

KIC 007440062

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 007440062-01 | OBS | No | 374.050079 | 259.791148 | 2595.0 | 43.975 | 7.2 | 10.8 | 175.27 | 3091 | 1321.47 | 2499.51 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007440062-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 1 | INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH |

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.

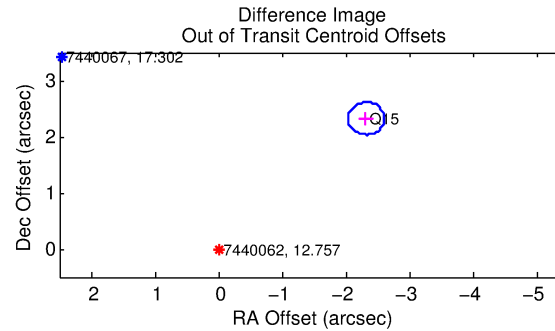
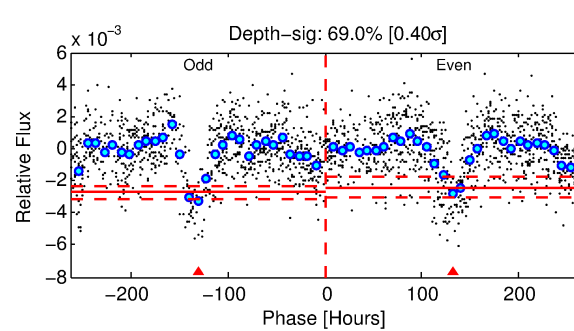
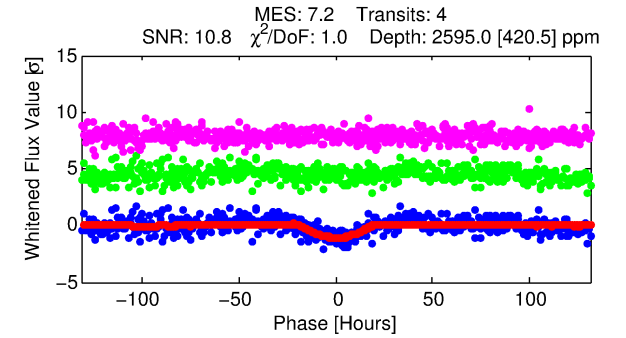
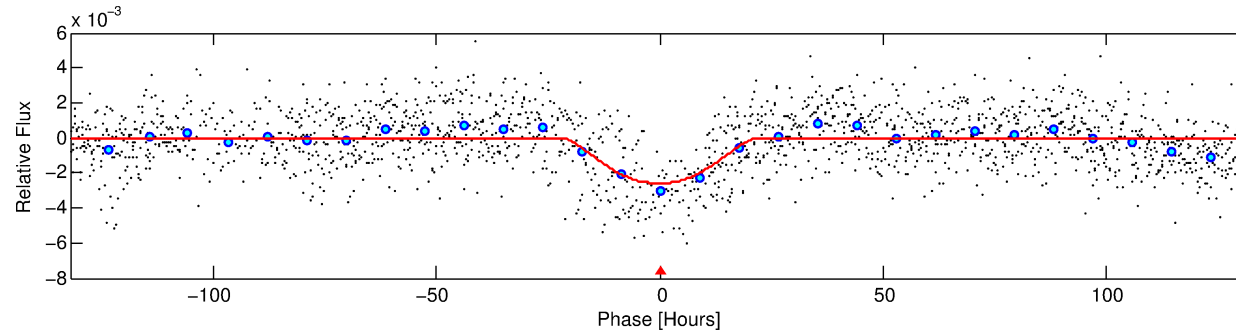
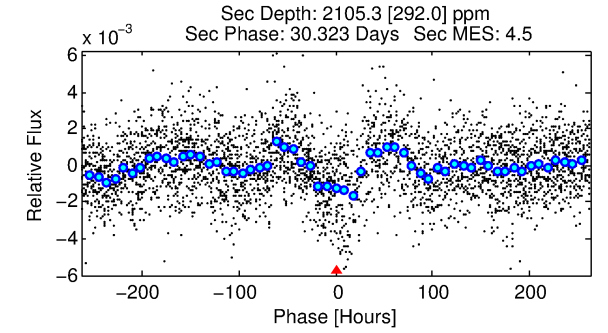
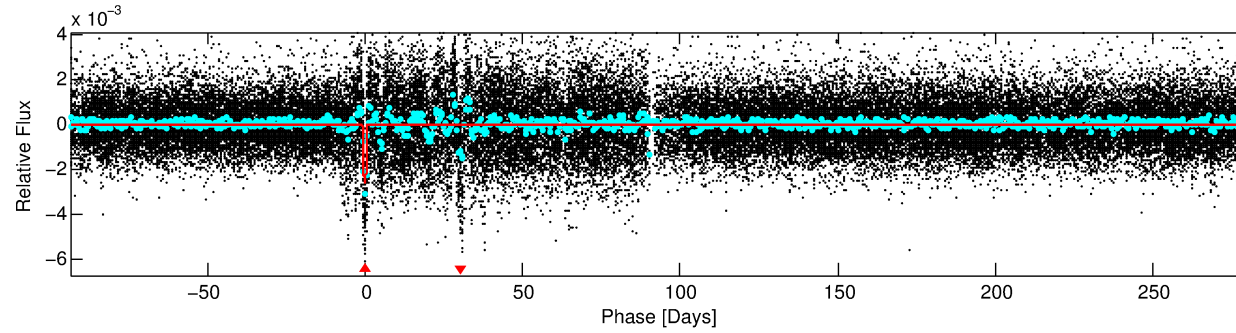
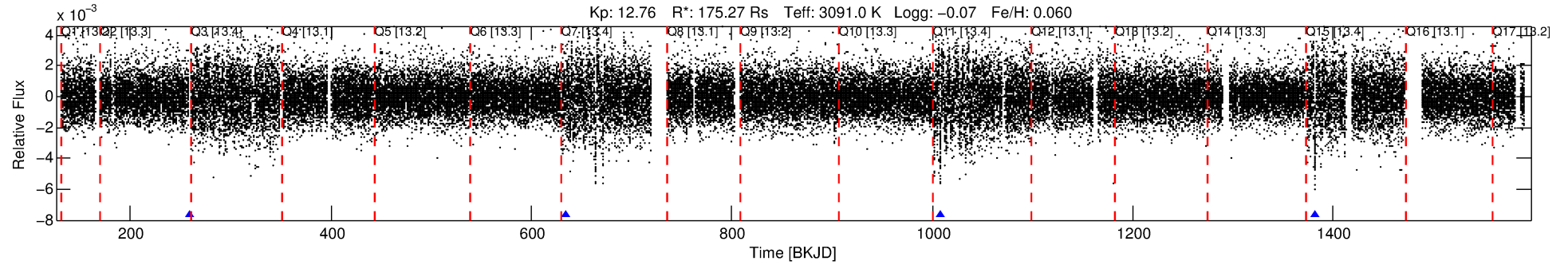
Ephemeris Match Information For 007440062-01

| TCE (1) | KIC | Parent (2) | Parent KIC | $P_1:P_2$ | Dist ($''$) | Δ Row | Δ Col | m_2 | m_1 | D_2/D_1 | Mechanism | Flag | σ_P | σ_T |
|--------------|---------|--------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|-------------|------|------------|------------|
| 007440062-01 | 7440062 | 007602309-01 | 7602309 | 1:1 | 1082.4 | -3 | -272 | 15.37 | 12.76 | 0.29 | Col-Anomaly | 1 | 2.85 | 1.35 |

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7440062 Candidate: 1 of 1 Period: 374.050 d



DV Fit Results:

Period = 374.05008 [0.04207] d
Epoch = 259.7911 [0.0881] BKJD
Rp/R* = 0.0691 [0.0378]
a/R* = 32.05 [8.11]
b = 0.95 [0.09]
Seff = 2499.51 [990.11]
Teq = 1803 [179] K
Rp = 1321.47 [744.01] Re
a = 1.0026 [0.1967] AU
Ag = 0.67 [0.77] [-0.43σ]
Teff = 2519 [703] K [0.99σ]

