

KIC 009655422

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009655422-01 | OBS | No | 0.876012 | 132.336701 | 395.4 | 2.558 | 12.3 | 16.6 | 5.53 | 7785 | 12.87 | 0.00 |
| 009655422-02 | OBS | No | 0.876036 | 132.106581 | 421.4 | 2.974 | 13.0 | 16.0 | 5.53 | 7785 | 19.91 | 0.00 |
| 009655422-03 | OBS | No | 0.876024 | 131.885994 | 155.8 | 1.500 | 11.0 | -1.0 | 5.53 | 7785 | 6.97 | 163848.71 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------------------------------------------------------------------------------------------|
| 009655422-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED |
| 009655422-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |
| 009655422-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |

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

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

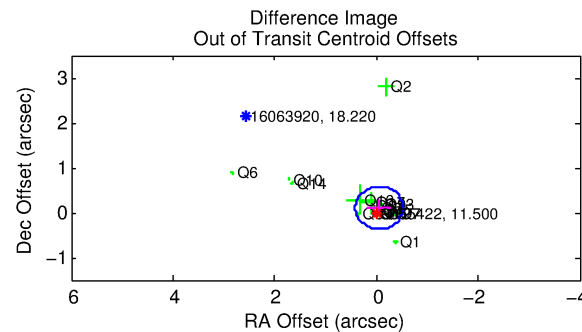
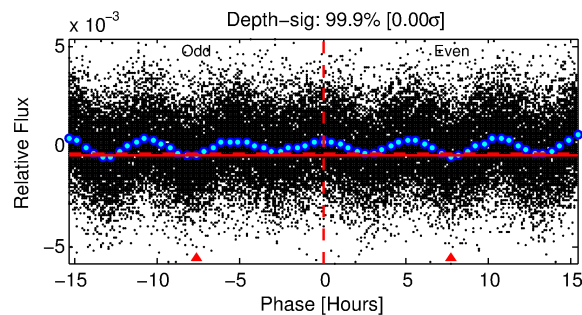
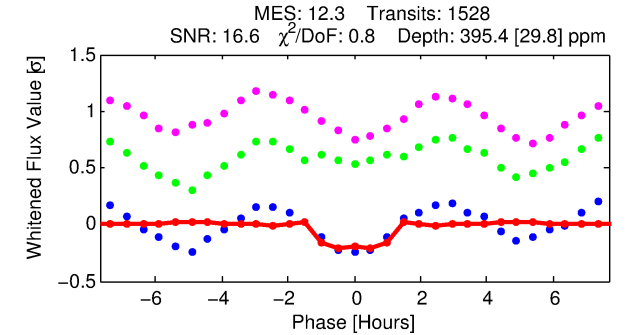
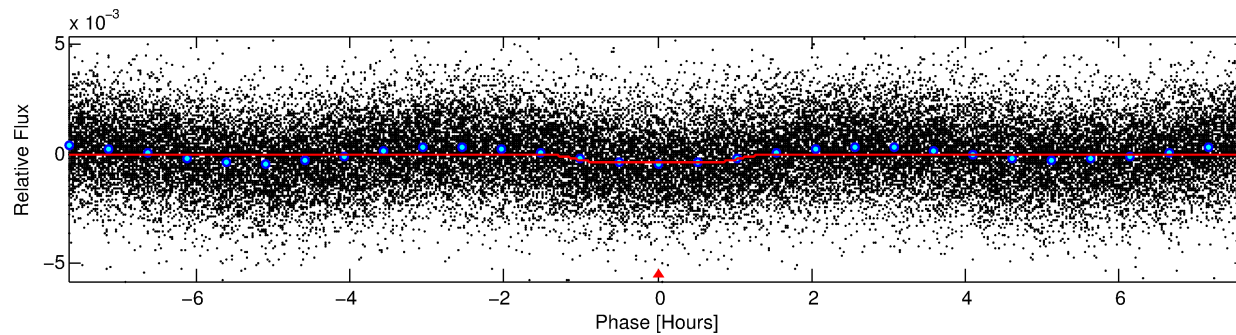
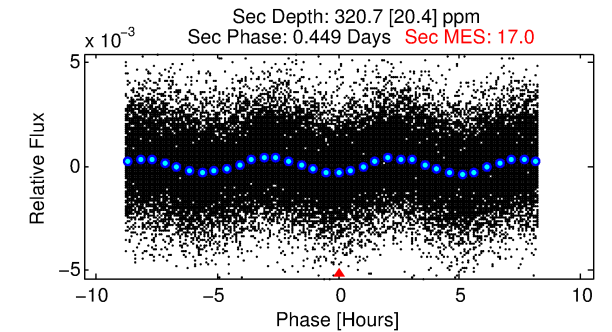
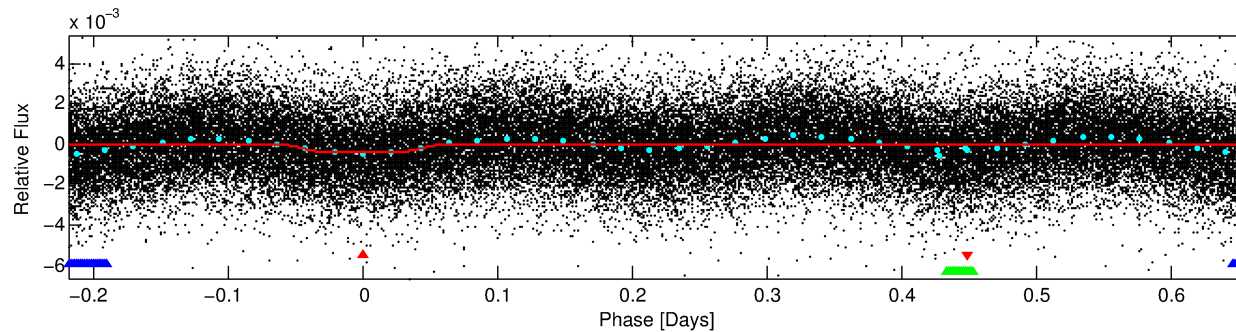
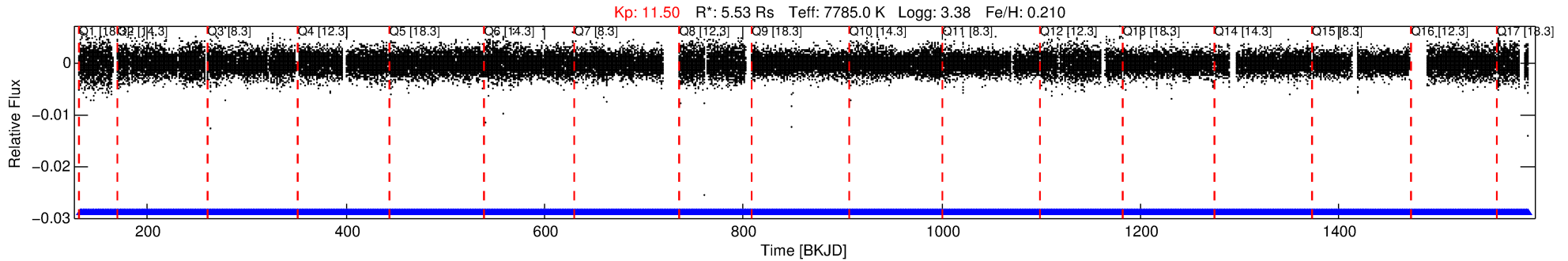
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009655422-01

No Significant Match Found

DV One-Page Summary

KIC: 9655422 Candidate: 1 of 3 Period: 0.876 d



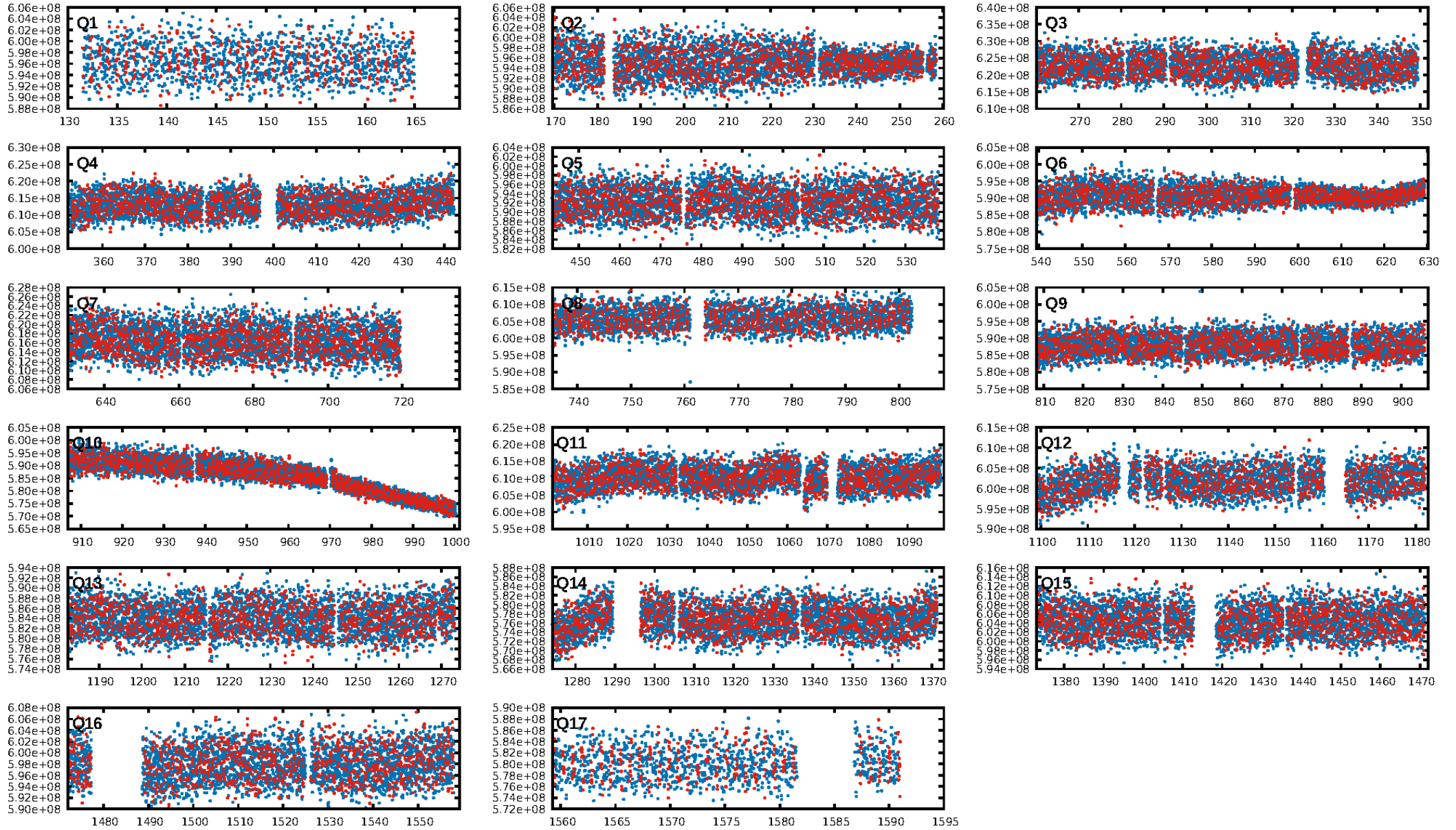
DV Fit Results:

Period = 0.87601 [0.00001] d
Epoch = 132.3367 [0.0013] BKJD
Rp/R* = 0.0213 [0.0025]
a/R* = 1.57 [0.60]
b = 0.90 [0.14]
Seff = N/A
Teq = N/A
Rp = 12.87 [8.71] Re
a = N/A
Ag = N/A
Teffp = N/A

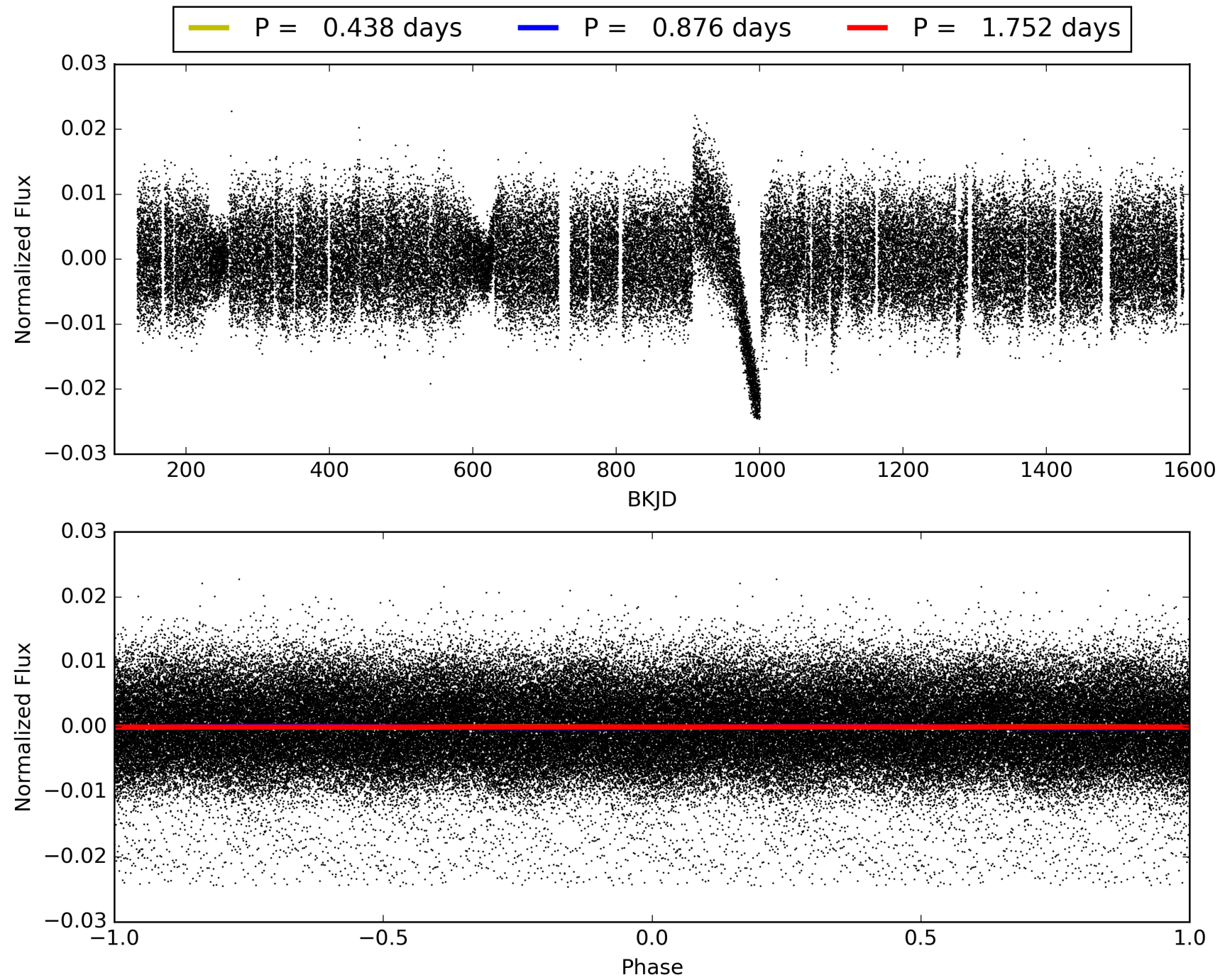
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1458/1458]
GhostDiagnostic-chr: 2.29
Centroid-sig: 0.0%
Centroid-so: 0.372 arcsec [5.91 σ]
OotOffset-rm: 0.116 arcsec [0.74 σ]
KicOffset-rm: 0.186 arcsec [1.02 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 009655422-01, PDC Light Curves

