

KIC 009469010

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009469010-01 | OBS | No | 5.247740 | 135.608677 | 22.5 | 12.109 | 8.0 | 5.2 | 2.49 | 6511 | 1.32 | 2245.62 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009469010-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | 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.

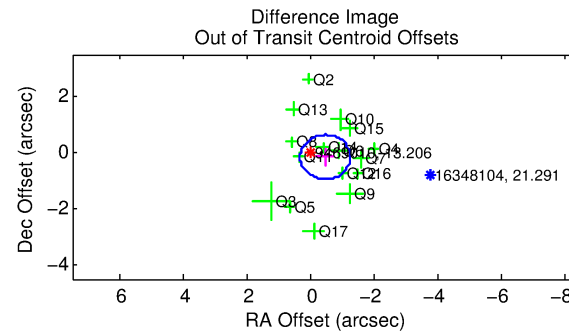
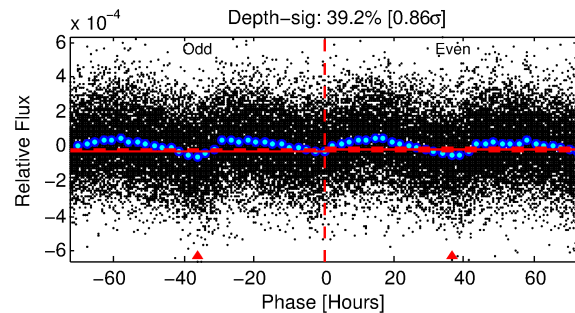
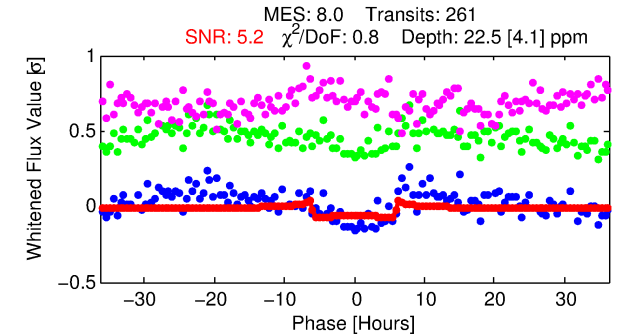
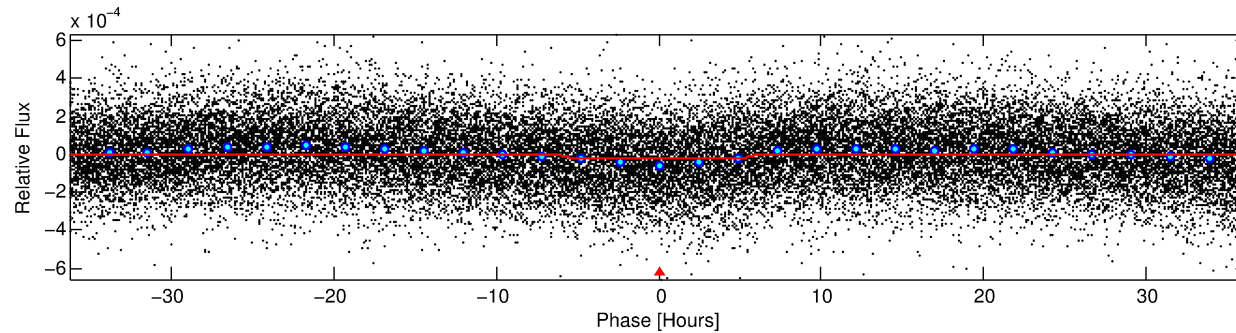
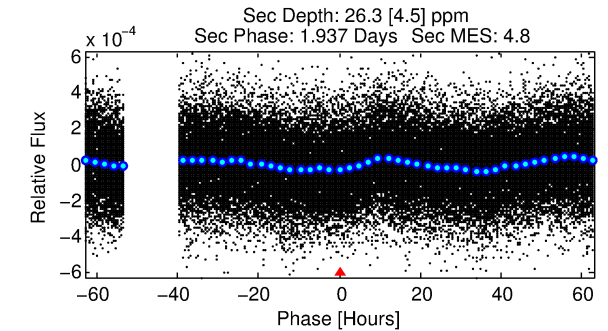
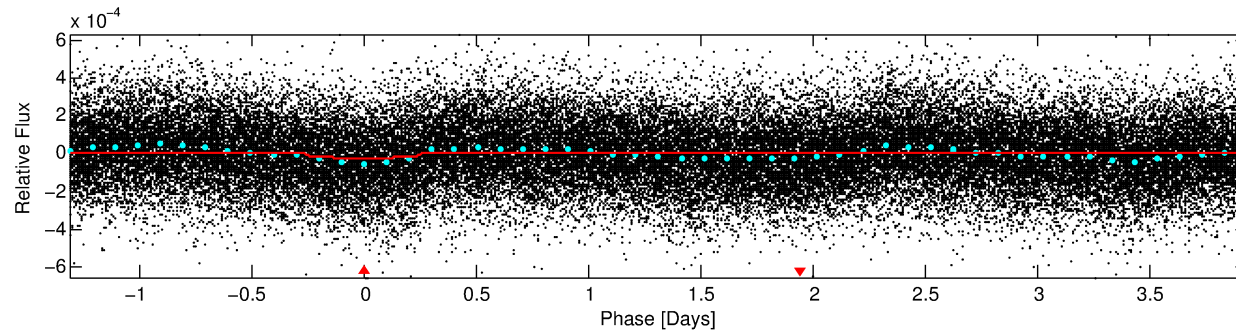
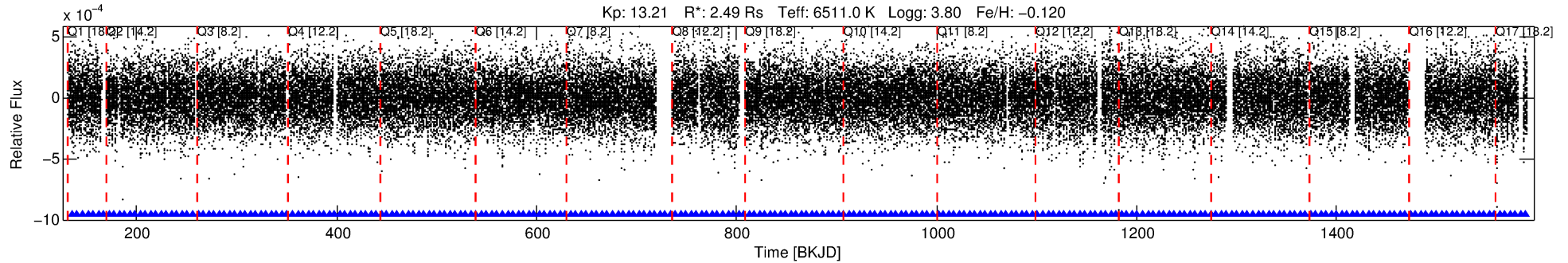
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009469010-01

No Significant Match Found

DV One-Page Summary

KIC: 9469010 Candidate: 1 of 1 Period: 5.248 d



DV Fit Results:

Period = 5.24774 [0.00010] d
Epoch = 135.6087 [0.0132] BKJD
Rp/R* = 0.0049 [0.0014]
a/R* = 2.10 [2.49]
b = 0.83 [0.60]
Seff = 2245.62 [1152.66]
Teq = 1755 [225] K
Rp = 1.32 [0.58] Re
a = 0.0668 [0.0209] AU
Ag = 36.94 [28.75] [1.25σ]
Teffp = 6691 [1019] K [4.73σ]

