

KIC 004845862

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 004845862-01 | OBS | 4606.01 | 2.449299 | 132.809612 | 110.1 | 2.786 | 8.3 | 9.8 | 0.75 | 4840 | 0.92 | 269.49 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------------|
| 004845862-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 0 | CENT_RESOLVED_OFFSET |

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 004845862-01

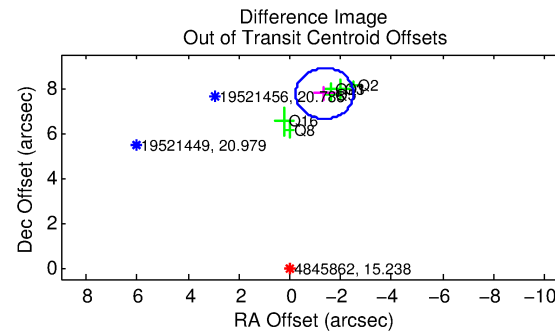
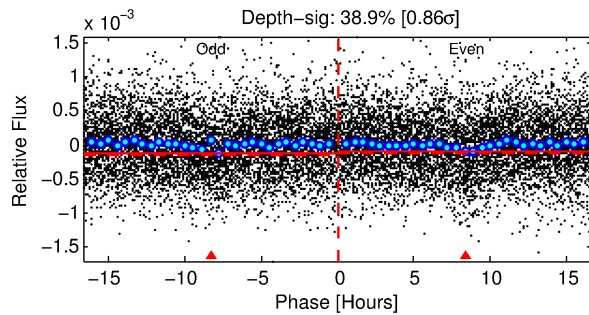
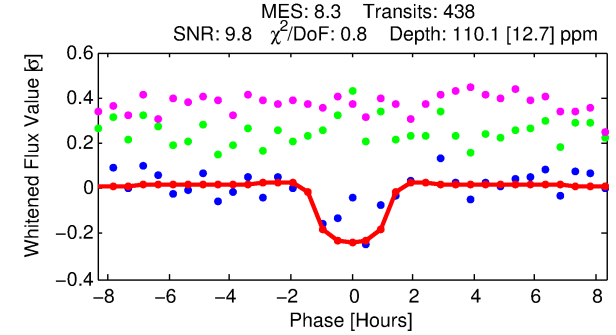
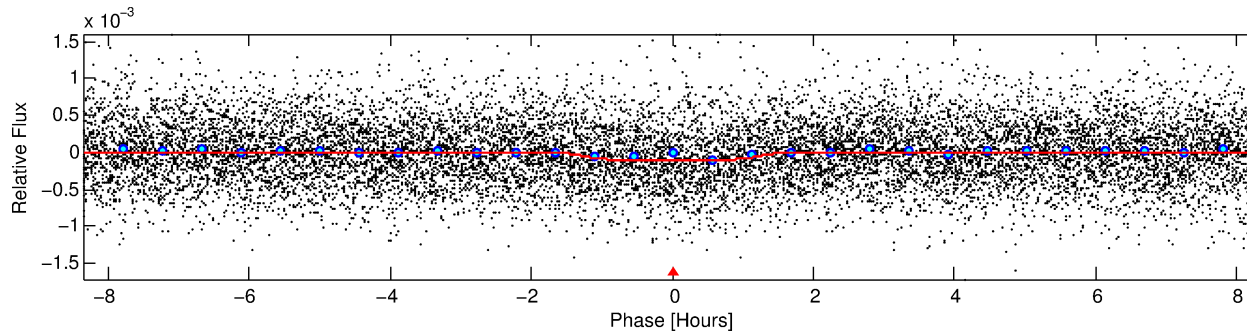
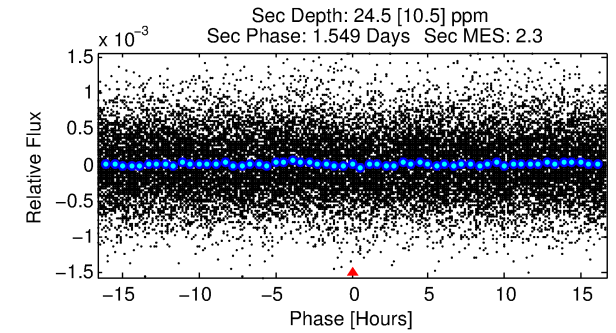
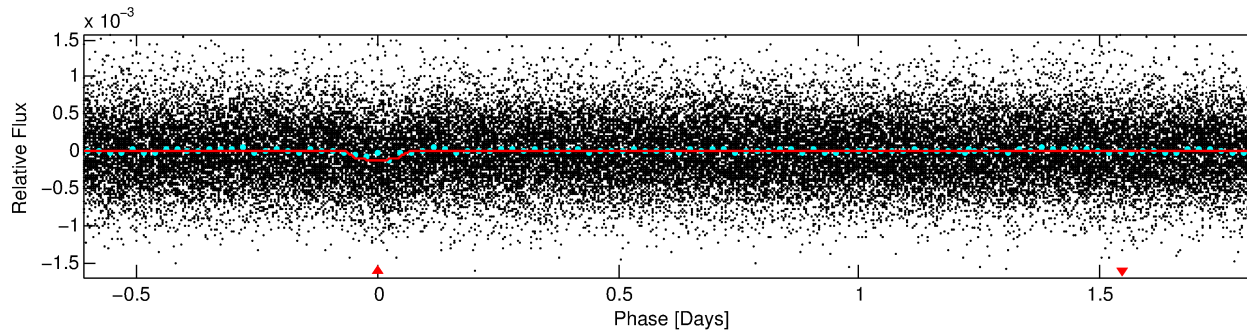
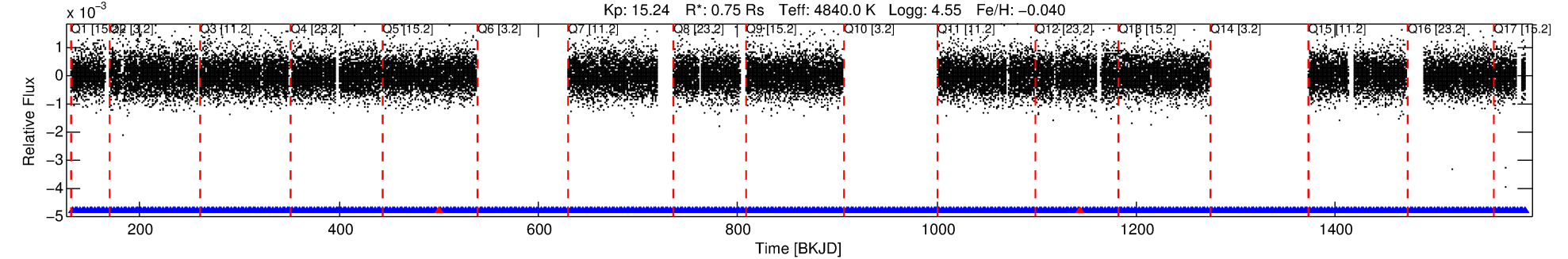
No Significant Match Found

DV One-Page Summary

KIC: 4845862 Candidate: 1 of 1 Period: 2.449 d

KOI: K04606.01 Corr: 0.959

Kp: 15.24 R*: 0.75 Rs Teff: 4840.0 K Logg: 4.55 Fe/H: -0.040



DV Fit Results:

Period = 2.44930 [0.00002] d
Epoch = 132.8096 [0.0041] BKJD
Rp/R* = 0.0113 [0.0098]
a/R* = 3.68 [10.96]
b = 0.86 [1.00]
Seff = 269.49 [45.68]
Teff = 1033 [44] K
Rp = 0.92 [0.80] Re
a = 0.0320 [0.0026] AU
Ag = 16.18 [28.92] [0.52σ]
Teffp = 3204 [1431] K [1.52σ]

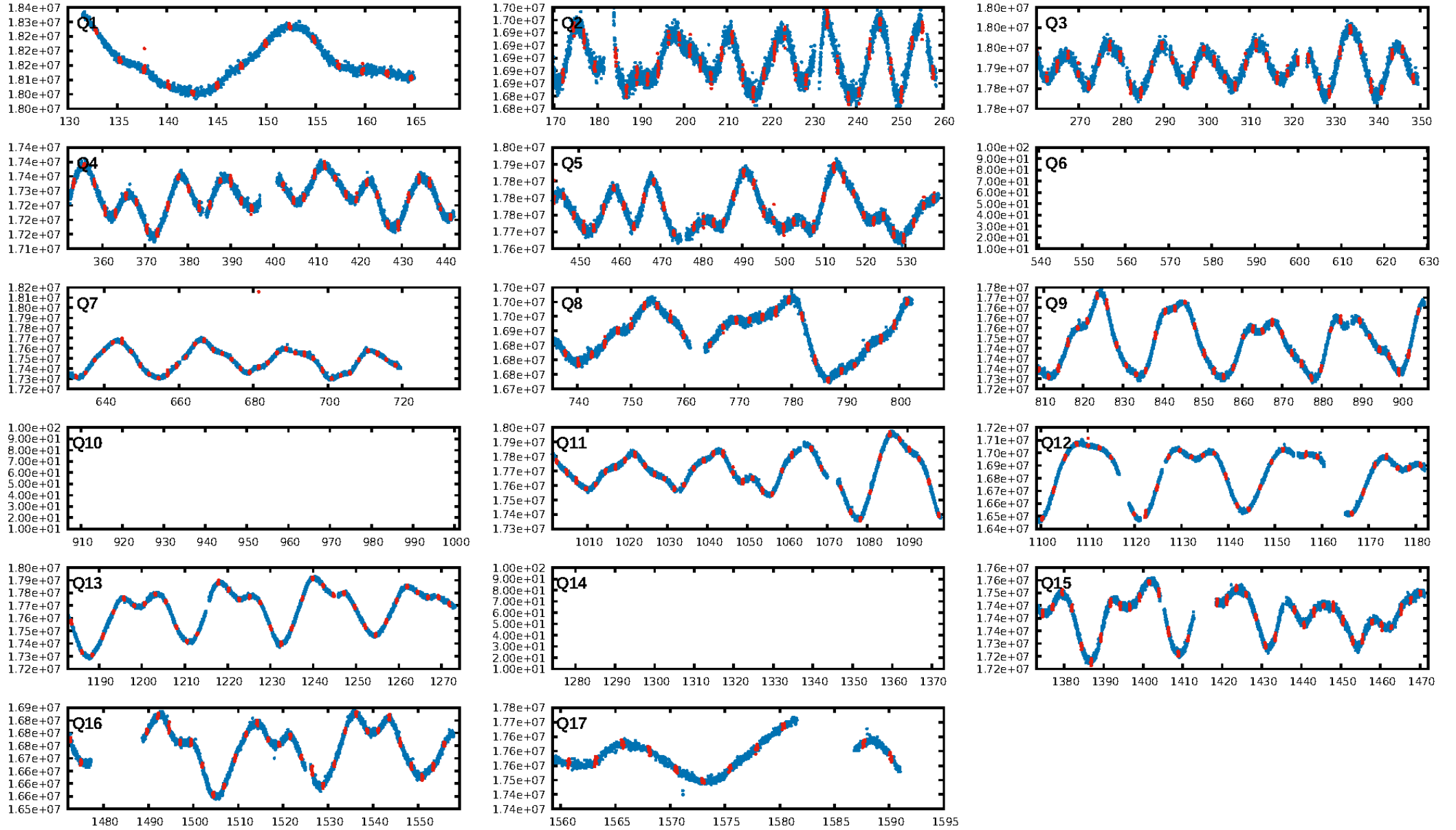
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.32e-18
RollingBand-fgt: 1.00 [411/413]
GhostDiagnostic-chr: -0.3477
Centroid-sig: 0.0%
Centroid-so: 16.626 arcsec [12.36σ]
OotOffset-rm: 7.876 arcsec [20.87σ]
KicOffset-rm: 7.785 arcsec [23.62σ]
OotOffset-st: 1/0/2/3 [6]
KicOffset-st: 1/0/2/3 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [14/14]