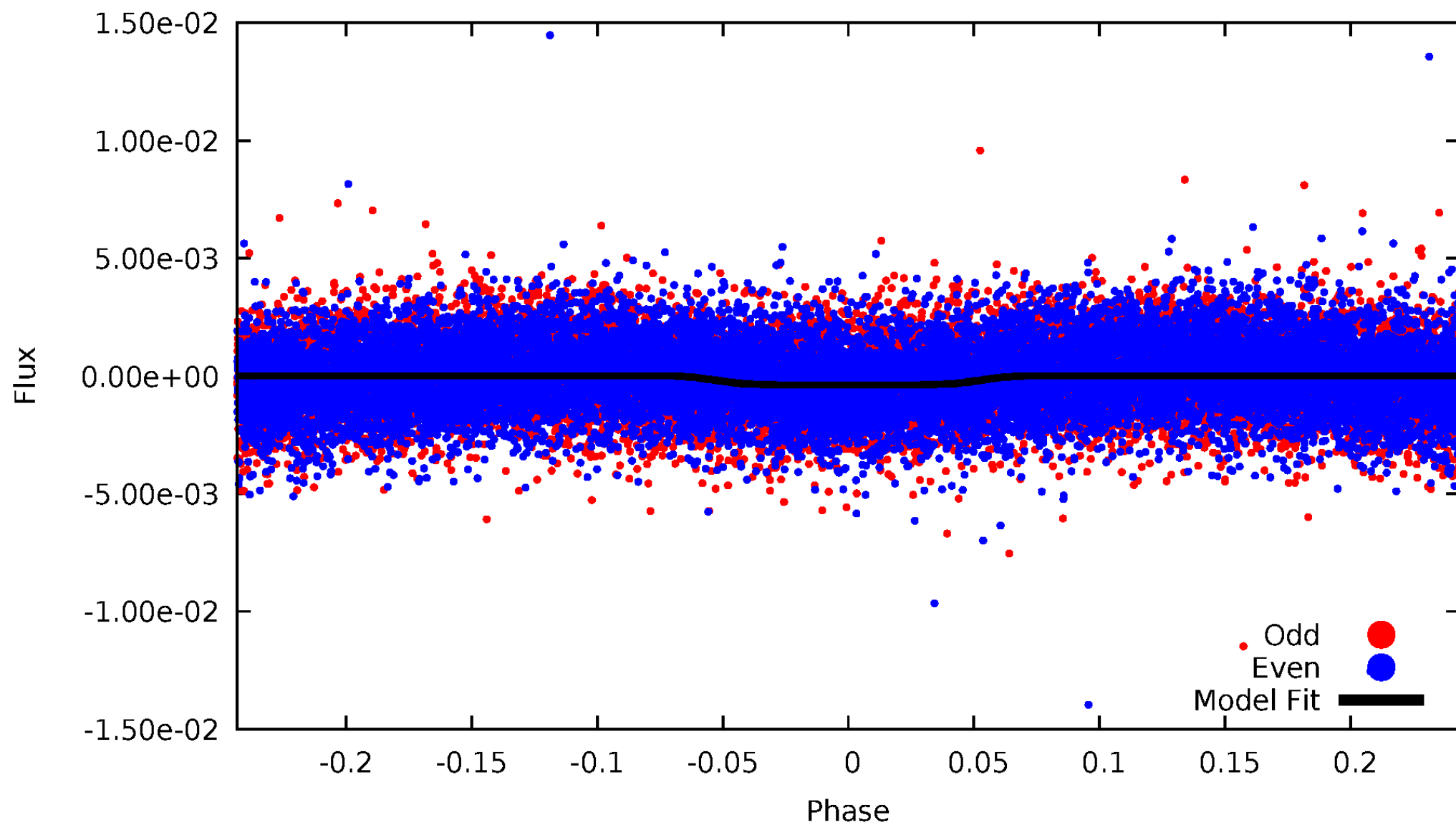


TCE 009655422-01



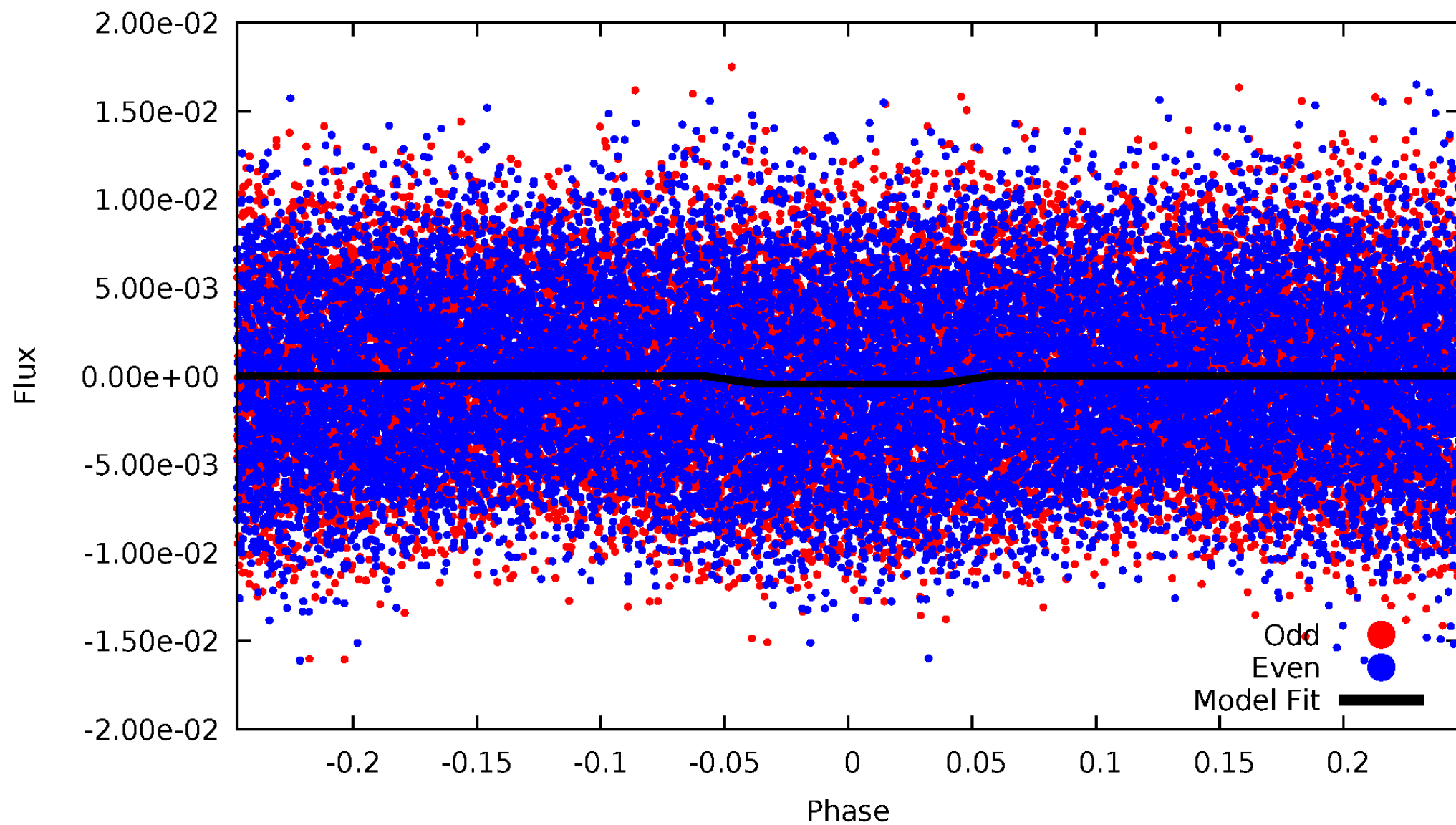
DV Odd/Even

TCE 009655422-01



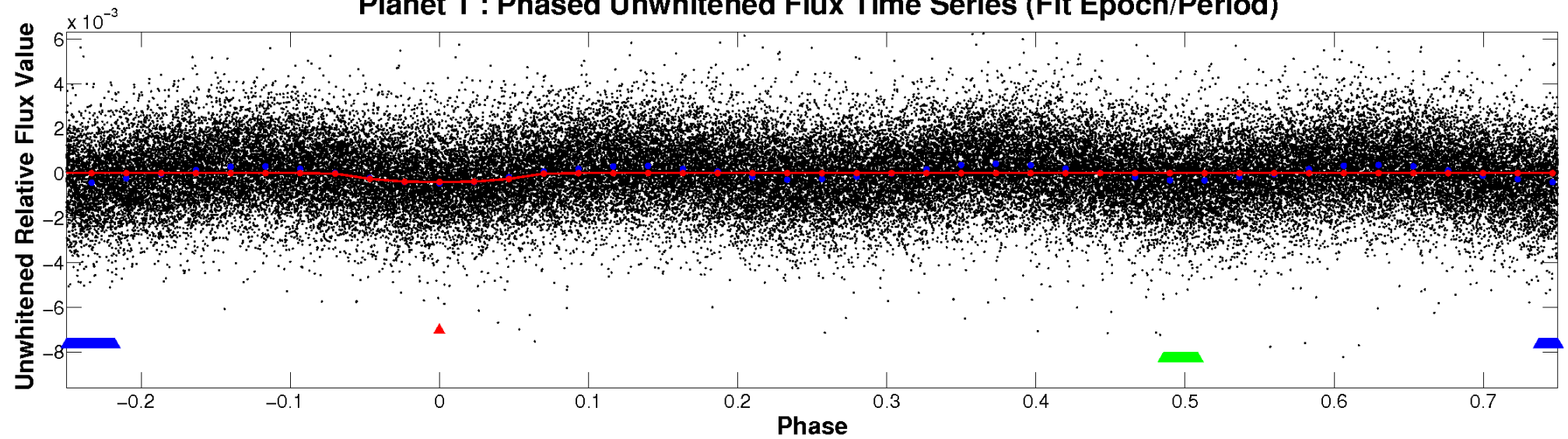
ALT Odd/Even

TCE 009655422-01

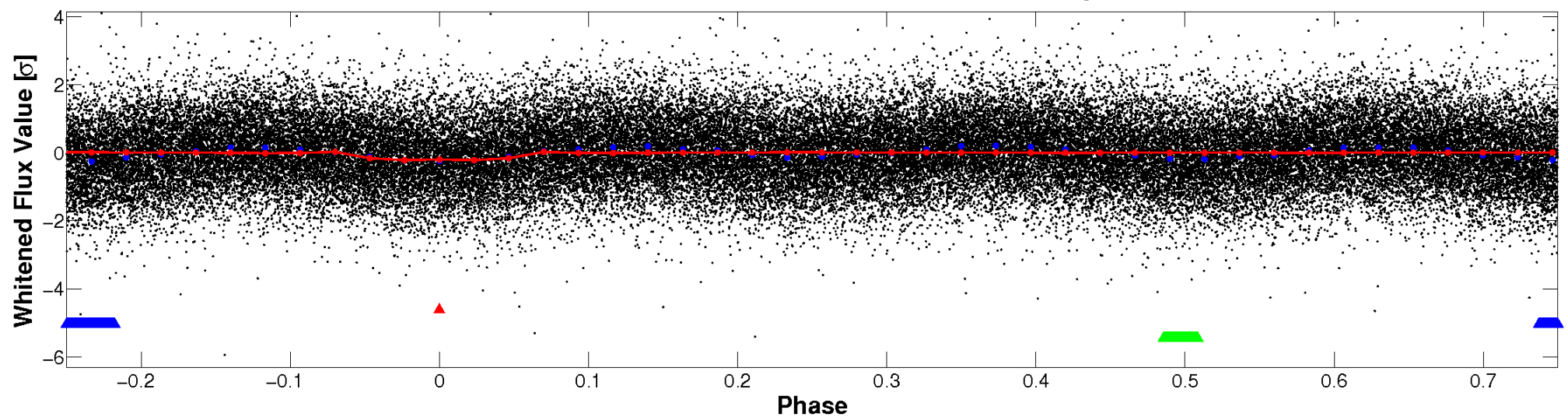


Non-Whitened Vs. Whitened Light Curve

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

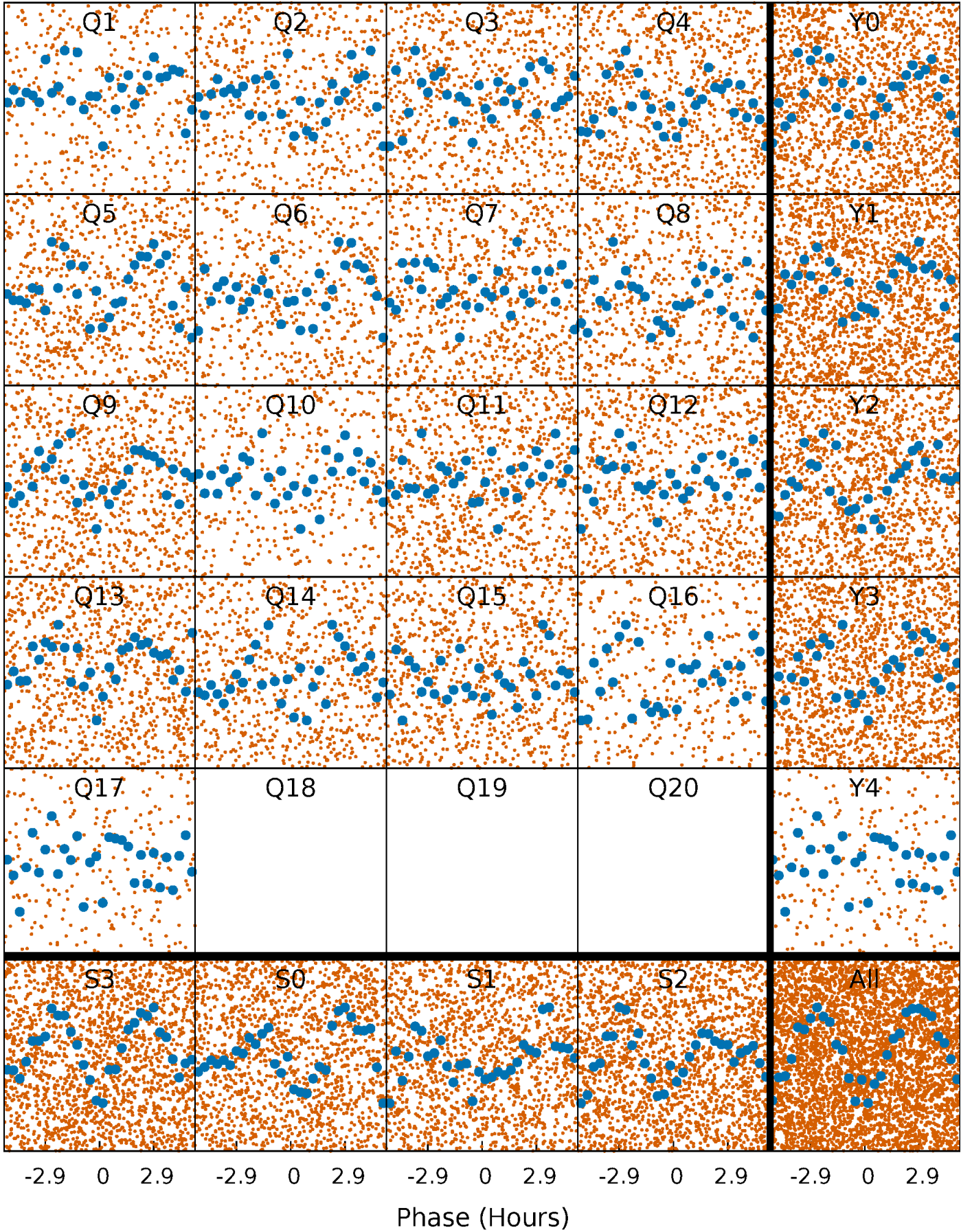


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



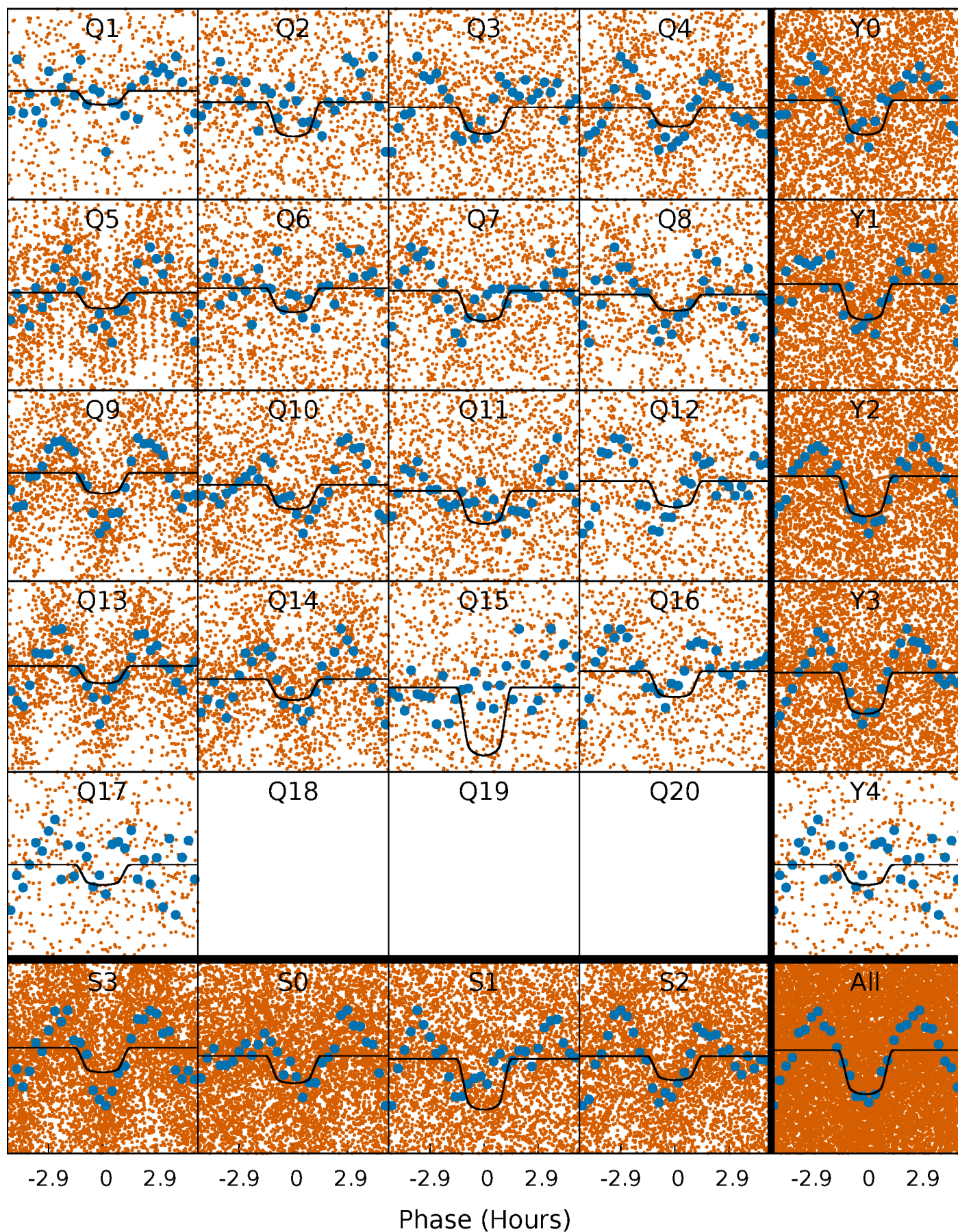
PDC Quarter-Phased Transit Curves

TCE 009655422-01 P= 0.876012 Days $T_0=132.336701$ (BKJD)



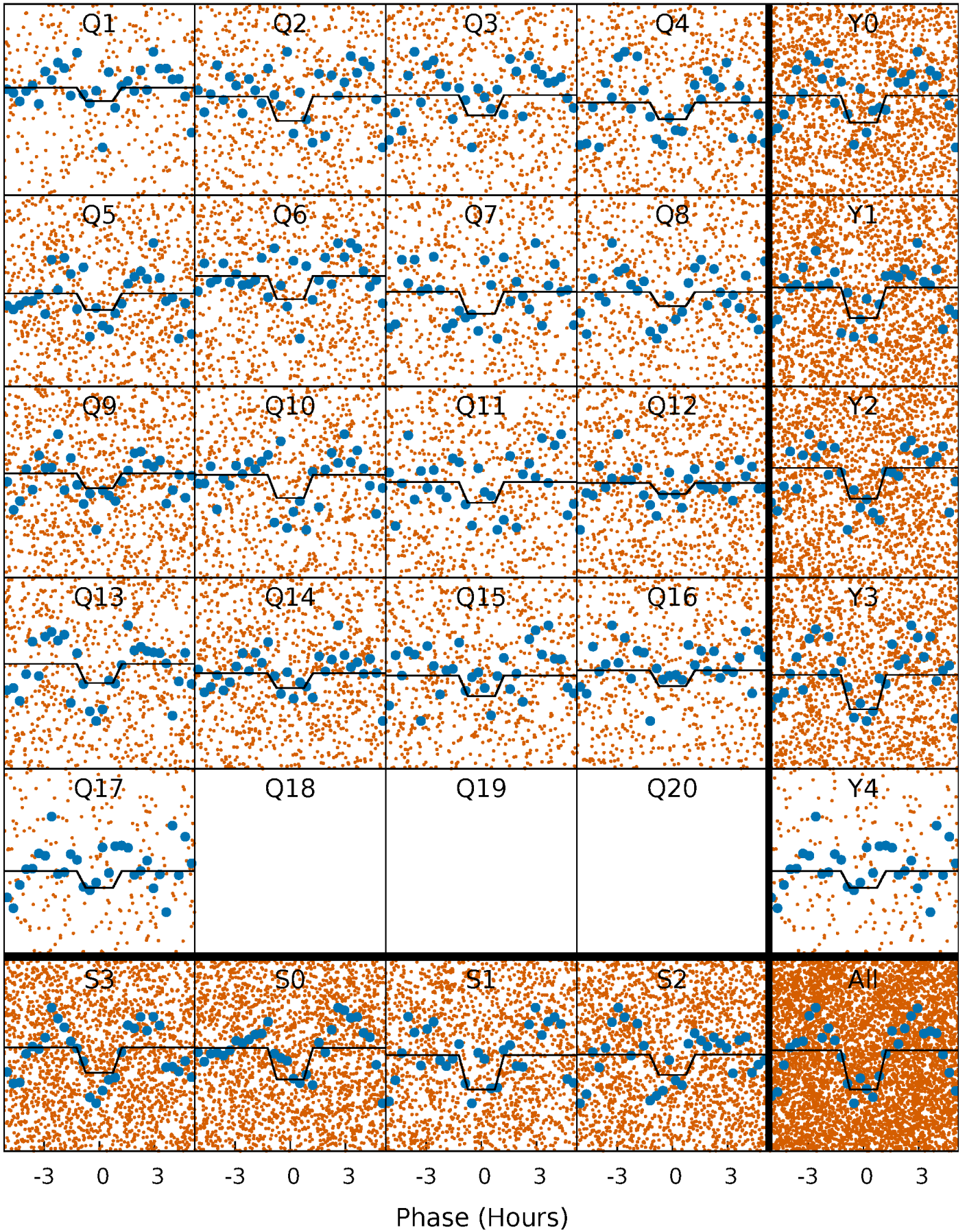
DV Quarter-Phased Transit Curves

TCE 009655422-01 P= 0.876012 Days $T_0=132.336701$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

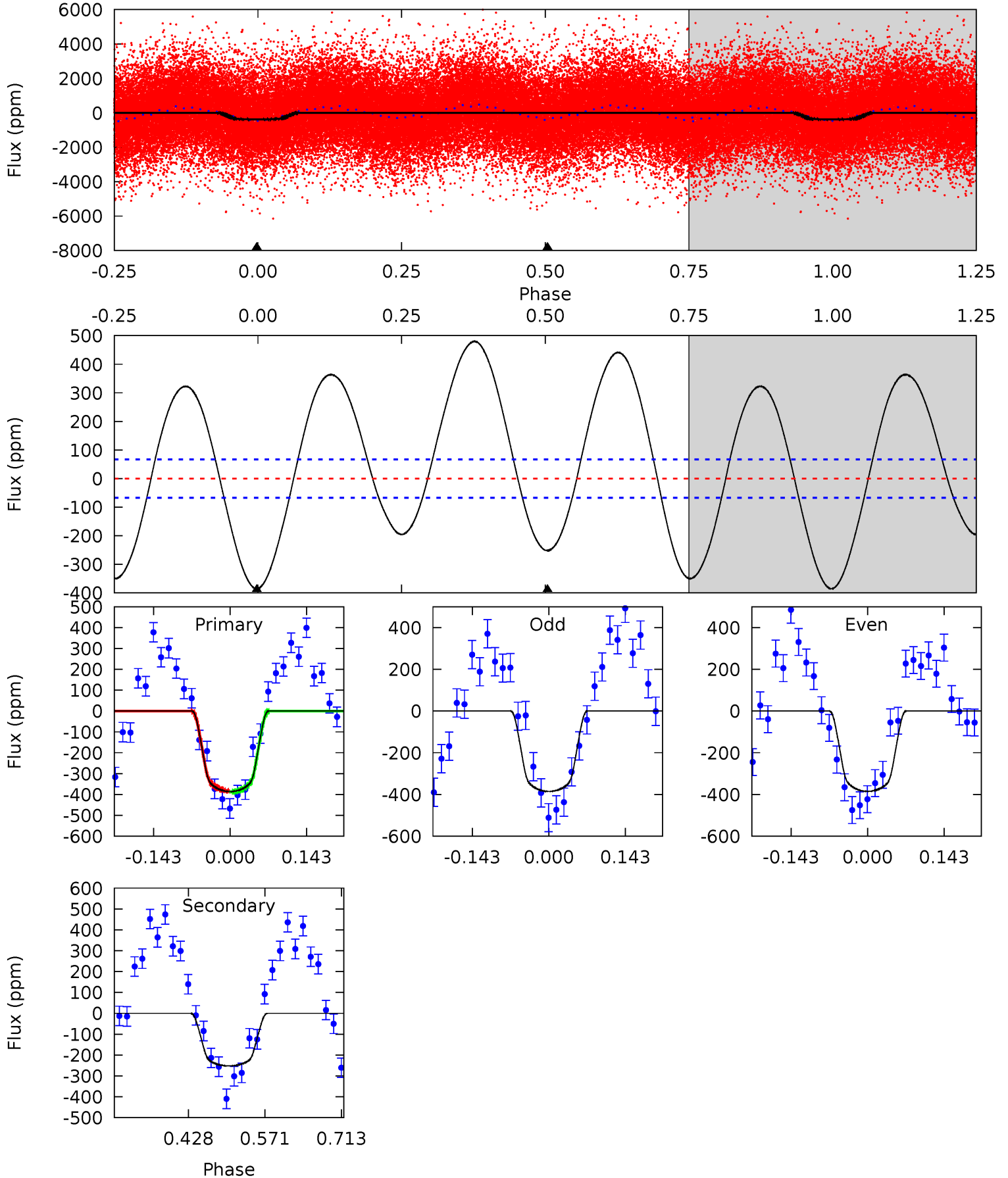
TCE 009655422-01 P= 0.876016 Days $T_0=132.336641$ (BKJD)



DV Model-Shift Uniqueness Test

009655422-01, P = 0.876012 Days, E = 131.460689 Days

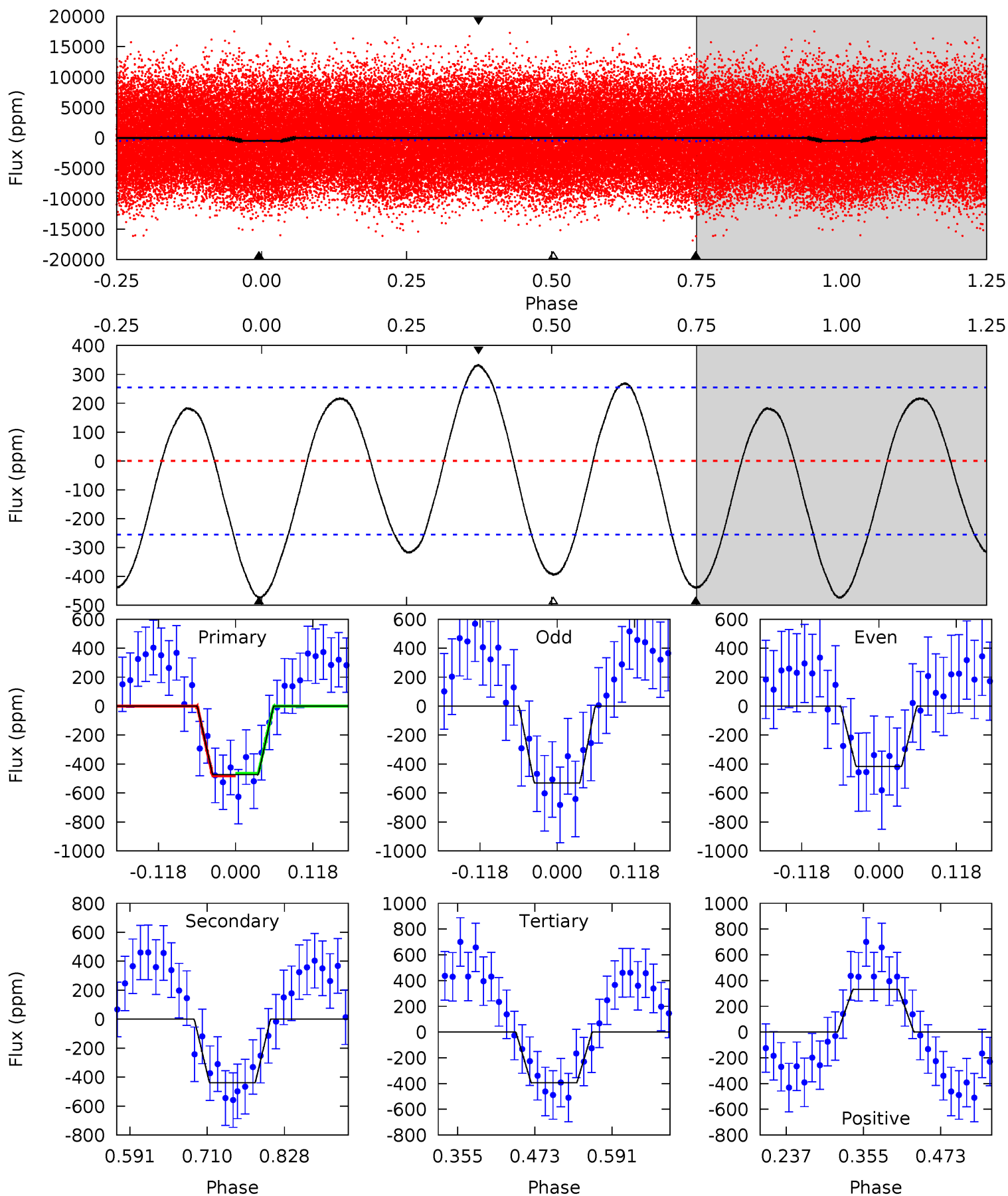
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 25.8 | 16.9 | 0 | 0 | 4.49 | 1.47 | 15.1 | 25.8 | 25.8 | 16.9 | 16.9 | 0.02 | 0.89 | 0.55 | 0.17 |



Alt Model-Shift Uniqueness Test

009655422-01, P = 0.876016 Days, E = 131.460625 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.41 | 7.81 | 7.01 | 5.90 | 4.53 | 1.56 | 4.08 | 1.41 | 2.51 | 0.80 | 1.91 | 1.02 | 0.87 | 0.41 | 0.15 |



Stellar Parameters For KIC 009655422

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 7785^{+243}_{-324} | $3.375^{+0.645}_{-0.172}$ | $0.210^{+0.150}_{-0.400}$ | $5.531^{+1.844}_{-3.687}$ | $2.646^{+0.161}_{-0.911}$ | $0.022^{+0.263}_{-0.010}$ |
| | +3%/-4% | +19%/-5% | +71%/-190% | +33%/-67% | +6%/-34% | +1192%/-46% |
| 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 009655422-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|-------------------------|-----------------------|-----------------------|---------------------------|
| DV | -252 ± 15 | $11.79^{+3.20}_{-3.77}$ | 6967^{+747}_{-1081} | 5495^{+833}_{-1168} | $0.576^{+0.575}_{-0.212}$ |
| Alt. | -440 ± 56 | $12.14^{+3.16}_{-3.79}$ | 6958^{+701}_{-1051} | 6852^{+828}_{-933} | $0.982^{+0.964}_{-0.365}$ |

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

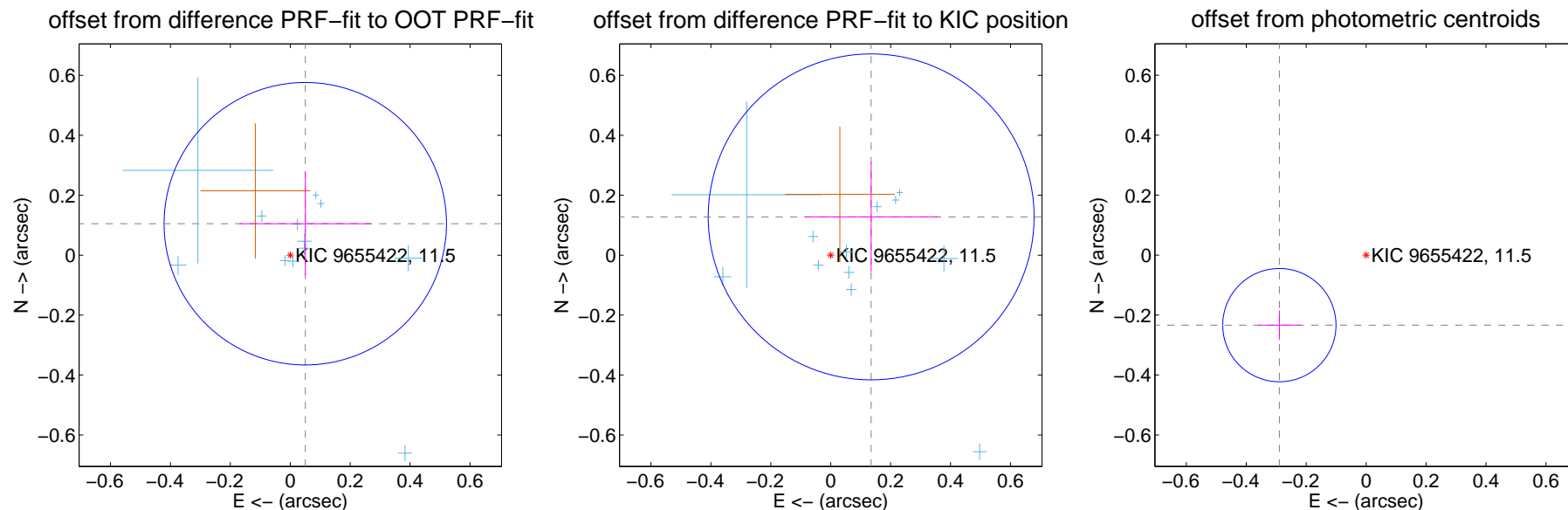
DV Centroid Data

Supplemental centroid analysis for 009655422-01. **Kepler magnitude: 11.50**. Transit SNR 16.65

There are 16 quarters with good PRF difference image offsets

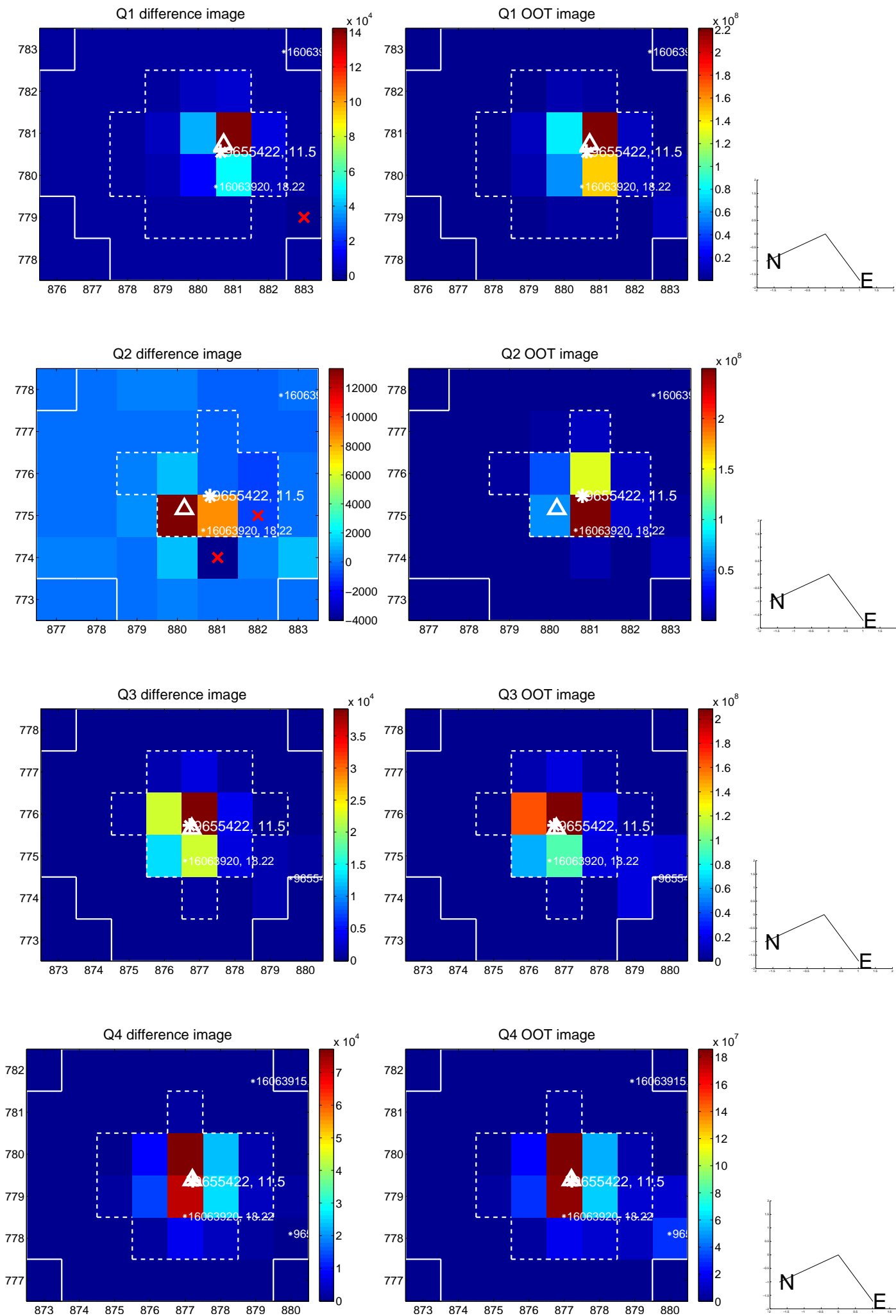
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|-----------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.116 ± 0.157 | 0.74 | -0.050 ± 0.220 | 0.105 ± 0.173 |
| PRF-fit source offset from KIC position | 0.186 ± 0.181 | 1.02 | -0.135 ± 0.223 | 0.128 ± 0.183 |
| photometric centroid source offset | 0.37 ± 0.06 | 5.91 | 0.29 ± 0.07 | -0.23 ± 0.05 |

