

KIC 011232745

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 011232745-01 | OBS | 7421.01 | 4.817118 | 133.103261 | 23010.9 | 2.660 | 773.1 | 445.1 | 0.80 | 5419 | 16.61 | 170.78 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 011232745-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED |

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.

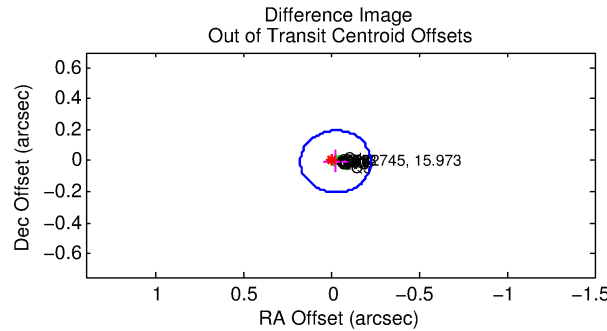
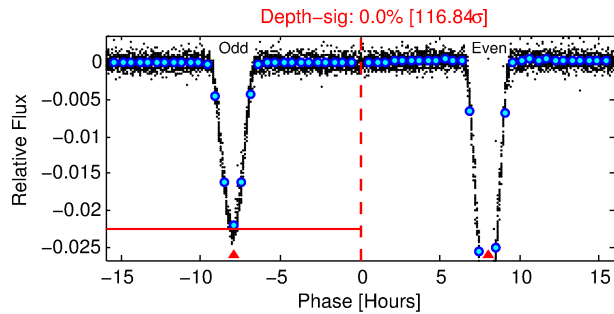
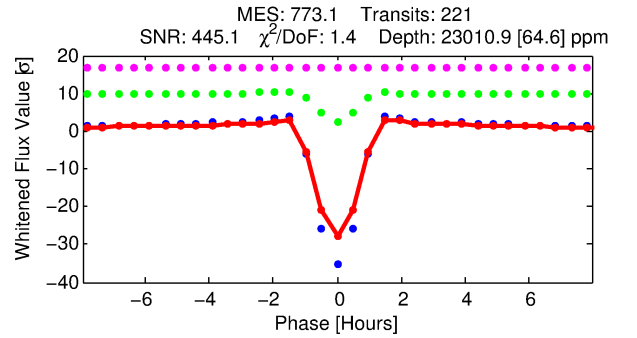
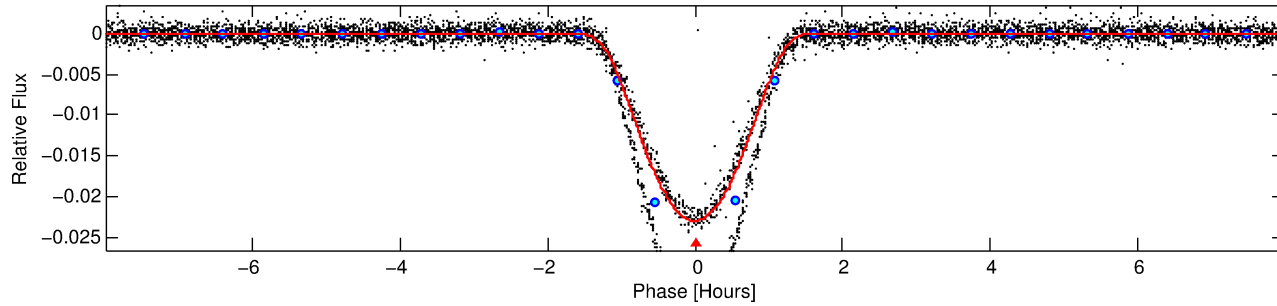
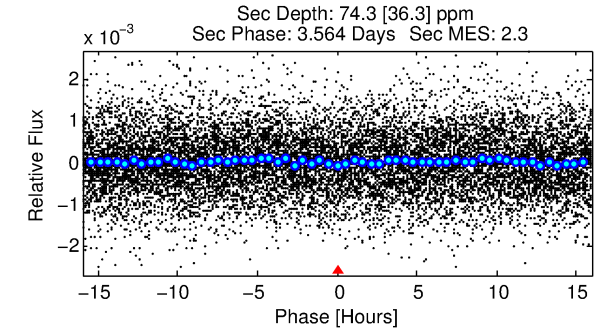
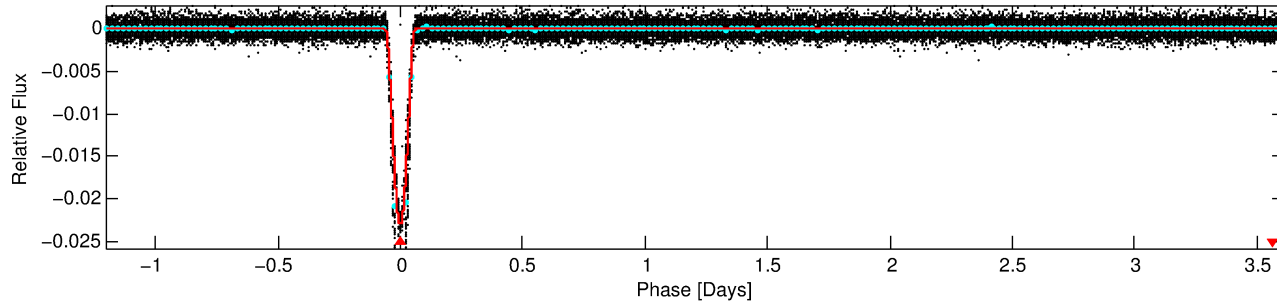
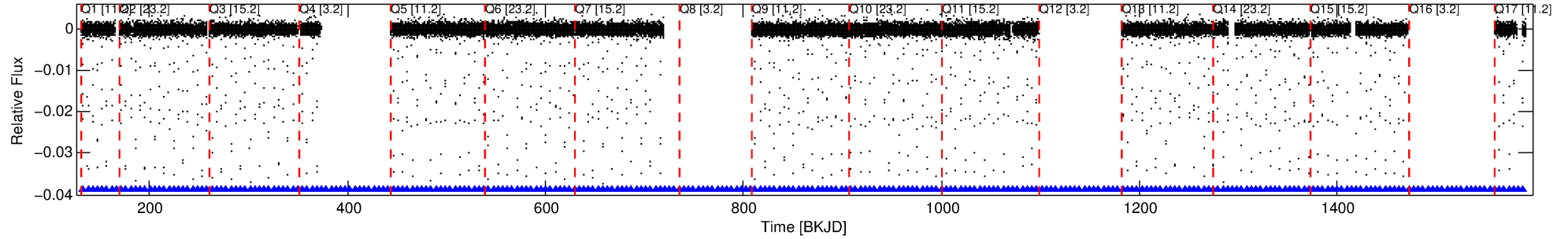
Ephemeris Match Information For 011232745-01