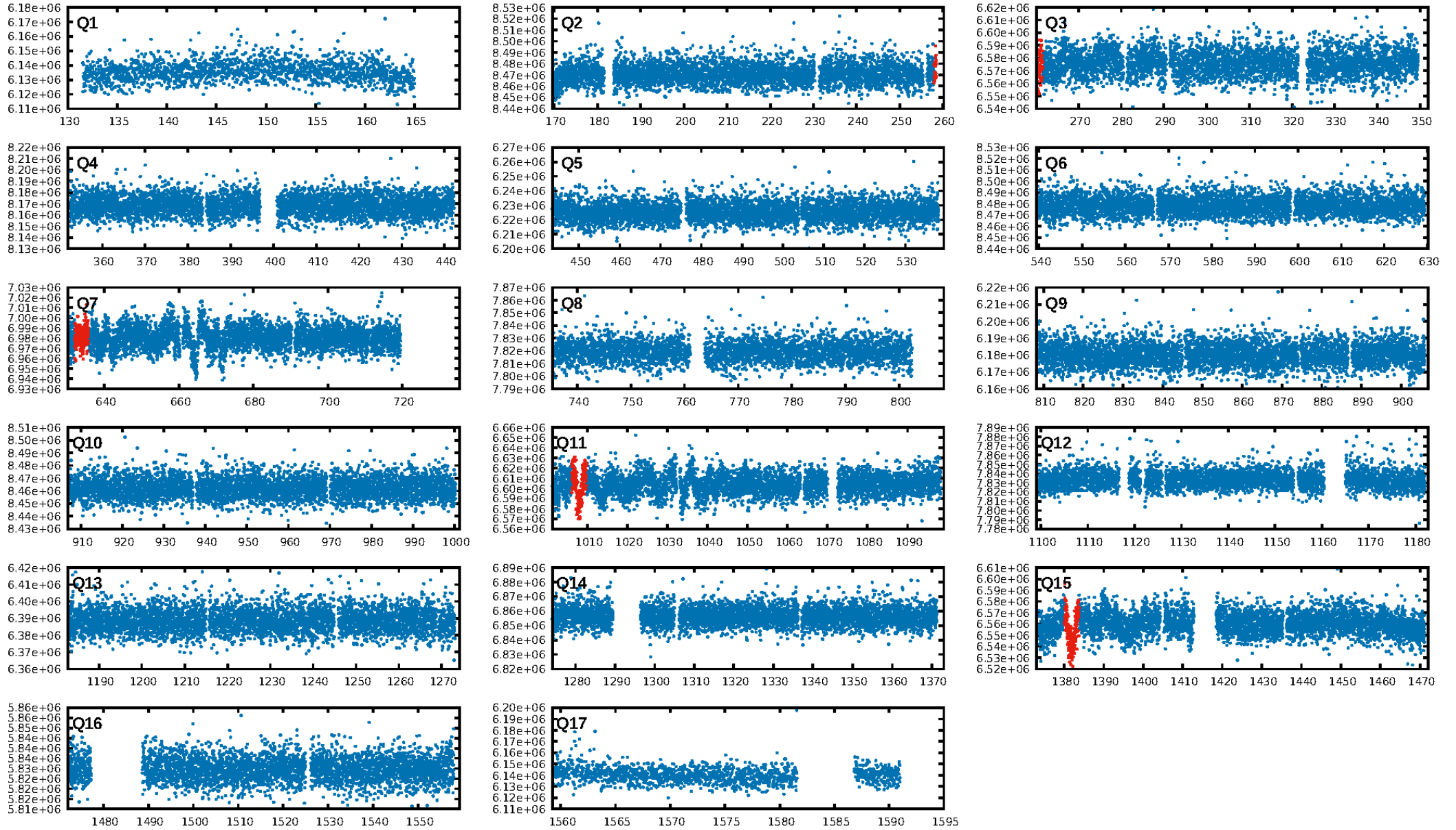
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.97e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.08271
Centroid-sig: 0.1%
Centroid-so: 2.488 arcsec [2.46σ]
OotOffset-rm: 3.282 arcsec [34.11σ]
KicOffset-rm: 3.368 arcsec [35.31σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

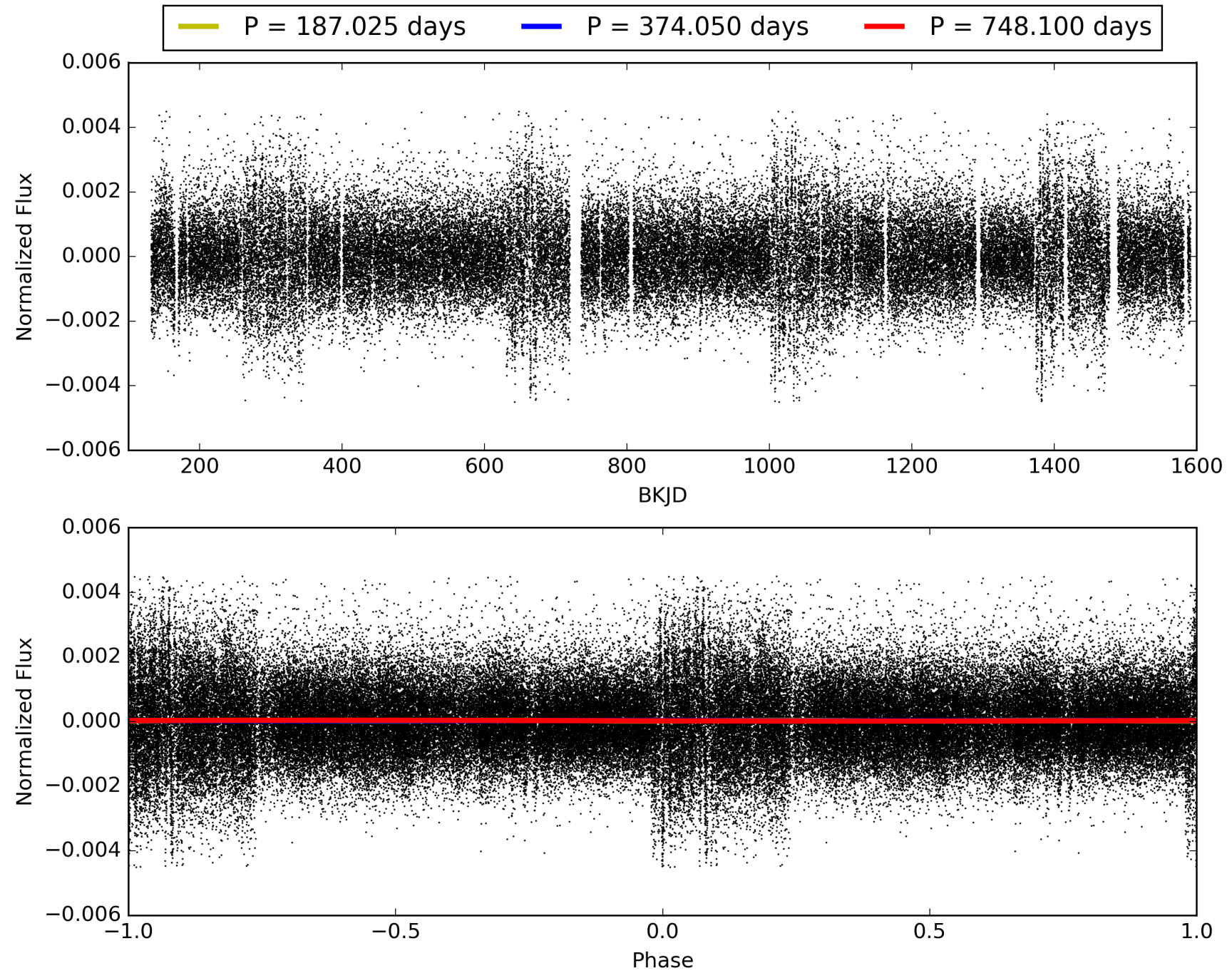
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:37:41 Z

