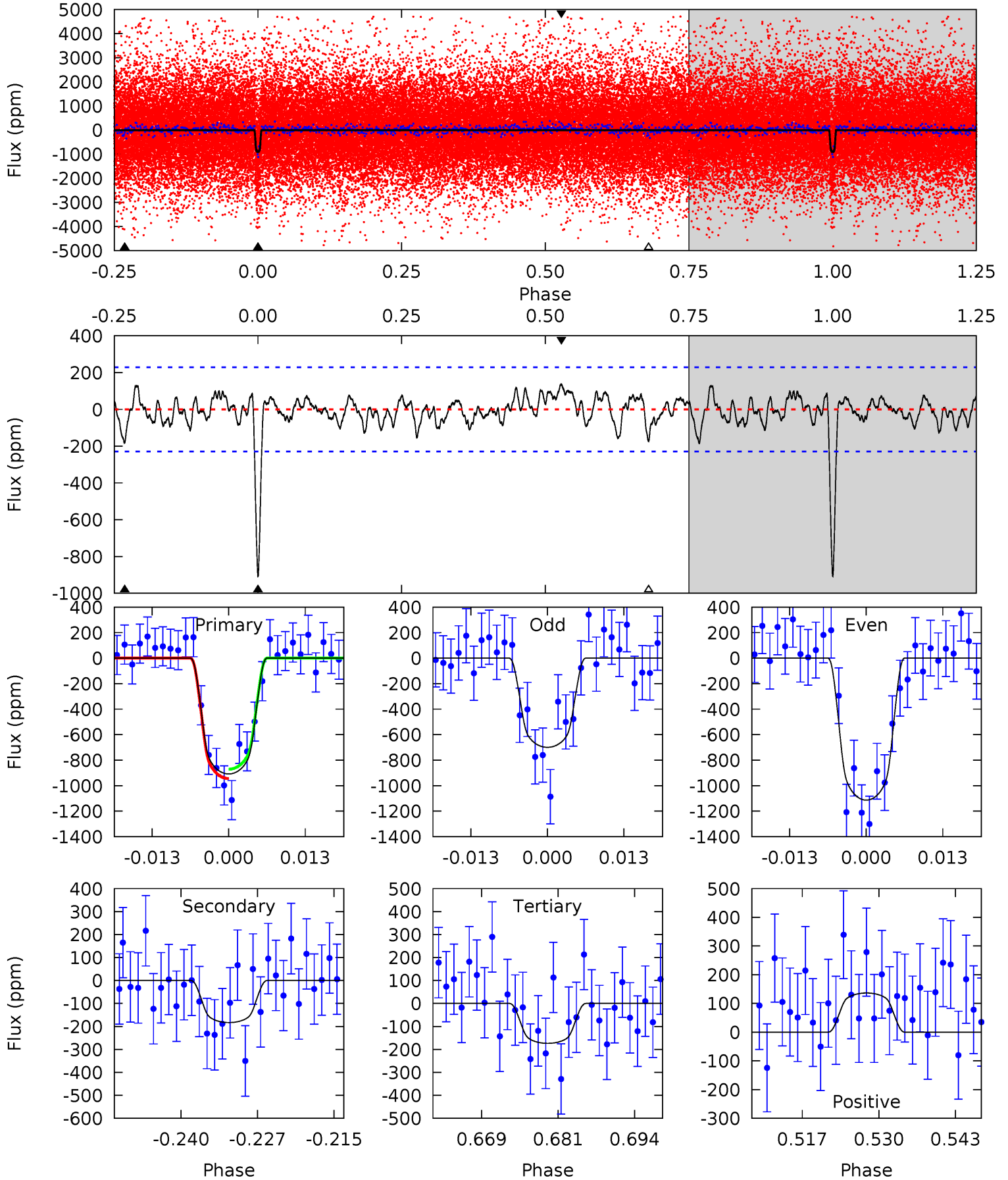
TCE 007918478-01 P= 9.909187 Days $T_0=133.093948$ (BKJD)



DV Model-Shift Uniqueness Test

007918478-01, P = 9.909150 Days, E = 133.096643 Days

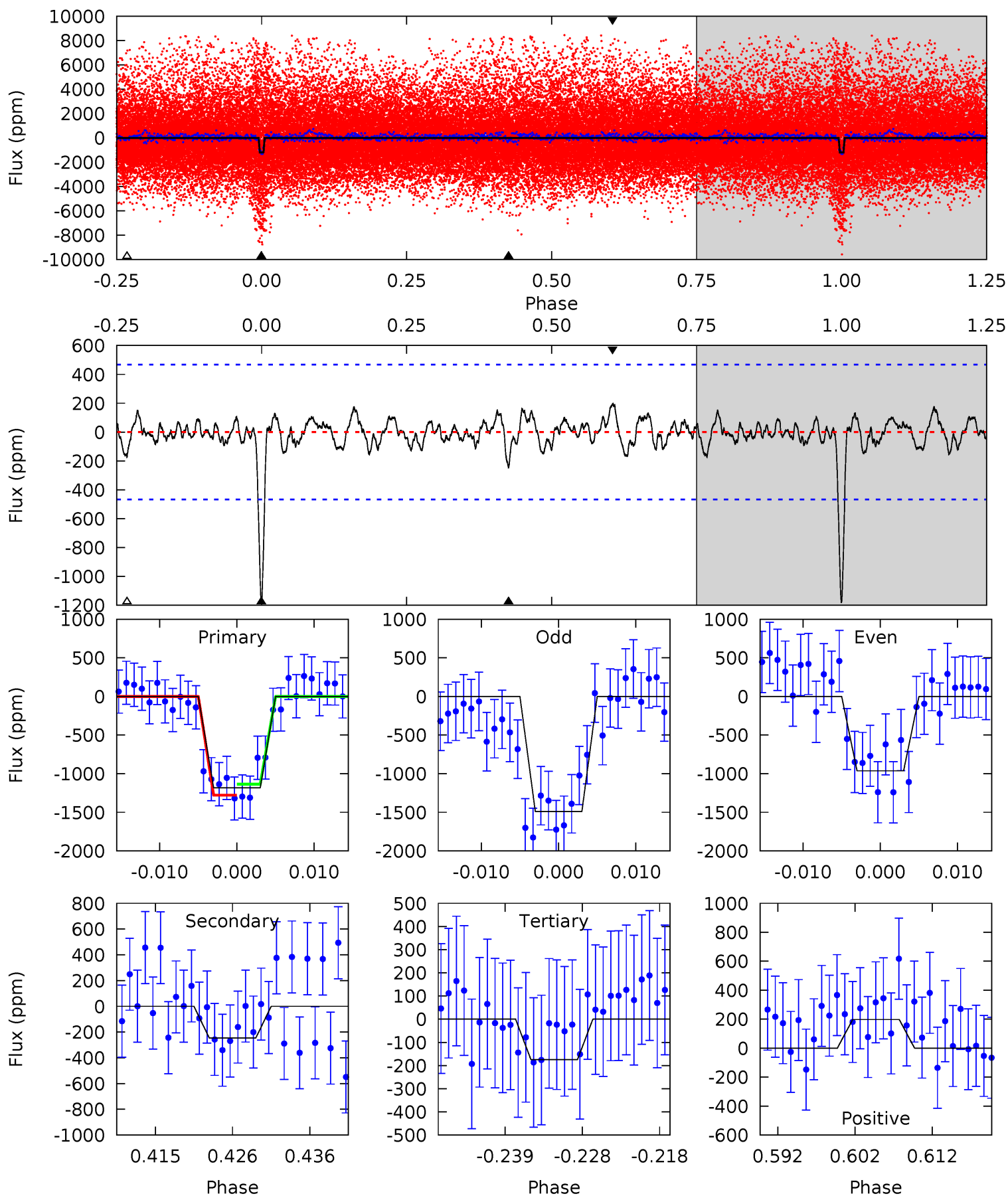
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.8 | 3.99 | 3.78 | 2.97 | 4.98 | 2.49 | 1.26 | 16.0 | 16.8 | 0.21 | 1.02 | 4.52 | 1.08 | 0.13 | 0.80 |



Alt Model-Shift Uniqueness Test

007918478-01, P = 9.909187 Days, E = 133.093948 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.7 | 2.64 | 1.87 | 2.13 | 5.02 | 2.56 | 0.76 | 10.8 | 10.6 | 0.77 | 0.51 | 2.83 | 0.51 | 0.14 | 0.77 |



Stellar Parameters For KIC 007918478

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5396^{+194}_{-194} | $4.632^{+0.032}_{-0.104}$ | $-0.480^{+0.300}_{-0.300}$ | $0.702^{+0.119}_{-0.051}$ | $0.784^{+0.082}_{-0.082}$ | $3.194^{+0.469}_{-1.015}$ |
| | +4%/-4% | +1%/-2% | +62%/-62% | +17%/-7% | +10%/-10% | +15%/-32% |
| Source | KIC0 | 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 007918478-01 / KOI 4209.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|--------------------|
| DV | -183 ± 46 | $2.58^{+0.58}_{-0.59}$ | 987^{+44}_{-47} | 3816^{+388}_{-313} | 101^{+74}_{-39} |
| Alt. | -246 ± 93 | $2.22^{+0.57}_{-0.56}$ | 985^{+46}_{-43} | 4253^{+544}_{-499} | 185^{+169}_{-89} |

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 $A_{obs} \gg 1.0$

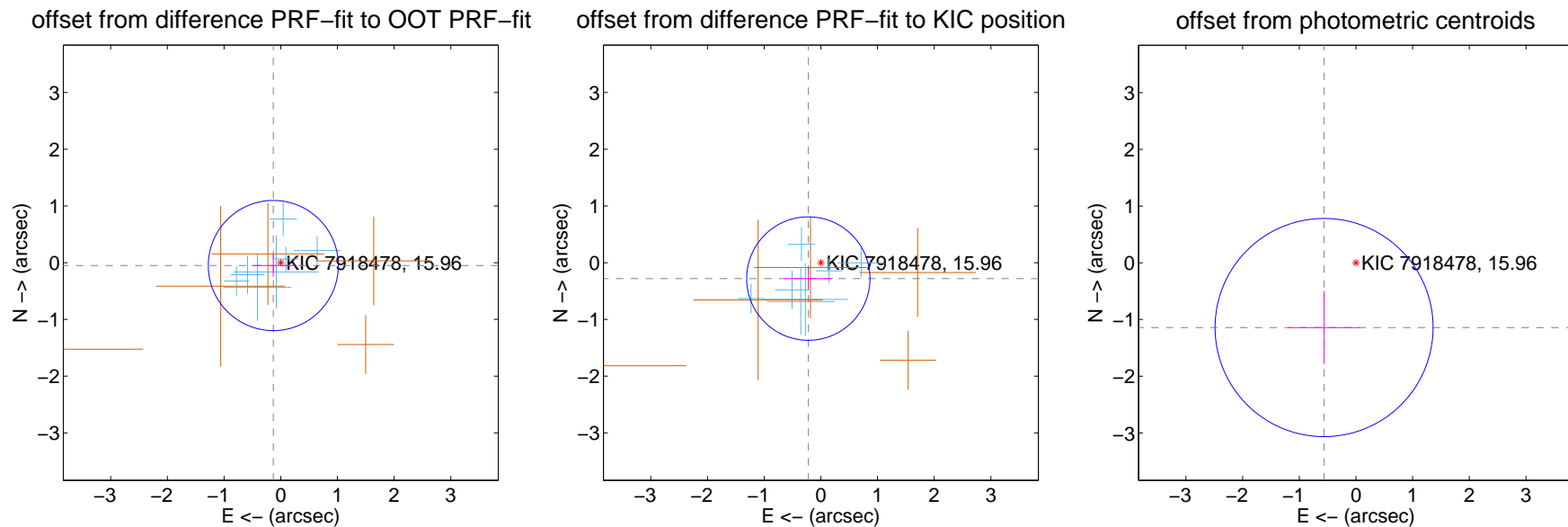
DV Centroid Data

Supplemental centroid analysis for 007918478-01. Kepler magnitude: 15.96. Transit SNR 14.24

There are 7 quarters with good PRF difference image offsets

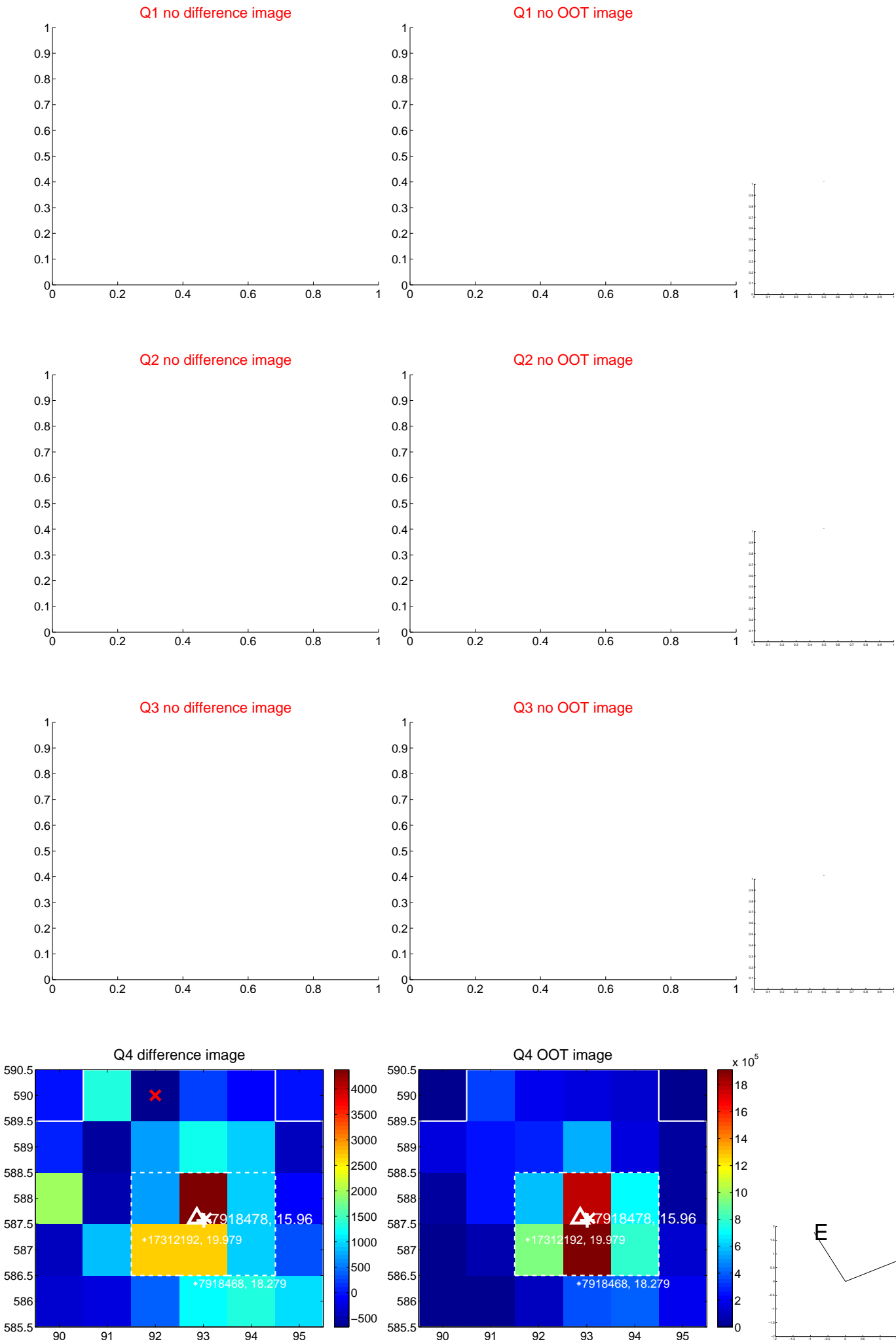
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.140 ± 0.382 | 0.37 | 0.131 ± 0.378 | -0.050 ± 0.197 |
| PRF-fit source offset from KIC position | 0.357 ± 0.363 | 0.98 | 0.221 ± 0.429 | -0.280 ± 0.200 |
| photometric centroid source offset | 1.27 ± 0.64 | 1.99 | 0.56 ± 0.63 | -1.14 ± 0.64 |

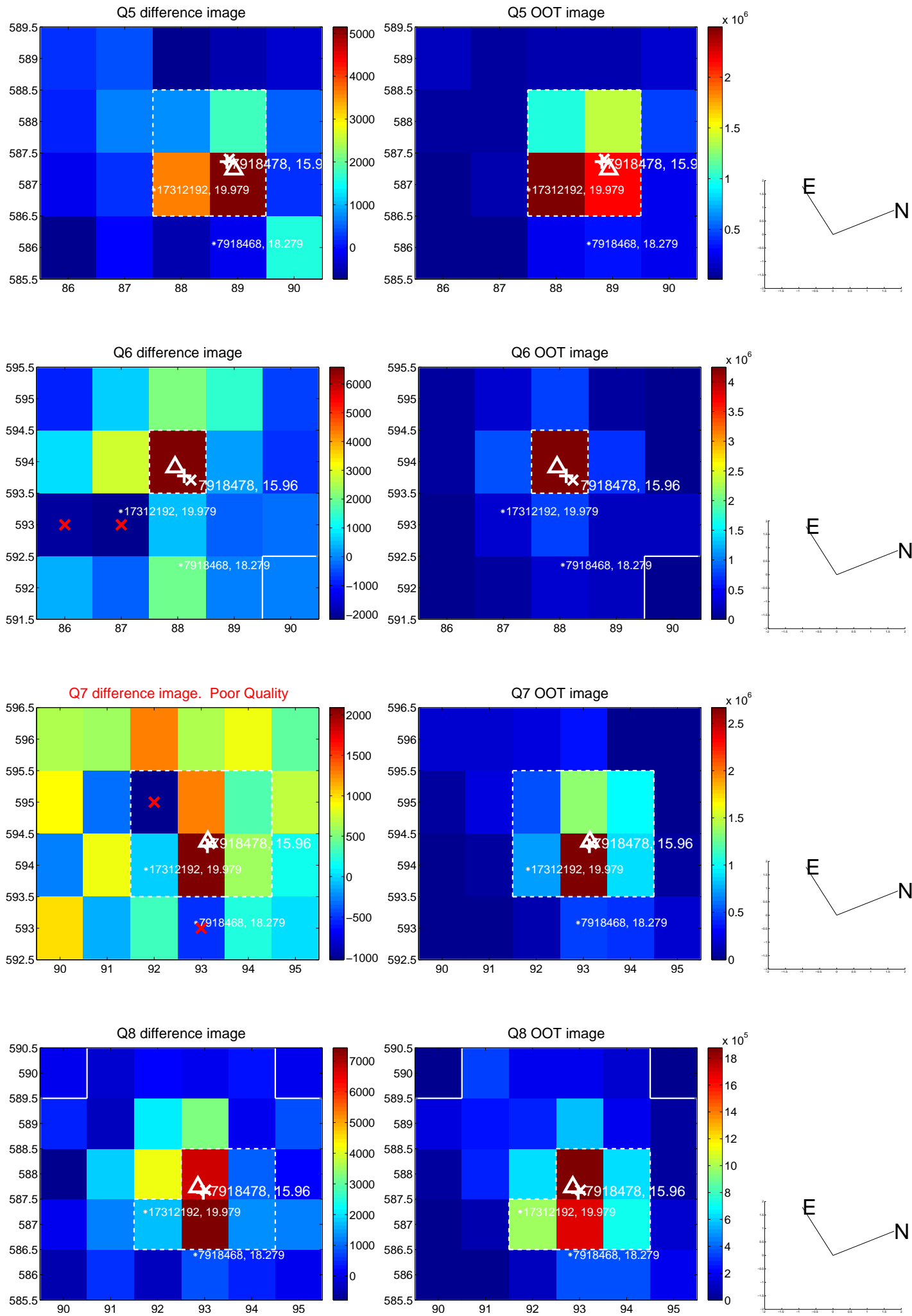


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

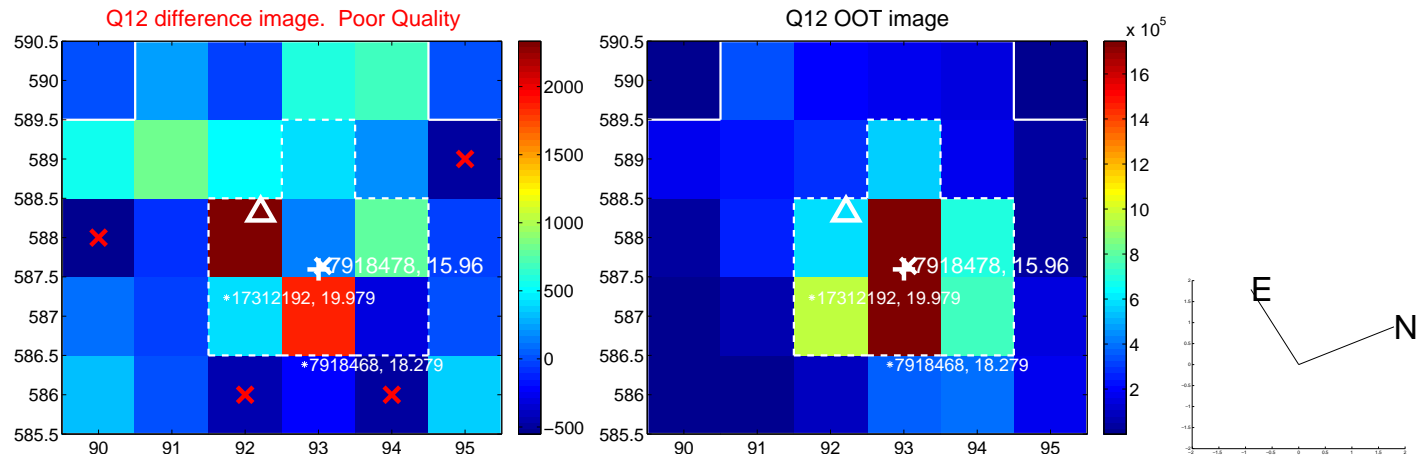
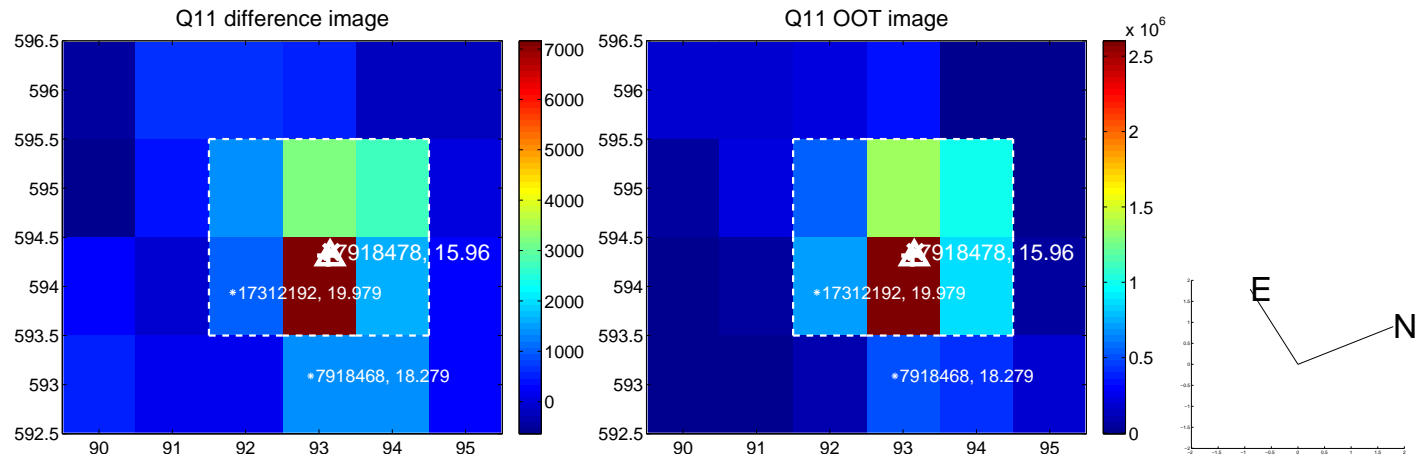
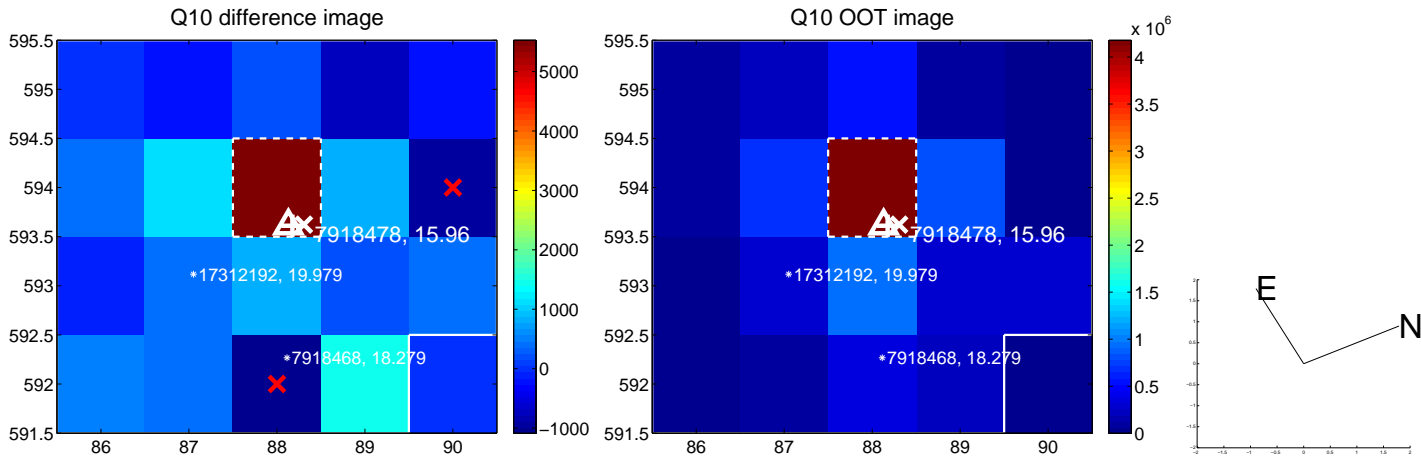
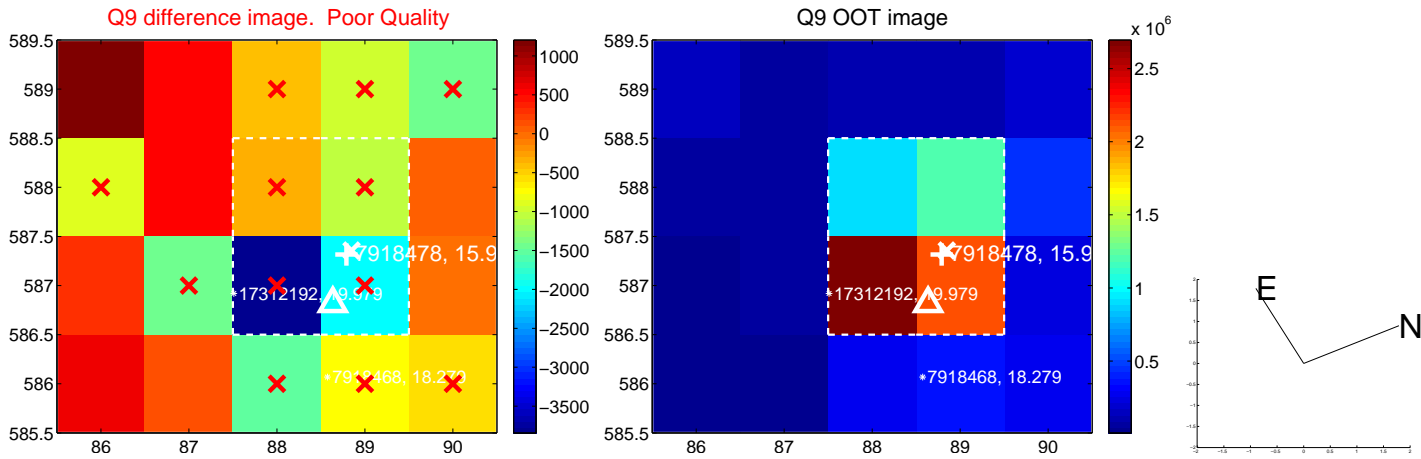
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