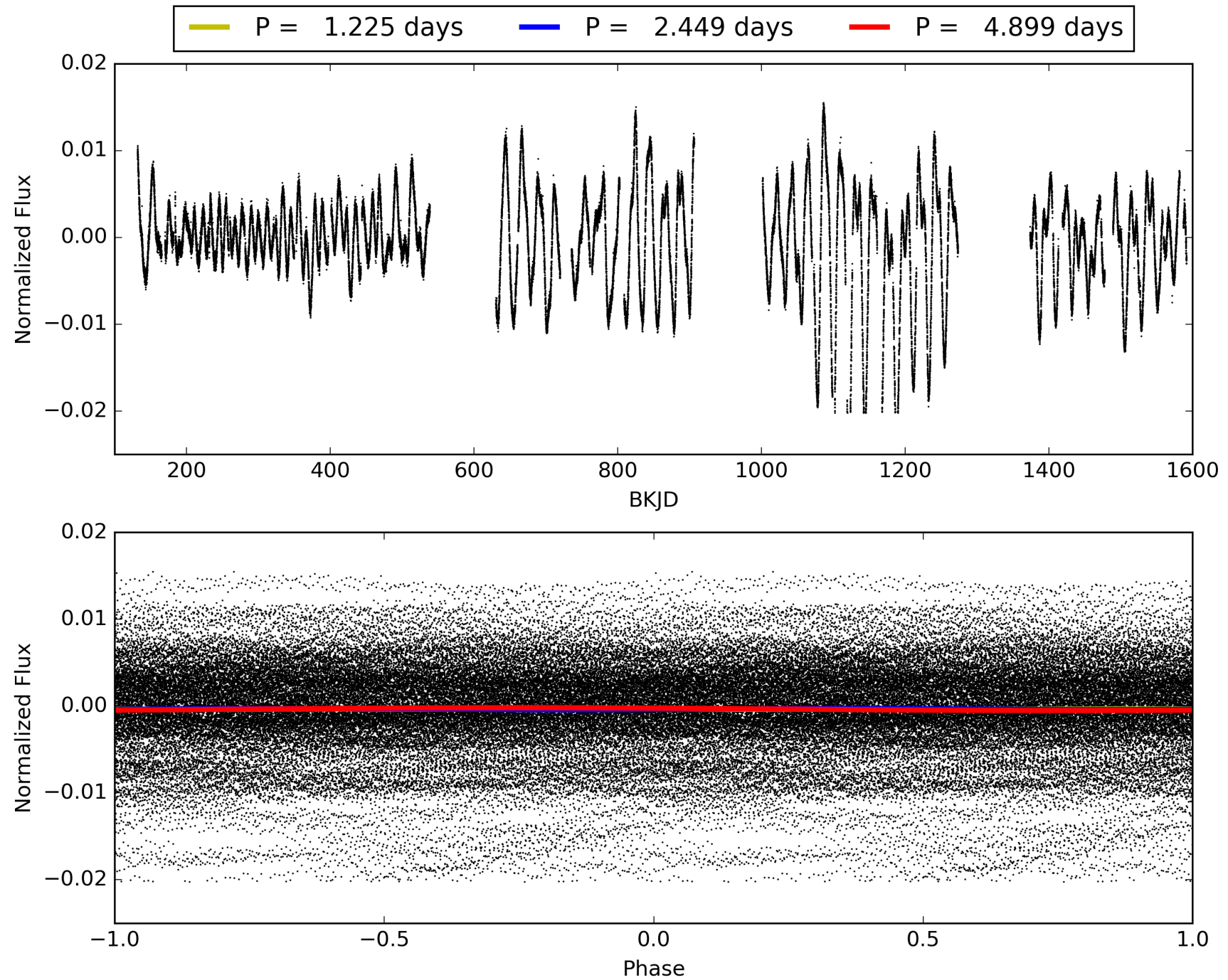
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:45:14 Z

