

KIC 010647452

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010647452-01 | OBS | 4366.01 | 0.762940 | 131.921715 | 142.0 | 1.213 | 12.5 | 12.1 | 0.73 | 5385 | 1.05 | 1757.63 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--------------|
| 010647452-01 | OBS | PC | 0.95 | 0 | 0 | 0 | 0 | CENT_KIC_POS |

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 010647452-01

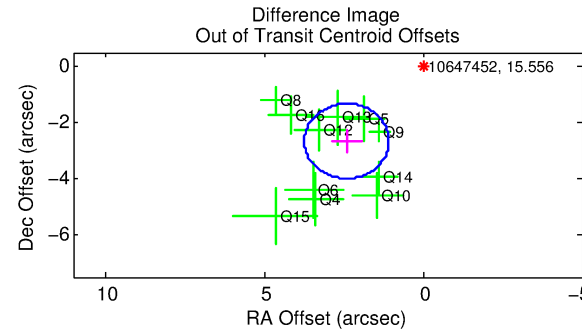
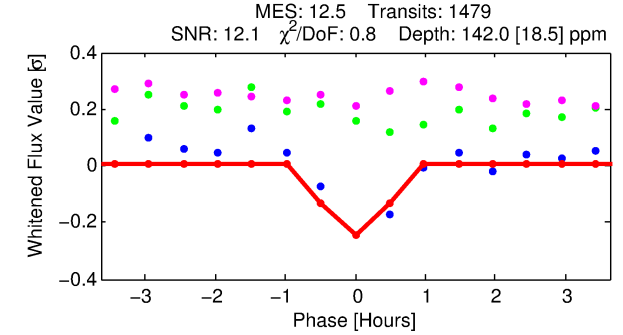
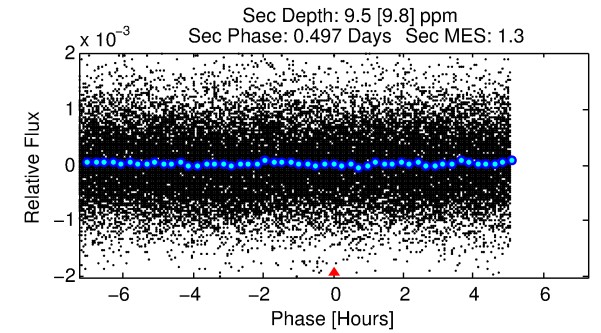
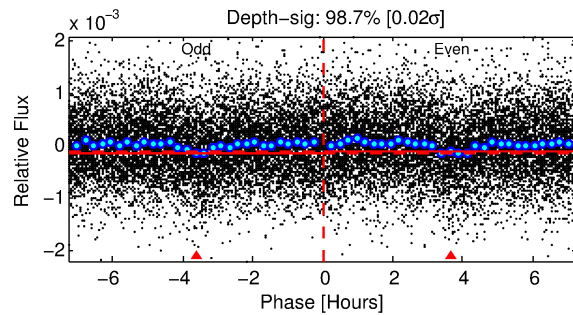
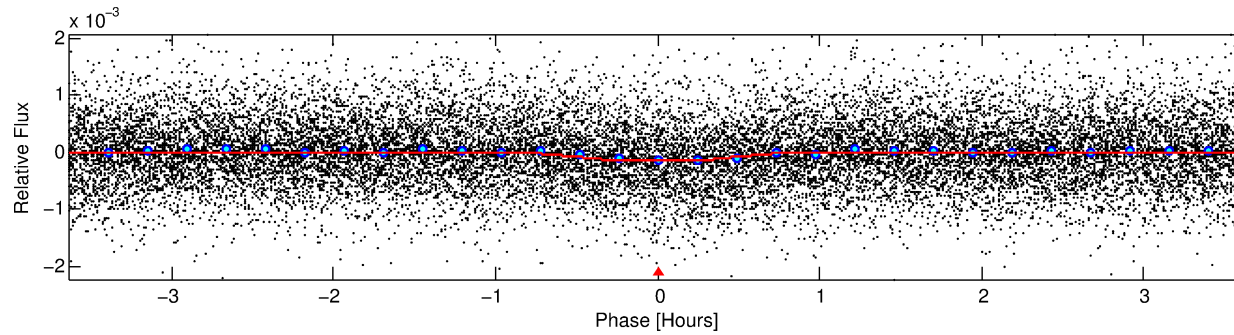
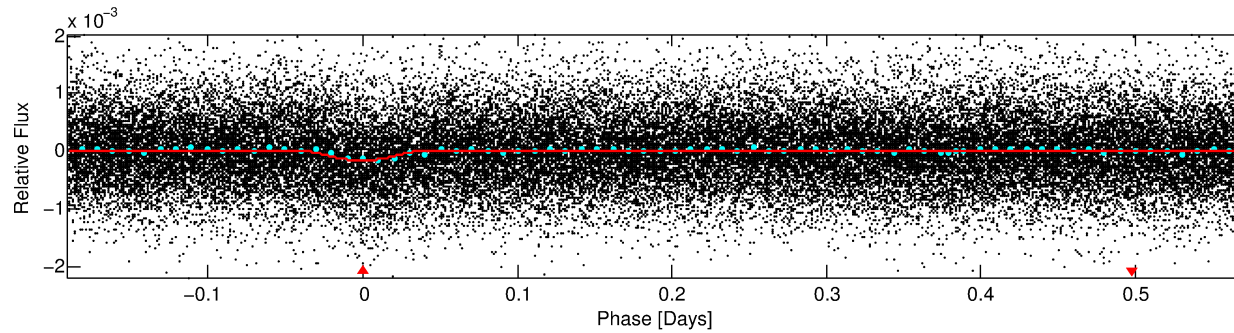
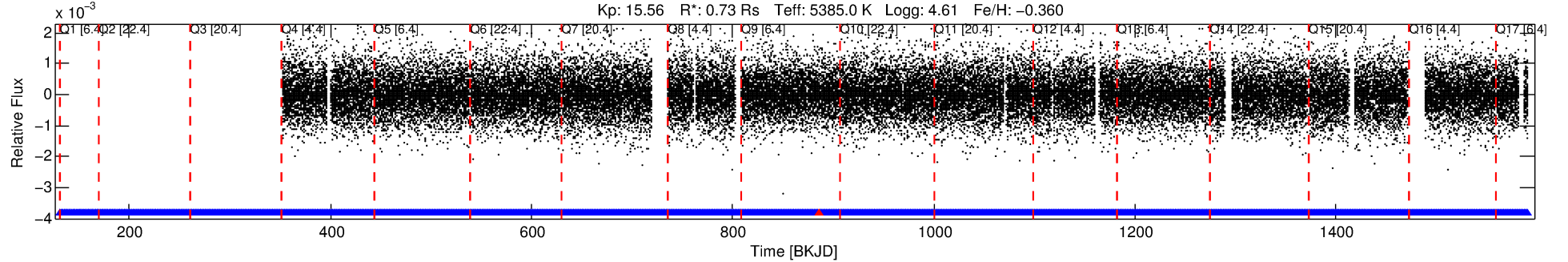
No Significant Match Found

DV One-Page Summary

KIC: 10647452 Candidate: 1 of 1 Period: 0.763 d

KOI: K04366.01 Corr: 0.839

Kp: 15.56 R*: 0.73 Rs Teff: 5385.0 K Logg: 4.61 Fe/H: -0.360



DV Fit Results:

Period = 0.76294 [0.00001] d
Epoch = 131.9217 [0.0016] BKJD
Rp/R* = 0.0132 [0.0093]
a/R* = 2.42 [6.36]
b = 0.90 [0.68]
Seff = 1757.63 [442.37]
Teq = 1651 [104] K
Rp = 1.05 [0.77] Re
a = 0.0151 [0.0022] AU
Ag = 1.08 [1.91] [0.04σ]
Teffp = 2604 [1143] K [0.83σ]