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

TCE 007440062-01, PDC Light Curves

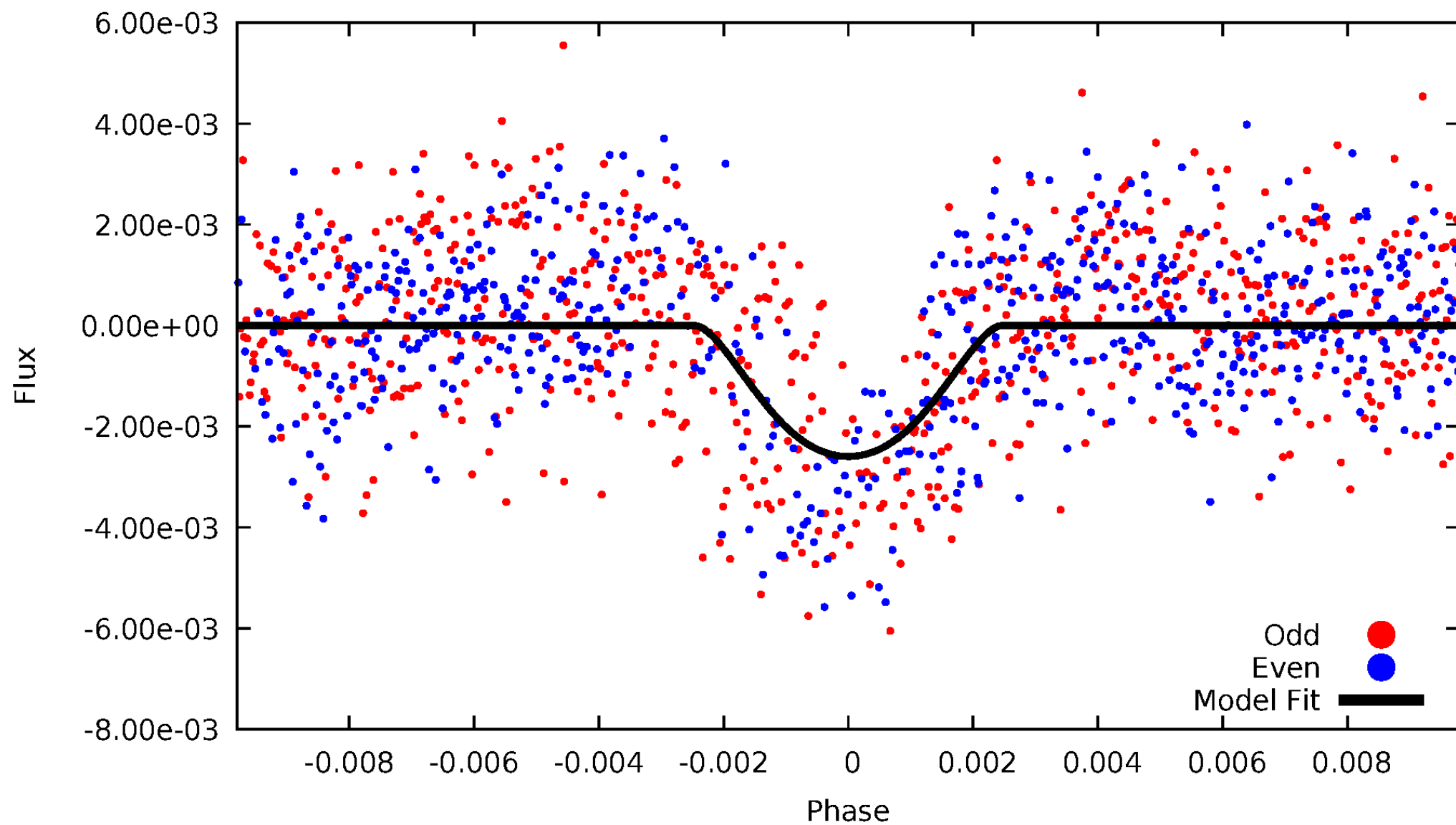


TCE 007440062-01