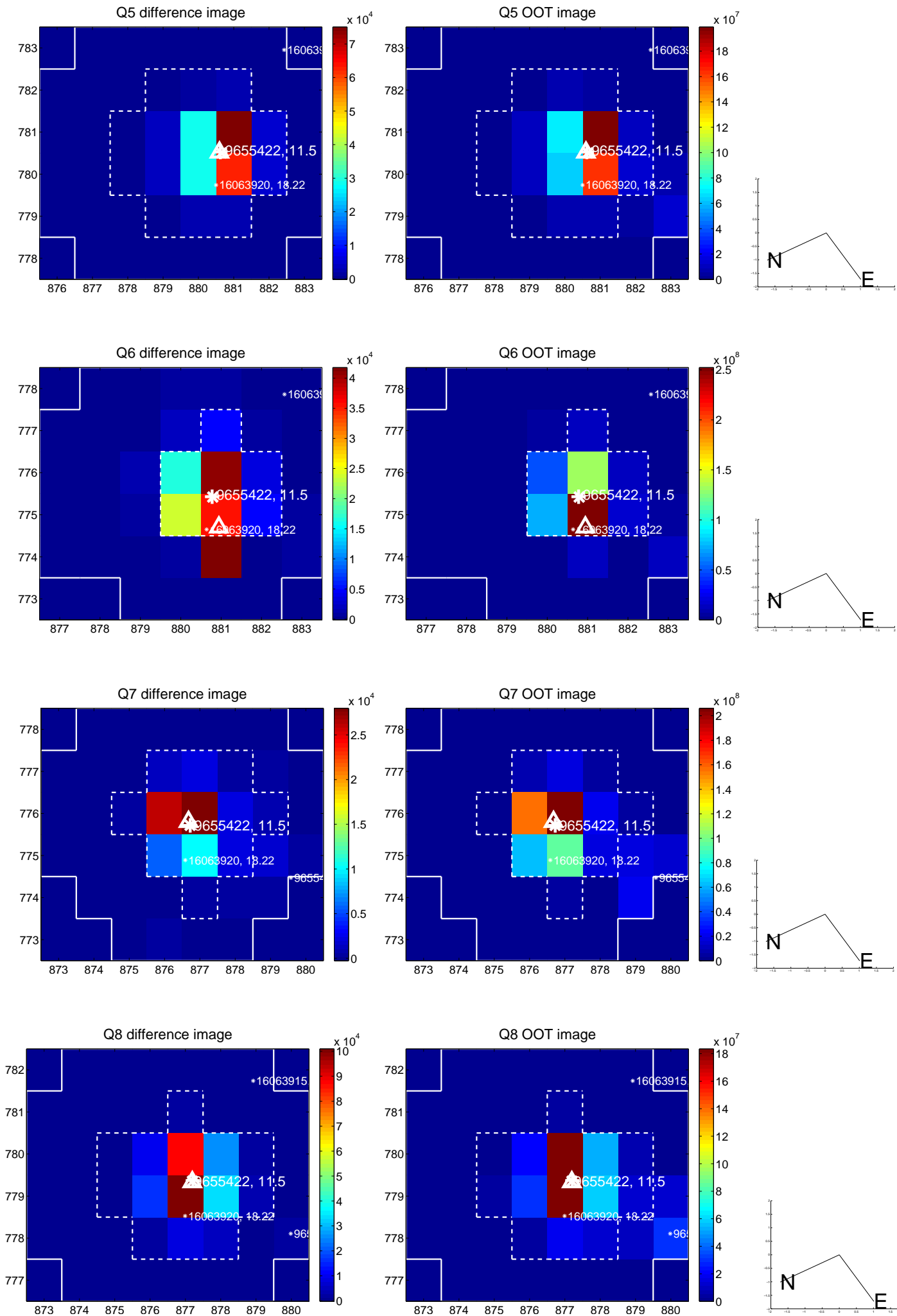


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

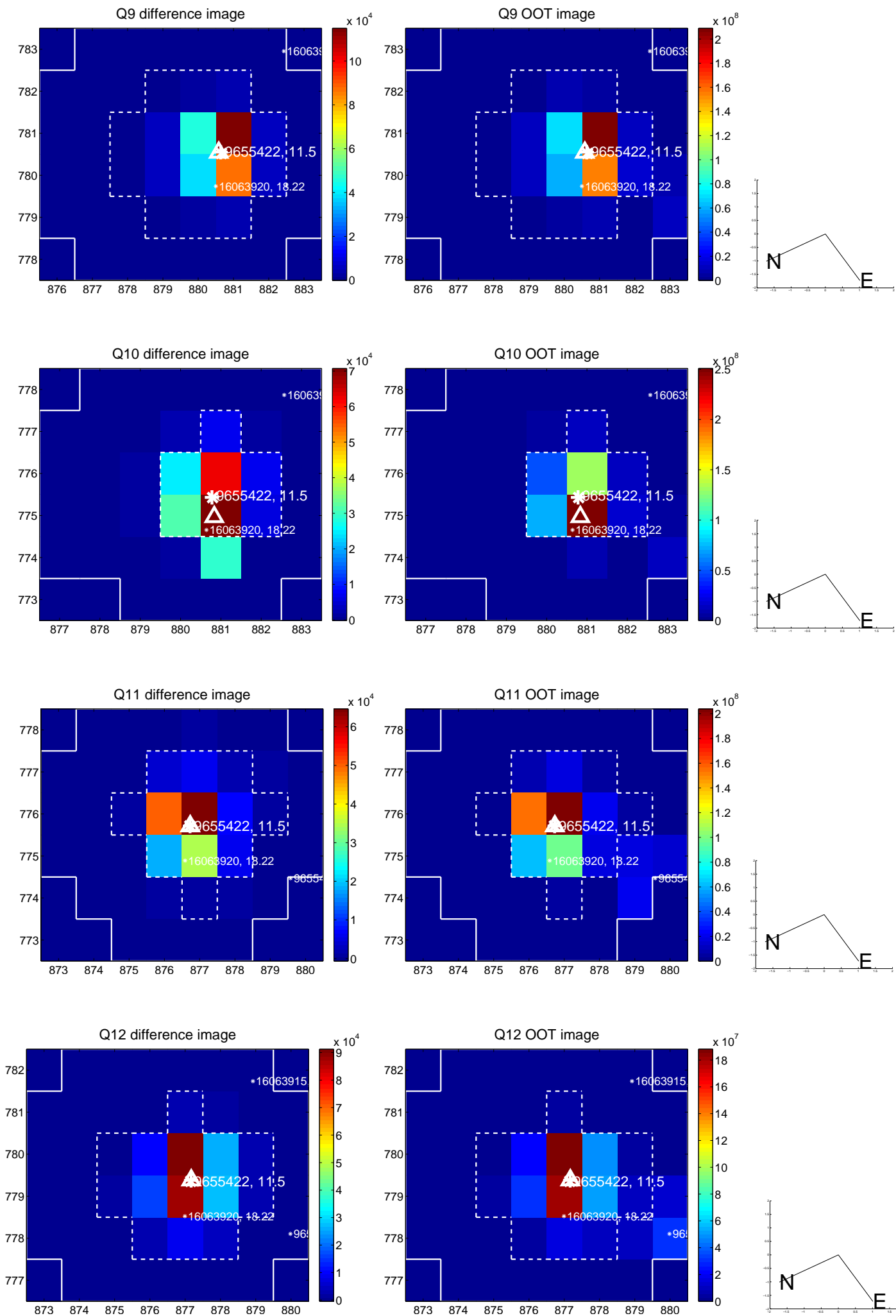
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



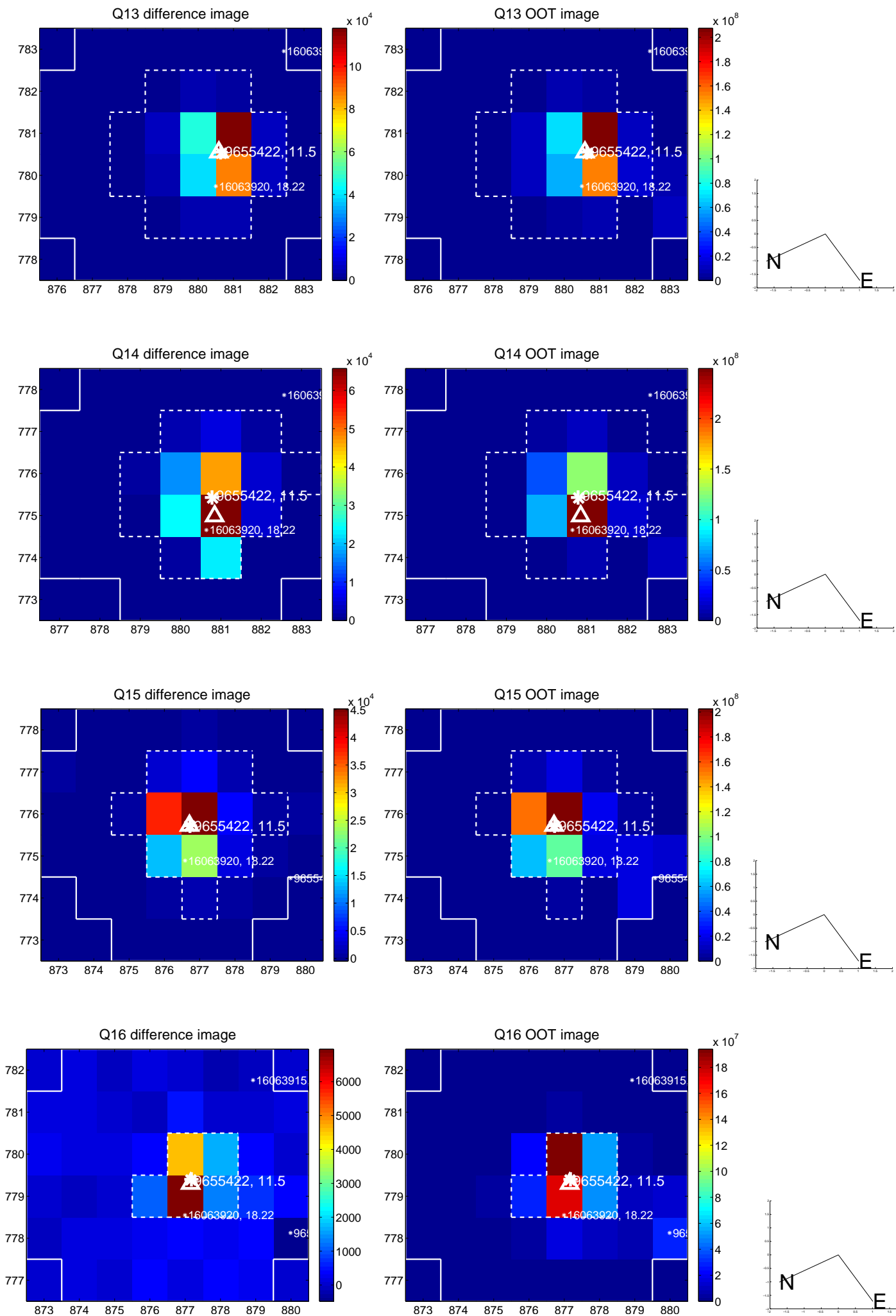
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



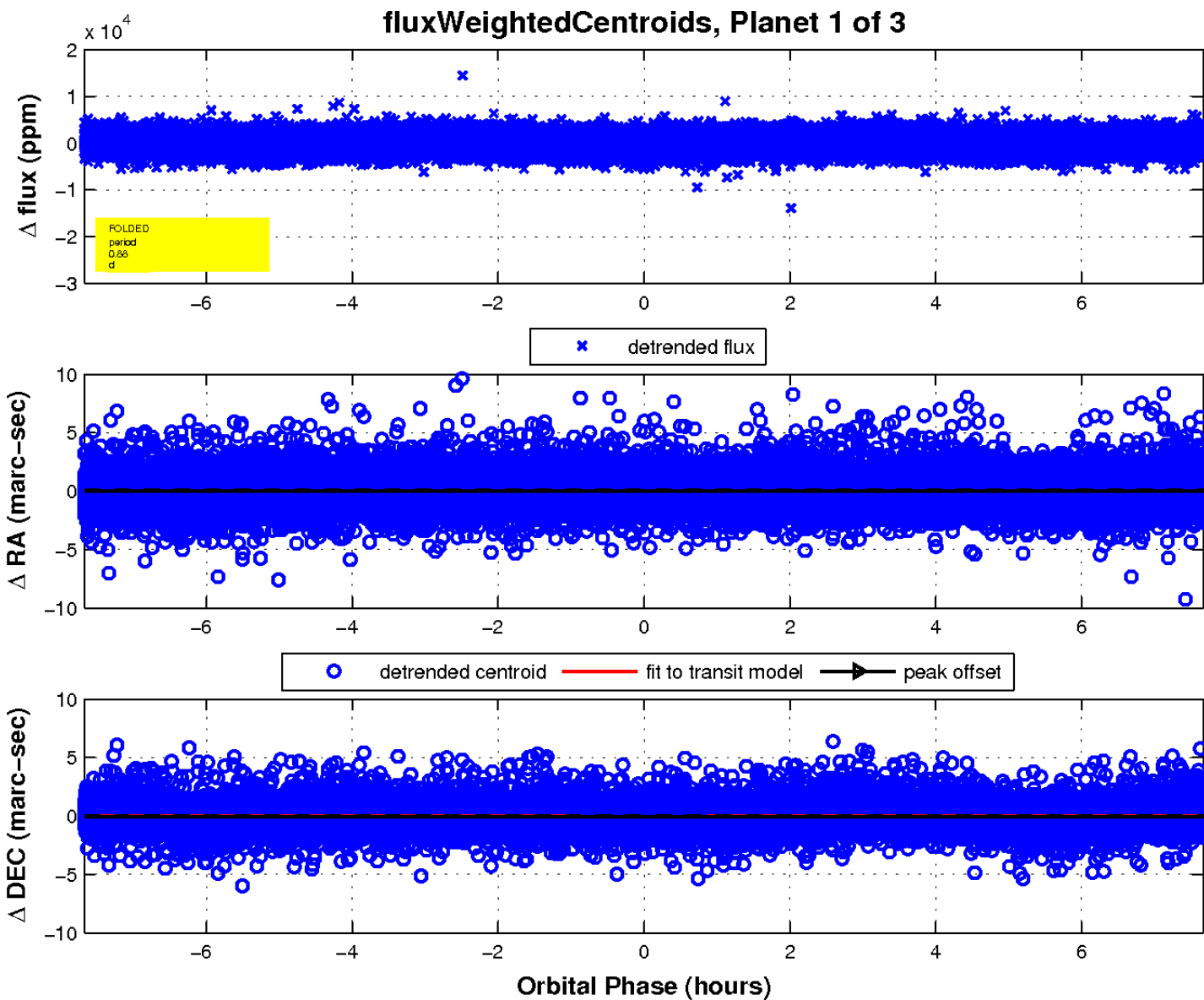
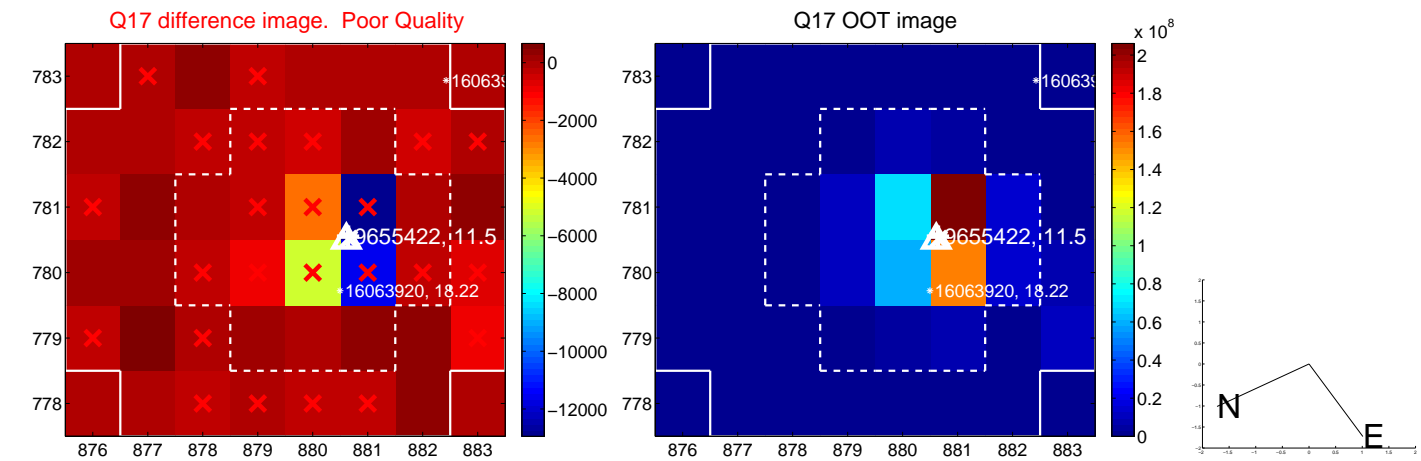
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



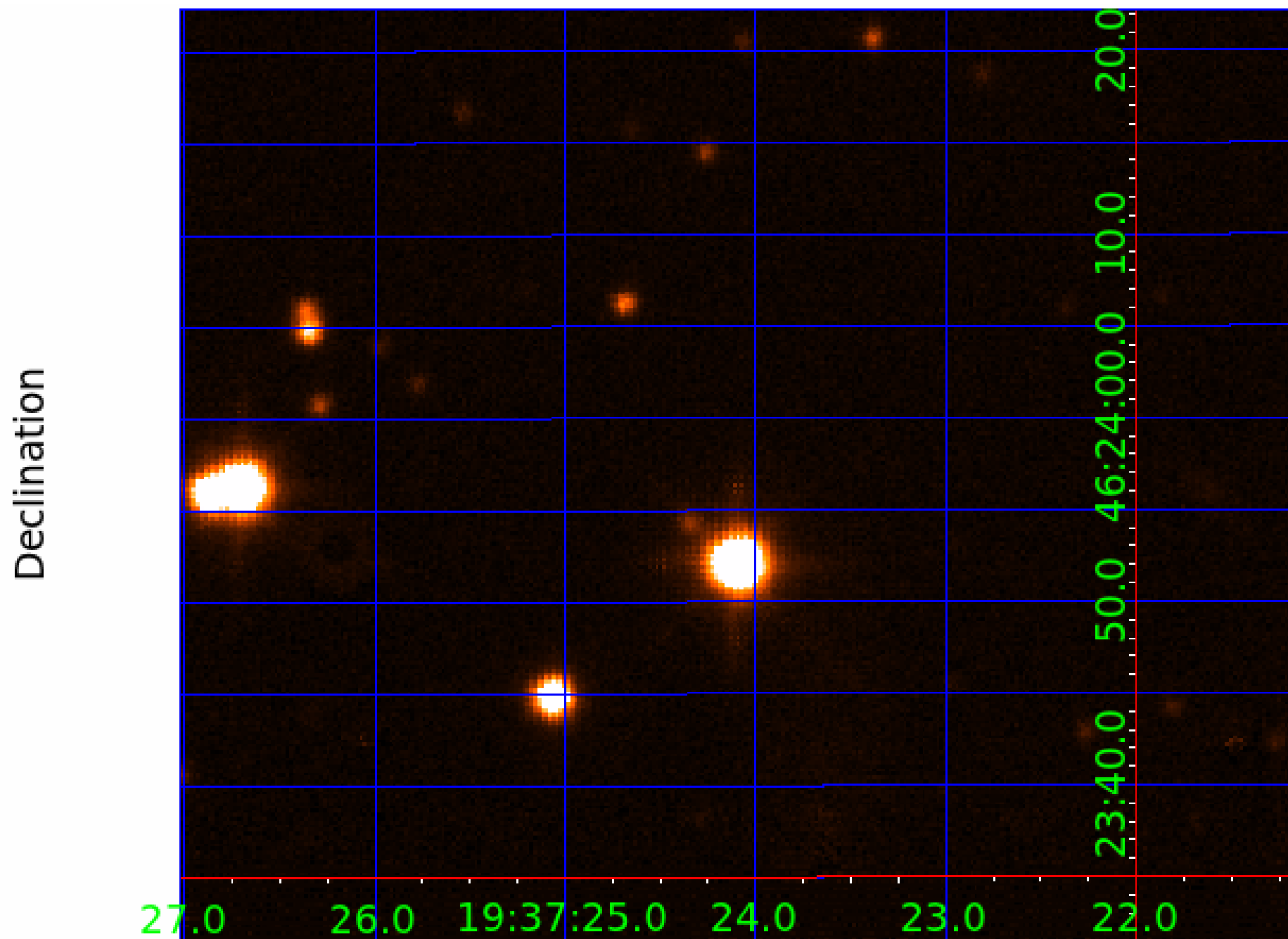
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009655422

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009655422-01 | OBS | No | 0.876012 | 132.336701 | 395.4 | 2.558 | 12.3 | 16.6 | 5.53 | 7785 | 12.87 | 0.00 |
| 009655422-02 | OBS | No | 0.876036 | 132.106581 | 421.4 | 2.974 | 13.0 | 16.0 | 5.53 | 7785 | 19.91 | 0.00 |
| 009655422-03 | OBS | No | 0.876024 | 131.885994 | 155.8 | 1.500 | 11.0 | -1.0 | 5.53 | 7785 | 6.97 | 163848.71 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------------------------------------------------------------------------------------------|
| 009655422-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED |
| 009655422-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |
| 009655422-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |

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.

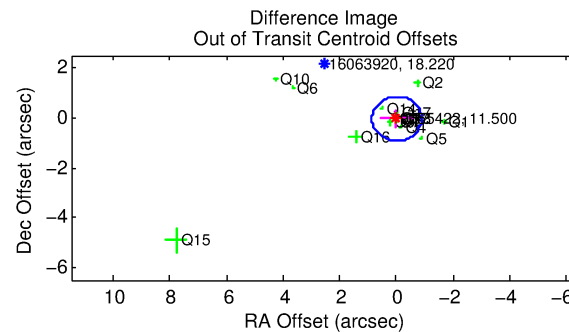
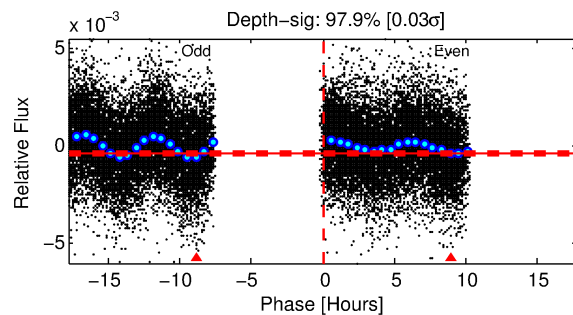
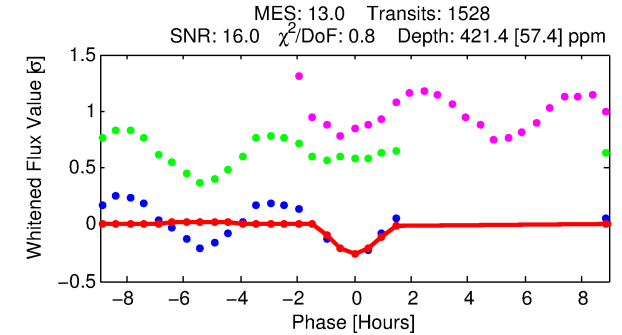
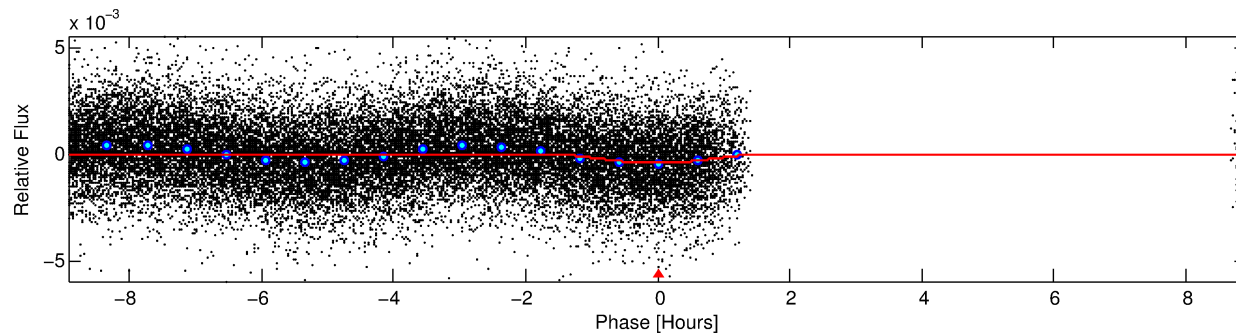
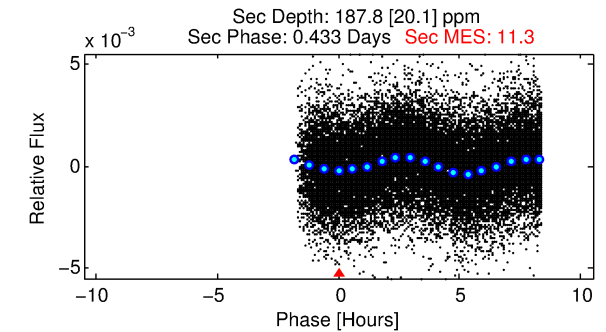
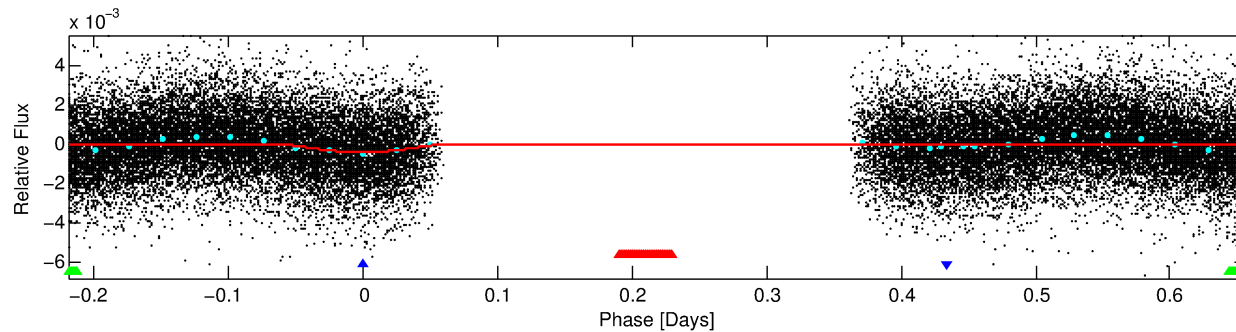
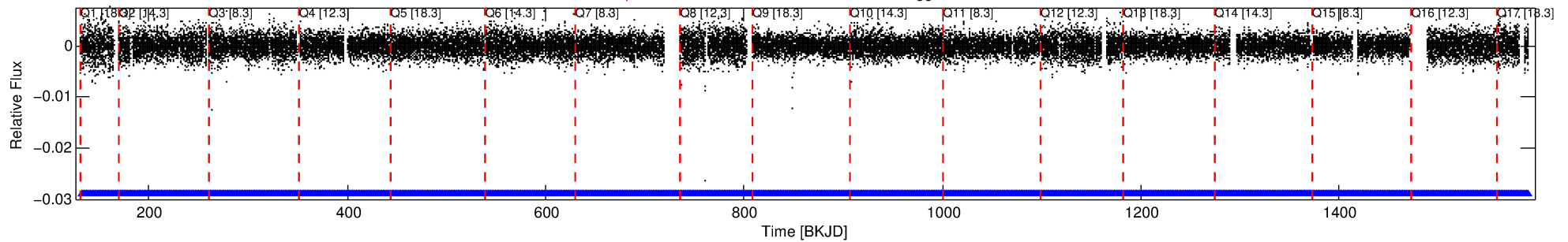
Ephemeris Match Information For 009655422-02