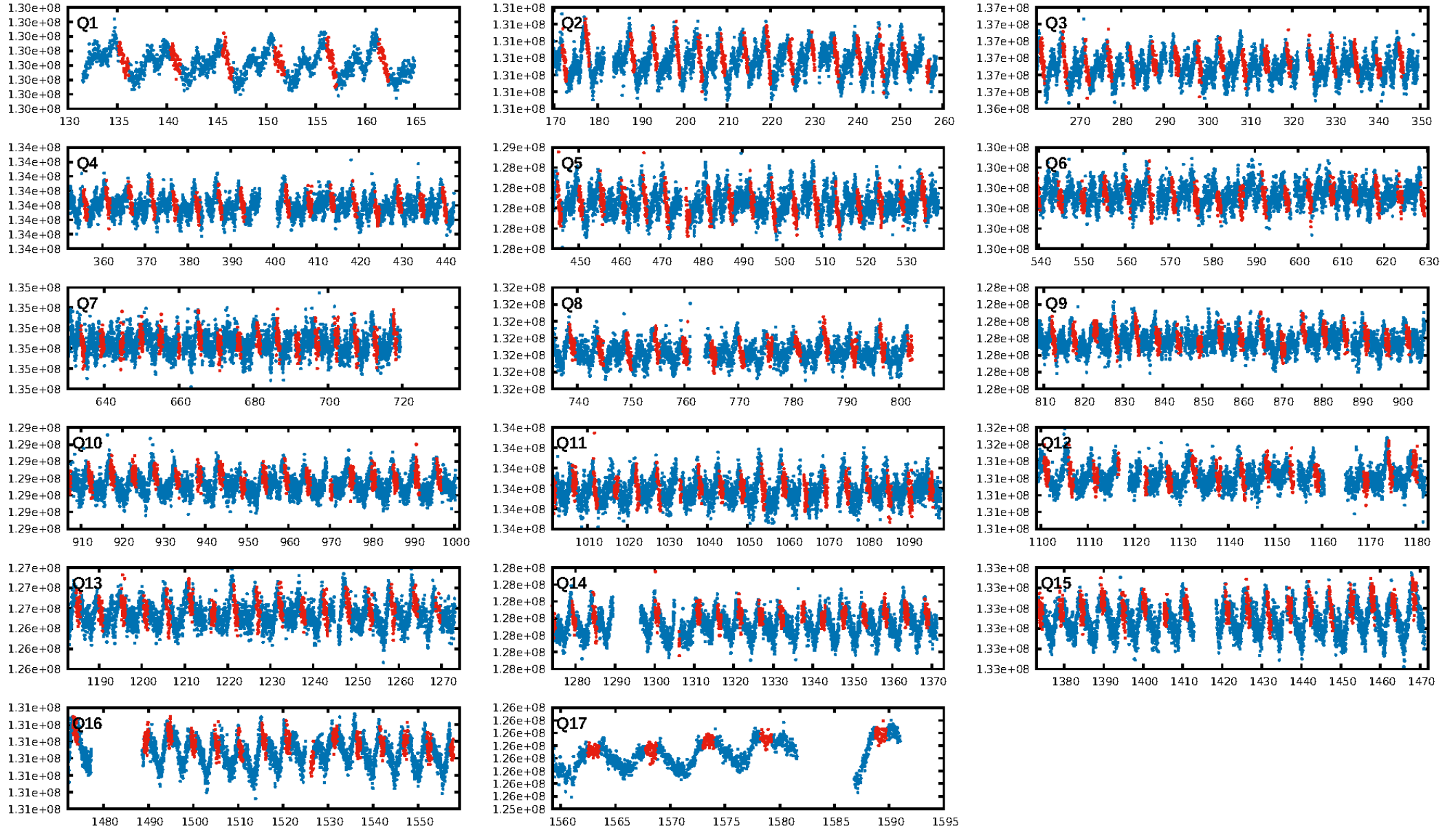
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.67e-11
RollingBand-fgt: 1.00 [250/250]
GhostDiagnostic-chr: 2.182
Centroid-sig: 6.3%
Centroid-so: 1.590 arcsec [1.42σ]
OotOffset-rm: 0.476 arcsec [1.80σ]
KicOffset-rm: 0.481 arcsec [1.81σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

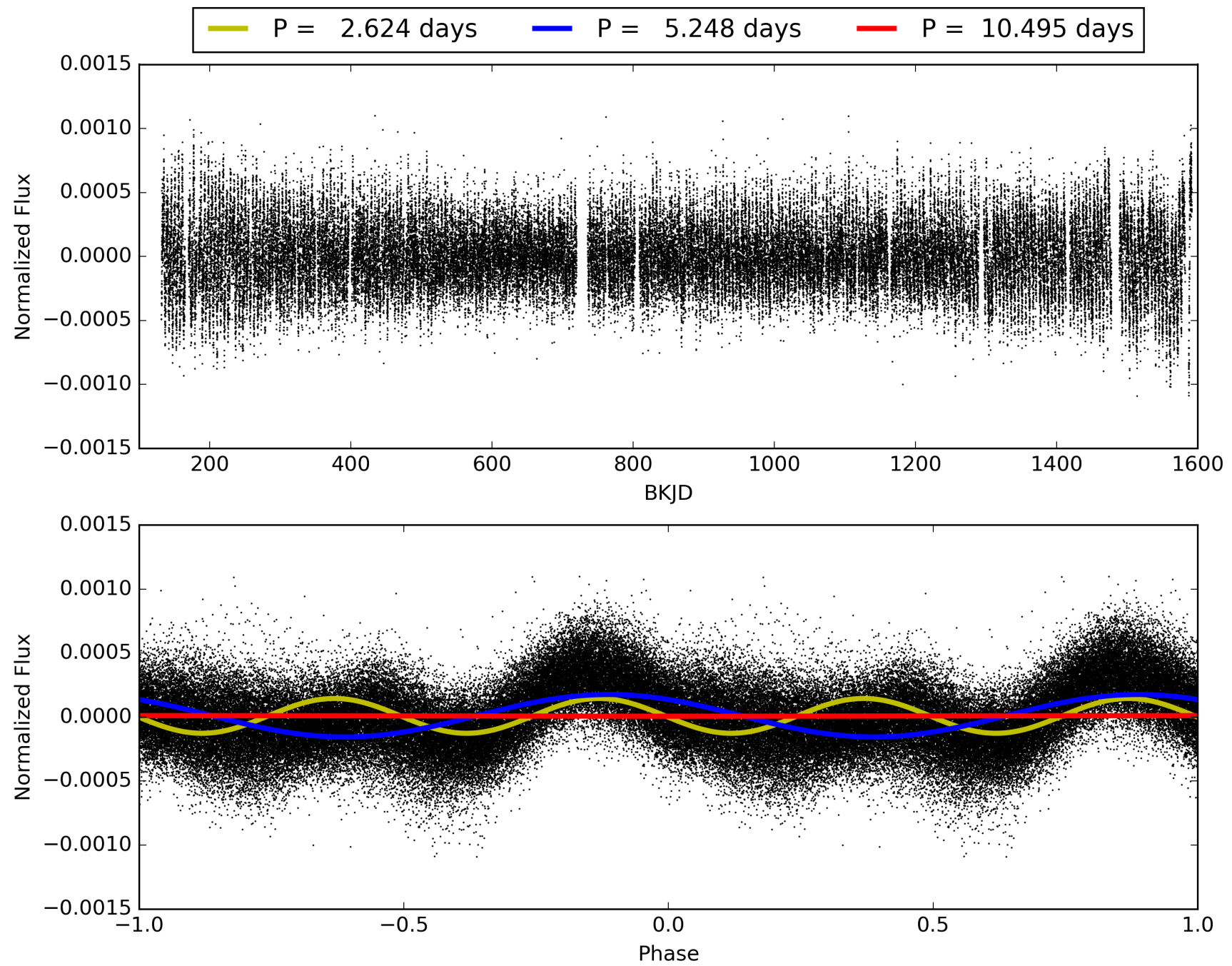
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:45:22 Z