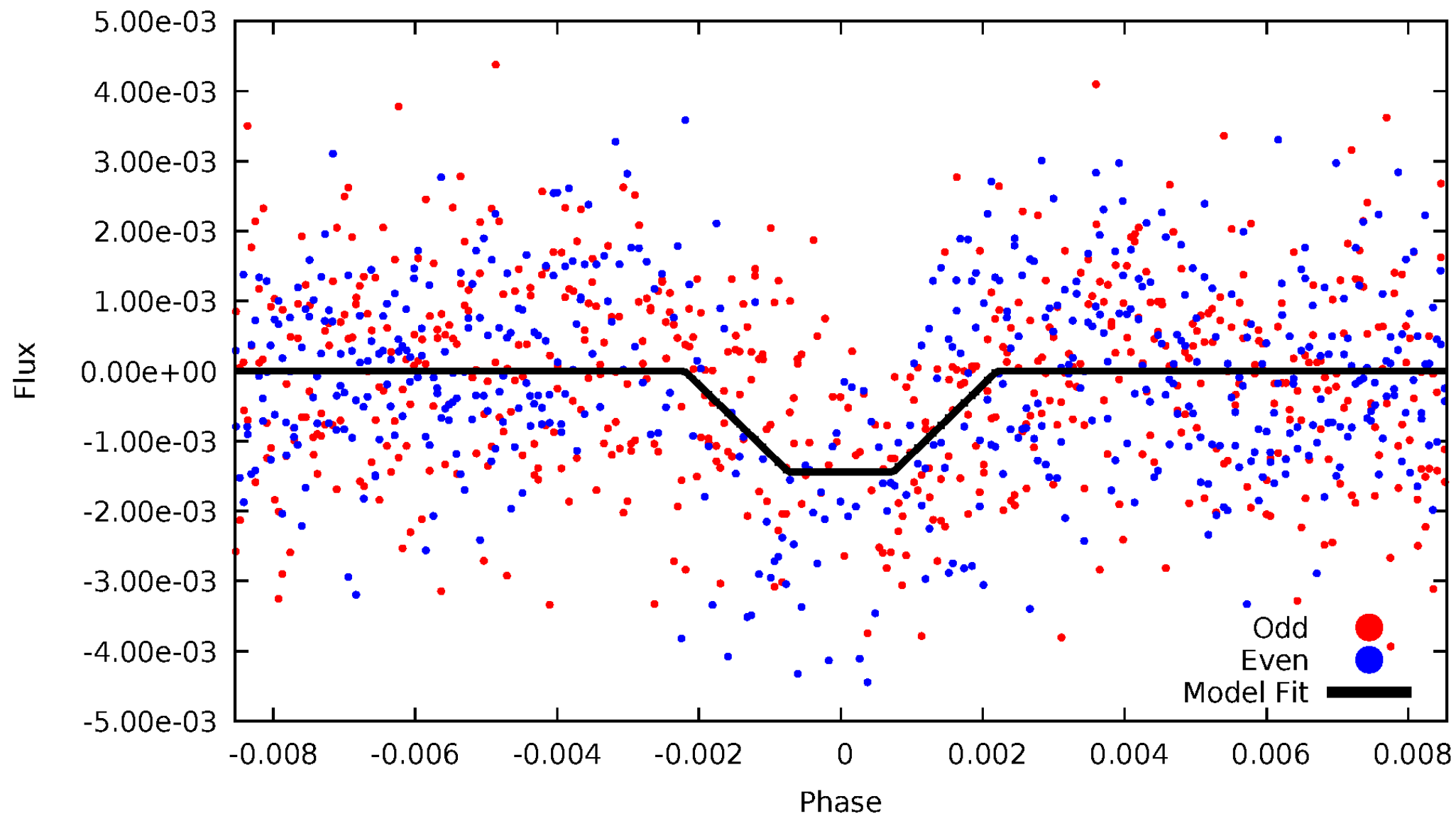
DV Odd/Even

TCE 007440062-01

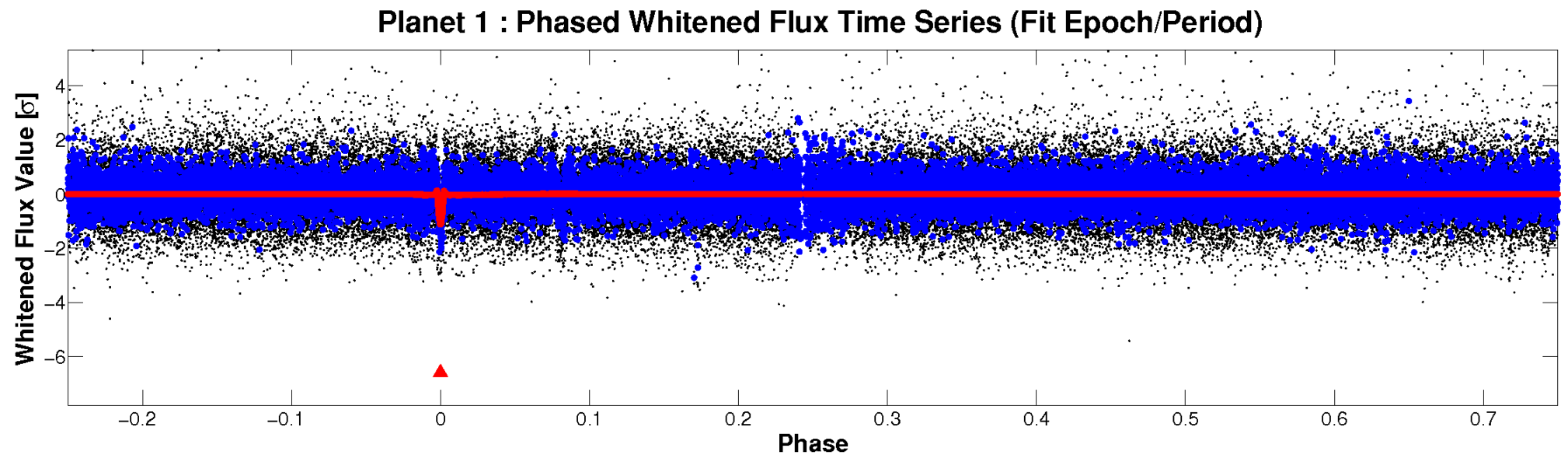
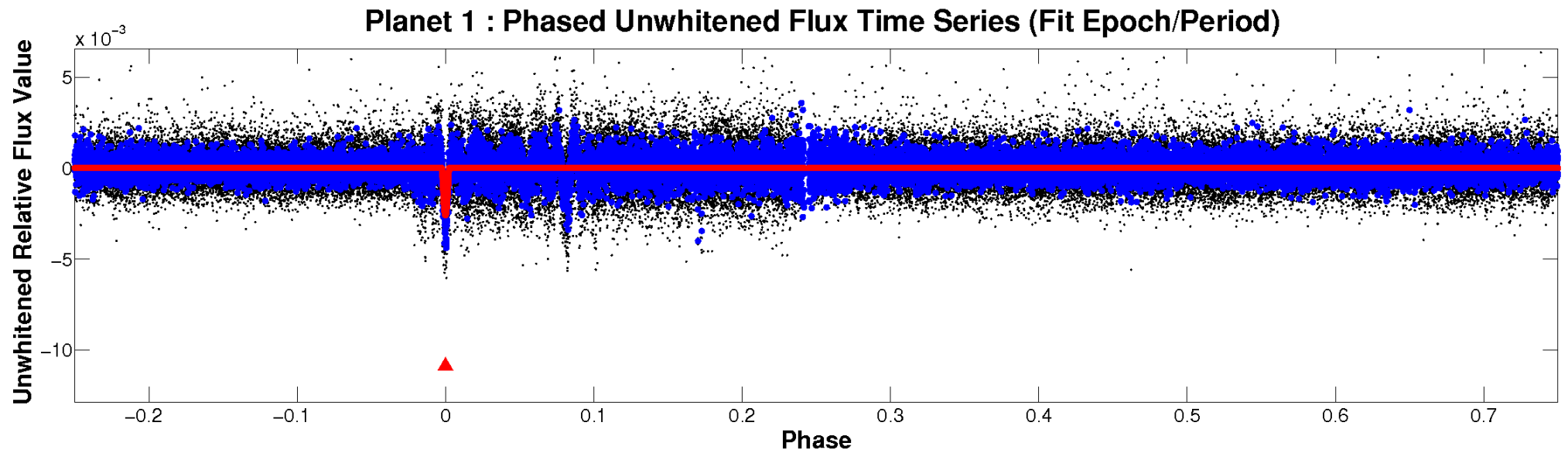