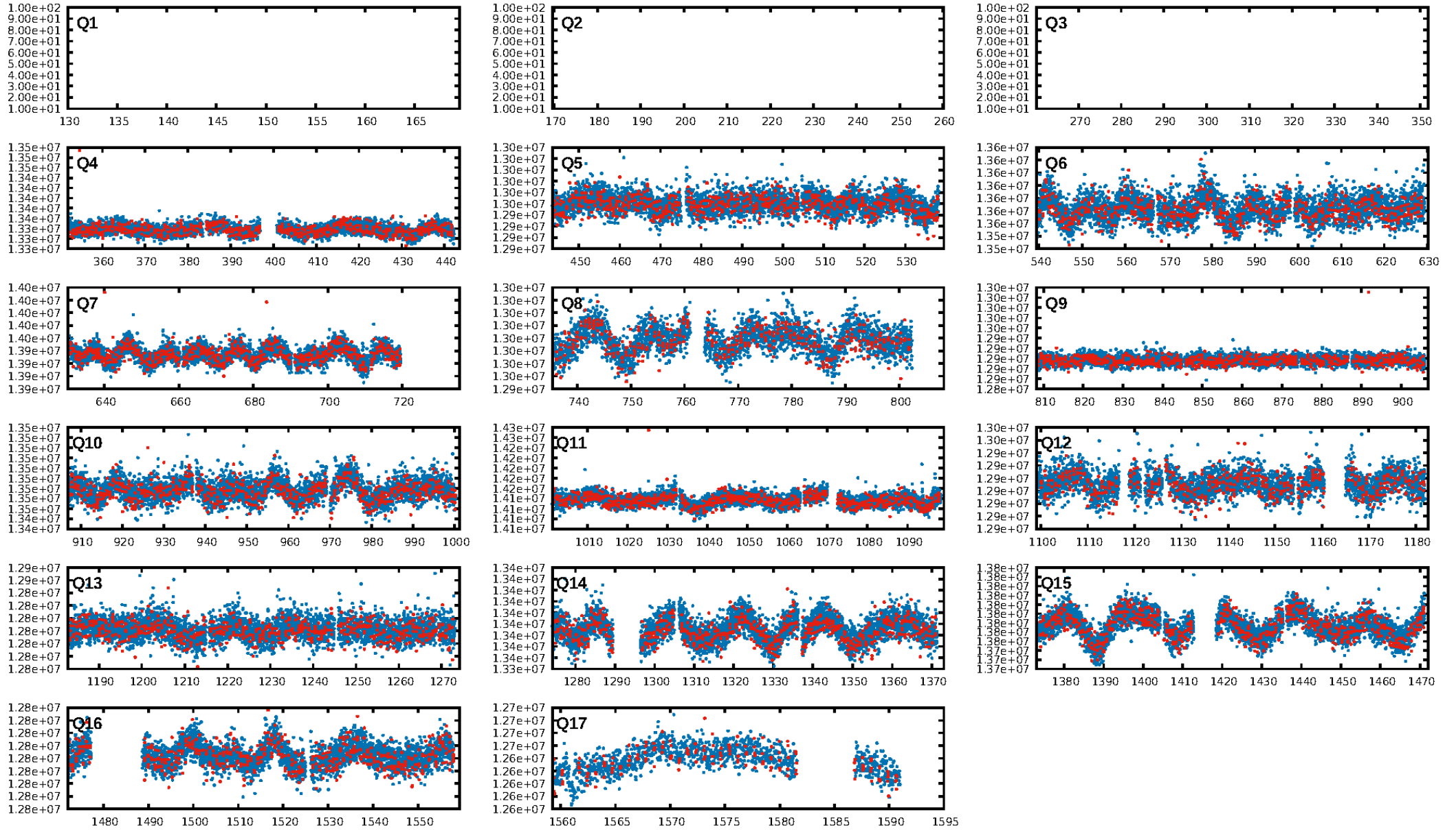
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.14e-34
RollingBand-fgt: 1.00 [1443/1444]
GhostDiagnostic-chr: 2.089
Centroid-sig: 8.2%
Centroid-so: 1.424 arcsec [2.09σ]
OotOffset-rm: 3.589 arcsec [8.08σ]
KicOffset-rm: 0.871 arcsec [3.17σ]
OotOffset-st: 3/1/4/3 [11]
KicOffset-st: 3/1/4/3 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 1.00 [14/14]

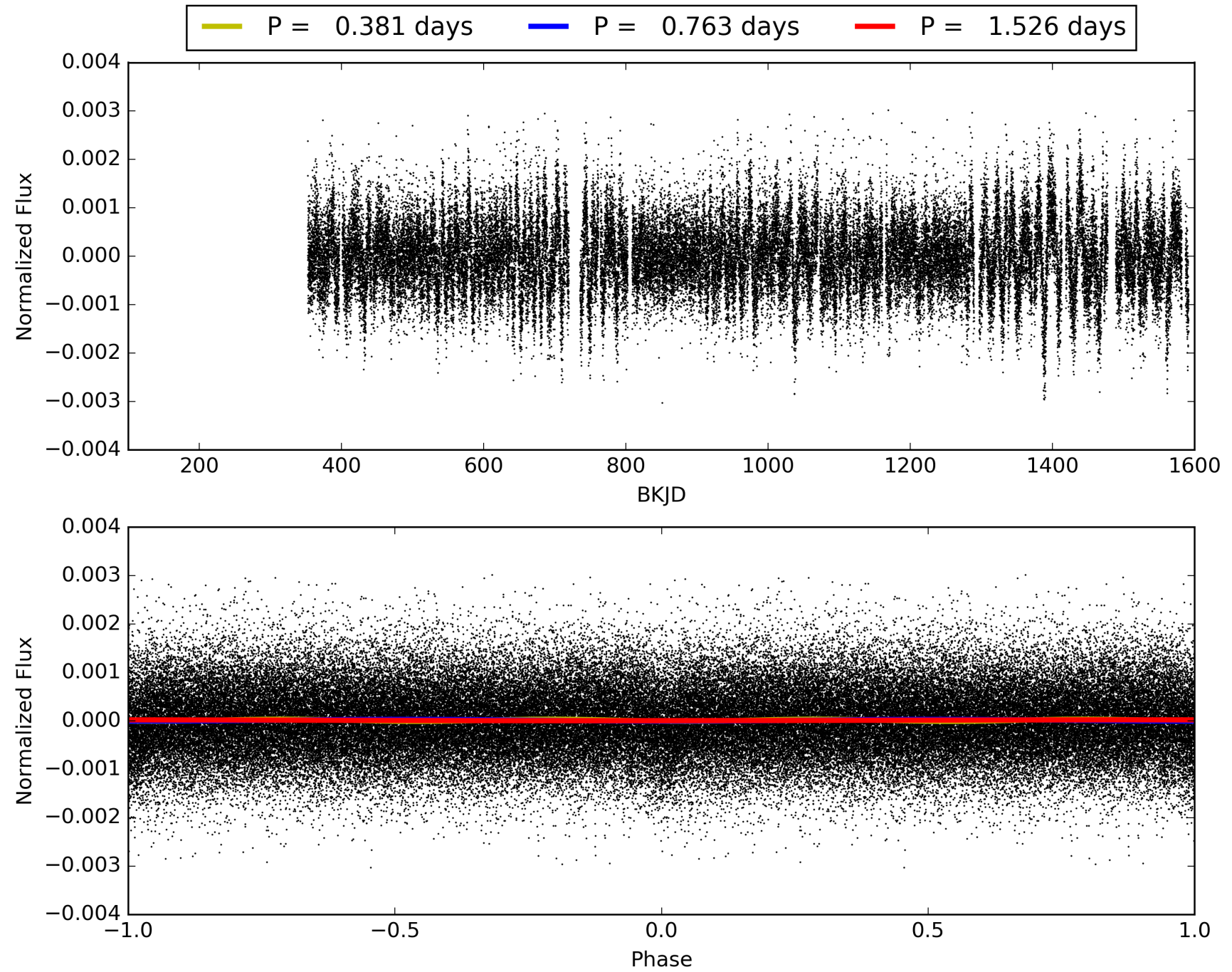
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:10:39 Z