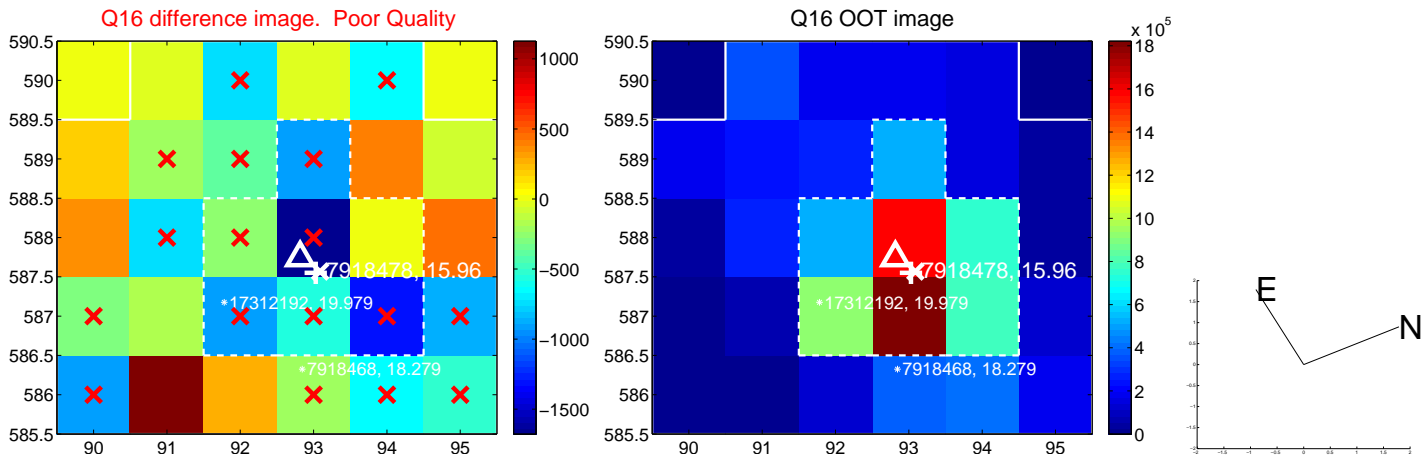
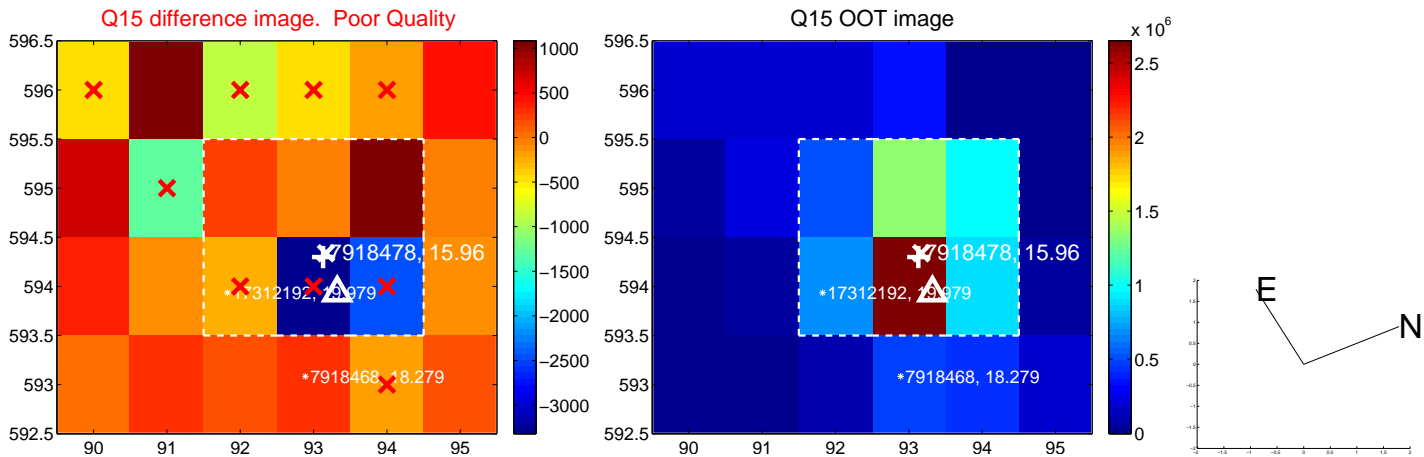
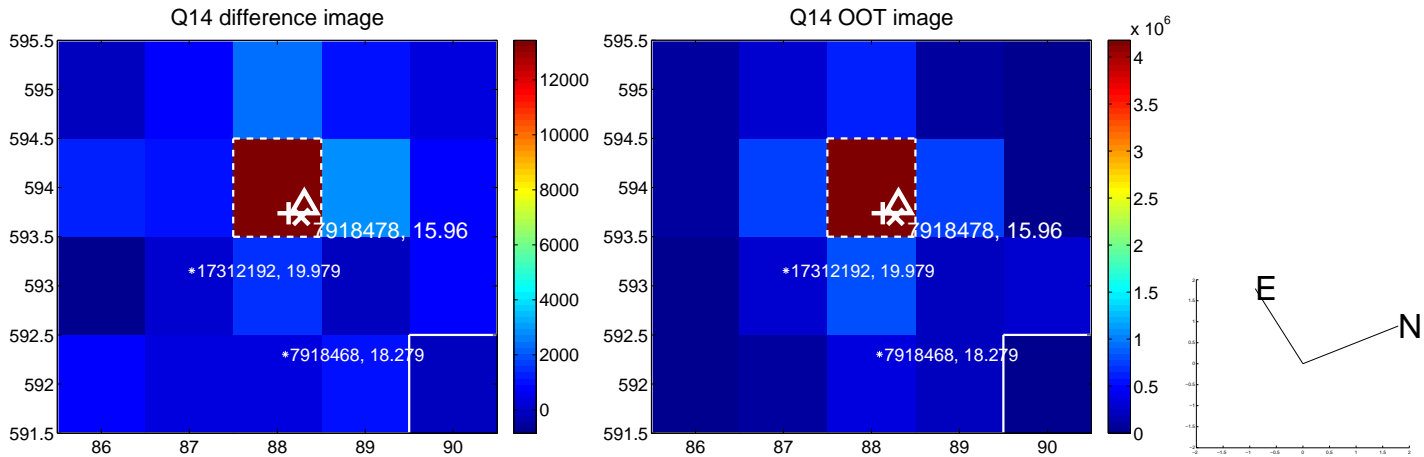
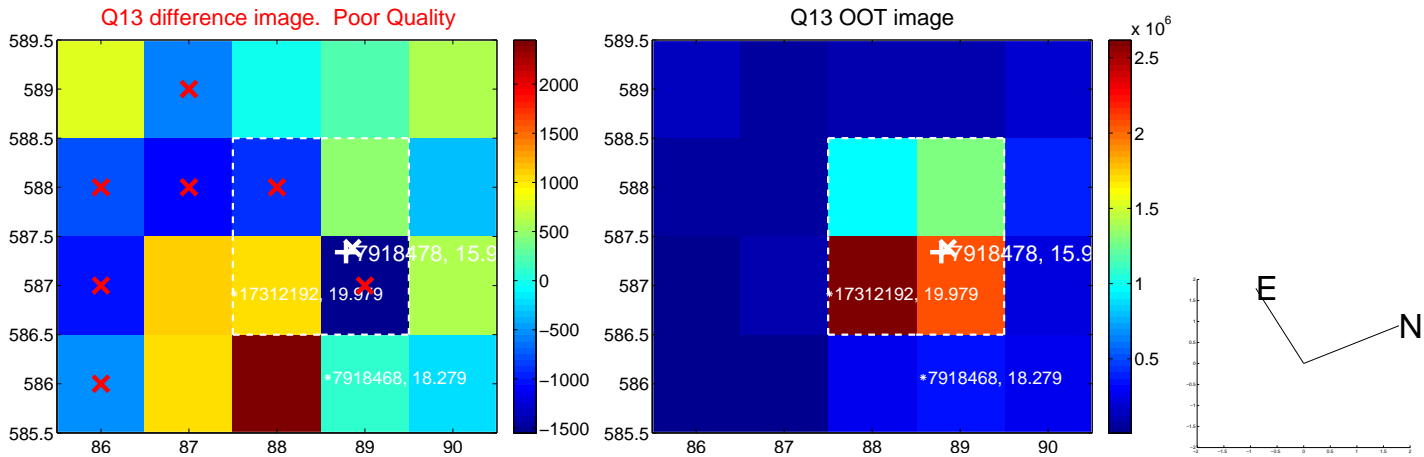
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



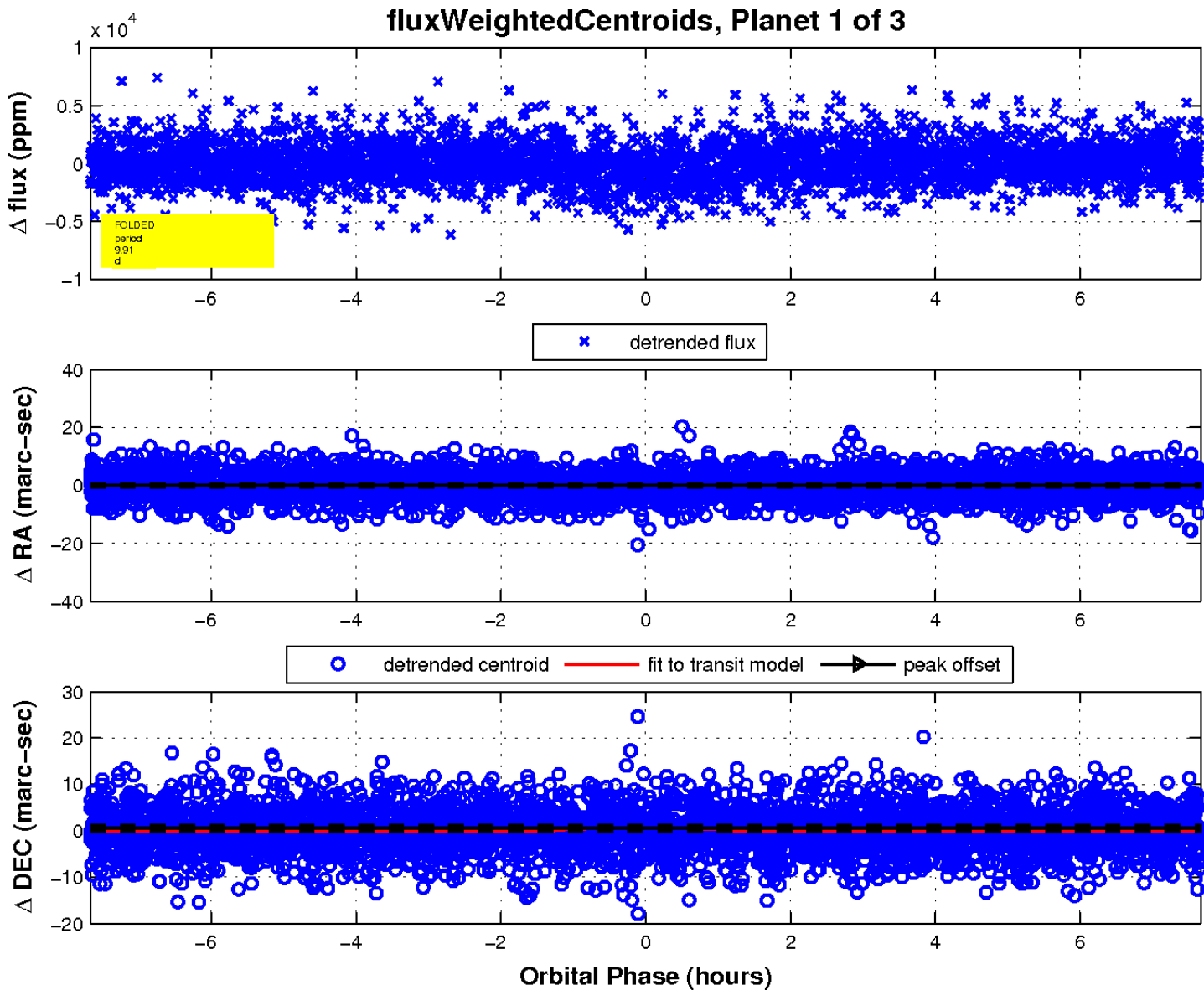
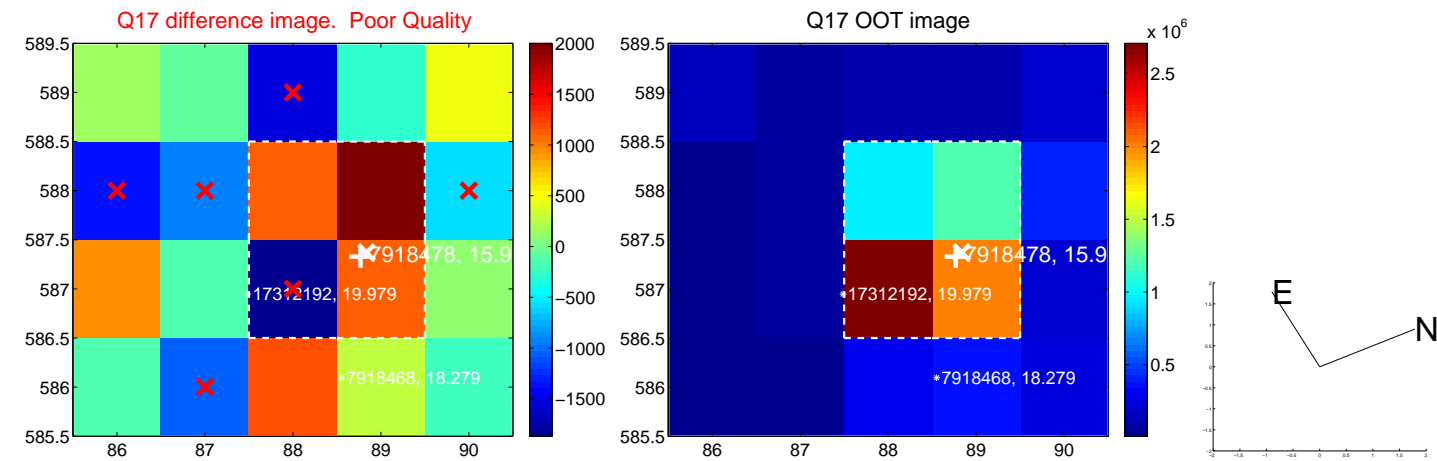
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

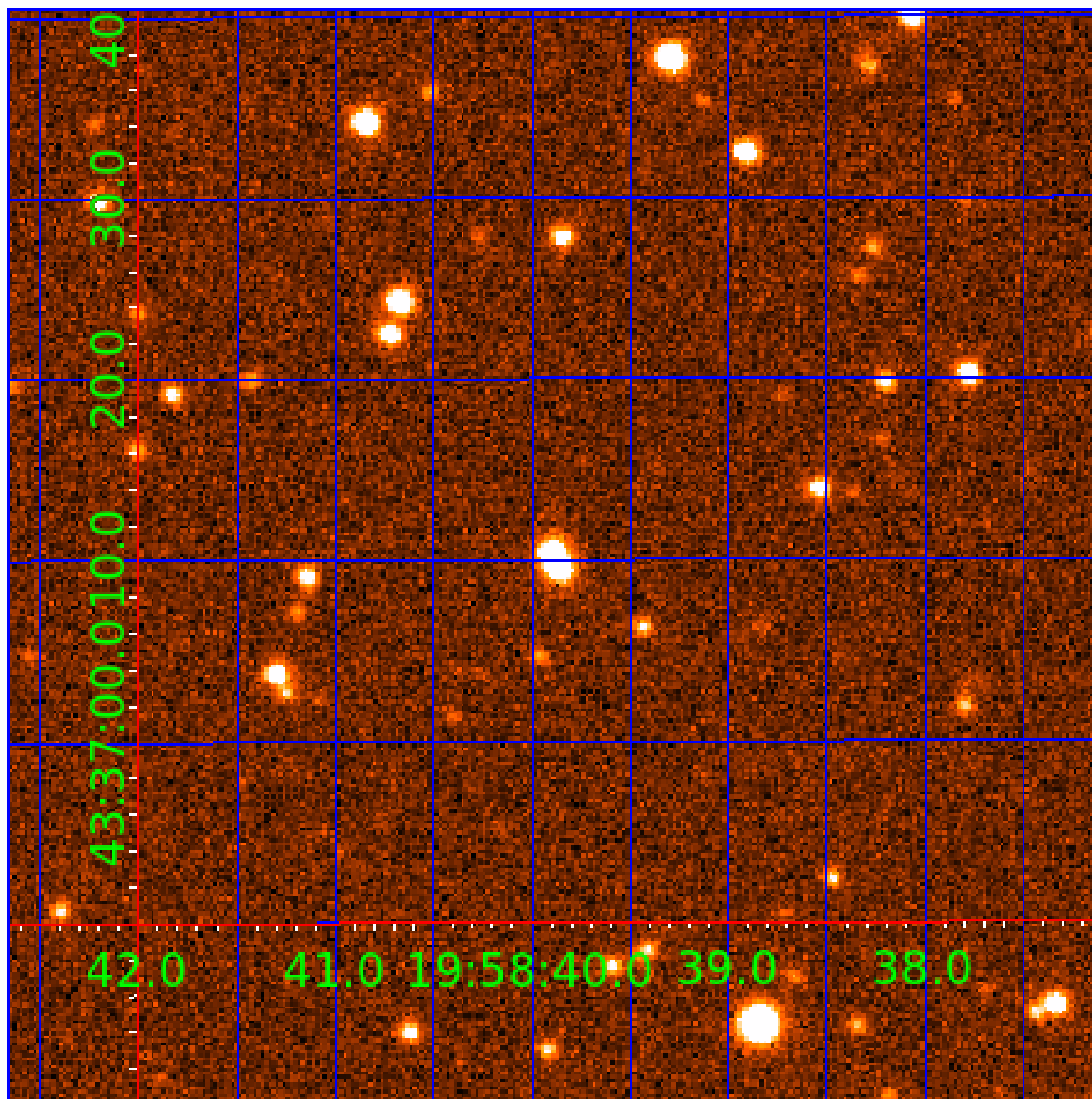


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007918478

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007918478-01 | OBS | 4209.01 | 9.909150 | 133.096643 | 951.3 | 2.557 | 14.2 | 14.2 | 0.70 | 5396 | 2.51 | 54.62 |
| 007918478-02 | OBS | No | 1.891787 | 131.602317 | 154.5 | 10.884 | 10.2 | 8.6 | 0.70 | 5396 | 0.88 | 496.87 |
| 007918478-03 | OBS | No | 32.100461 | 155.140085 | 912.5 | 15.216 | 8.3 | 6.1 | 0.70 | 5396 | 2.45 | 11.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007918478-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007918478-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT |
| 007918478-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

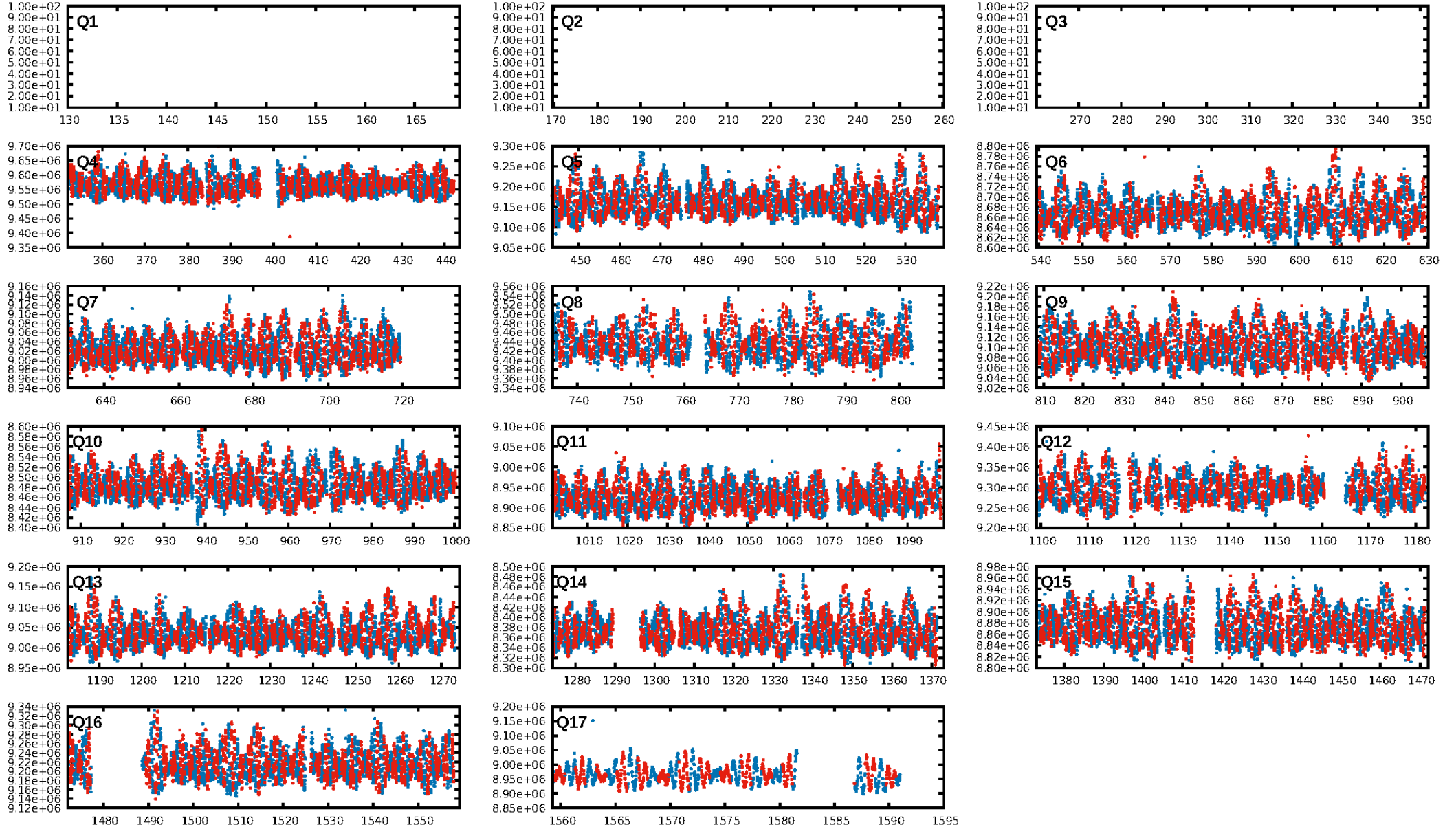
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007918478-02