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

TCE 009469010-01, PDC Light Curves

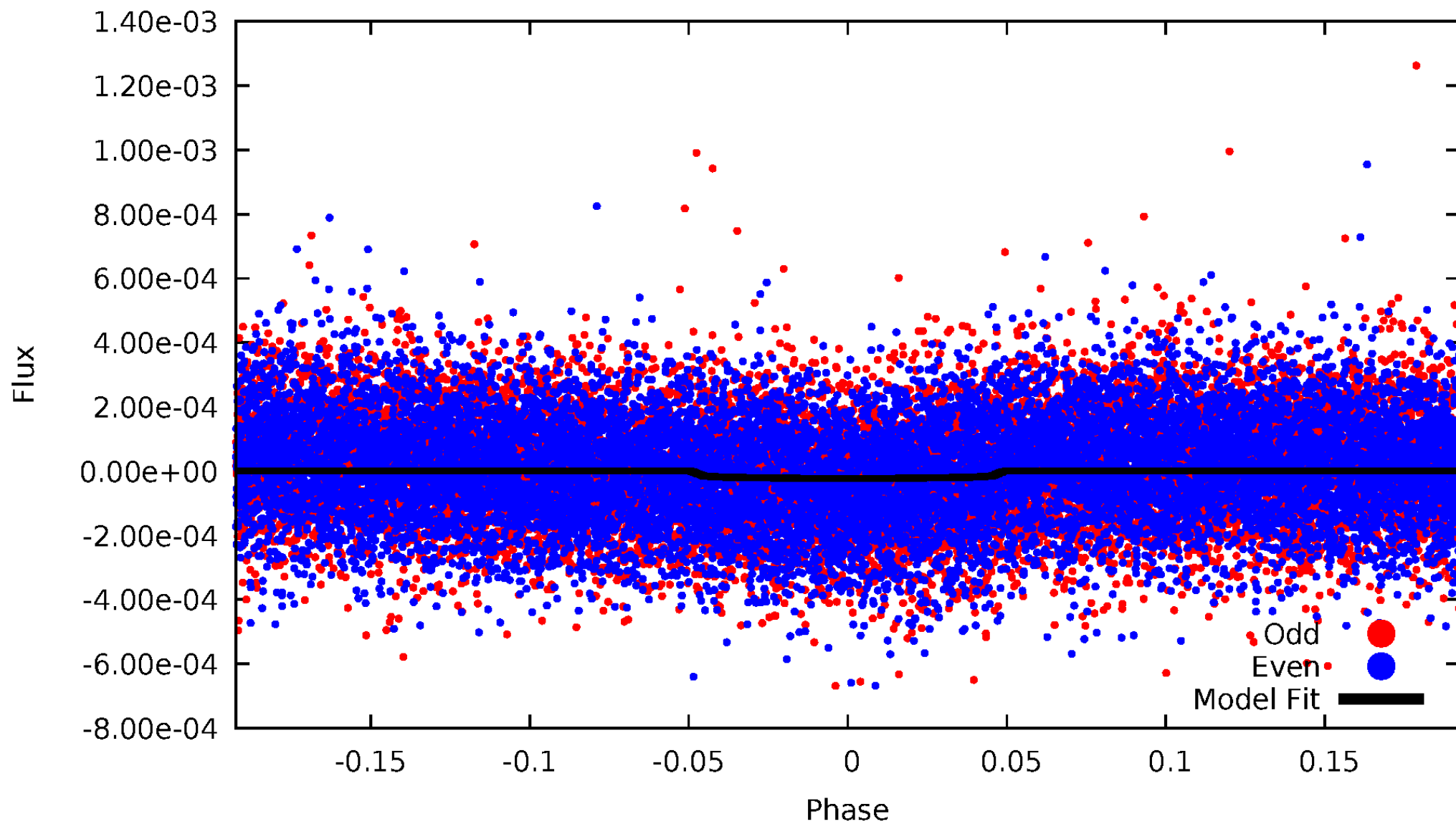


TCE 009469010-01



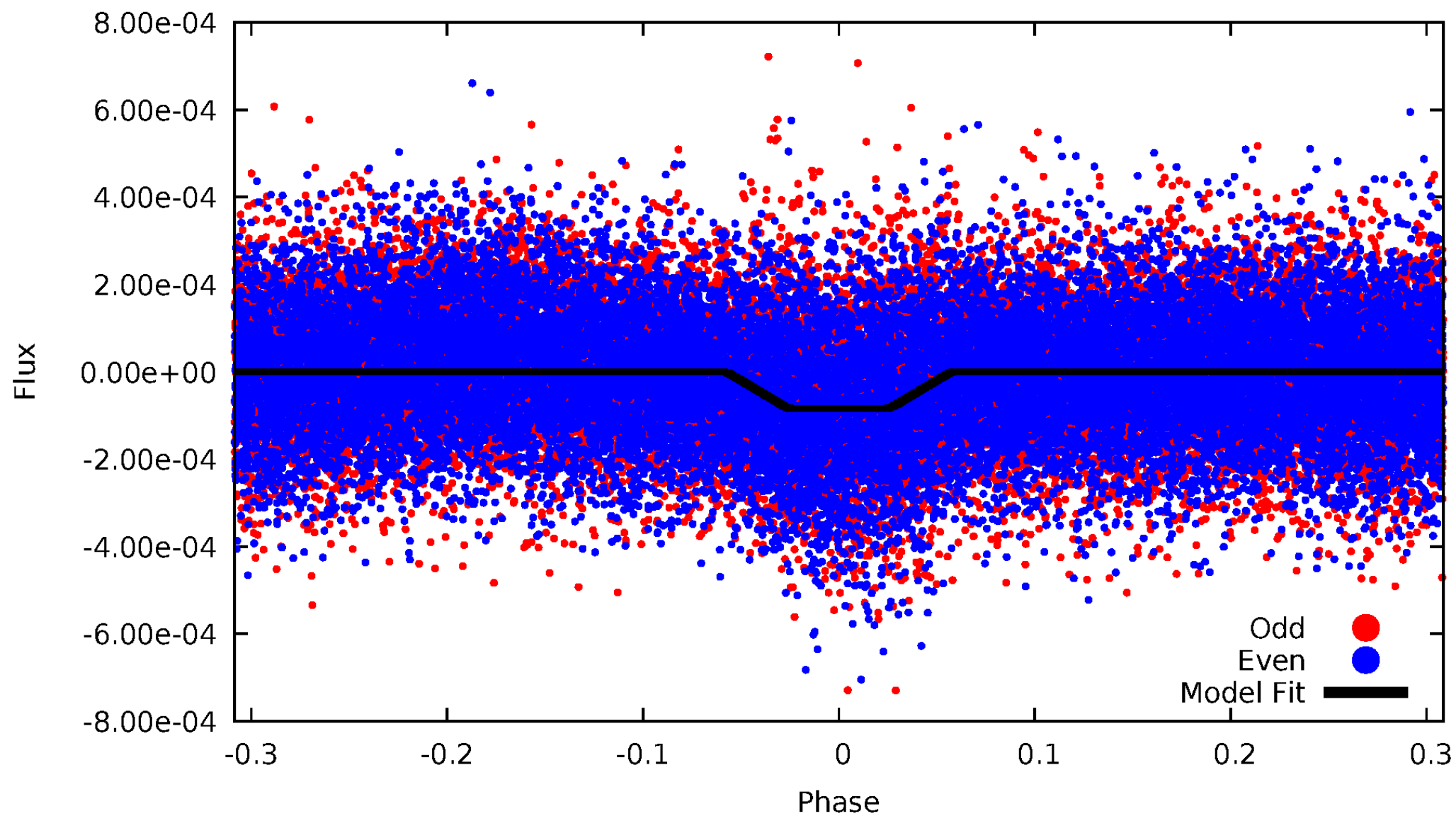
DV Odd/Even

TCE 009469010-01



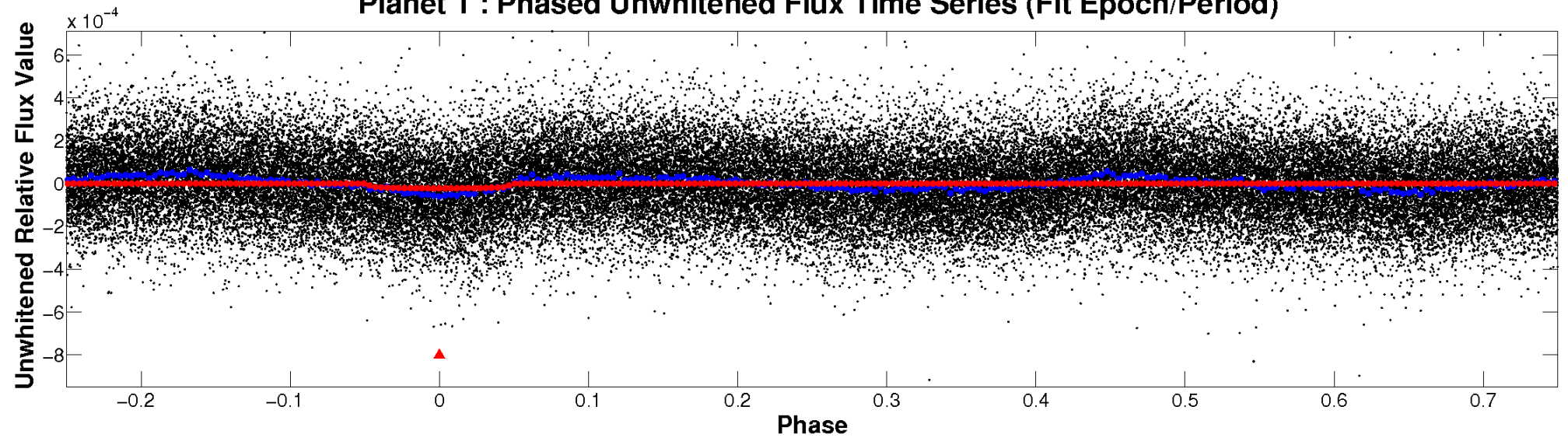
ALT Odd/Even

TCE 009469010-01

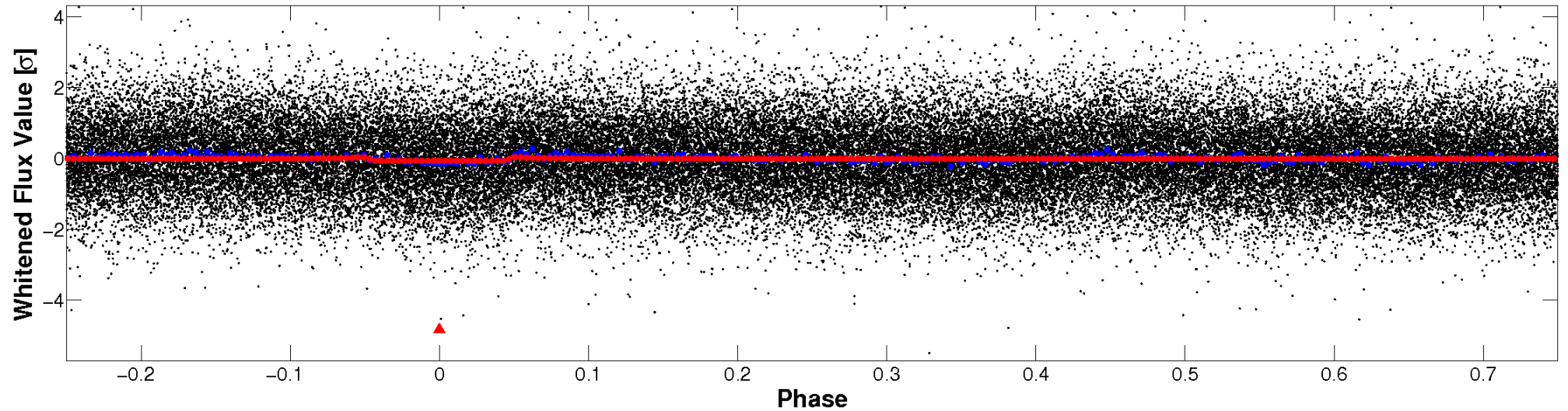