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

TCE 010647452-01, PDC Light Curves

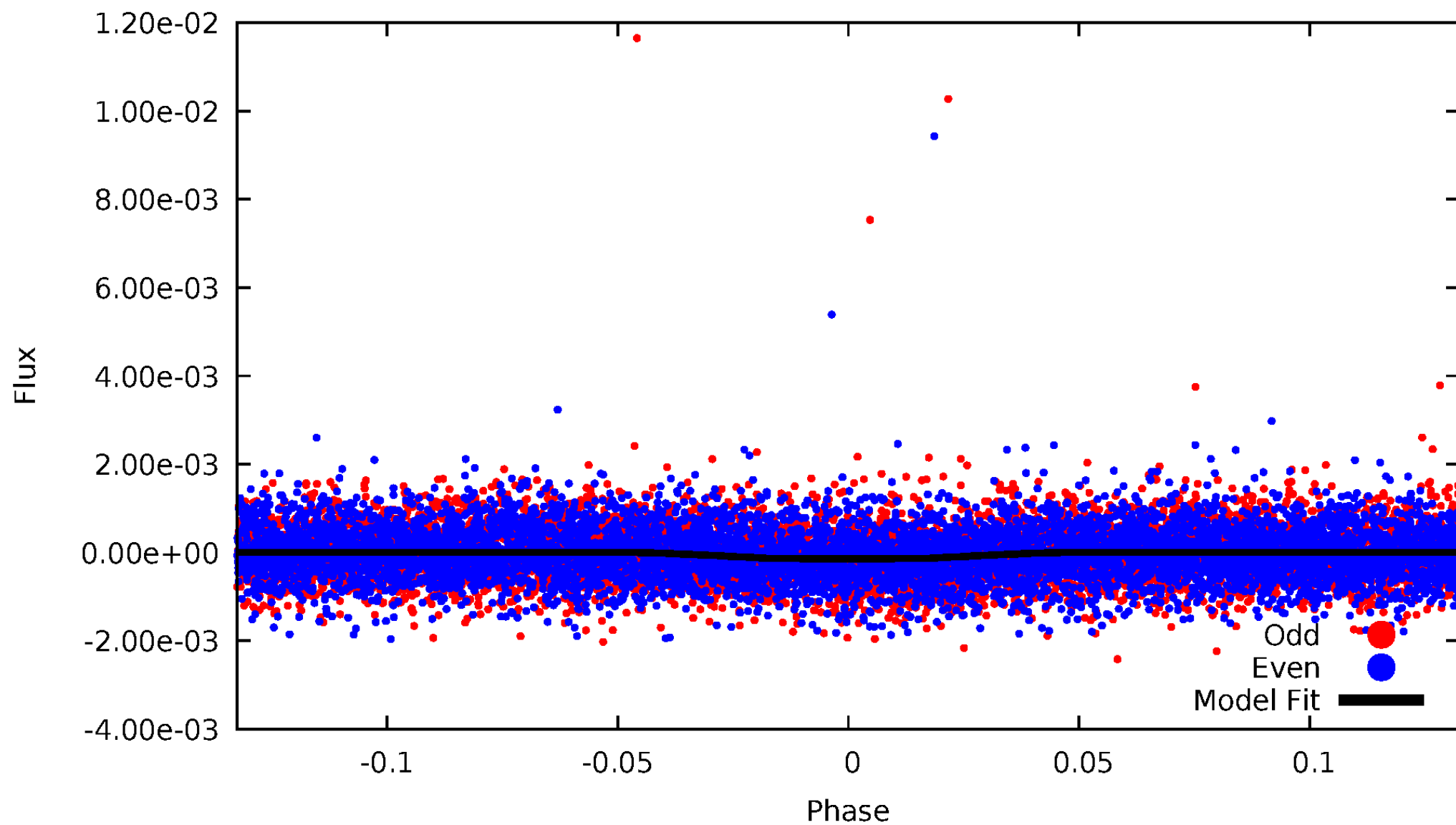


TCE 010647452-01



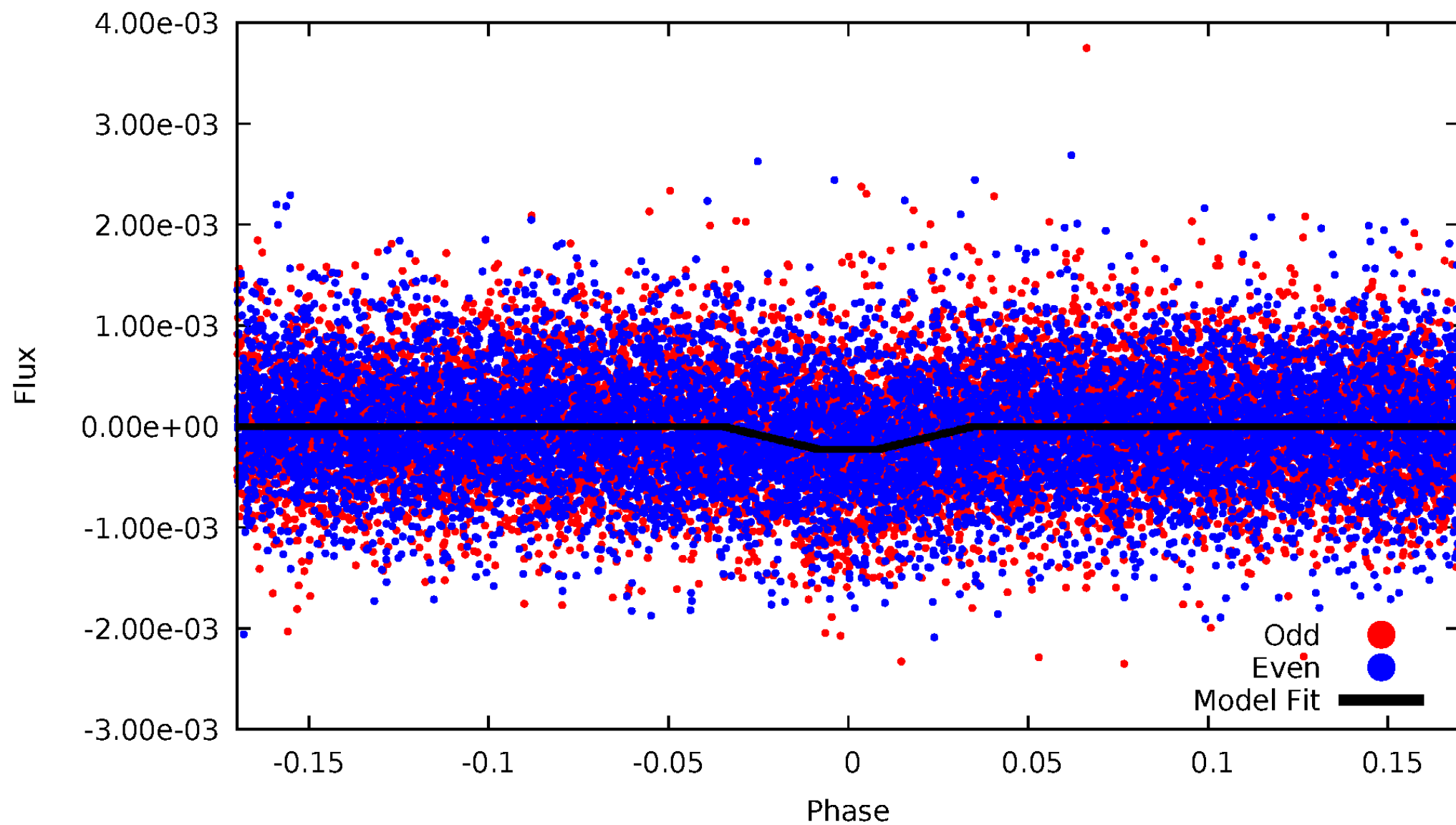
DV Odd/Even

TCE 010647452-01



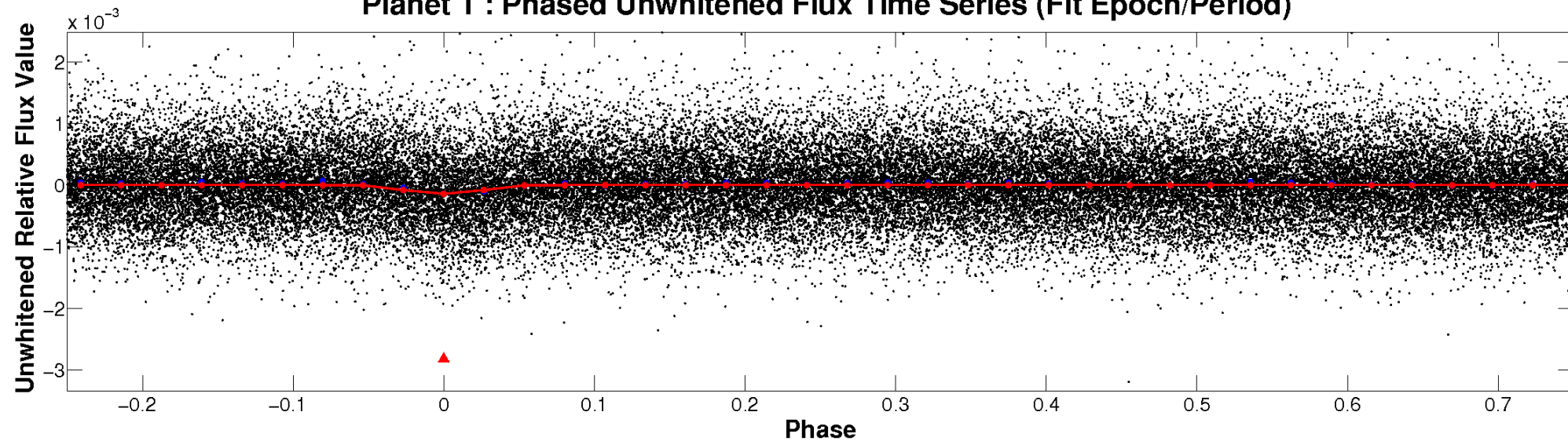
ALT Odd/Even

TCE 010647452-01

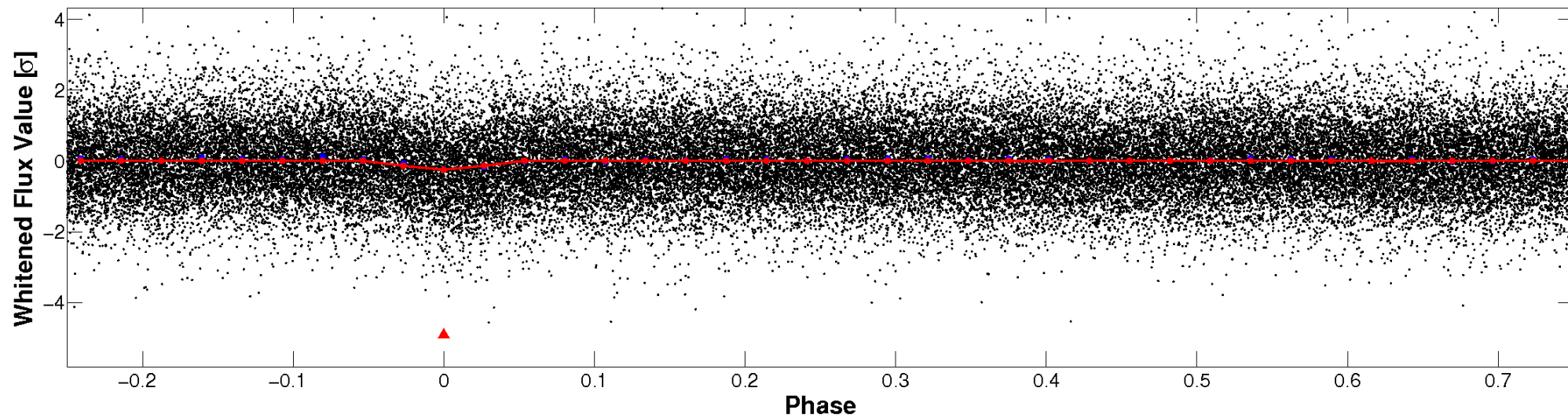


Non-Whitened Vs. Whitened Light Curve

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

