

KIC 008491447

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008491447-01 | OBS | No | 16.741483 | 139.930541 | 39.4 | 20.623 | 10.4 | 10.3 | 1.73 | 6269 | 1.18 | 248.02 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------|
| 008491447-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV |

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

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

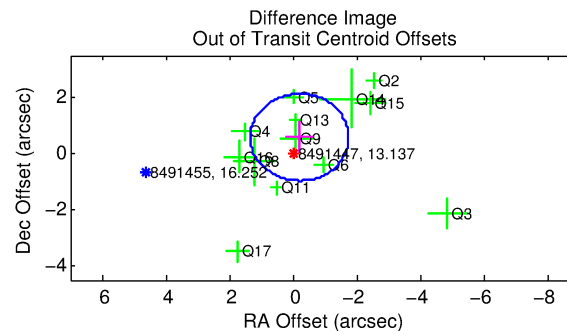
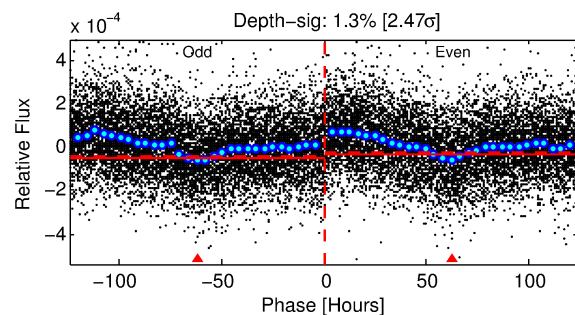
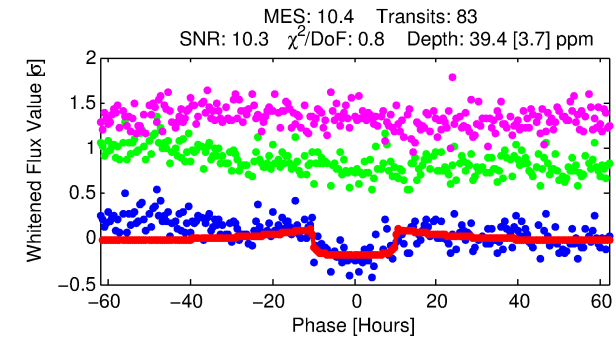
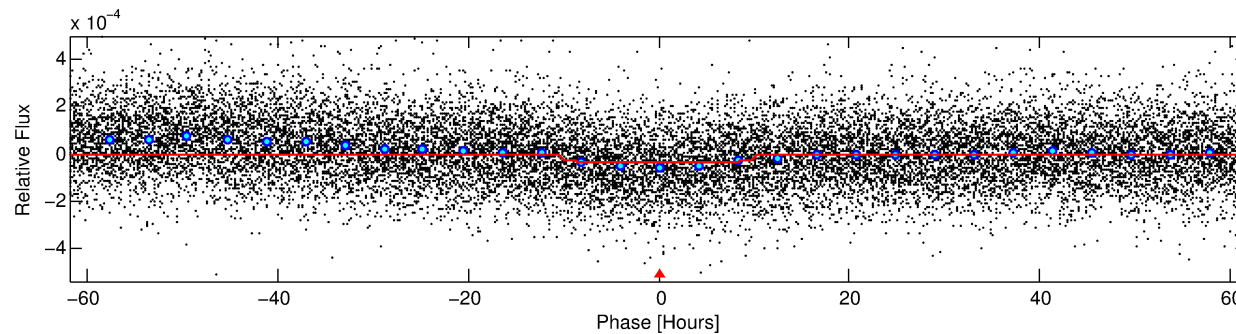
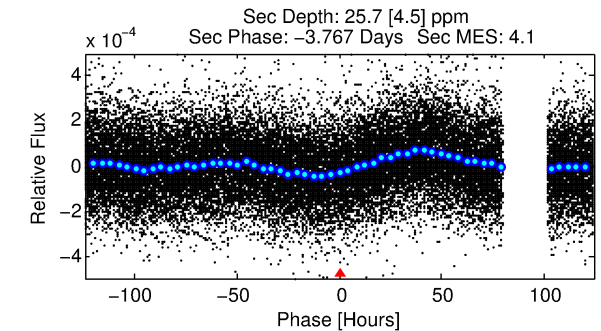
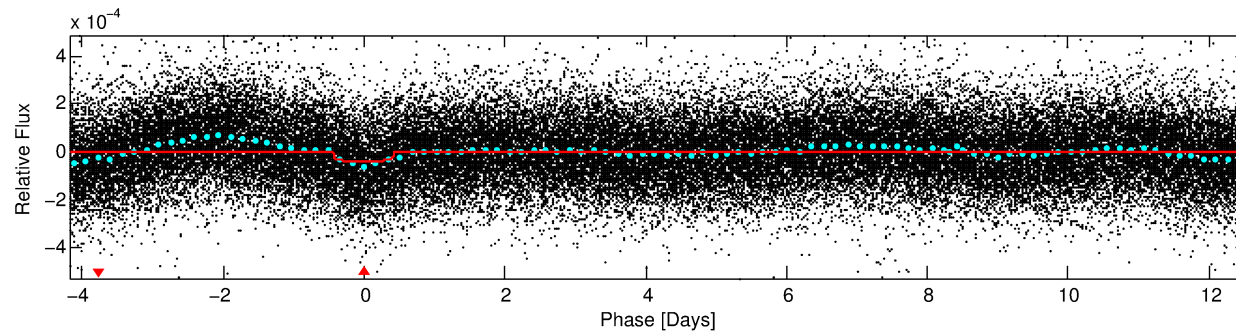
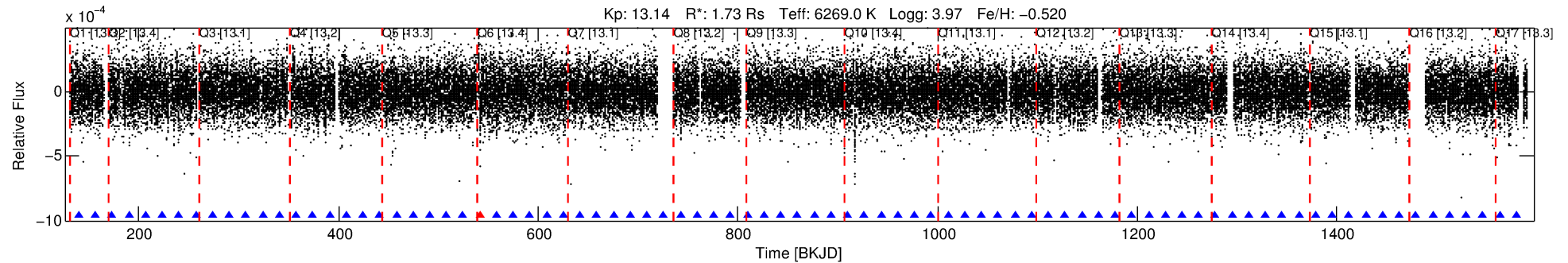
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008491447-01

No Significant Match Found

DV One-Page Summary

KIC: 8491447 Candidate: 1 of 1 Period: 16.741 d



DV Fit Results:

Period = 16.74148 [0.00035] d
Epoch = 139.9305 [0.0173] BKJD
Rp/R* = 0.0062 [0.0011]
a/R* = 4.28 [3.74]
b = 0.75 [0.55]
Seff = 248.02 [124.19]
Teq = 1012 [127] K
Rp = 1.18 [0.42] Re
a = 0.1291 [0.0387] AU
Ag = 170.72 [107.03] [1.59σ]
Teffp = 5655 [588] K [7.73σ]