Non-Whitened Vs. Whitened Light Curve

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

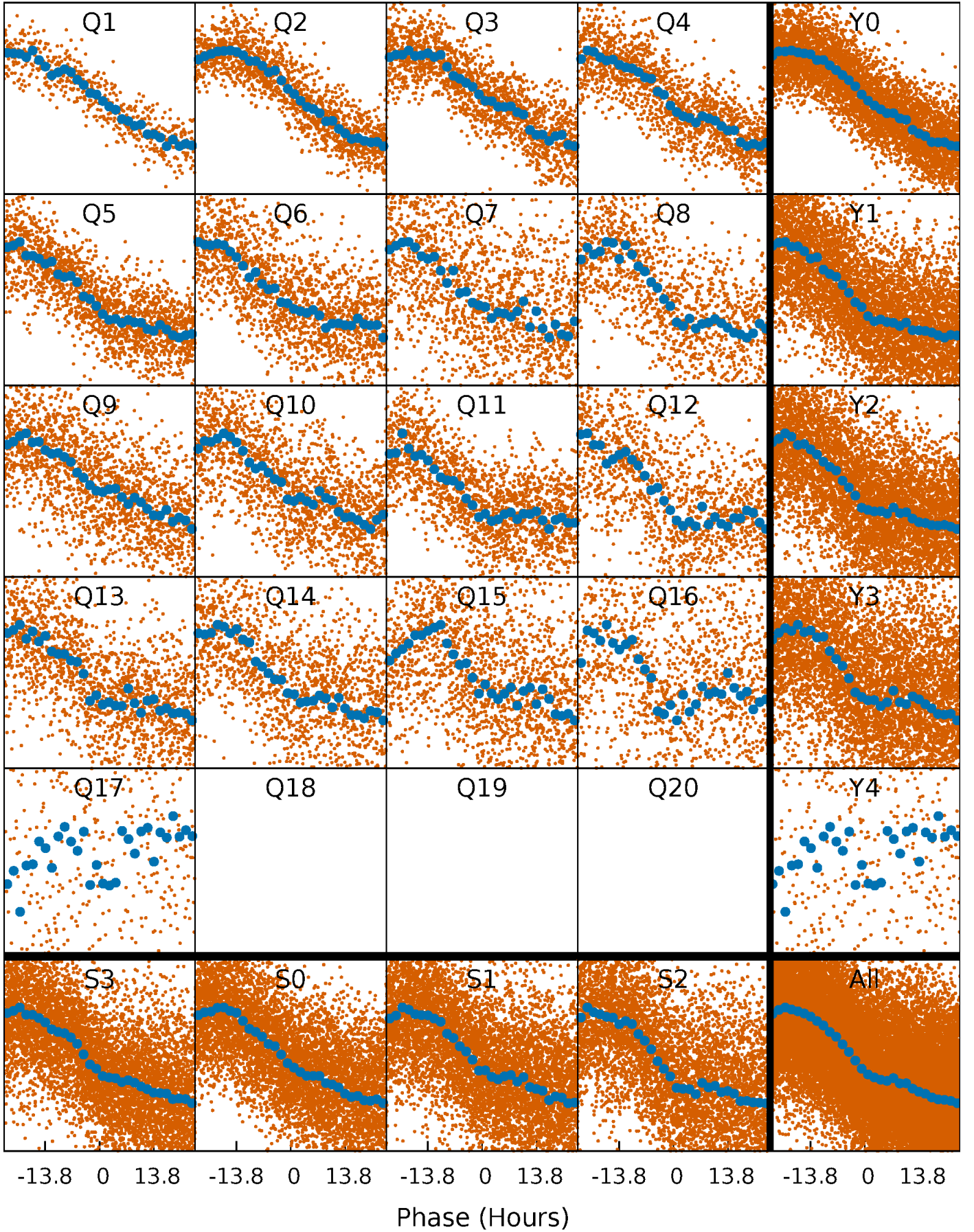


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



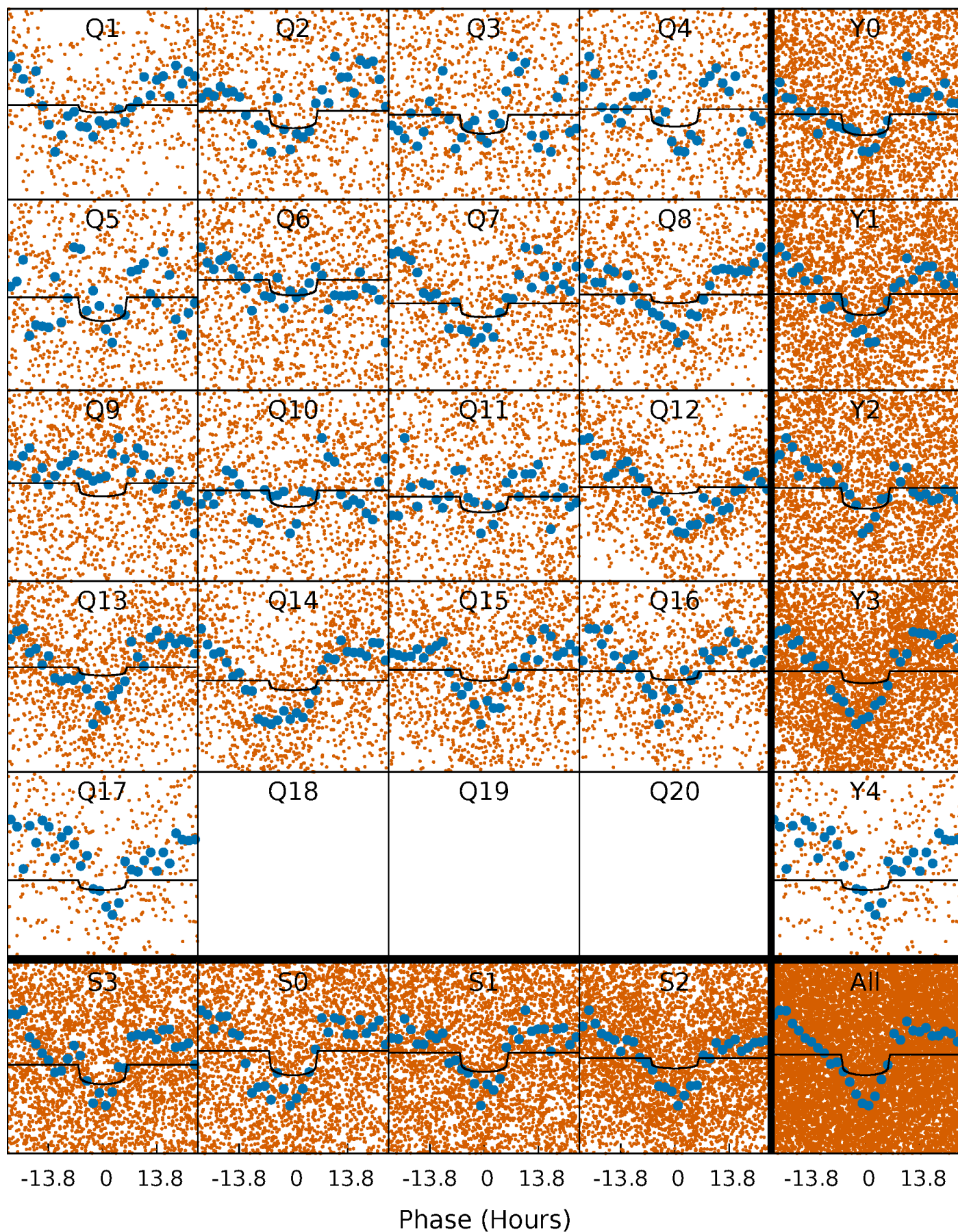
PDC Quarter-Phased Transit Curves

TCE 009469010-01 P= 5.247740 Days $T_0=135.608677$ (BKJD)