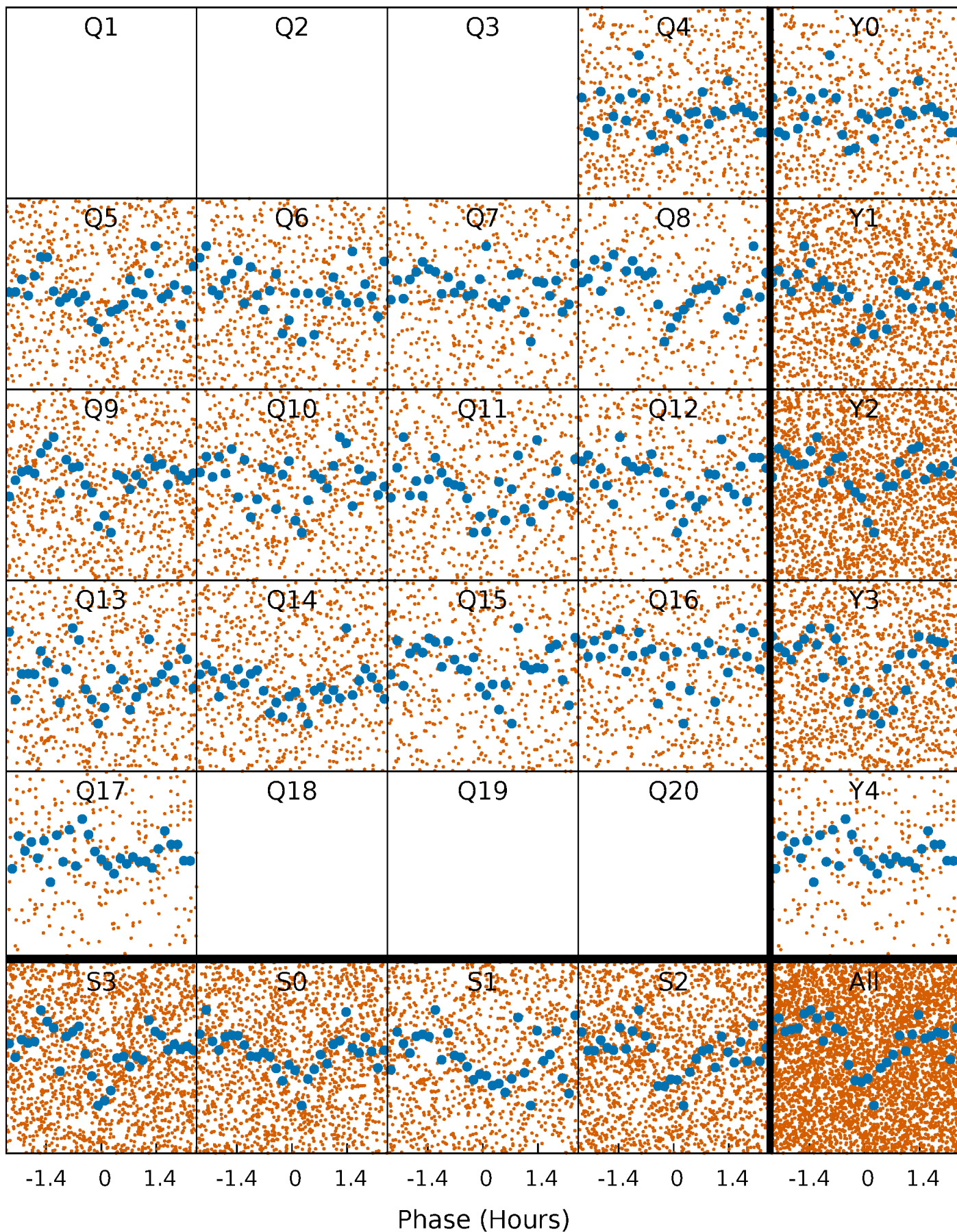


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



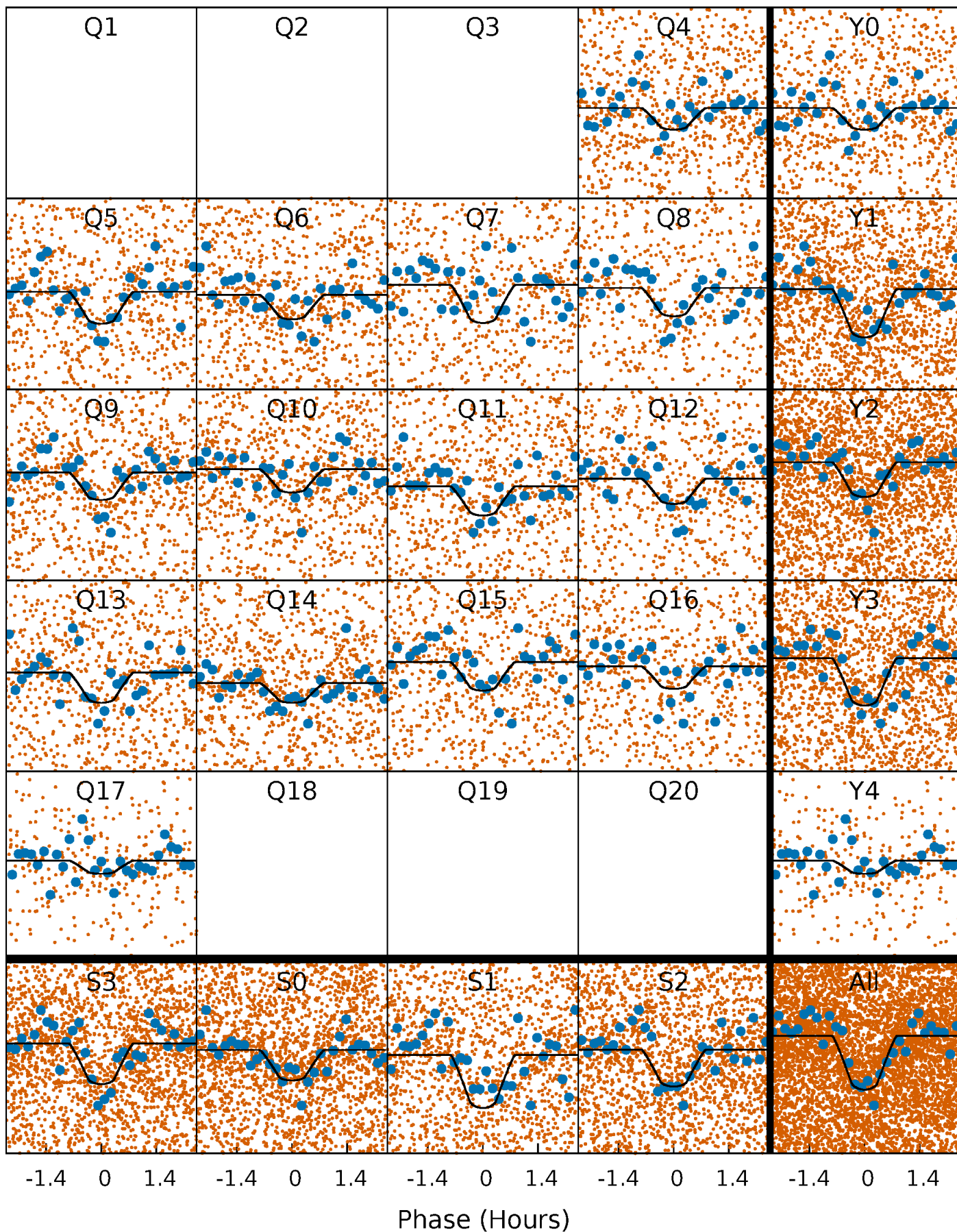
PDC Quarter-Phased Transit Curves

TCE 010647452-01 P= 0.762940 Days $T_0=131.921716$ (BKJD)



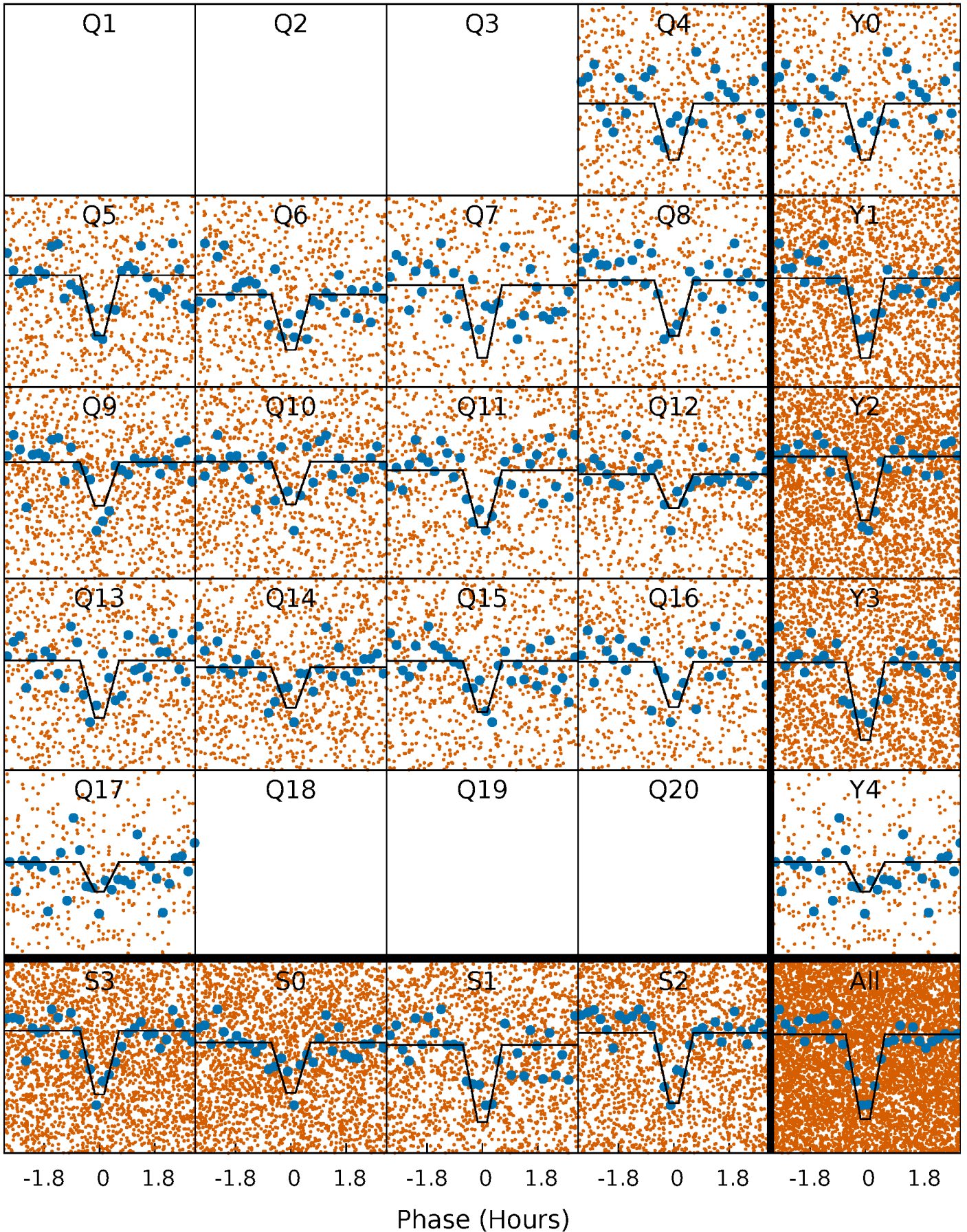
DV Quarter-Phased Transit Curves

TCE 010647452-01 P= 0.762940 Days $T_0=131.921716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