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

TCE 004845862-01, PDC Light Curves

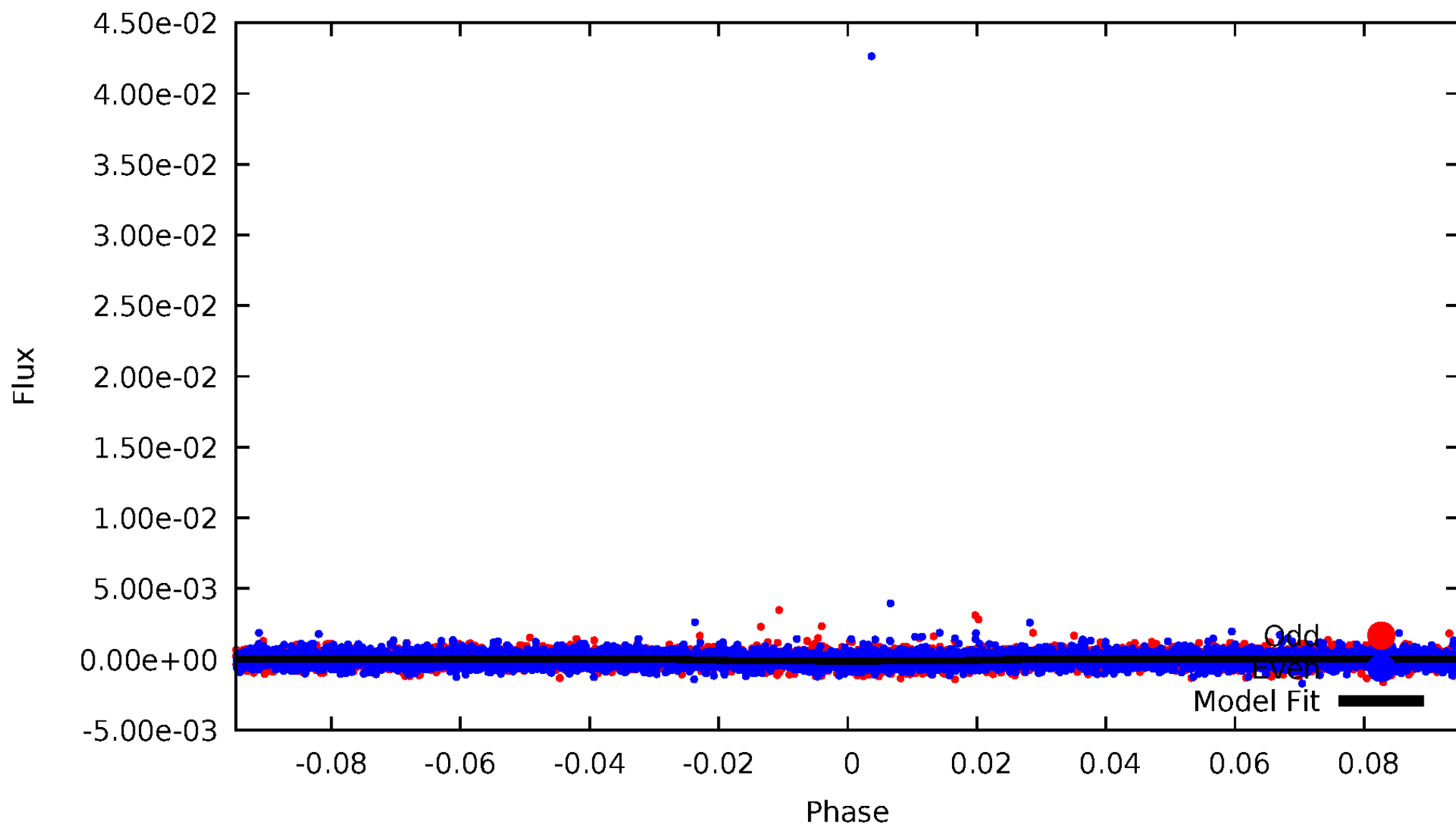


TCE 004845862-01



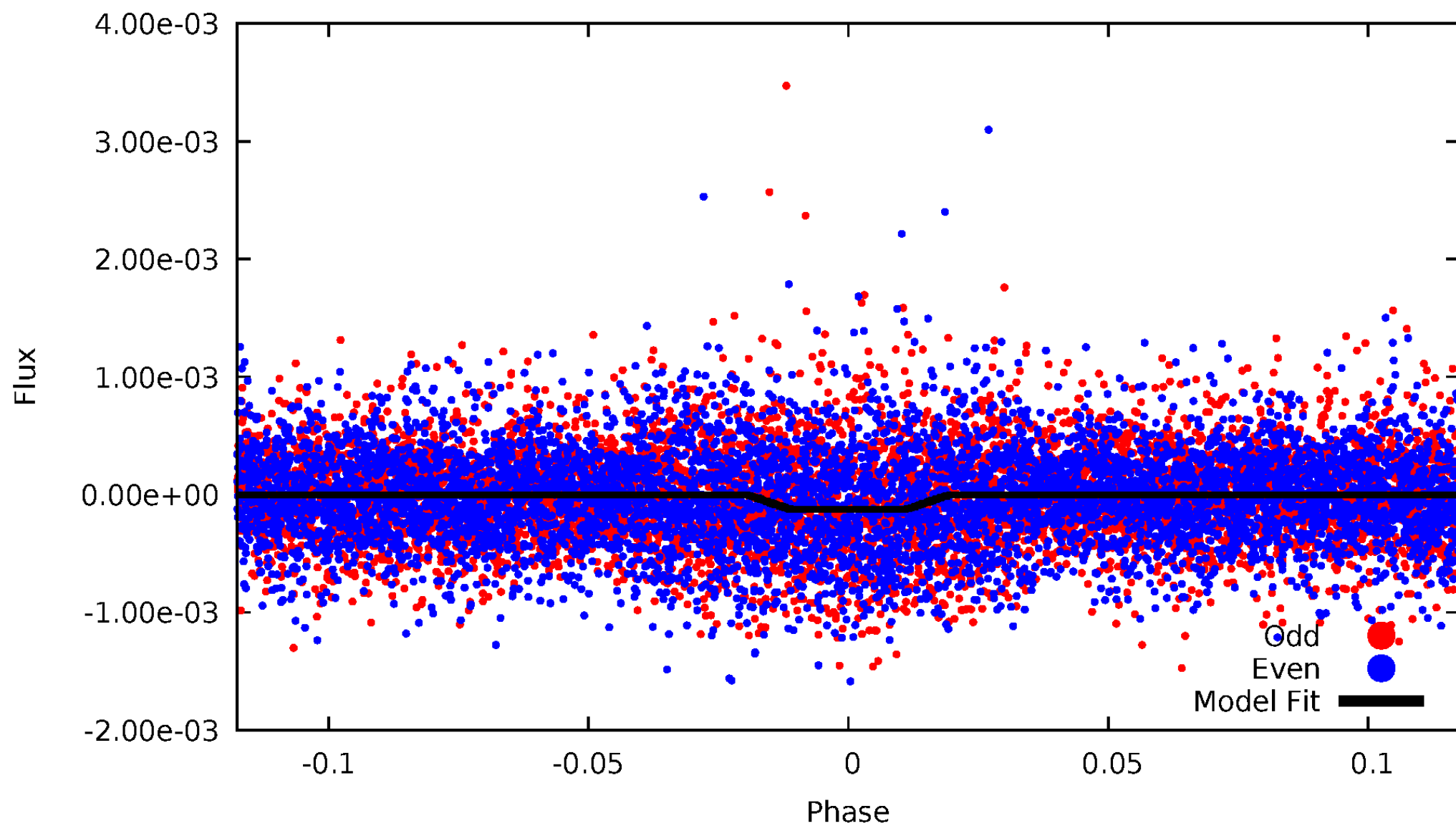
DV Odd/Even

TCE 004845862-01



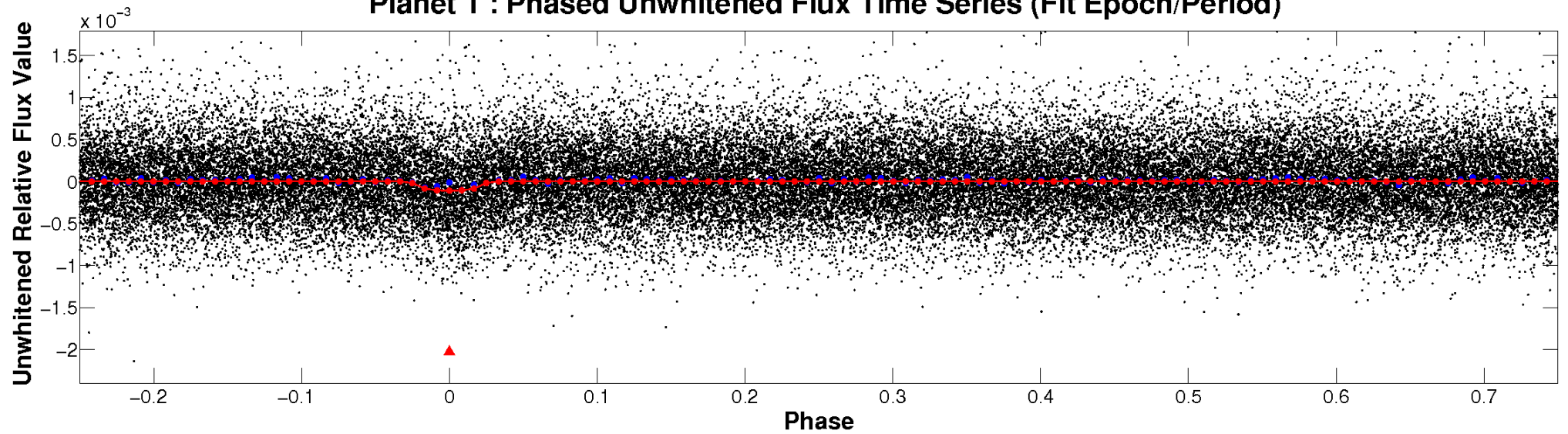
ALT Odd/Even

TCE 004845862-01

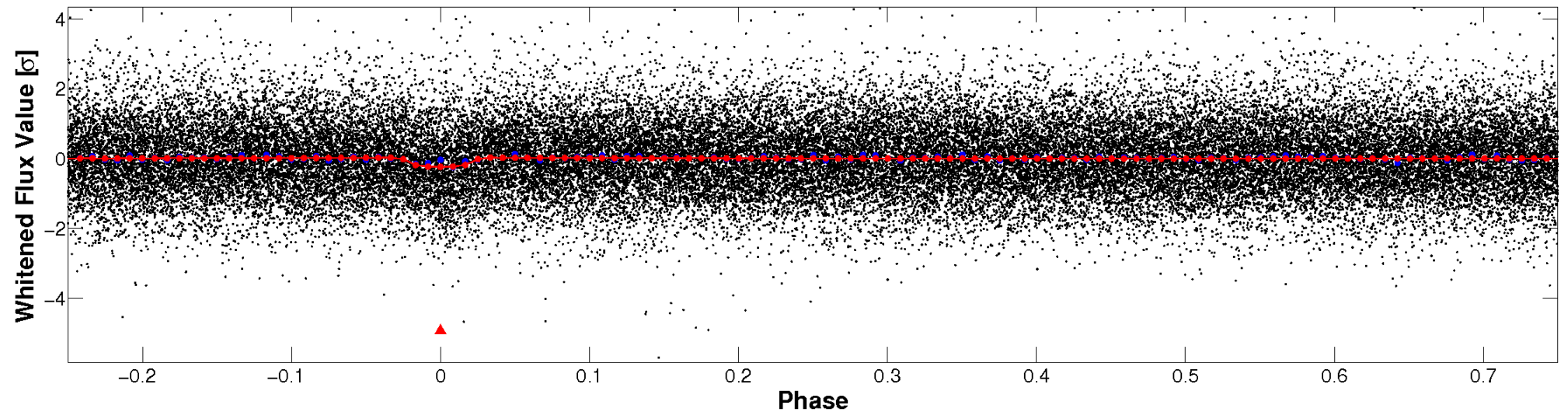


Non-Whitened Vs. Whitened Light Curve

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

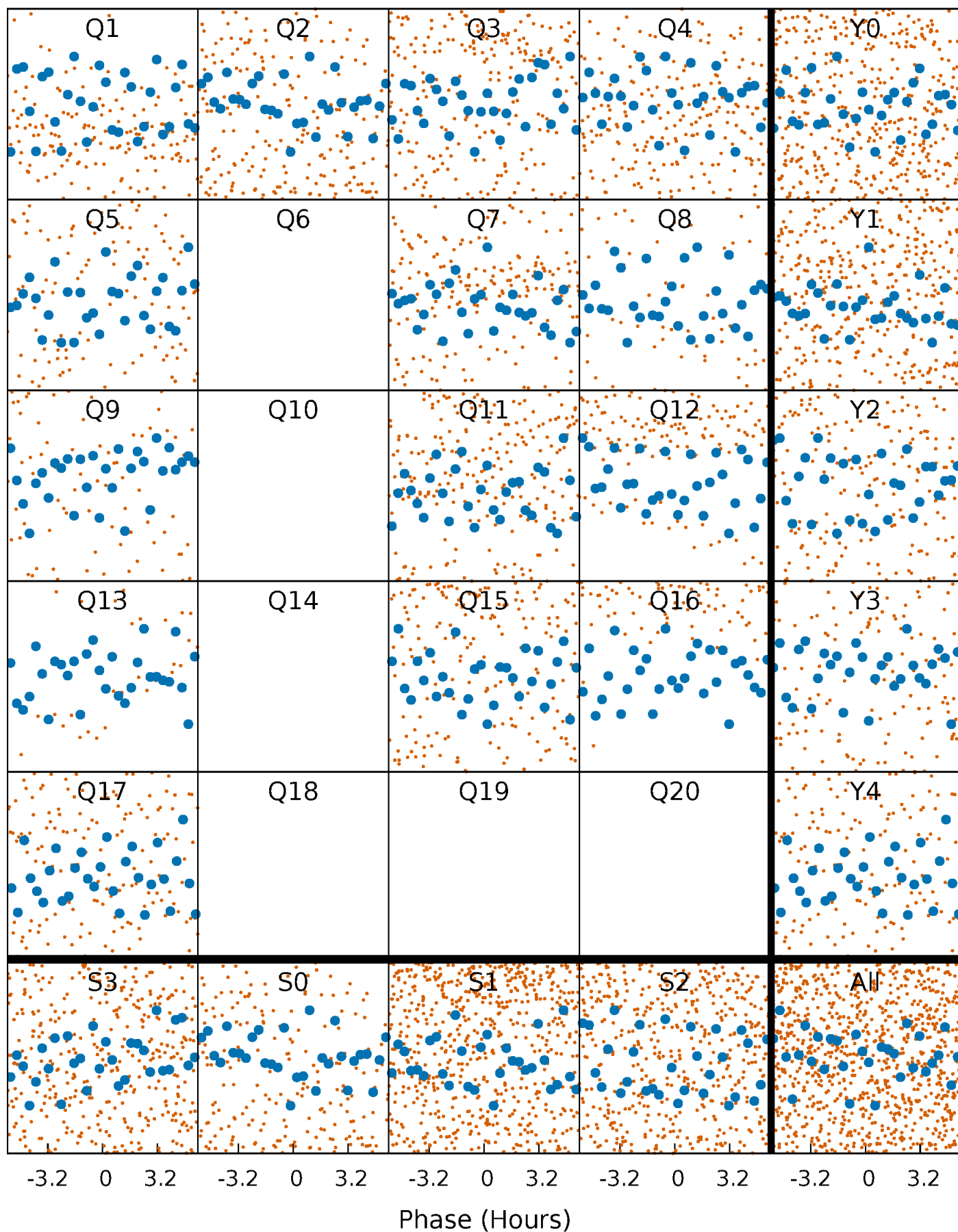