No Significant Match Found

DV One-Page Summary

KIC: 9655422 Candidate: 2 of 3 Period: 0.876 d

Kp: 11.50 R*: 5.53 Rs Teff: 7785.0 K Logg: 3.38 Fe/H: 0.210



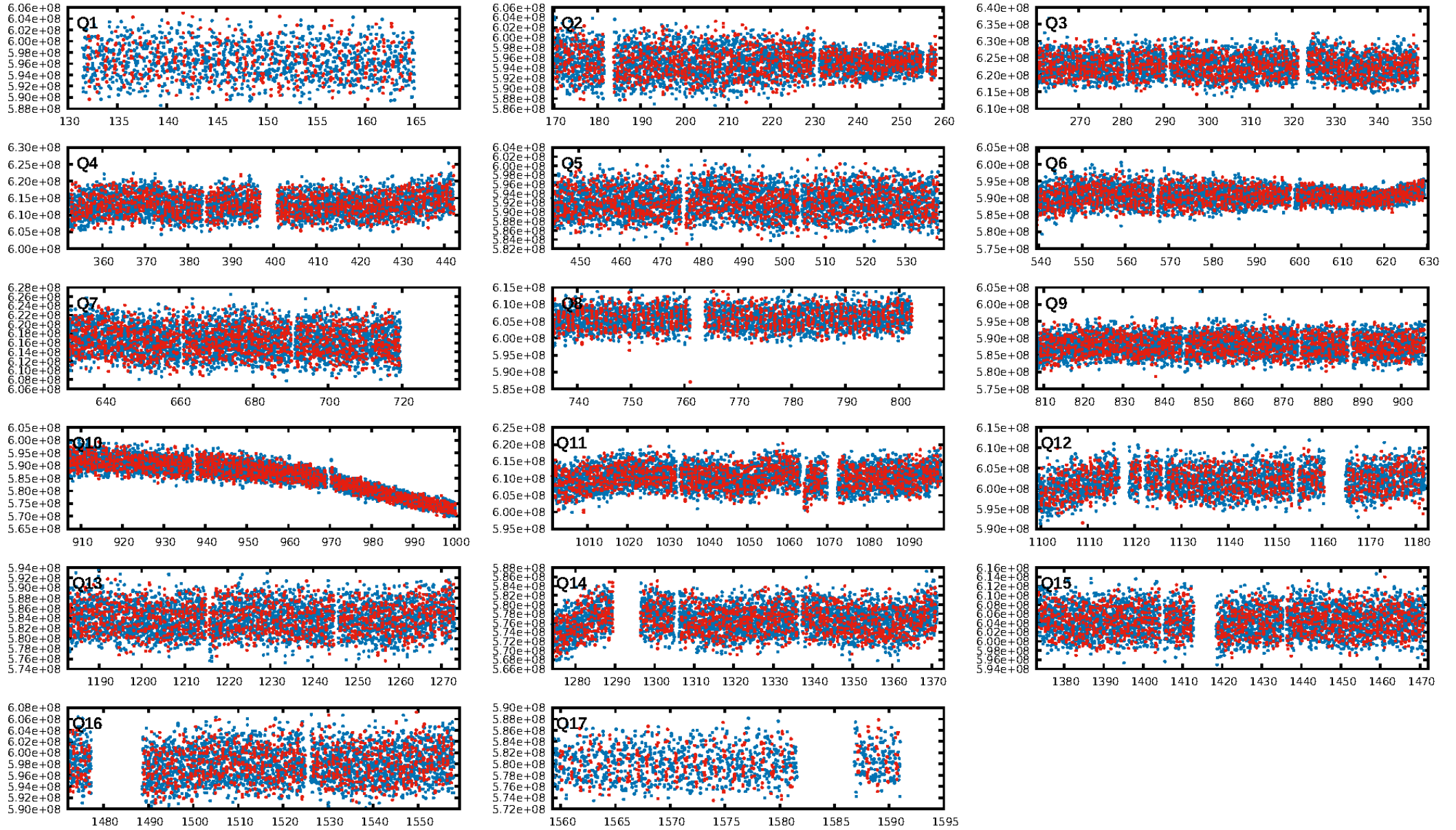
DV Fit Results:

Period = 0.87604 [0.00002] d
Epoch = 132.1066 [0.0032] BKJD
Rp/R* = 0.0330 [0.0435]
a/R* = 1.19 [0.09]
b = 0.99 [0.07]
Seff = N/A
Teq = N/A
Rp = 19.91 [29.43] Re
a = N/A
Ag = N/A
Teffp = N/A

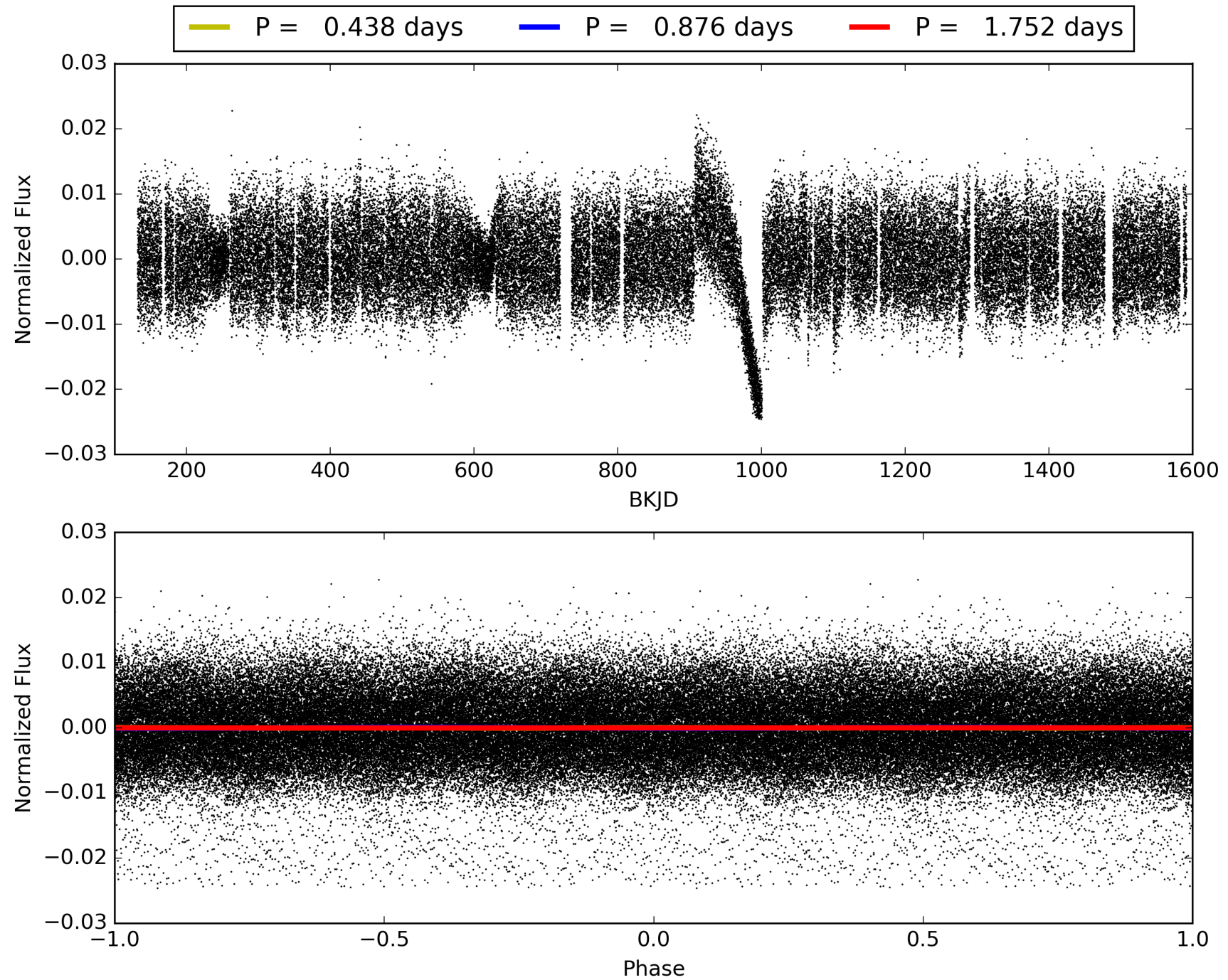
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1461/1461]
GhostDiagnostic-chr: 3.184
Centroid-sig: 0.0%
Centroid-so: 0.116 arcsec [1.93σ]
OotOffset-rm: 0.041 arcsec [0.14σ]
KicOffset-rm: 0.100 arcsec [0.33σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 009655422-02, PDC Light Curves

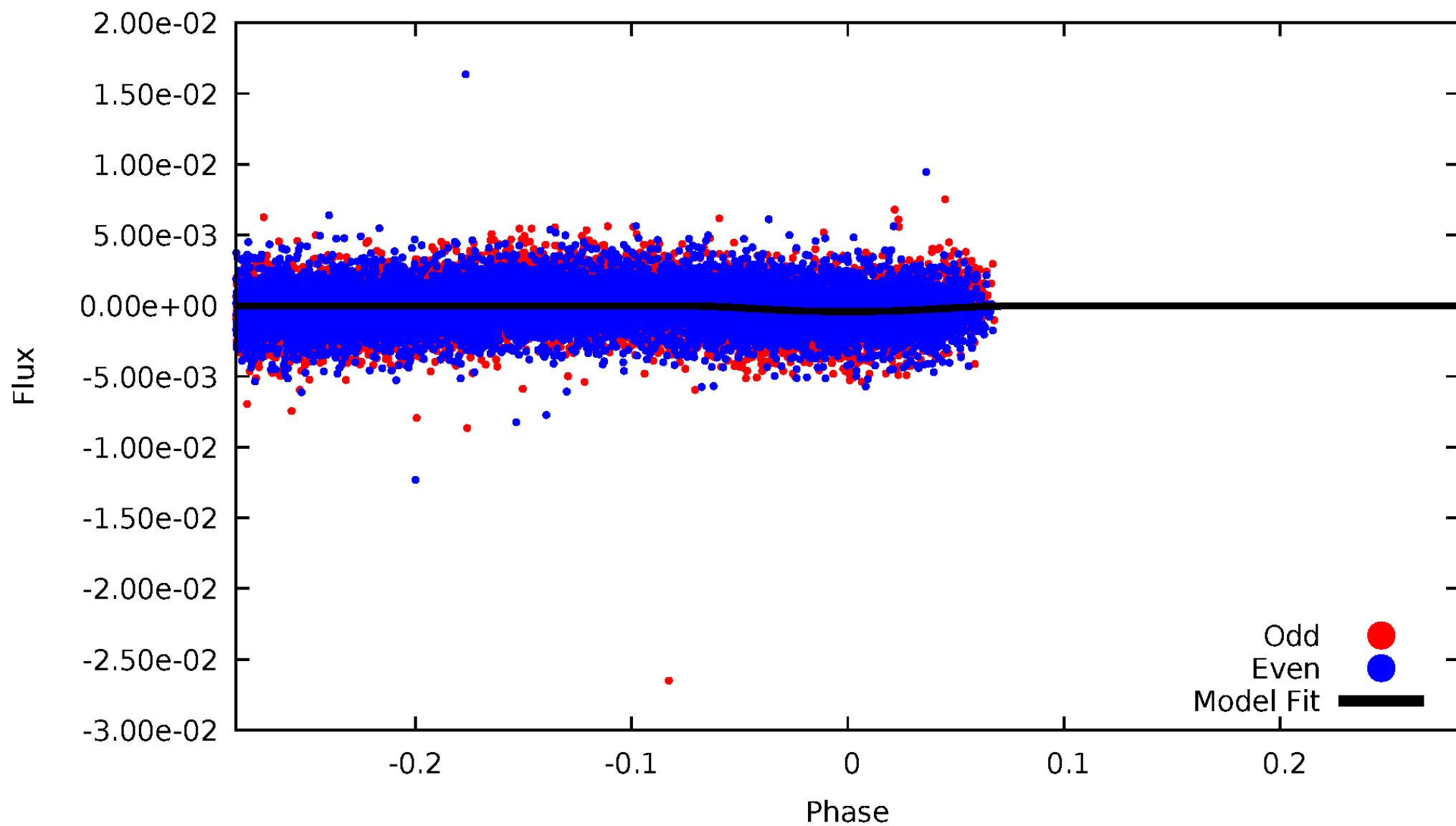


TCE 009655422-02



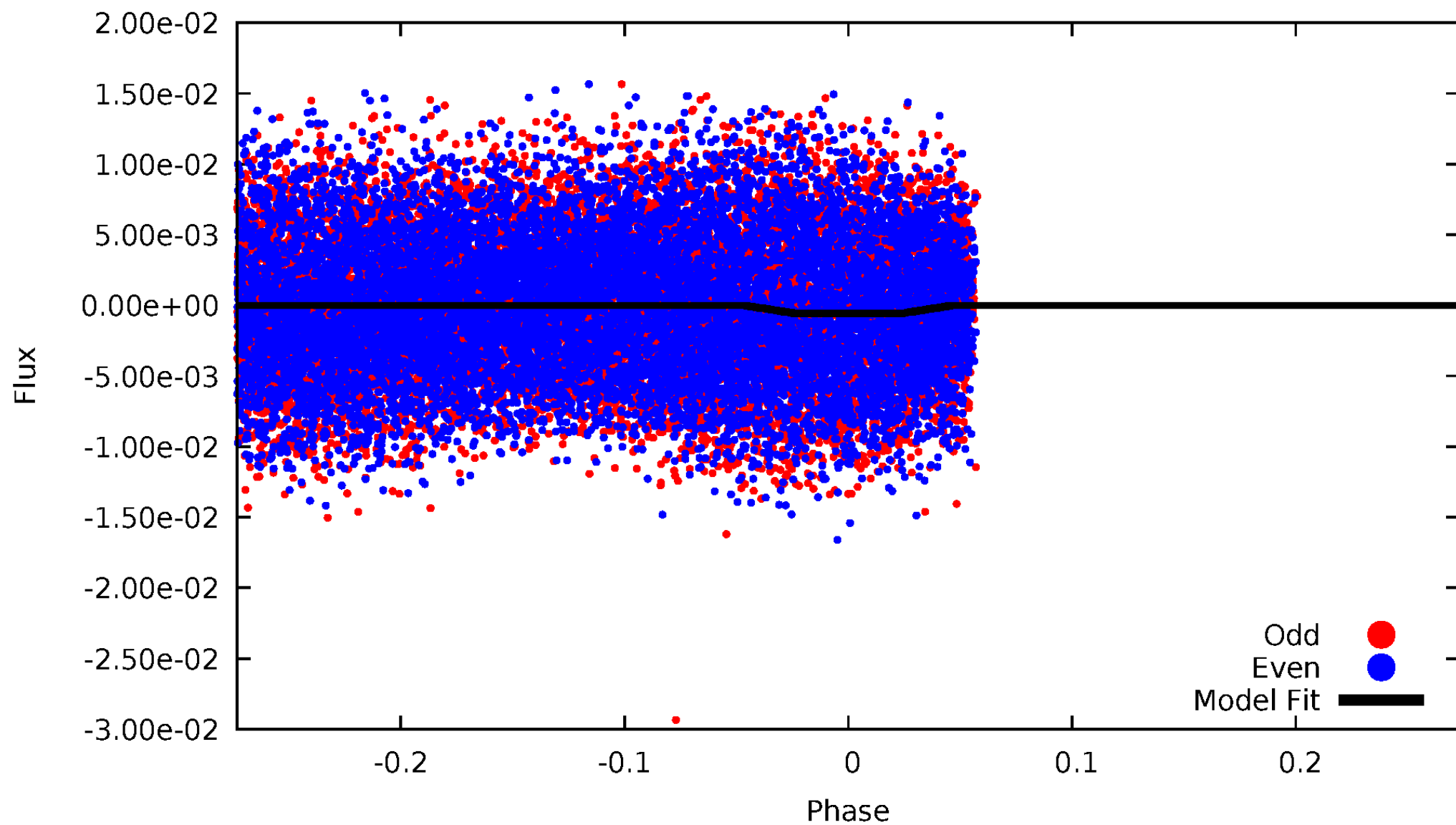
DV Odd/Even

TCE 009655422-02



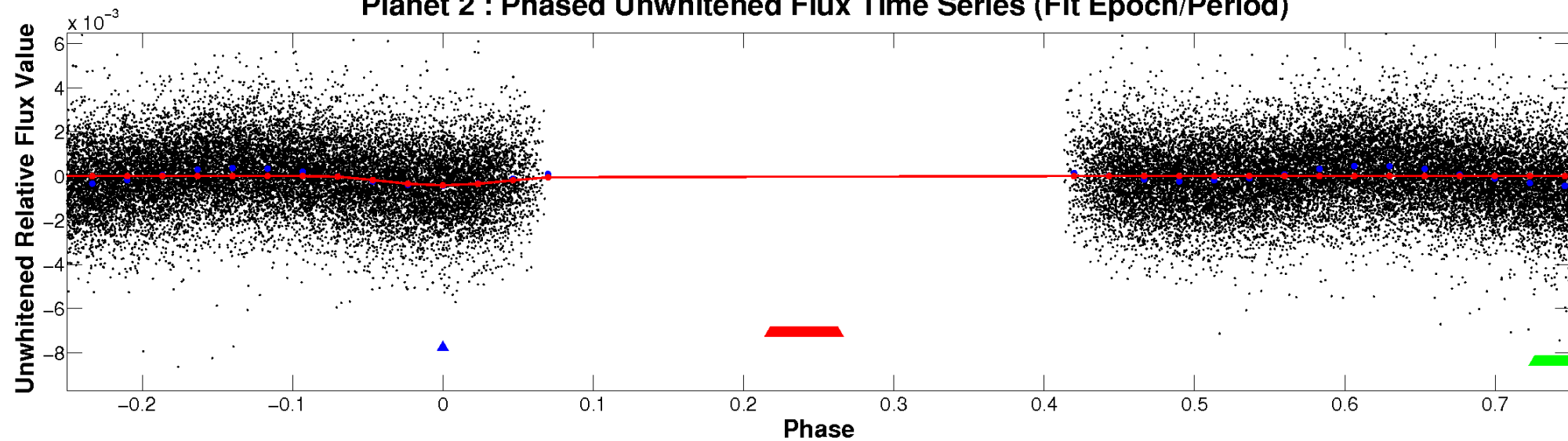
ALT Odd/Even

TCE 009655422-02

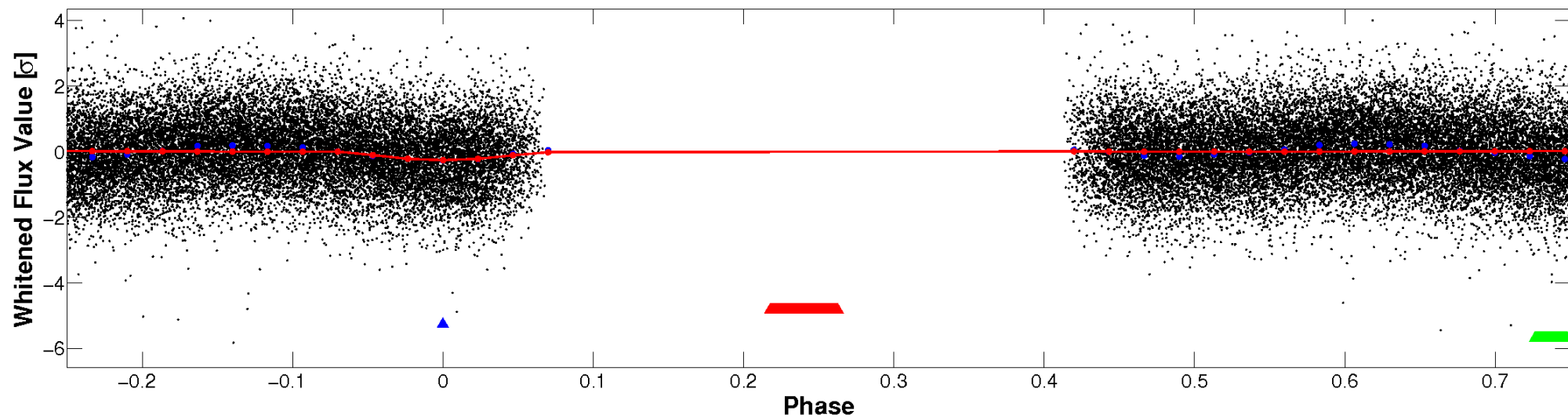


Non-Whitened Vs. Whitened Light Curve

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

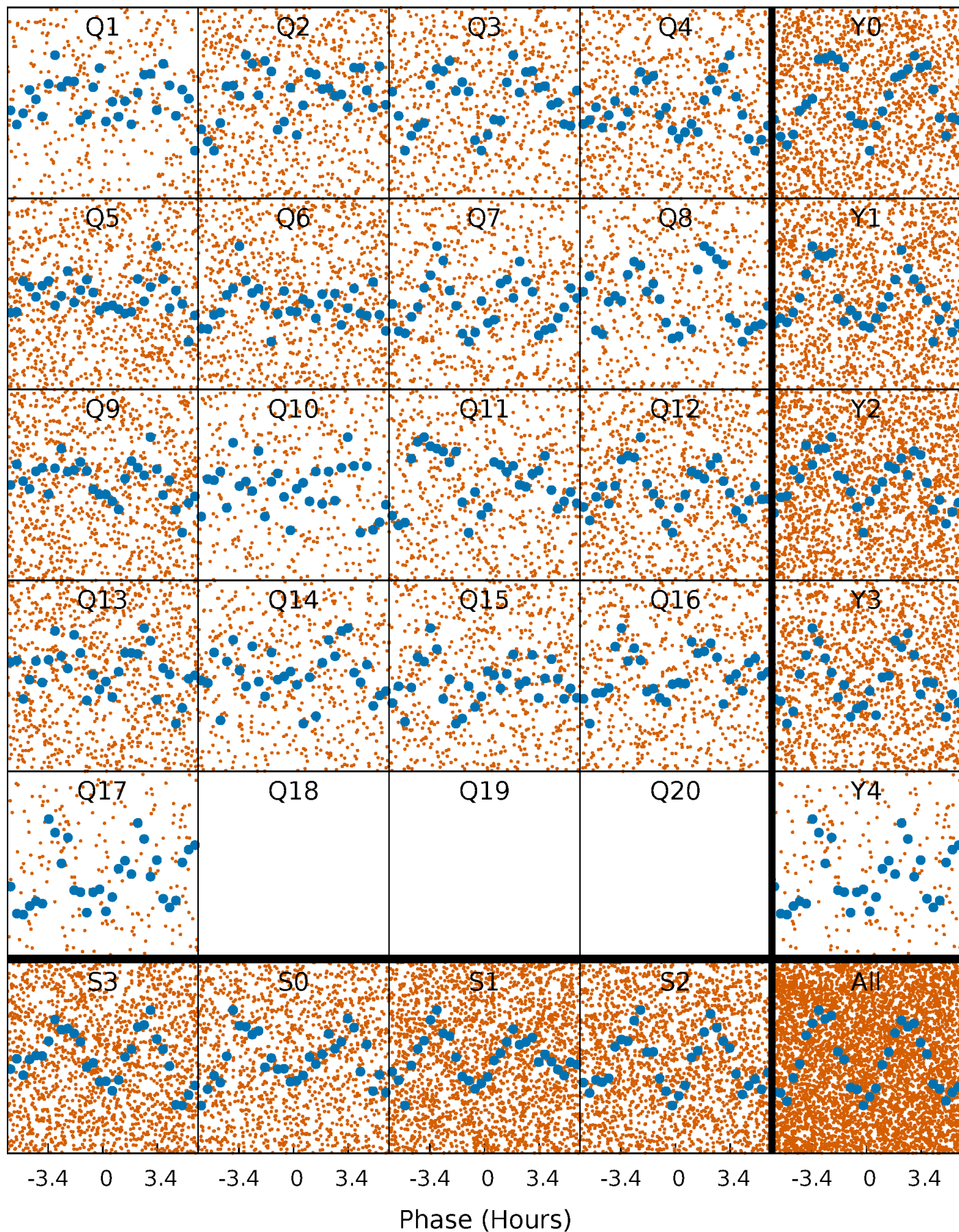


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



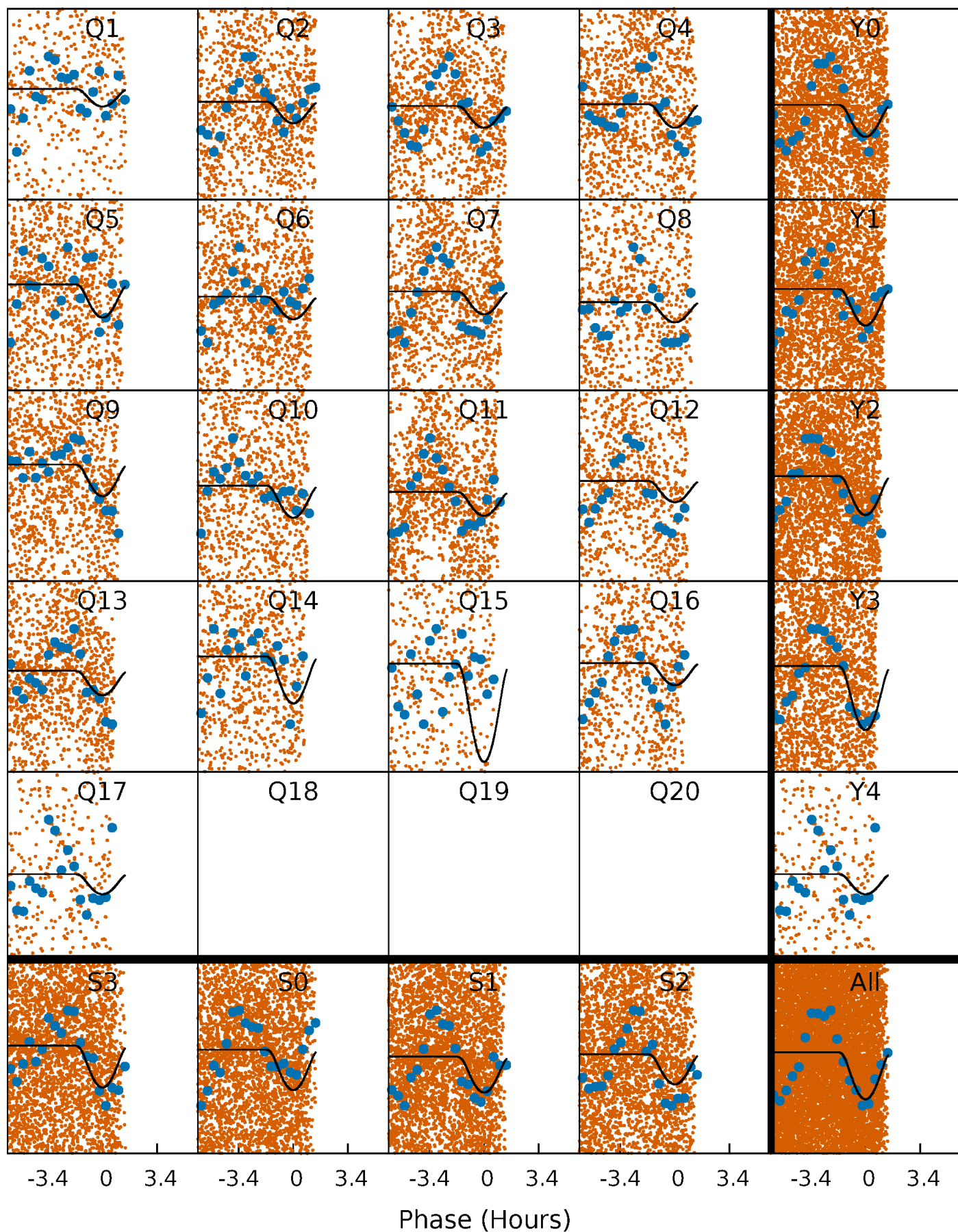
PDC Quarter-Phased Transit Curves

TCE 009655422-02 P= 0.876036 Days $T_0=132.106582$ (BKJD)