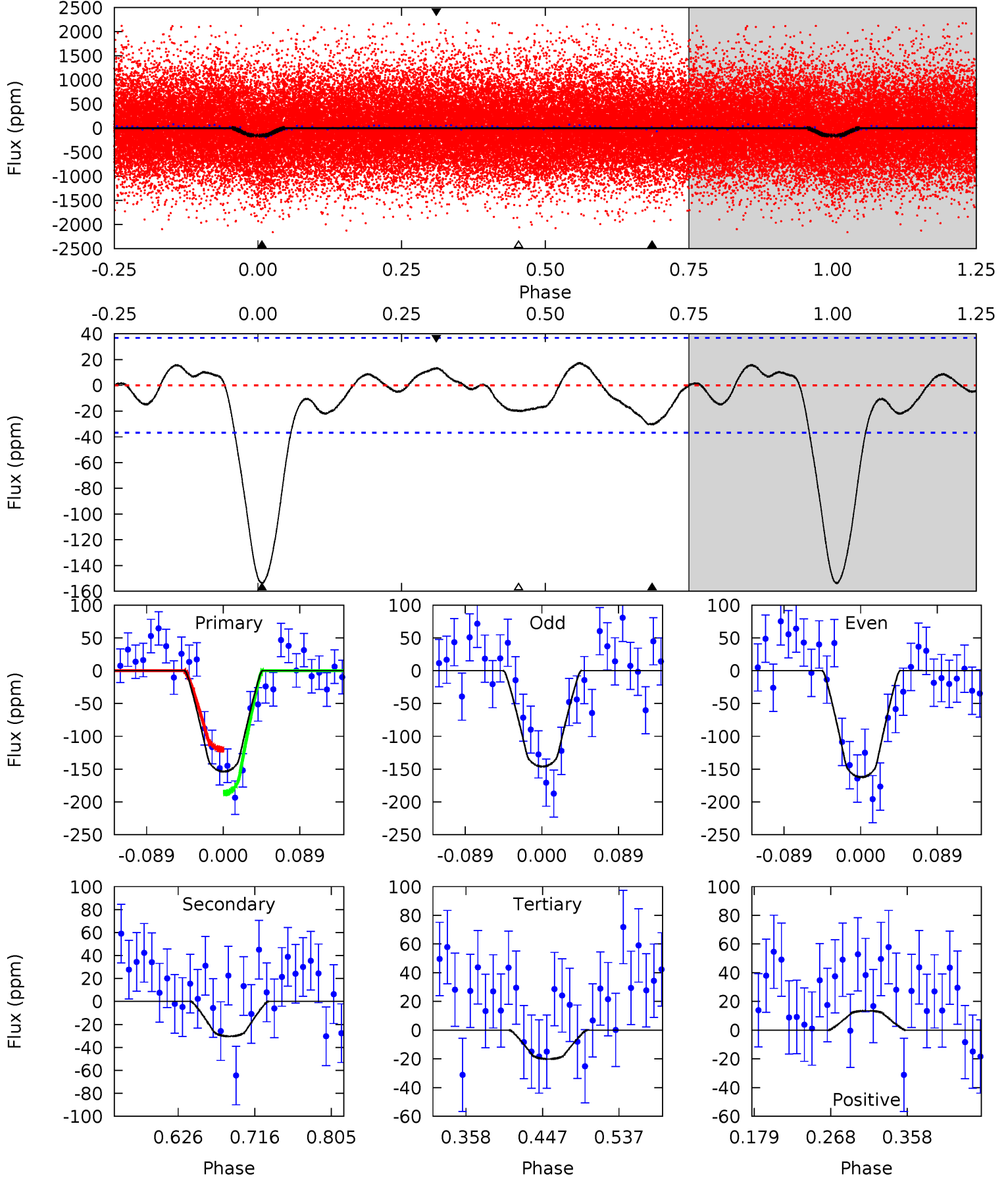
TCE 010647452-01 P= 0.762950 Days $T_0=131.917070$ (BKJD)



DV Model-Shift Uniqueness Test

010647452-01, P = 0.762940 Days, E = 131.921716 Days

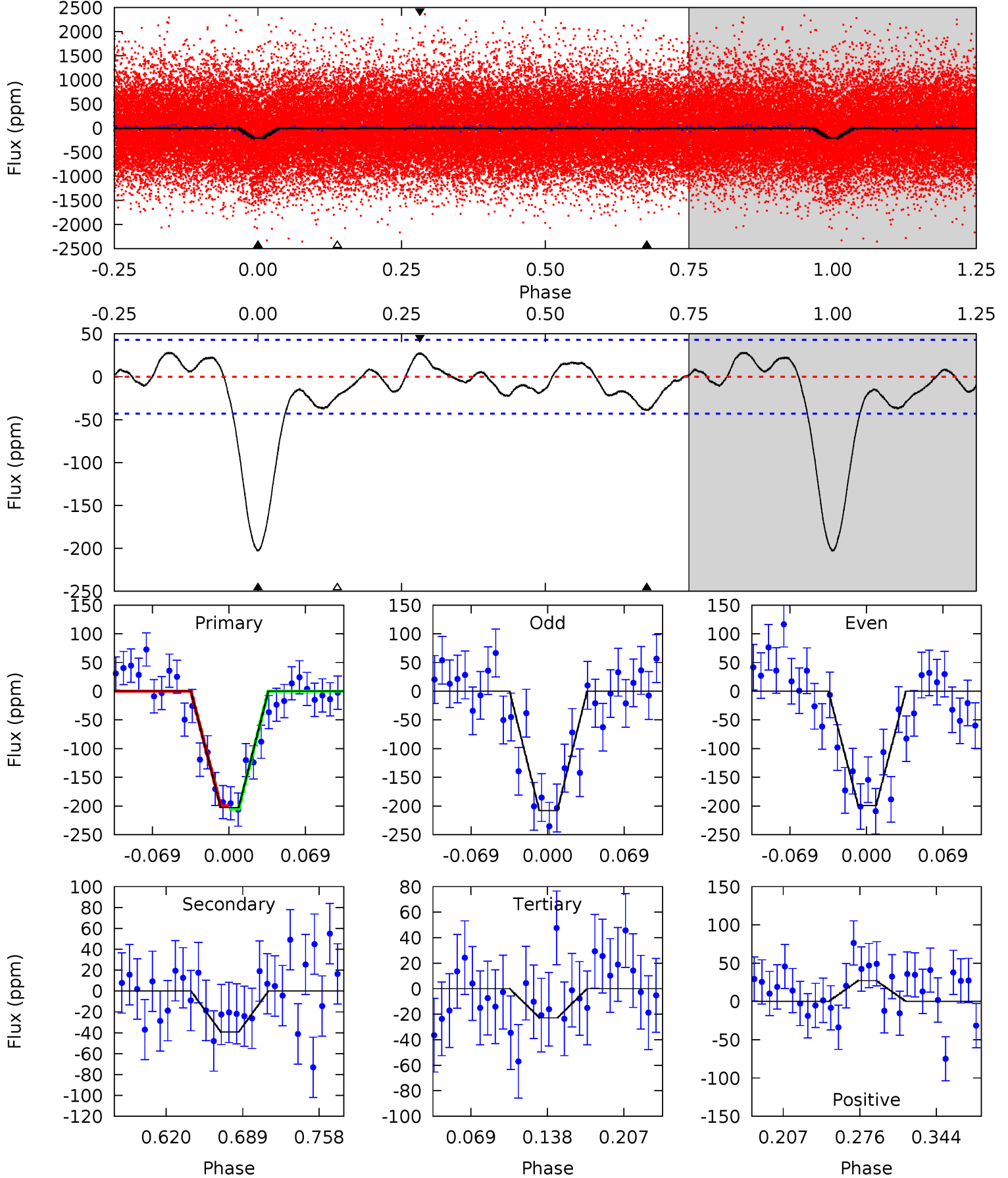
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.2 | 3.78 | 2.51 | 1.69 | 4.59 | 1.70 | 1.43 | 16.7 | 17.5 | 1.28 | 2.10 | 1.01 | 0.92 | 0.10 | 4.18 |



Alt Model-Shift Uniqueness Test

010647452-01, P = 0.762950 Days, E = 131.917070 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 | 4.22 | 2.46 | 2.93 | 4.64 | 1.82 | 1.69 | 19.4 | 18.9 | 1.76 | 1.29 | 0.49 | 0.94 | 0.12 | 0.33 |



Stellar Parameters For KIC 010647452

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5385^{+187}_{-187} | $4.610^{+0.037}_{-0.112}$ | $-0.360^{+0.300}_{-0.300}$ | $0.731^{+0.132}_{-0.057}$ | $0.797^{+0.093}_{-0.084}$ | $2.872^{+0.537}_{-0.945}$ |
| | +3%/-3% | +1%/-2% | +83%/-83% | +18%/-8% | +12%/-11% | +19%/-33% |
| 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 010647452-01 / KOI 4366.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -30 ± 8 | $1.17^{+0.76}_{-0.63}$ | 2336^{+116}_{-94} | 3652^{+1295}_{-658} | $2.712^{+9.599}_{-1.716}$ |
| Alt. | -39 ± 9 | $1.30^{+0.80}_{-0.71}$ | 2342^{+124}_{-106} | 3668^{+1442}_{-608} | $2.898^{+11.510}_{-1.843}$ |