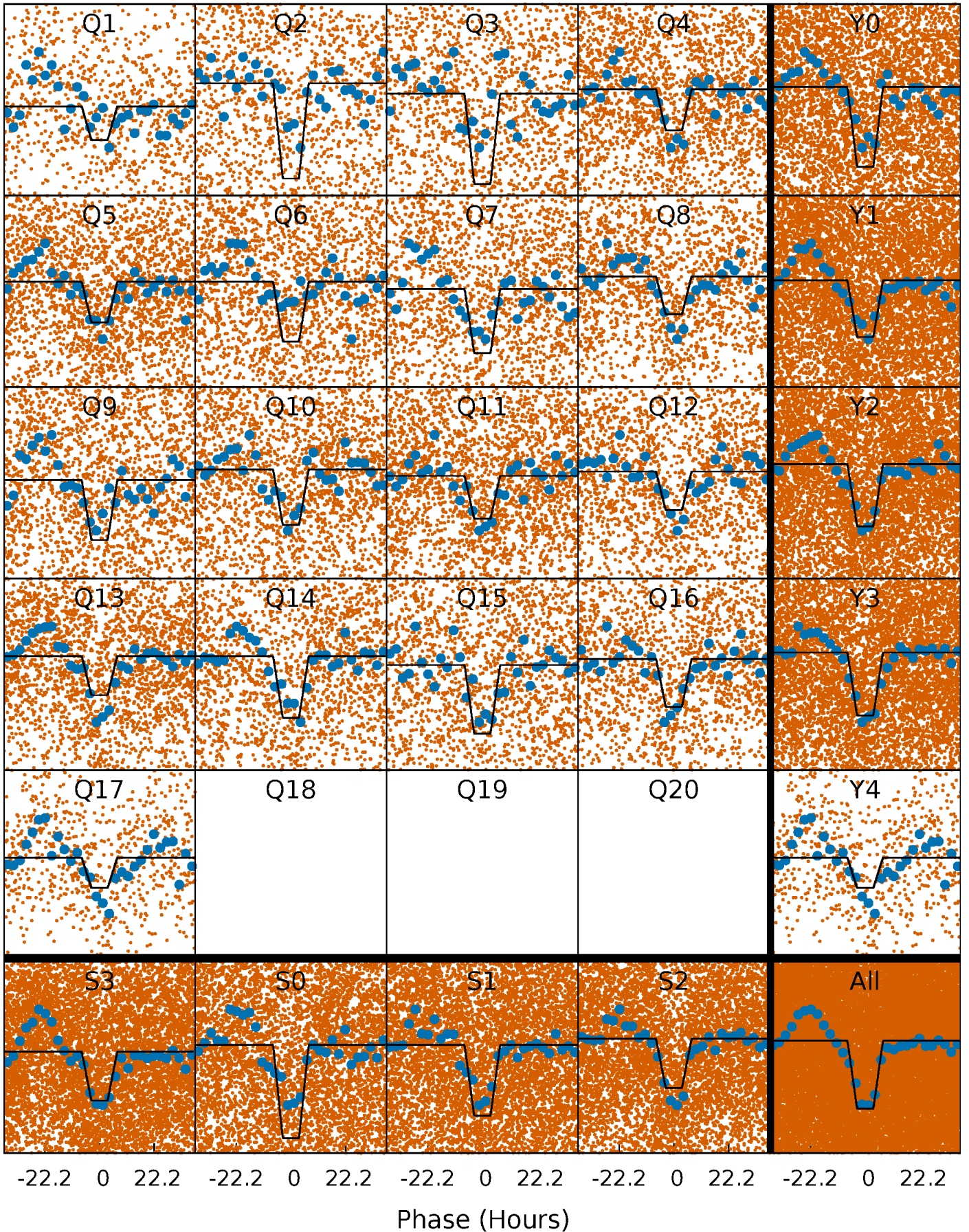
DV Quarter-Phased Transit Curves

TCE 009469010-01 P= 5.247740 Days $T_0=135.608677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

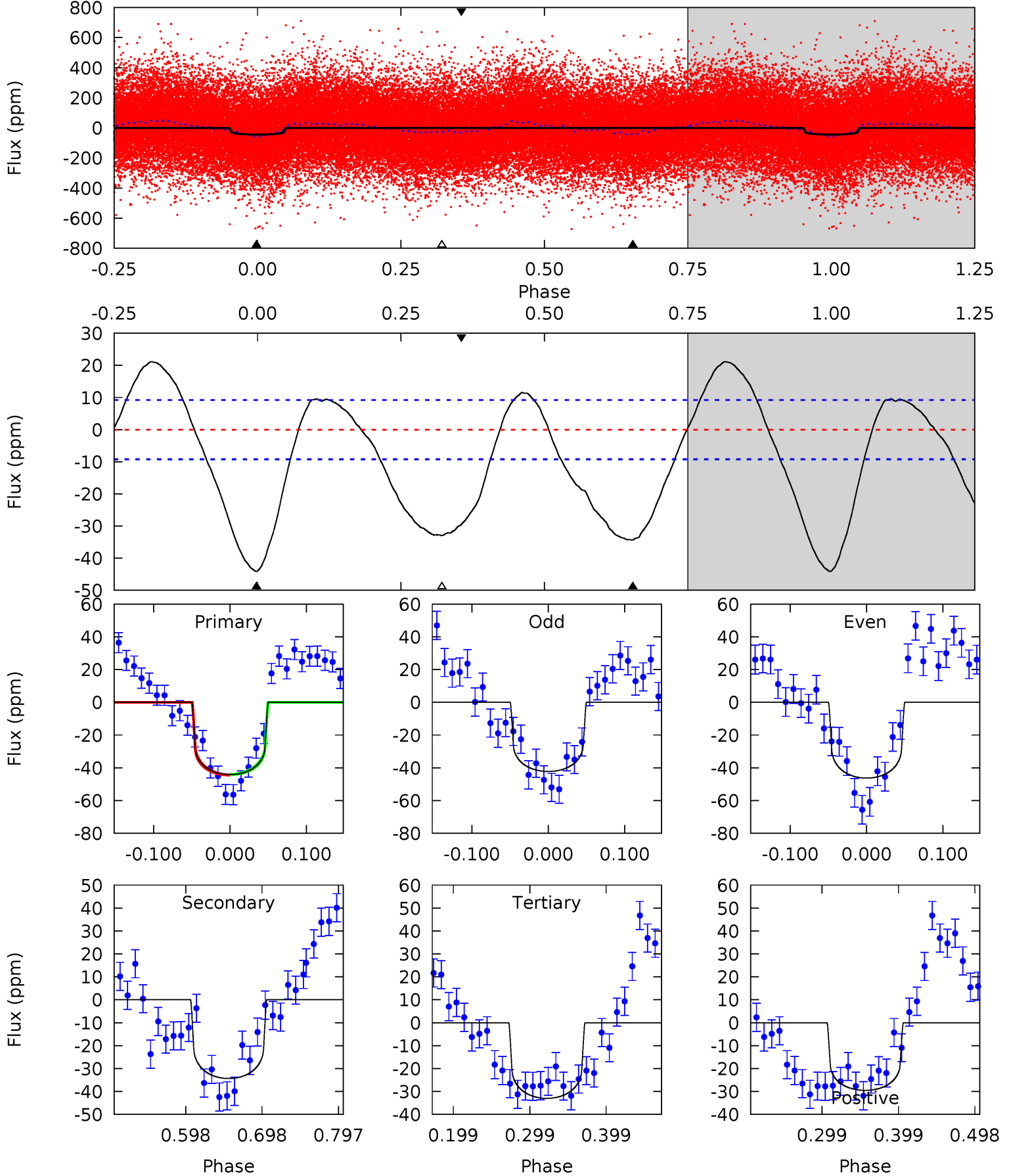
TCE 009469010-01 P= 5.247334 Days $T_0=135.681518$ (BKJD)



DV Model-Shift Uniqueness Test

009469010-01, P = 5.247740 Days, E = 130.360937 Days

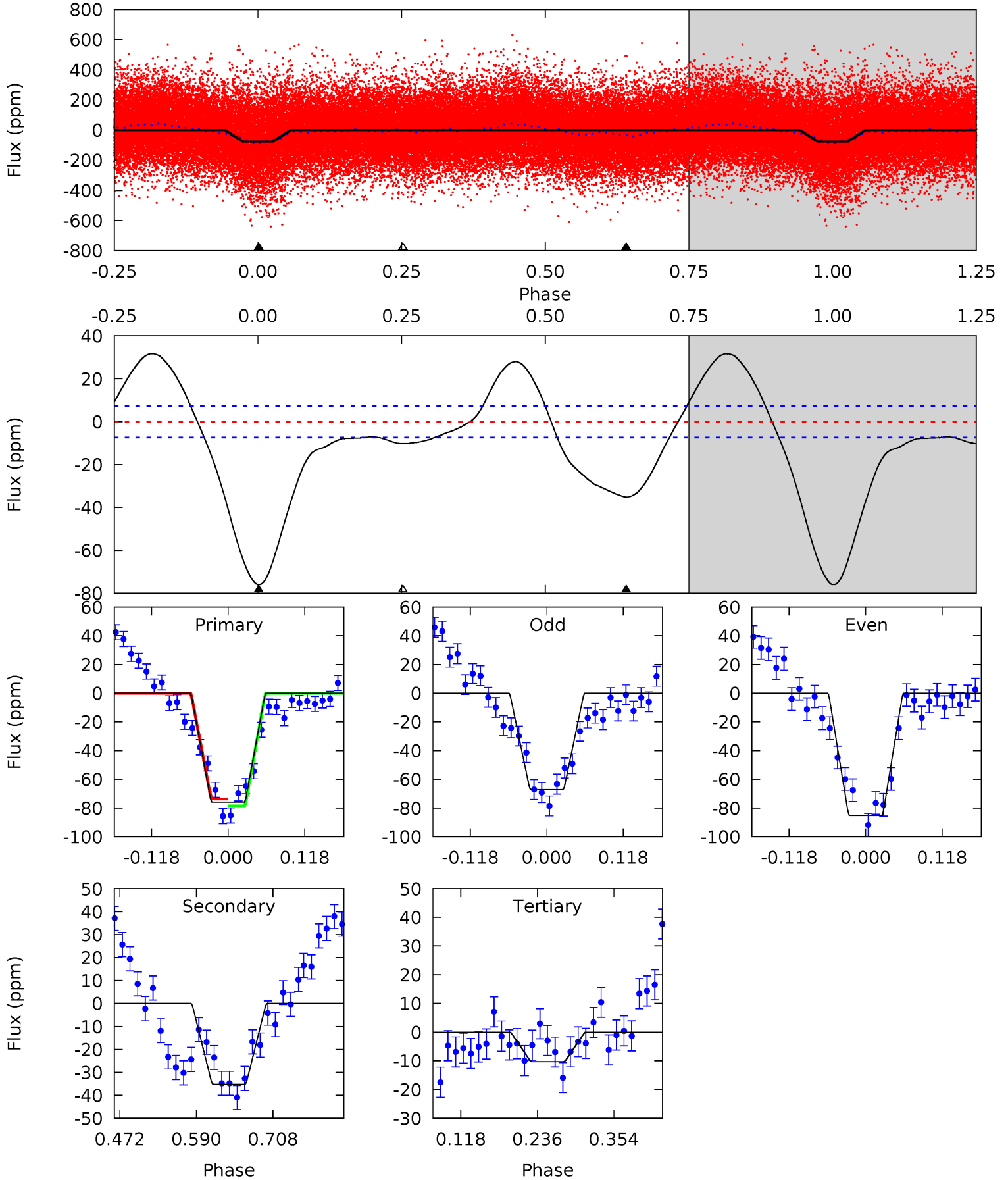
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.9 | 17.0 | 16.3 | -14.6 | 4.57 | 1.65 | 8.33 | 5.51 | 36.5 | 0.67 | 31.6 | 1.00 | 1.14 | 0.32 | 0.10 |