No Significant Match Found

DV One-Page Summary

KIC: 11232745 Candidate: 1 of 1 Period: 4.817 d
KOI: K07421.01 Corr: 0.990

Kp: 15.97 R*: 0.80 Rs Teff: 5419.0 K Logg: 4.58 Fe/H: -0.100



DV Fit Results:

Period = 4.81712 [0.00000] d
Epoch = 133.1033 [0.0001] BKJD
Rp/R* = 0.1914 [0.0086]
a/R* = 10.67 [0.11]
b = 0.91 [0.02]
Seff = 170.78 [45.35]
Teq = 922 [61] K
Rp = 16.61 [3.40] Re
a = 0.0535 [0.0089] AU
Ag = 0.42 [0.23] [-2.47σ]
Teffp = 1150 [147] K [1.43σ]

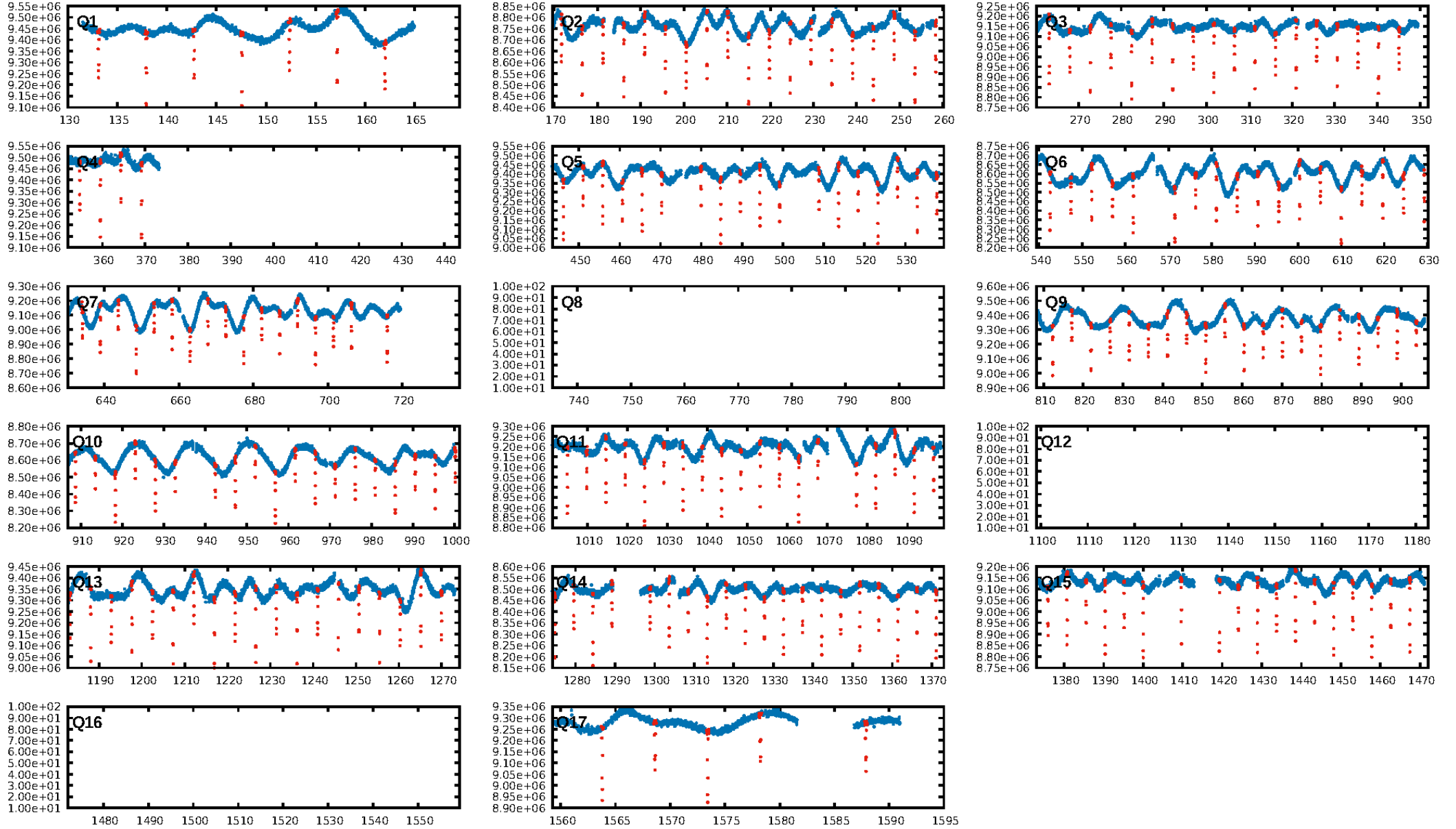
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [205/205]
GhostDiagnostic-chr: 1.685
Centroid-sig: 0.0%
Centroid-so: 0.251 arcsec [11.38σ]
OotOffset-rm: 0.024 arcsec [0.36σ]
KicOffset-rm: 0.210 arcsec [2.90σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