ALT Odd/Even

TCE 007440062-01

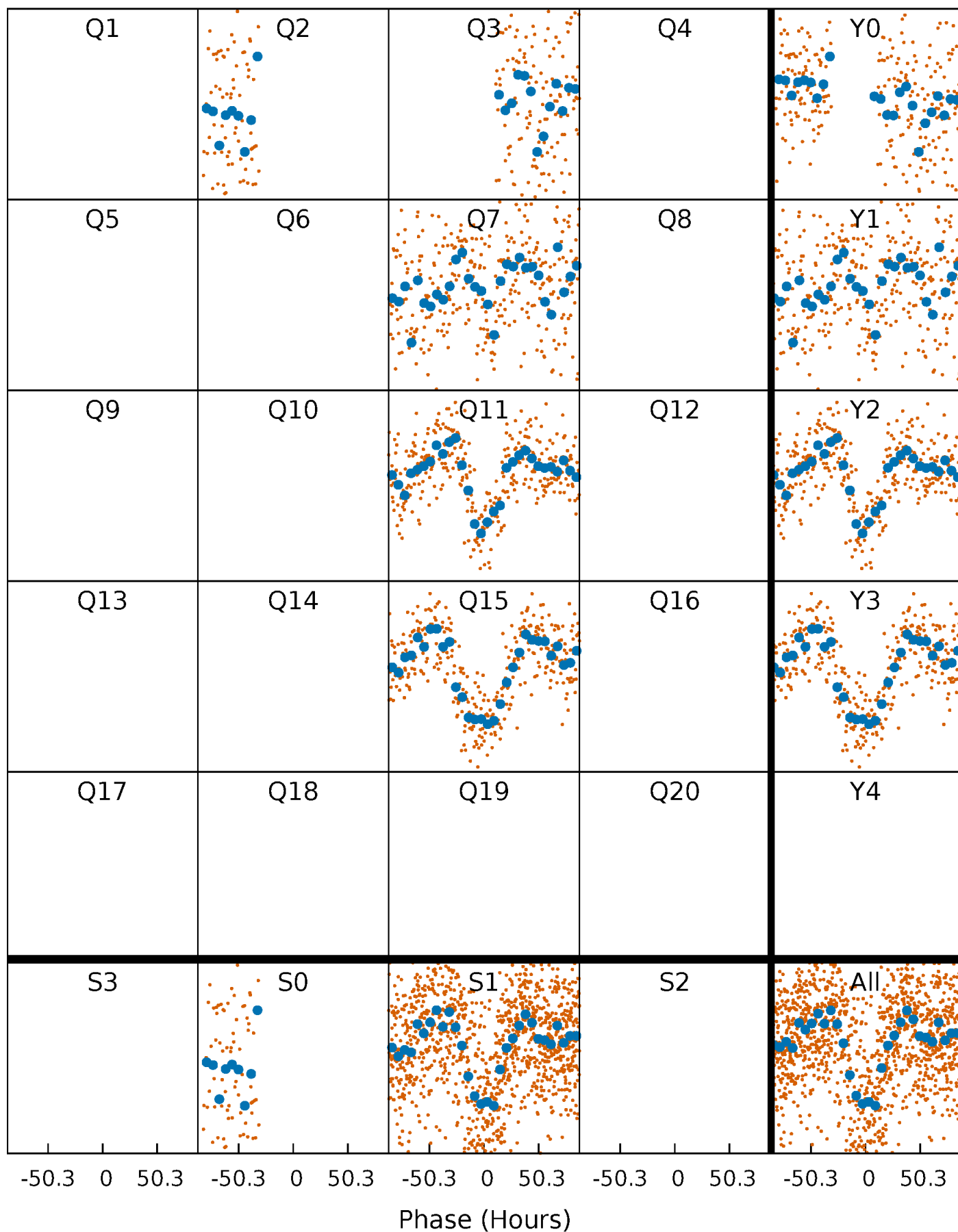


Non-Whitened Vs. Whitened Light Curve



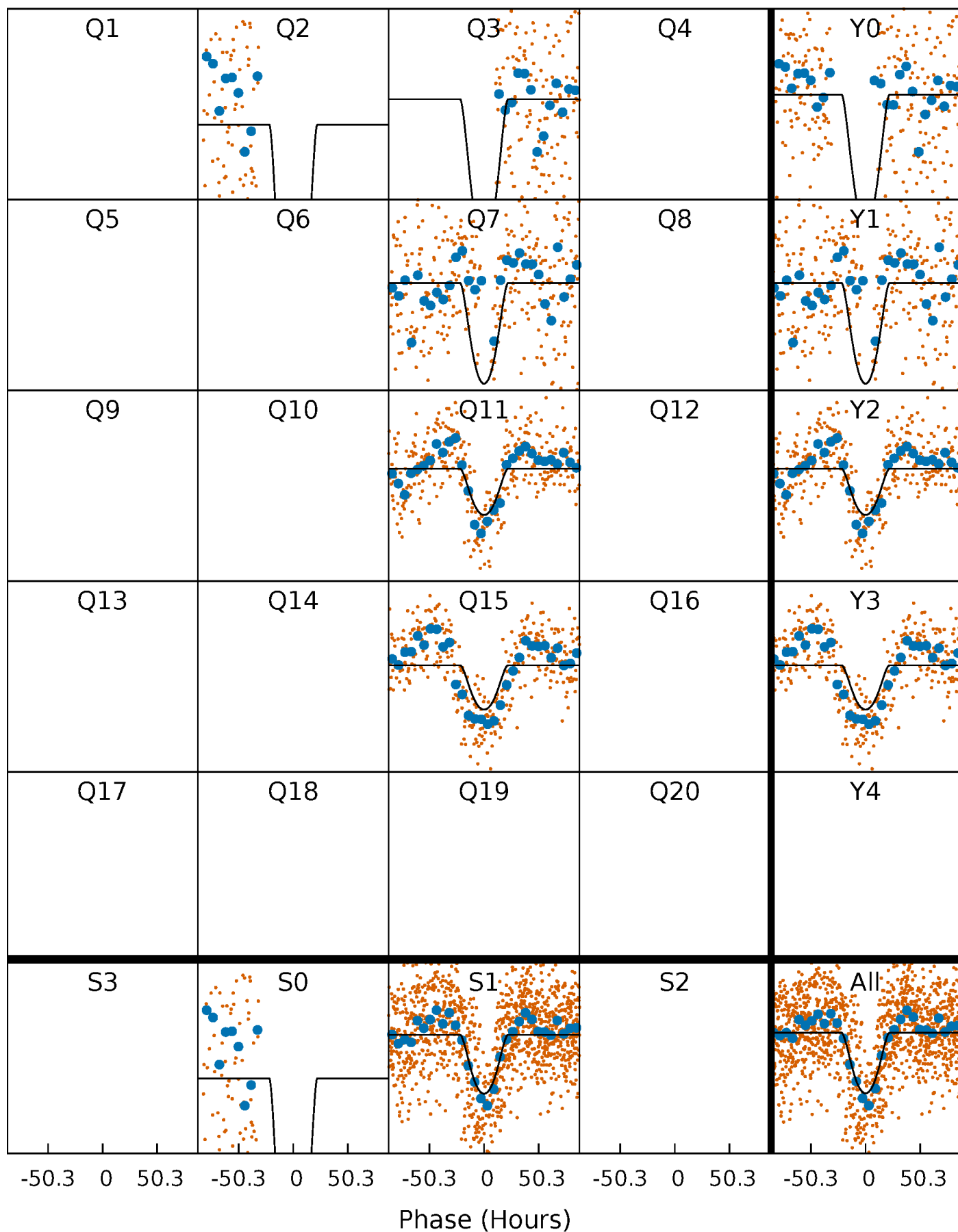
PDC Quarter-Phased Transit Curves

TCE 007440062-01 P=374.050079 Days $T_0=259.791148$ (BKJD)



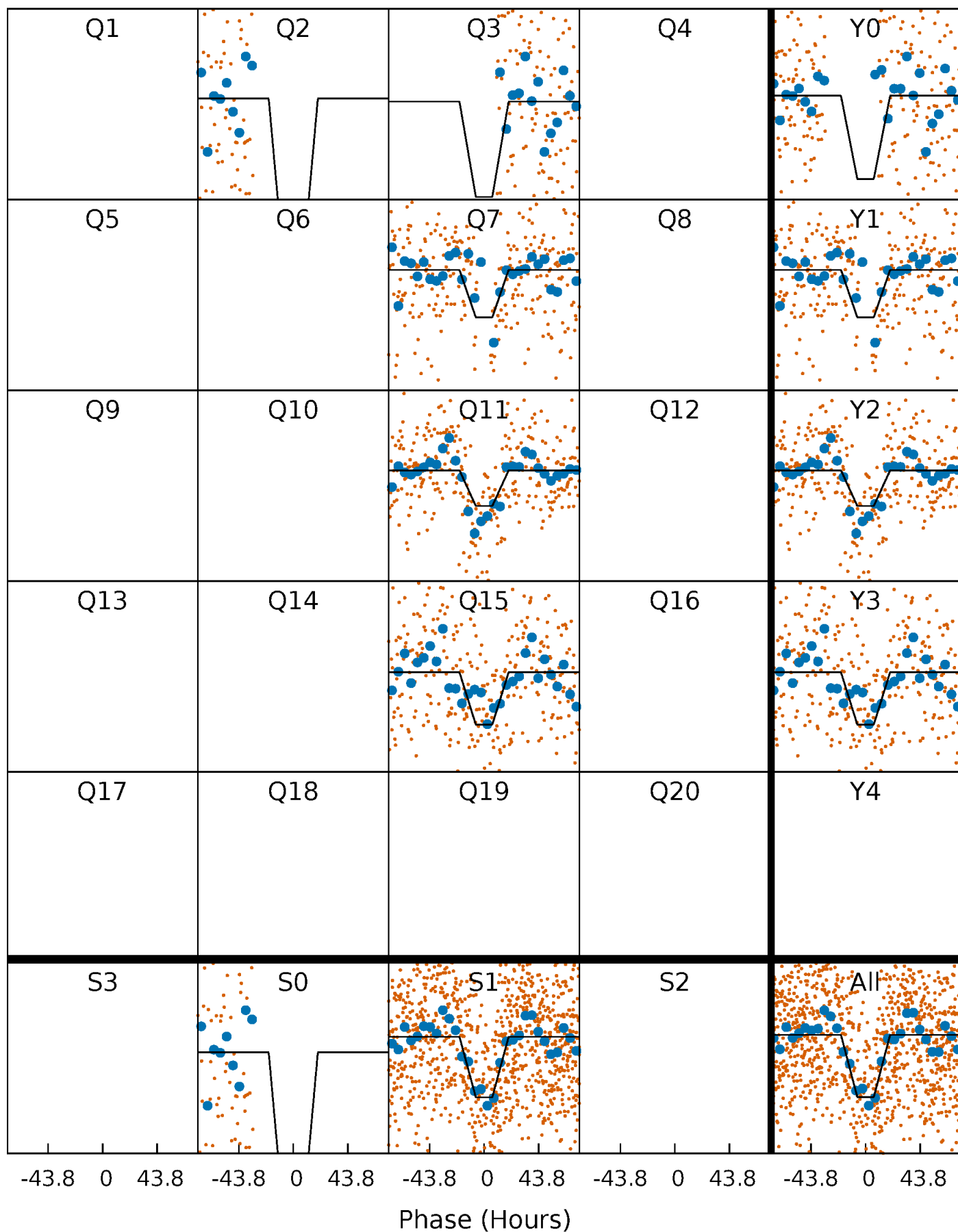
DV Quarter-Phased Transit Curves

TCE 007440062-01 P=374.050079 Days $T_0=259.791148$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