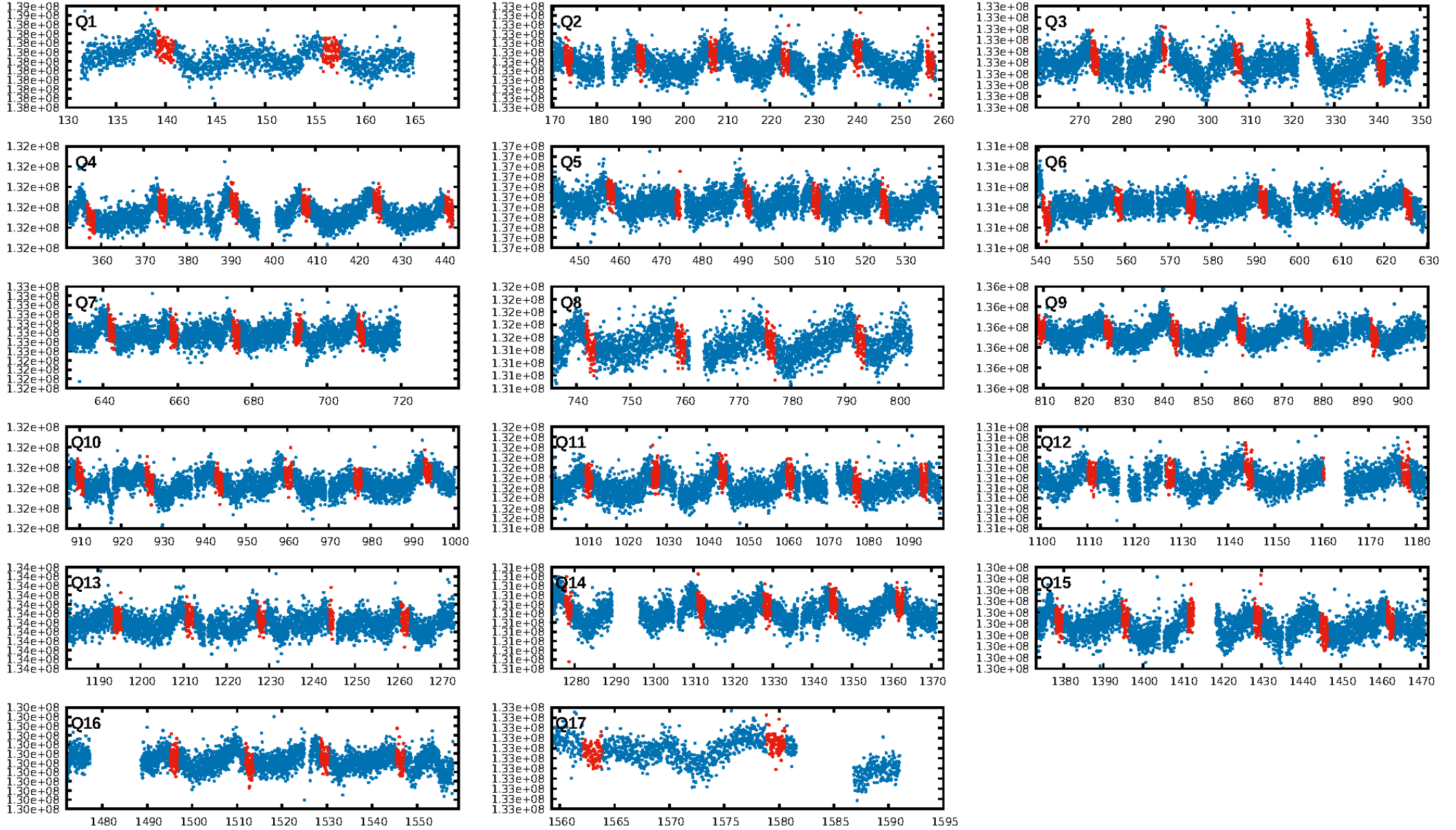
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.68e-28
RollingBand-fgt: 0.99 [78/79]
GhostDiagnostic-chr: 1.477
Centroid-sig: 46.7%
Centroid-so: 0.683 arcsec [0.66σ]
OotOffset-rm: 0.615 arcsec [1.19σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-rm: 0.611 arcsec [1.02σ]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

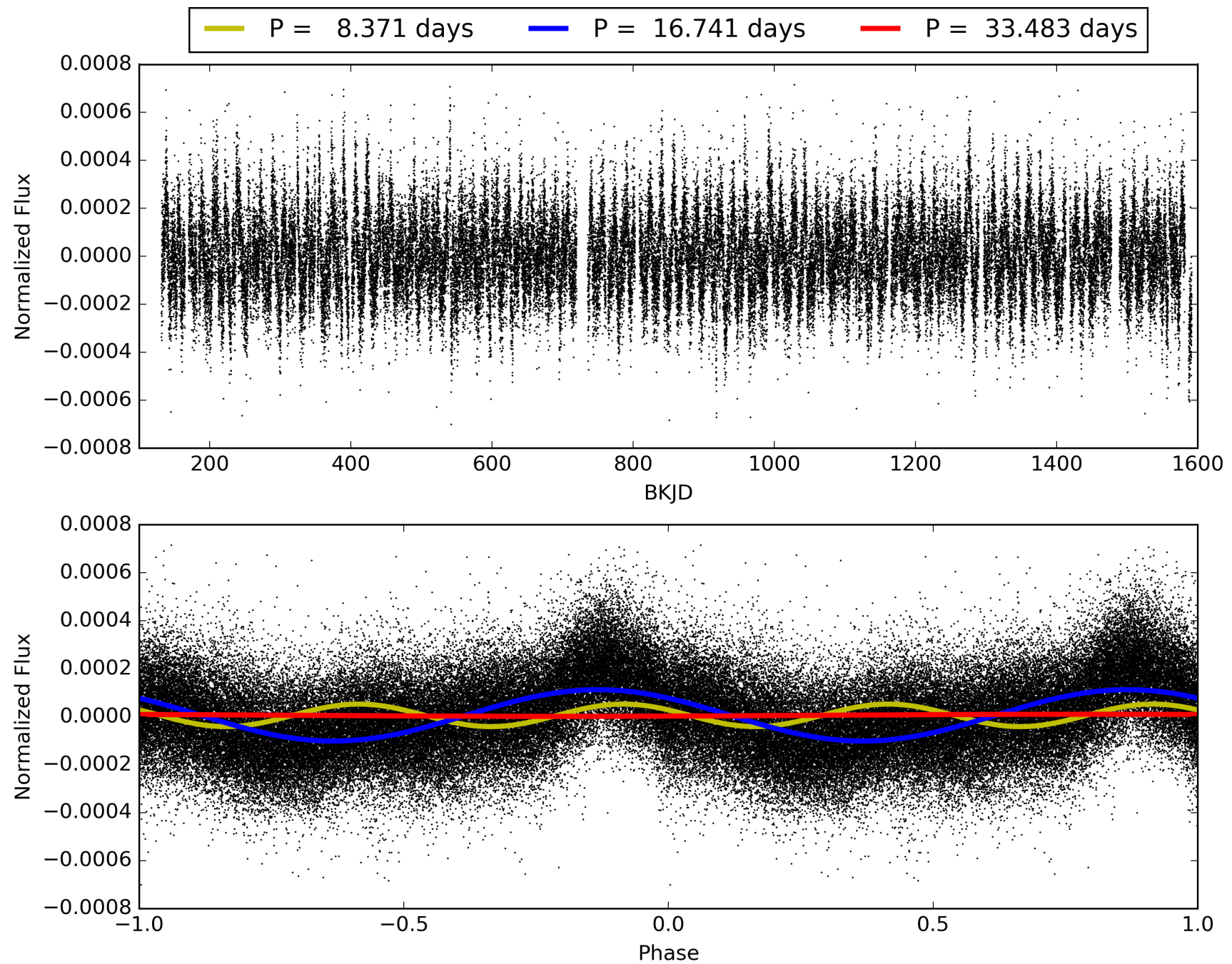
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:12:13 Z