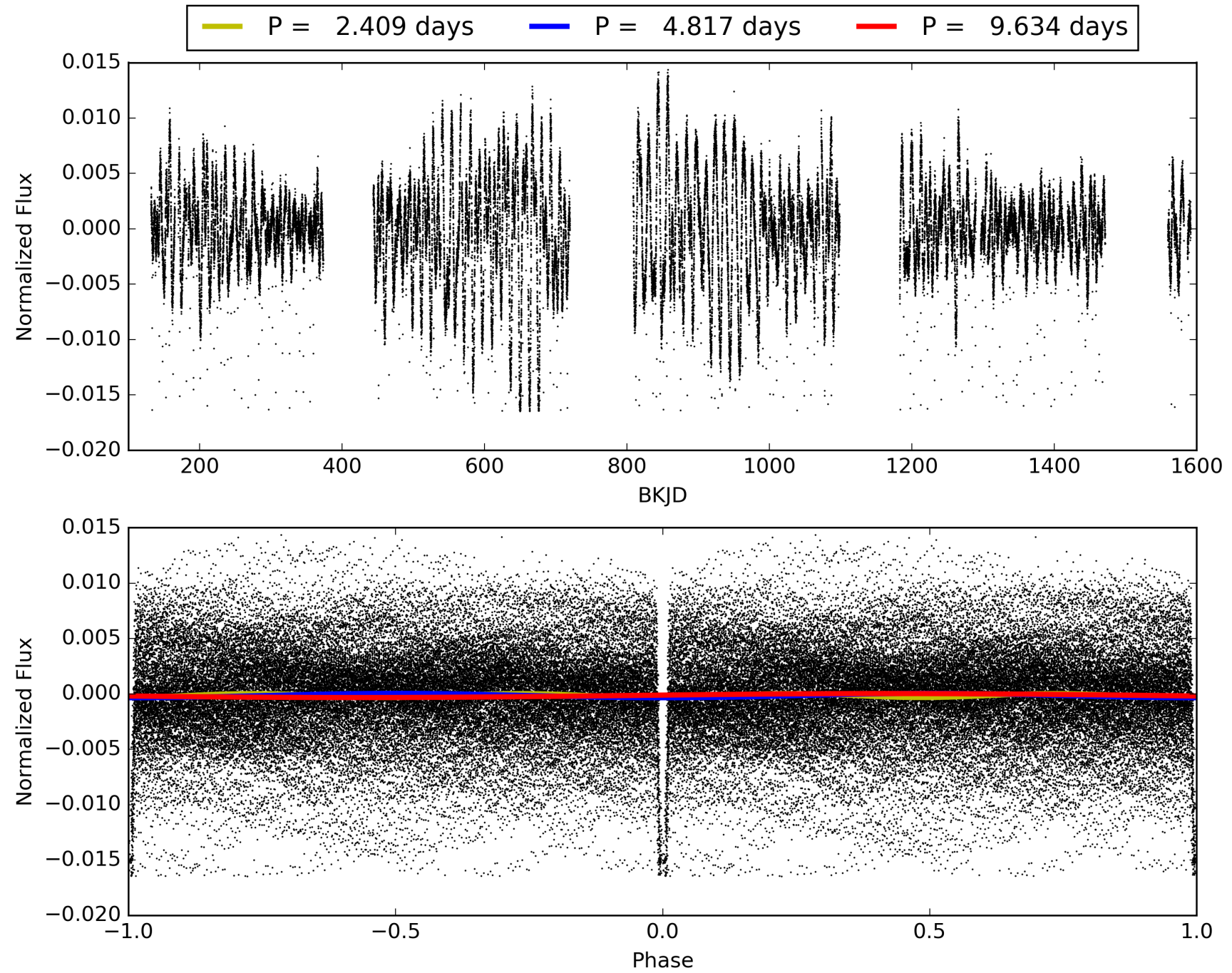
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:04:01 Z