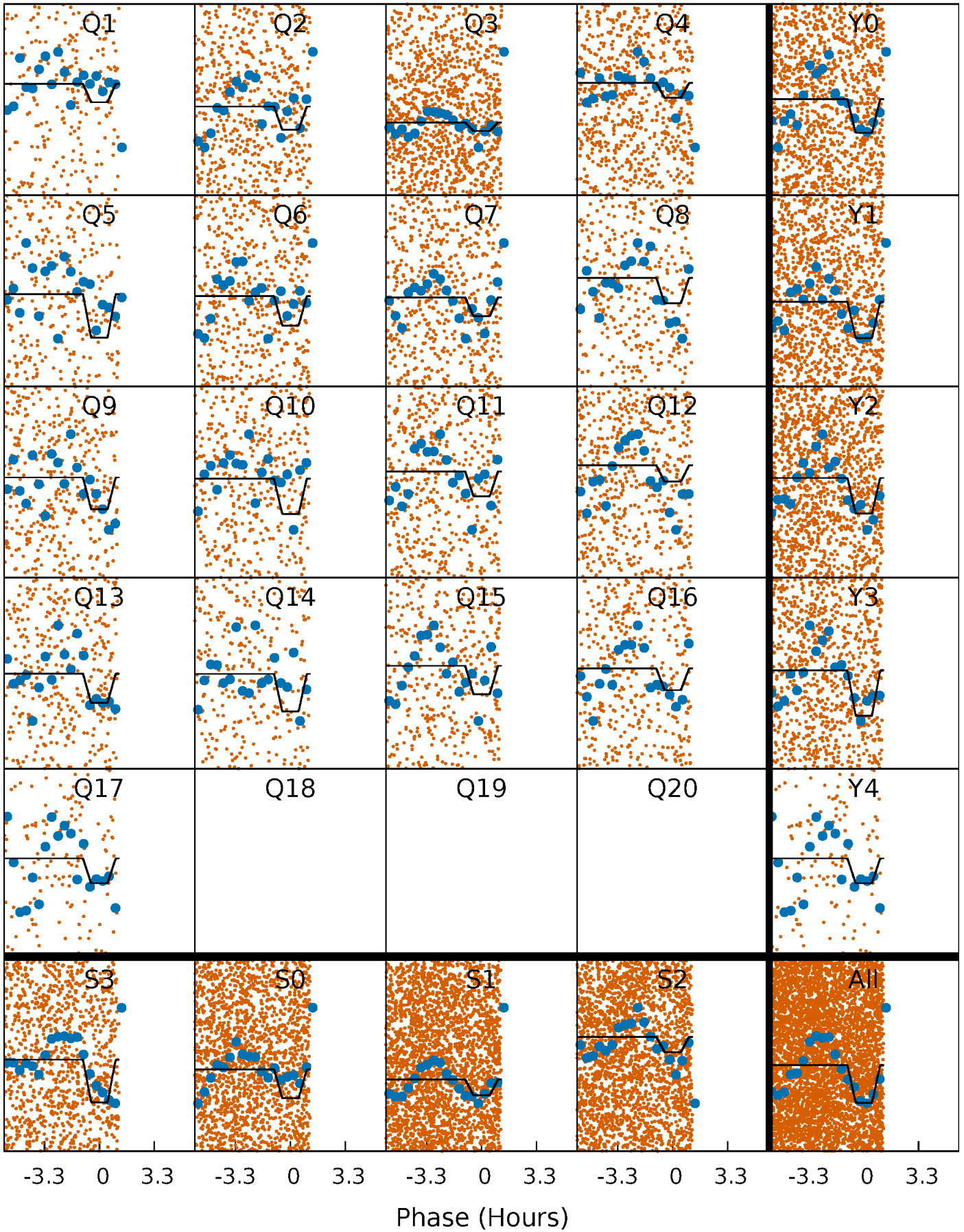
DV Quarter-Phased Transit Curves

TCE 009655422-02 P= 0.876036 Days $T_0=132.106582$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

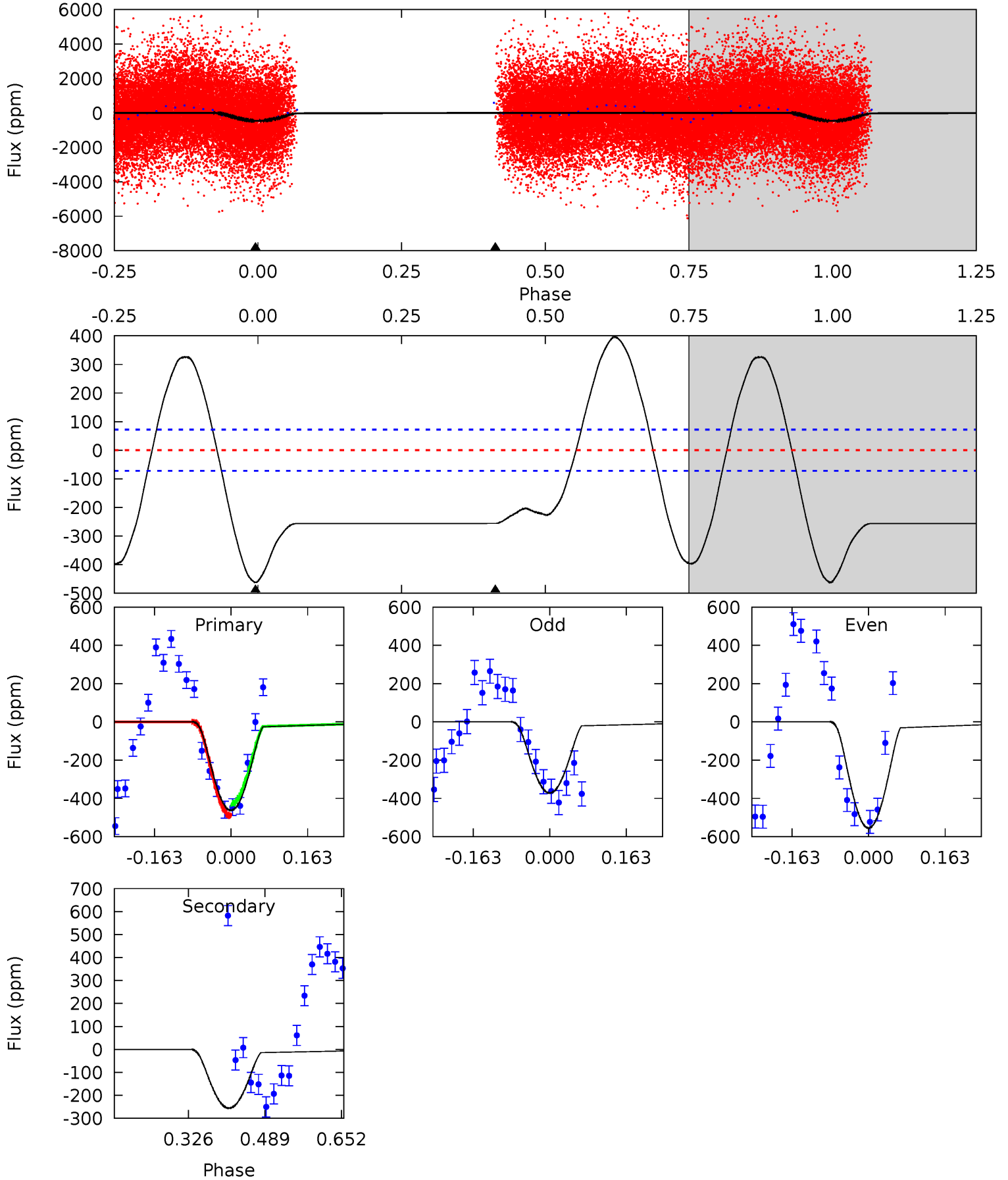
TCE 009655422-02 P= 0.876016 Days $T_0=132.115975$ (BKJD)



DV Model-Shift Uniqueness Test

009655422-02, P = 0.876036 Days, E = 131.230546 Days

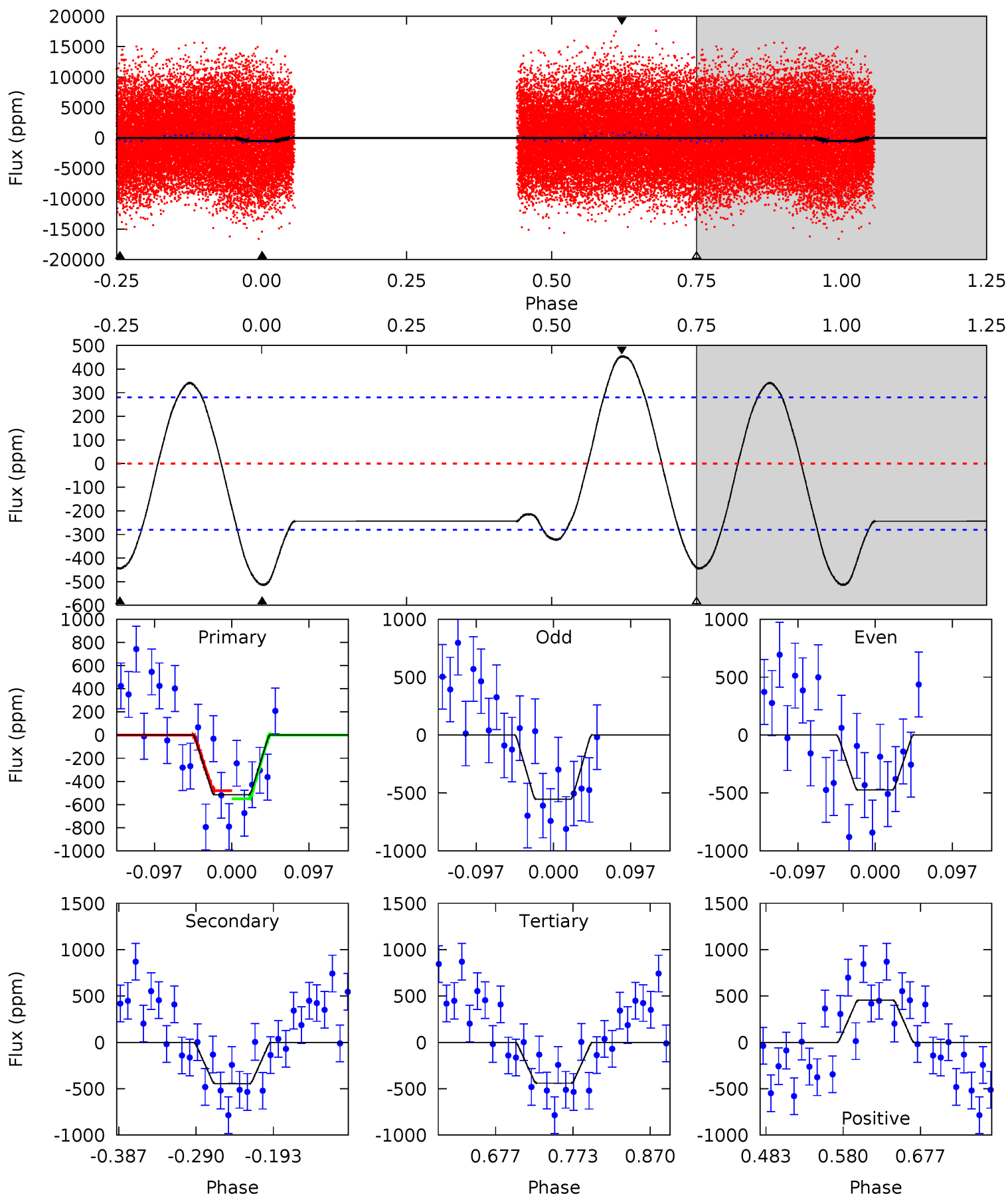
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.6 | 15.8 | 0 | 0 | 4.46 | 1.39 | 17.3 | 28.6 | 28.6 | 15.8 | 15.8 | 5.74 | 1.00 | 0.46 | 1.87 |



Alt Model-Shift Uniqueness Test

009655422-02, P = 0.876016 Days, E = 131.239959 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.39 | 7.27 | 7.19 | 7.42 | 4.57 | 1.66 | 4.72 | 1.20 | 0.97 | 0.08 | -0.15 | 0.66 | 1.05 | 0.47 | 0.58 |



Stellar Parameters For KIC 009655422

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 7785^{+243}_{-324} | $3.375^{+0.645}_{-0.172}$ | $0.210^{+0.150}_{-0.400}$ | $5.531^{+1.844}_{-3.687}$ | $2.646^{+0.161}_{-0.911}$ | $0.022^{+0.263}_{-0.010}$ |
| | +3%/-4% | +19%/-5% | +71%/-190% | +33%/-67% | +6%/-34% | +1192%/-46% |
| 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 009655422-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|---------------------------|-----------------------|--------------------------|---------------------------|
| DV | -256 ± 16 | $23.68^{+24.31}_{-15.80}$ | 6953^{+701}_{-1010} | -4582^{+11395}_{-1101} | $0.150^{+1.081}_{-0.114}$ |
| Alt. | -446 ± 61 | $21.73^{+21.33}_{-15.11}$ | 6992^{+718}_{-1128} | -2899^{+13120}_{-2509} | $0.286^{+2.956}_{-0.207}$ |

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 $A_{obs} \gg 1.0$

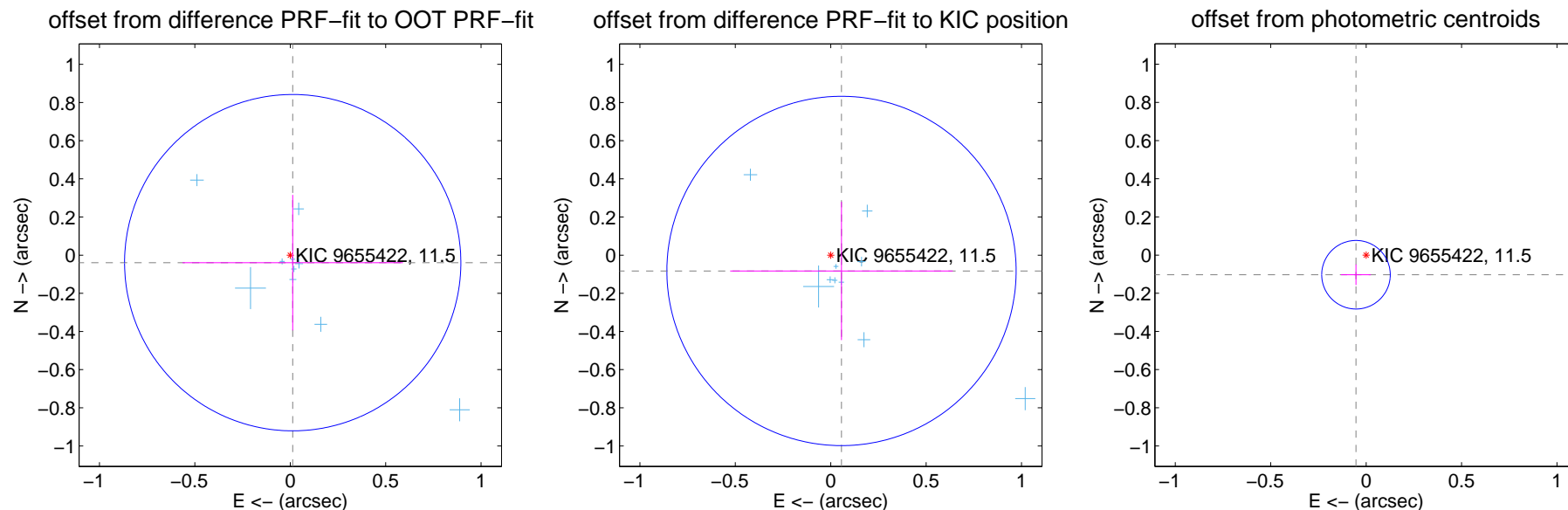
DV Centroid Data

Supplemental centroid analysis for 009655422-02. **Kepler magnitude: 11.50**. Transit SNR 15.96

There are 12 quarters with good PRF difference image offsets

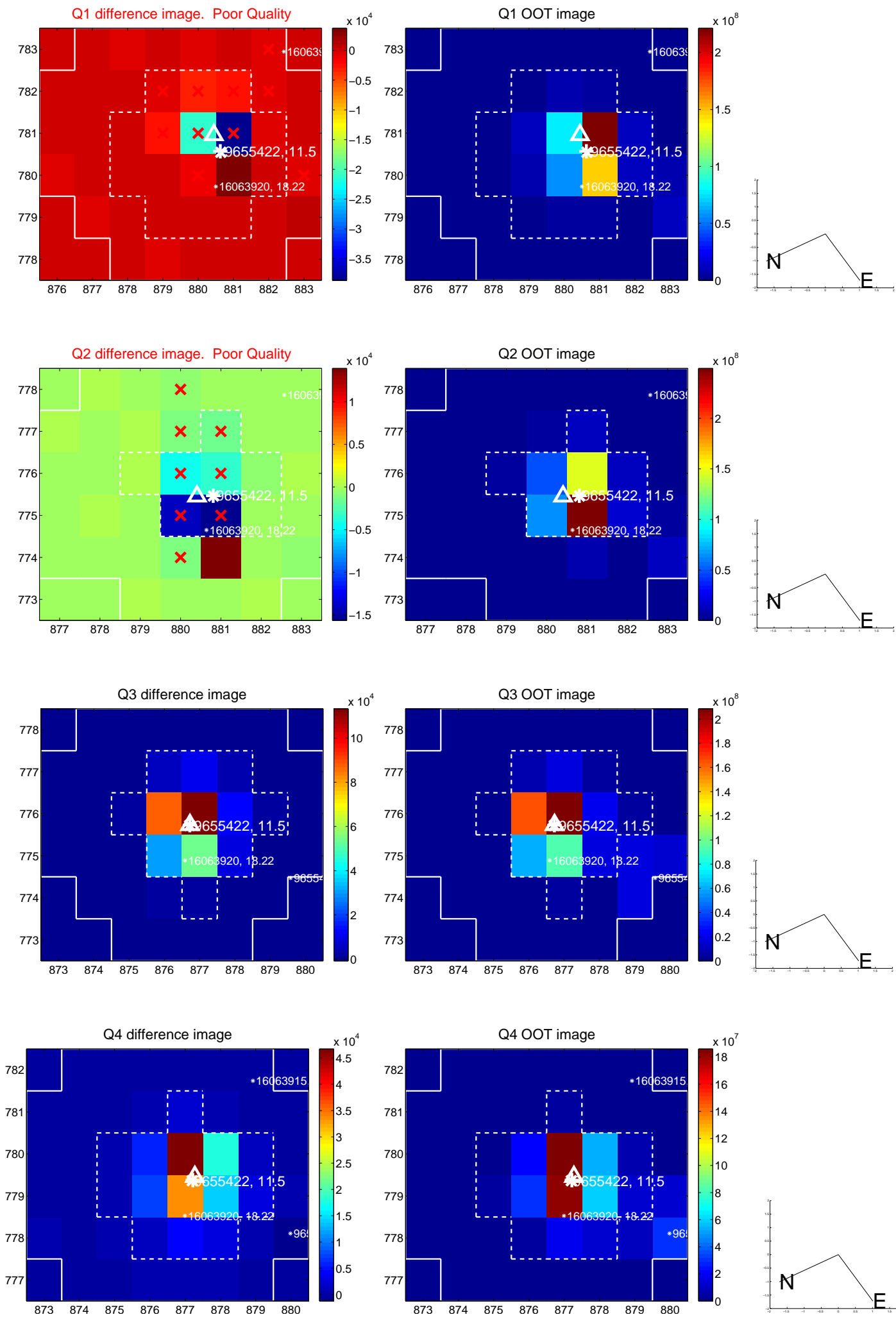
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.041 ± 0.294 | 0.14 | -0.013 ± 0.577 | -0.039 ± 0.355 |
| PRF-fit source offset from KIC position | 0.100 ± 0.305 | 0.33 | -0.057 ± 0.584 | -0.083 ± 0.362 |
| photometric centroid source offset | 0.12 ± 0.06 | 1.93 | 0.05 ± 0.08 | -0.10 ± 0.05 |

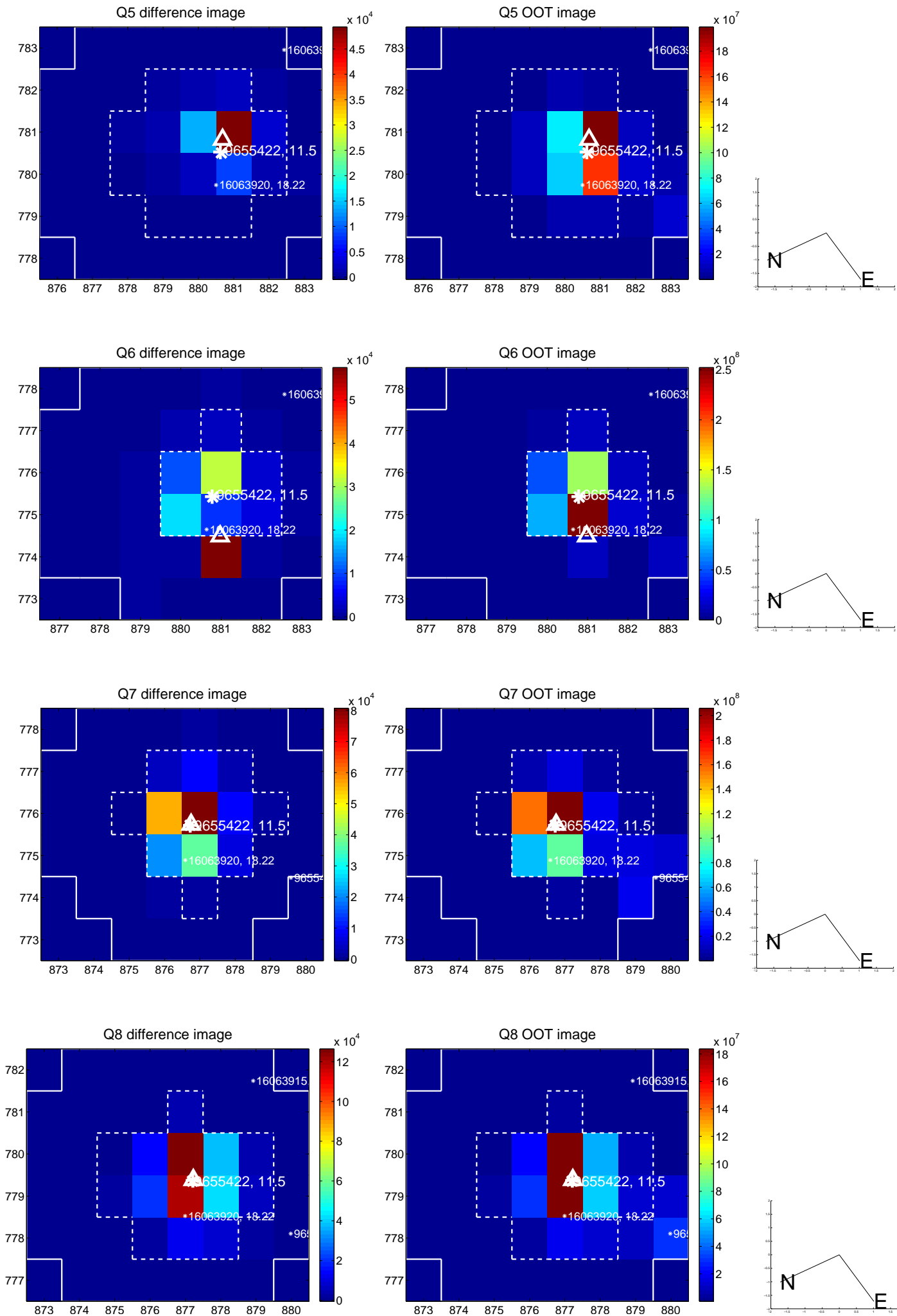


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

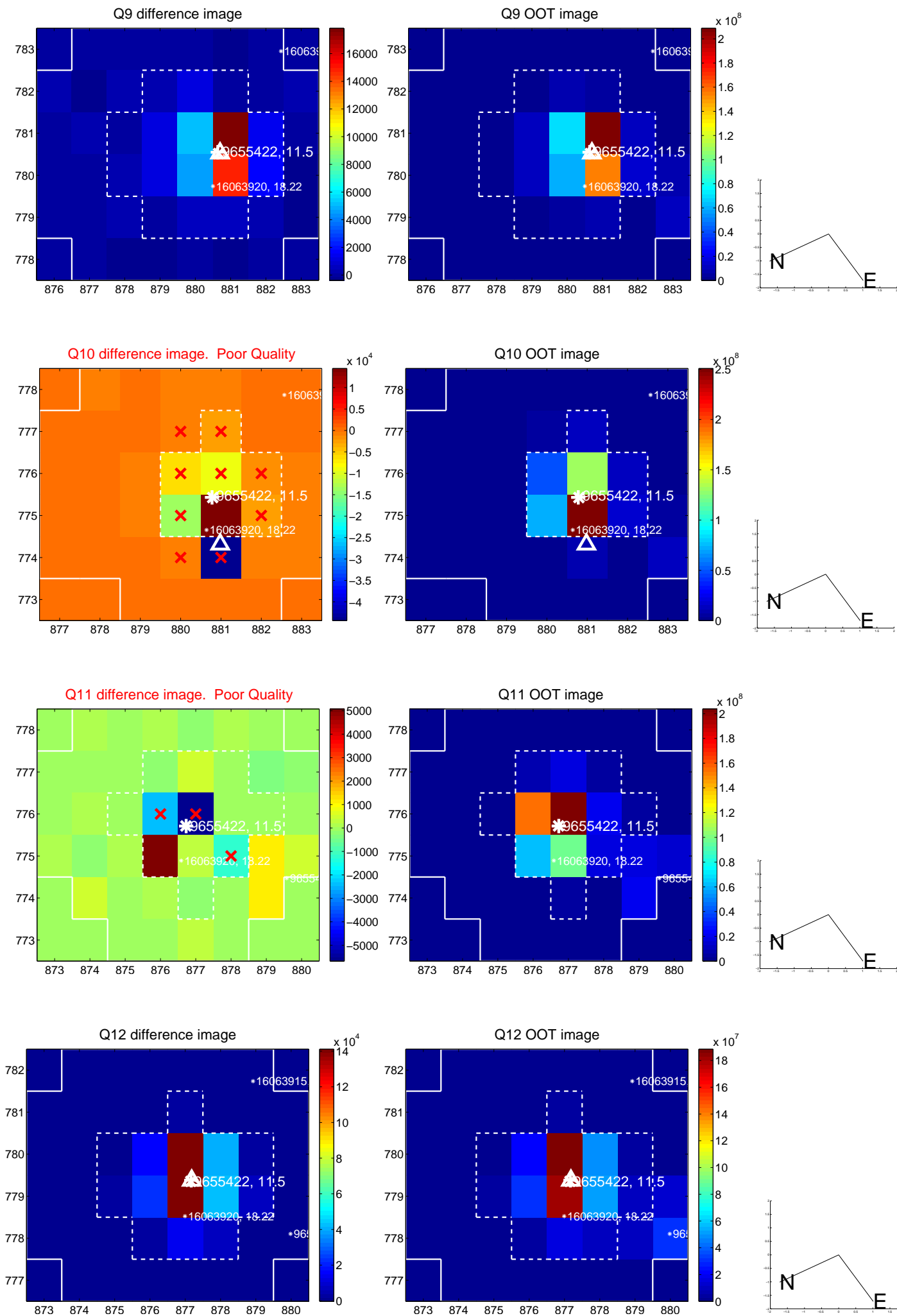
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