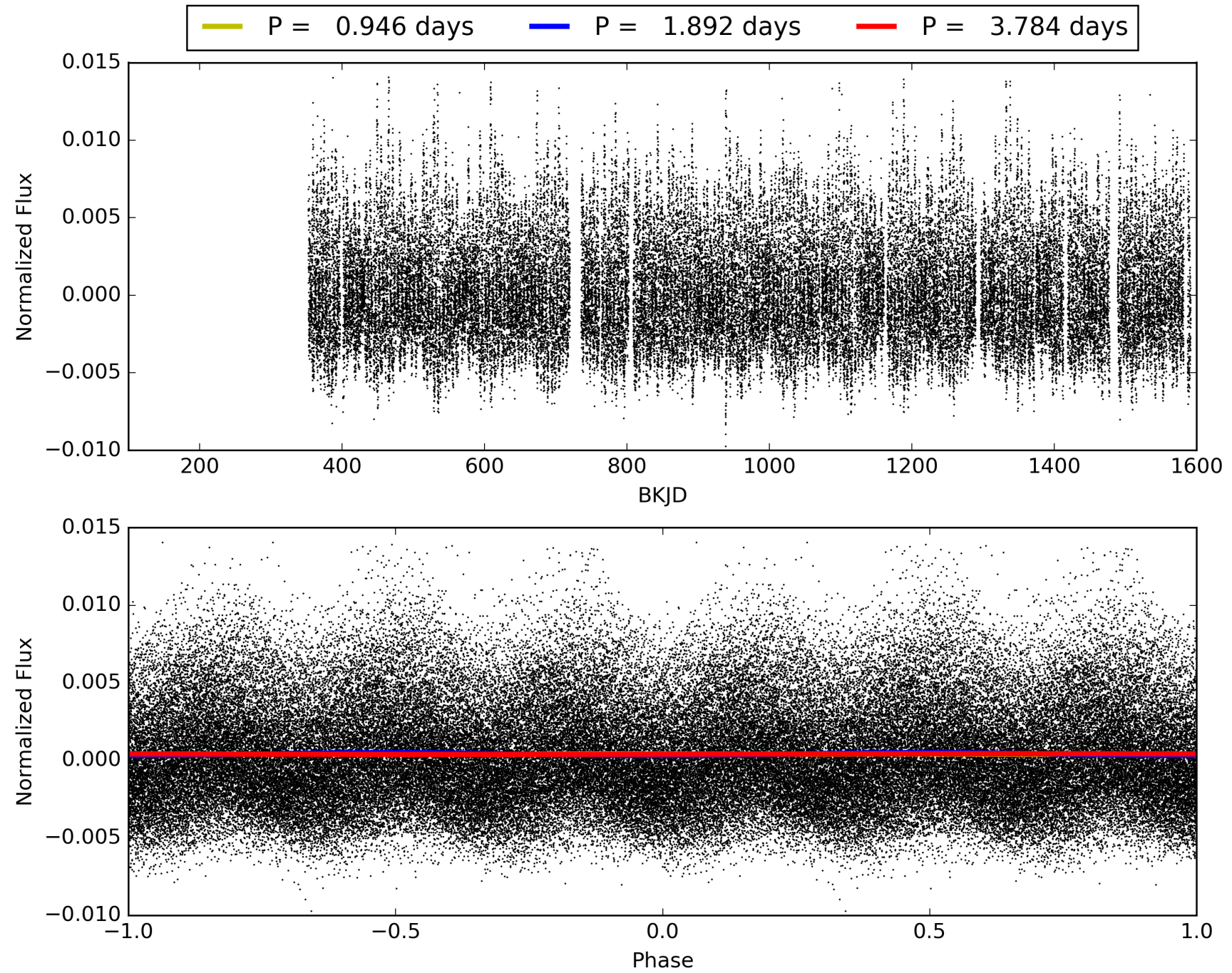
No Significant Match Found

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

TCE 007918478-02, PDC Light Curves

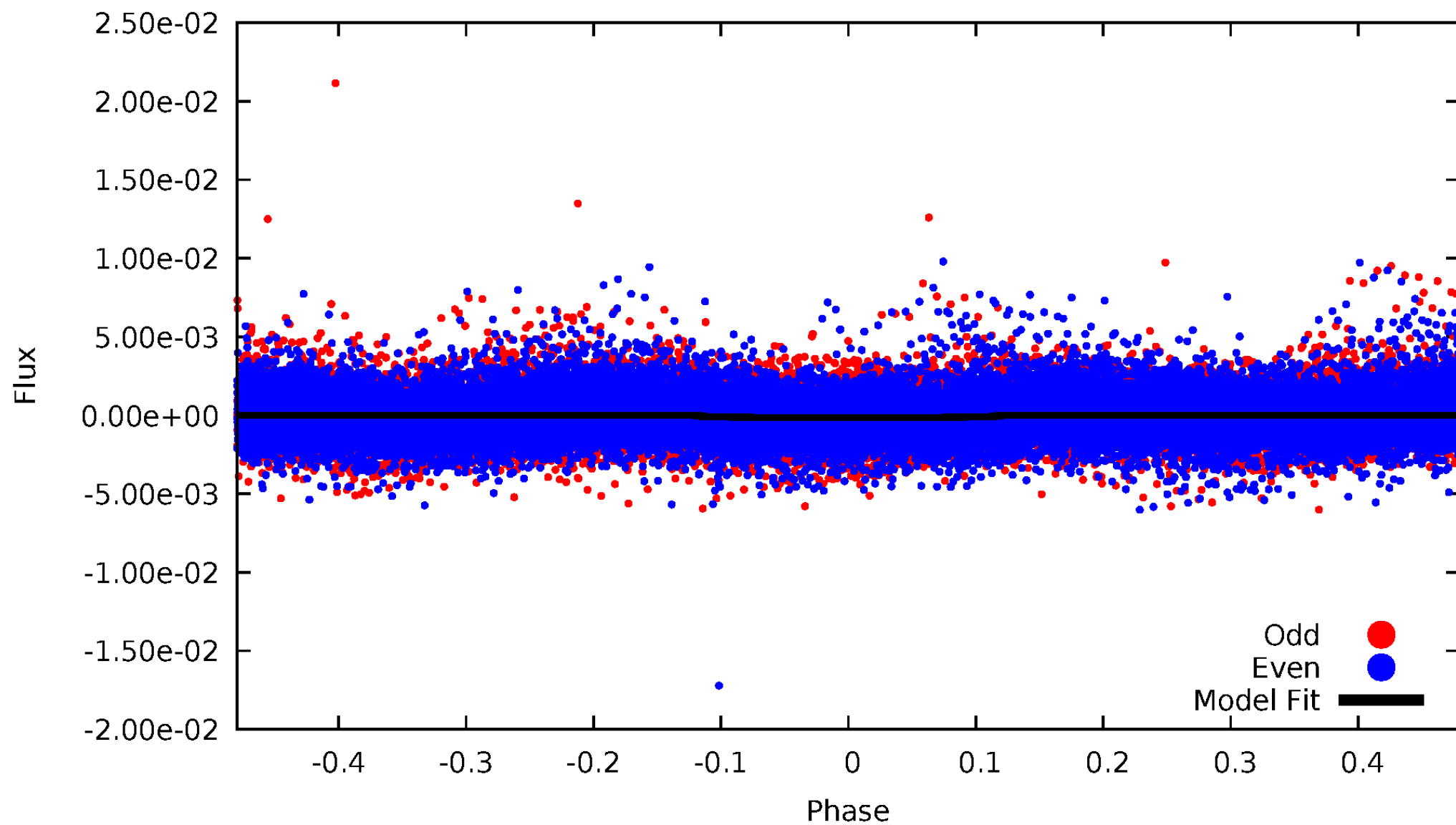


TCE 007918478-02



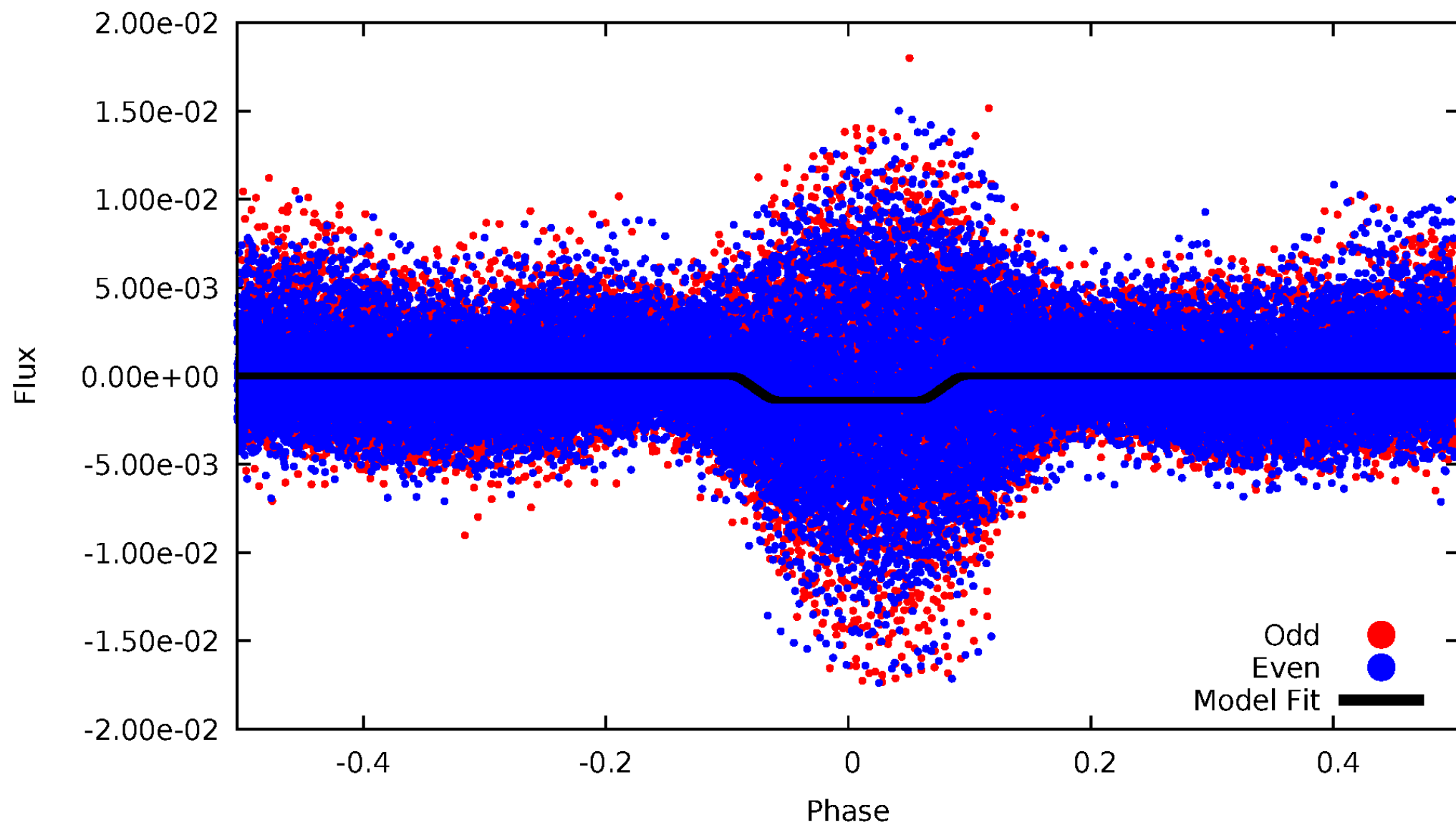
DV Odd/Even

TCE 007918478-02



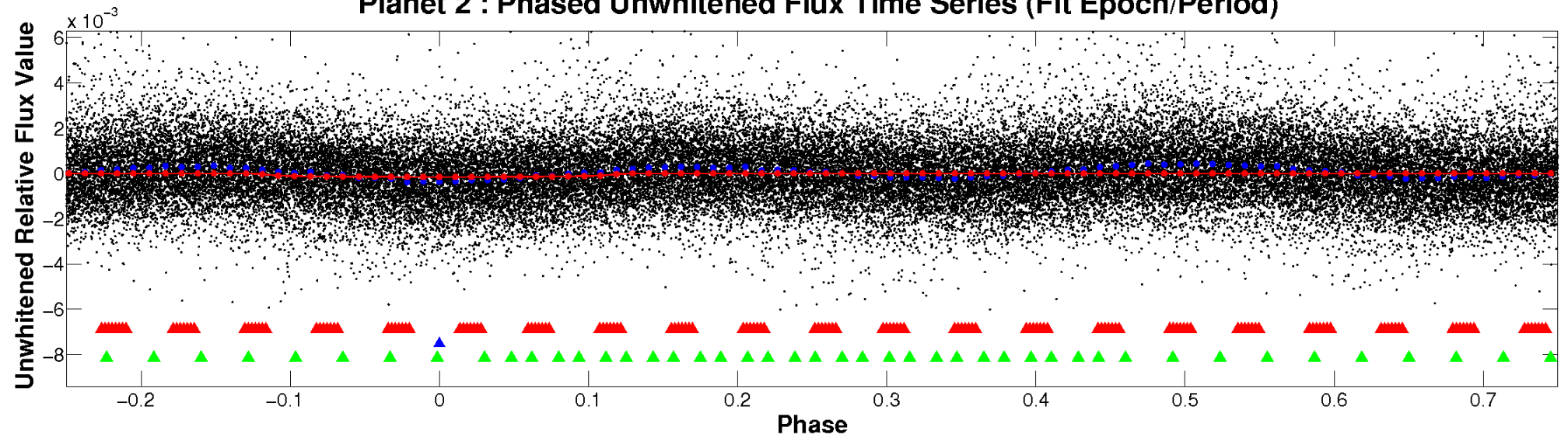
ALT Odd/Even

TCE 007918478-02

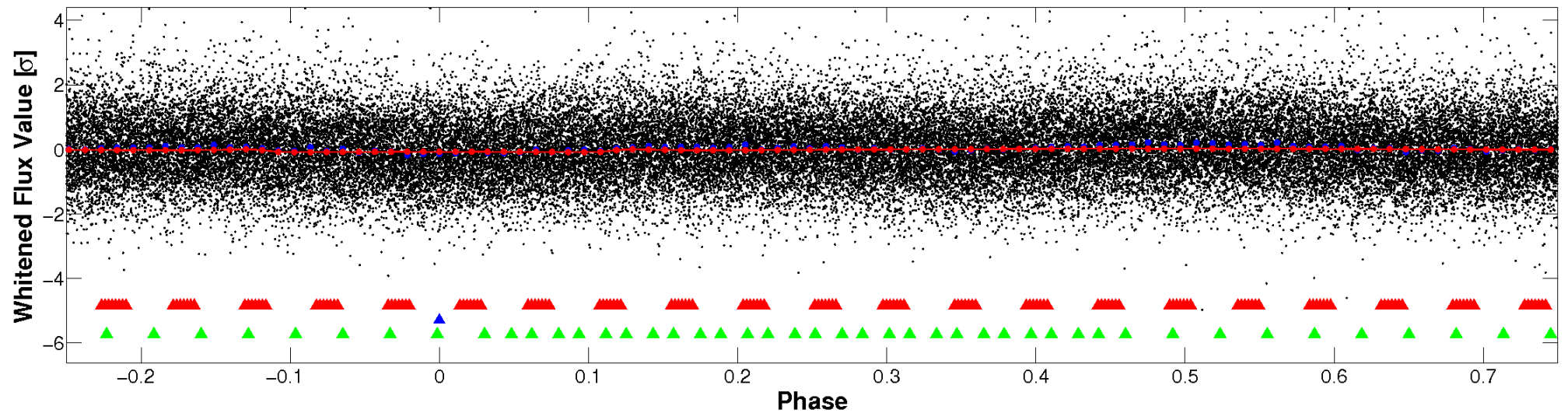


Non-Whitened Vs. Whitened Light Curve

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

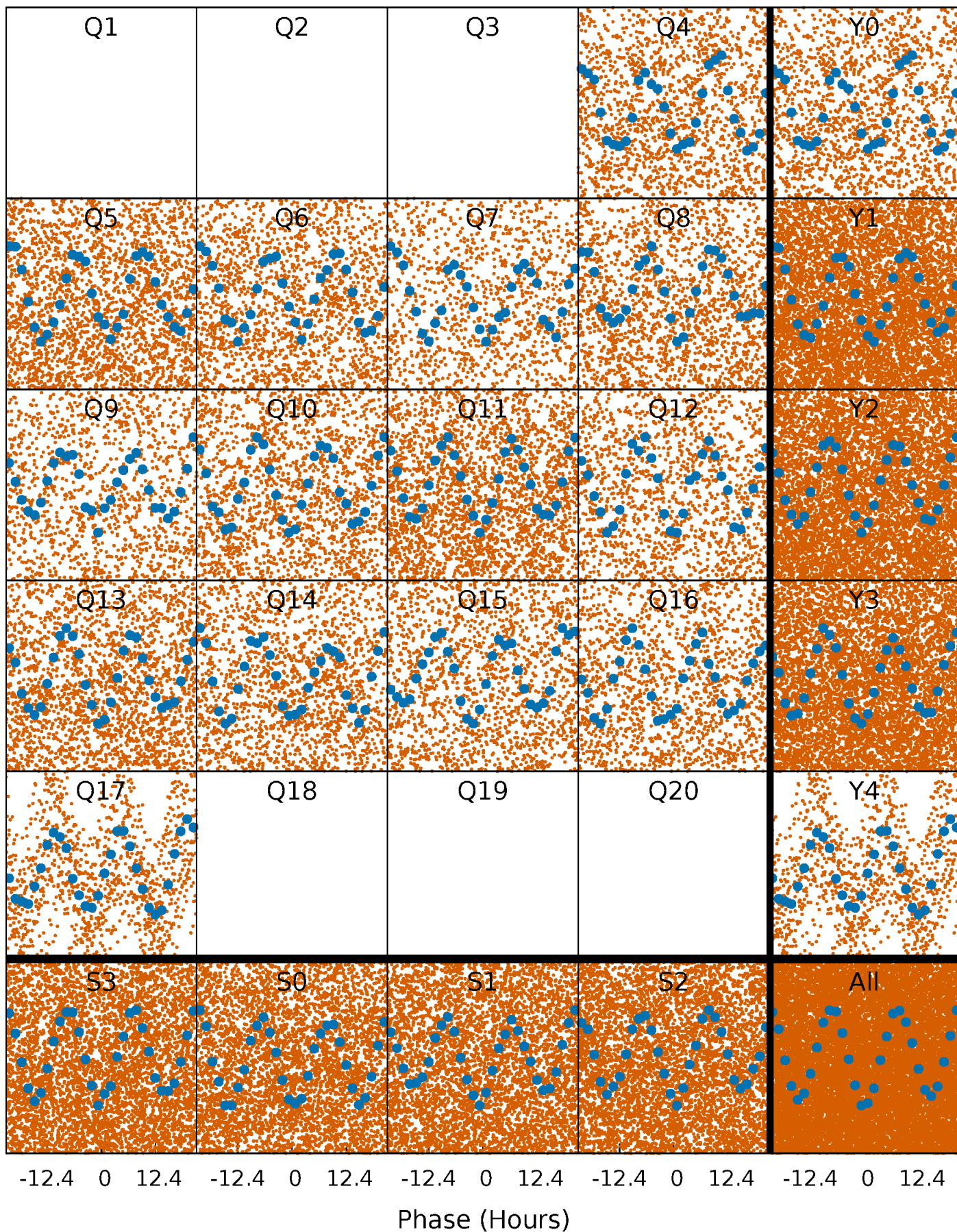


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



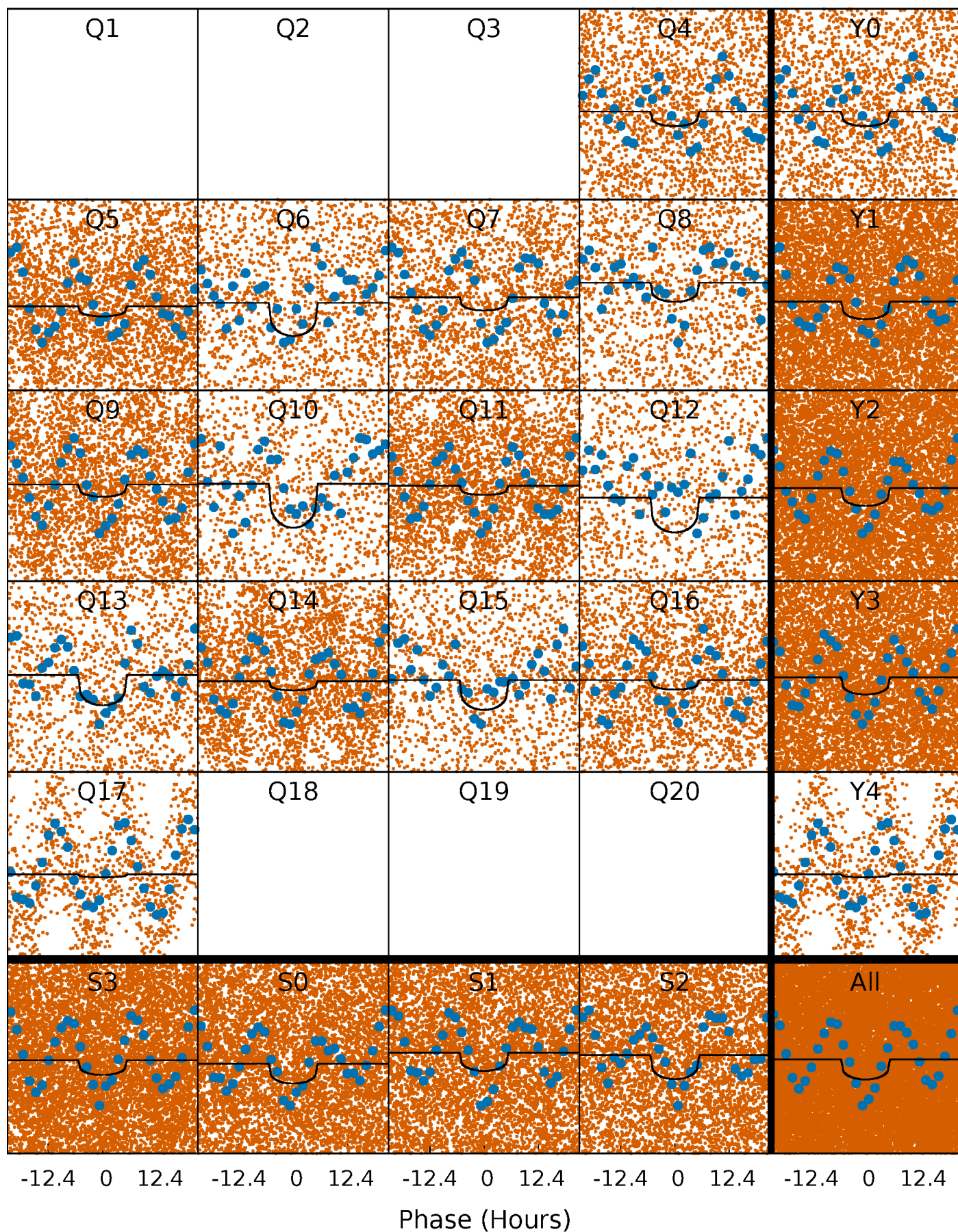
PDC Quarter-Phased Transit Curves

TCE 007918478-02 P= 1.891787 Days $T_0=131.602317$ (BKJD)



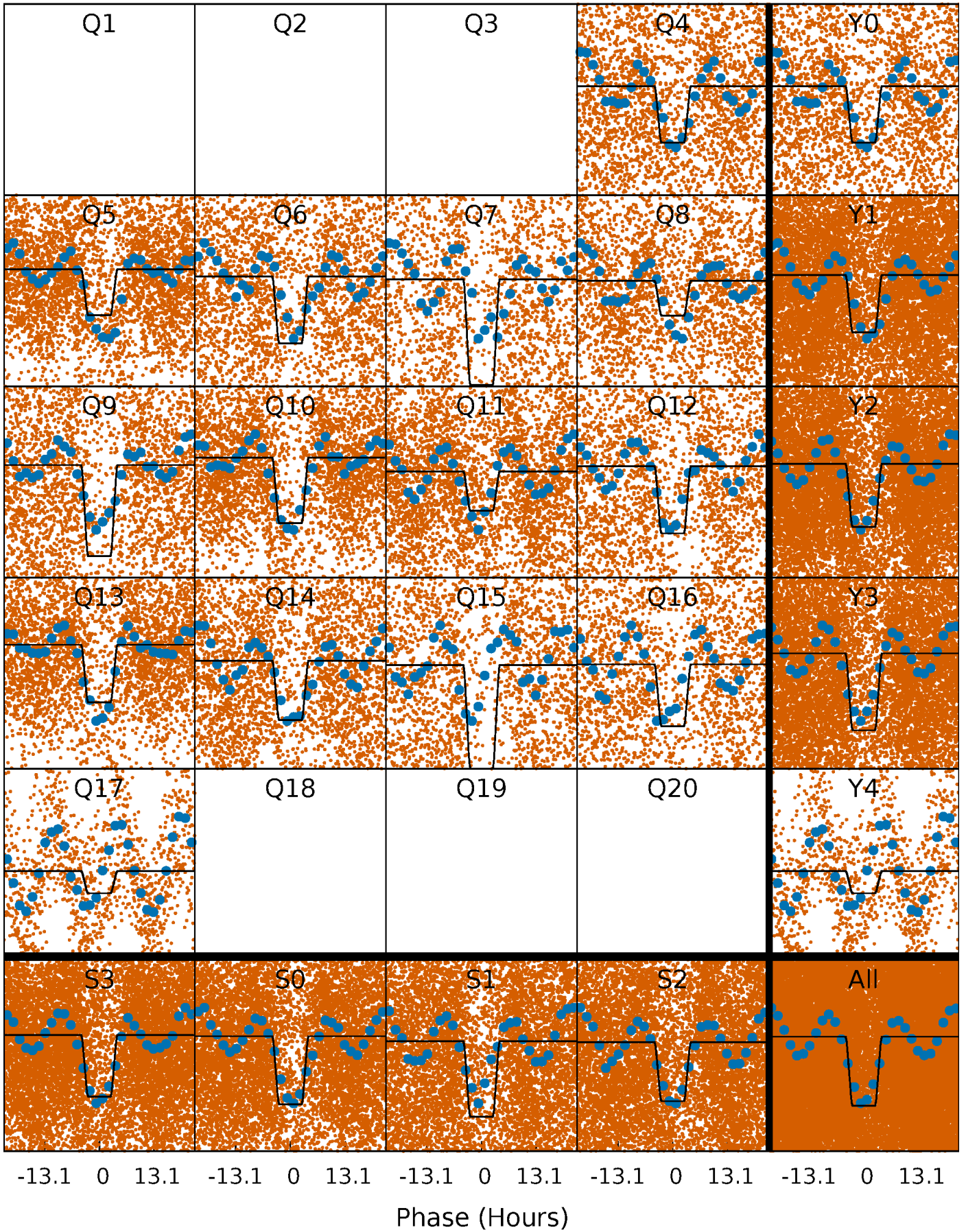
DV Quarter-Phased Transit Curves

TCE 007918478-02 P= 1.891787 Days $T_0=131.602317$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