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

TCE 008491447-01, PDC Light Curves

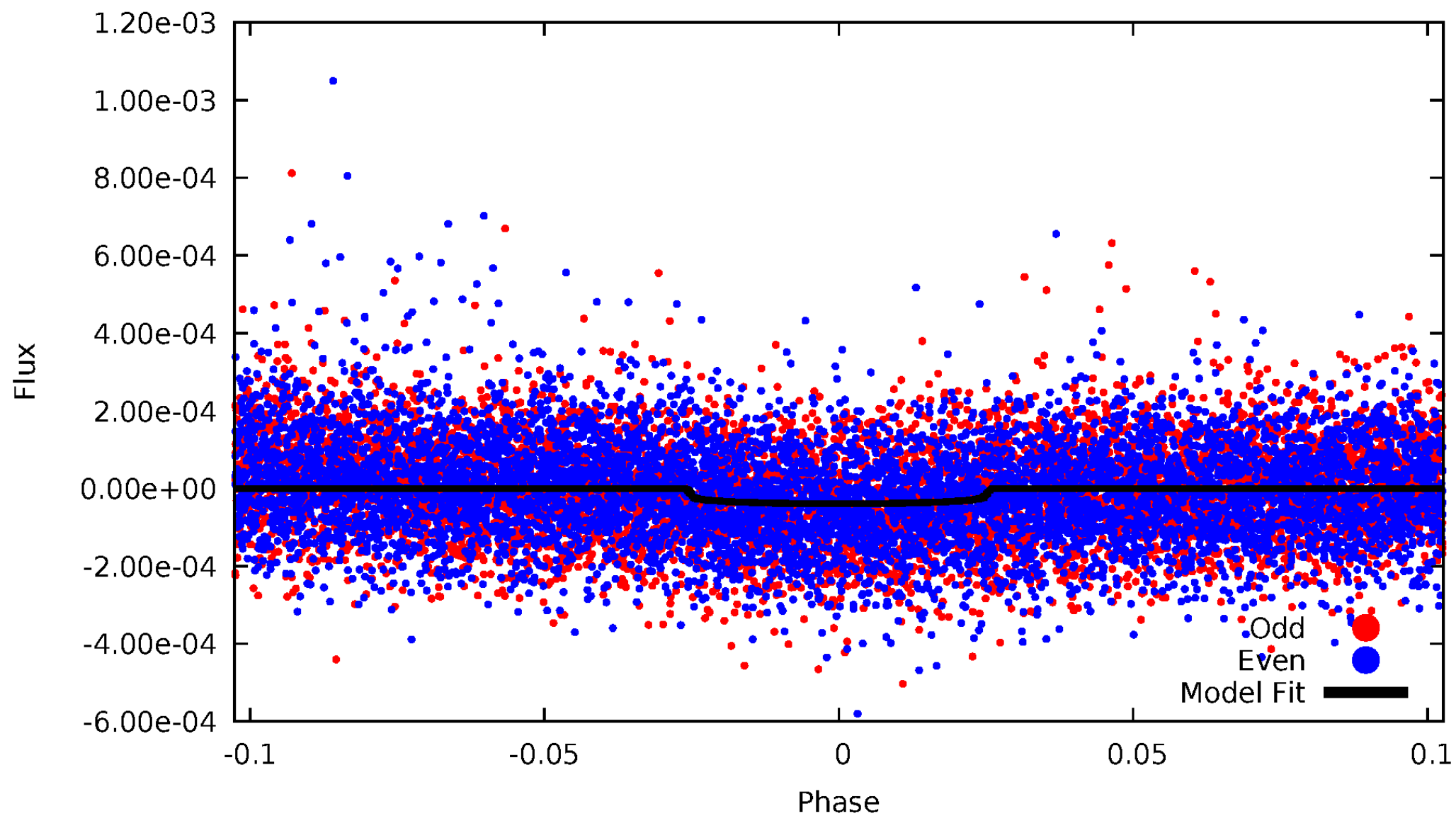


TCE 008491447-01



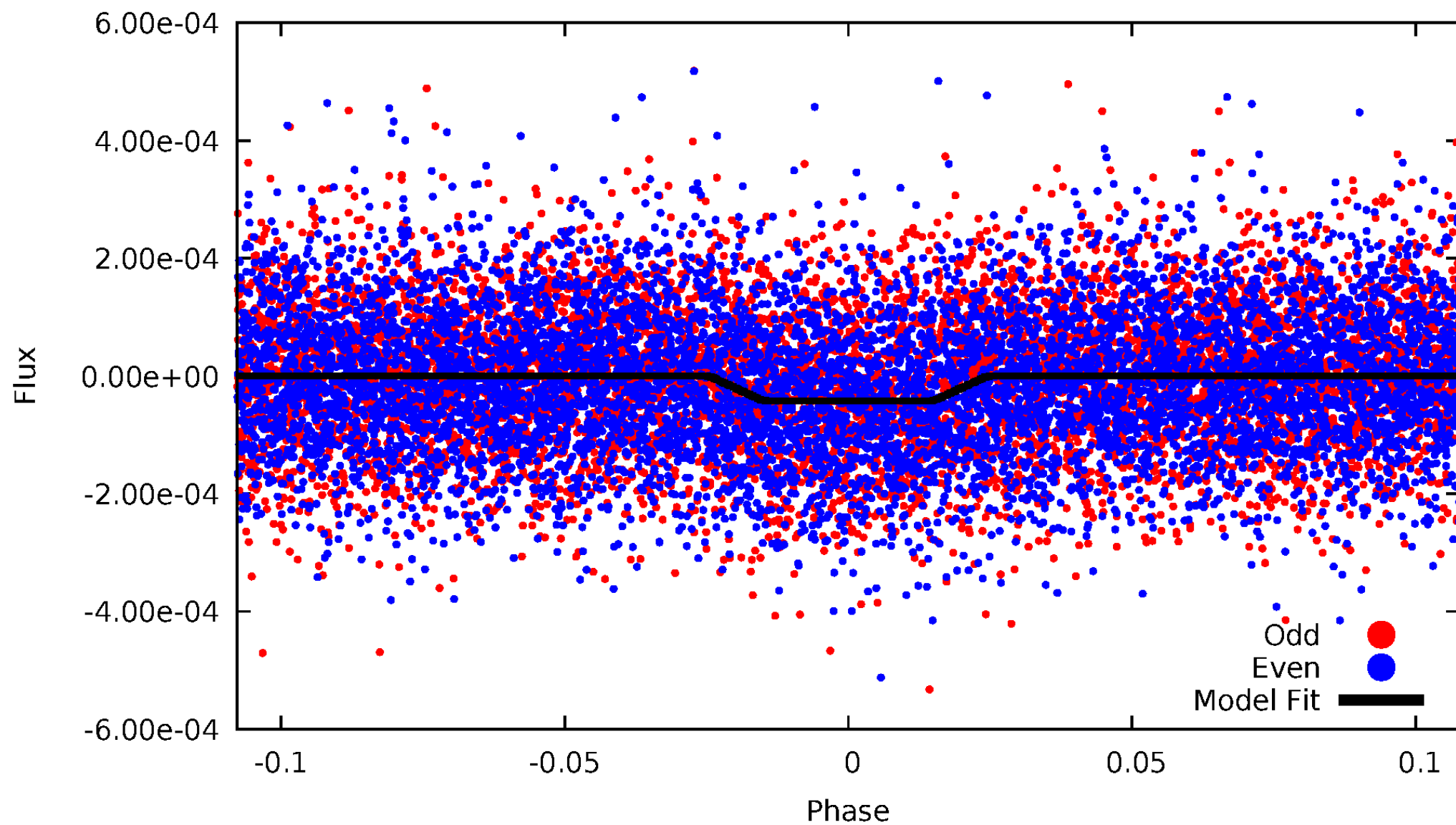
DV Odd/Even

TCE 008491447-01

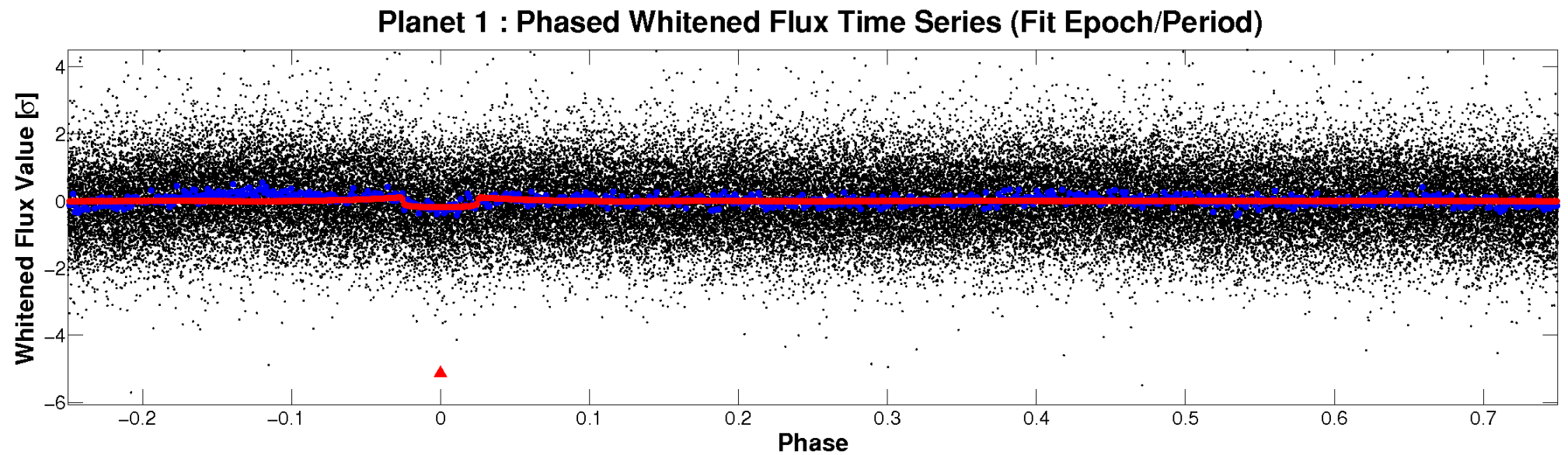
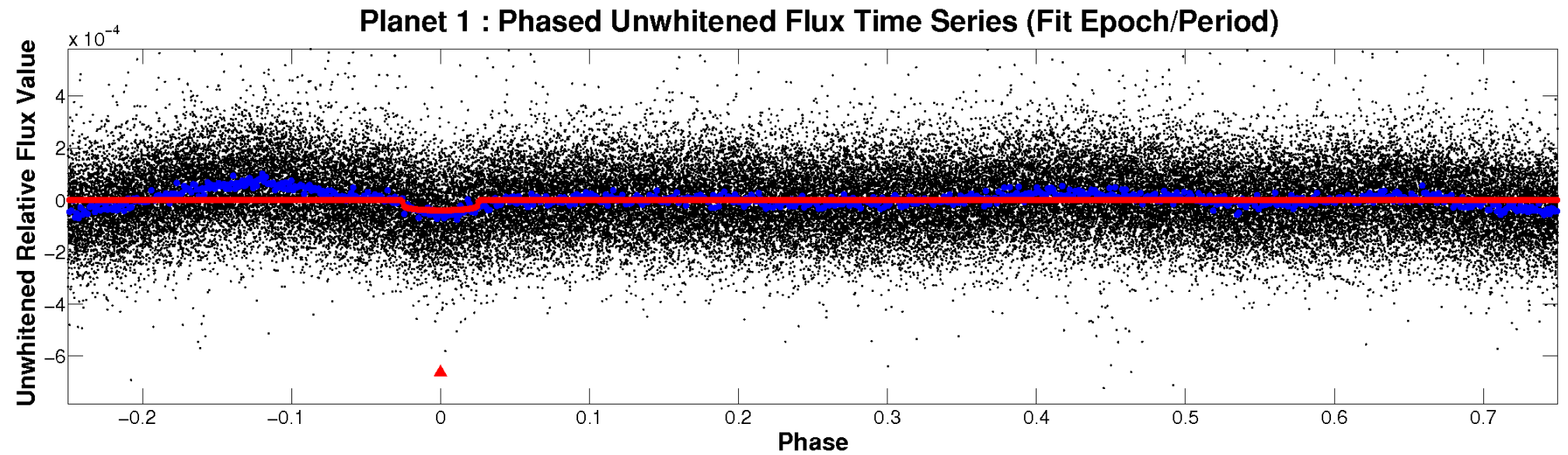