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

TCE 011232745-01, PDC Light Curves

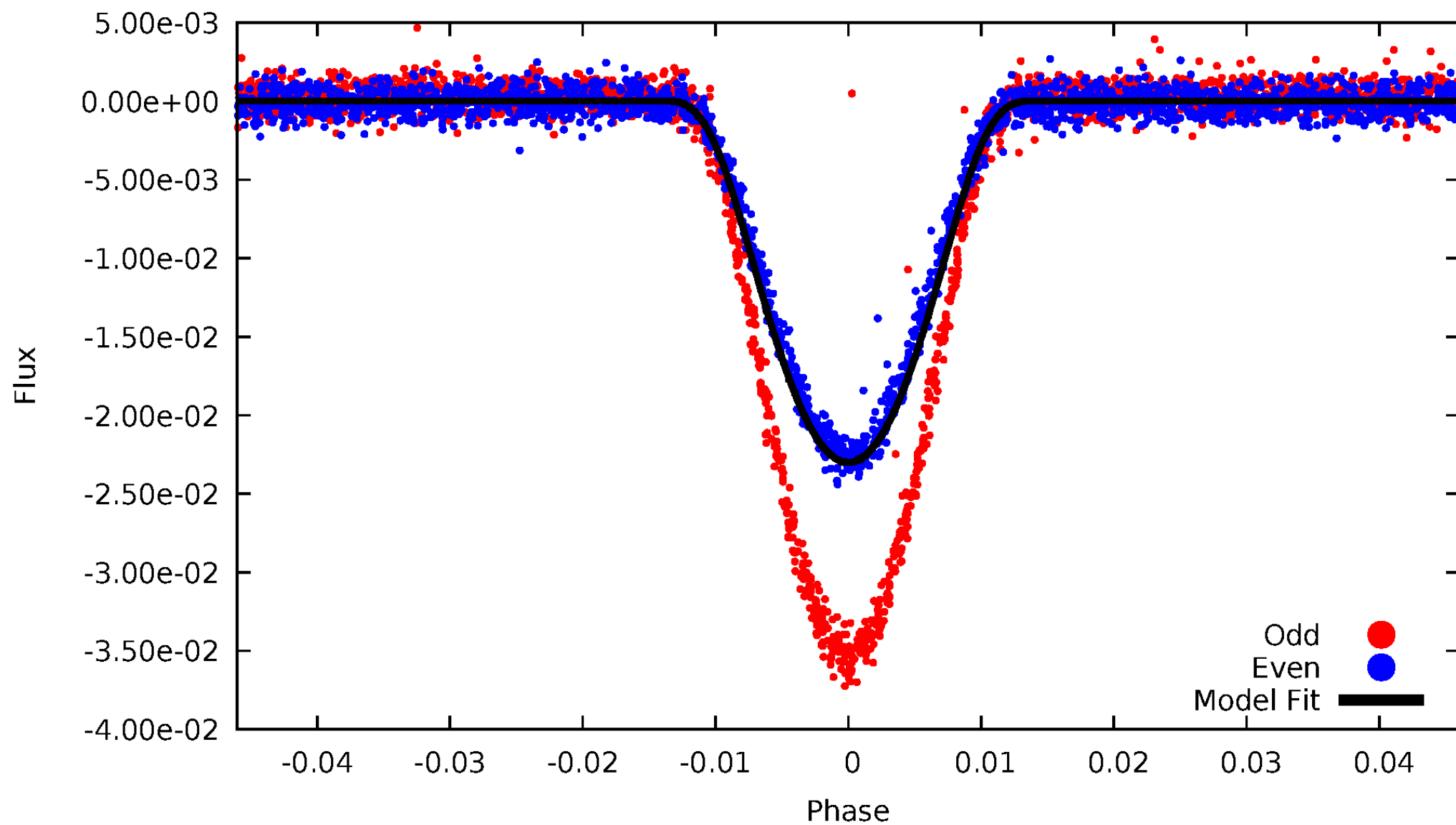


TCE 011232745-01



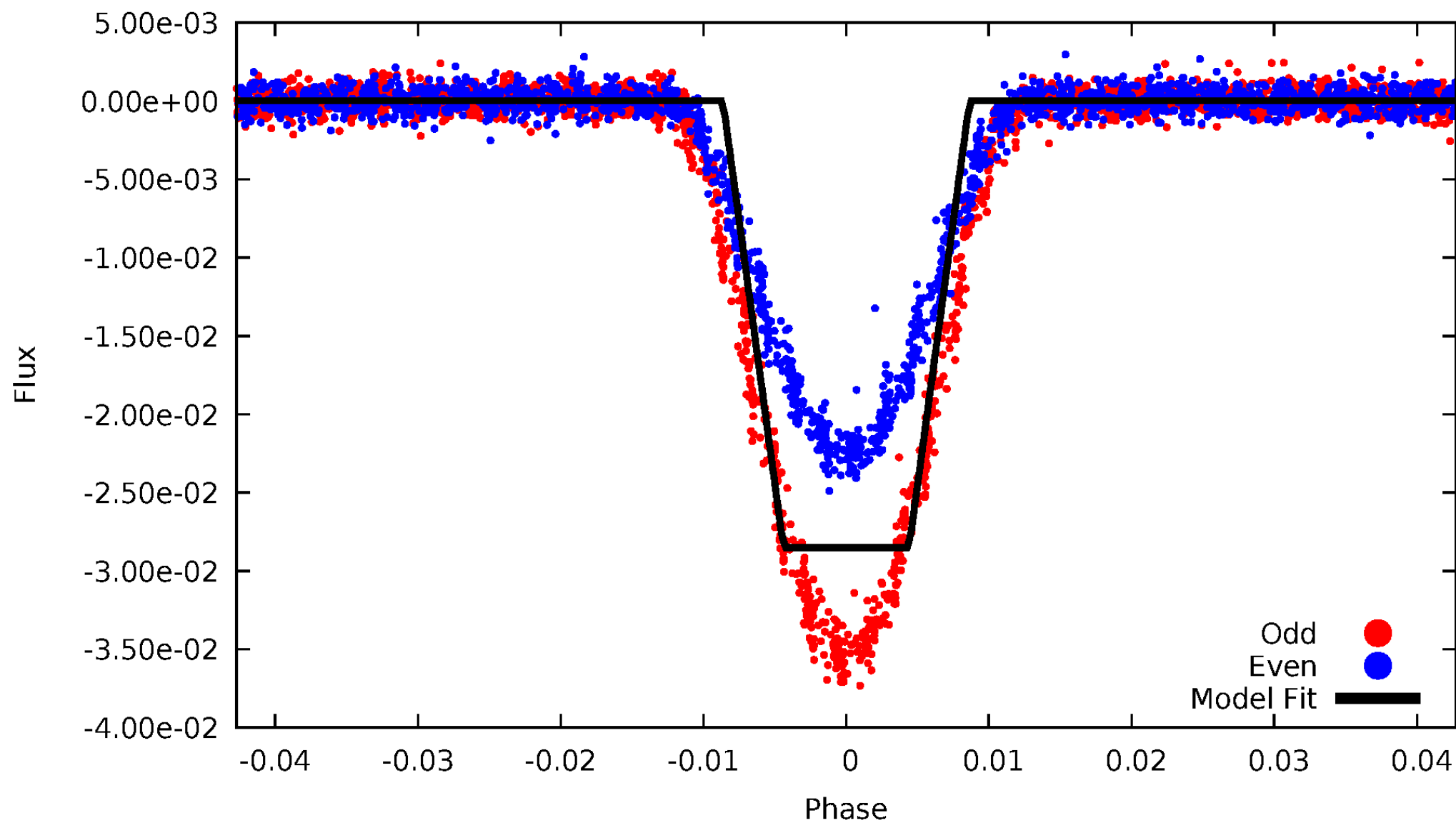
DV Odd/Even

TCE 011232745-01



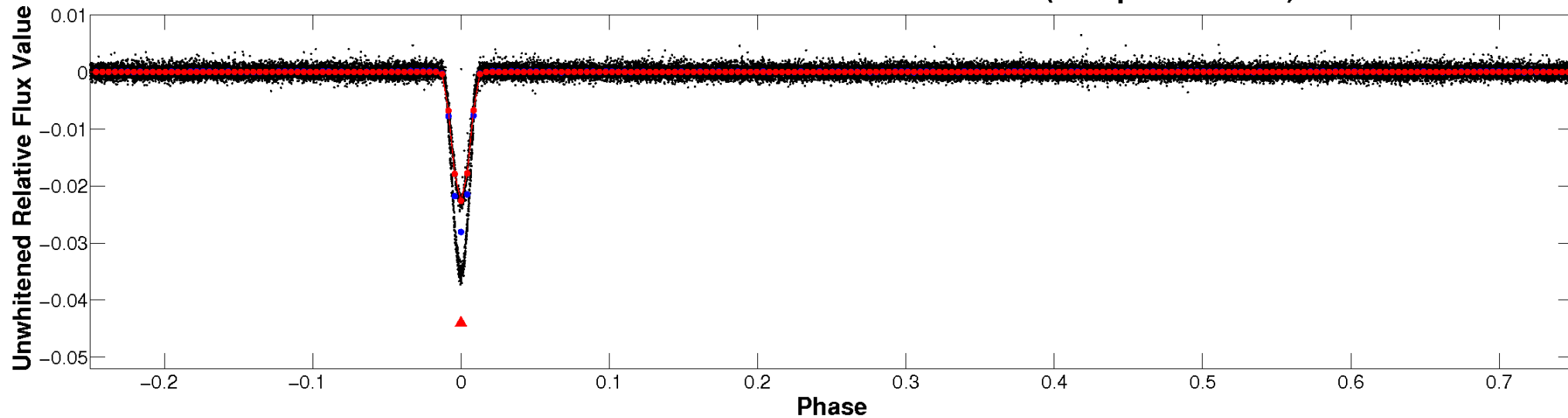
ALT Odd/Even