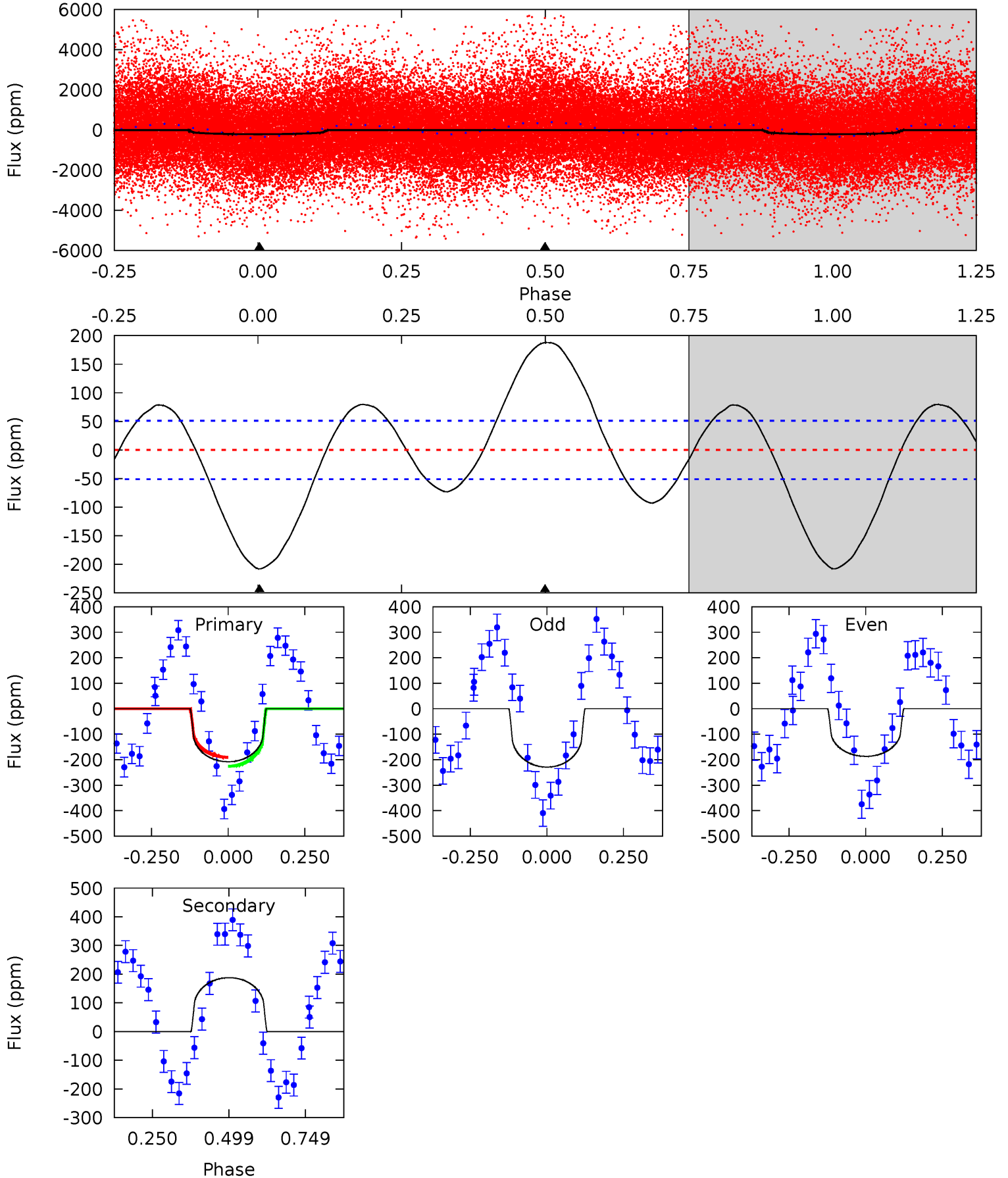
TCE 007918478-02 P= 1.891751 Days $T_0=131.631325$ (BKJD)



DV Model-Shift Uniqueness Test

007918478-02, P = 1.891787 Days, E = 131.602317 Days

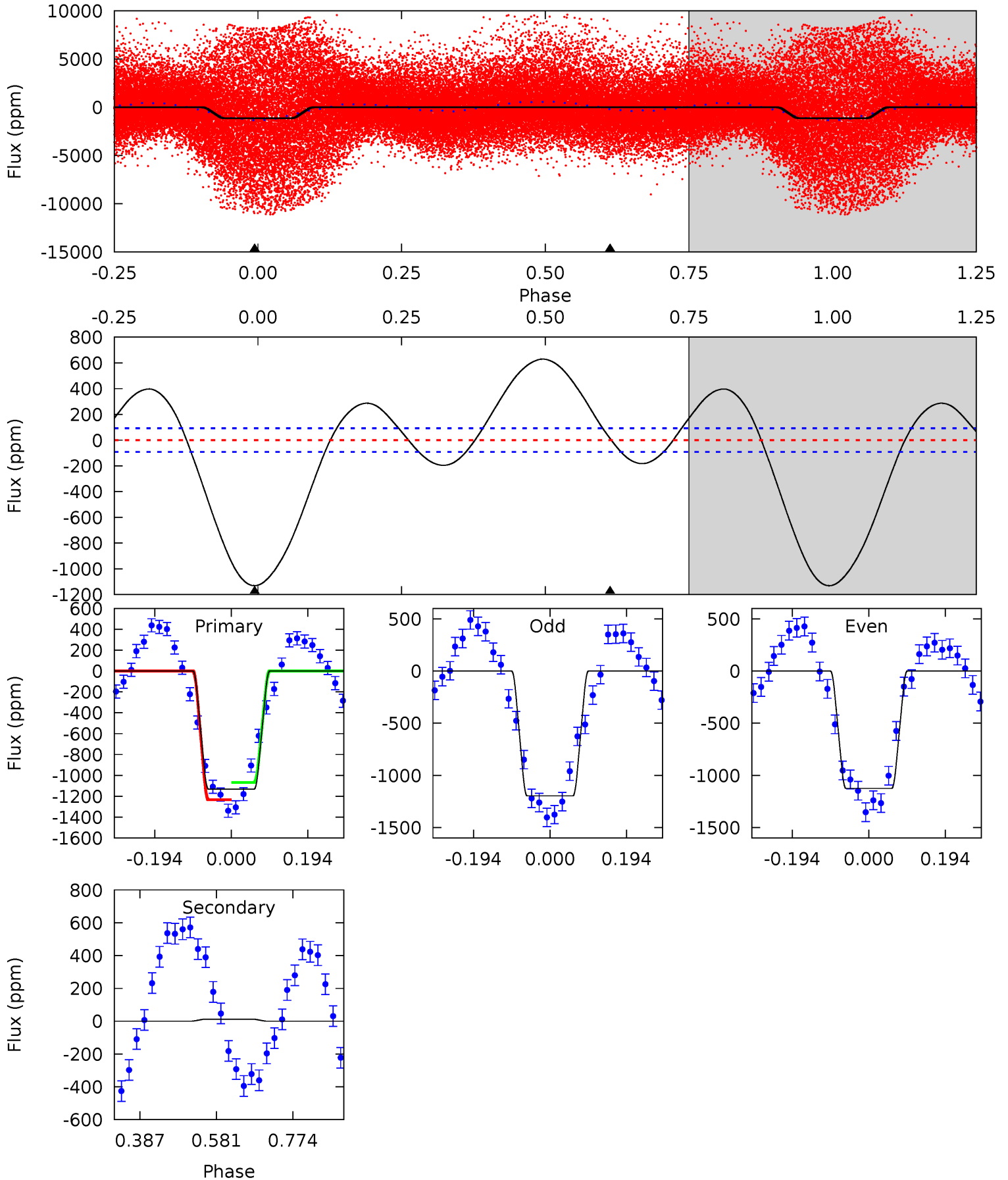
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.8 | -16.1 | 0 | 0 | 4.37 | 1.15 | 2.44 | 17.8 | 17.8 | -16.1 | -16.1 | 1.80 | 0.91 | 0.47 | 1.55 |



Alt Model-Shift Uniqueness Test

007918478-02, P = 1.891751 Days, E = 131.631325 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 54.7 | -0.60 | 0 | 0 | 4.42 | 1.30 | 8.00 | 54.7 | 54.7 | -0.60 | -0.60 | 1.73 | 1.10 | 0.36 | 3.99 |



Stellar Parameters For KIC 007918478

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5396^{+194}_{-194} | $4.632^{+0.032}_{-0.104}$ | $-0.480^{+0.300}_{-0.300}$ | $0.702^{+0.119}_{-0.051}$ | $0.784^{+0.082}_{-0.082}$ | $3.194^{+0.469}_{-1.015}$ |
| | +4%/-4% | +1%/-2% | +62%/-62% | +17%/-7% | +10%/-10% | +15%/-32% |
| Source | KIC0 | 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 007918478-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|-------------------------|--------------------------------|
| DV | 188 ± 12 | $1.16^{+0.97}_{-0.75}$ | 1709^{+84}_{-75} | -5225^{+1108}_{-4090} | $-56.436^{+39.249}_{-386.923}$ |
| Alt. | 12 ± 21 | $2.91^{+1.14}_{-1.02}$ | 1708^{+81}_{-74} | -2612^{+4386}_{-409} | $-0.545^{+0.868}_{-1.579}$ |

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 $A_{\text{obs}} \gg 1.0$

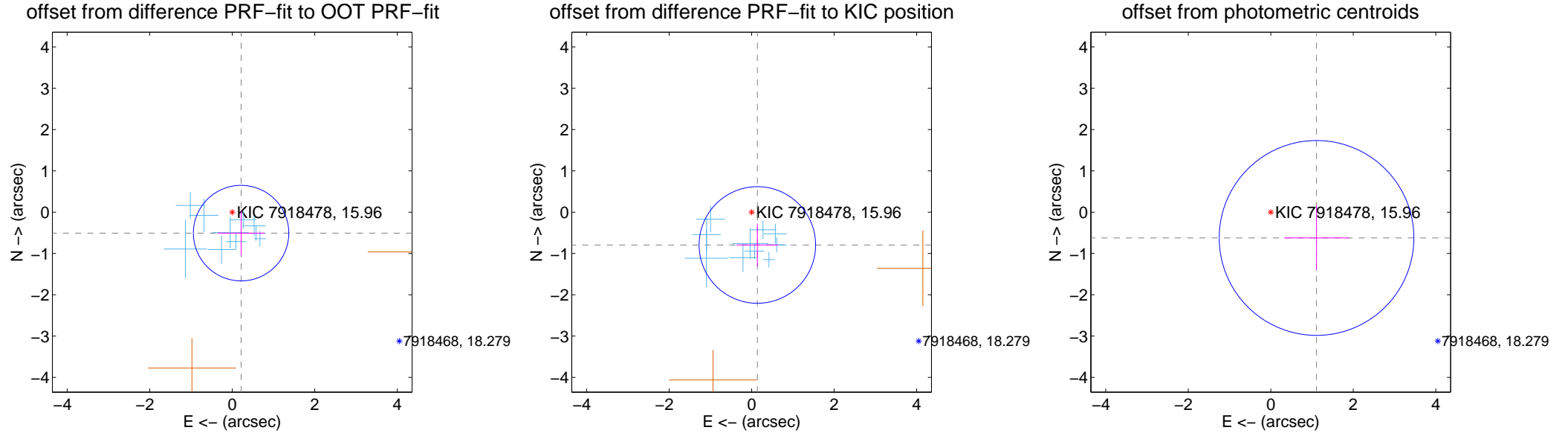
DV Centroid Data

Supplemental centroid analysis for 007918478-02. Kepler magnitude: 15.96. Transit SNR 8.62

There are 10 quarters with good PRF difference image offsets

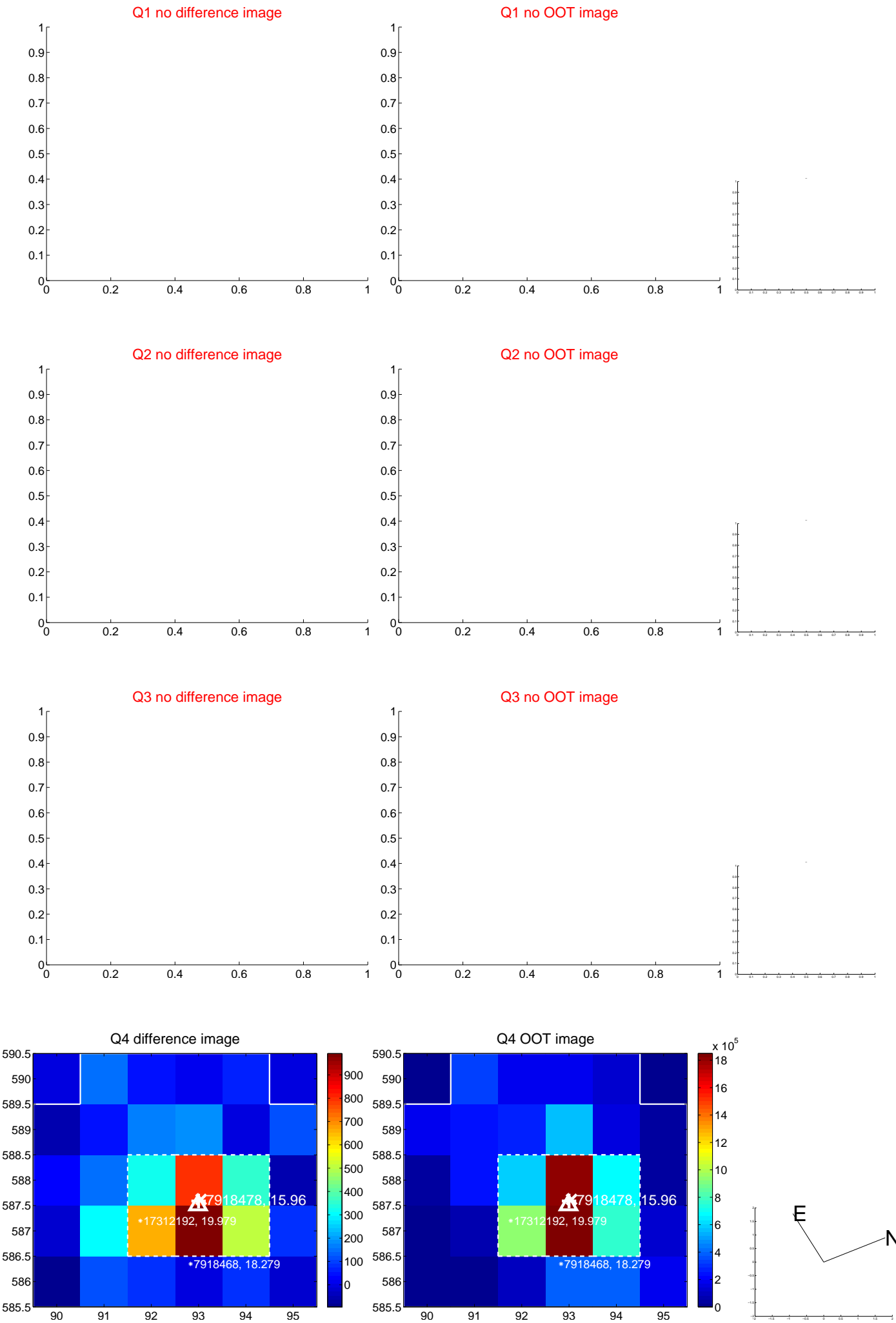
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.551 ± 0.385 | 1.43 | -0.215 ± 0.570 | -0.507 ± 0.532 |
| PRF-fit source offset from KIC position | 0.806 ± 0.471 | 1.71 | -0.139 ± 0.505 | -0.794 ± 0.518 |
| photometric centroid source offset | 1.27 ± 0.79 | 1.62 | -1.11 ± 0.79 | -0.62 ± 0.79 |

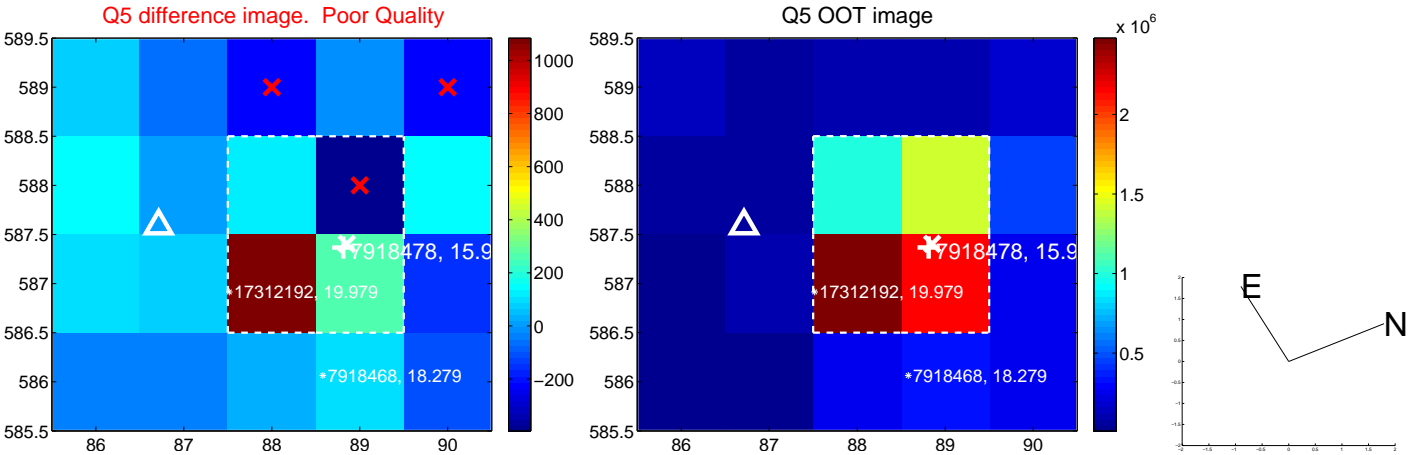


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

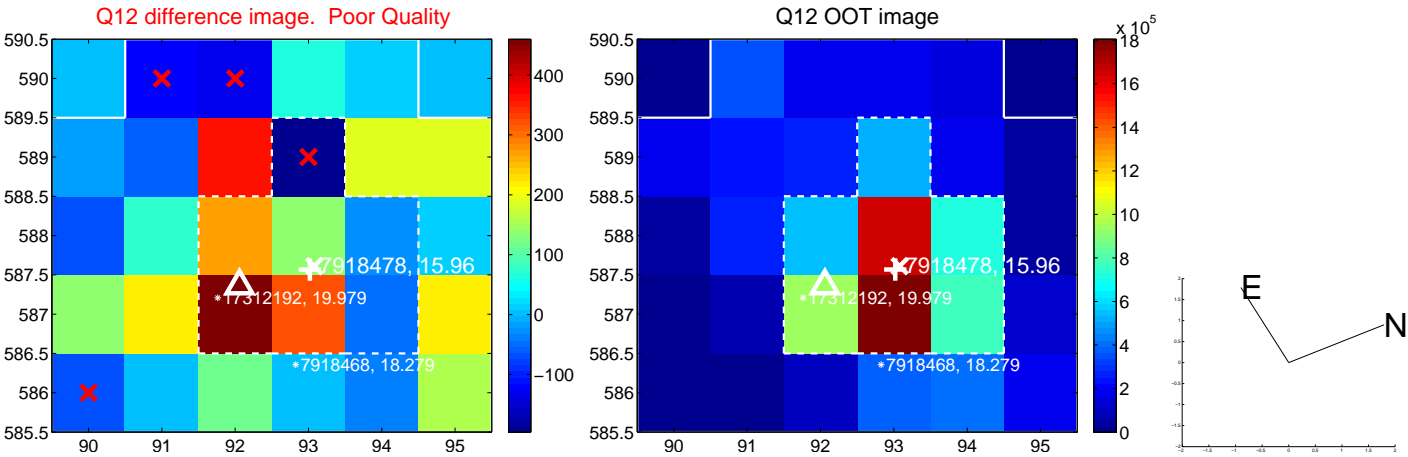
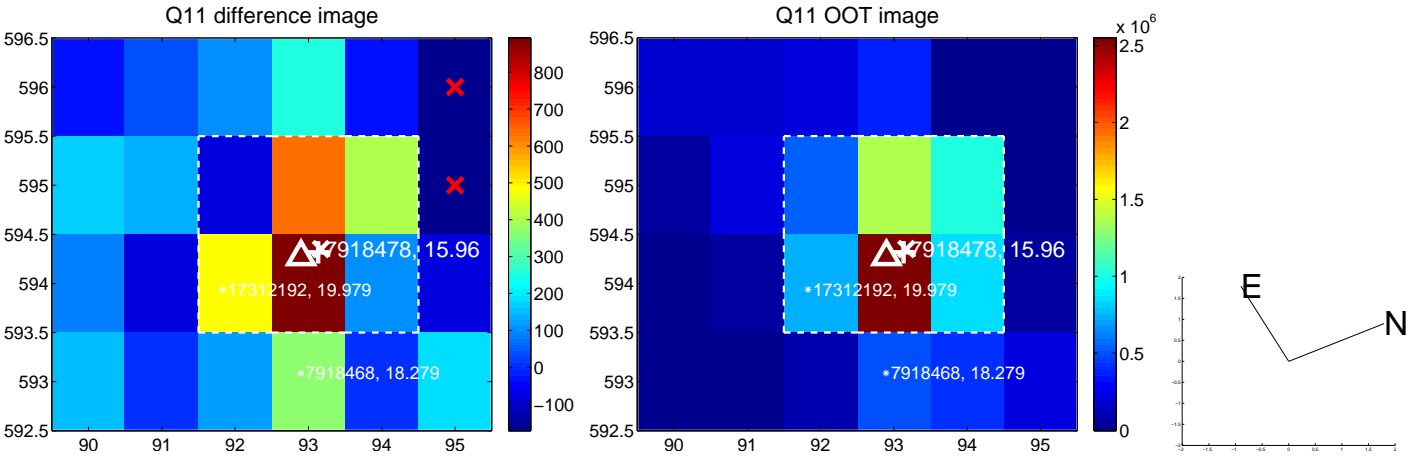
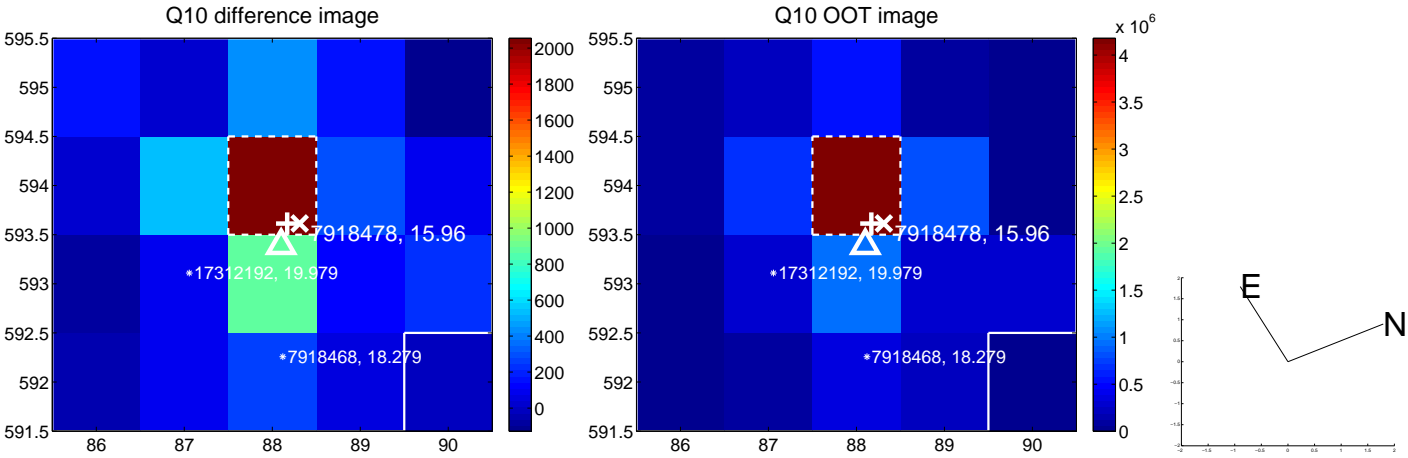
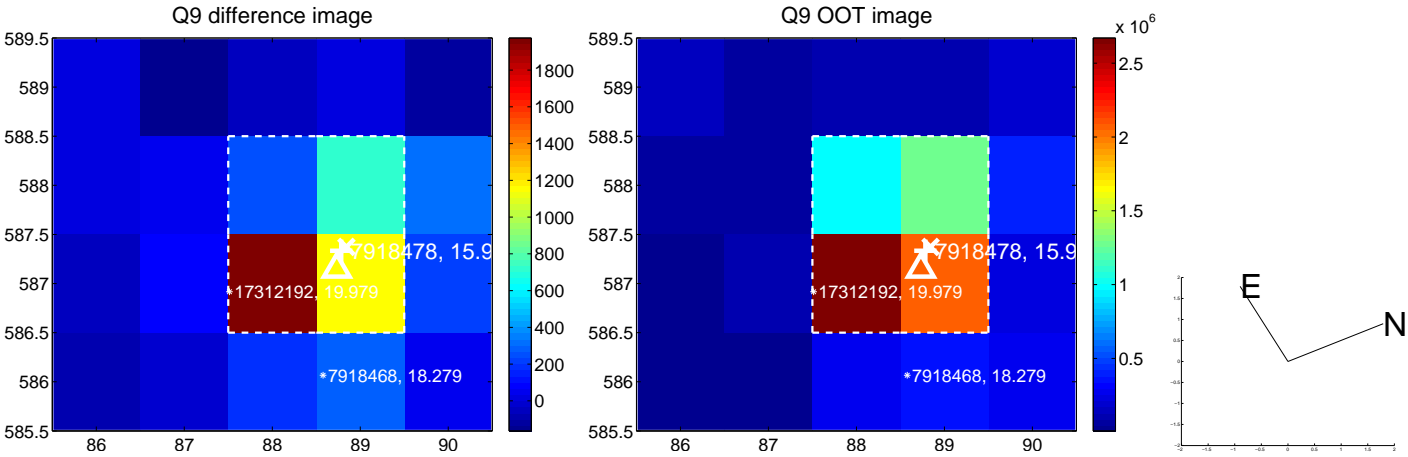
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