Alt Model-Shift Uniqueness Test

009469010-01, P = 5.247334 Days, E = 130.434184 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 46.5 | 21.5 | 6.26 | 0 | 4.53 | 1.56 | 9.19 | 40.2 | 46.5 | 15.2 | 21.5 | 5.59 | 0.99 | 0.29 | 1.43 |



Stellar Parameters For KIC 009469010

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6511^{+162}_{-195} | $3.803^{+0.292}_{-0.097}$ | $-0.120^{+0.300}_{-0.250}$ | $2.493^{+0.479}_{-0.821}$ | $1.442^{+0.235}_{-0.287}$ | $0.131^{+0.243}_{-0.048}$ |
| | +2%/-3% | +8%/-3% | +250%/-208% | +19%/-33% | +16%/-20% | +186%/-37% |
| Source | PHO1 | FLK73 | 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 009469010-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|------------------|
| DV | -34 ± 2 | $1.24^{+0.46}_{-0.37}$ | 2412^{+138}_{-203} | 7194^{+1597}_{-949} | 54^{+60}_{-24} |
| Alt. | -35 ± 2 | $2.34^{+0.49}_{-0.51}$ | 2391^{+159}_{-213} | 5287^{+442}_{-351} | 16^{+9}_{-5} |

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

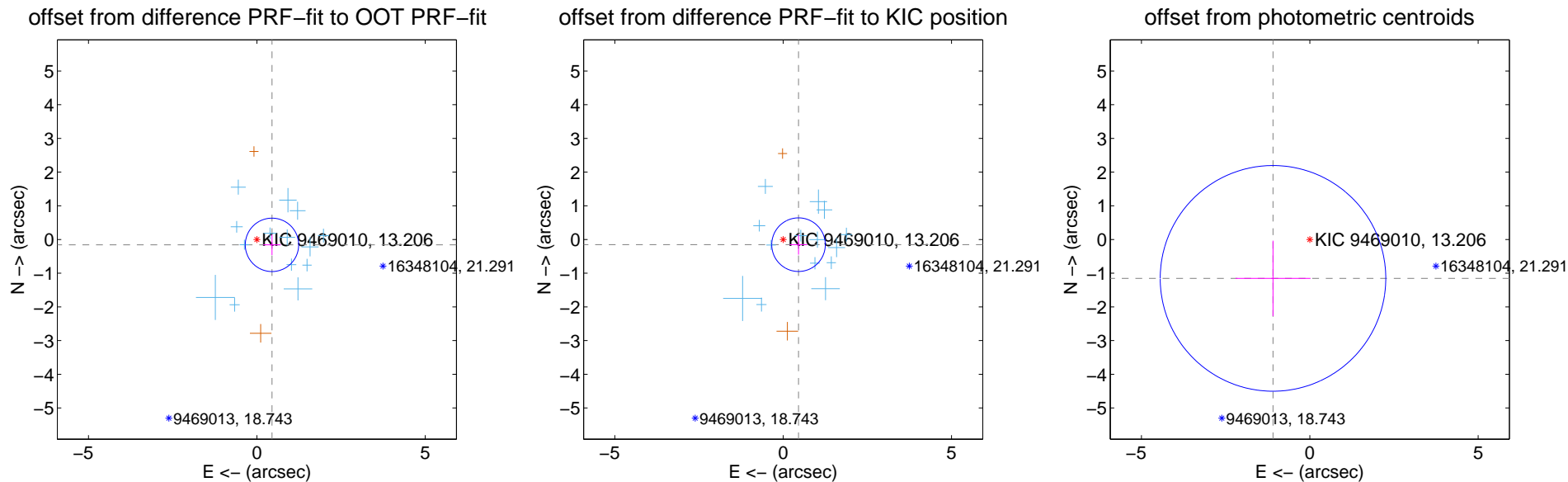
DV Centroid Data

Supplemental centroid analysis for 009469010-01. Kepler magnitude: 13.21. Transit SNR 5.15

There are 14 quarters with good PRF difference image offsets

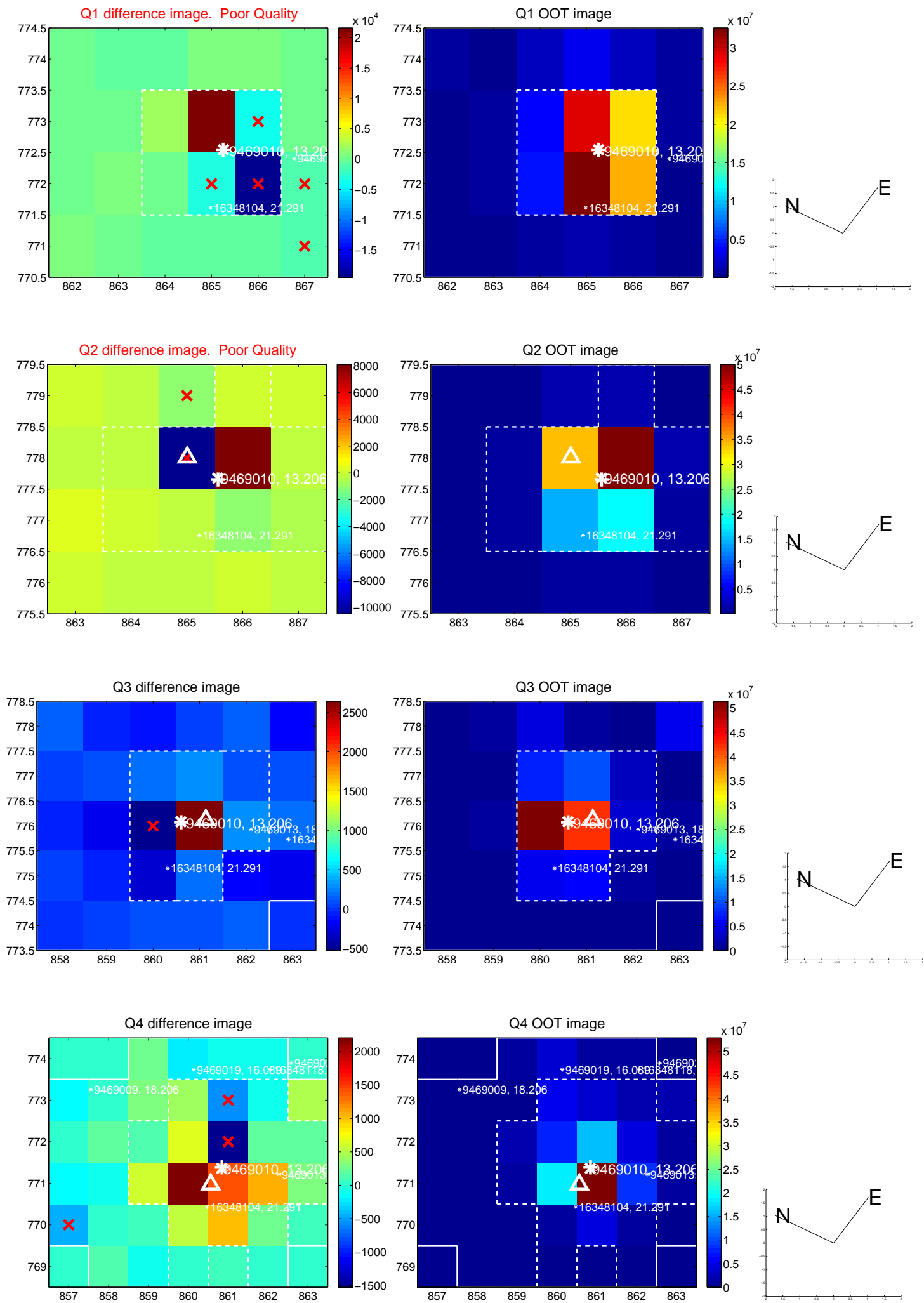
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.476 ± 0.264 | 1.80 | -0.449 ± 0.259 | -0.159 ± 0.301 |
| PRF-fit source offset from KIC position | 0.481 ± 0.265 | 1.81 | -0.456 ± 0.261 | -0.154 ± 0.297 |
| photometric centroid source offset | 1.59 ± 1.12 | 1.42 | 1.09 ± 1.11 | -1.15 ± 1.12 |