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



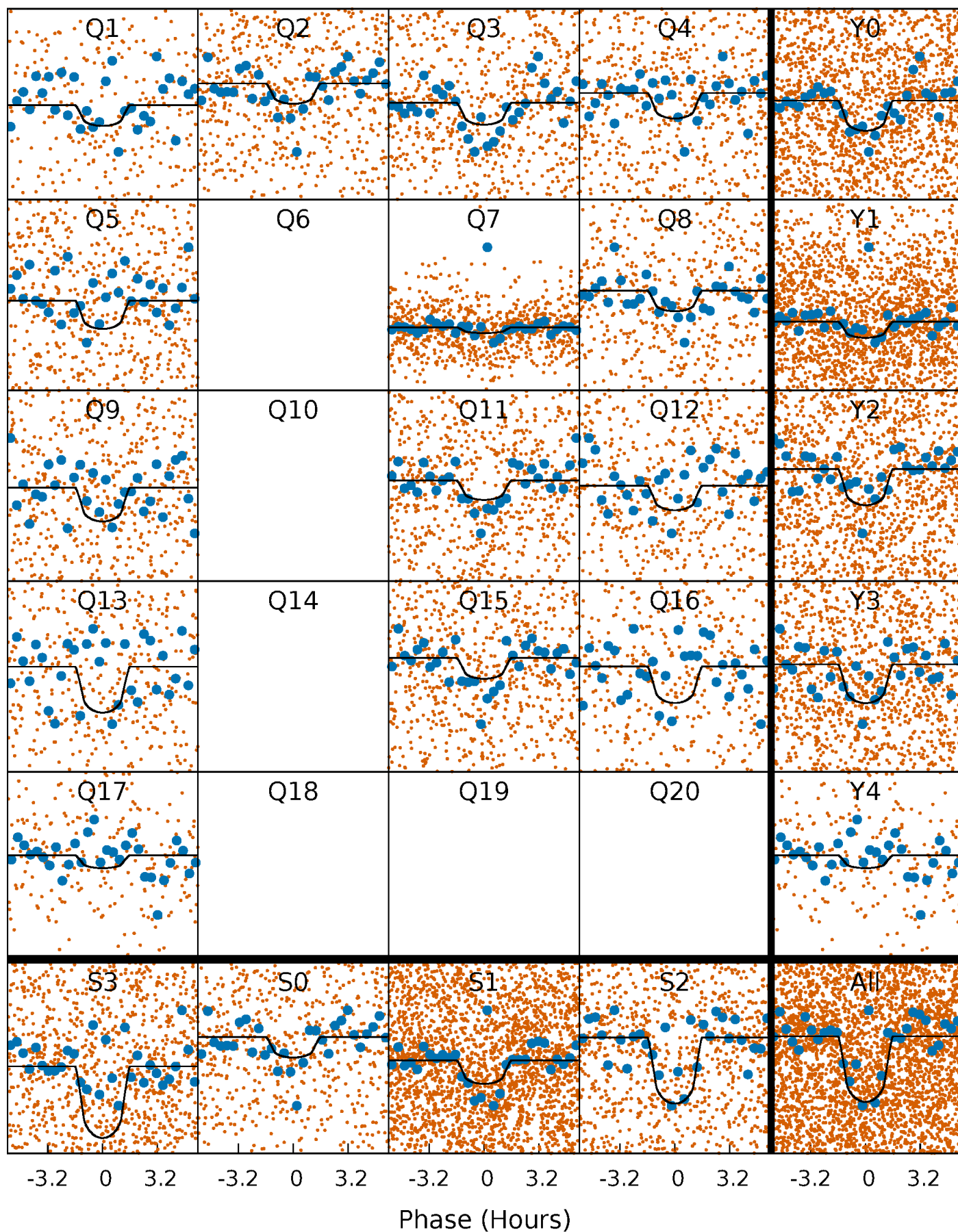
PDC Quarter-Phased Transit Curves

TCE 004845862-01 P= 2.449299 Days $T_0=132.809612$ (BKJD)



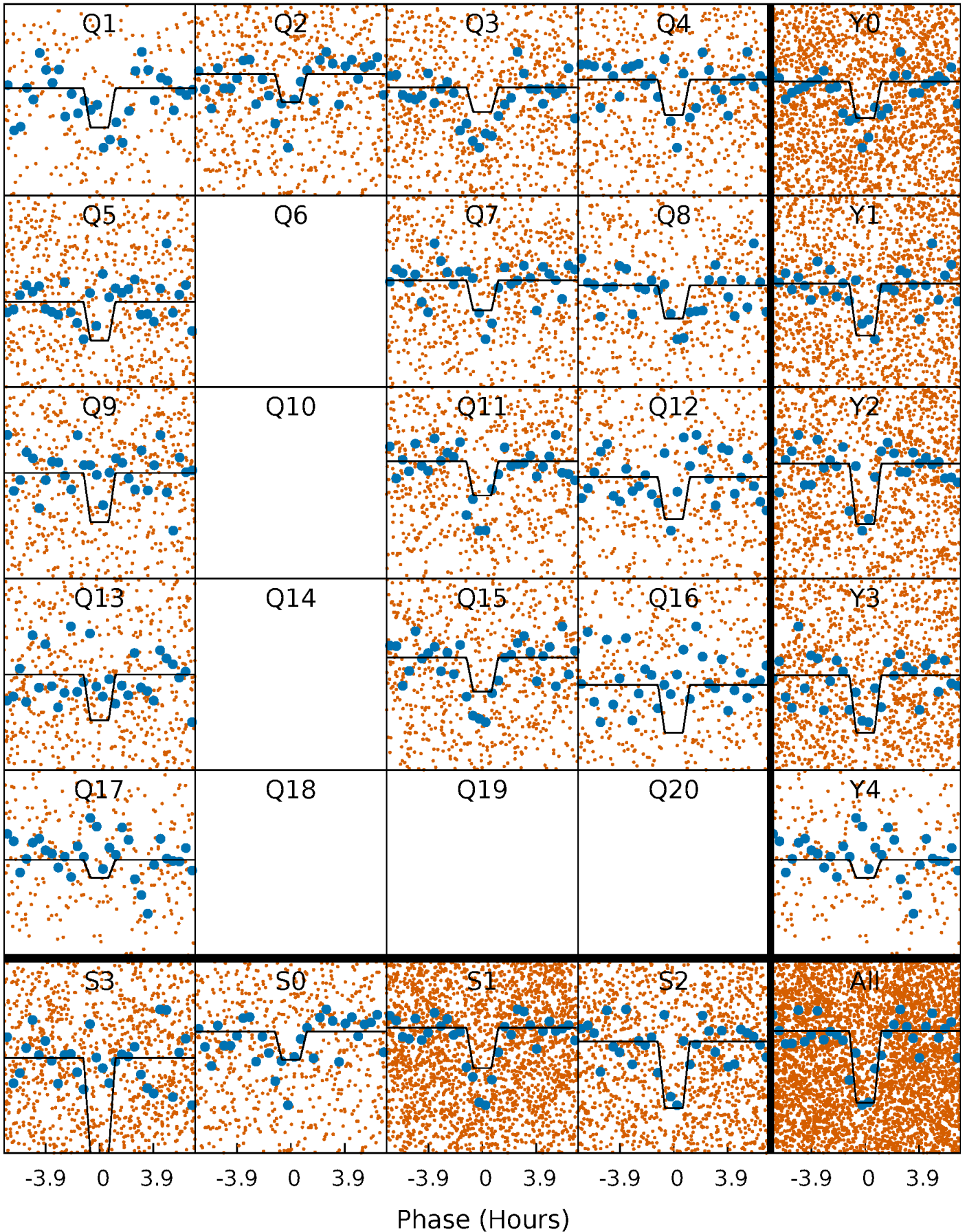
DV Quarter-Phased Transit Curves

TCE 004845862-01 P= 2.449299 Days $T_0=132.809612$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

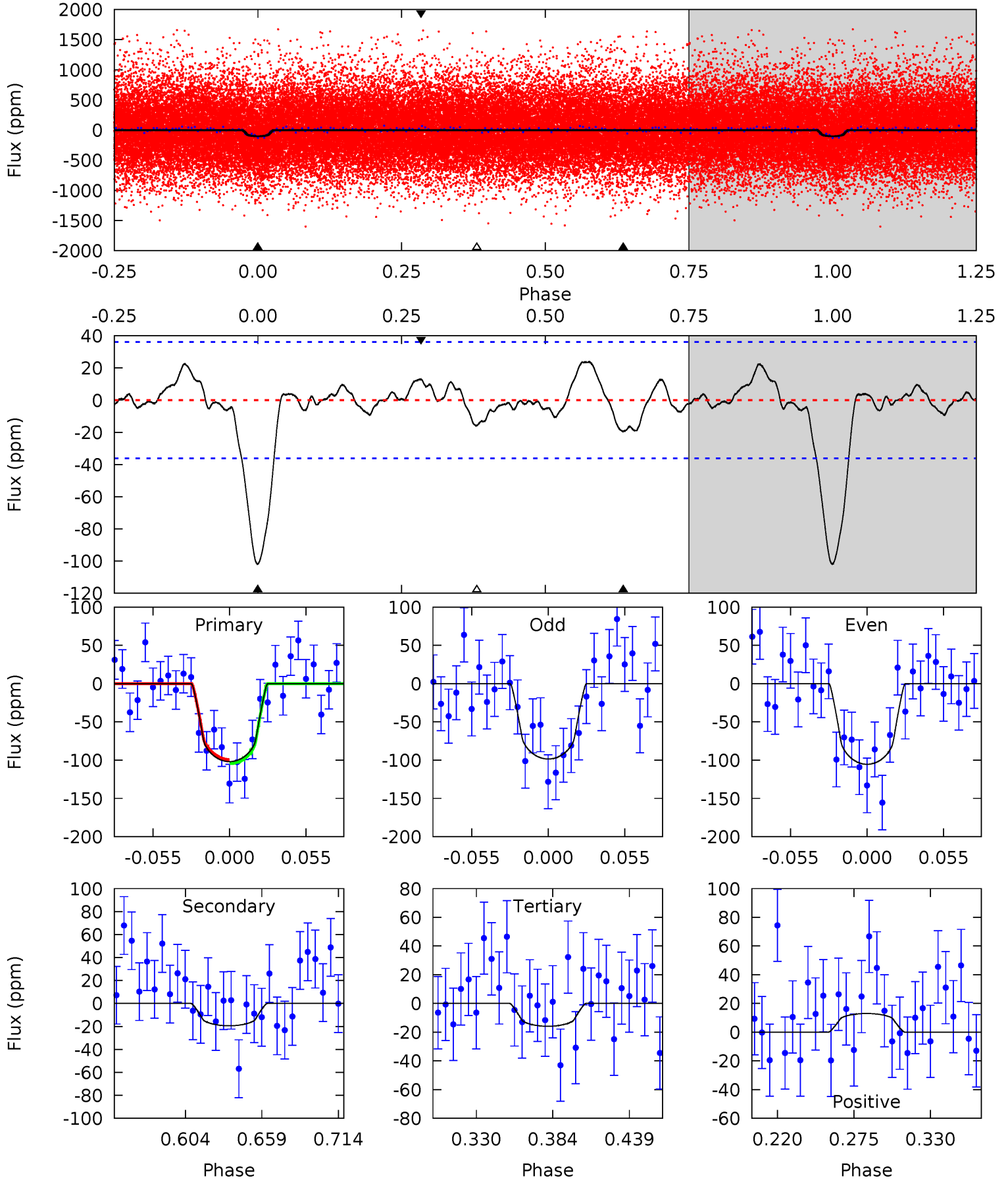
TCE 004845862-01 P= 2.449262 Days $T_0=132.827815$ (BKJD)