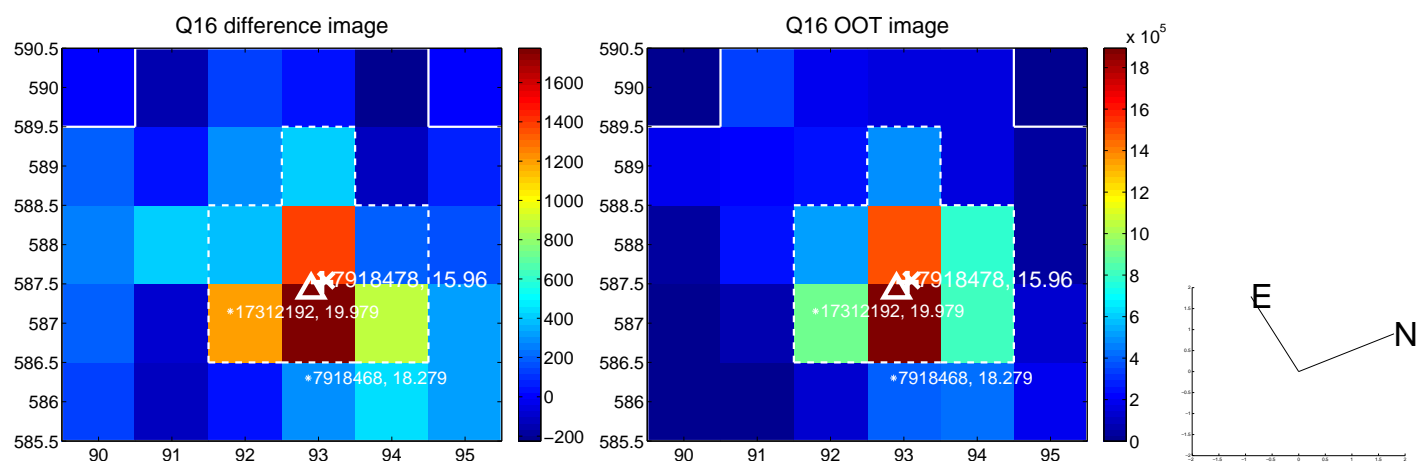
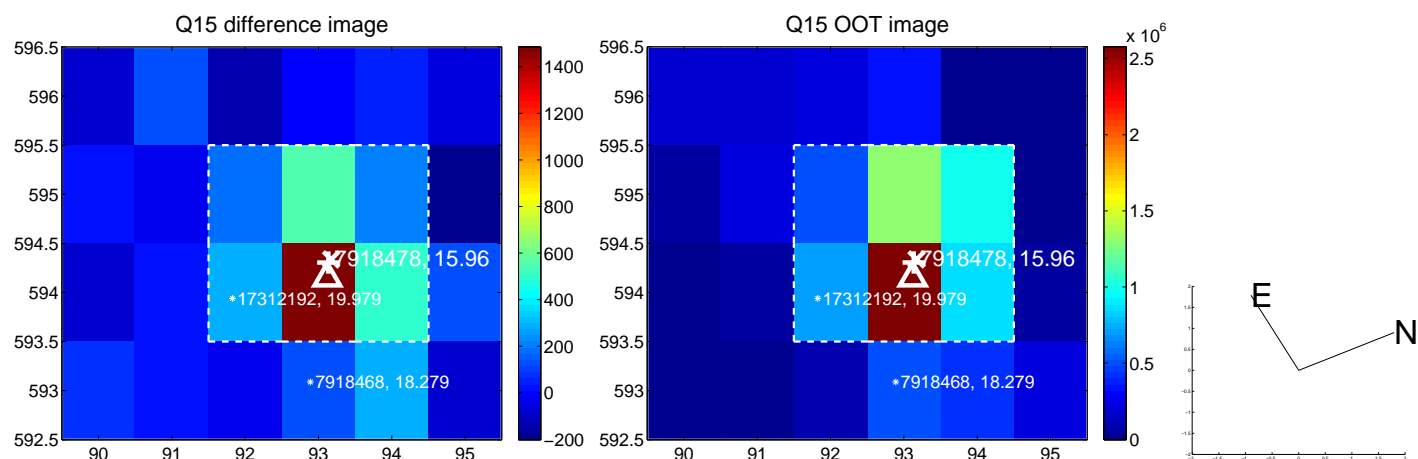
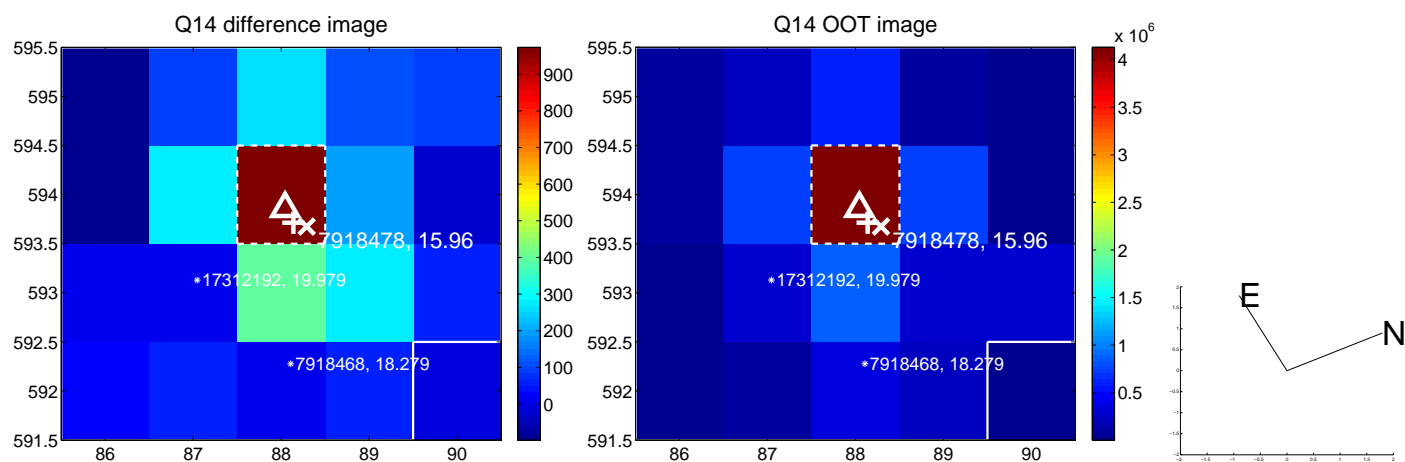
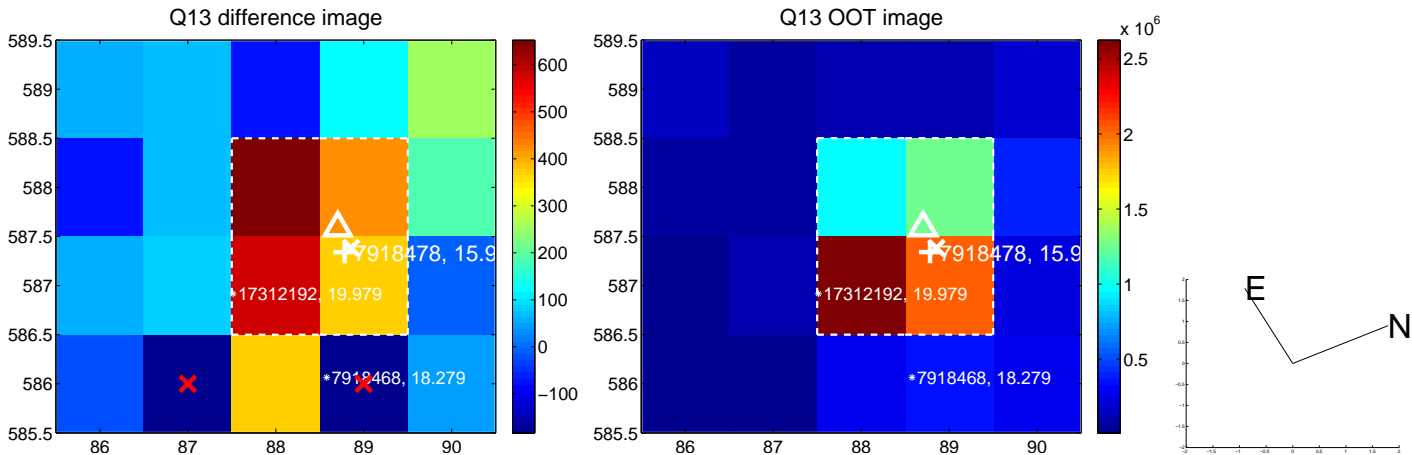
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



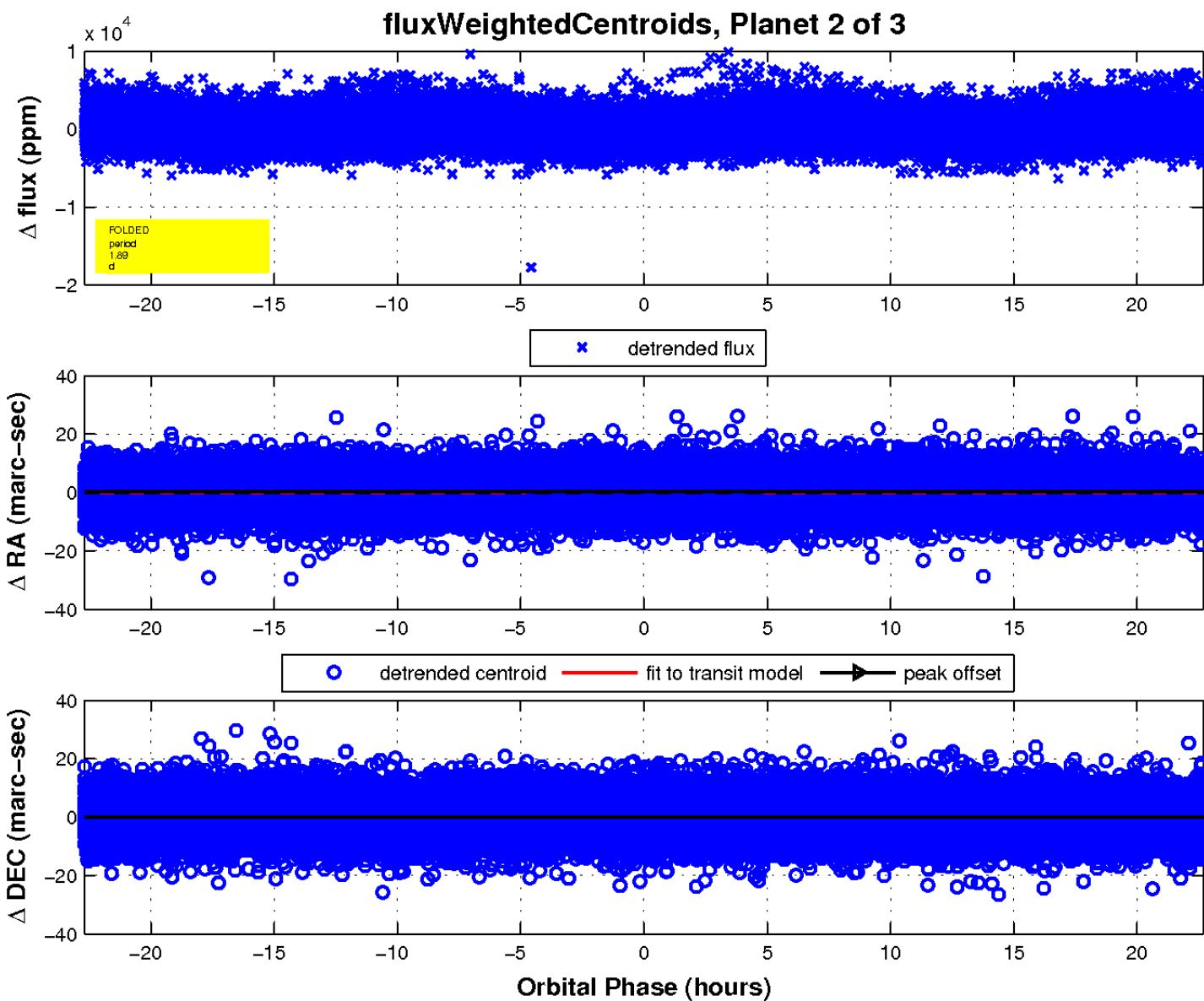
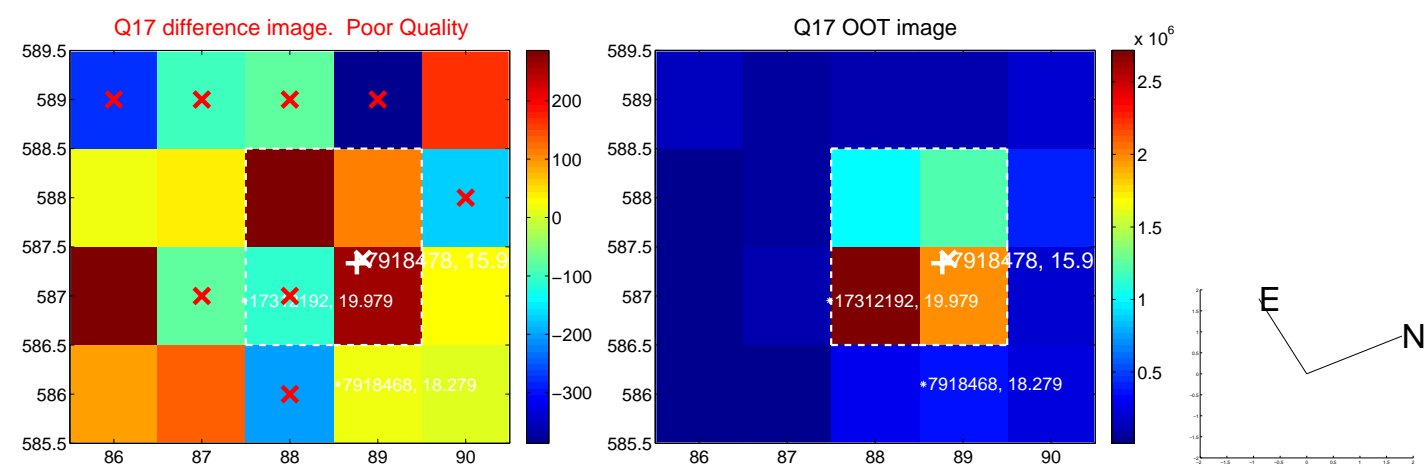
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

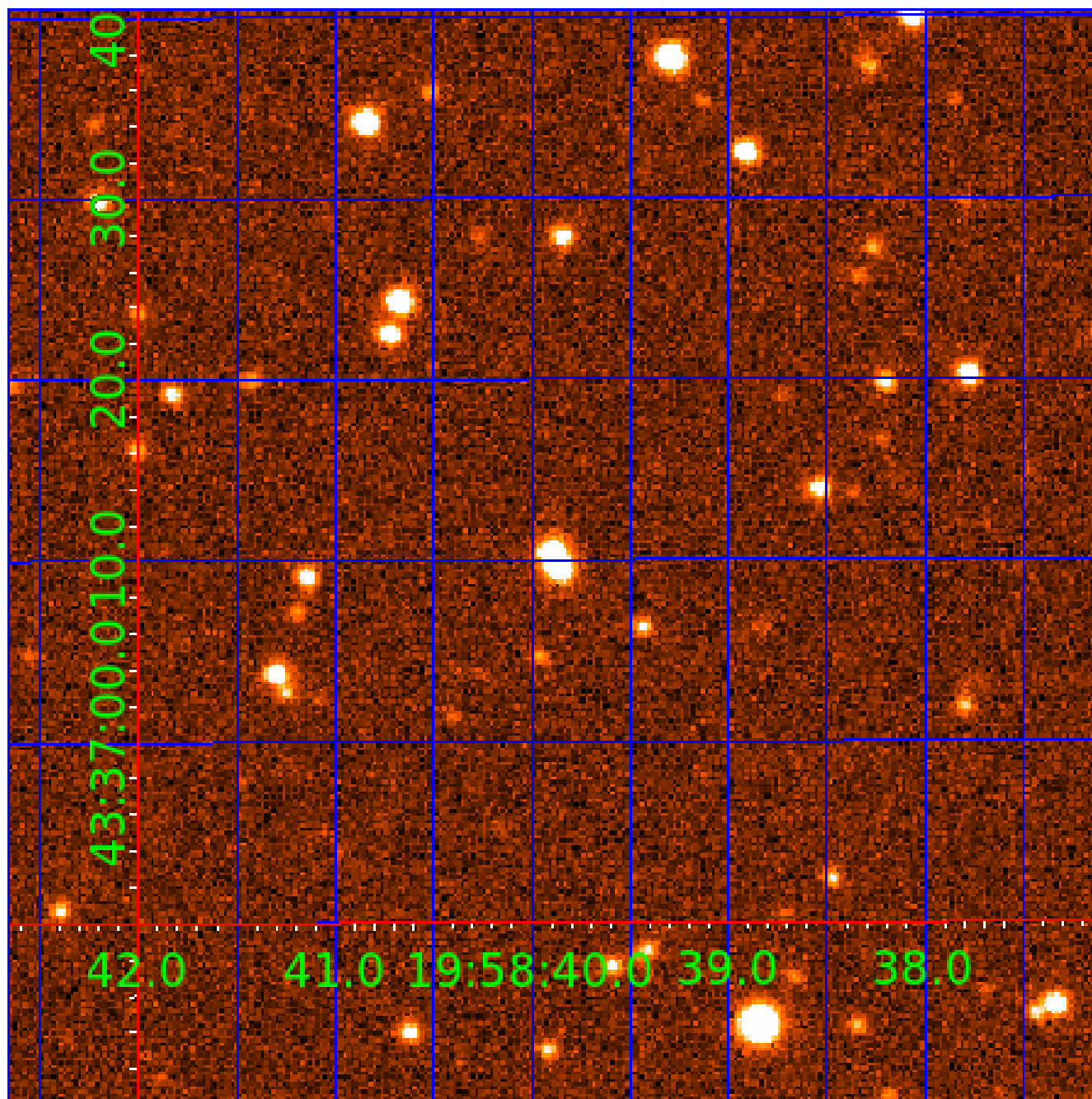


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



UKIRT Image

Declination



KIC 007918478

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007918478-01 | OBS | 4209.01 | 9.909150 | 133.096643 | 951.3 | 2.557 | 14.2 | 14.2 | 0.70 | 5396 | 2.51 | 54.62 |
| 007918478-02 | OBS | No | 1.891787 | 131.602317 | 154.5 | 10.884 | 10.2 | 8.6 | 0.70 | 5396 | 0.88 | 496.87 |
| 007918478-03 | OBS | No | 32.100461 | 155.140085 | 912.5 | 15.216 | 8.3 | 6.1 | 0.70 | 5396 | 2.45 | 11.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007918478-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007918478-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT |
| 007918478-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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.

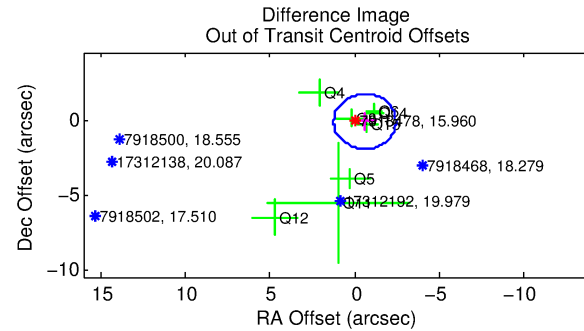
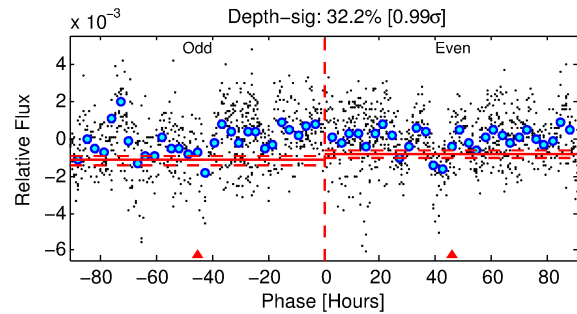
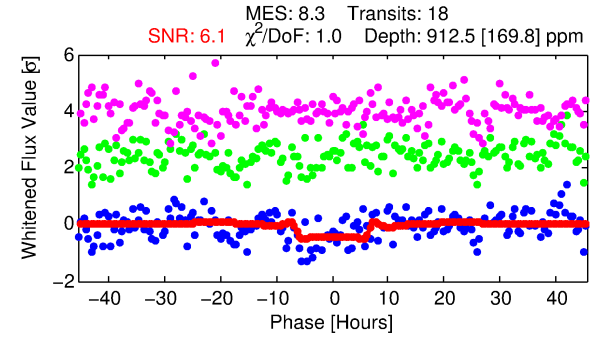
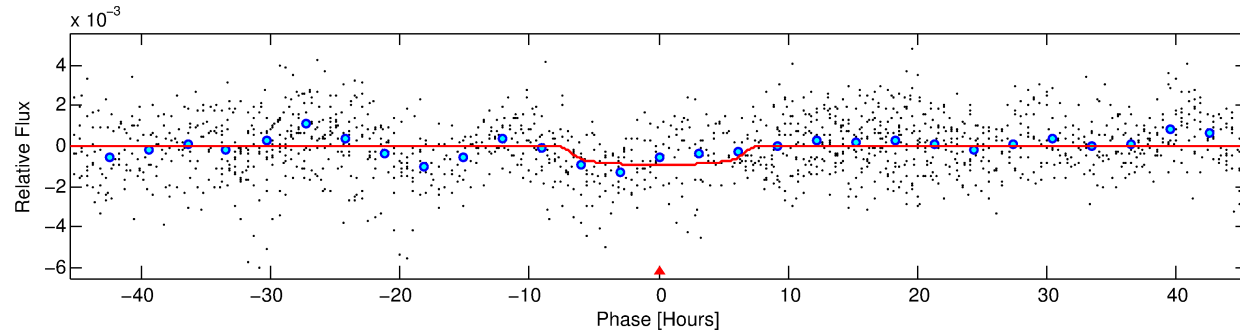
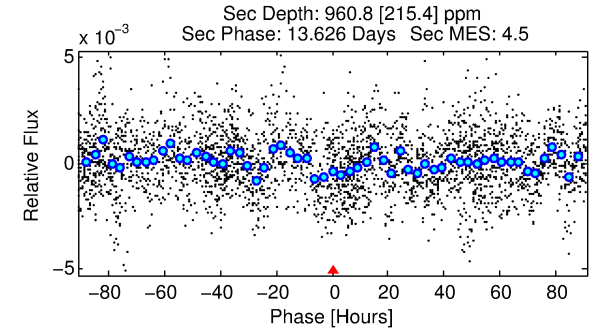
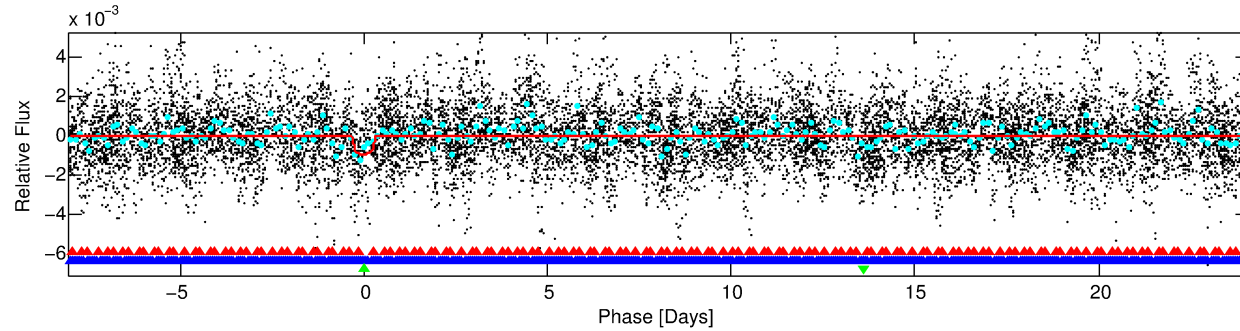
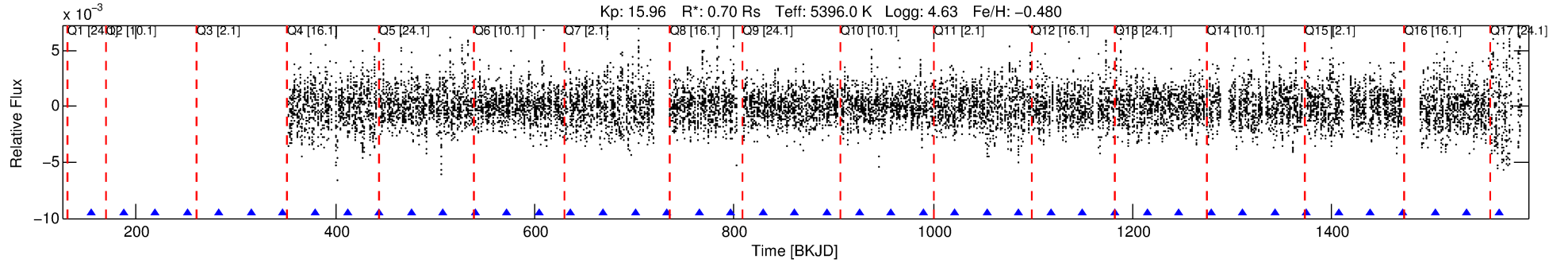
Ephemeris Match Information For 007918478-03