ALT Odd/Even

TCE 008491447-01

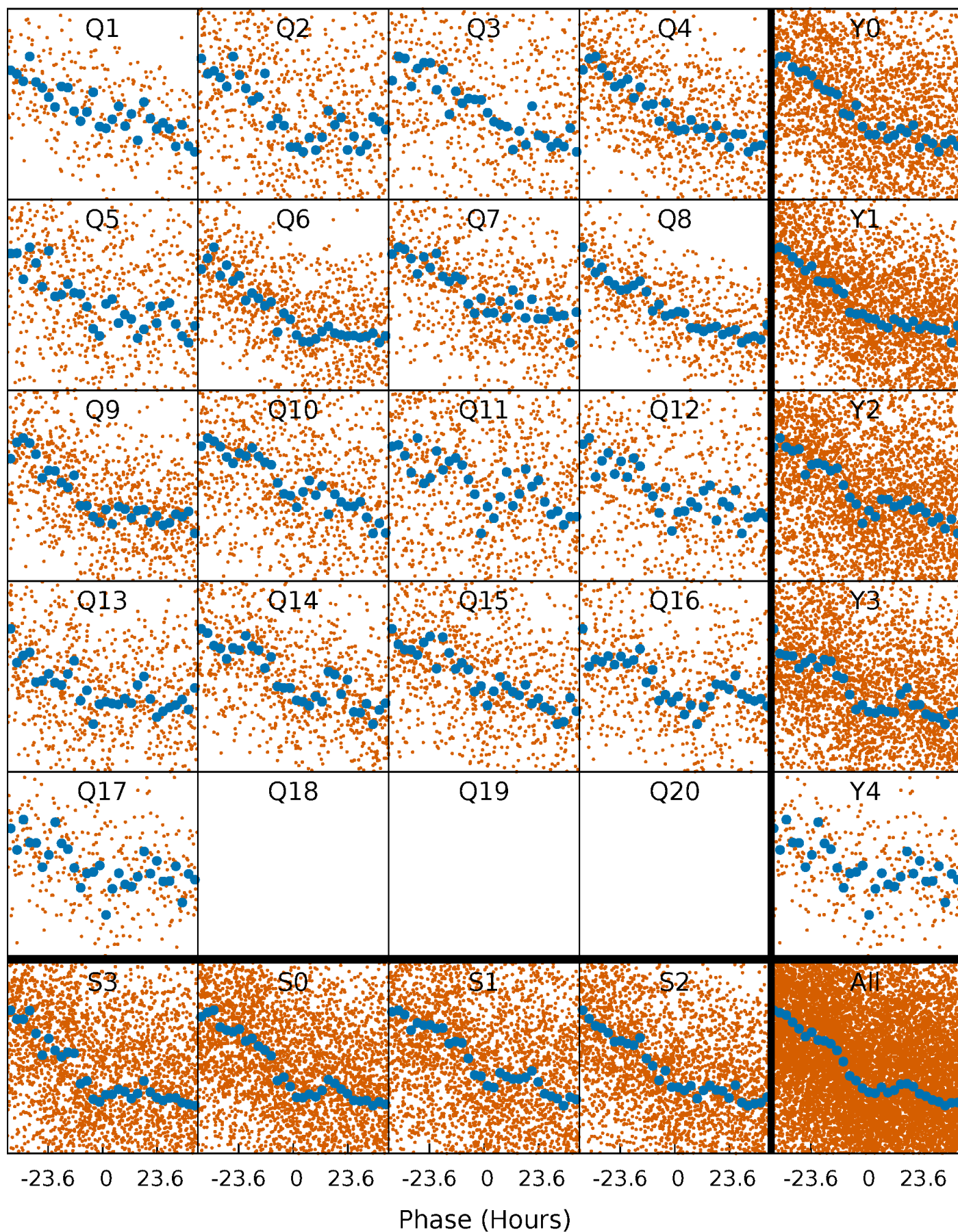


Non-Whitened Vs. Whitened Light Curve



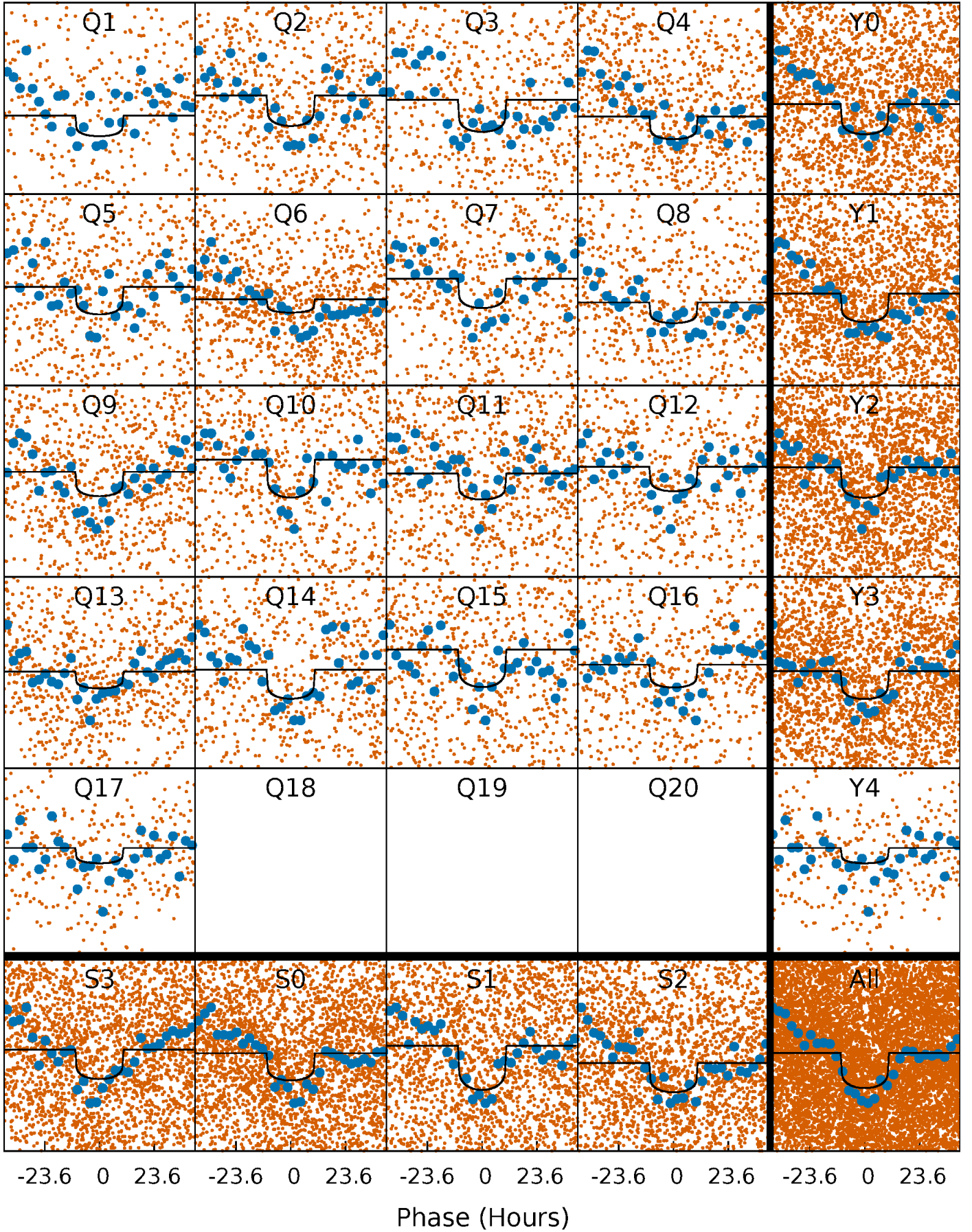
PDC Quarter-Phased Transit Curves

TCE 008491447-01 P= 16.741483 Days $T_0=139.930541$ (BKJD)