DV Model-Shift Uniqueness Test

004845862-01, P = 2.449299 Days, E = 130.360313 Days

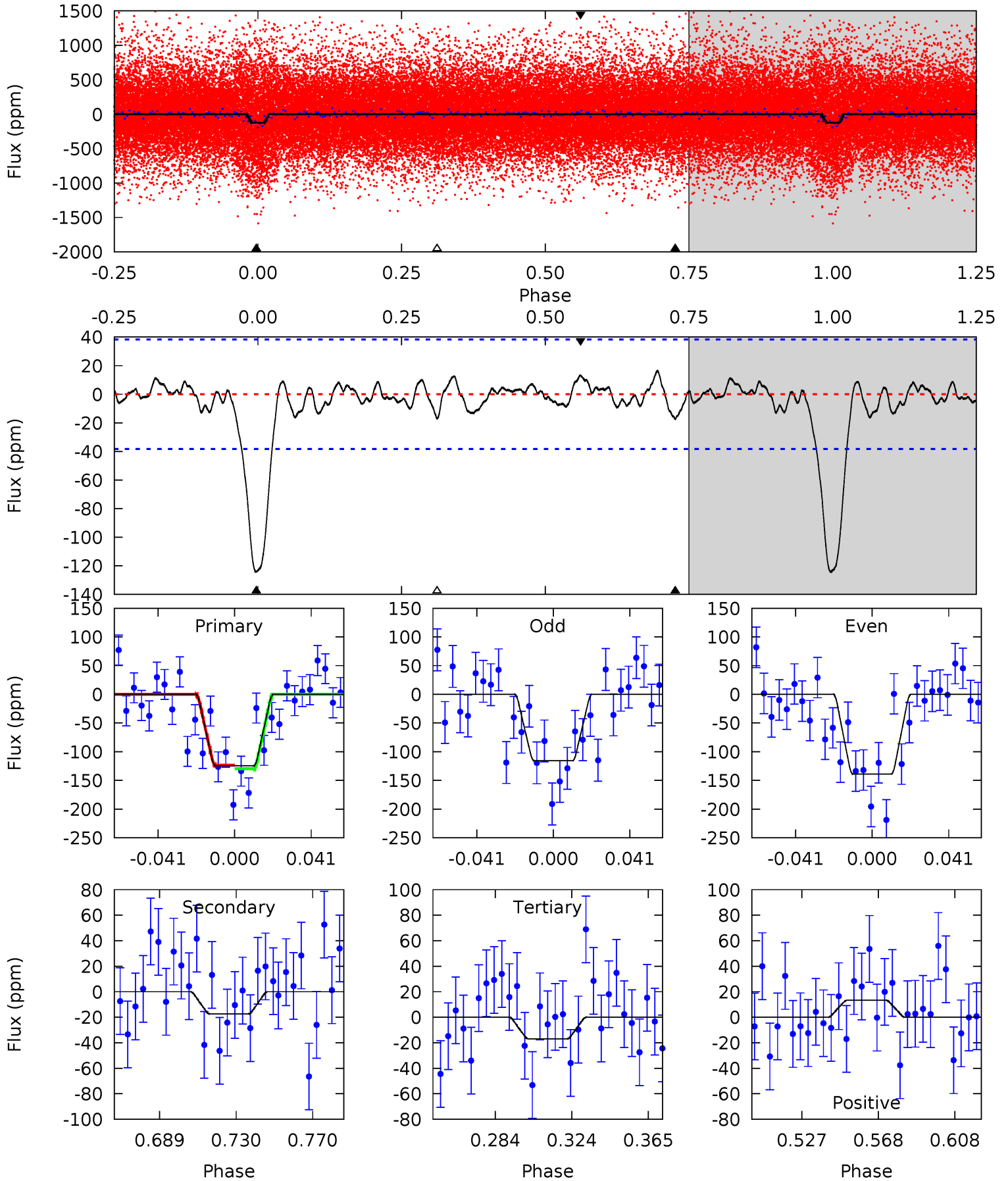
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.2 | 2.52 | 2.07 | 1.69 | 4.69 | 1.92 | 1.05 | 11.2 | 11.5 | 0.46 | 0.84 | 0.45 | 0.59 | 0.19 | 0.34 |



Alt Model-Shift Uniqueness Test

004845862-01, P = 2.449262 Days, E = 130.378553 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.4 | 2.17 | 2.11 | 1.65 | 4.75 | 2.05 | 0.79 | 13.3 | 13.8 | 0.05 | 0.51 | 1.45 | 0.73 | 0.12 | 0.39 |



Stellar Parameters For KIC 004845862

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4840^{+145}_{-130} | $4.551^{+0.066}_{-0.033}$ | $-0.040^{+0.300}_{-0.300}$ | $0.749^{+0.053}_{-0.072}$ | $0.727^{+0.083}_{-0.053}$ | $2.441^{+0.712}_{-0.315}$ |
| | +3%/-3% | +1%/-1% | +750%/-750% | +7%/-10% | +11%/-7% | +29%/-13% |
| 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 004845862-01 / KOI 4606.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -19 ± 8 | $1.03^{+0.73}_{-0.61}$ | 1434^{+49}_{-47} | 3277^{+1231}_{-505} | $9.772^{+49.390}_{-6.567}$ |
| Alt. | -17 ± 8 | $0.99^{+0.74}_{-0.62}$ | 1439^{+45}_{-51} | 3274^{+1282}_{-606} | $9.534^{+56.543}_{-7.066}$ |

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

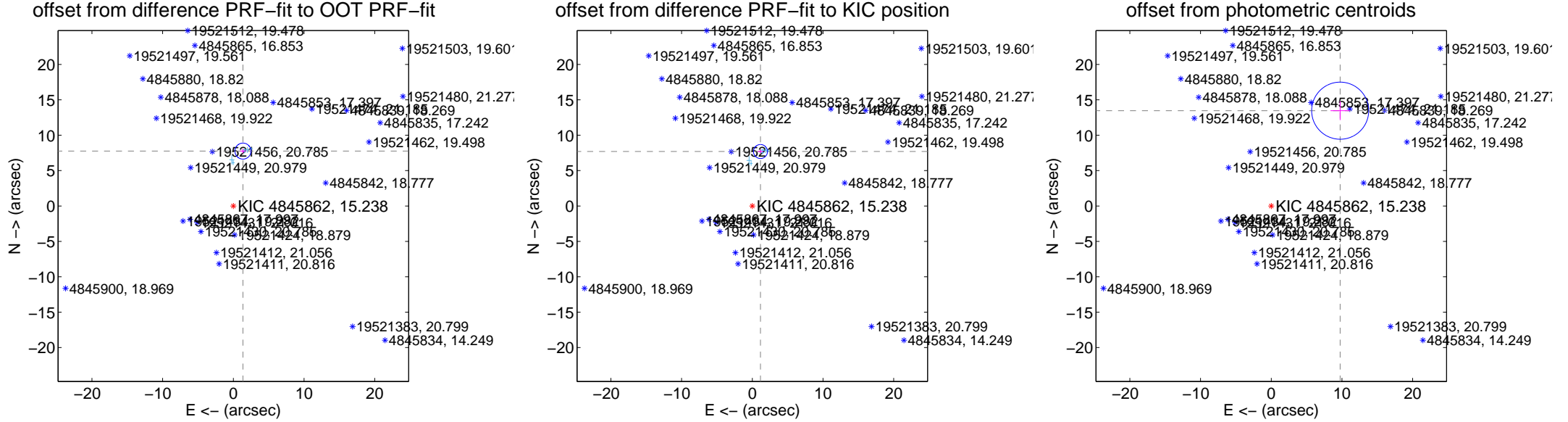
DV Centroid Data

Supplemental centroid analysis for 004845862-01. Kepler magnitude: 15.24. Transit SNR 9.83