No Significant Match Found

DV One-Page Summary

KIC: 7918478 Candidate: 3 of 3 Period: 32.100 d

KOI: K04209 Corr: No Ephemeris Match



DV Fit Results:

Period = 32.10046 [0.00287] d
Epoch = 155.1401 [0.0847] BKJD
Rp/R* = 0.0320 [0.0046]
a/R* = 9.13 [3.86]
b = 0.86 [0.13]
Seff = 11.40 [2.77]
Teq = 468 [28] K
Rp = 2.45 [0.55] Re
a = 0.1812 [0.0251] AU
Ag = 2884.93 [1195.16] [2.41σ]
Teffp = 5309 [521] K [9.28σ]

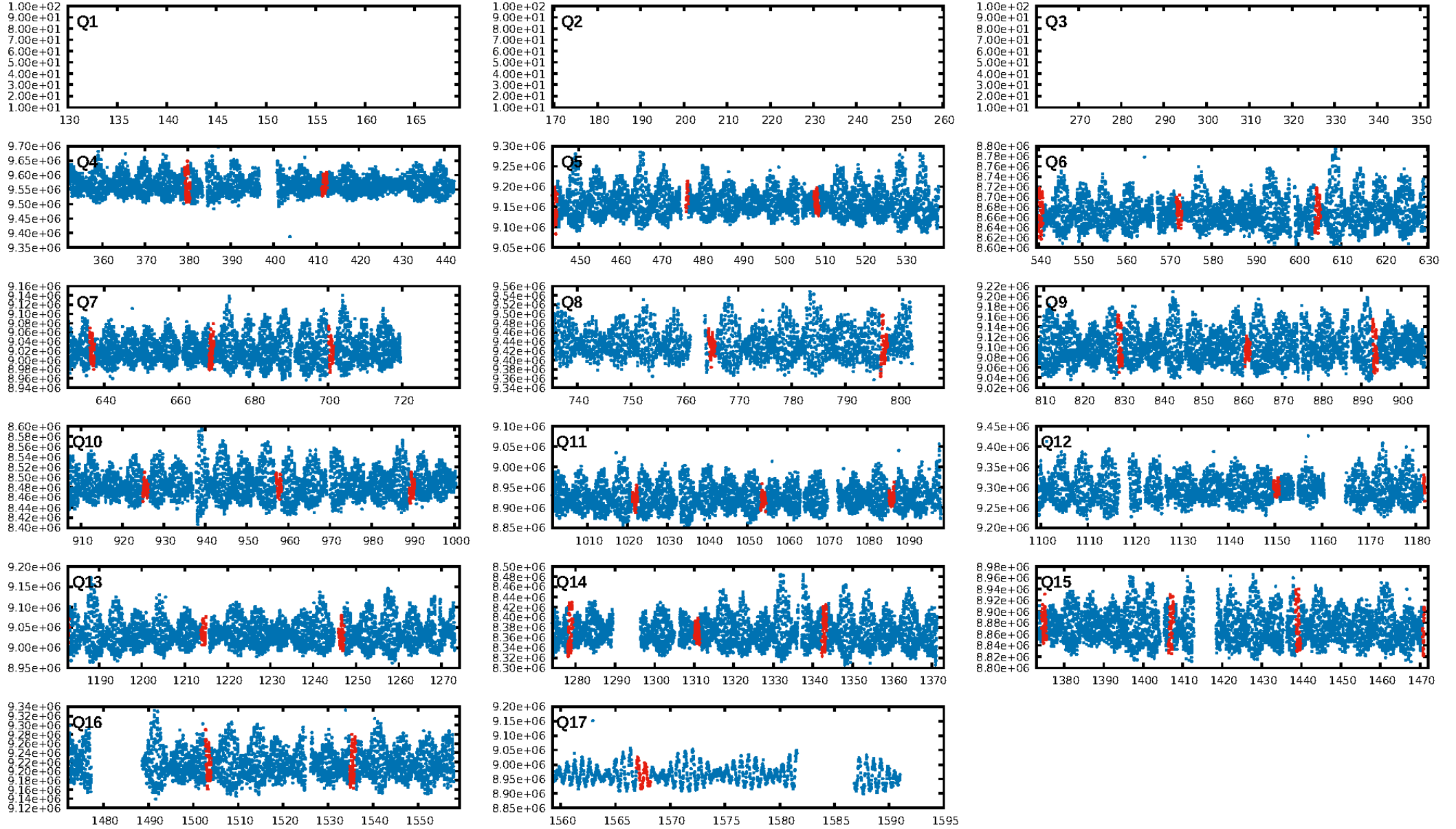
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.52σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.79e-11
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: -3.036
Centroid-sig: 54.0%
Centroid-so: 0.976 arcsec [1.96σ]
OotOffset-rm: 0.609 arcsec [1.00σ]
OotOffset-st: 2/2/3/1 [8]
KicOffset-rm: 0.606 arcsec [1.02σ]
KicOffset-st: 2/2/3/1 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/13]

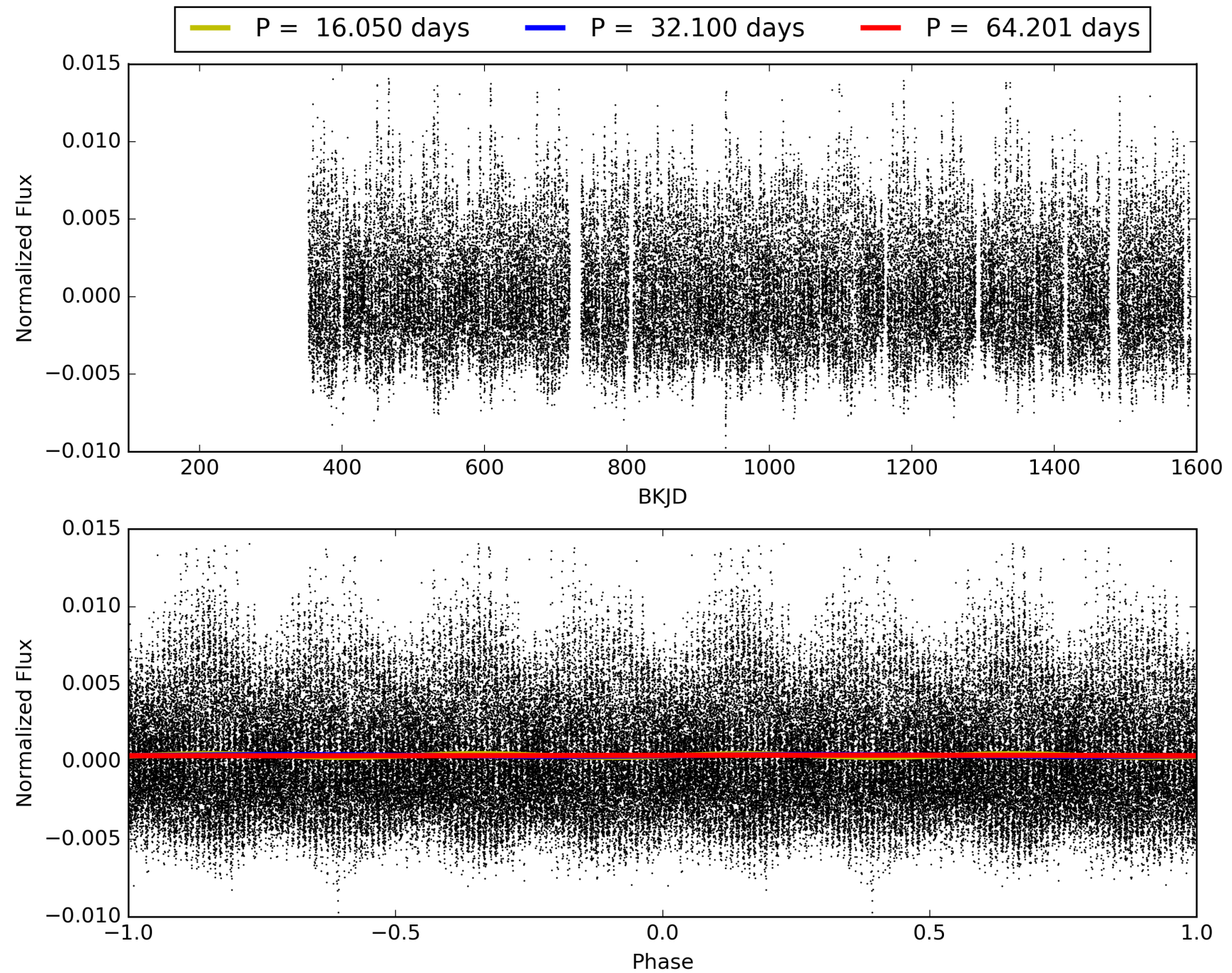
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:58:27 Z