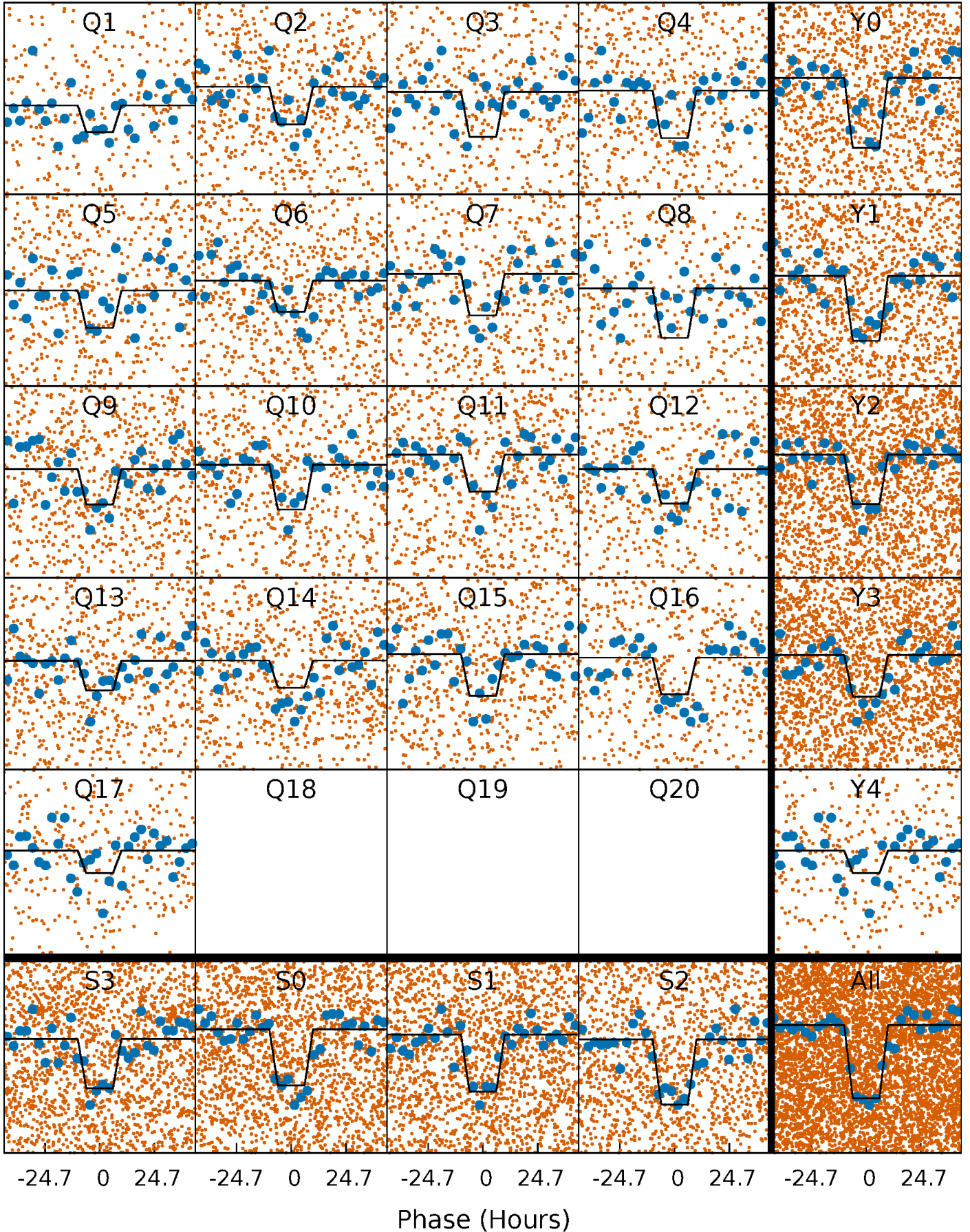
DV Quarter-Phased Transit Curves

TCE 008491447-01 P= 16.741483 Days $T_0=139.930541$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

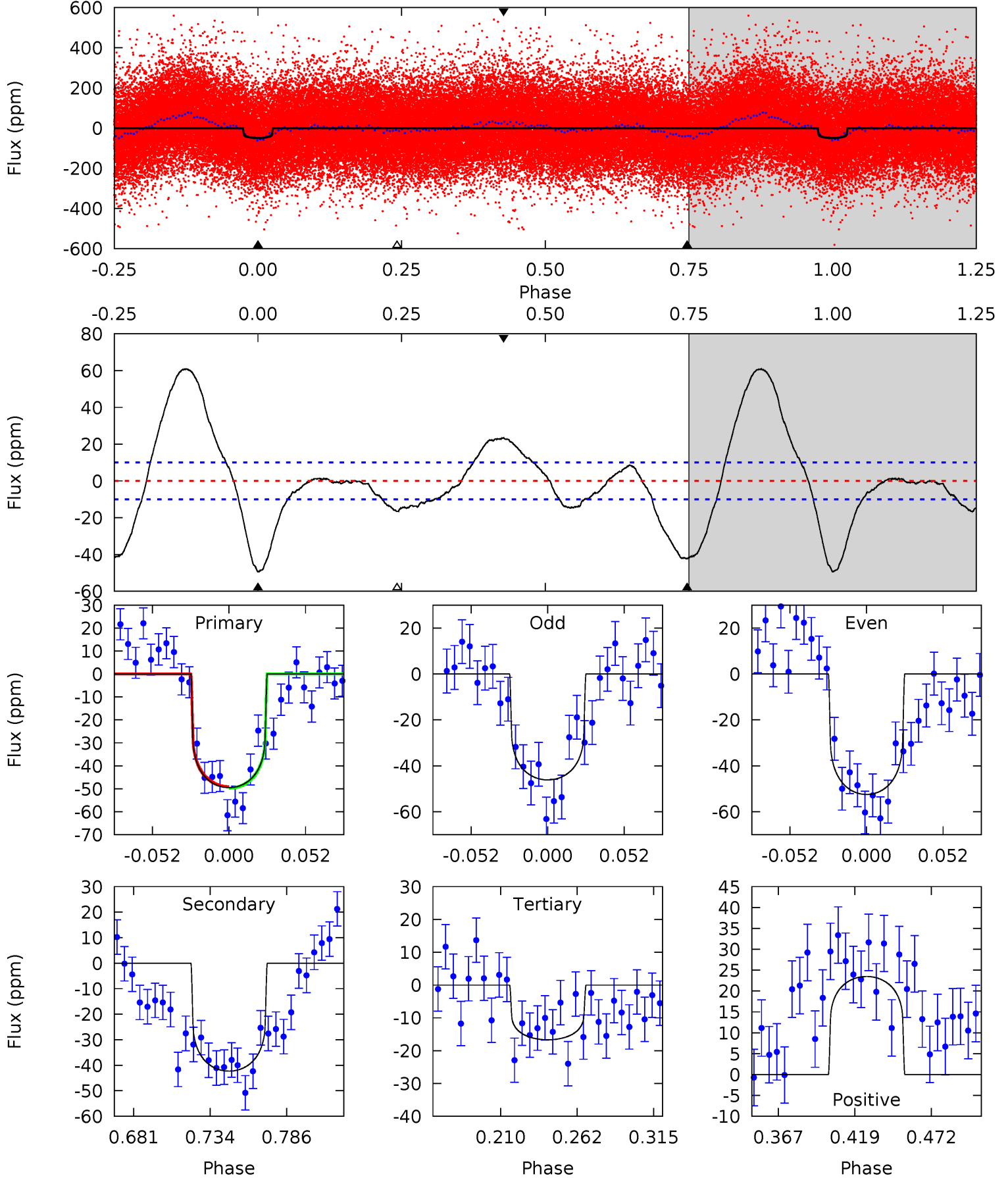
TCE 008491447-01 P= 16.742380 Days $T_0=139.866399$ (BKJD)



DV Model-Shift Uniqueness Test

008491447-01, P = 16.741483 Days, E = 123.189058 Days

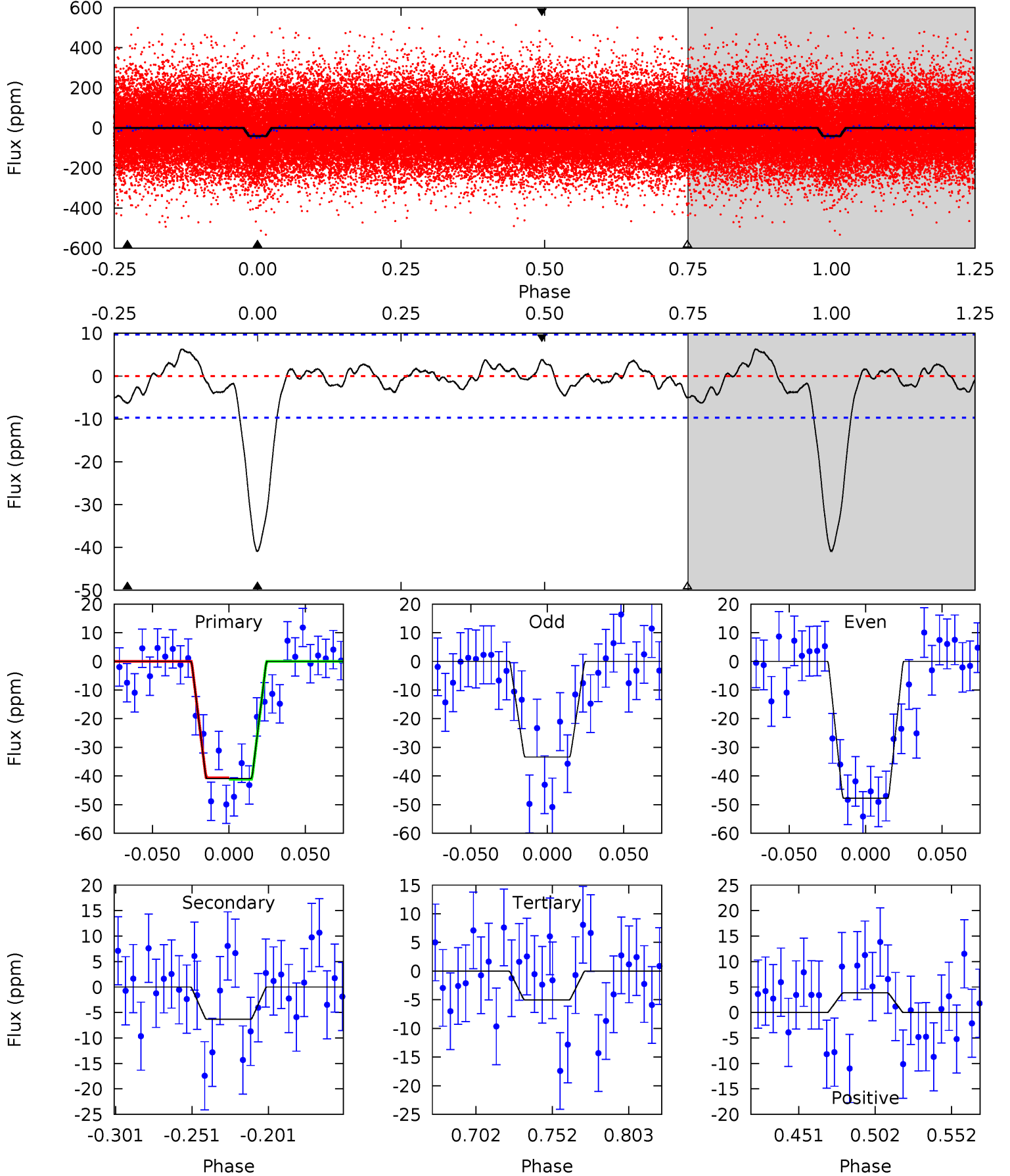
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.2 | 19.8 | 7.81 | 11.0 | 4.70 | 1.94 | 9.00 | 15.4 | 12.2 | 12.0 | 8.81 | 1.48 | 1.10 | 0.55 | 0.15 |