TCE 011232745-01

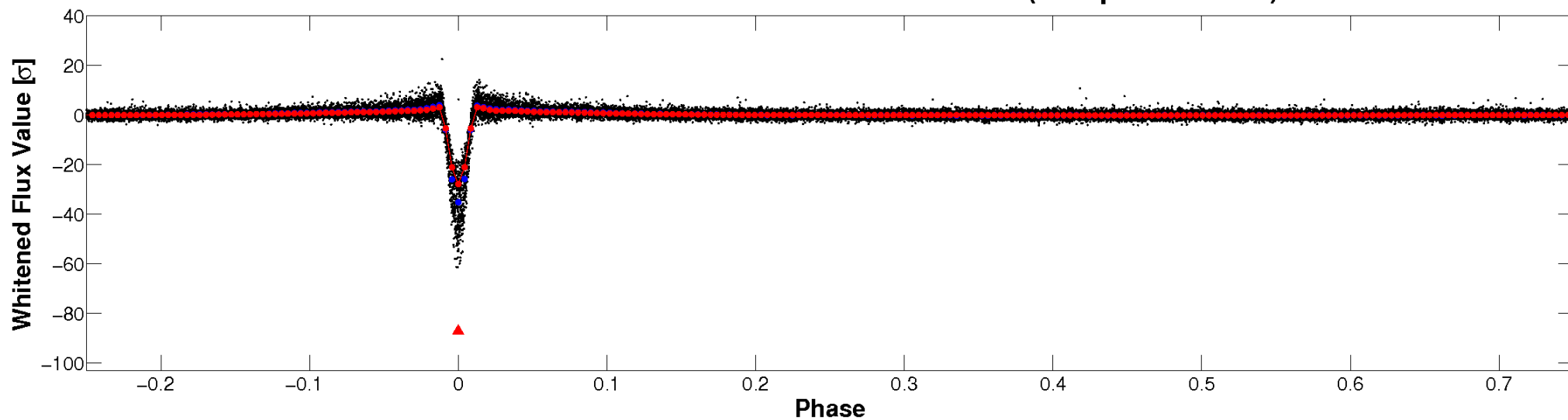


Non-Whitened Vs. Whitened Light Curve

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

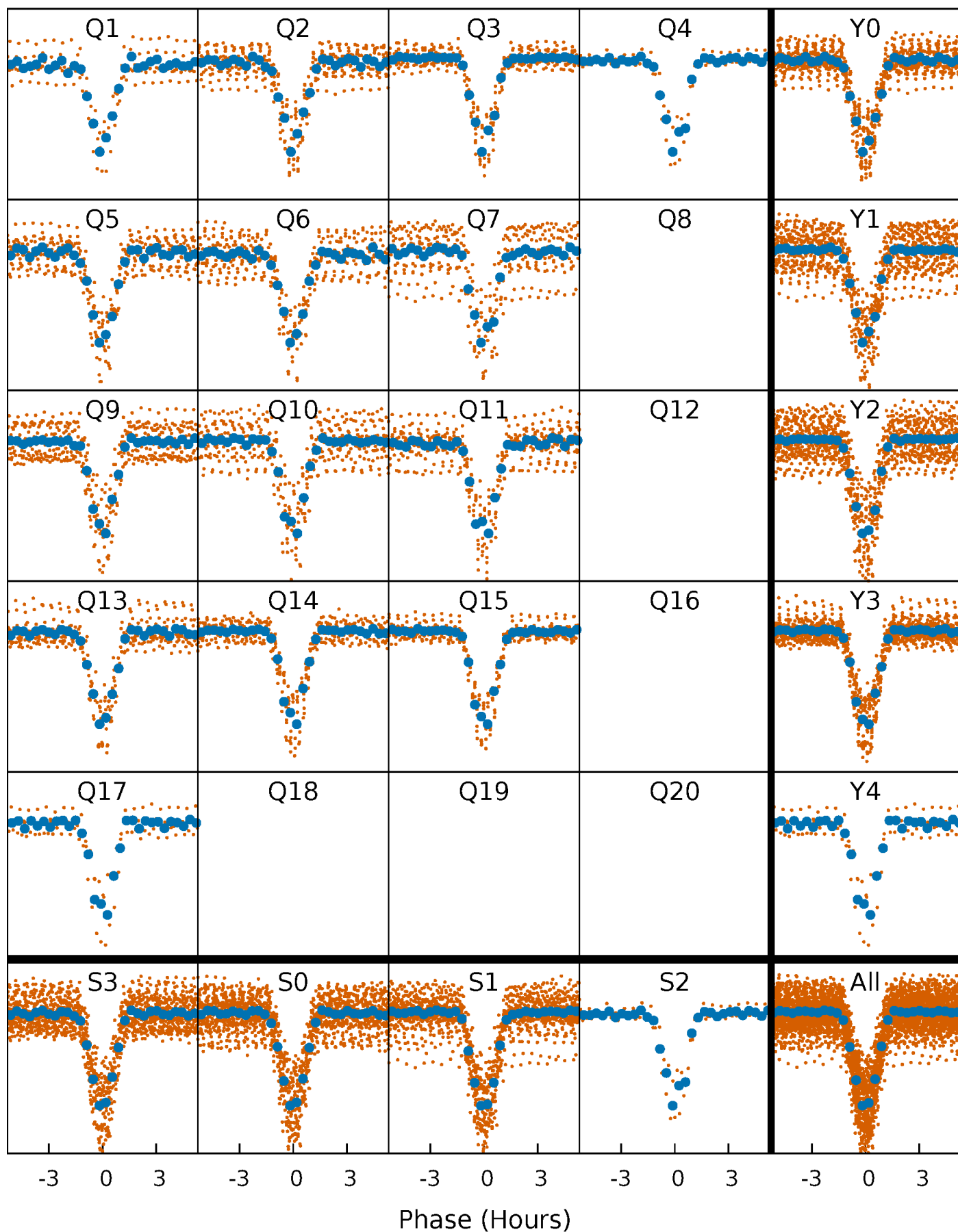


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



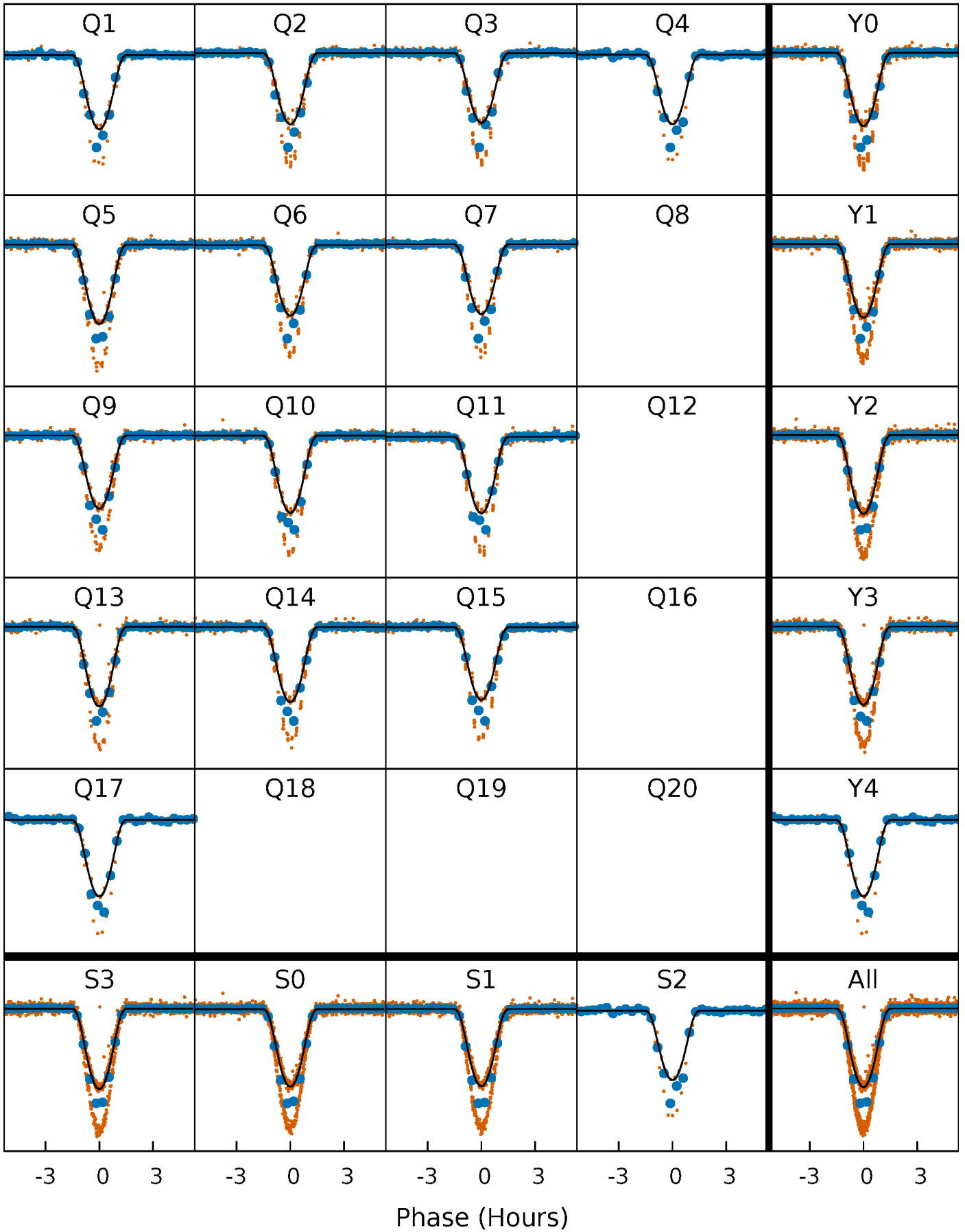