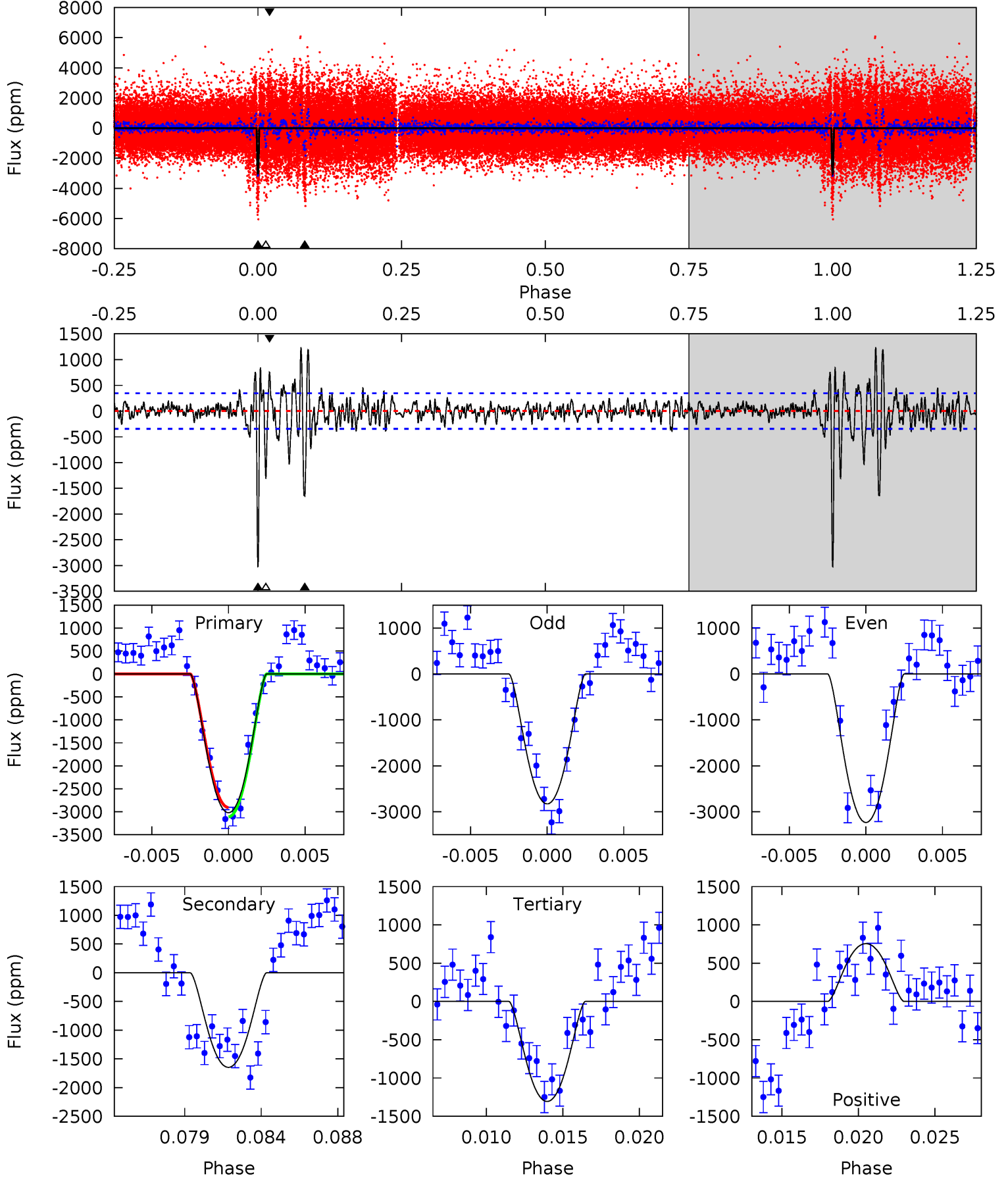
TCE 007440062-01 P=374.077183 Days $T_0=259.820114$ (BKJD)



DV Model-Shift Uniqueness Test

007440062-01, P = 374.050079 Days, E = 259.791148 Days

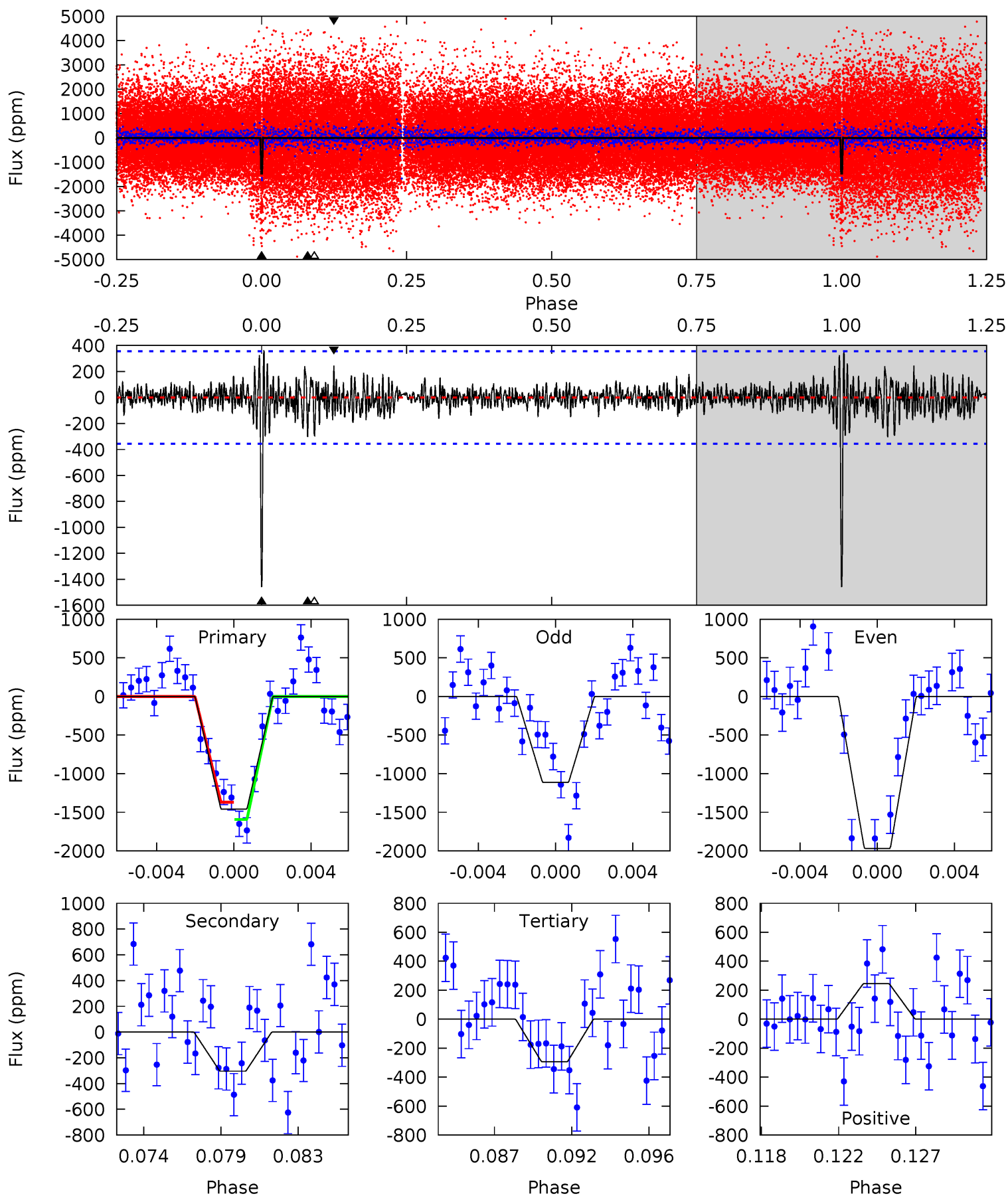
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 45.0 | 24.5 | 19.4 | 11.2 | 5.16 | 2.81 | 3.01 | 25.5 | 33.7 | 5.08 | 13.3 | 2.96 | 0.96 | 0.29 | 1.51 |



Alt Model-Shift Uniqueness Test

007440062-01, P = 374.077183 Days, E = 259.820114 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.2 | 4.42 | 4.27 | 3.56 | 5.18 | 2.85 | 0.98 | 17.0 | 17.7 | 0.15 | 0.86 | 6.12 | 0.89 | 0.20 | 1.62 |



Stellar Parameters For KIC 007440062

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|----------------------------|---------------------------|------------------------------|---------------------------|---|
| | 3091^{+124}_{-67} | $-0.067^{+0.229}_{-0.040}$ | $0.060^{+0.250}_{-0.100}$ | $175.269^{+9.816}_{-22.905}$ | $0.960^{+0.316}_{-0.035}$ | $0.000^{+0.000}_{-0.000}$ |
| | +4%/-2% | +342%/-60% | +417%/-167% | +6%/-13% | +33%/-4% | +94%/-10% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007440062-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|----------------|-------------------------------|----------------------|------------------------|---------------------------|
| DV | -1647 ± 67 | $1305.18^{+743.99}_{-695.75}$ | 2464^{+113}_{-121} | 2426^{+834}_{-4502} | $0.556^{+1.964}_{-0.322}$ |
| Alt. | -304 ± 69 | $805.07^{+656.25}_{-481.65}$ | 2472^{+105}_{-124} | -1950^{+4994}_{-428} | $0.261^{+1.478}_{-0.181}$ |