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

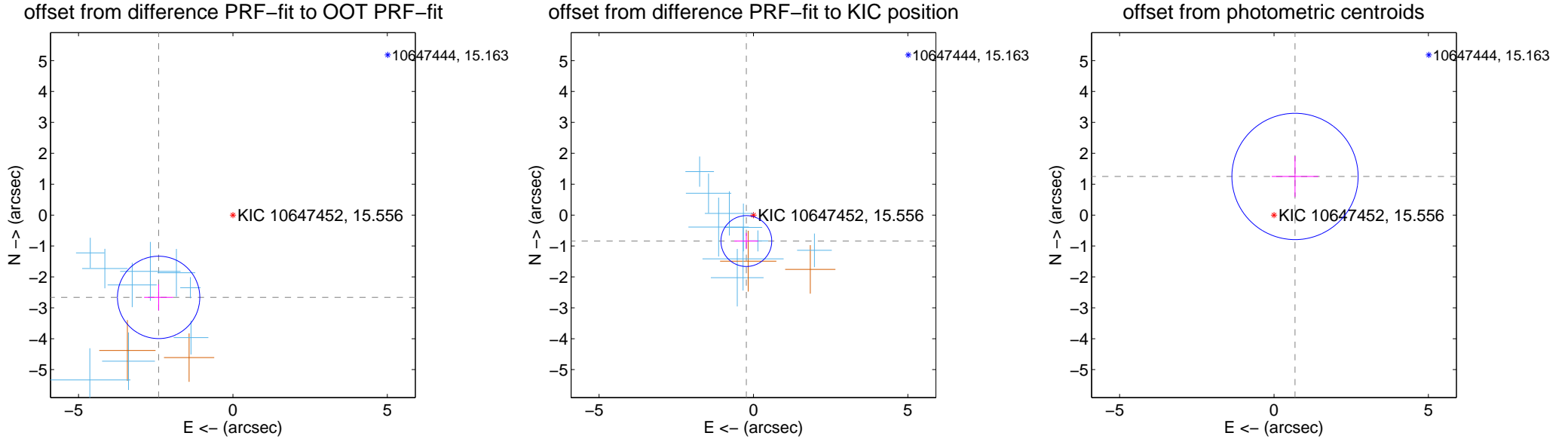
DV Centroid Data

Supplemental centroid analysis for 010647452-01. Kepler magnitude: 15.56. Transit SNR 12.14

There are 9 quarters with good PRF difference image offsets

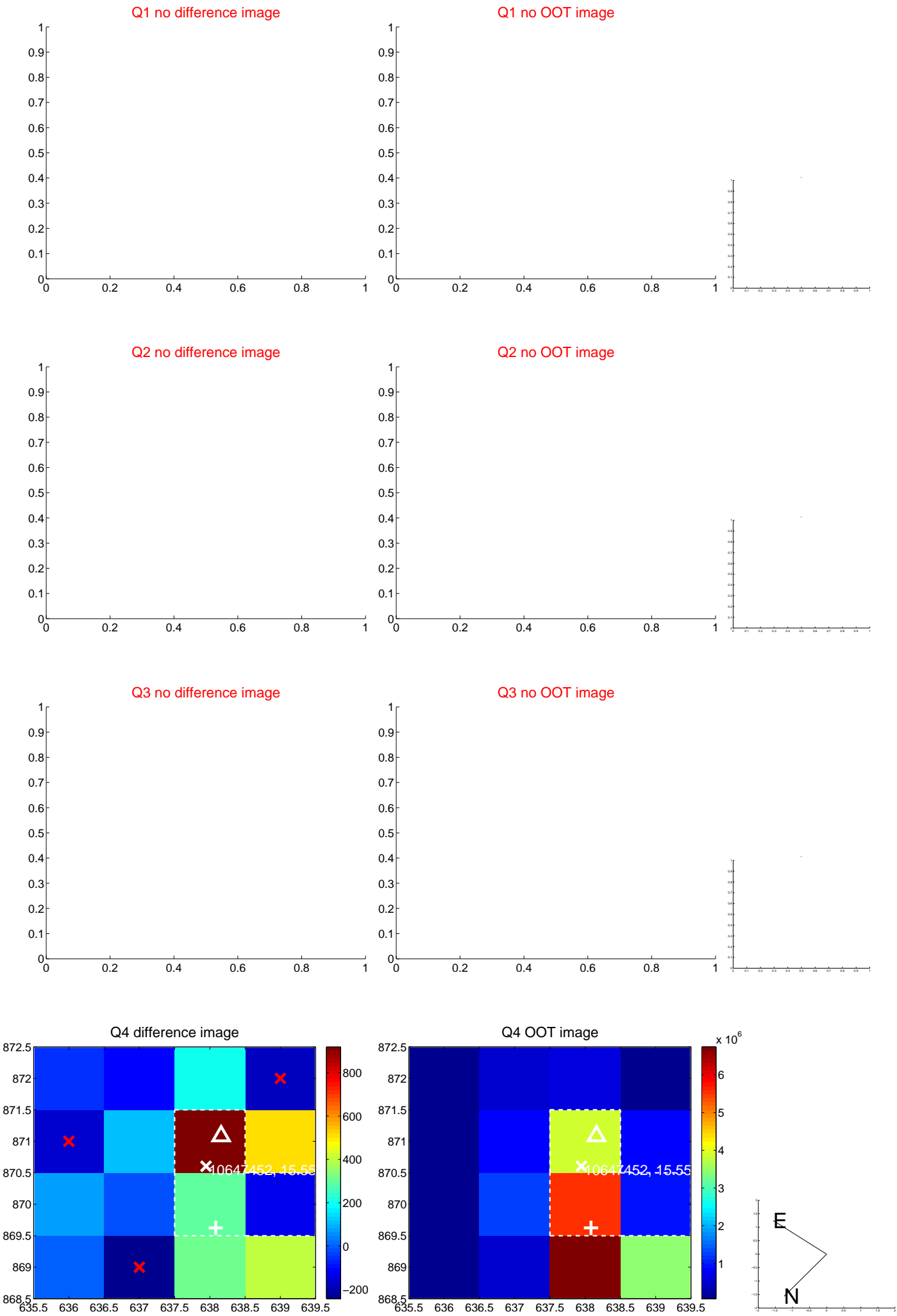
The OOT PRF centroid is offset from the target star catalog position by about 3.63 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.589 ± 0.444 | 8.08 | 2.406 ± 0.468 | -2.663 ± 0.424 |
| PRF-fit source offset from KIC position | 0.871 ± 0.274 | 3.17 | 0.231 ± 0.387 | -0.840 ± 0.264 |
| photometric centroid source offset | 1.42 ± 0.68 | 2.09 | -0.68 ± 0.75 | 1.25 ± 0.66 |