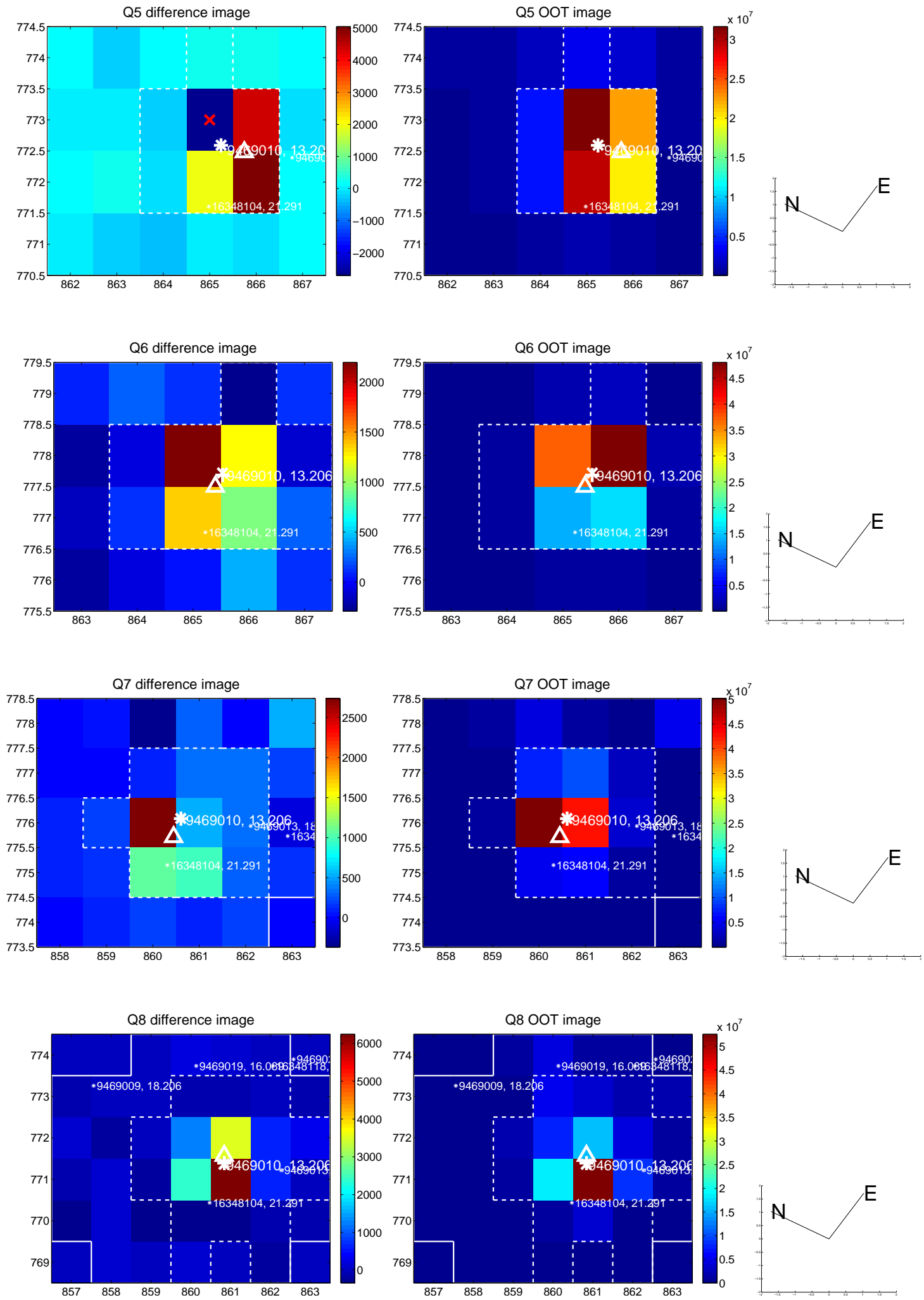


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

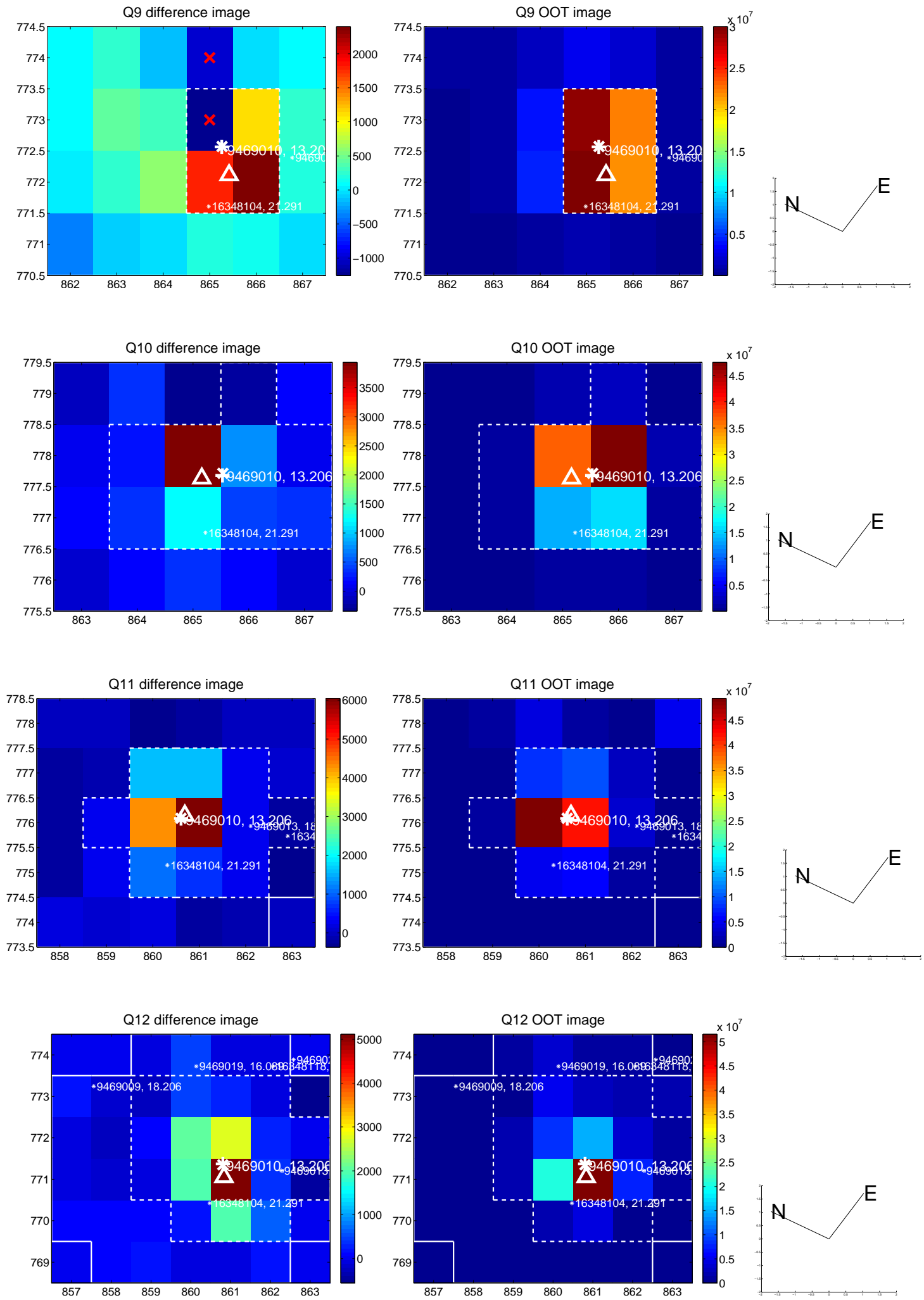
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