Alt Model-Shift Uniqueness Test

008491447-01, P = 16.742380 Days, E = 123.124019 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 | 3.06 | 2.44 | 1.86 | 4.71 | 1.96 | 1.08 | 17.4 | 18.0 | 0.62 | 1.20 | 3.48 | 1.01 | 0.13 | 0.12 |



Stellar Parameters For KIC 008491447

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6269^{+193}_{-174} | $3.973^{+0.287}_{-0.123}$ | $-0.520^{+0.350}_{-0.300}$ | $1.729^{+0.352}_{-0.528}$ | $1.024^{+0.176}_{-0.144}$ | $0.279^{+0.505}_{-0.099}$ |
| | +3%/-3% | +7%/-3% | +67%/-58% | +20%/-31% | +17%/-14% | +181%/-35% |
| 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 008491447-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|---------------------|----------------------|---------------------|
| DV | -42 ± 2 | $1.14^{+0.28}_{-0.26}$ | 1405^{+94}_{-127} | 6419^{+752}_{-510} | 303^{+206}_{-103} |
| Alt. | -6 ± 2 | $1.20^{+0.30}_{-0.26}$ | 1395^{+95}_{-123} | 4118^{+412}_{-348} | 40^{+32}_{-18} |

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 $A_{obs} \gg 1.0$

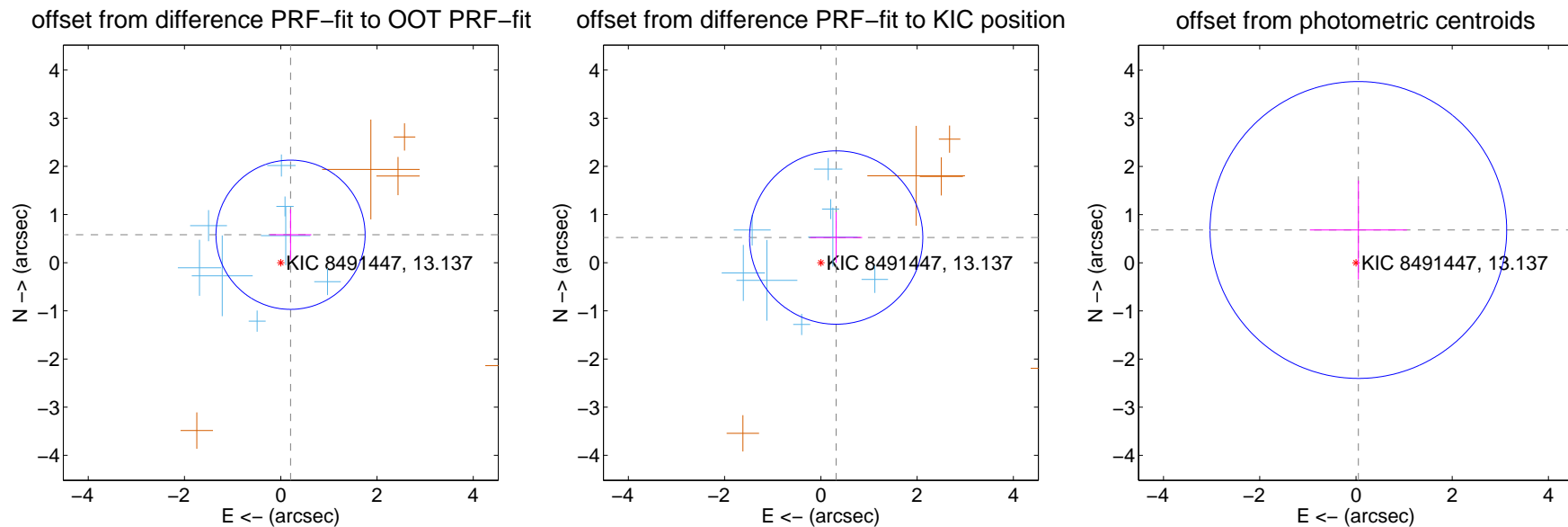
DV Centroid Data

Supplemental centroid analysis for 008491447-01. Kepler magnitude: 13.14. Transit SNR 10.33

There are 8 quarters with good PRF difference image offsets

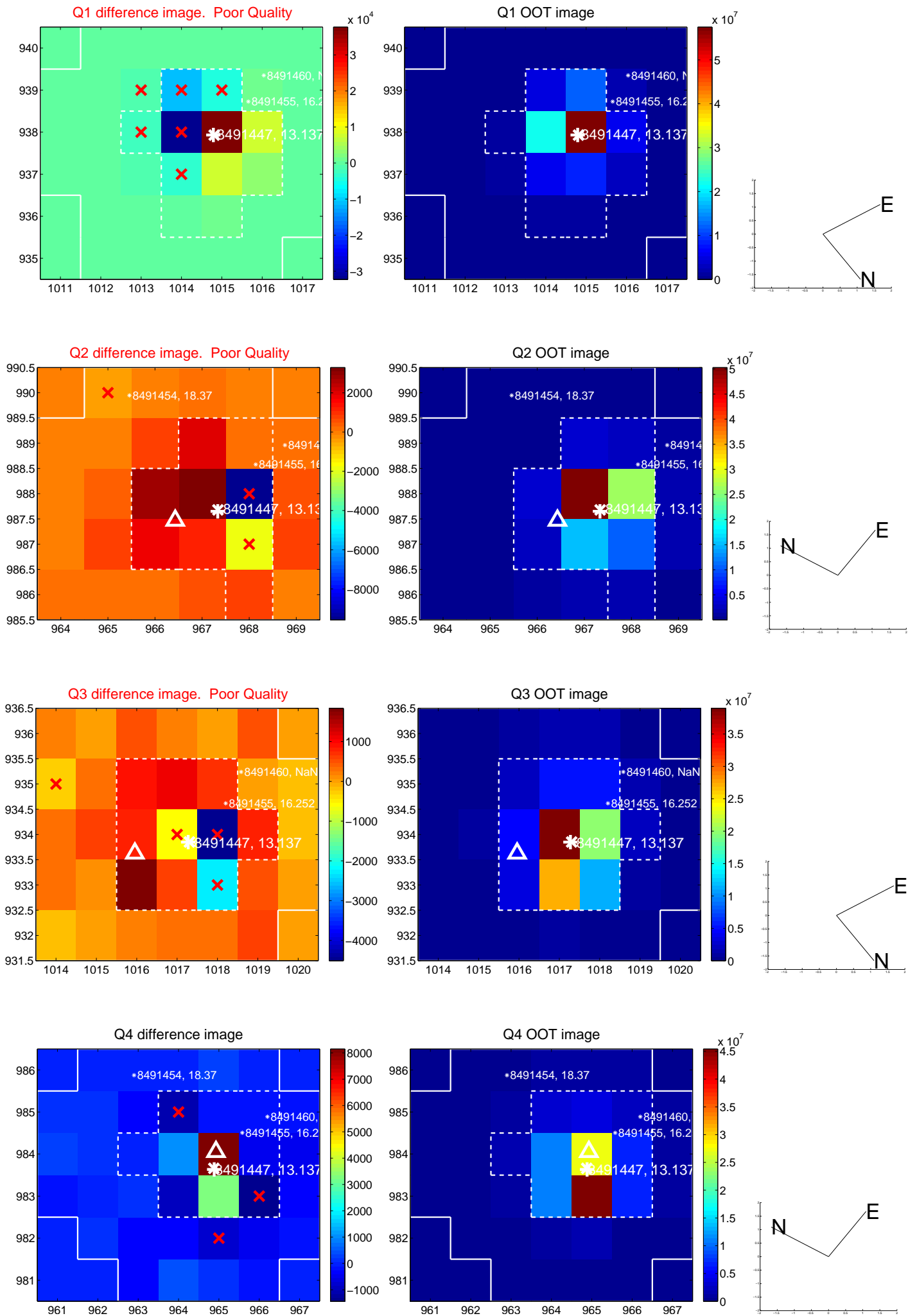
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.615 ± 0.516 | 1.19 | -0.204 ± 0.432 | 0.580 ± 0.526 |
| PRF-fit source offset from KIC position | 0.611 ± 0.600 | 1.02 | -0.318 ± 0.541 | 0.522 ± 0.524 |
| photometric centroid source offset | 0.68 ± 1.03 | 0.66 | -0.05 ± 1.01 | 0.68 ± 1.03 |