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

TCE 007918478-03, PDC Light Curves

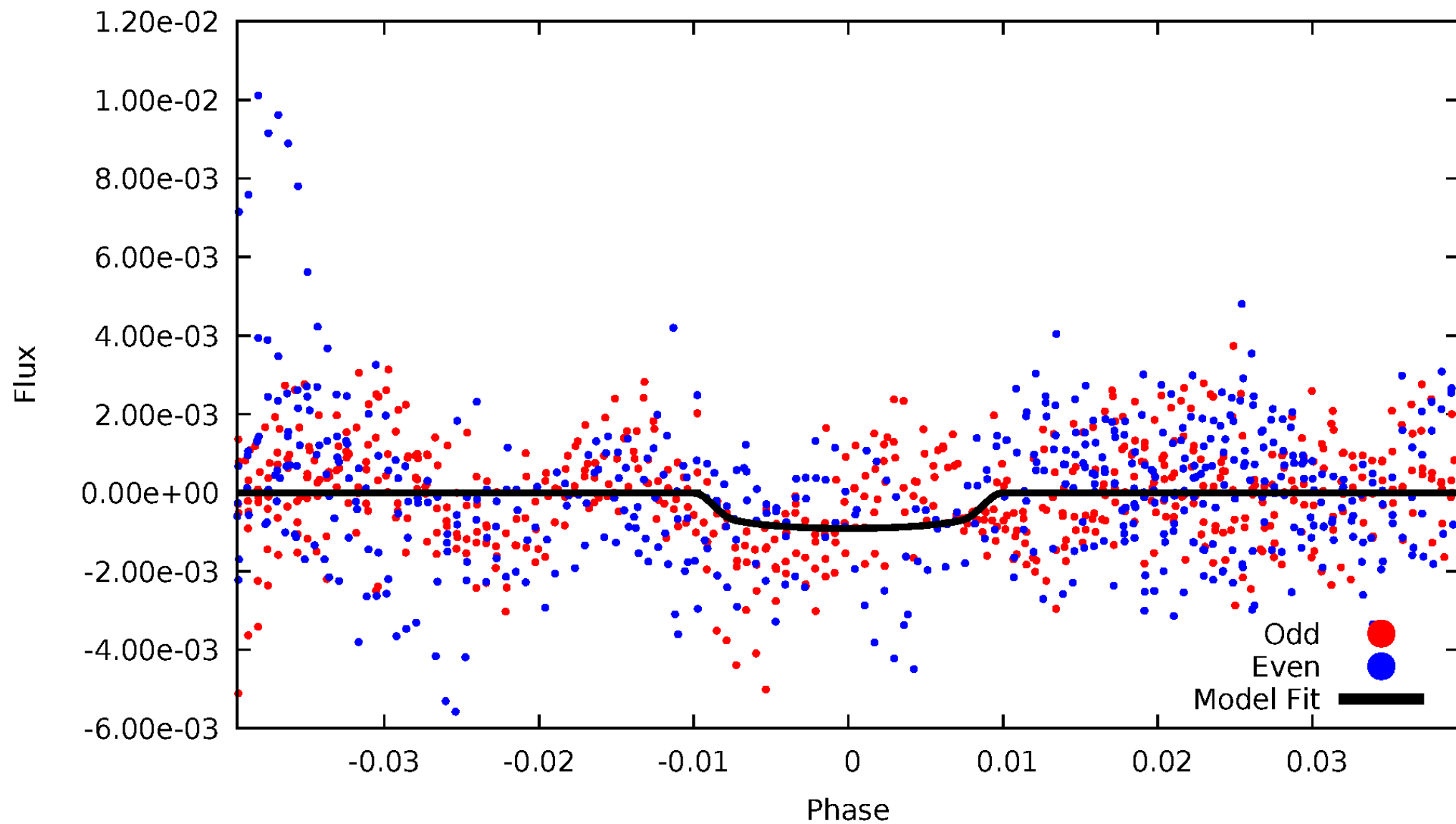


TCE 007918478-03



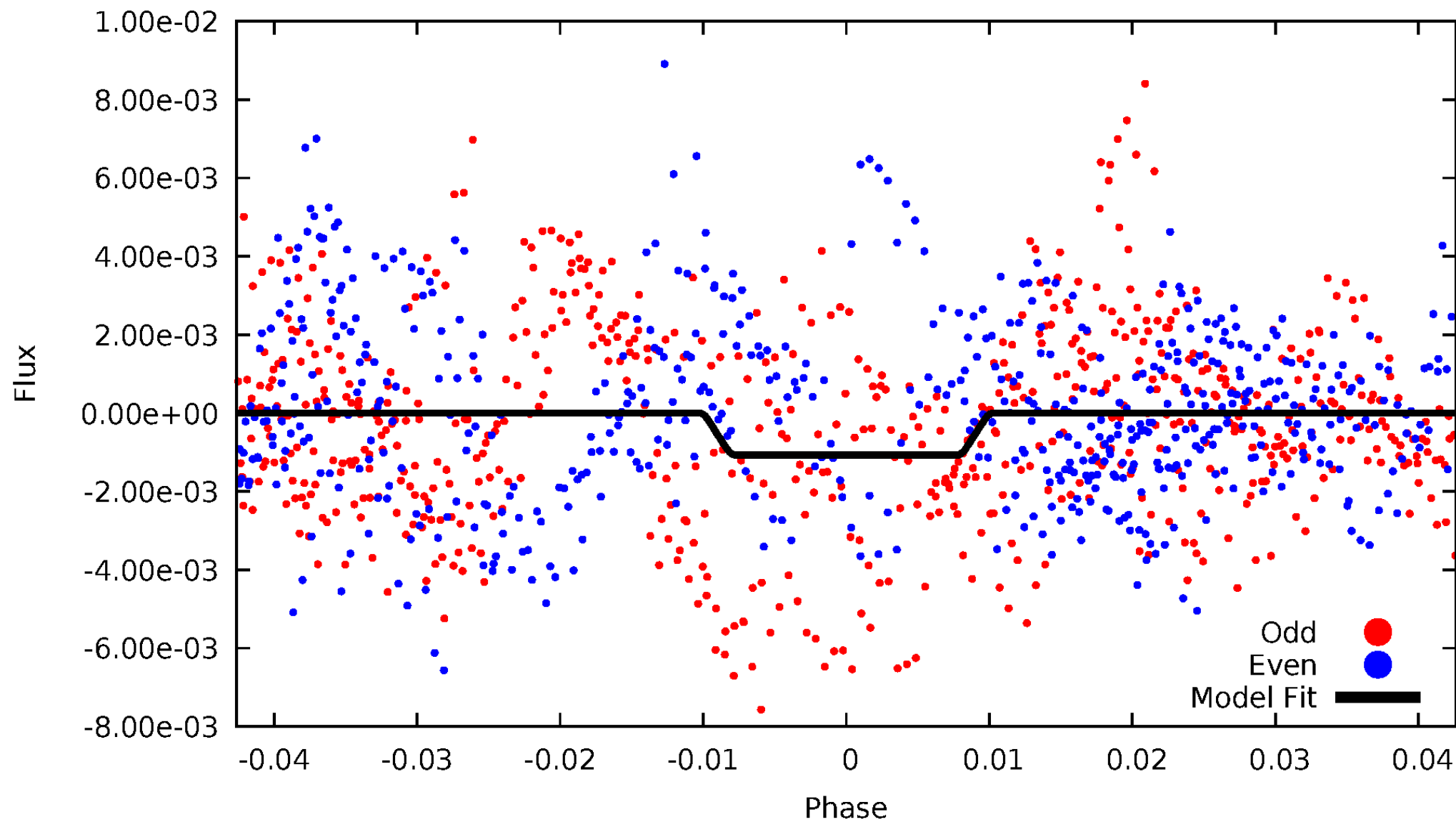
DV Odd/Even

TCE 007918478-03



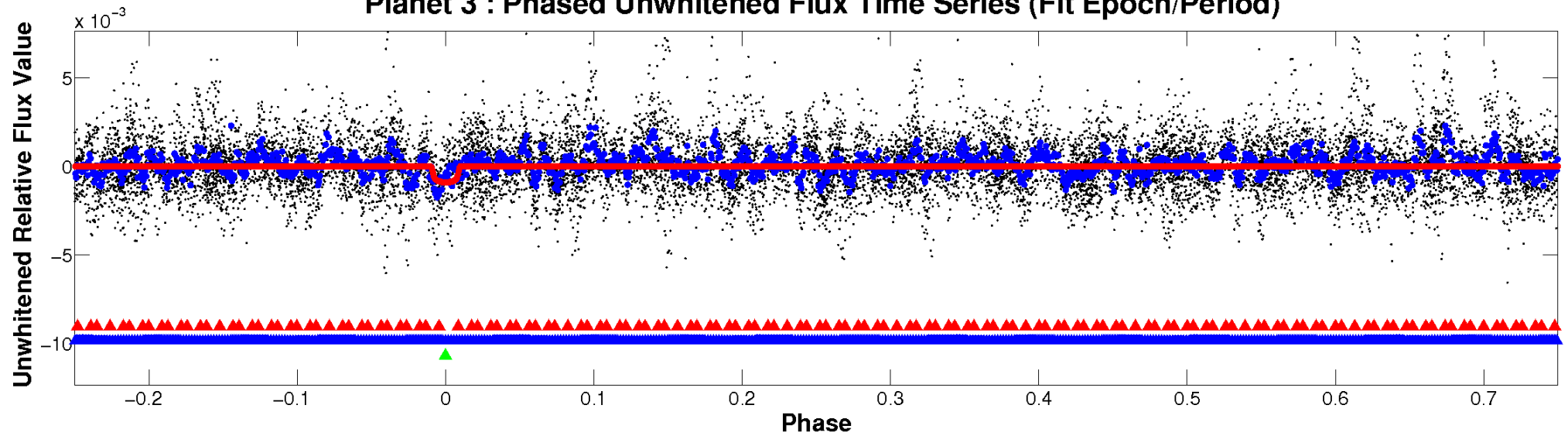
ALT Odd/Even

TCE 007918478-03

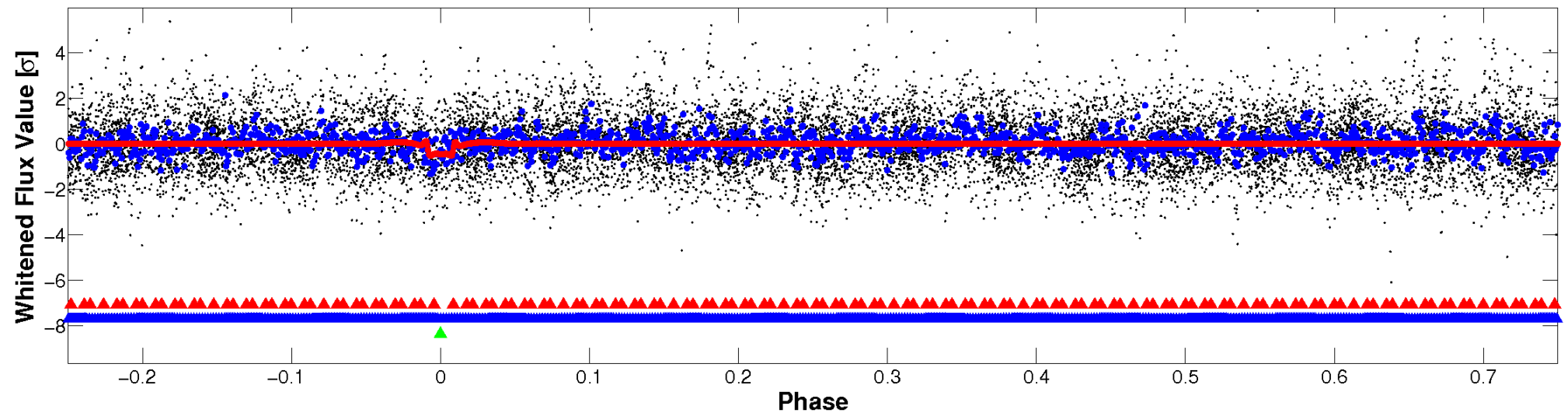


Non-Whitened Vs. Whitened Light Curve

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

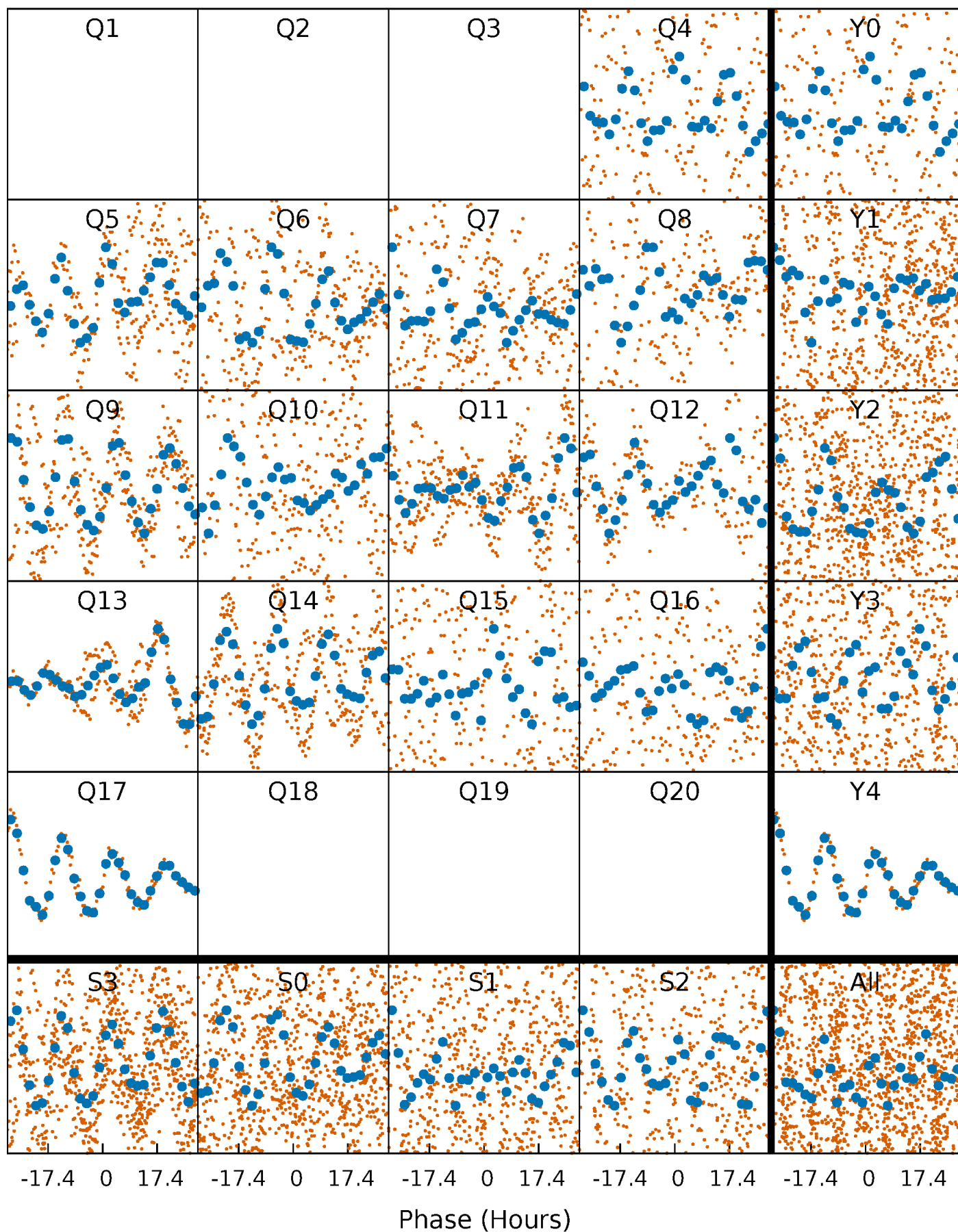


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



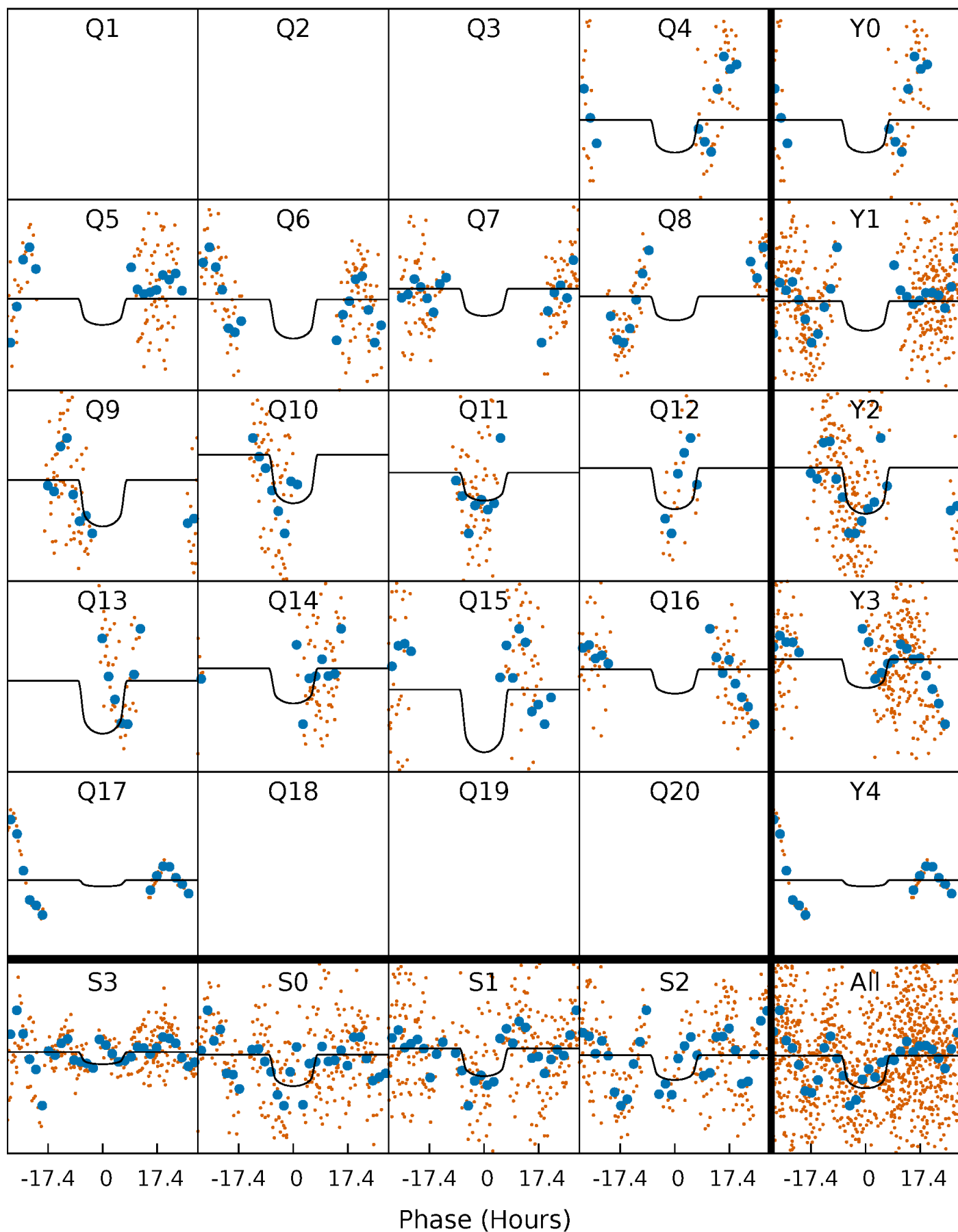
PDC Quarter-Phased Transit Curves

TCE 007918478-03 P= 32.100461 Days $T_0=155.140085$ (BKJD)



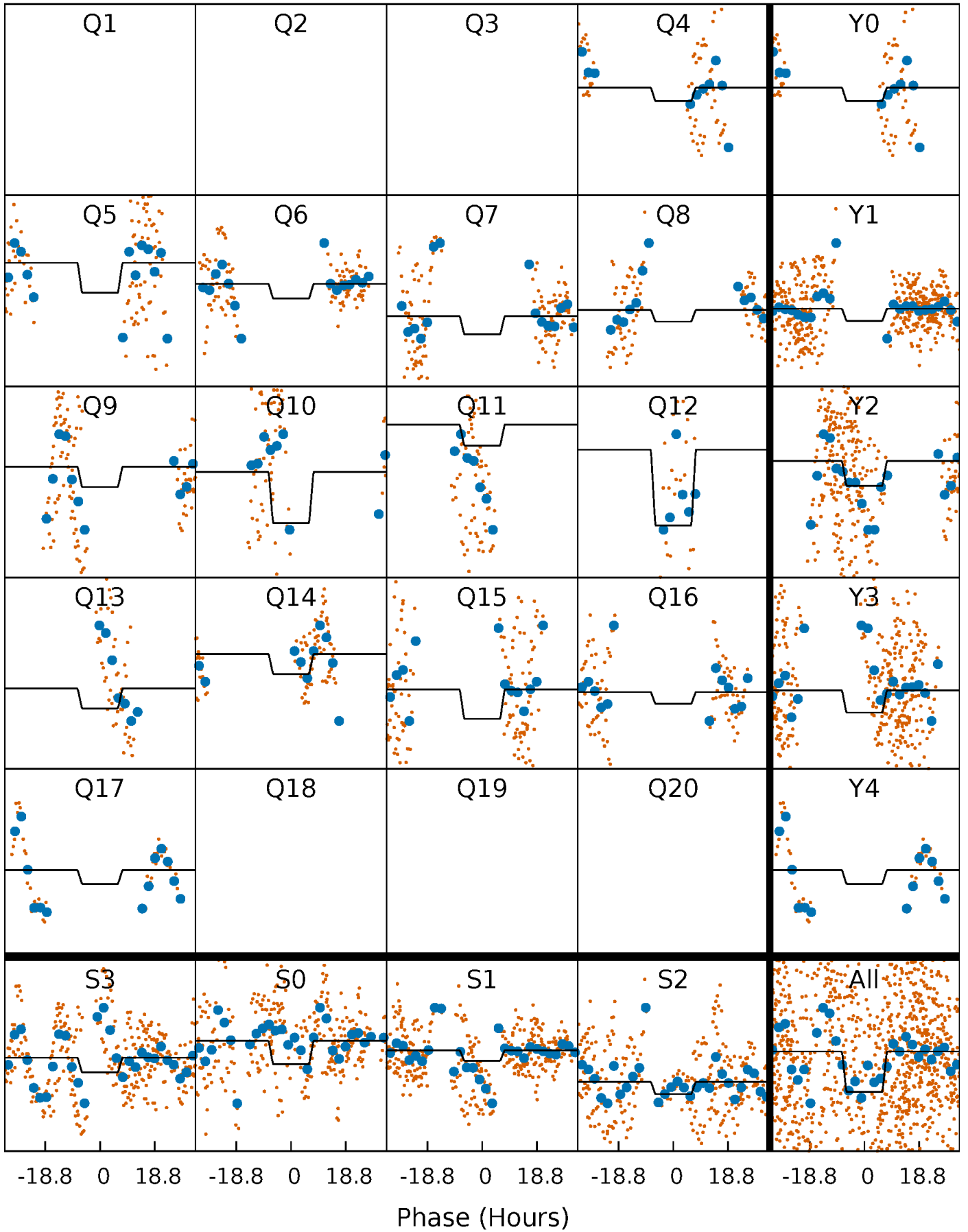
DV Quarter-Phased Transit Curves

TCE 007918478-03 P= 32.100461 Days $T_0=155.140085$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

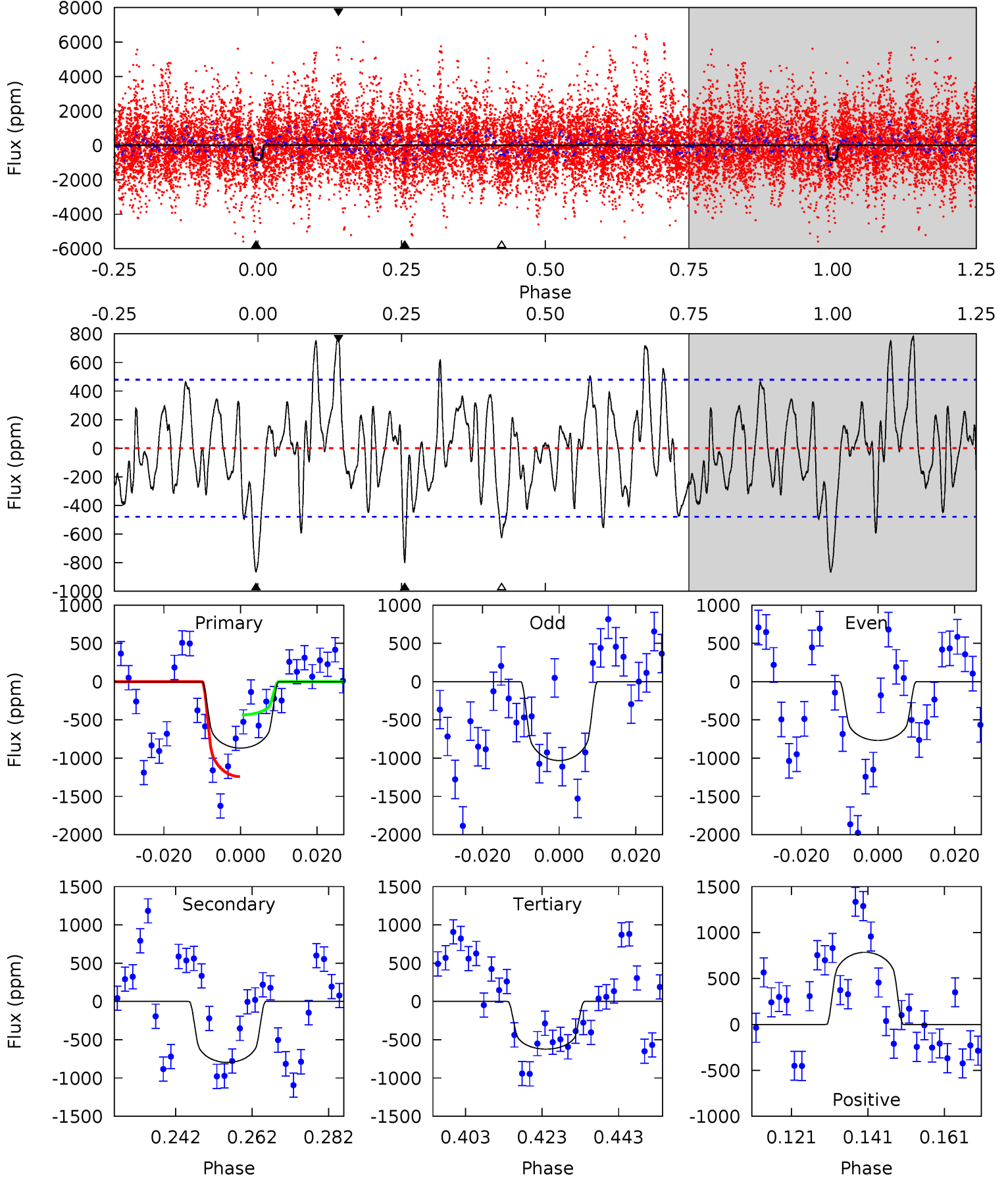
TCE 007918478-03 P= 32.097691 Days $T_0=155.240231$ (BKJD)



DV Model-Shift Uniqueness Test

007918478-03, P = 32.100461 Days, E = 155.140085 Days

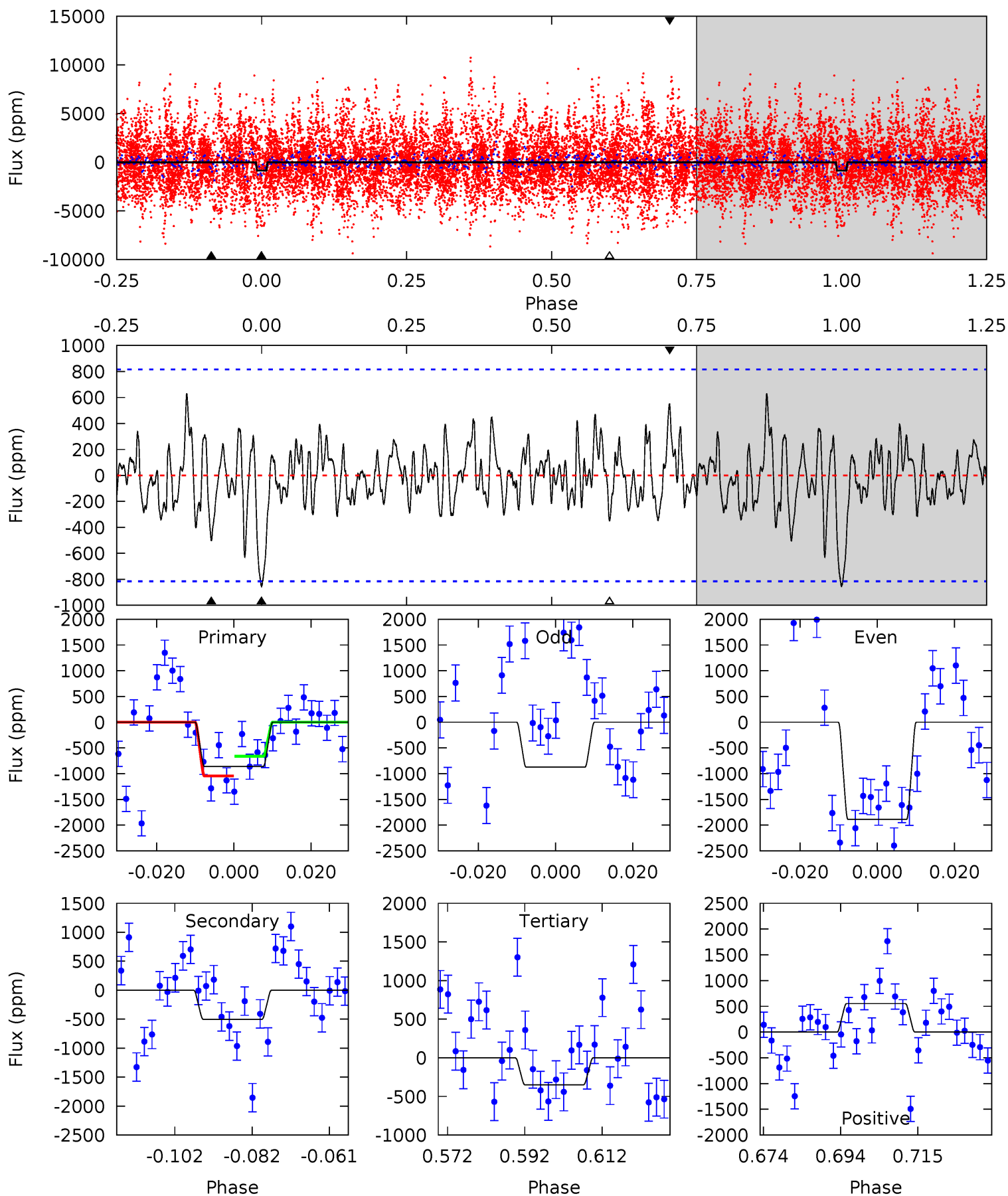
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.86 | 8.13 | 6.36 | 8.01 | 4.89 | 2.32 | 2.77 | 2.51 | 0.85 | 1.78 | 0.12 | 1.30 | 1.43 | 0.47 | 4.13 |



Alt Model-Shift Uniqueness Test

007918478-03, P = 32.097691 Days, E = 155.240231 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.15 | 3.01 | 2.09 | 3.32 | 4.89 | 2.32 | 1.11 | 3.06 | 1.83 | 0.92 | -0.31 | 2.93 | 1.33 | 0.42 | 1.15 |



Stellar Parameters For KIC 007918478

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5396^{+194}_{-194} | $4.632^{+0.032}_{-0.104}$ | $-0.480^{+0.300}_{-0.300}$ | $0.702^{+0.119}_{-0.051}$ | $0.784^{+0.082}_{-0.082}$ | $3.194^{+0.469}_{-1.015}$ |
| | +4%/-4% | +1%/-2% | +62%/-62% | +17%/-7% | +10%/-10% | +15%/-32% |
| Source | KIC0 | 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 007918478-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|----------------|------------------------|-------------------|----------------------|----------------------|
| DV | -797 ± 98 | $2.53^{+0.46}_{-0.40}$ | 664^{+33}_{-30} | 5088^{+451}_{-359} | 2265^{+935}_{-707} |
| Alt. | -502 ± 167 | $2.61^{+0.41}_{-0.42}$ | 664^{+33}_{-29} | 4562^{+453}_{-424} | 1325^{+734}_{-505} |

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 $A_{obs} \gg 1.0$

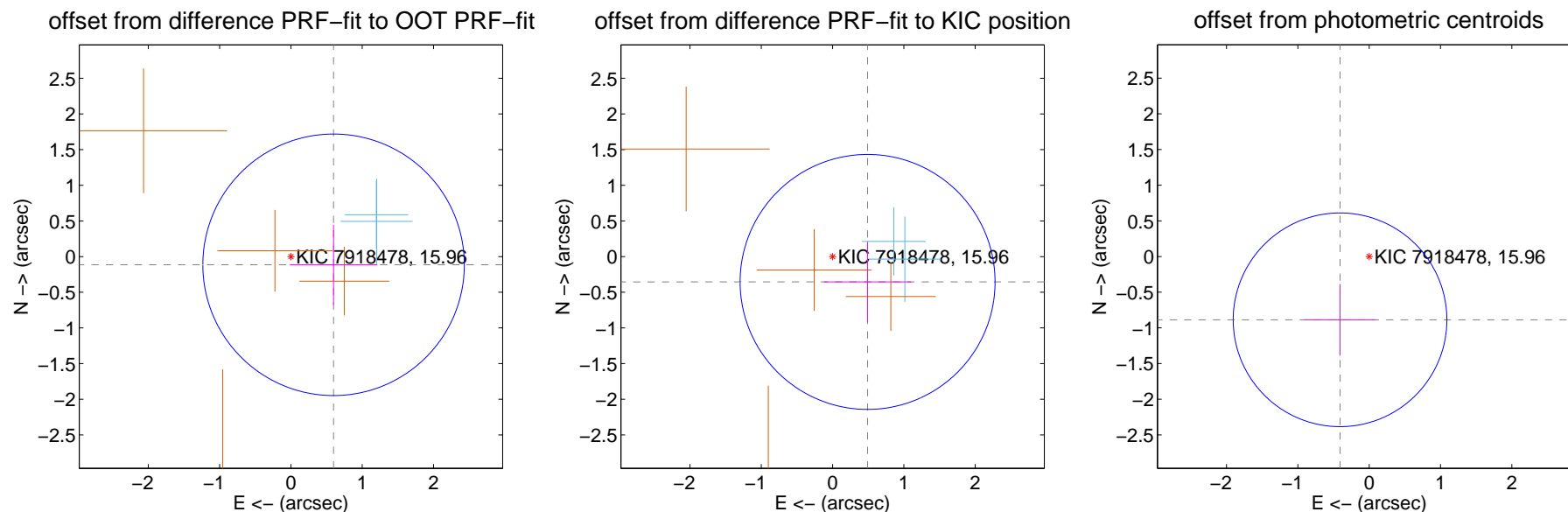
DV Centroid Data

Supplemental centroid analysis for 007918478-03. Kepler magnitude: 15.96. Transit SNR 6.11

There are 2 quarters with good PRF difference image offsets

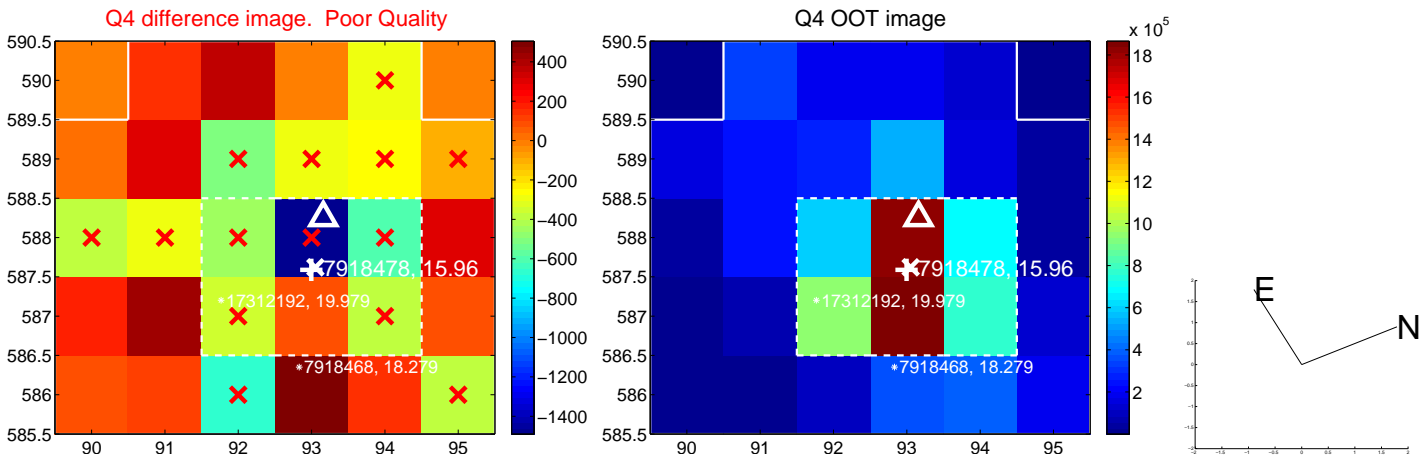
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.609 ± 0.611 | 1.00 | -0.598 ± 0.613 | -0.115 ± 0.562 |
| PRF-fit source offset from KIC position | 0.606 ± 0.596 | 1.02 | -0.491 ± 0.613 | -0.355 ± 0.562 |
| photometric centroid source offset | 0.98 ± 0.50 | 1.96 | 0.41 ± 0.50 | -0.89 ± 0.50 |