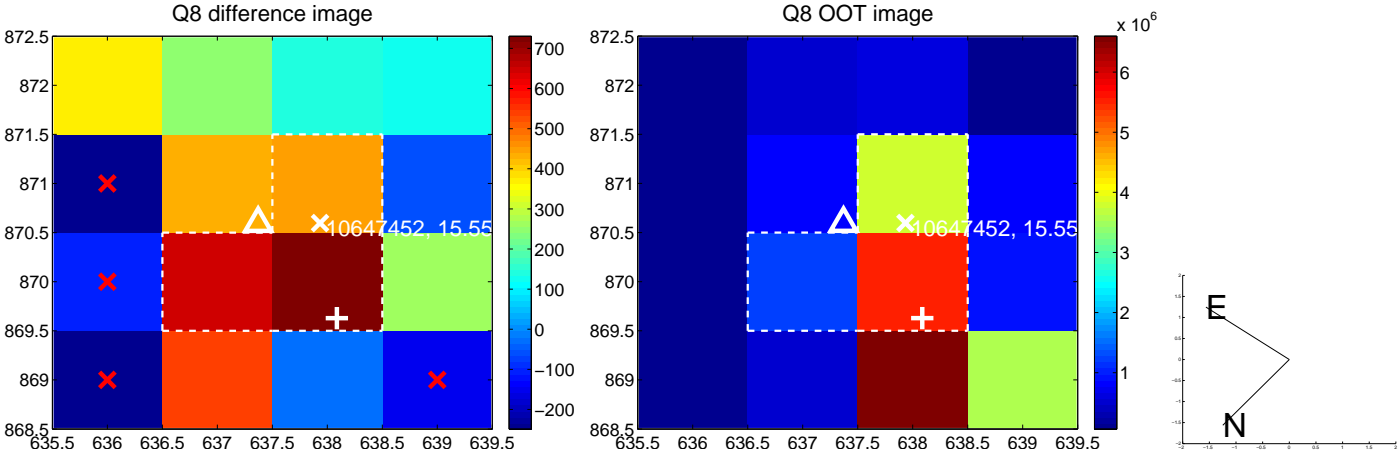
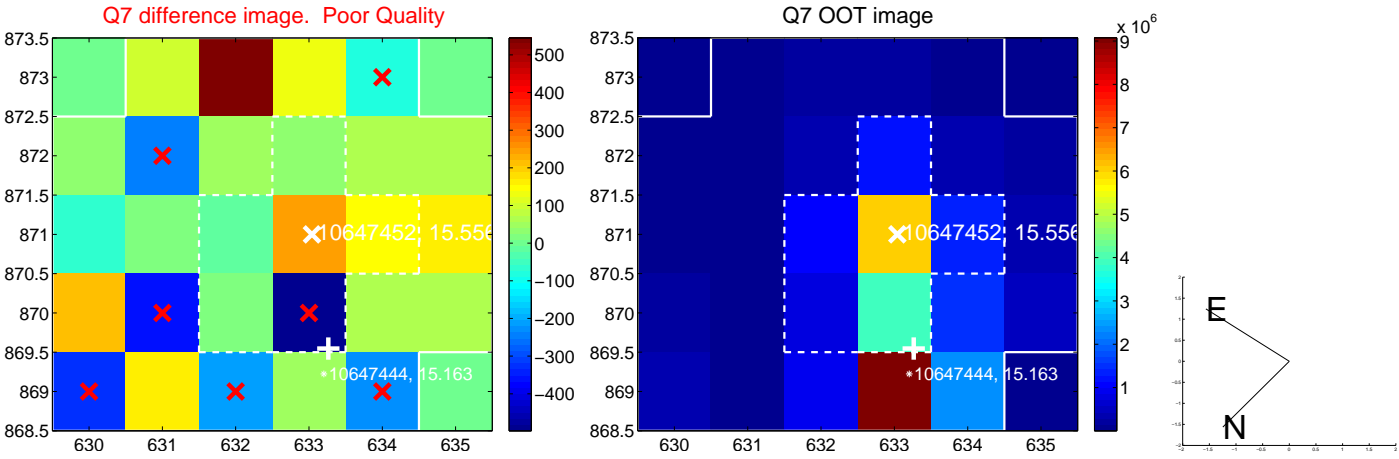
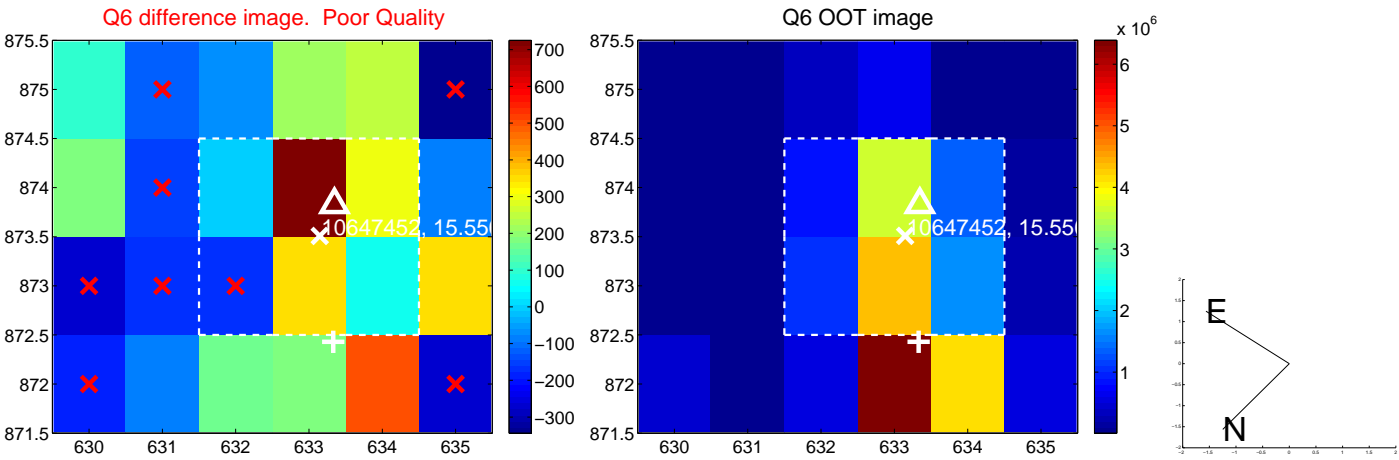
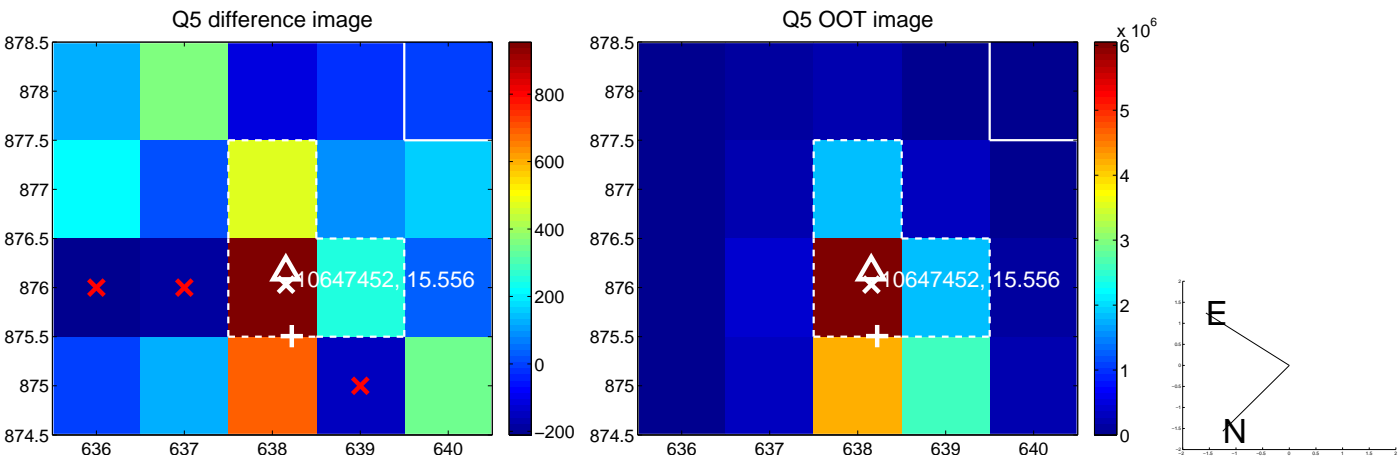


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

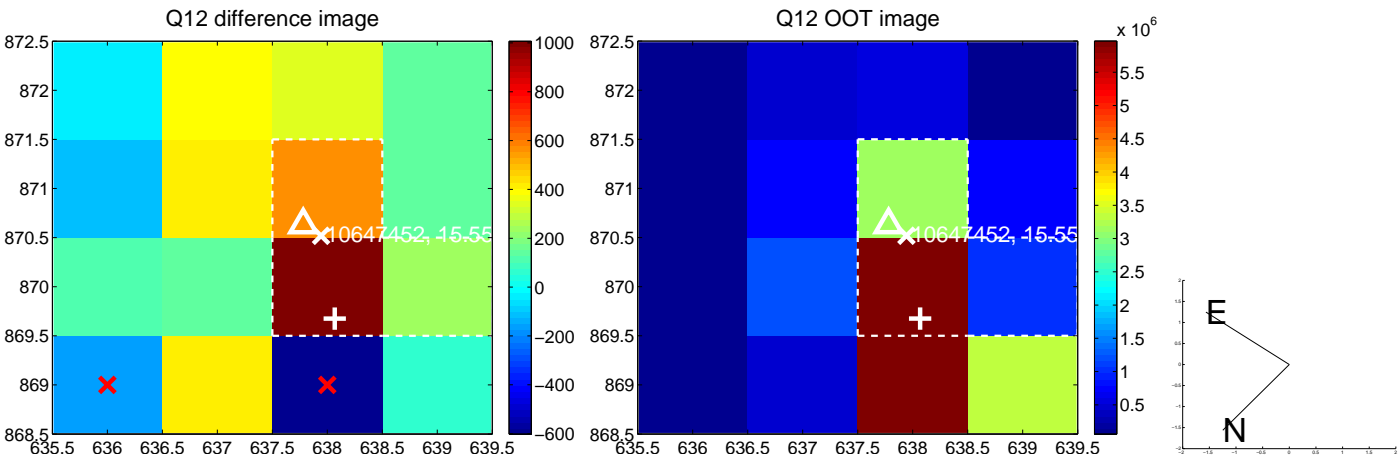
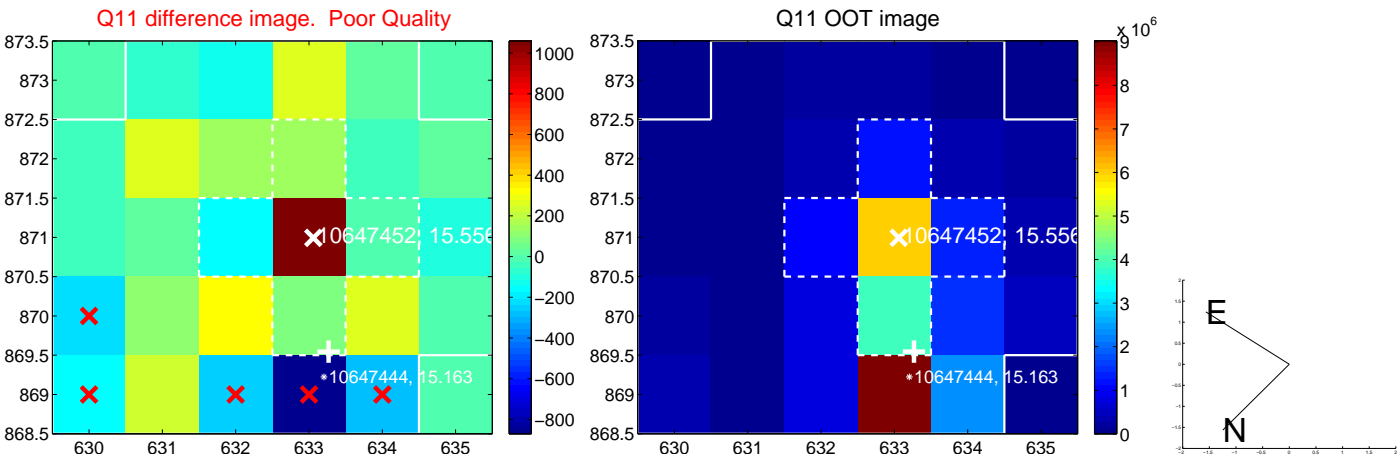
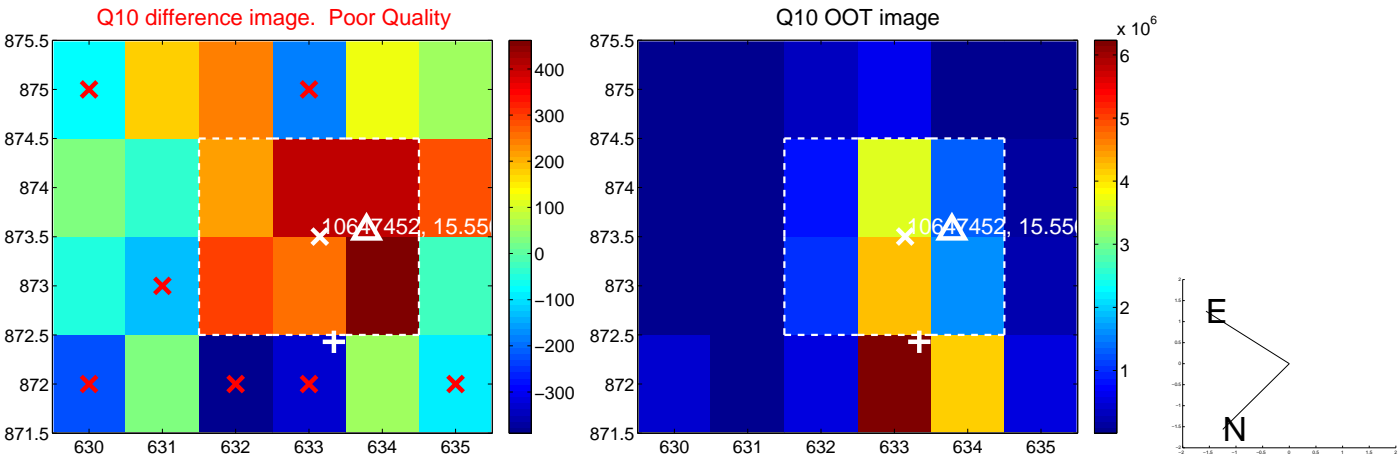
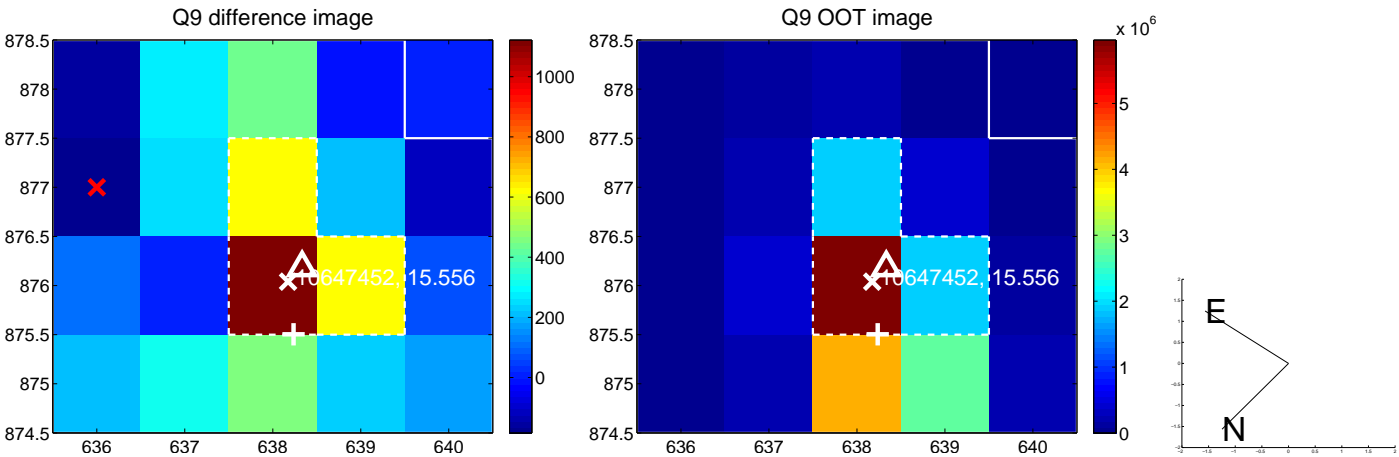
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