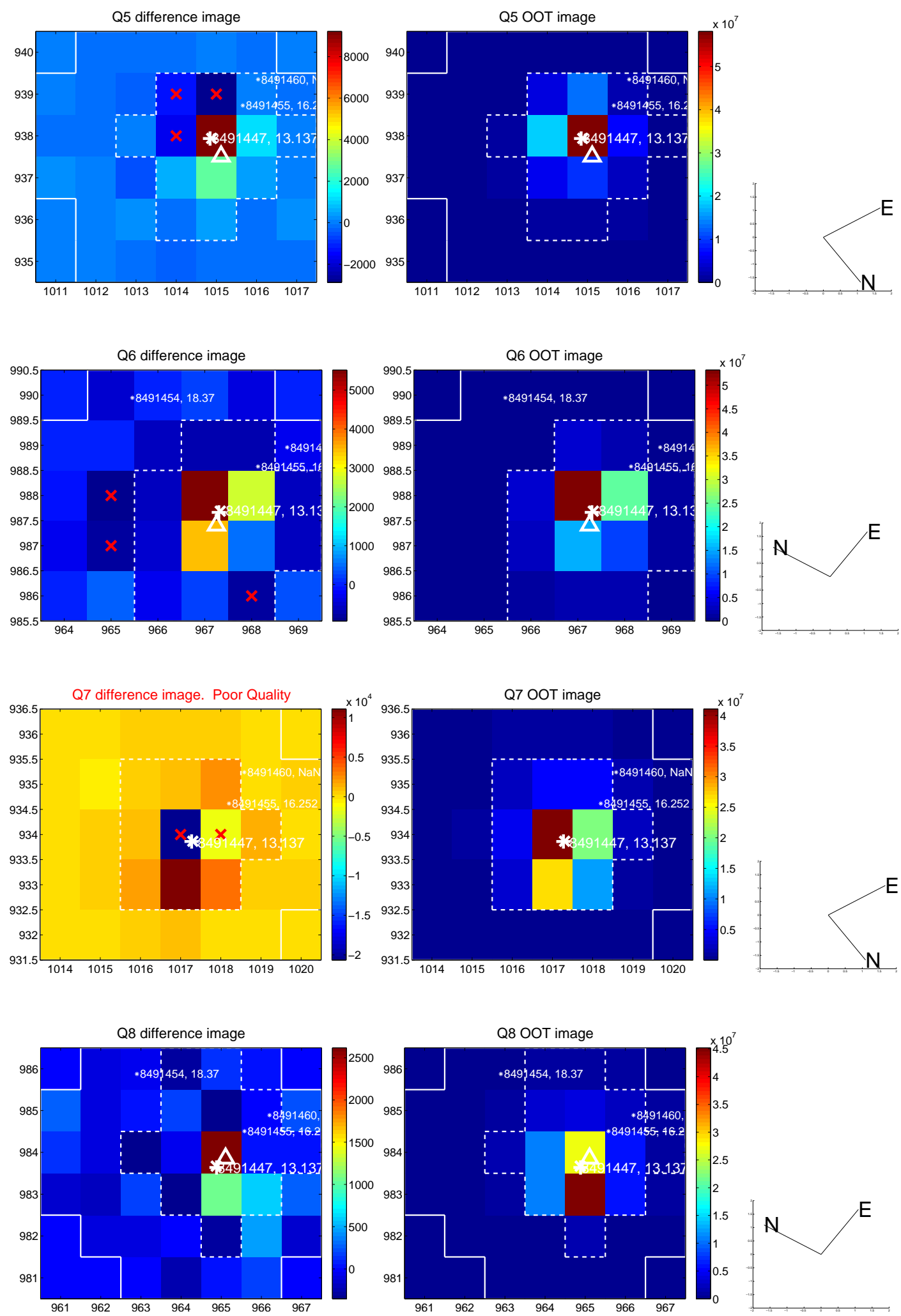


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

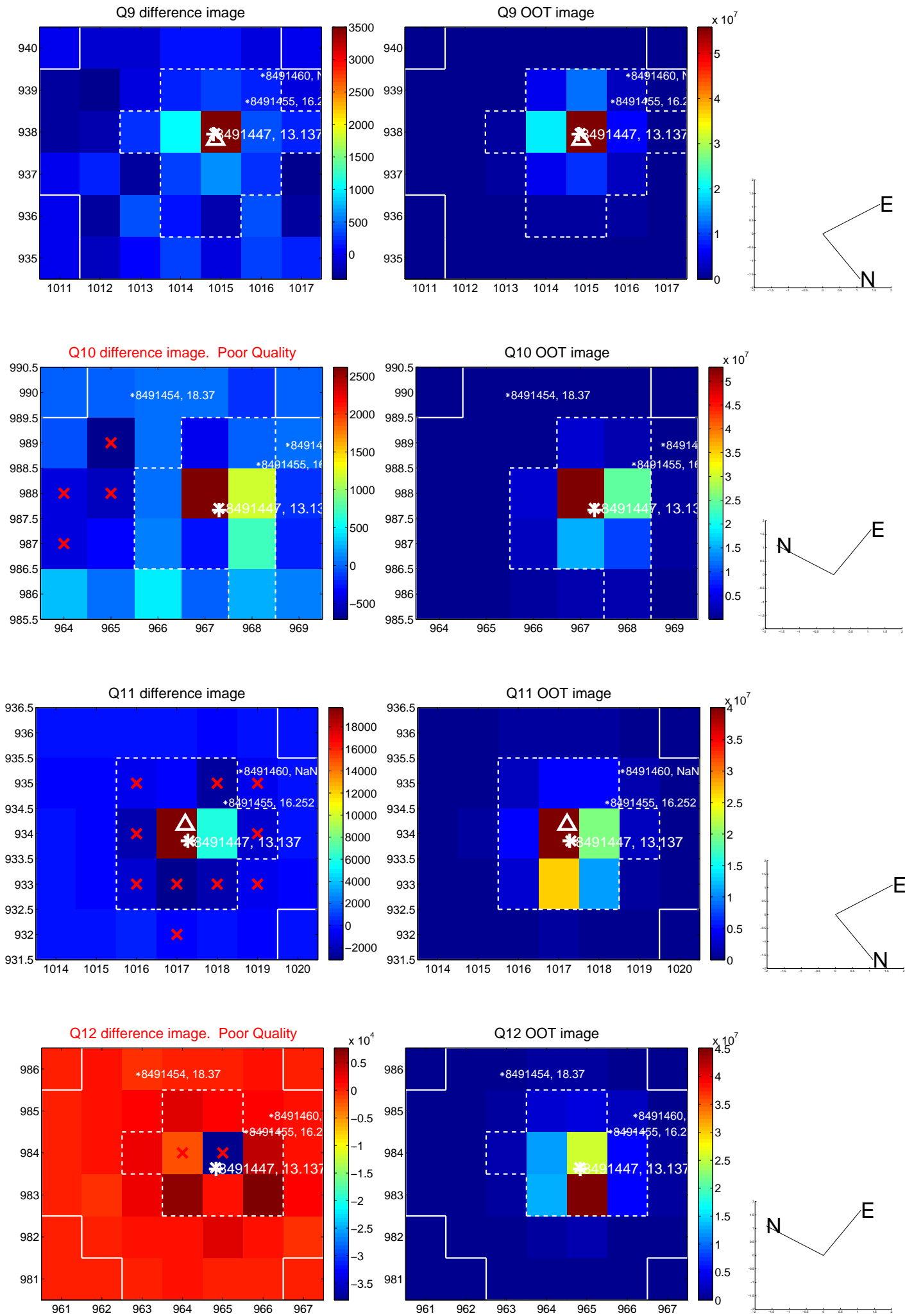
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