PDC Quarter-Phased Transit Curves

TCE 011232745-01 P= 4.817118 Days $T_0=133.103261$ (BKJD)



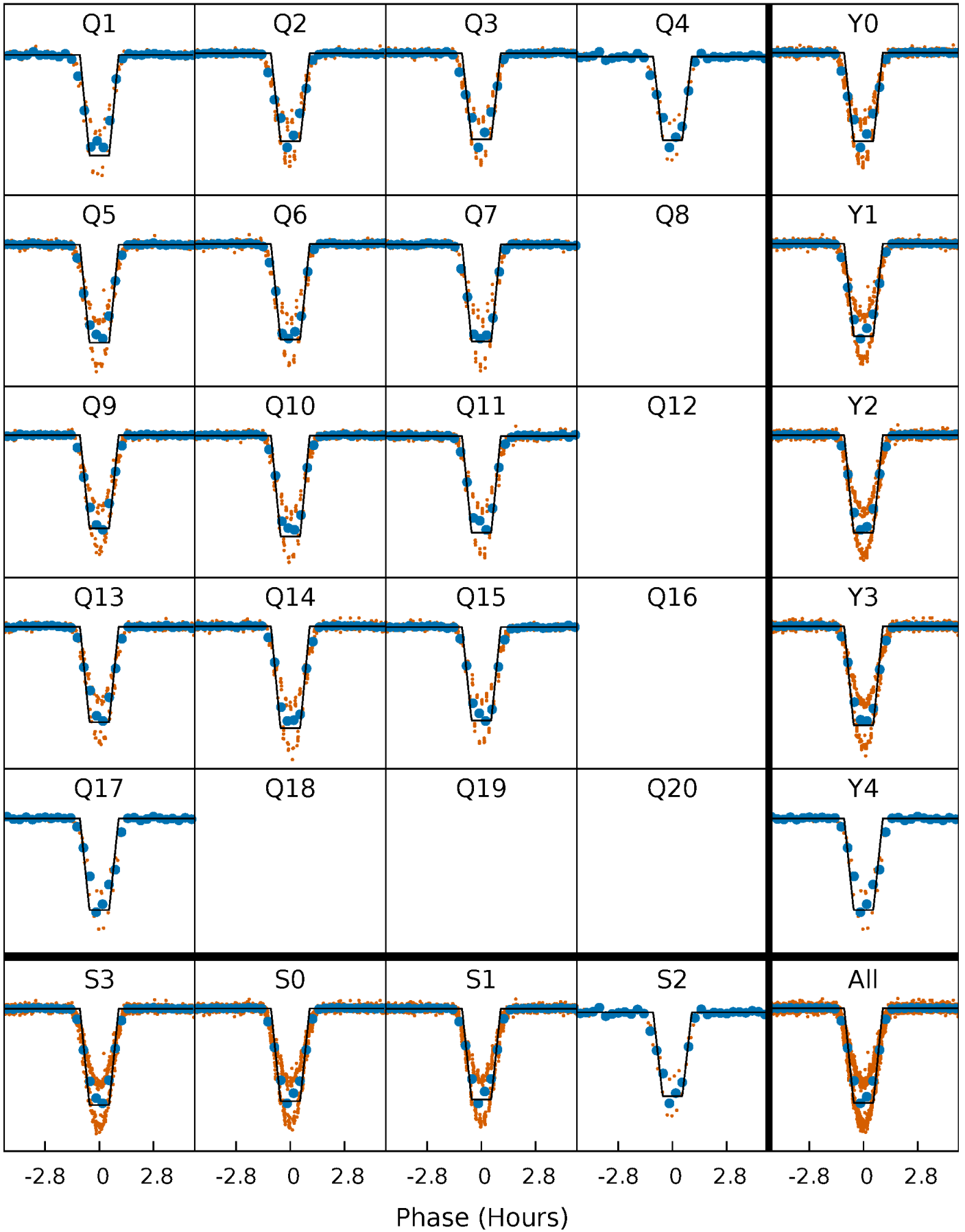
DV Quarter-Phased Transit Curves

TCE 011232745-01 P= 4.817118 Days $T_0=133.103261$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