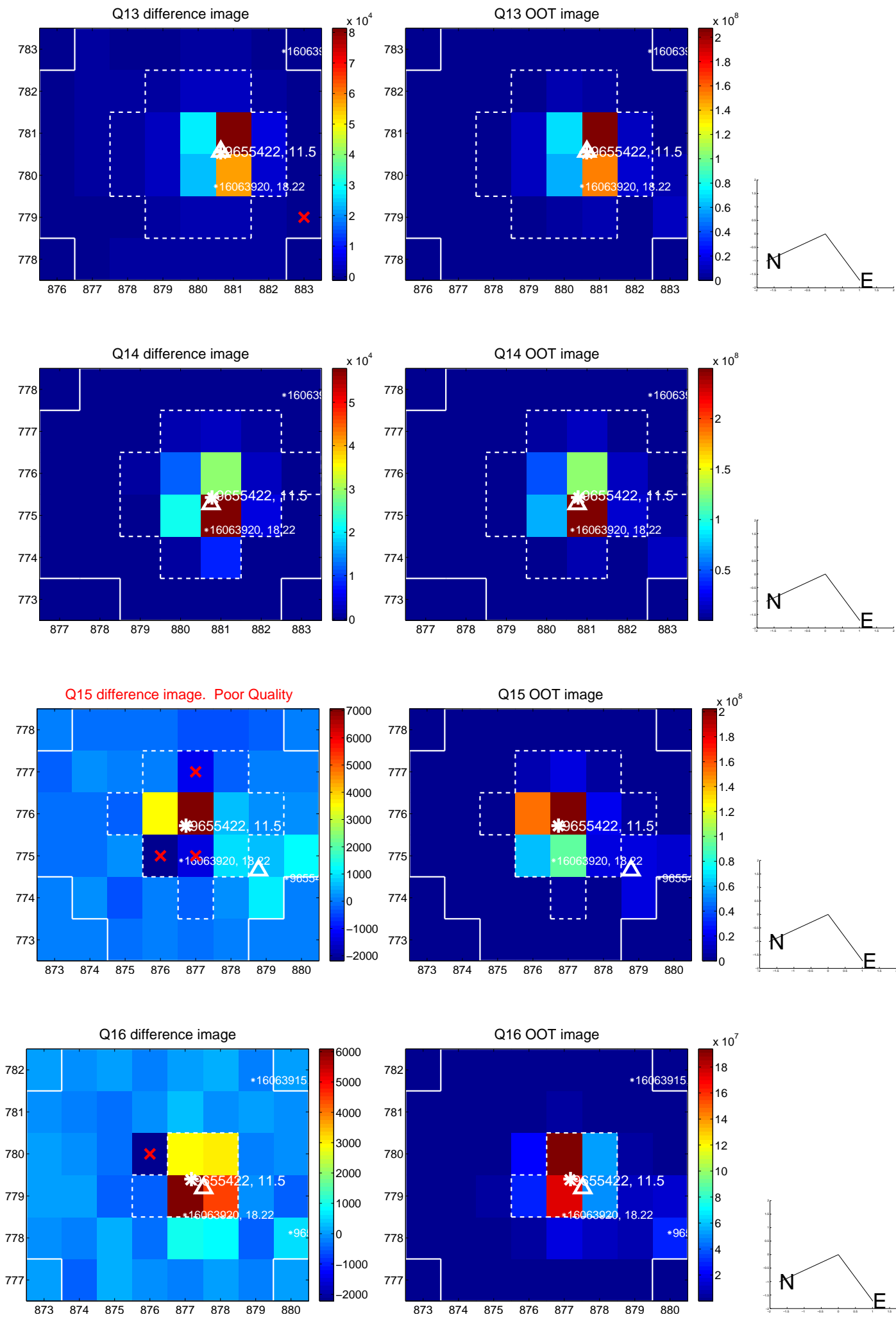
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



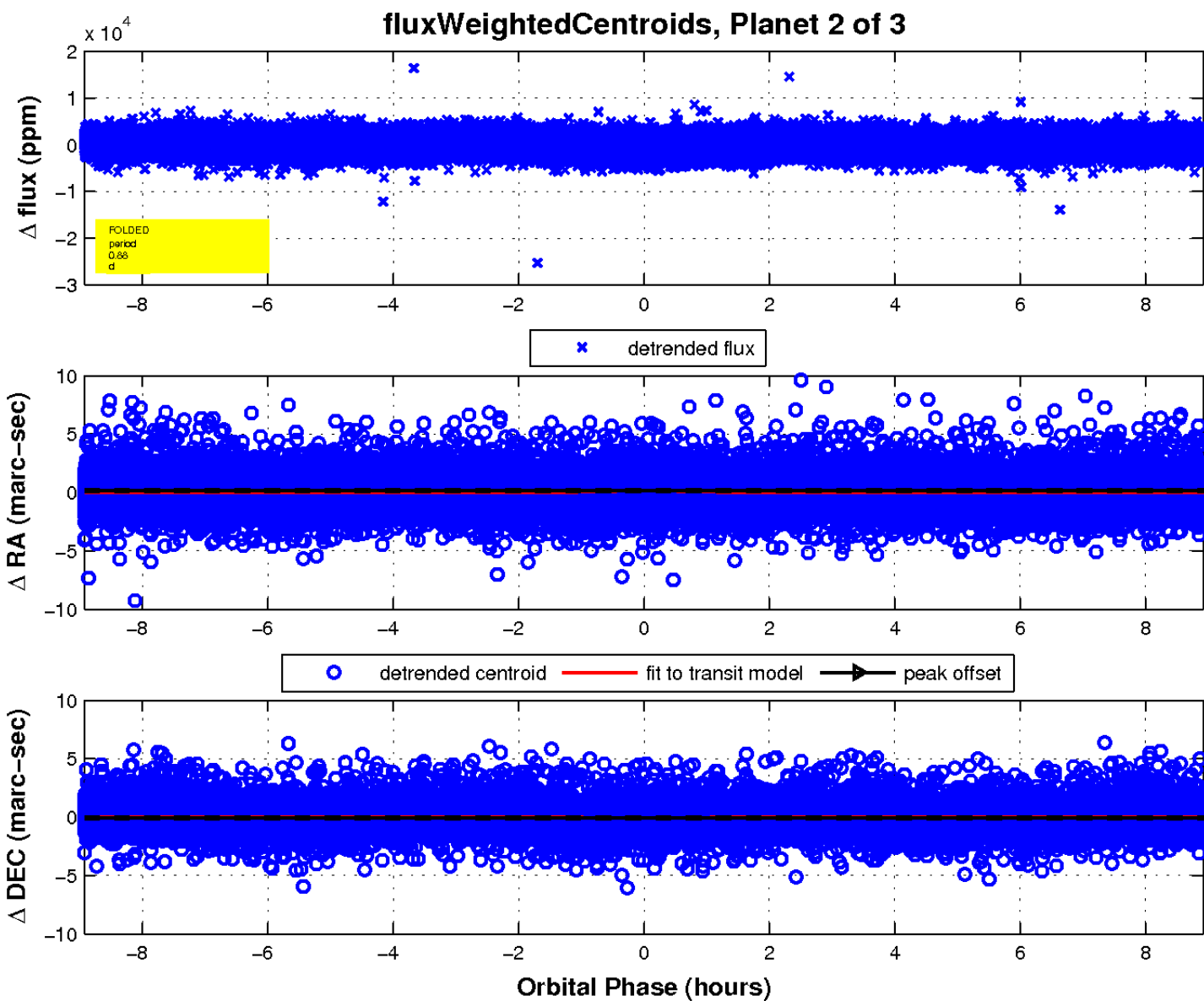
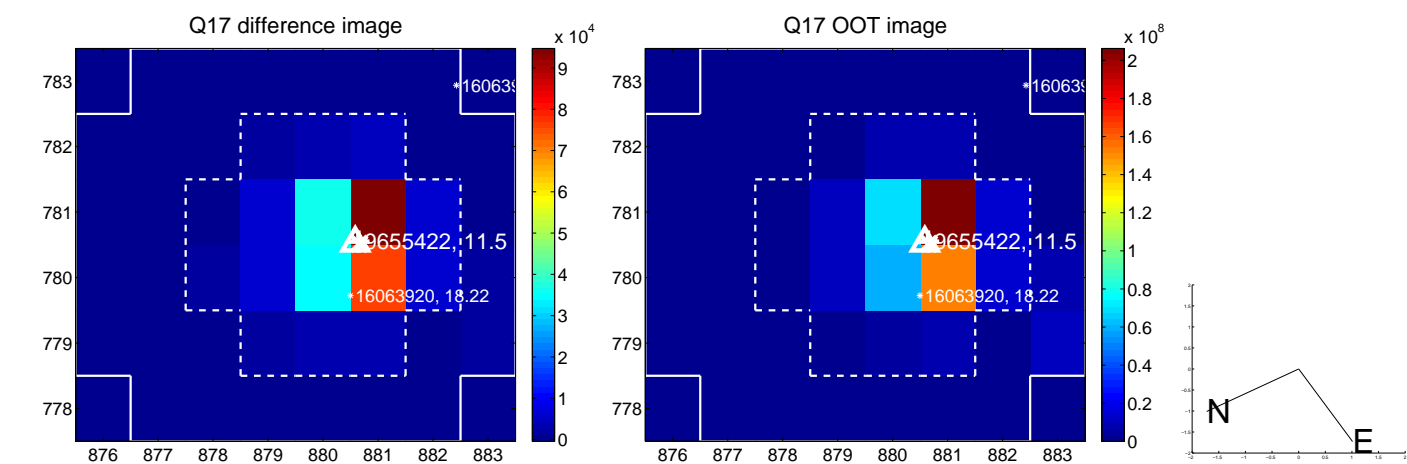
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



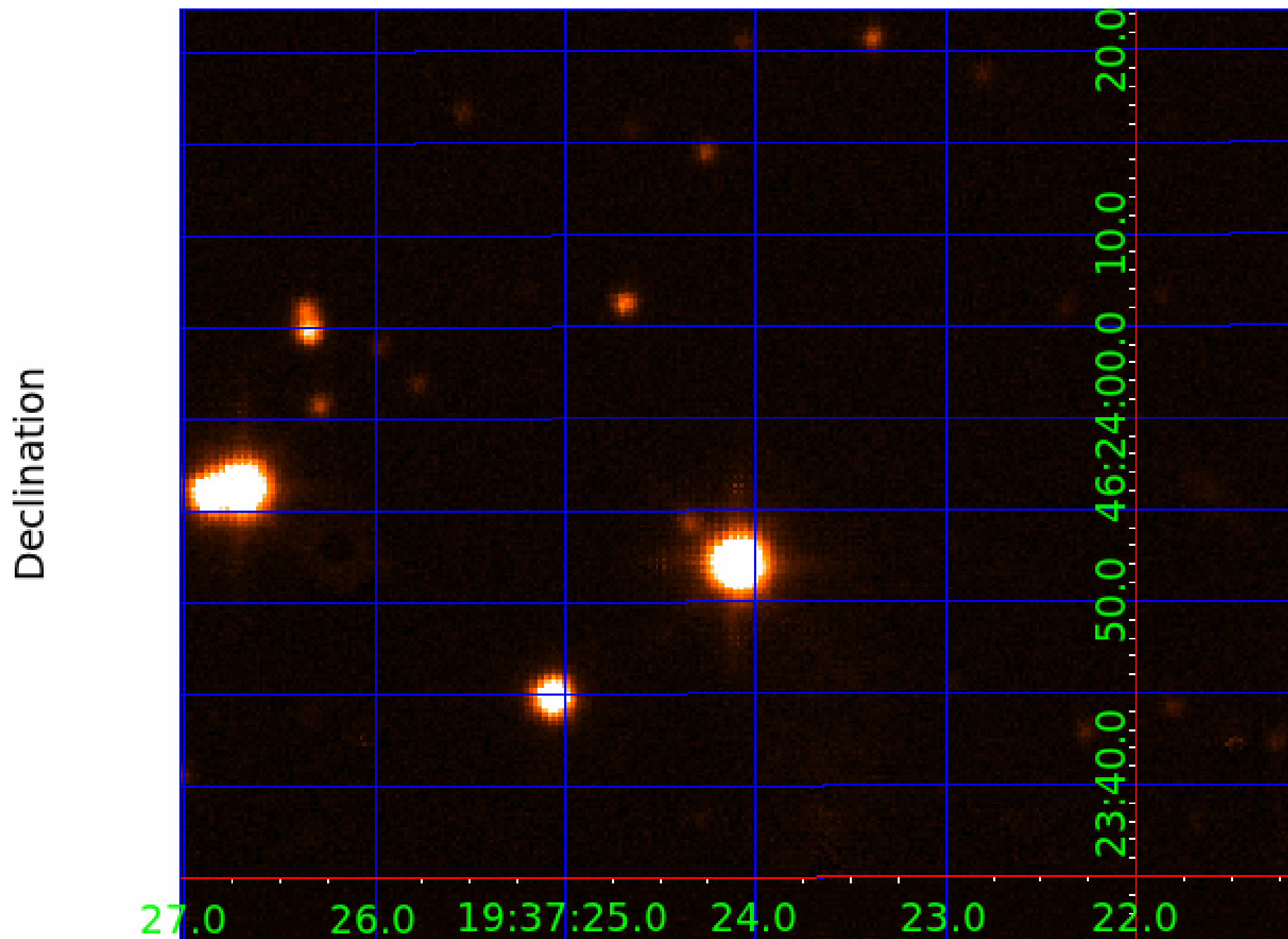
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009655422

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009655422-01 | OBS | No | 0.876012 | 132.336701 | 395.4 | 2.558 | 12.3 | 16.6 | 5.53 | 7785 | 12.87 | 0.00 |
| 009655422-02 | OBS | No | 0.876036 | 132.106581 | 421.4 | 2.974 | 13.0 | 16.0 | 5.53 | 7785 | 19.91 | 0.00 |
| 009655422-03 | OBS | No | 0.876024 | 131.885994 | 155.8 | 1.500 | 11.0 | -1.0 | 5.53 | 7785 | 6.97 | 163848.71 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------------------------------------------------------------------------------------------|
| 009655422-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED |
| 009655422-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |
| 009655422-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED |

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

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

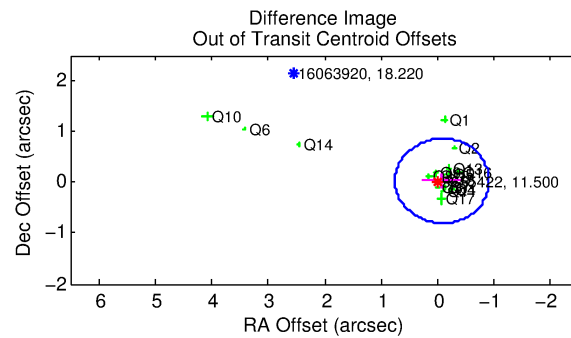
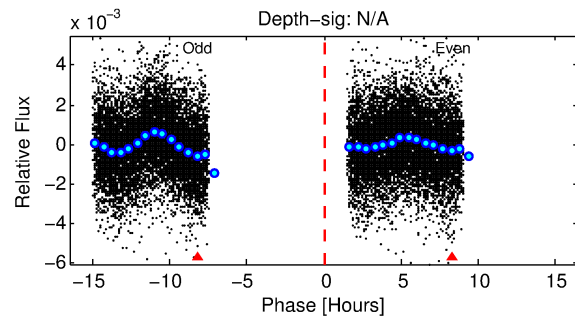
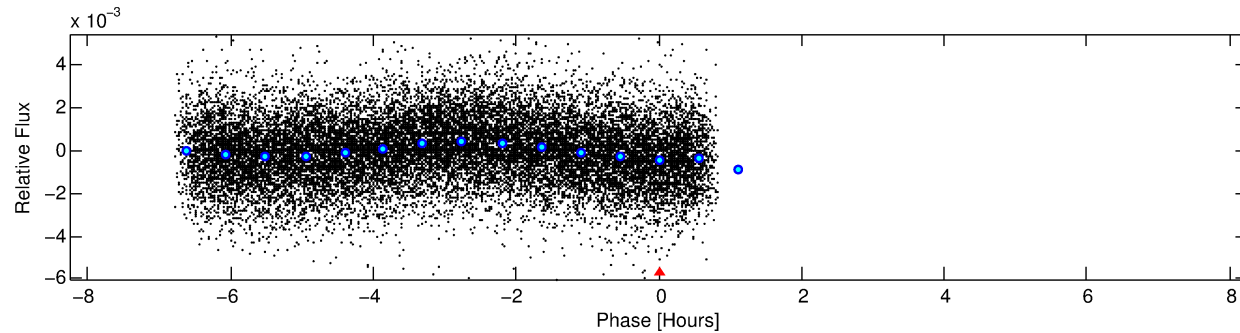
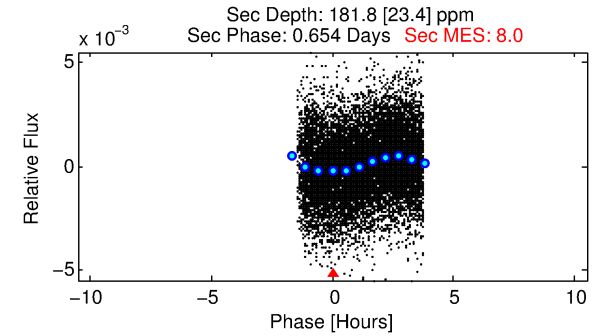
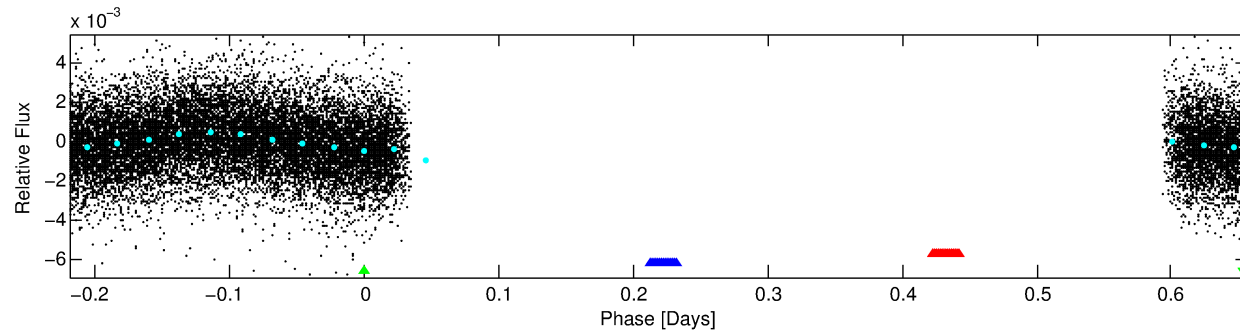
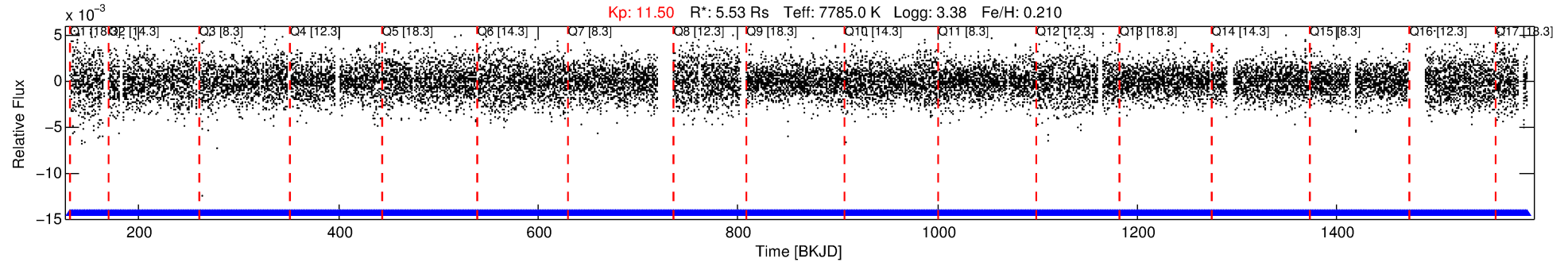
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009655422-03

No Significant Match Found

DV One-Page Summary

KIC: 9655422 Candidate: 3 of 3 Period: 0.876 d



TPS TCE Results:

Period = 0.87602 d
Epoch = 131.8860 BKJD

DV fit results are unavailable

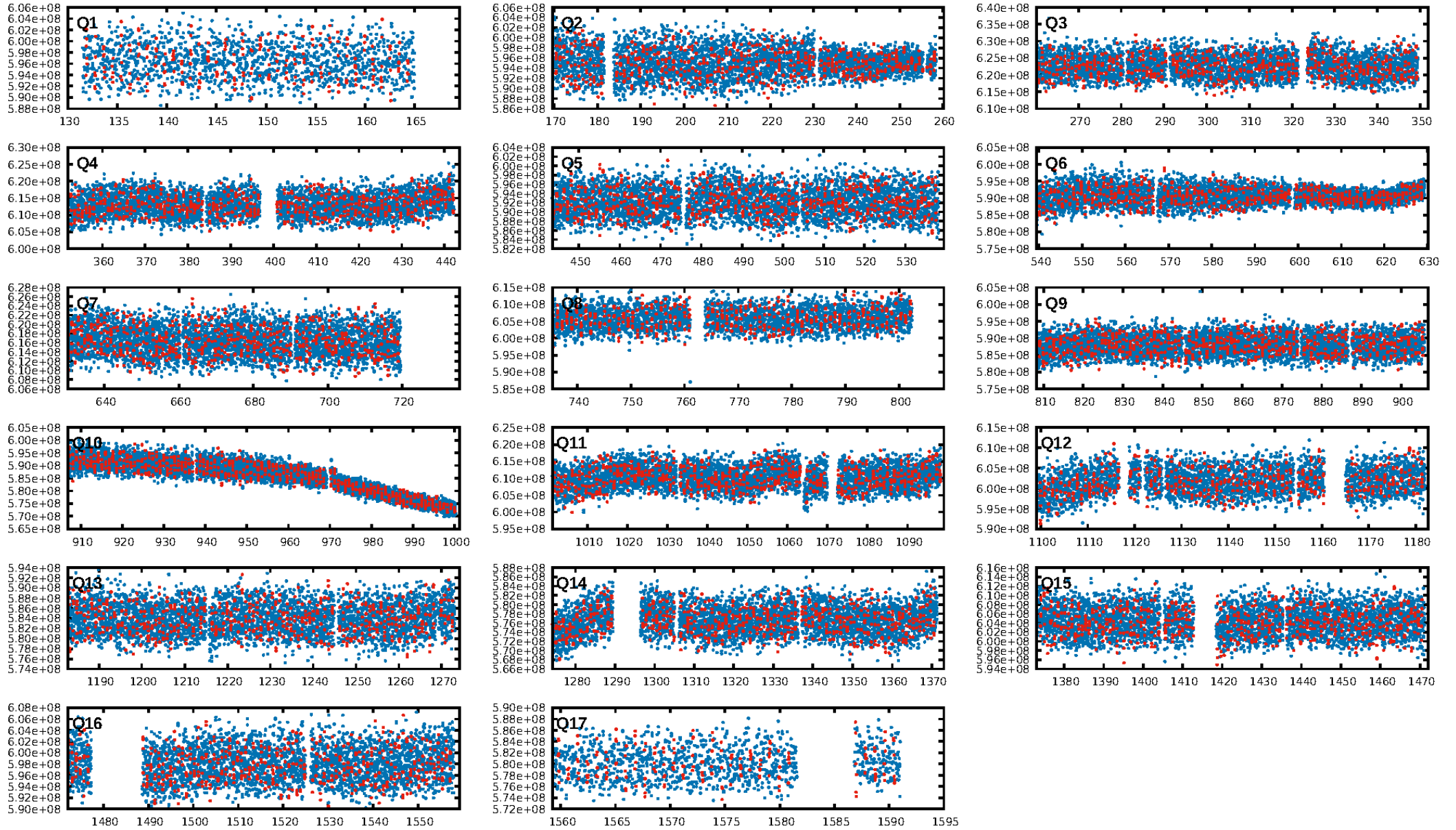
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1456/1456]
GhostDiagnostic-chr: 1.543
Centroid-sig: 0.0%
Centroid-so: 0.348 arcsec [6.56 σ]
OotOffset-rm: 0.083 arcsec [0.30 σ]
KicOffset-rm: 0.114 arcsec [0.34 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