There are 6 quarters with good PRF difference image offsets

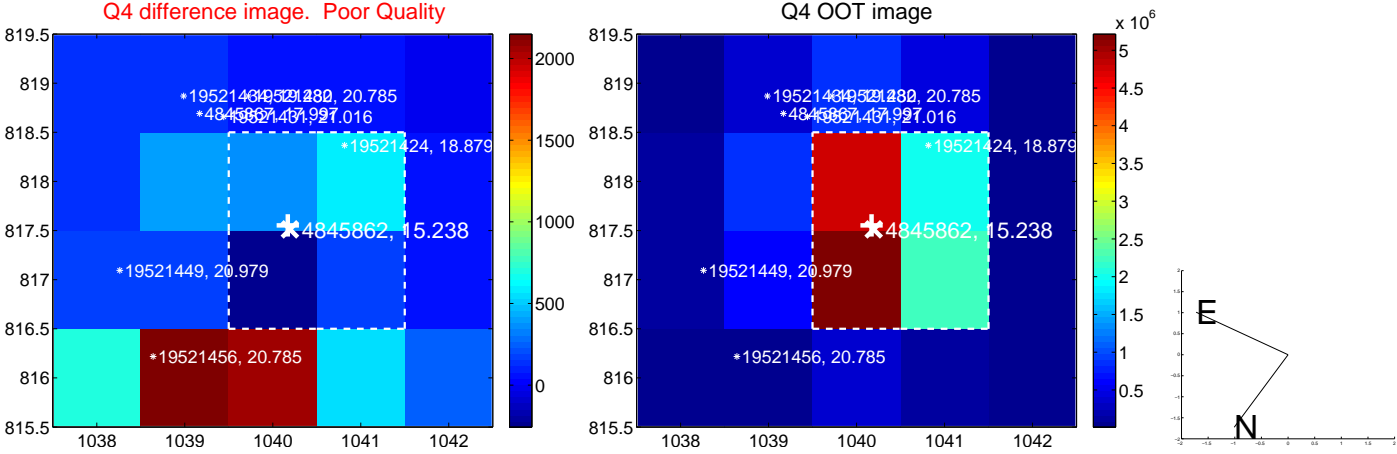
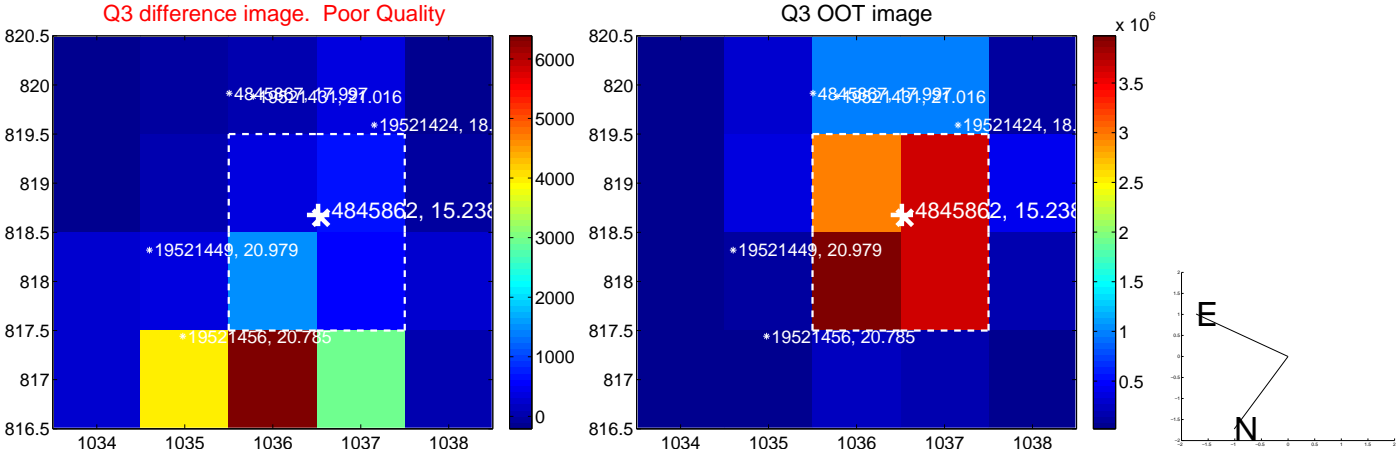
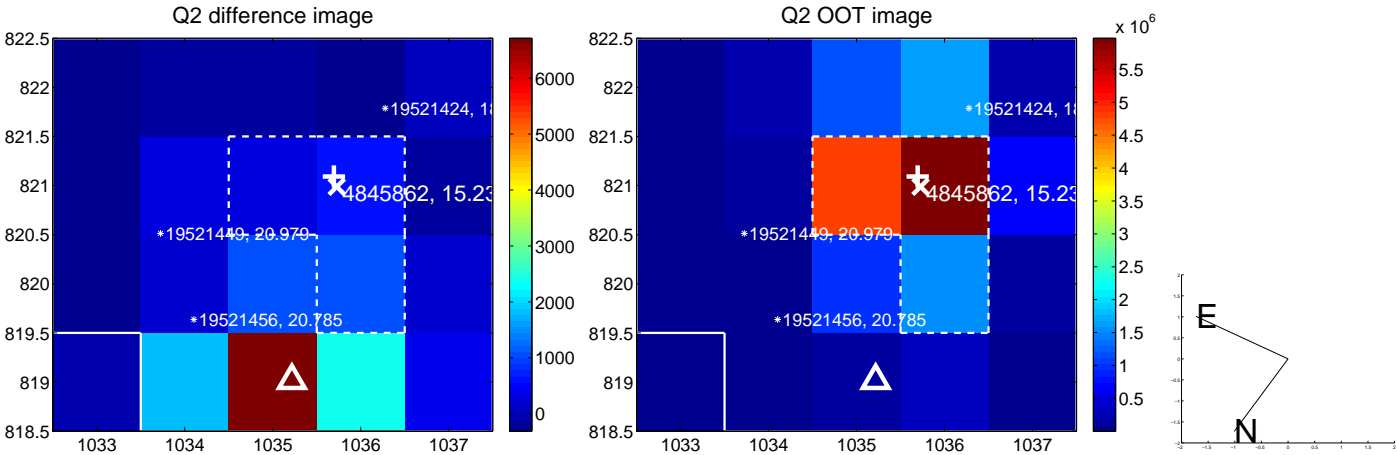
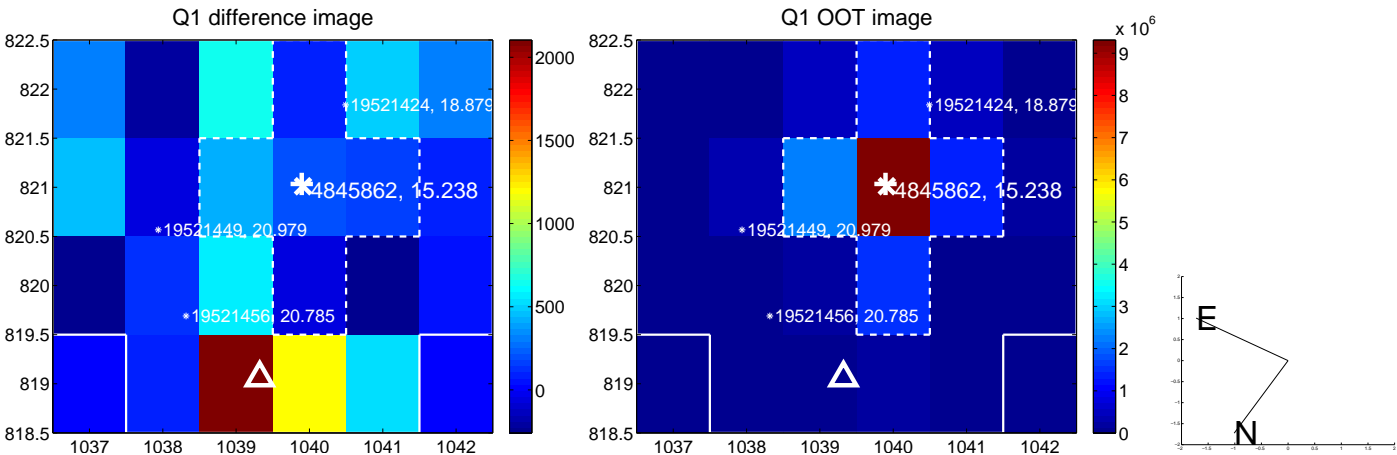
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 7.876 \pm 0.377 | 20.87 | -1.359 \pm 0.417 | 7.758 \pm 0.315 |
| PRF-fit source offset from KIC position | 7.785 \pm 0.330 | 23.62 | -1.159 \pm 0.399 | 7.699 \pm 0.279 |
| photometric centroid source offset | 16.63 \pm 1.34 | 12.36 | -9.75 \pm 1.36 | 13.47 \pm 1.33 |

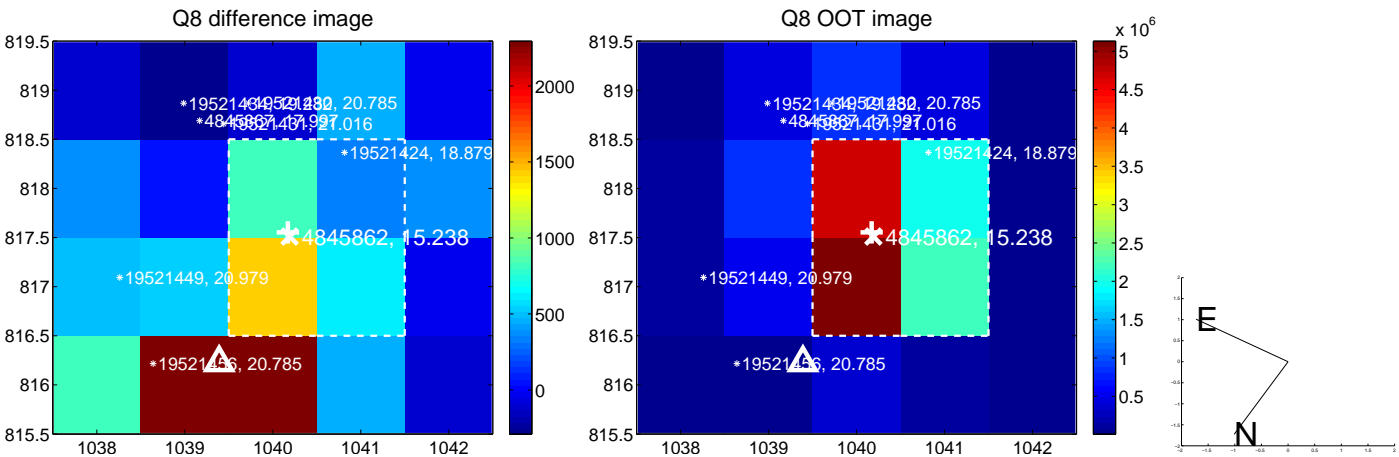
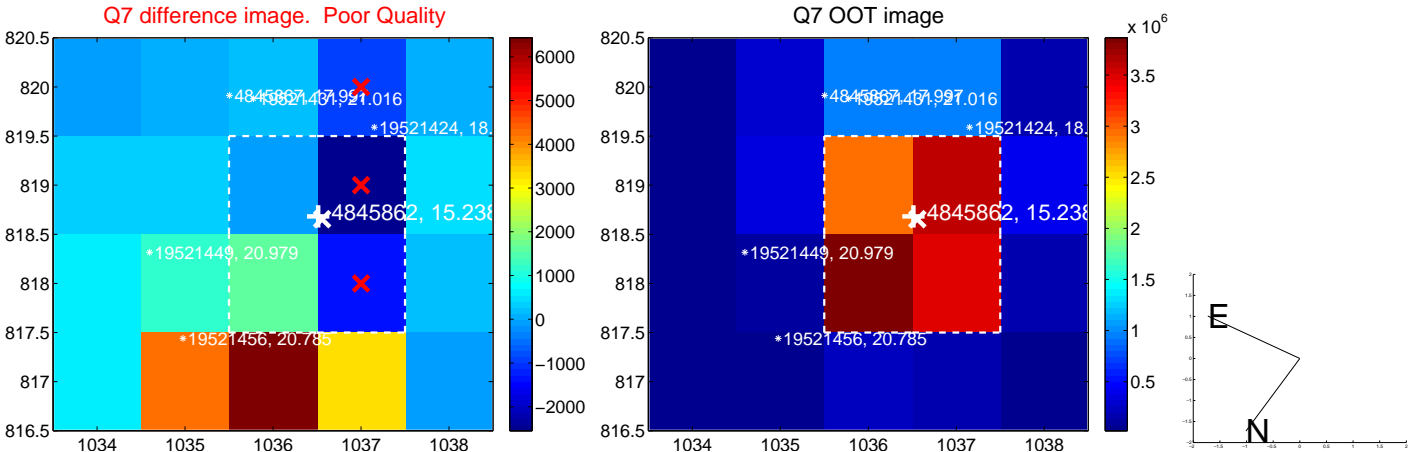
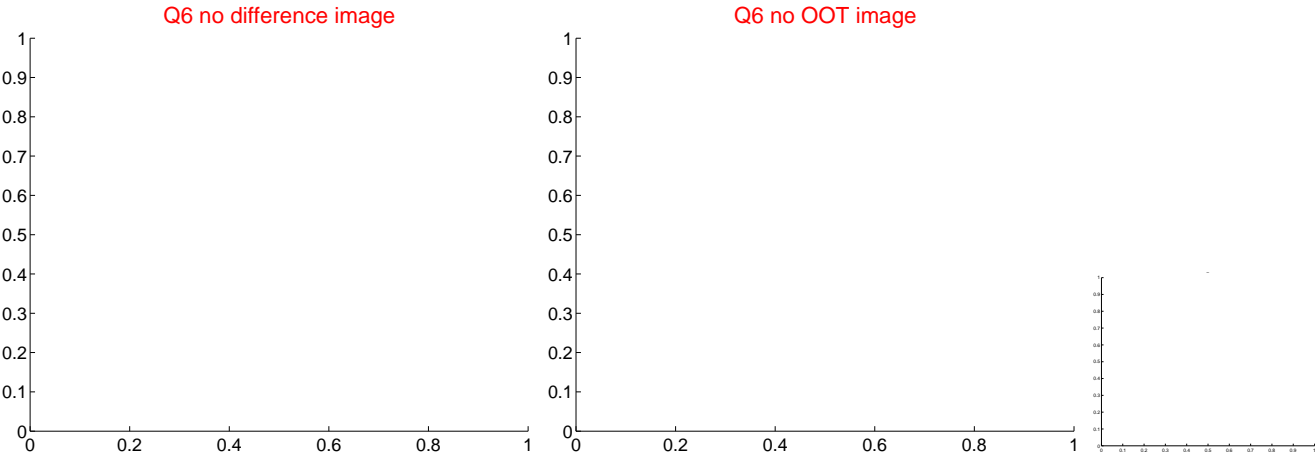
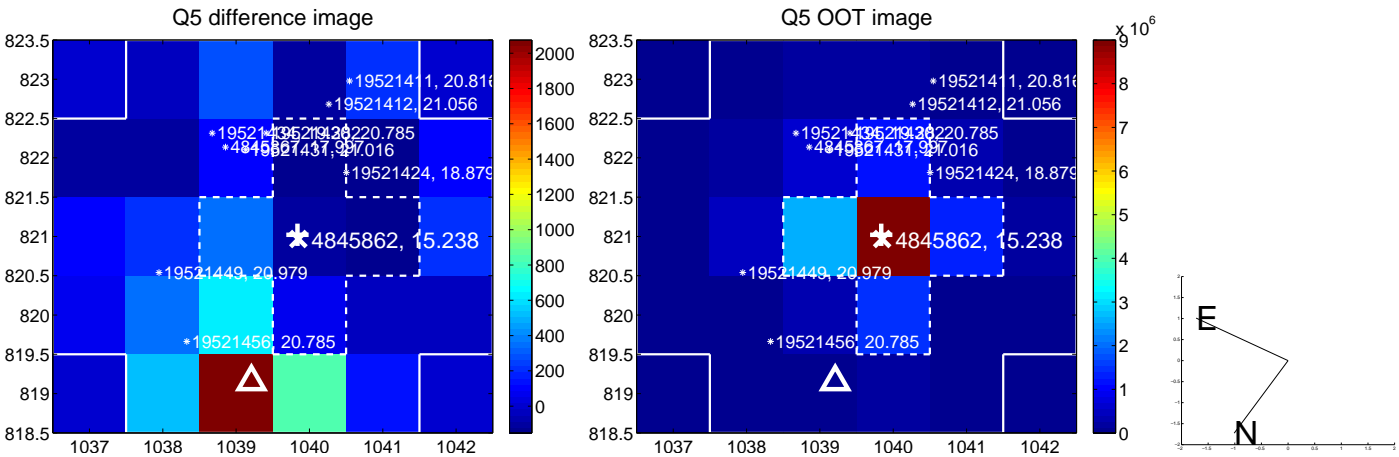