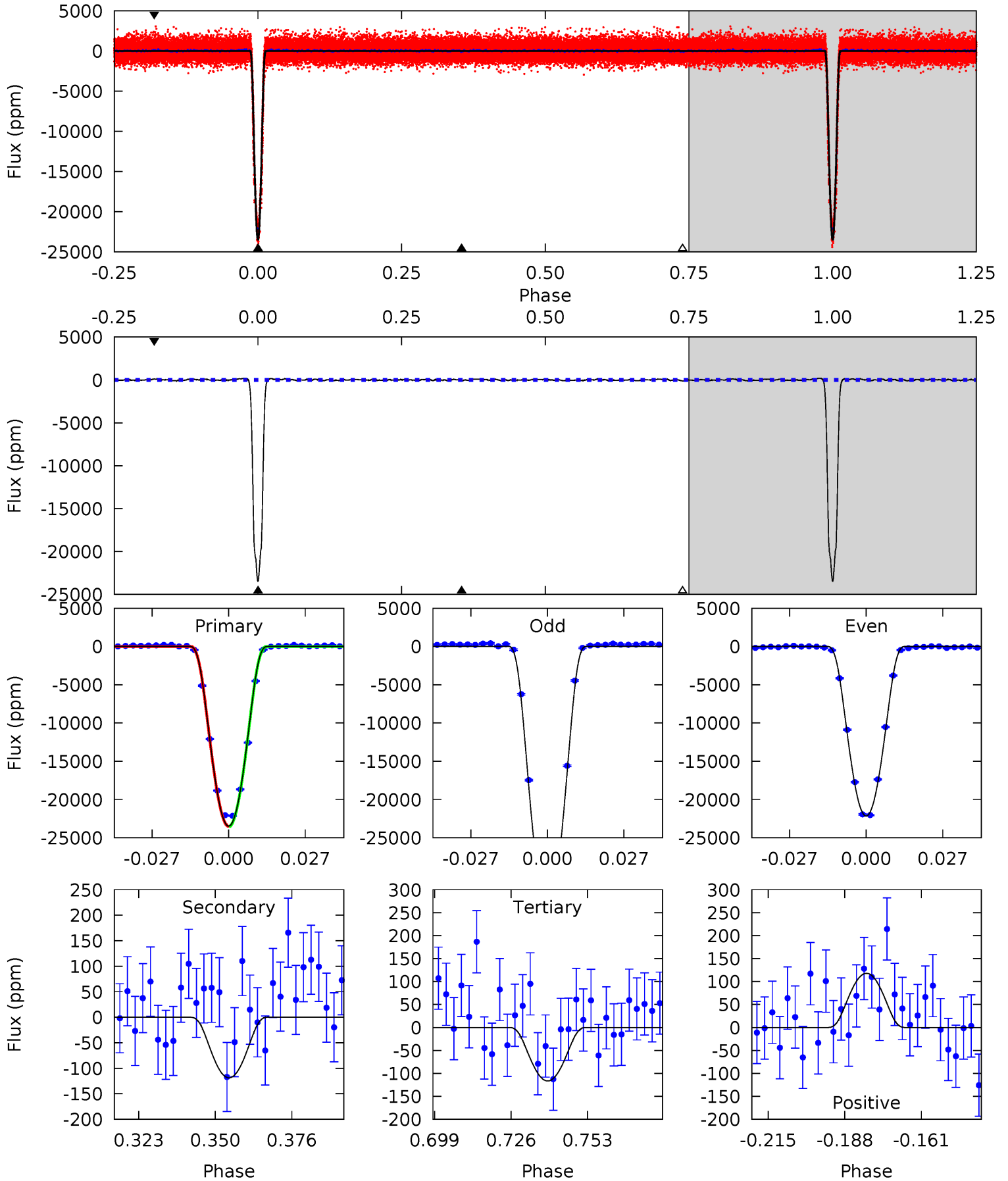
TCE 011232745-01 P= 4.817102 Days $T_0=133.105482$ (BKJD)



DV Model-Shift Uniqueness Test

011232745-01, P = 4.817118 Days, E = 128.286143 Days

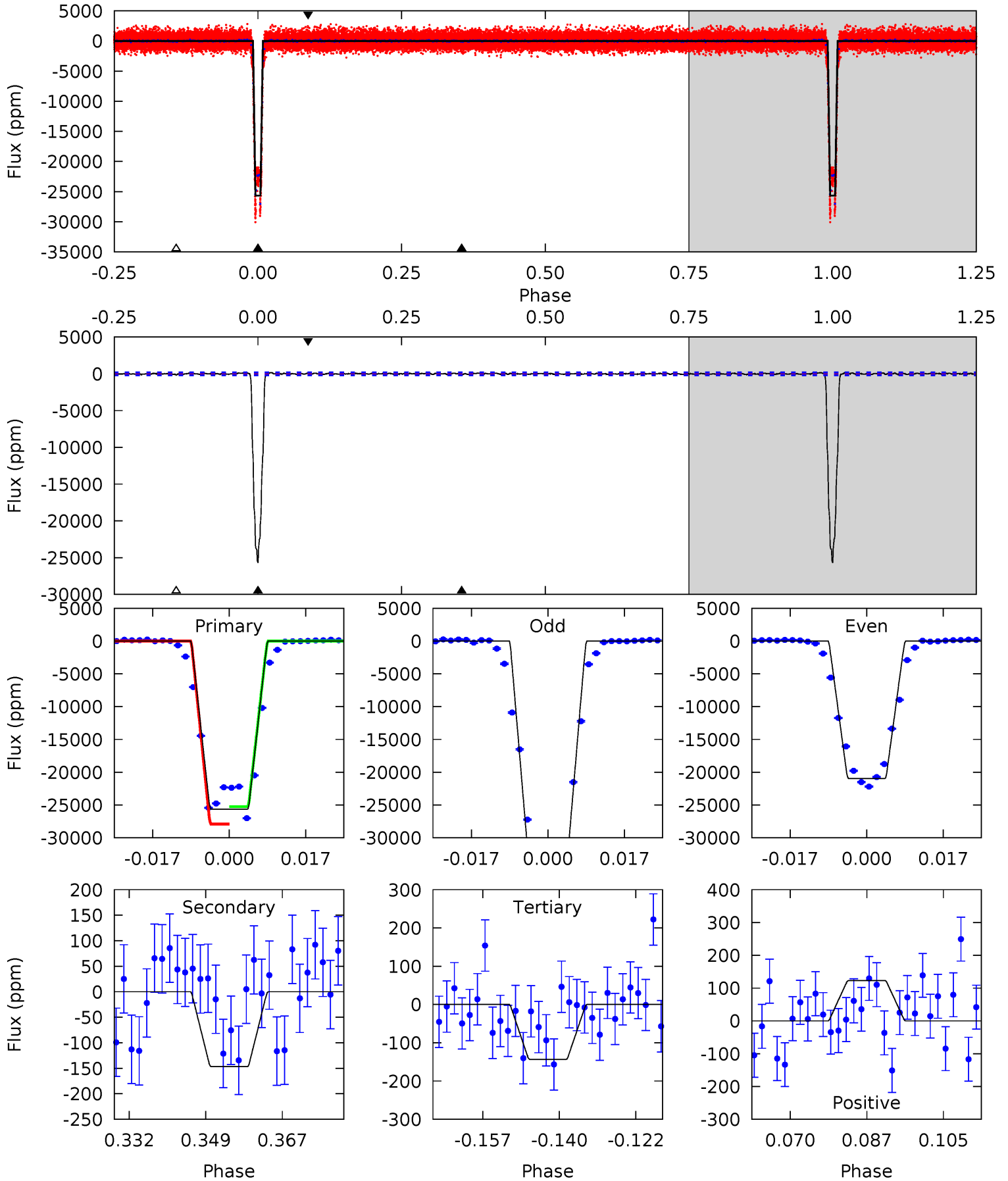
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 971.9 | 4.92 | 4.82 | 4.88 | 4.83 | 2.21 | 1.99 | 967.1 | 967.0 | 0.09 | 0.03 | 318.1 | 1.21 | 0.01 | 1.03 |