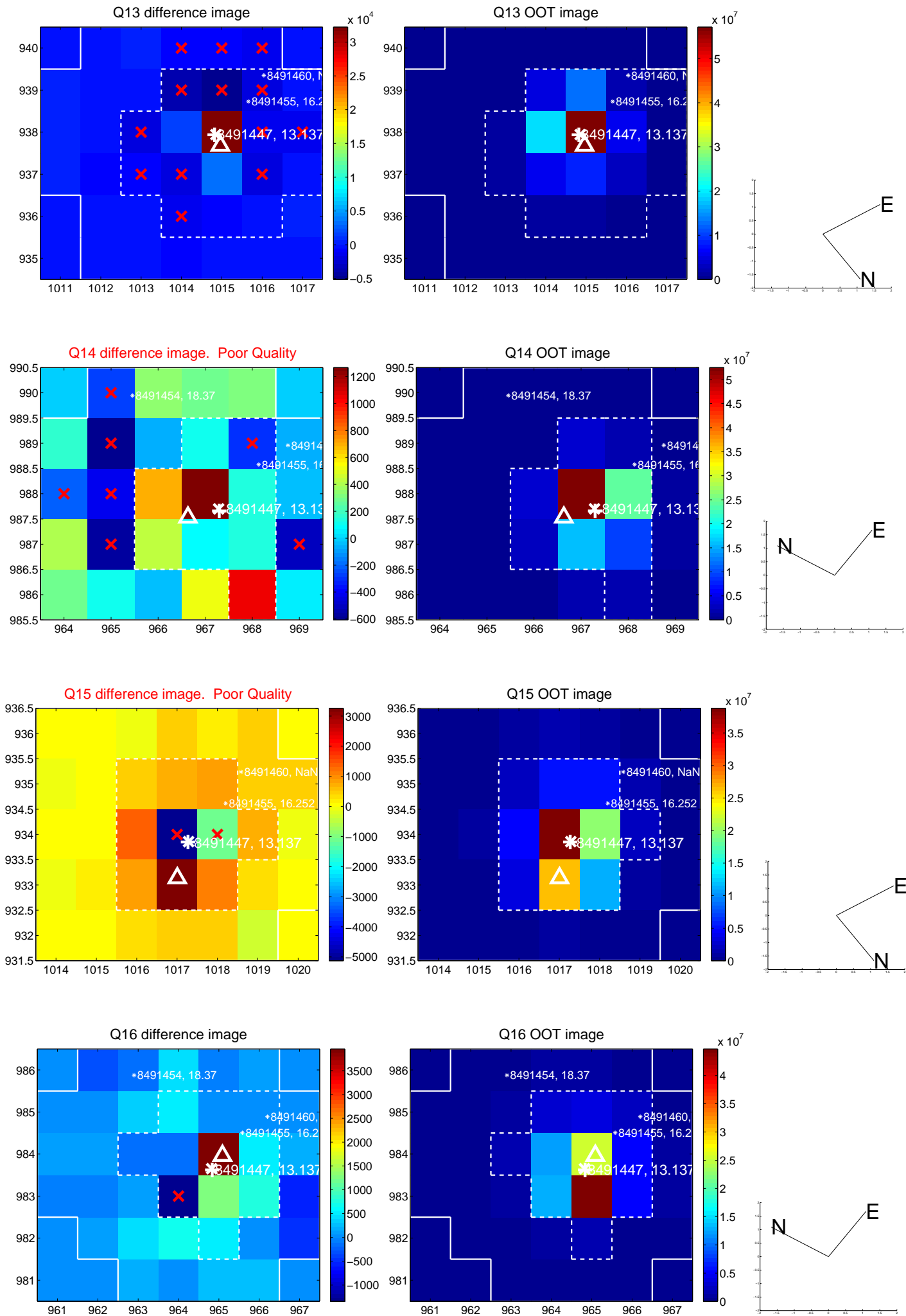
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



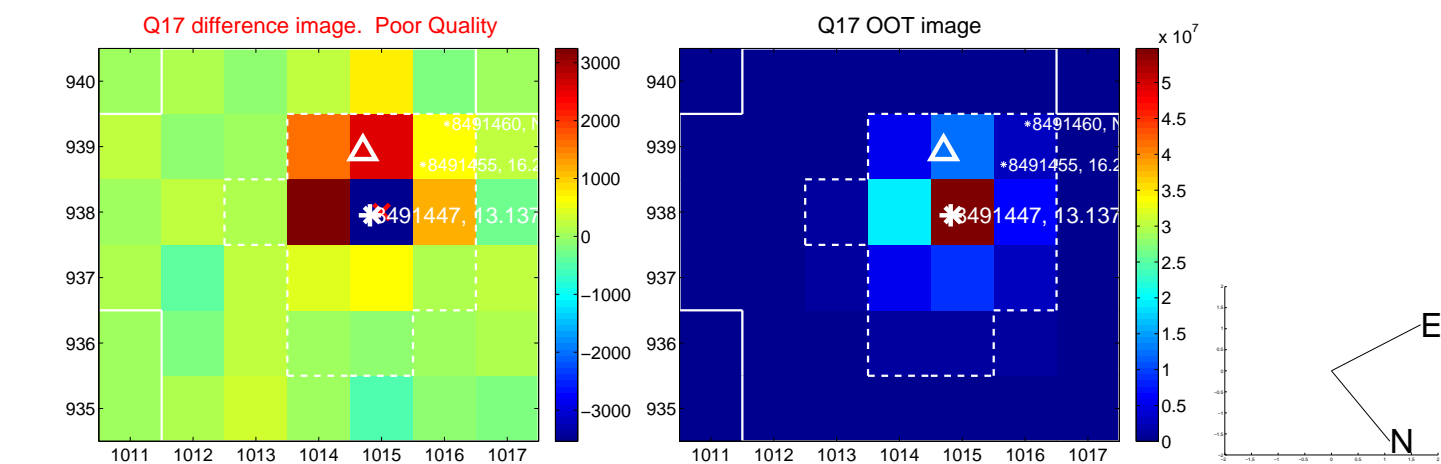
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



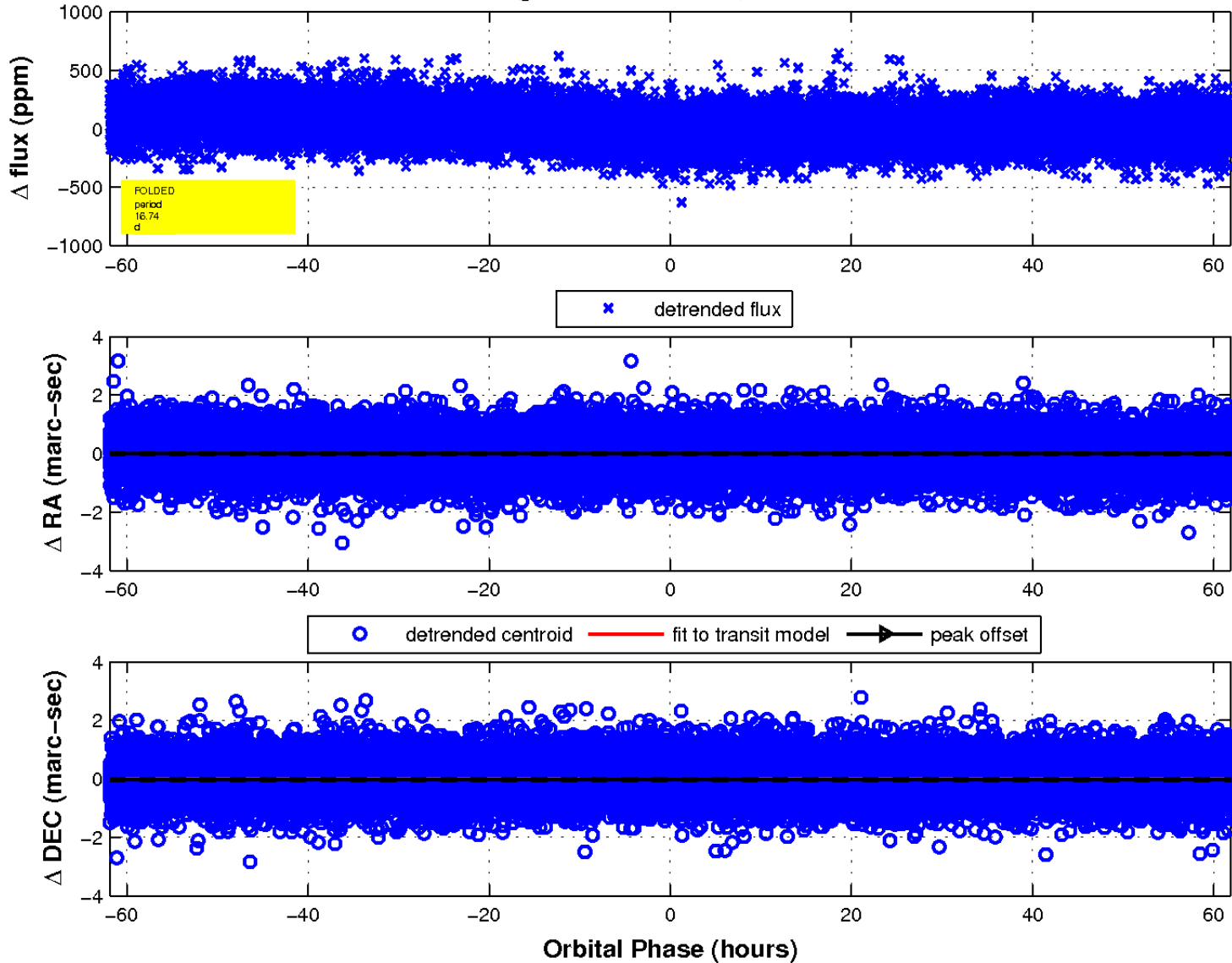
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