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

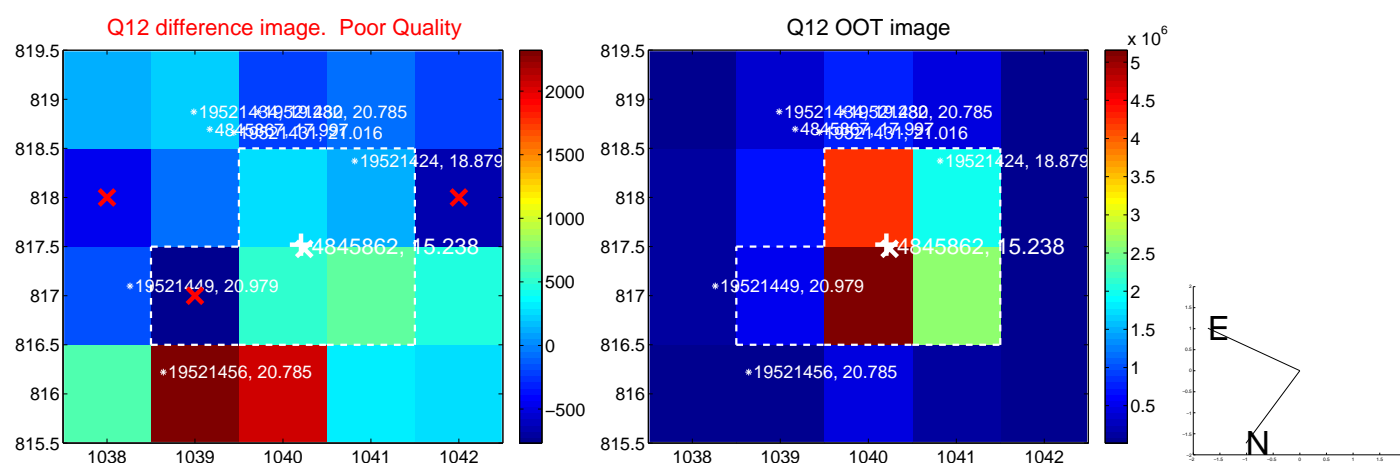
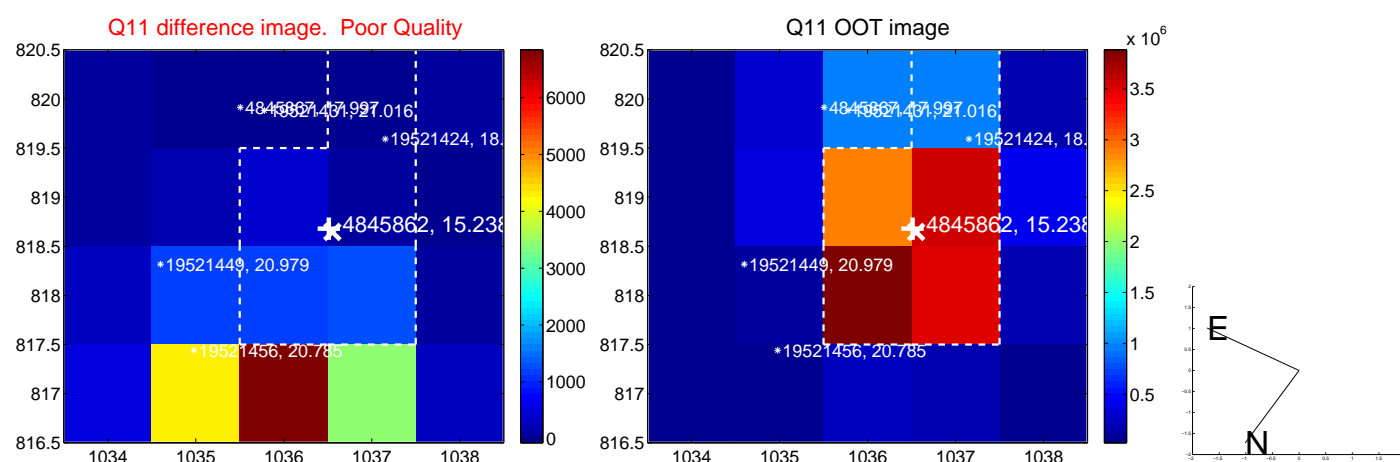
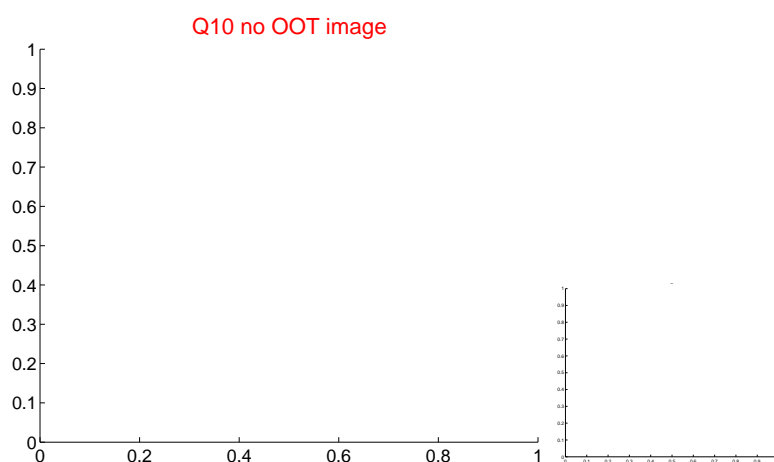
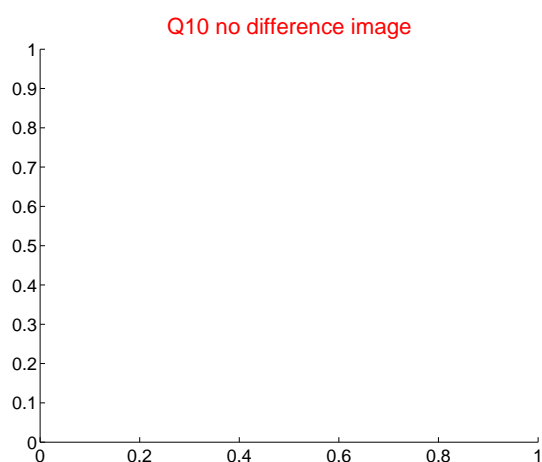
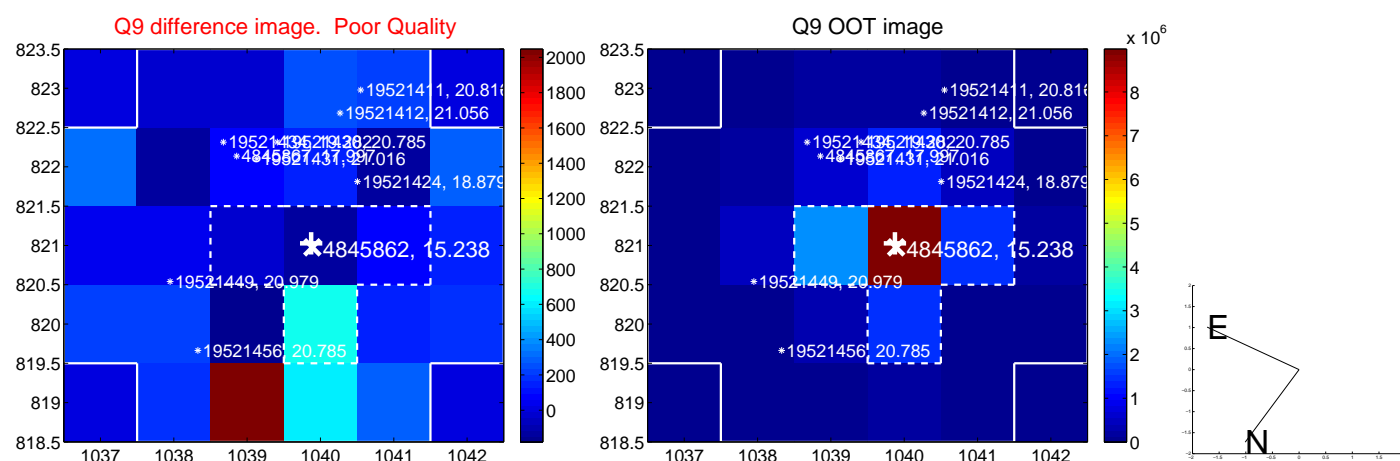
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