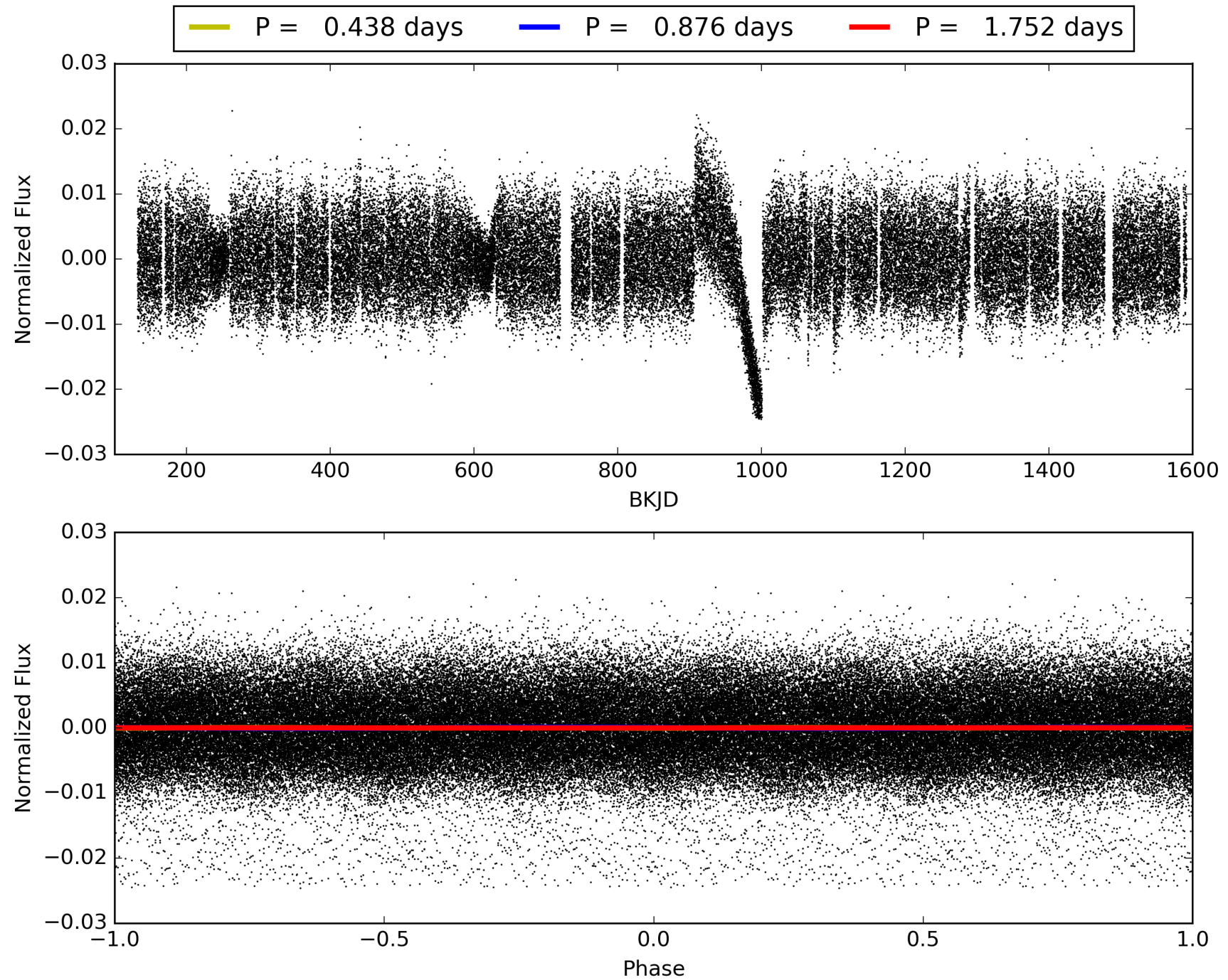
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:12:19 Z

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

TCE 009655422-03, PDC Light Curves

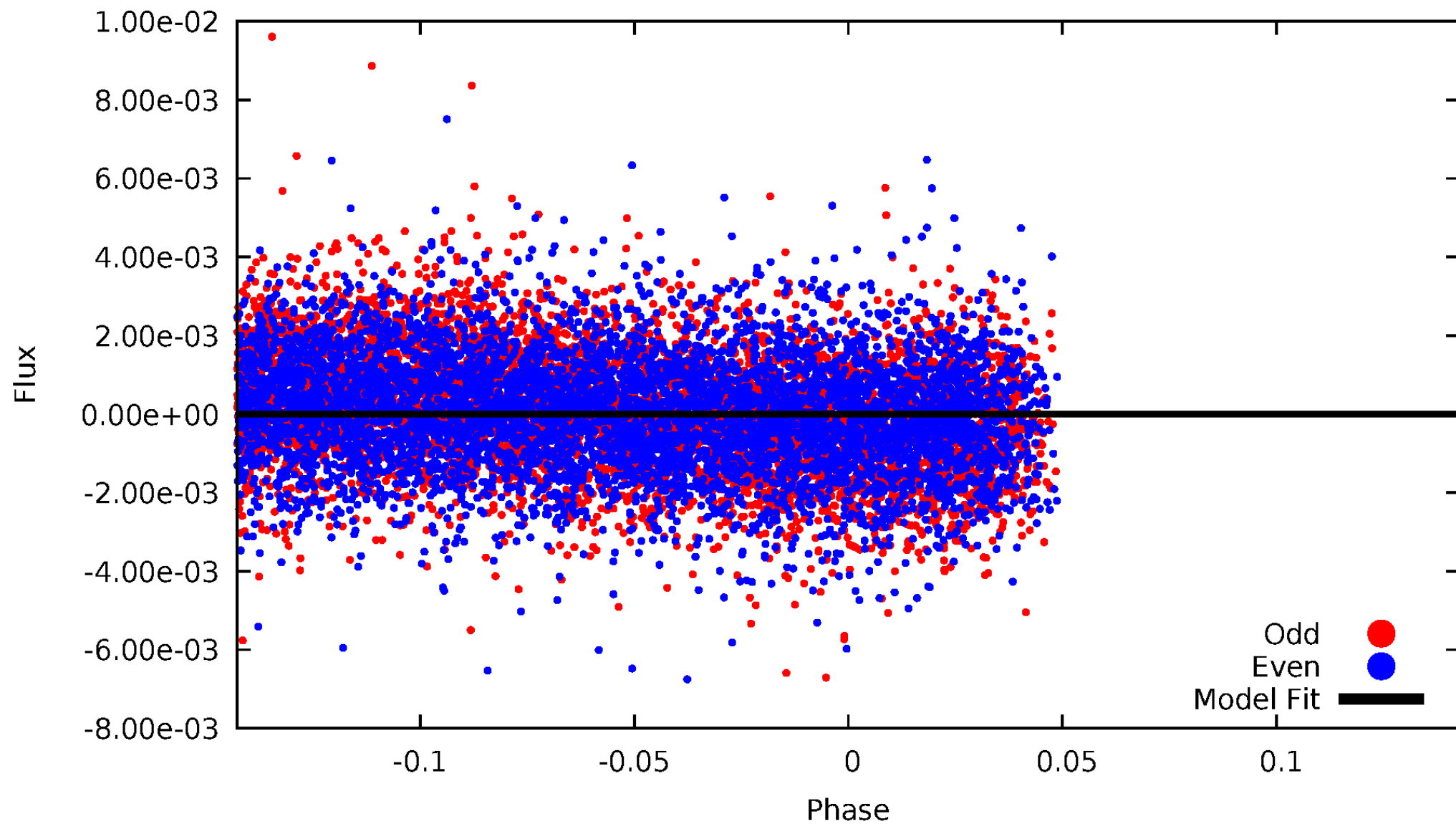


TCE 009655422-03



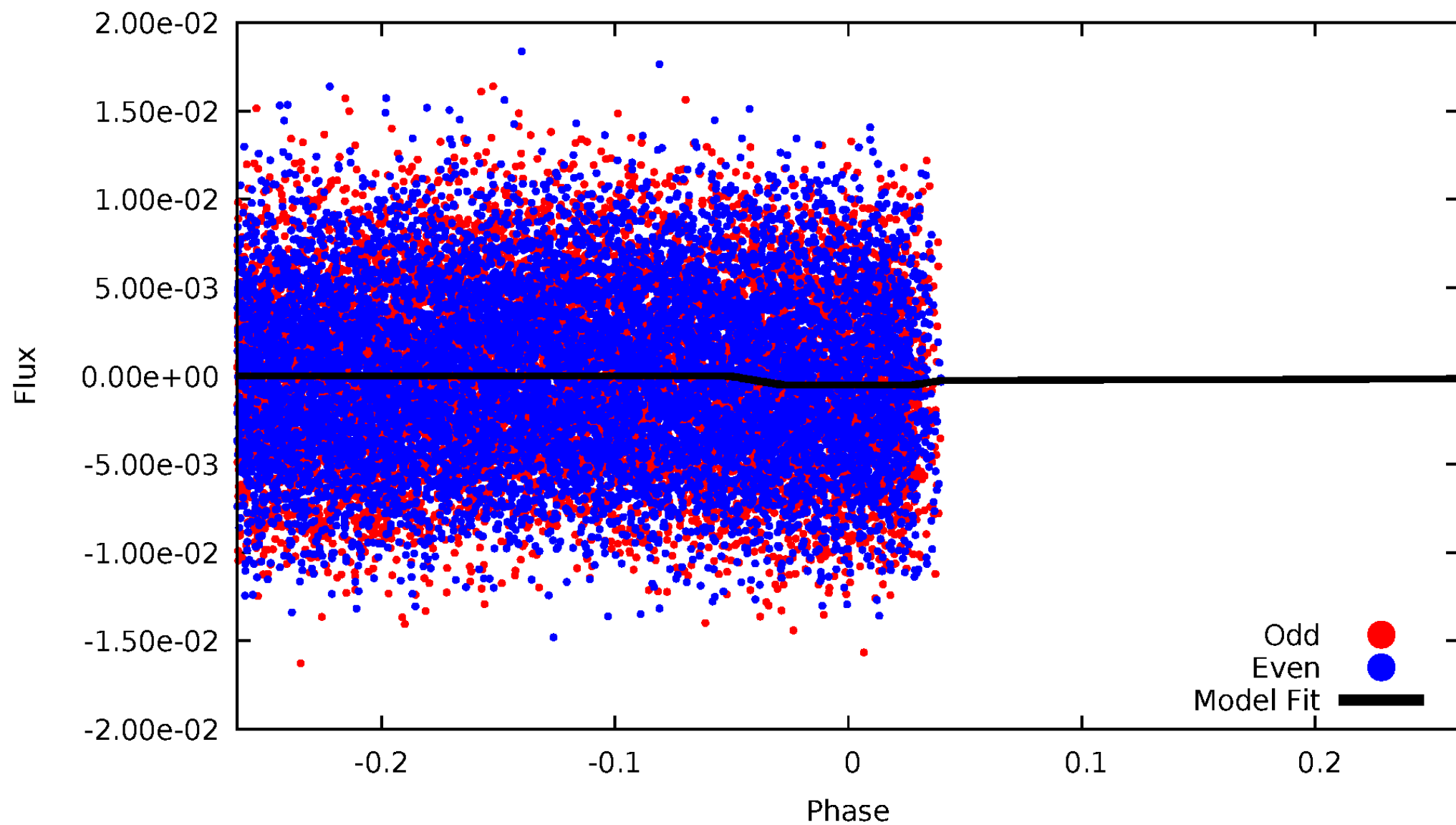
DV Odd/Even

TCE 009655422-03



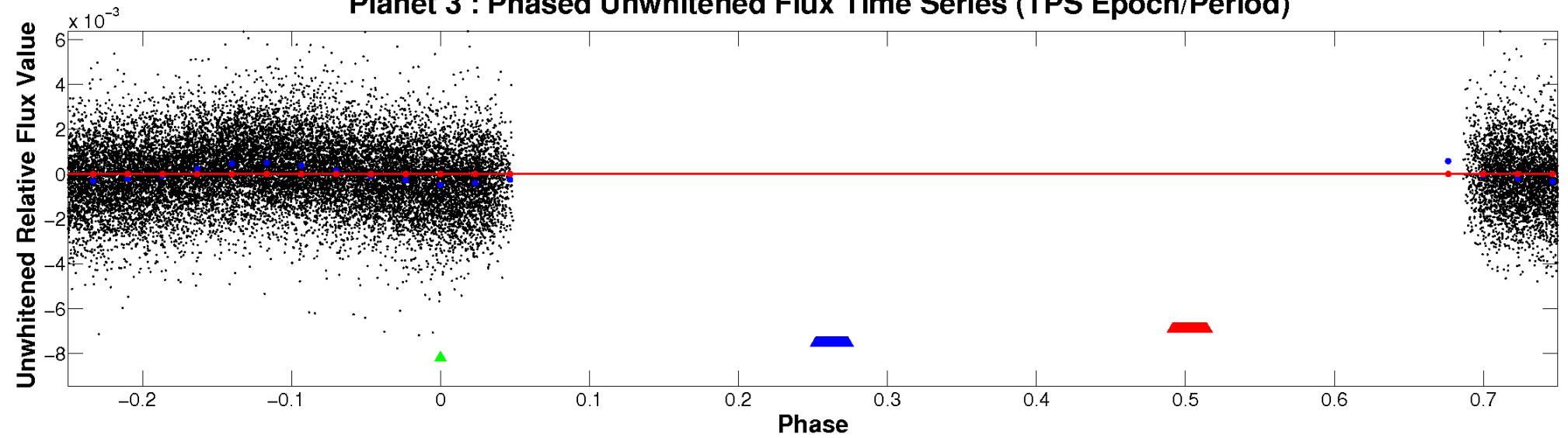
ALT Odd/Even

TCE 009655422-03

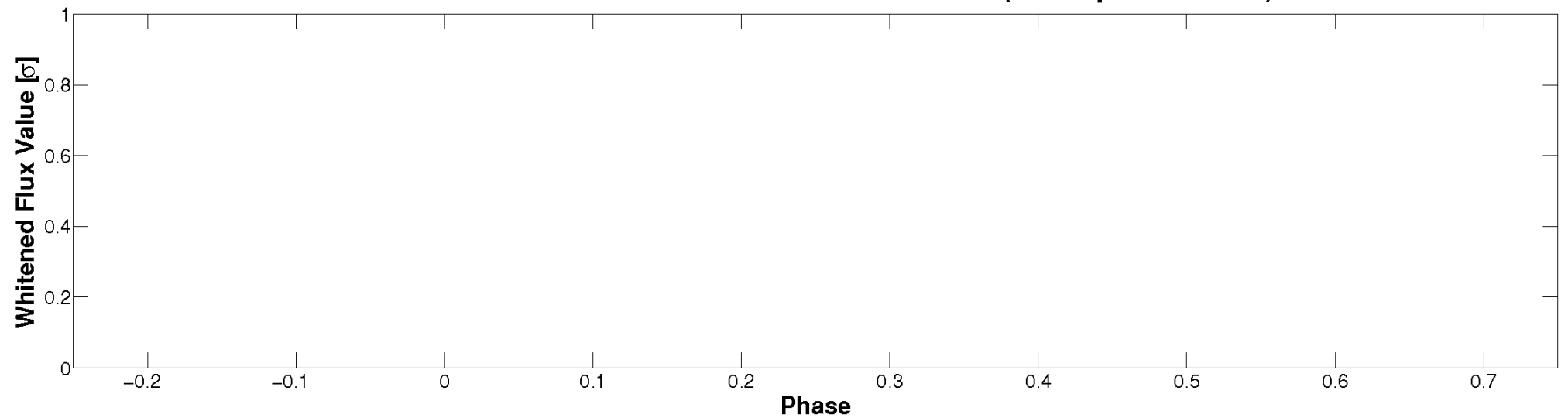


Non-Whitened Vs. Whitened Light Curve

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

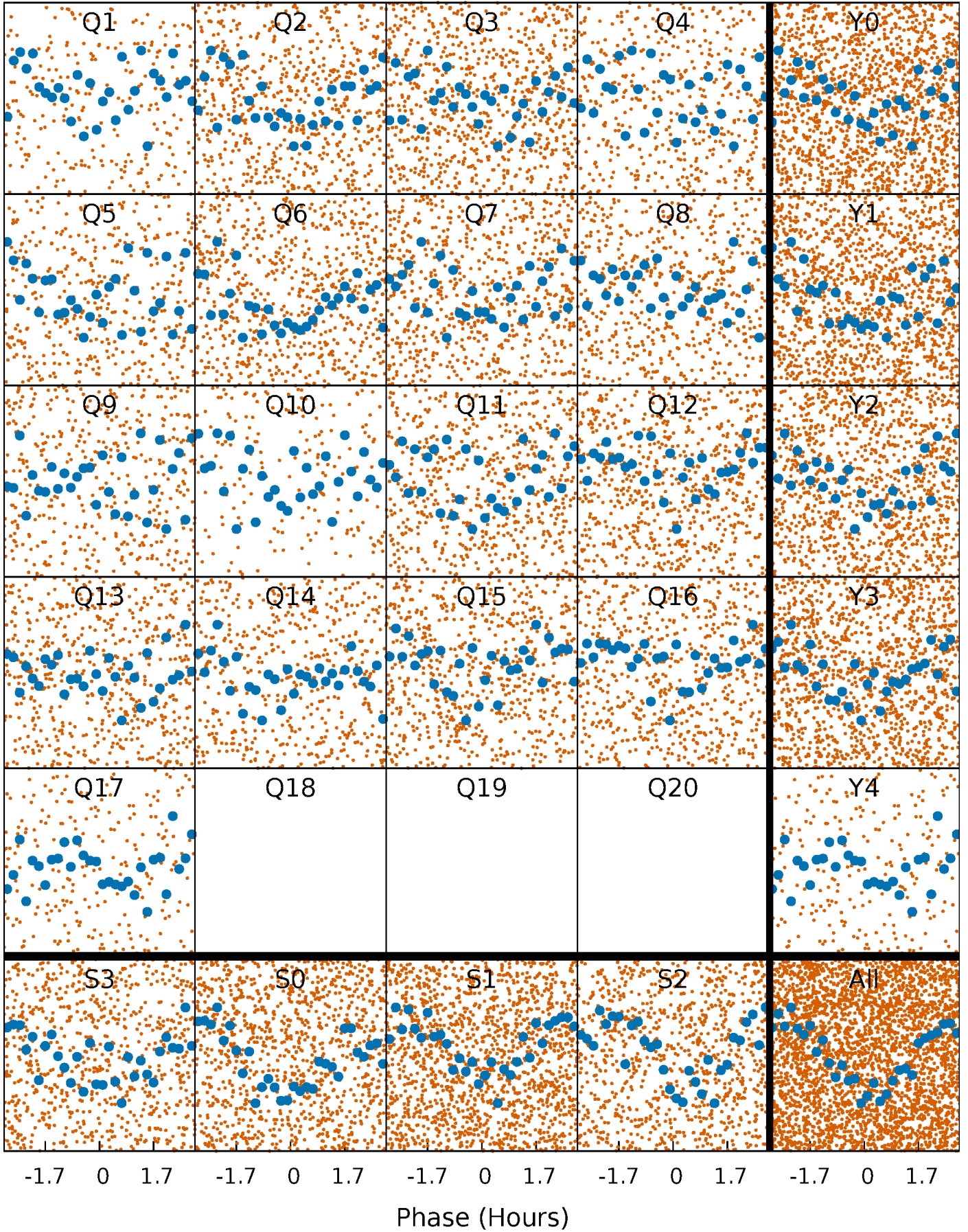


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



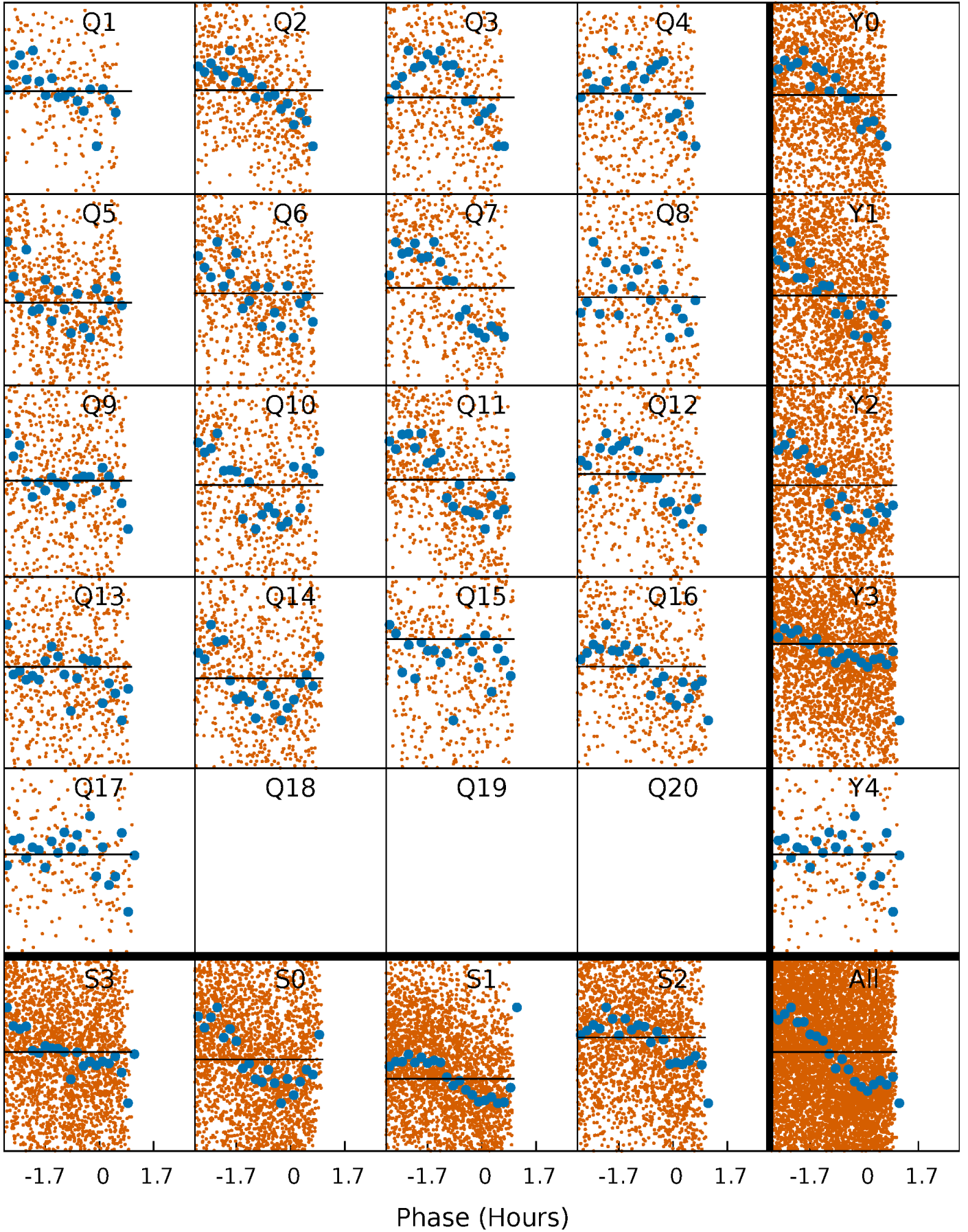
PDC Quarter-Phased Transit Curves

TCE 009655422-03 P= 0.876024 Days $T_0=131.885994$ (BKJD)



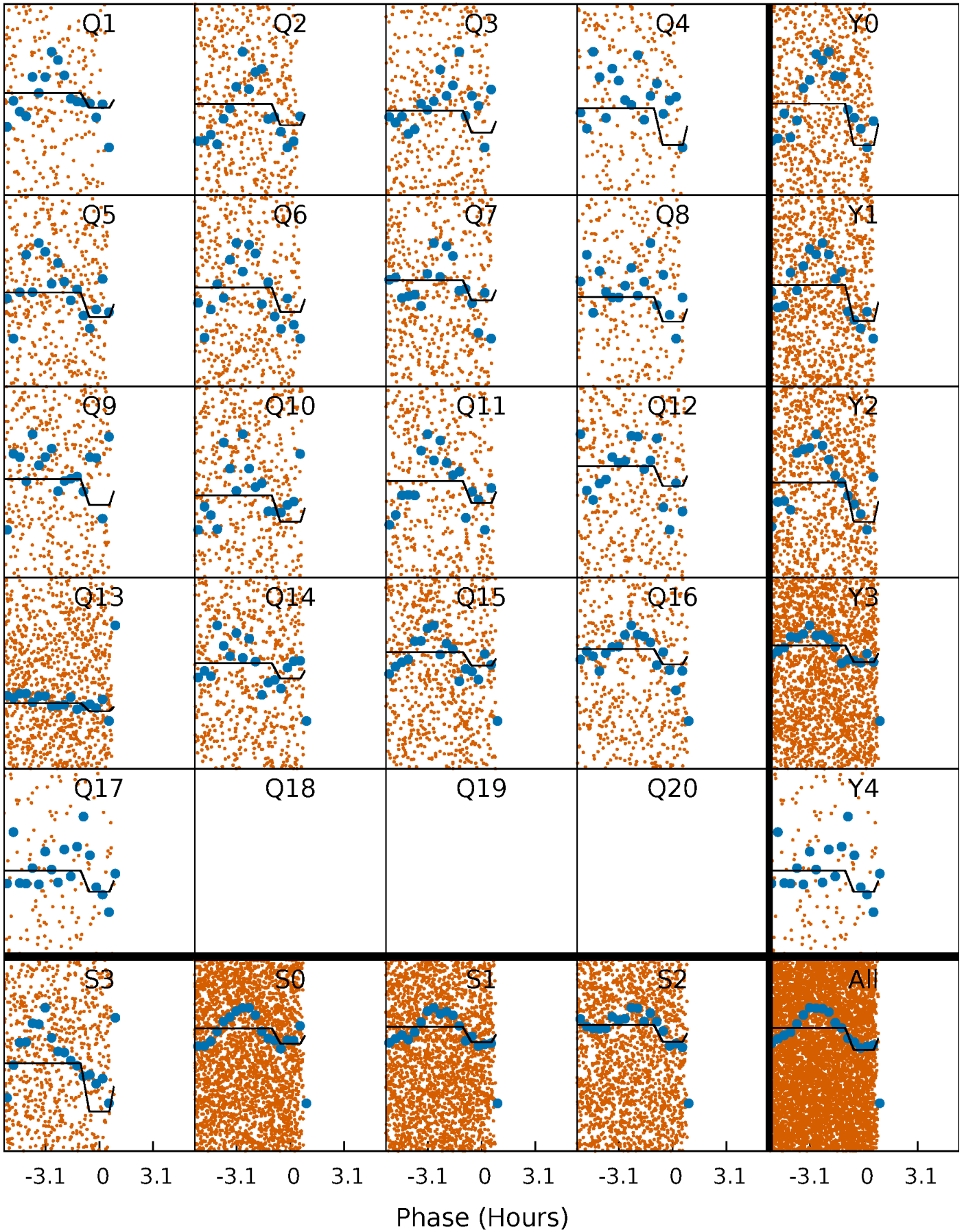
DV Quarter-Phased Transit Curves

TCE 009655422-03 P= 0.876024 Days $T_0=131.885994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