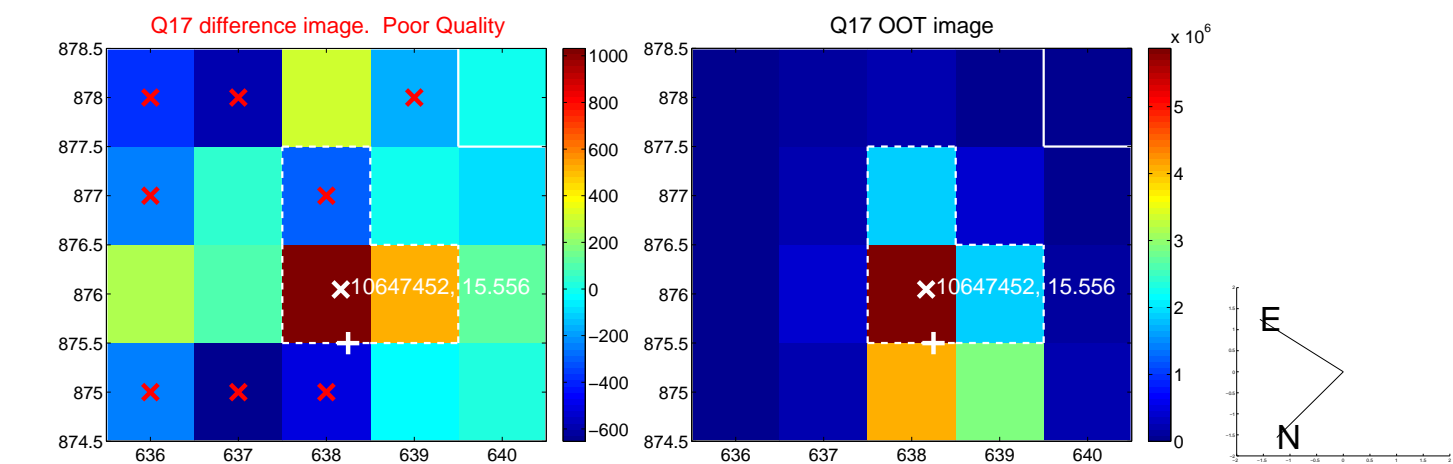
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



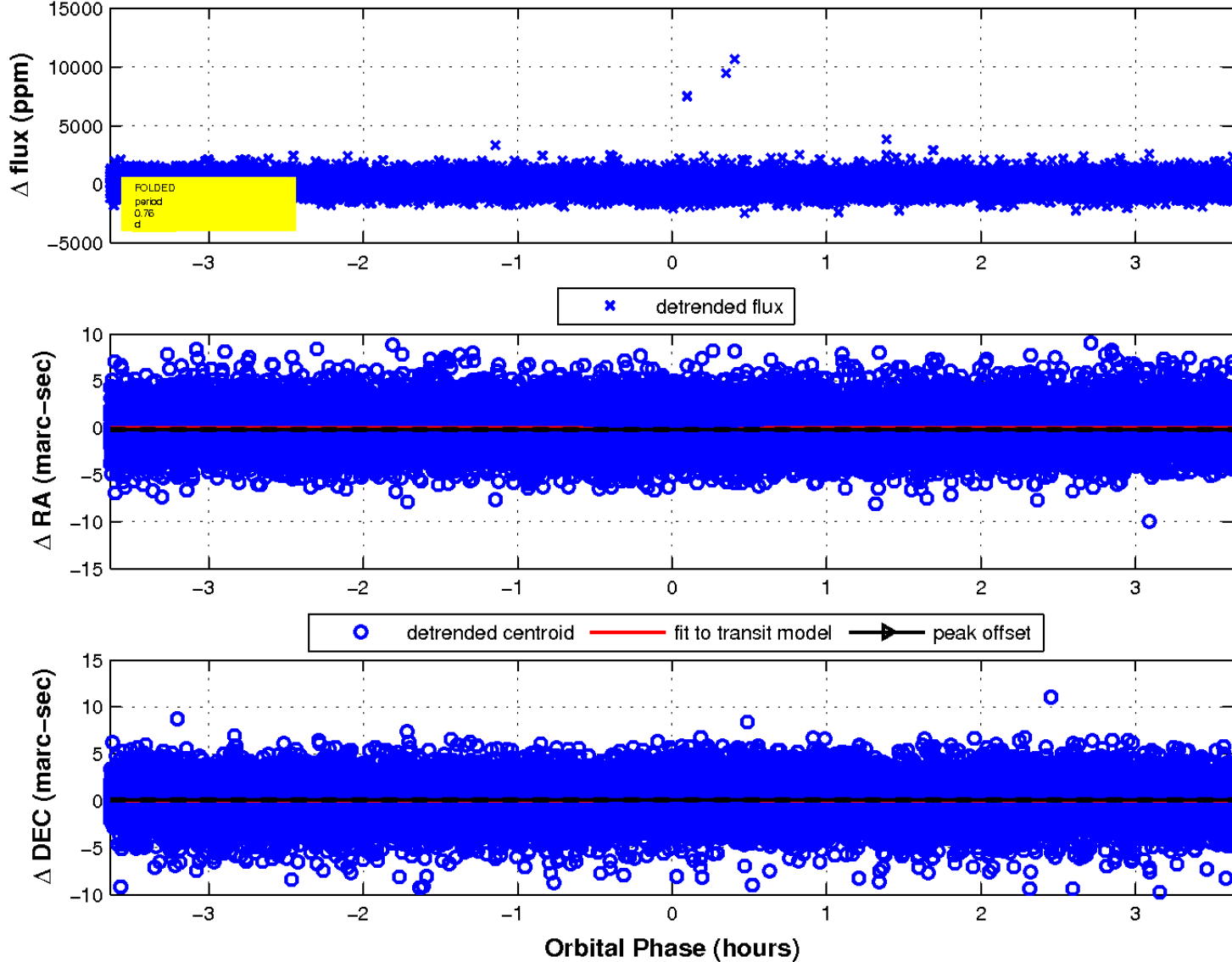
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