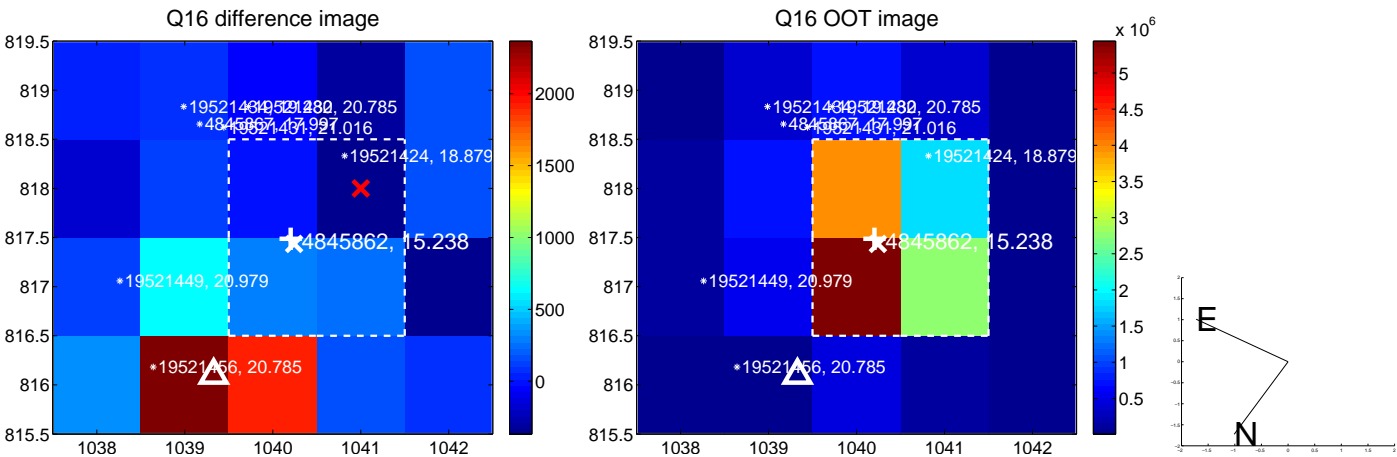
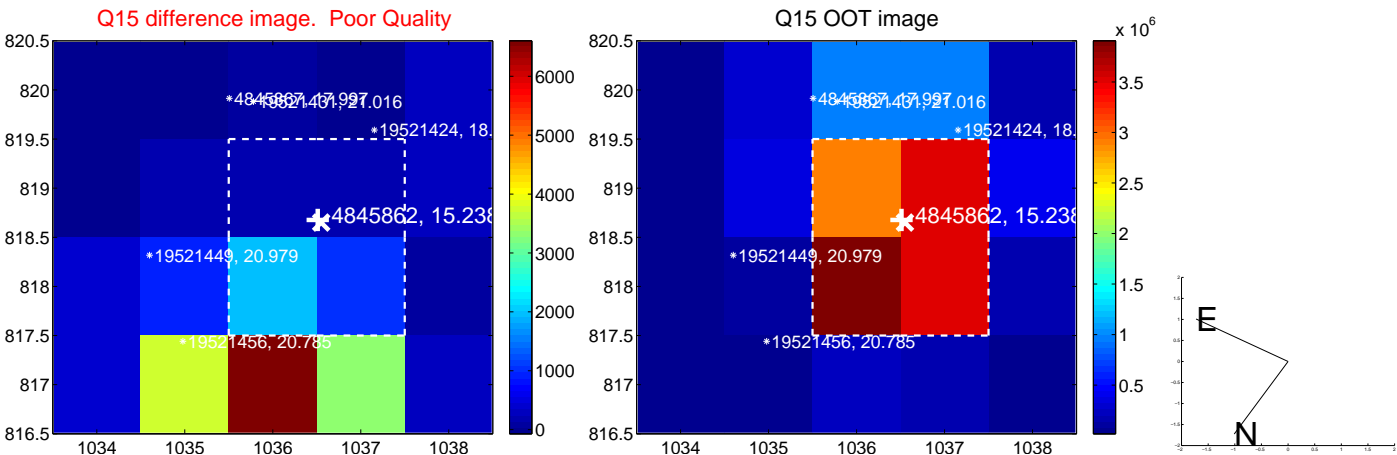
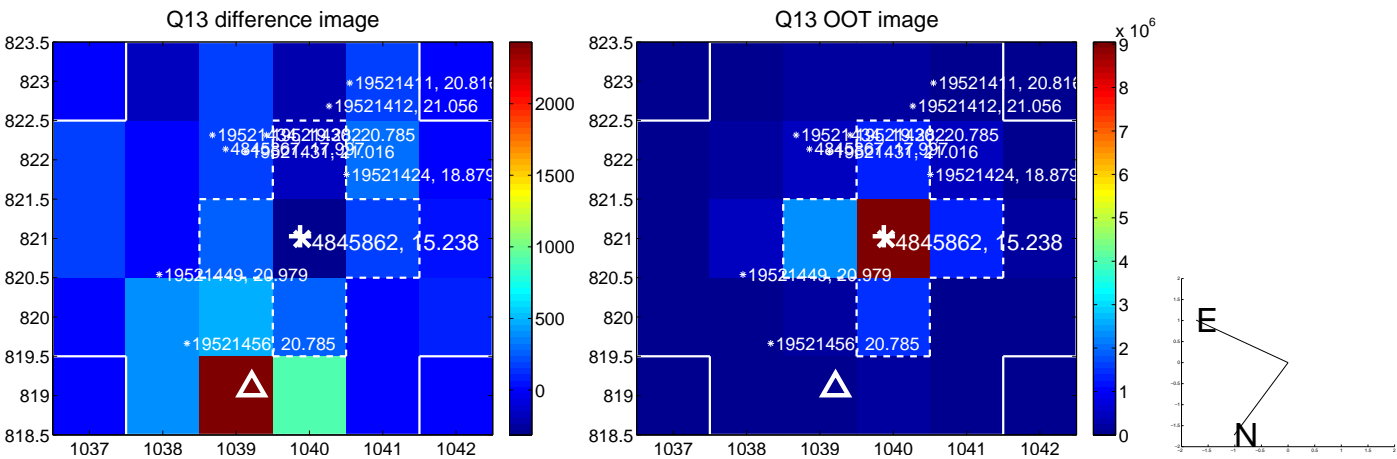
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



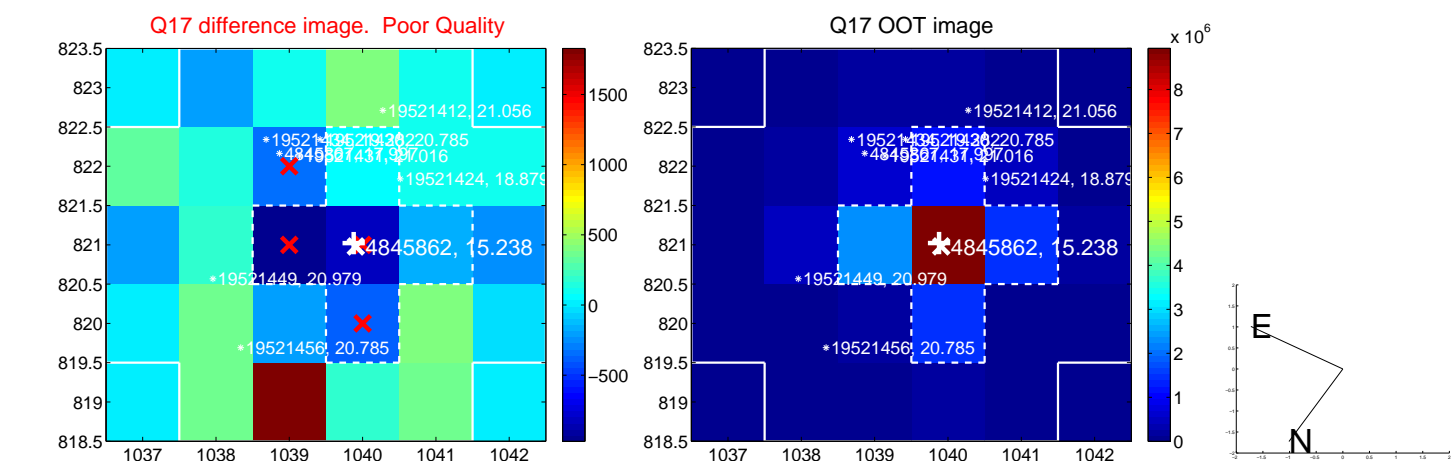
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



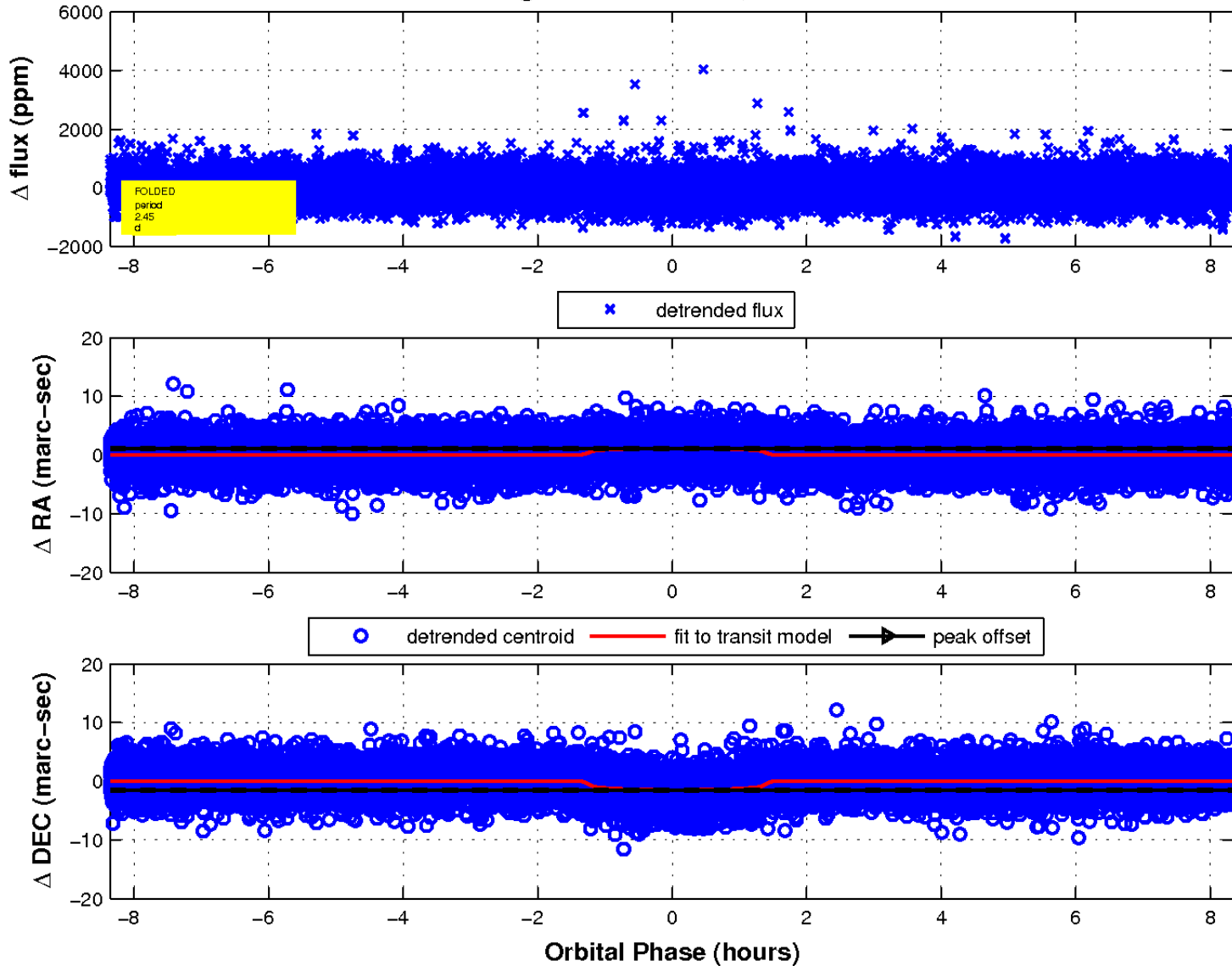
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