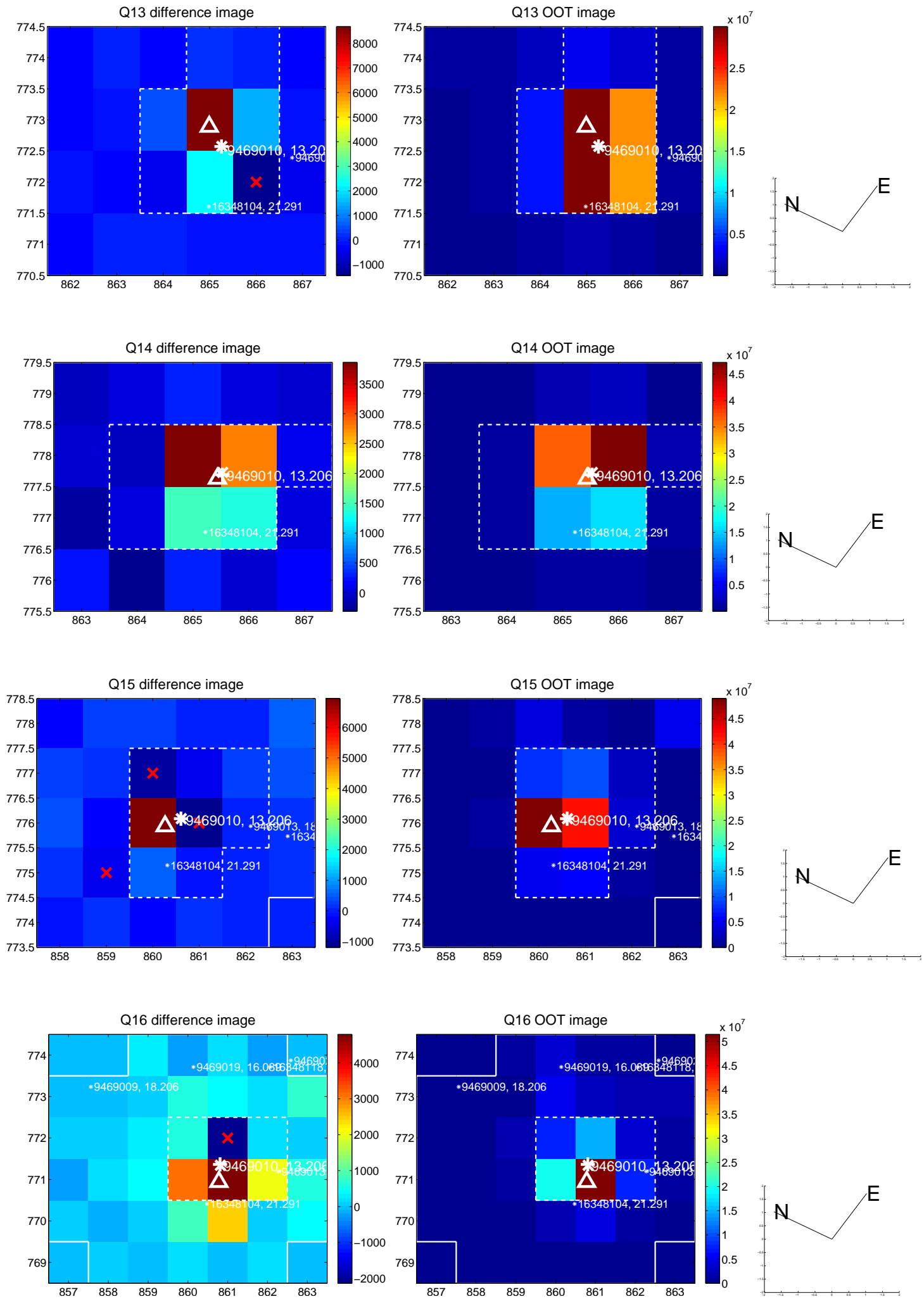
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



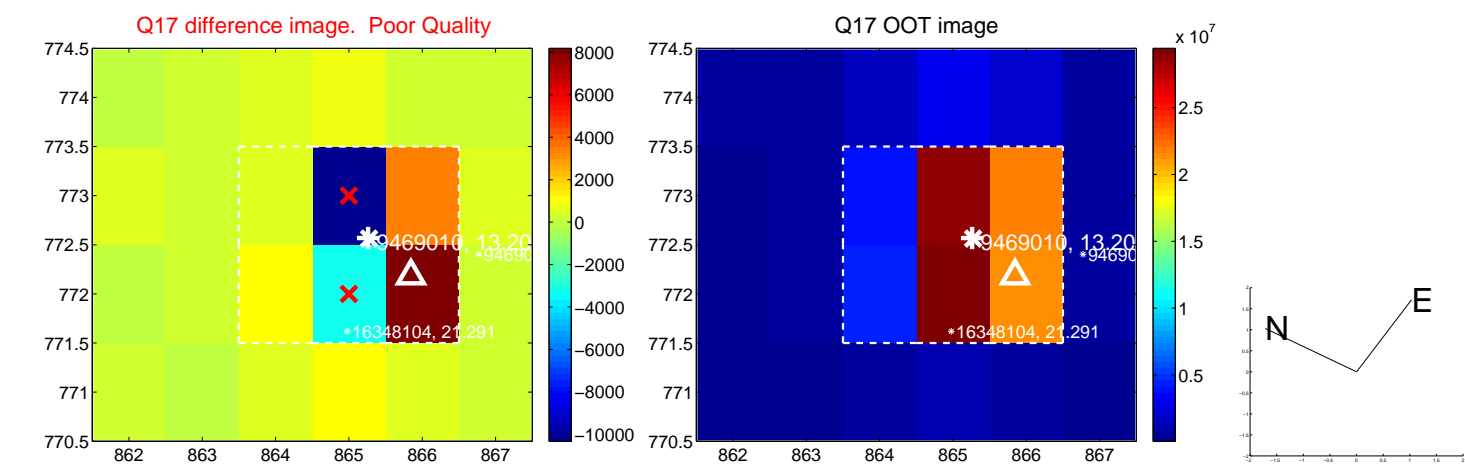
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



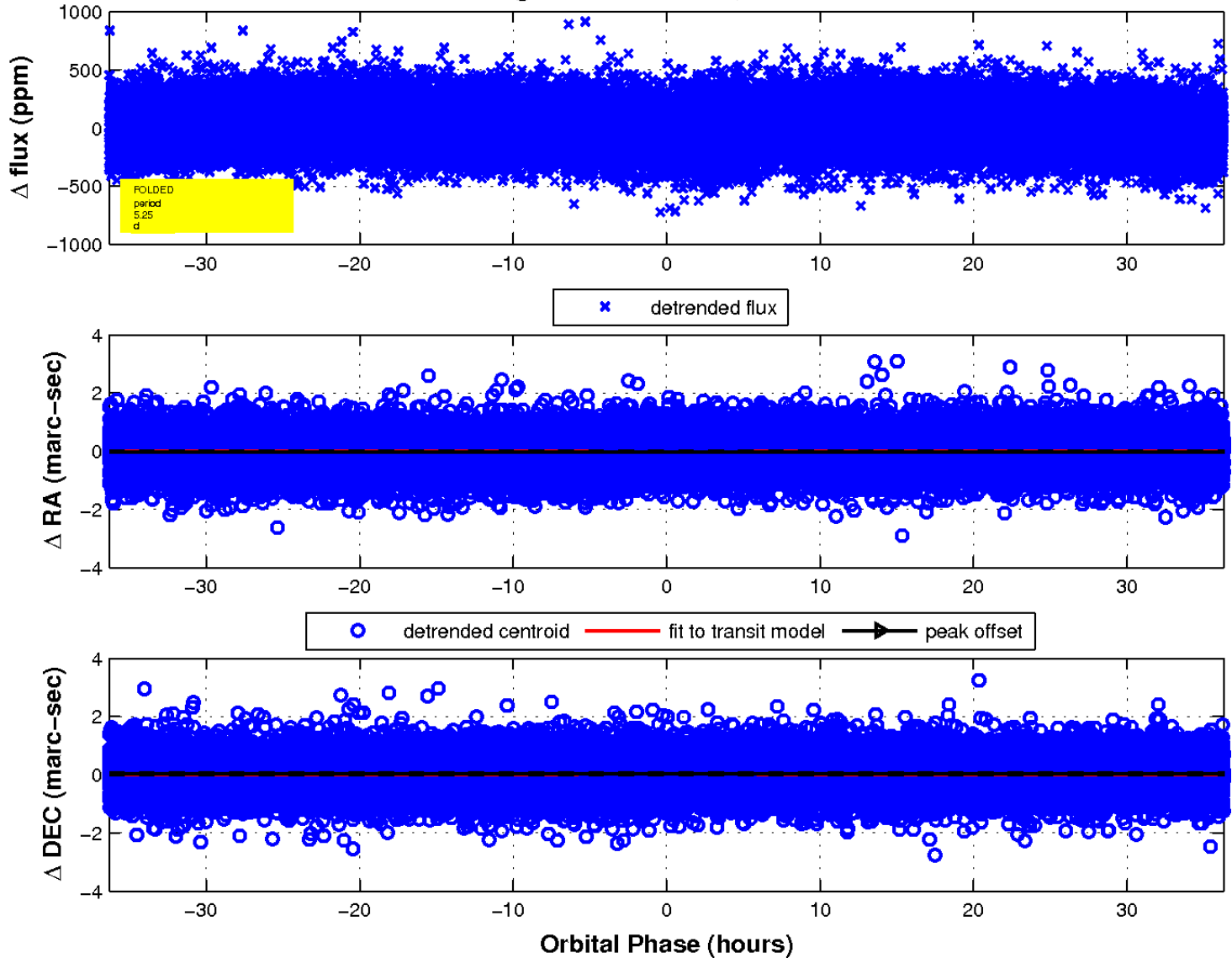
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