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

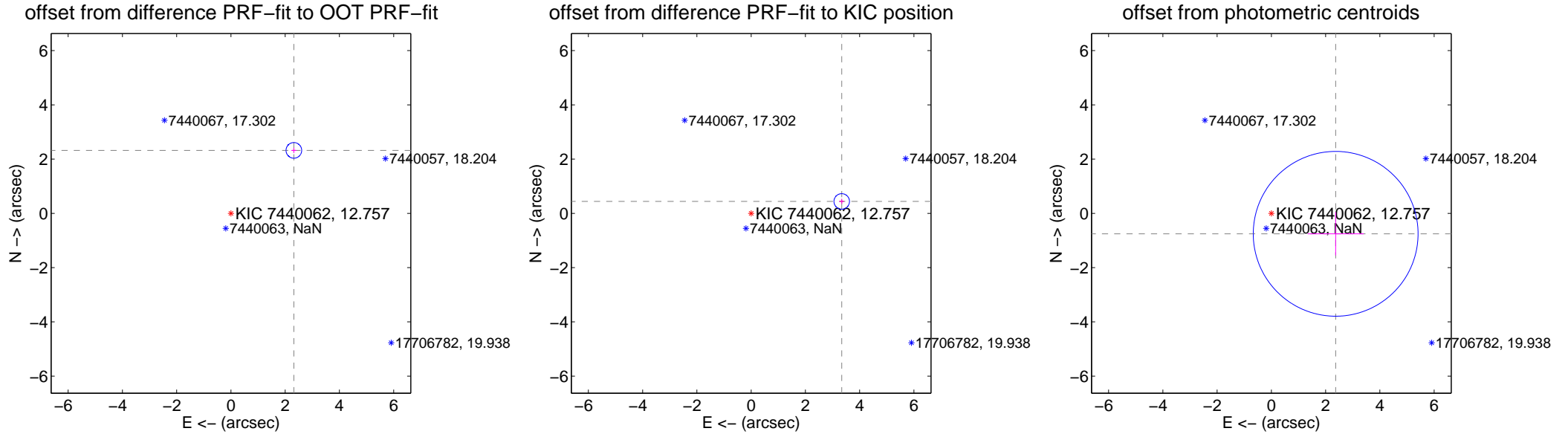
DV Centroid Data

Supplemental centroid analysis for 007440062-01. Kepler magnitude: 12.76. Transit SNR 10.82

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.14 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 | 3.282 ± 0.096 | 34.11 | -2.320 ± 0.095 | 2.322 ± 0.097 |
| PRF-fit source offset from KIC position | 3.368 ± 0.095 | 35.31 | -3.339 ± 0.095 | 0.440 ± 0.097 |
| photometric centroid source offset | 2.49 ± 1.01 | 2.46 | -2.37 ± 1.03 | -0.75 ± 0.80 |



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.



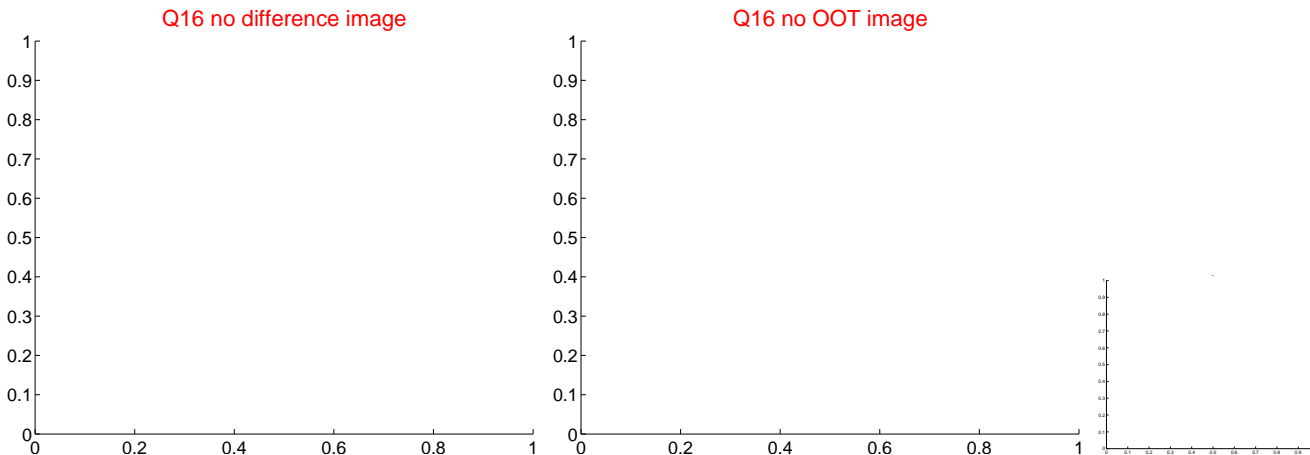
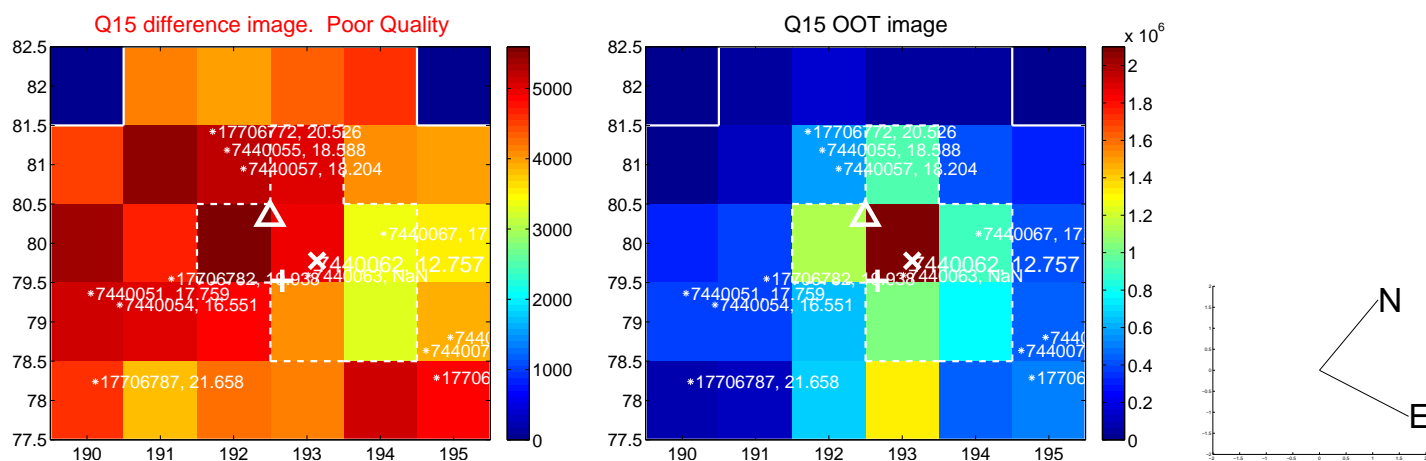
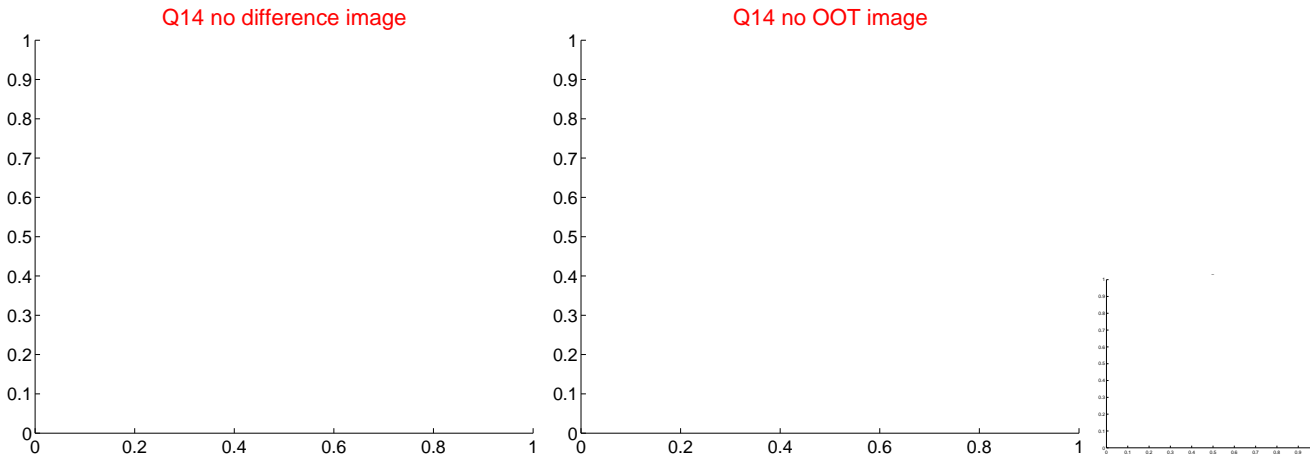
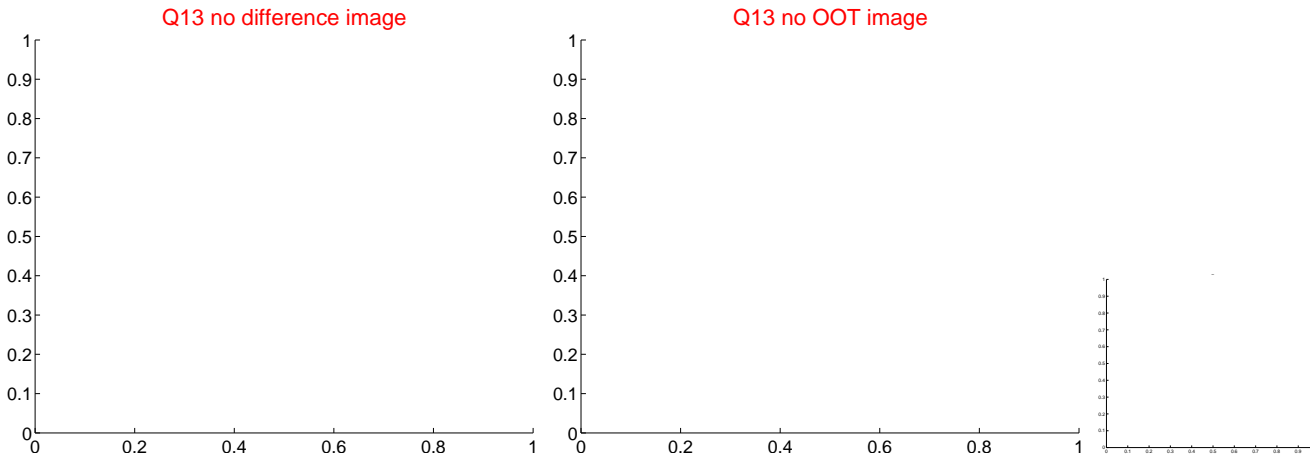
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