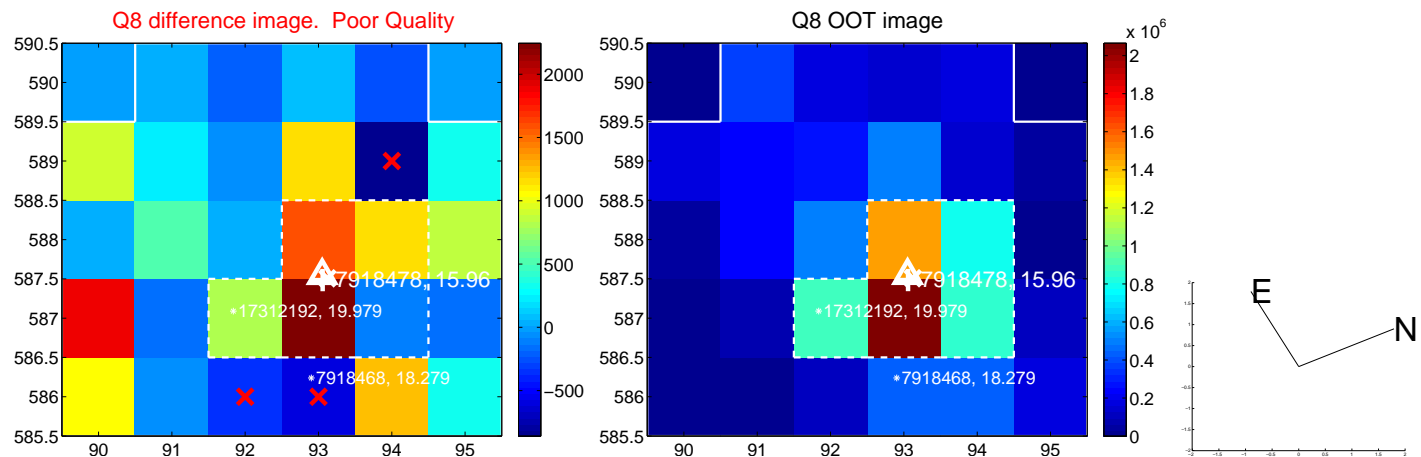
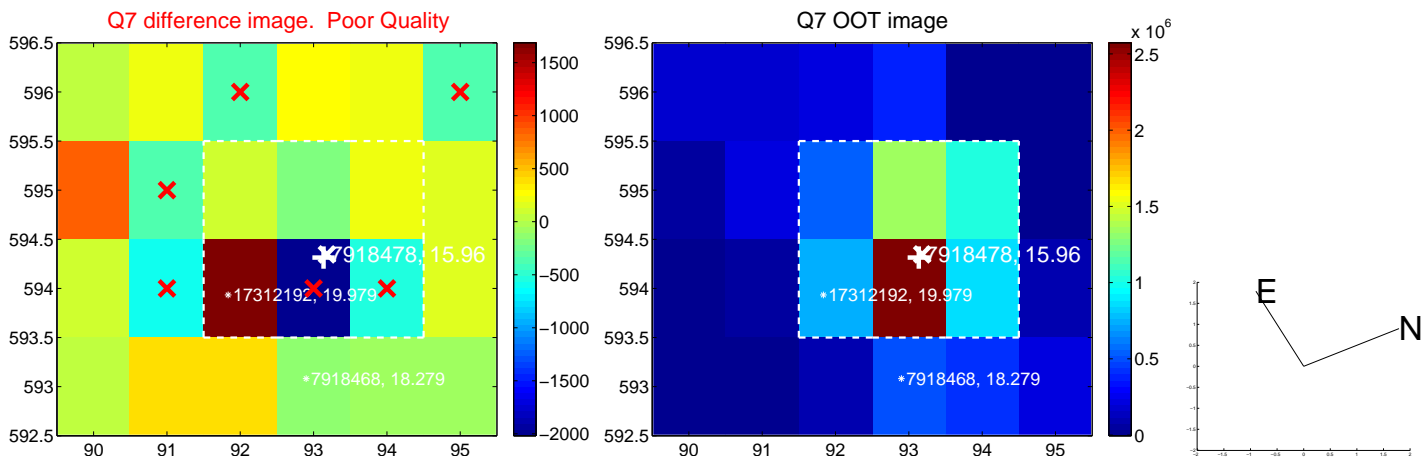
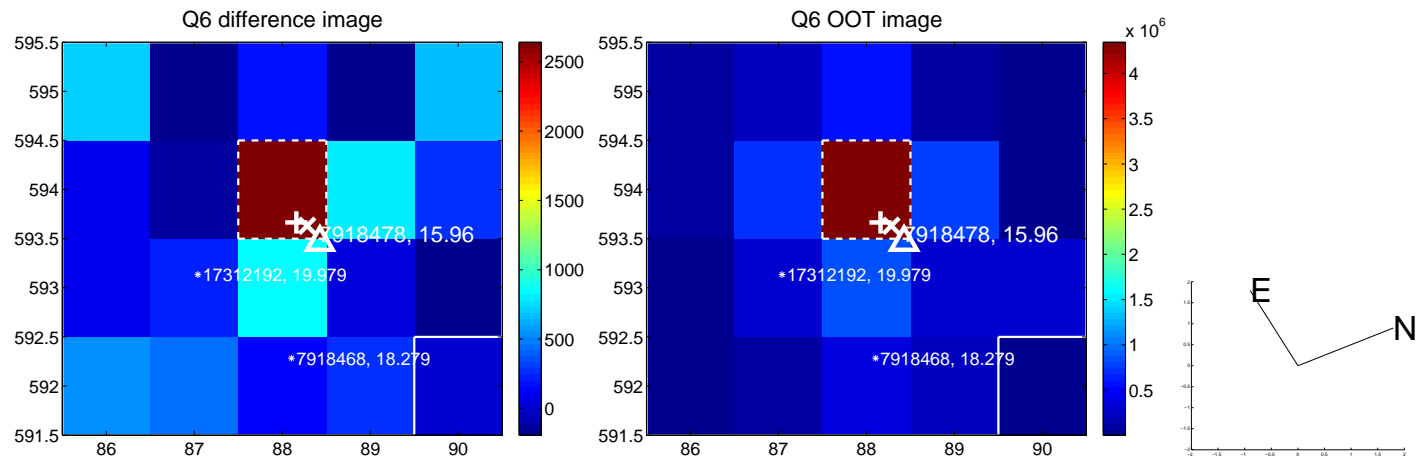
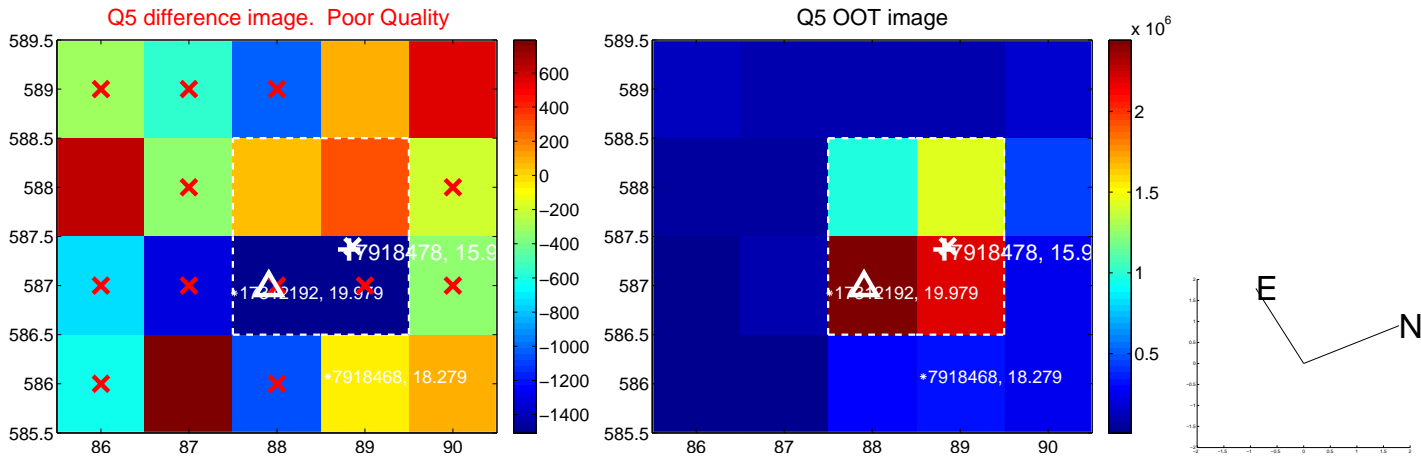


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

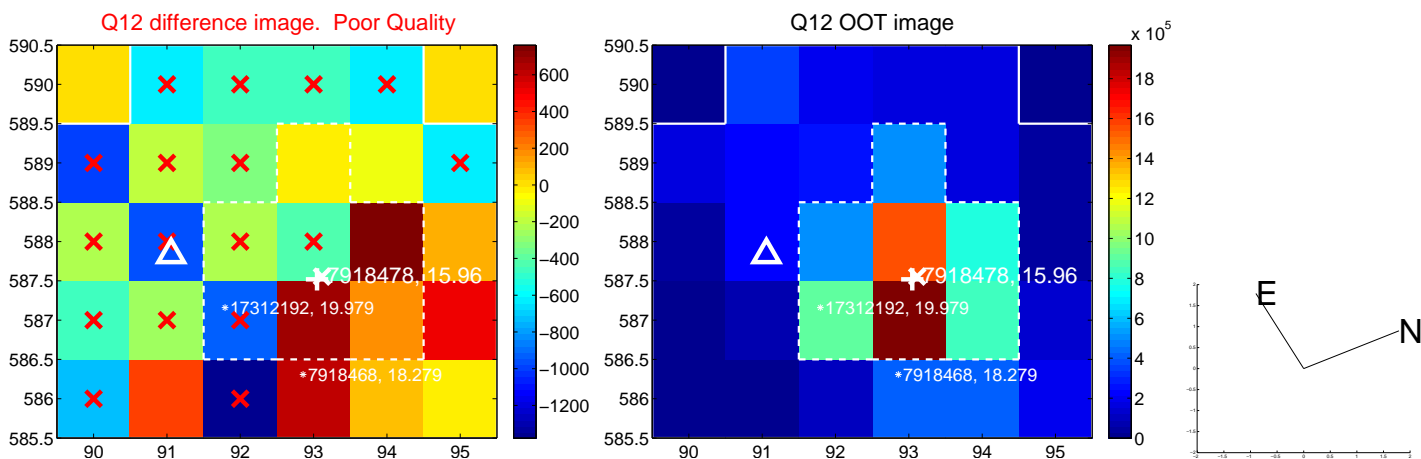
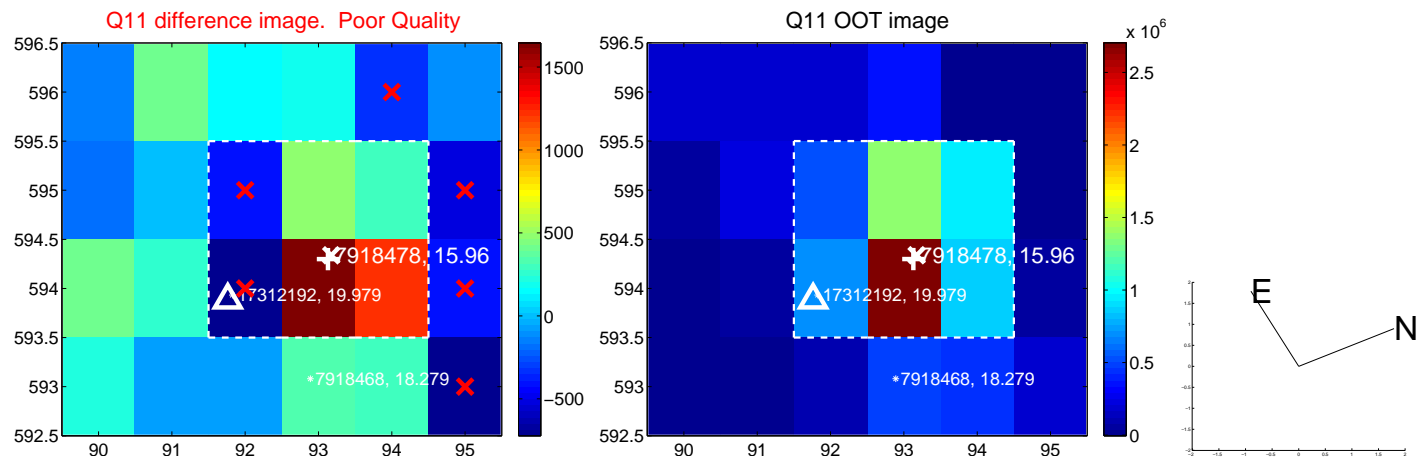
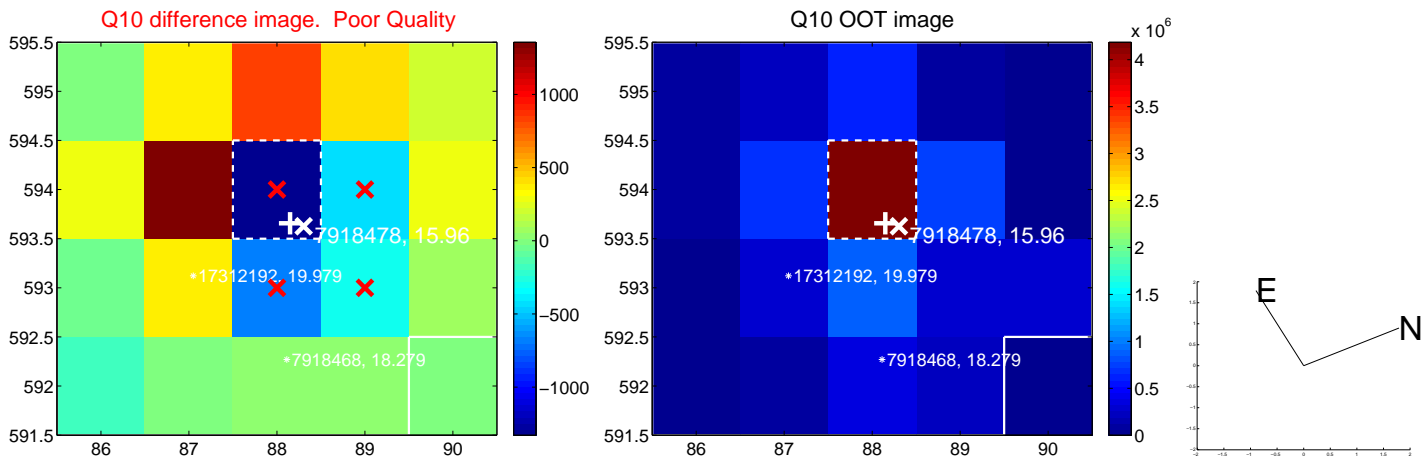
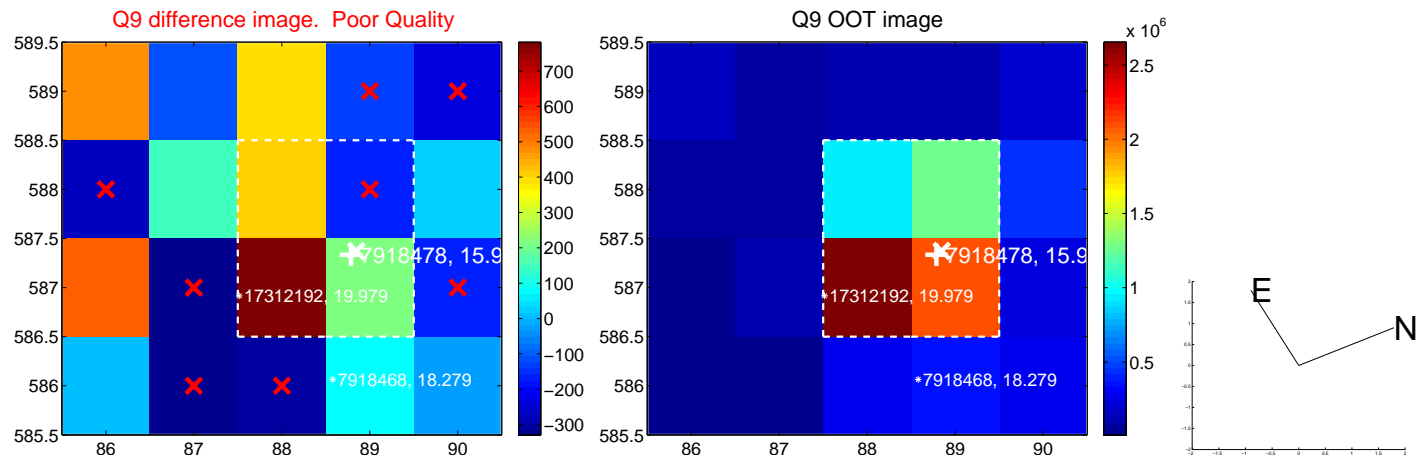
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.

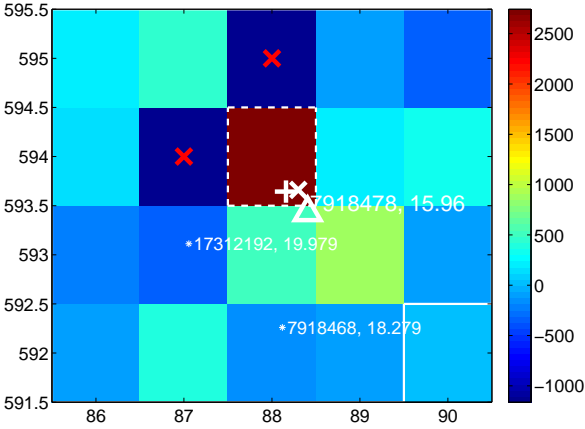
Q13 no difference image



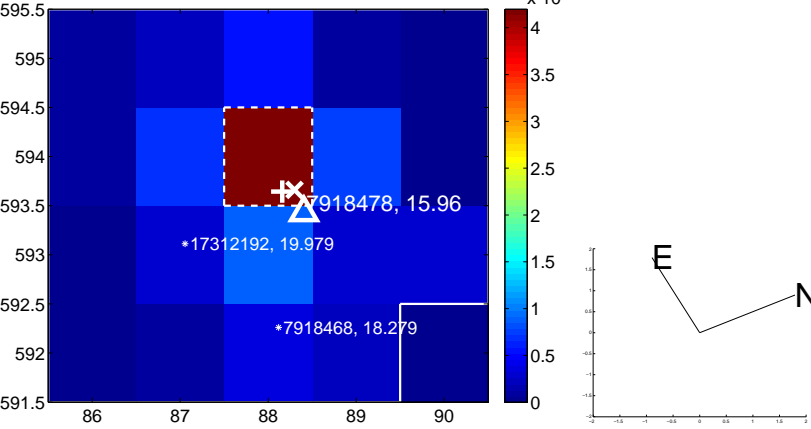
Q13 no OOT image



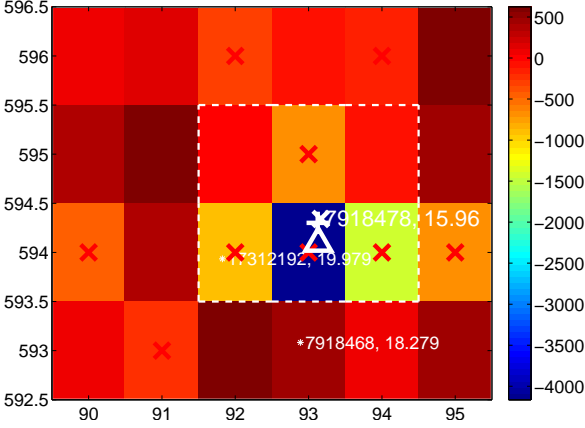
Q14 difference image



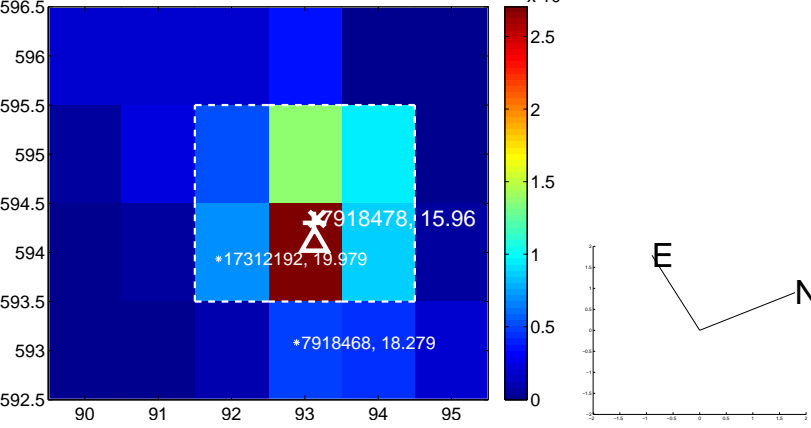
Q14 OOT image



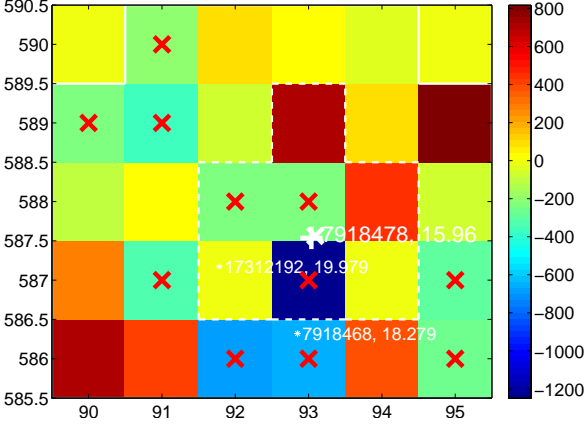
Q15 difference image. Poor Quality



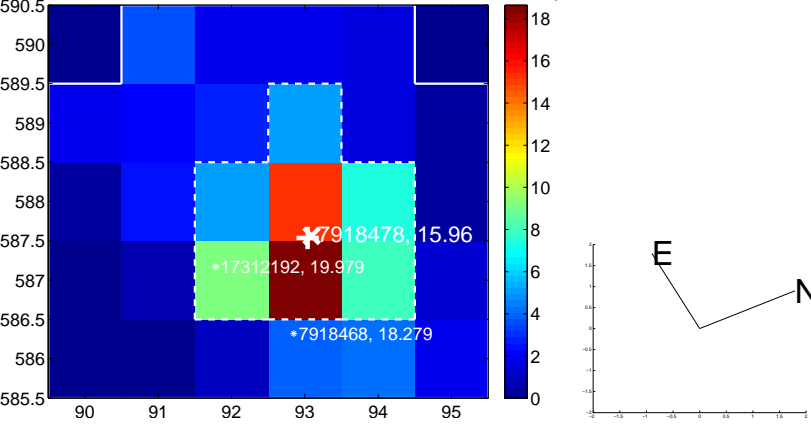
Q15 OOT image



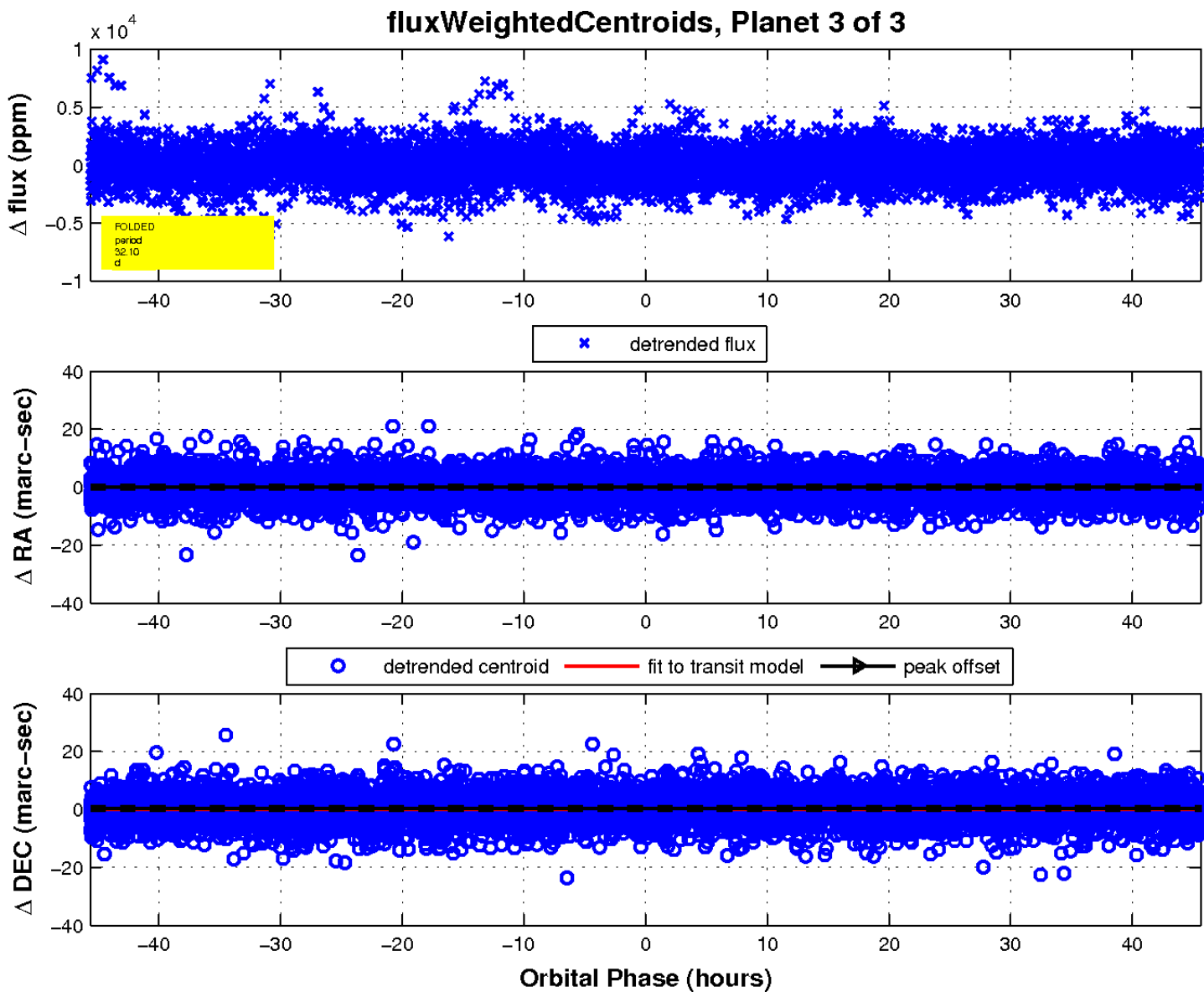
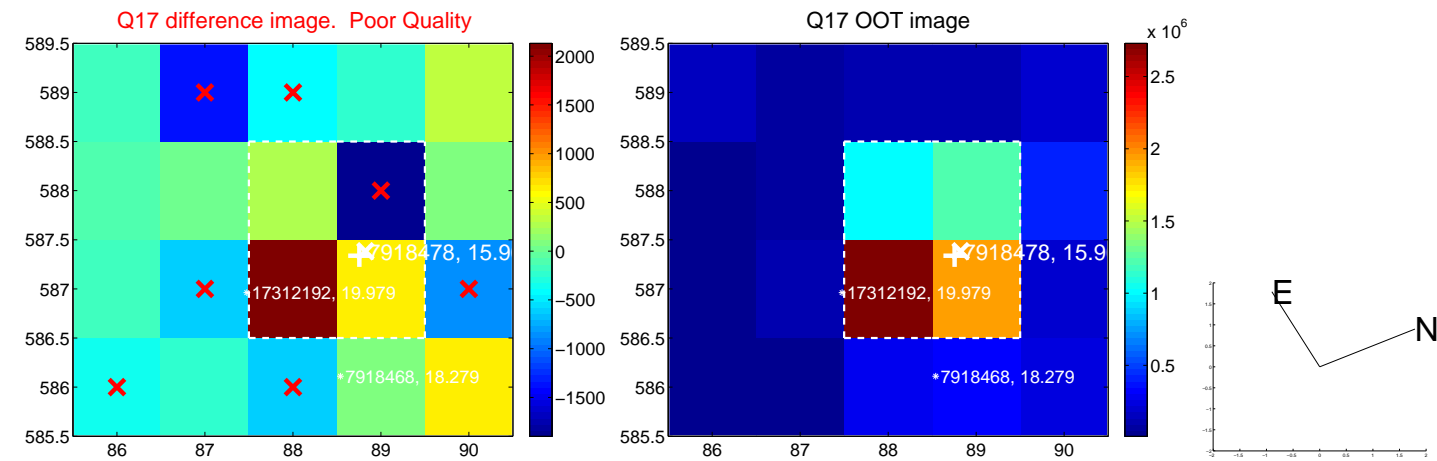
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

Declination