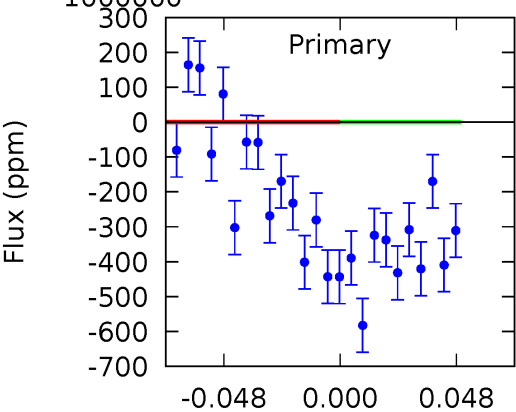
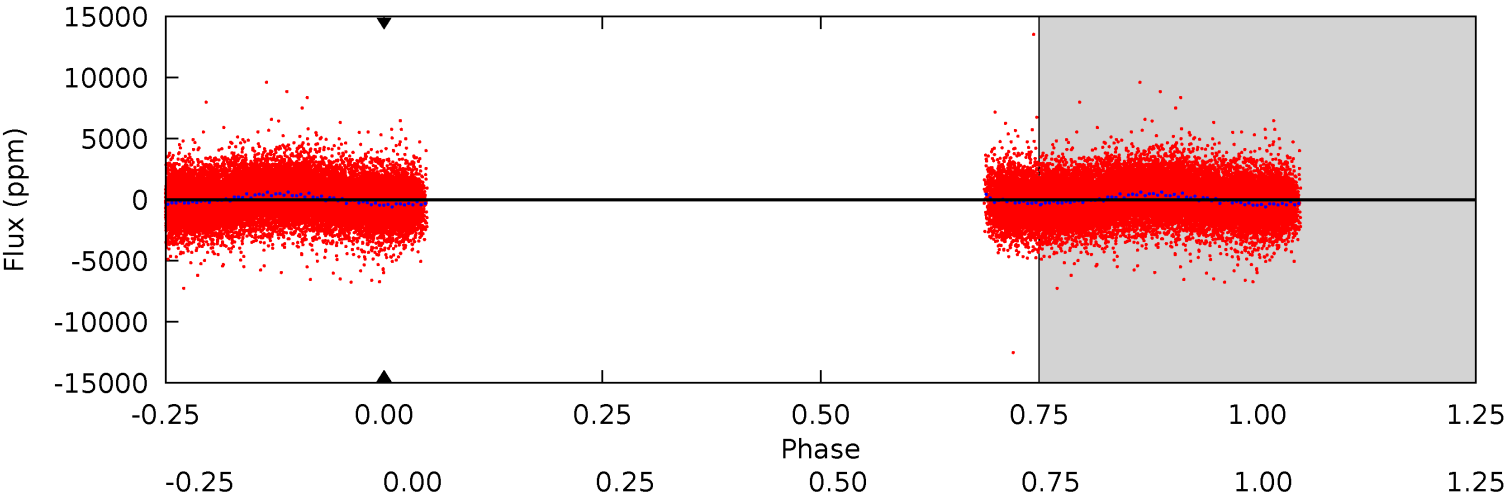
TCE 009655422-03 $P = 0.876024$ Days $T_0 = 131.893906$ (BKJD)



DV Model-Shift Uniqueness Test

009655422-03, P = 0.876024 Days, E = 131.009970 Days

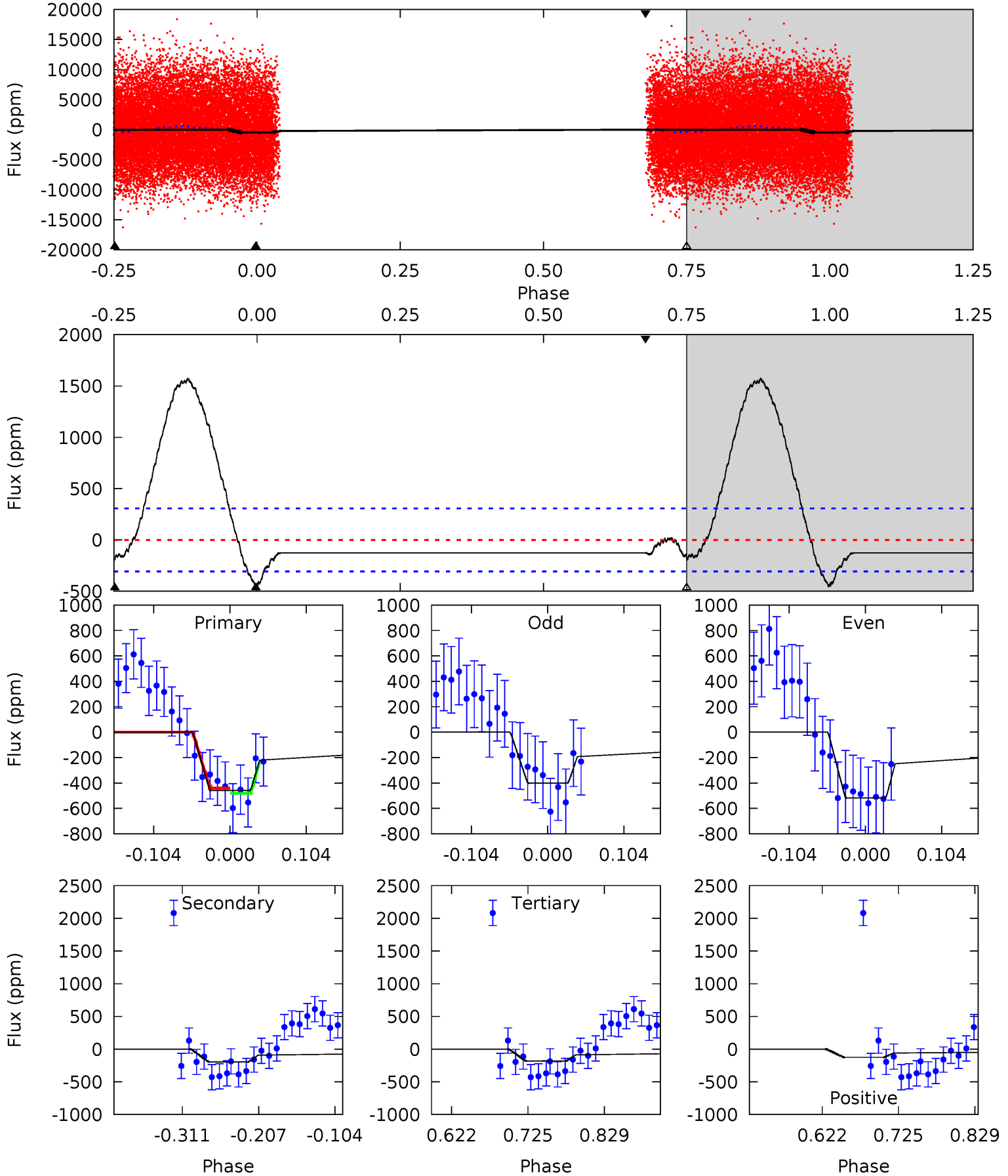
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

009655422-03, P = 0.876024 Days, E = 131.017882 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.82 | 2.89 | 2.72 | -1.87 | 4.56 | 1.63 | 11.4 | 4.10 | 8.69 | 0.17 | 4.75 | 0.87 | 0.95 | 0.77 | 0.29 |



Stellar Parameters For KIC 009655422

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 7785^{+243}_{-324} | $3.375^{+0.645}_{-0.172}$ | $0.210^{+0.150}_{-0.400}$ | $5.531^{+1.844}_{-3.687}$ | $2.646^{+0.161}_{-0.911}$ | $0.022^{+0.263}_{-0.010}$ |
| | +3%/-4% | +19%/-5% | +71%/-190% | +33%/-67% | +6%/-34% | +1192%/-46% |
| 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 009655422-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|---------------------------|-----------------------|---------------------------|-----------------------------|
| DV | 0 ± 1000000 | $34.97^{+42.61}_{-25.69}$ | 6872^{+766}_{-1137} | -4285^{+53790}_{-42052} | $0.195^{+53.069}_{-41.988}$ |
| Alt. | -194 ± 67 | $37.94^{+43.80}_{-26.29}$ | 6943^{+722}_{-1182} | -5137^{+8902}_{-768} | $0.040^{+0.340}_{-0.031}$ |

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 $A_{obs} \gg 1.0$

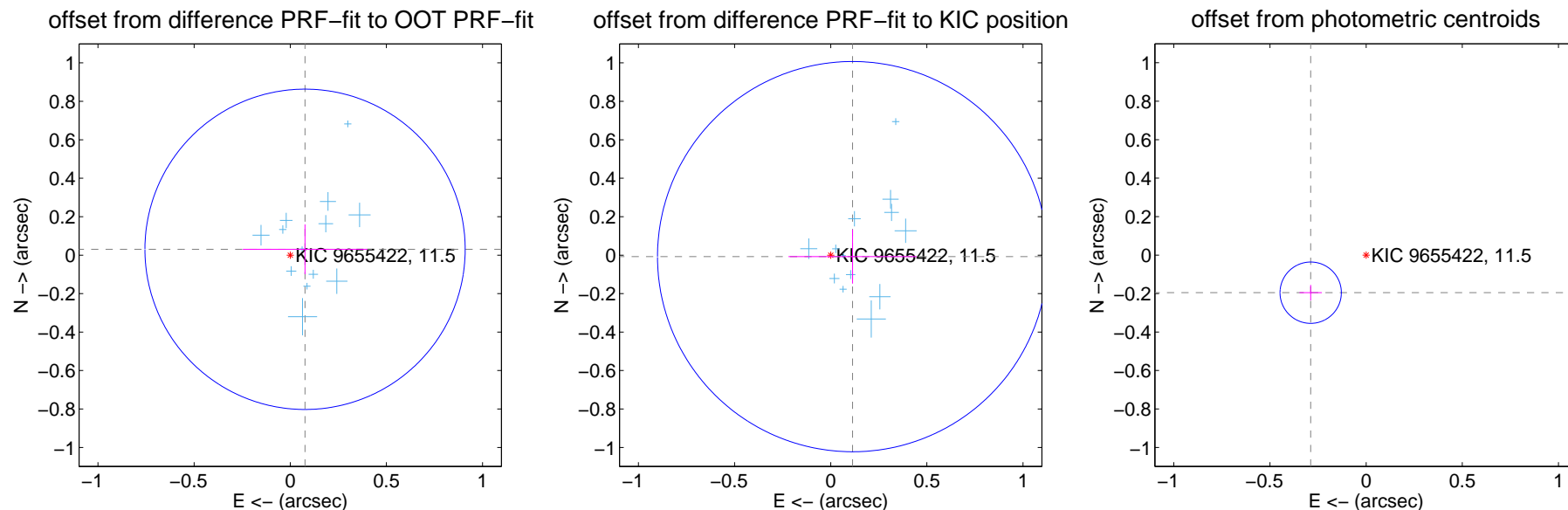
DV Centroid Data

Supplemental centroid analysis for 009655422-03. **Kepler magnitude: 11.50**. Transit SNR -1.00

There are 16 quarters with good PRF difference image offsets

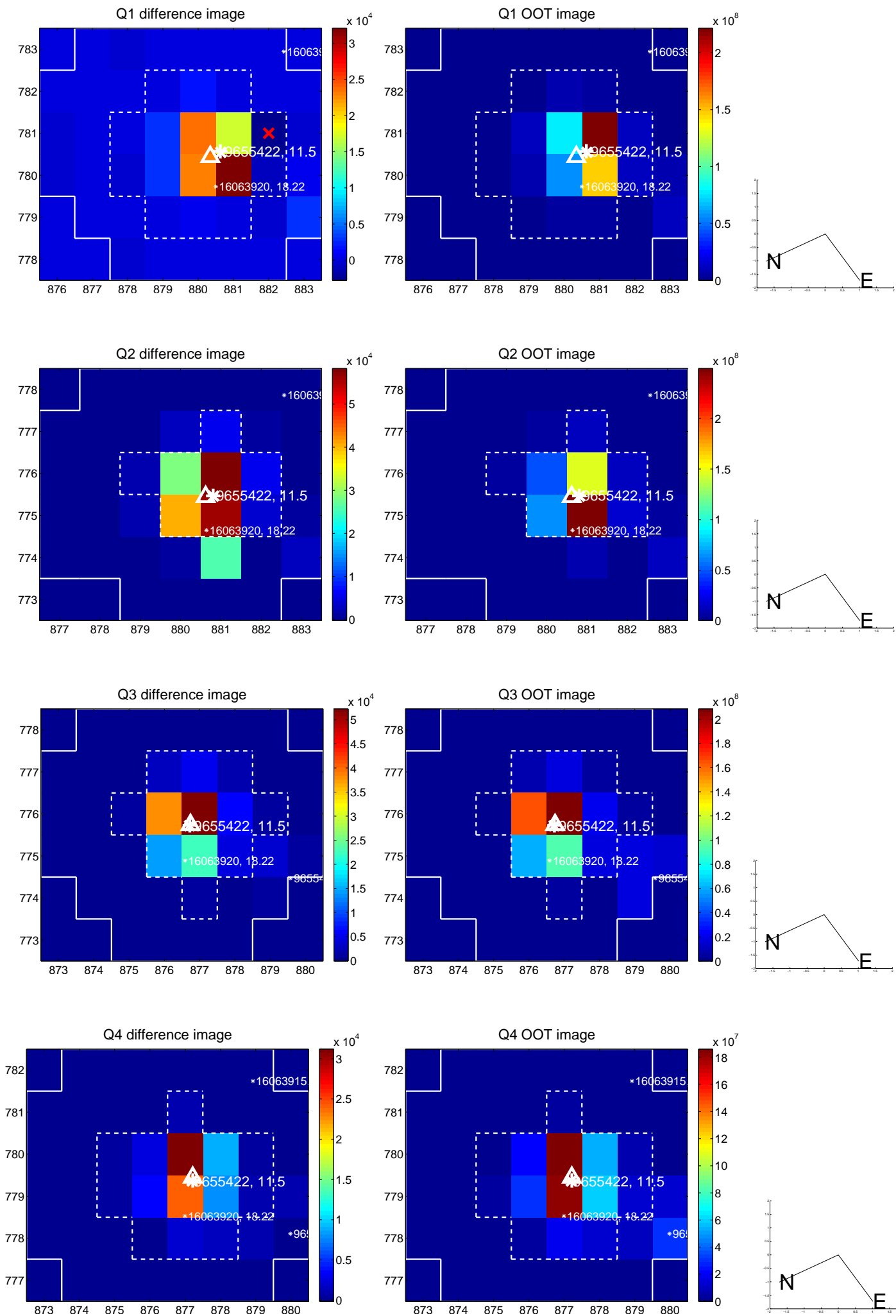
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|-----------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.083 ± 0.278 | 0.30 | -0.077 ± 0.324 | 0.030 ± 0.130 |
| PRF-fit source offset from KIC position | 0.114 ± 0.338 | 0.34 | -0.114 ± 0.333 | -0.008 ± 0.140 |
| photometric centroid source offset | 0.35 ± 0.05 | 6.56 | 0.29 ± 0.06 | -0.20 ± 0.04 |

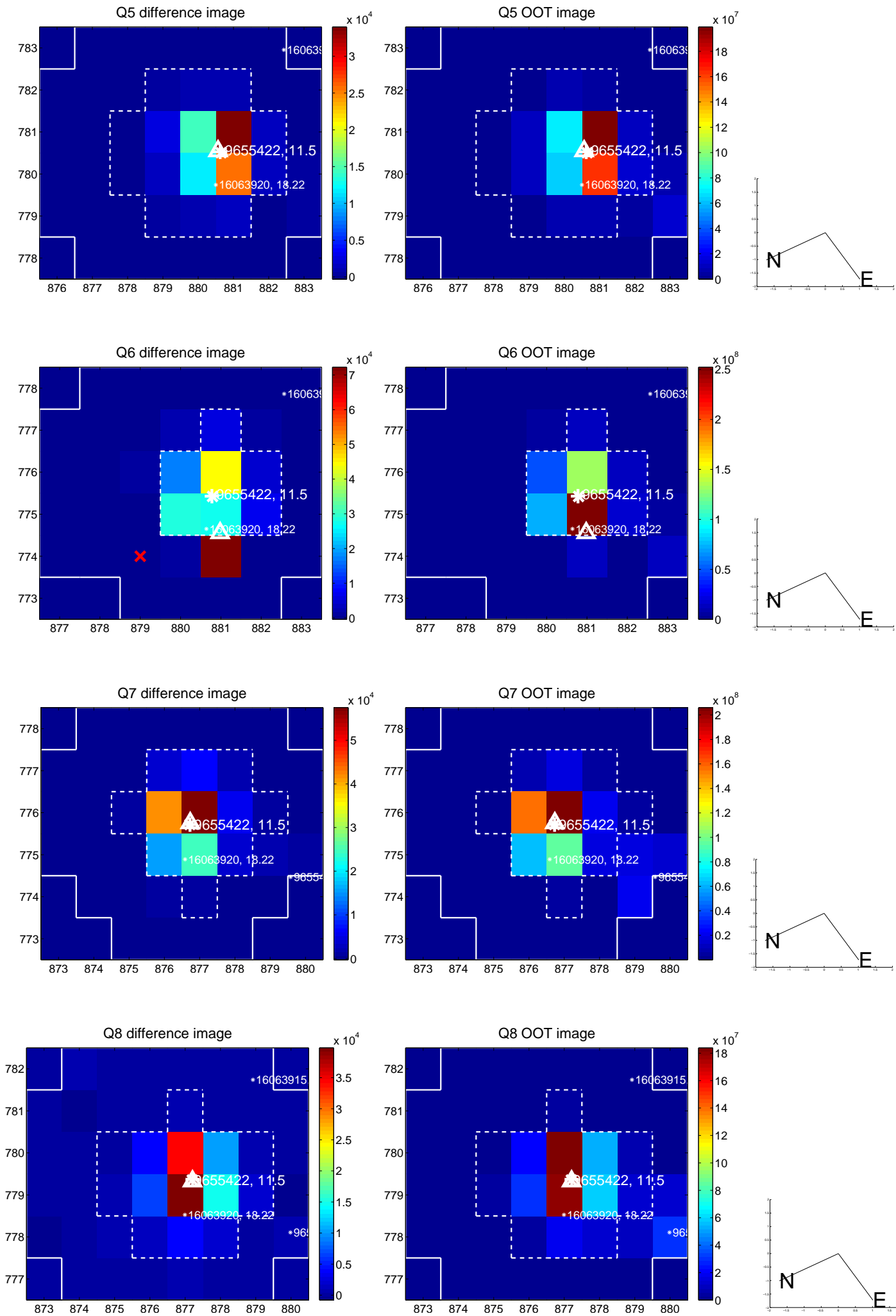


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

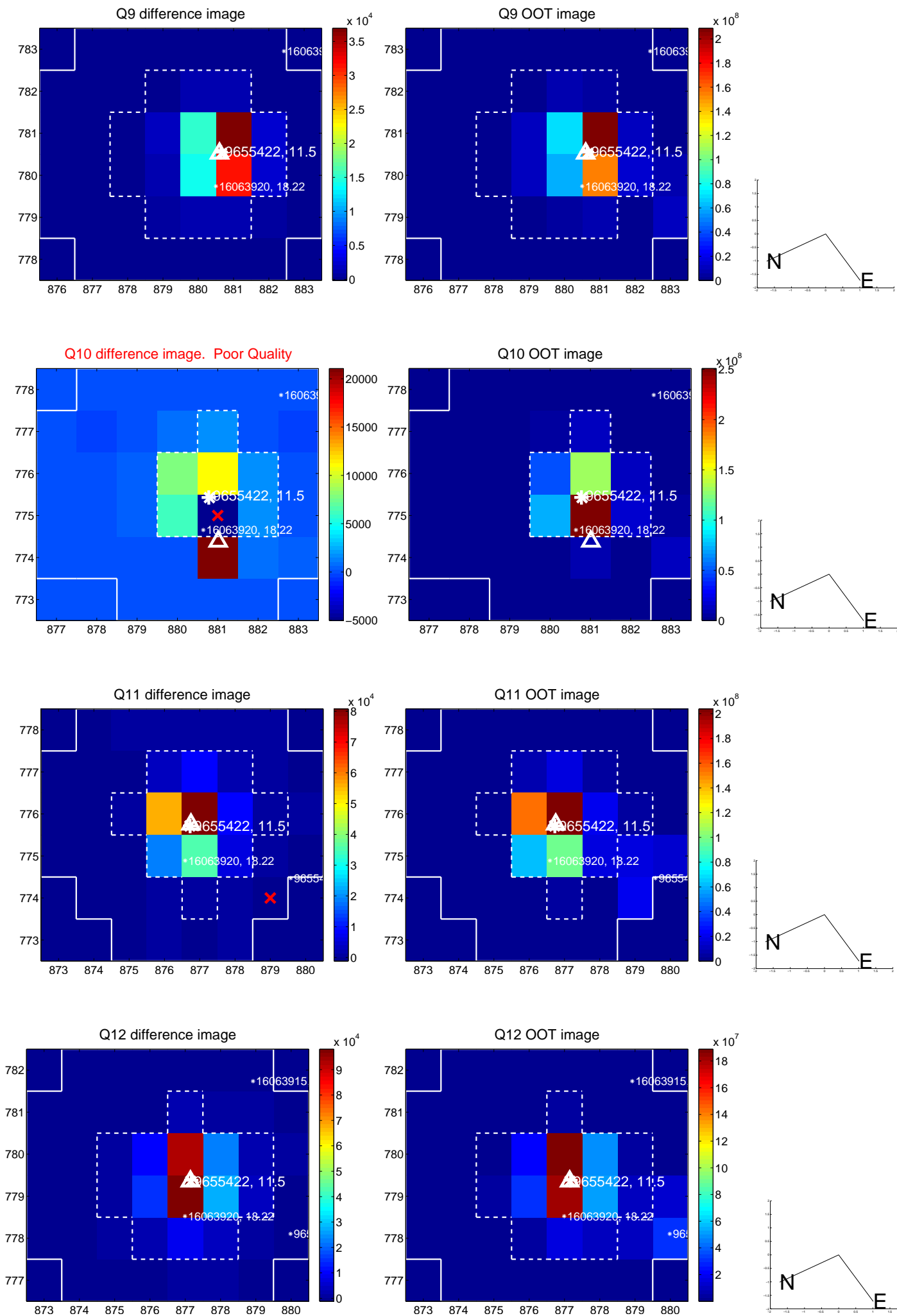
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



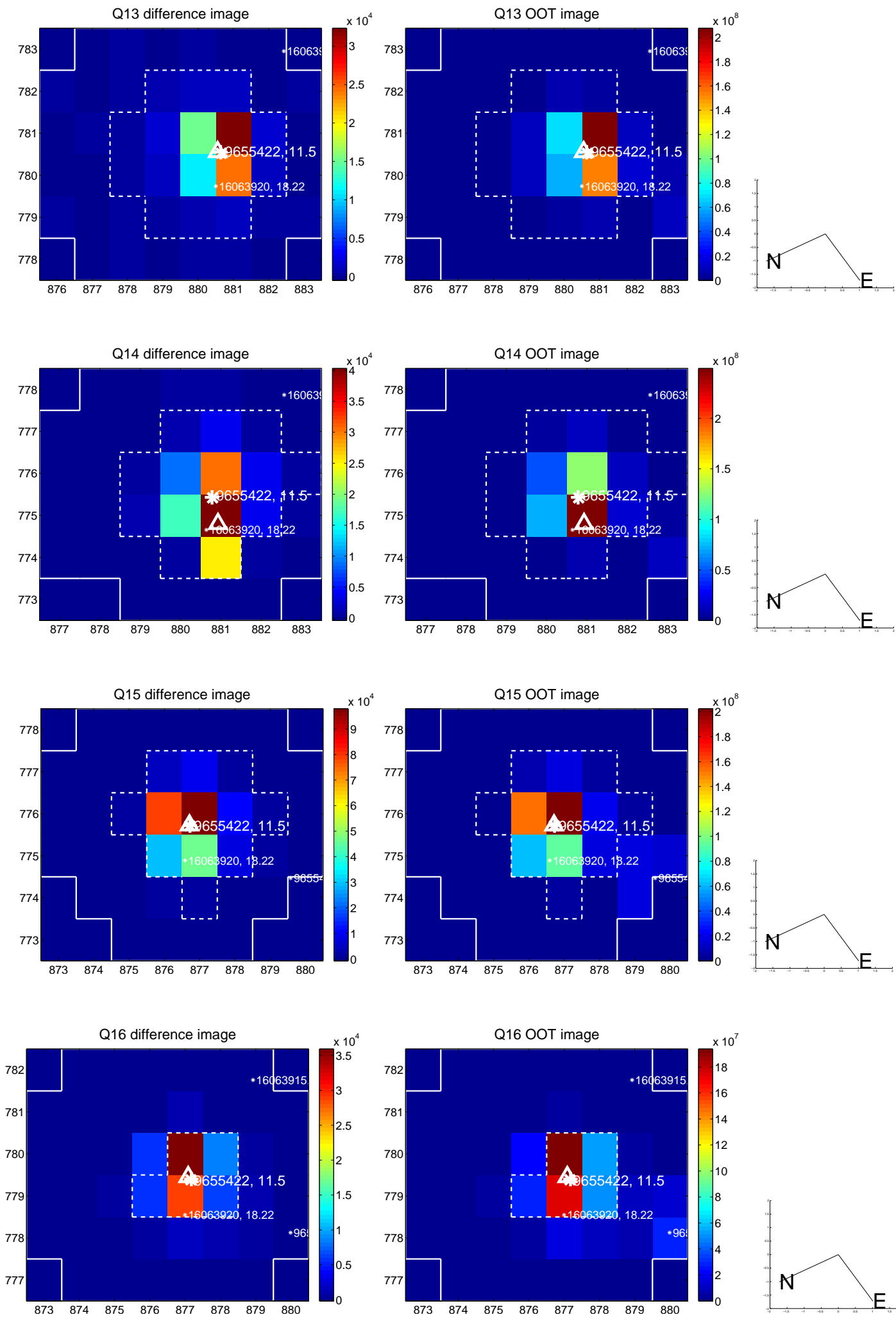
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