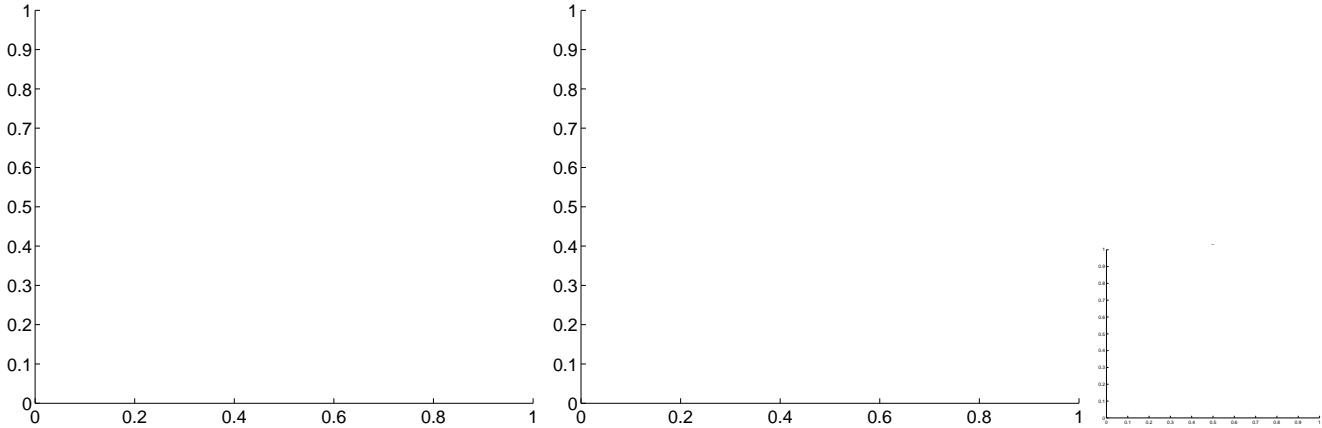
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



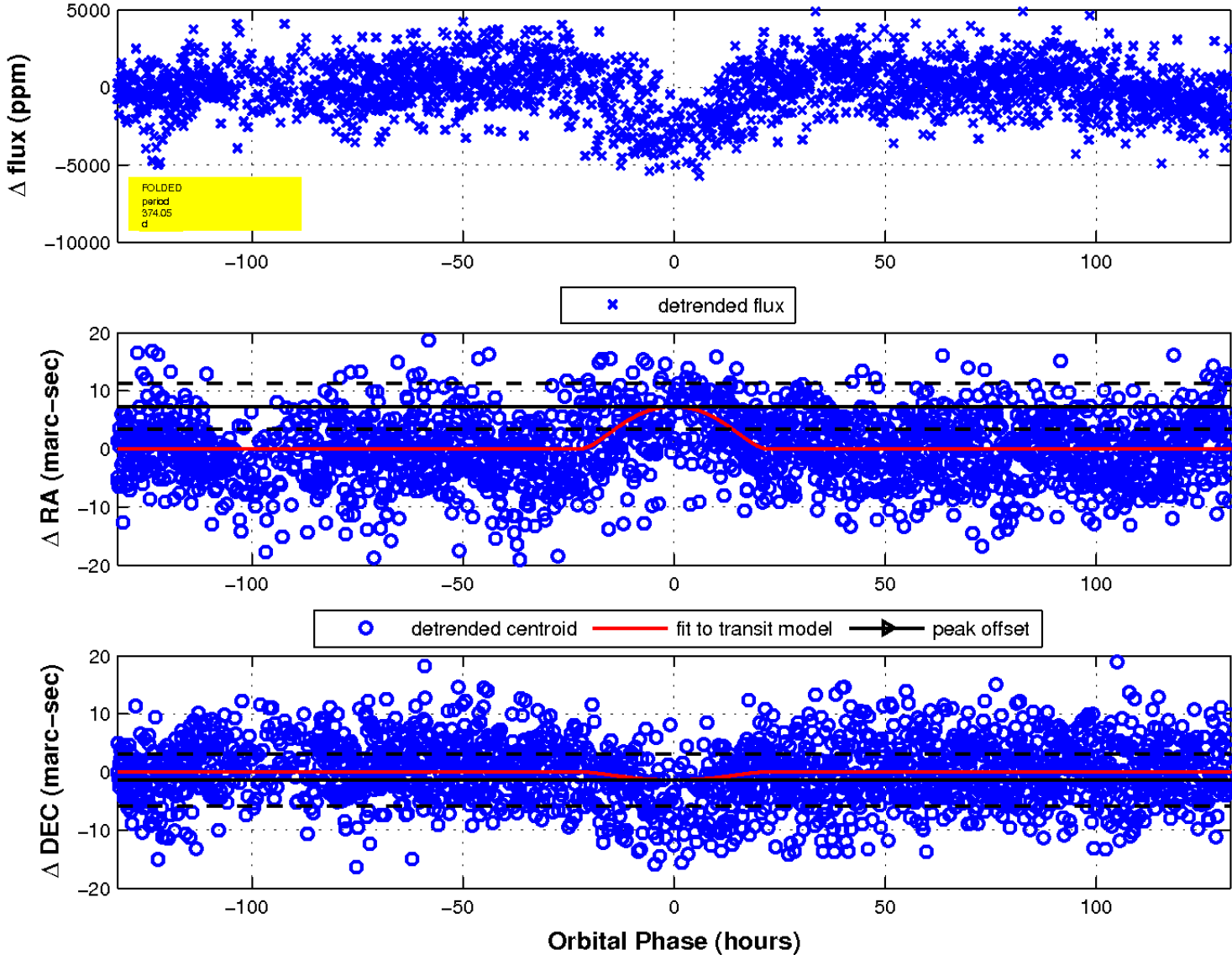
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