Alt Model-Shift Uniqueness Test

011232745-01, P = 4.817102 Days, E = 128.288380 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 682.7 | 3.91 | 3.82 | 3.27 | 4.92 | 2.38 | 1.23 | 678.9 | 679.4 | 0.09 | 0.63 | 222.0 | 1.18 | 0.01 | 32.7 |



Stellar Parameters For KIC 011232745

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5419^{+161}_{-161} | $4.581^{+0.032}_{-0.128}$ | $-0.100^{+0.300}_{-0.300}$ | $0.795^{+0.159}_{-0.068}$ | $0.885^{+0.081}_{-0.099}$ | $2.477^{+0.430}_{-0.943}$ |
| | +3%/-3% | +1%/-3% | +300%/-300% | +20%/-9% | +9%/-11% | +17%/-38% |
| 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 011232745-01 / KOI 7421.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|-------------------------|--------------------|---------------------|---------------------------|
| DV | -119 ± 24 | $17.19^{+1.74}_{-1.32}$ | 1317^{+63}_{-59} | 2074^{+91}_{-122} | $0.620^{+0.175}_{-0.147}$ |
| Alt. | -147 ± 38 | $15.04^{+1.64}_{-1.24}$ | 1312^{+64}_{-54} | 2252^{+98}_{-137} | $0.988^{+0.330}_{-0.304}$ |

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

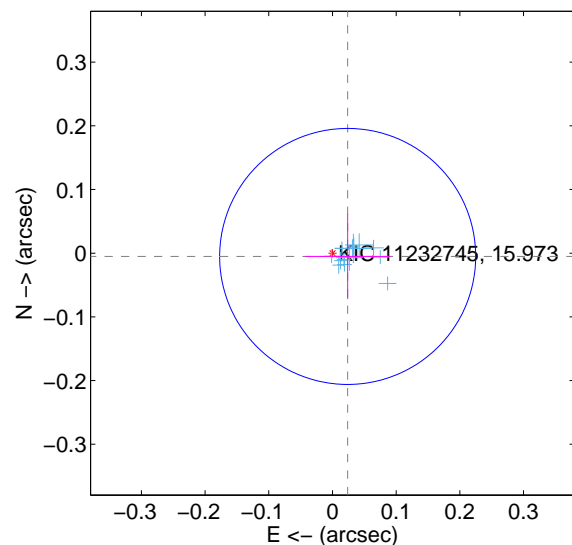
Supplemental centroid analysis for 011232745-01. Kepler magnitude: 15.97. Transit SNR 445.10

There are 14 quarters with good PRF difference image offsets

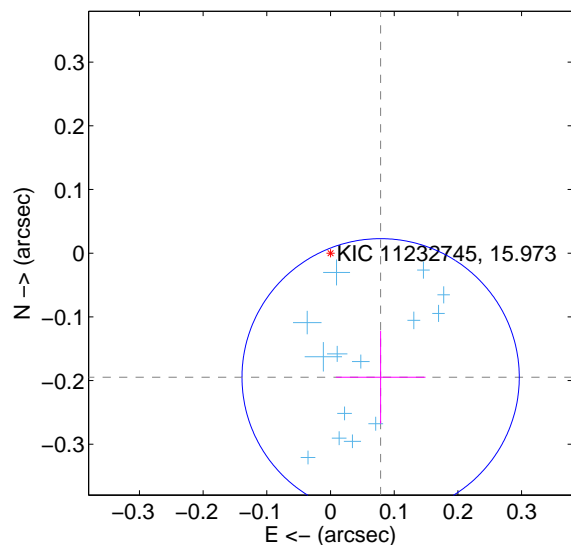
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.024 ± 0.067 | 0.36 | -0.024 ± 0.067 | -0.005 ± 0.067 |
| PRF-fit source offset from KIC position | 0.210 ± 0.073 | 2.90 | -0.079 ± 0.070 | -0.195 ± 0.073 |
| photometric centroid source offset | 0.25 ± 0.02 | 11.38 | 0.07 ± 0.02 | -0.24 ± 0.02 |

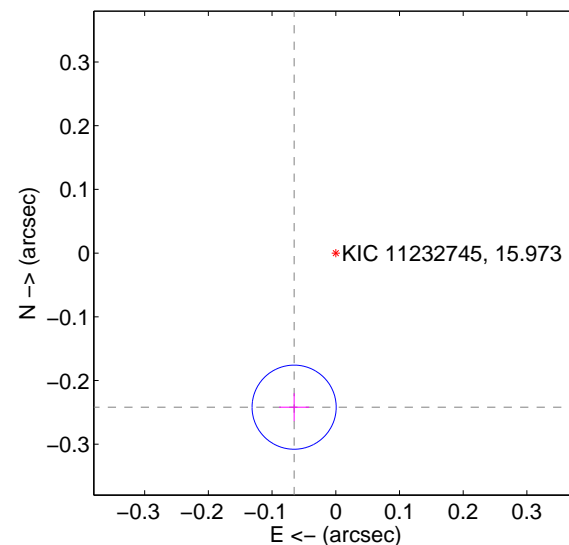
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

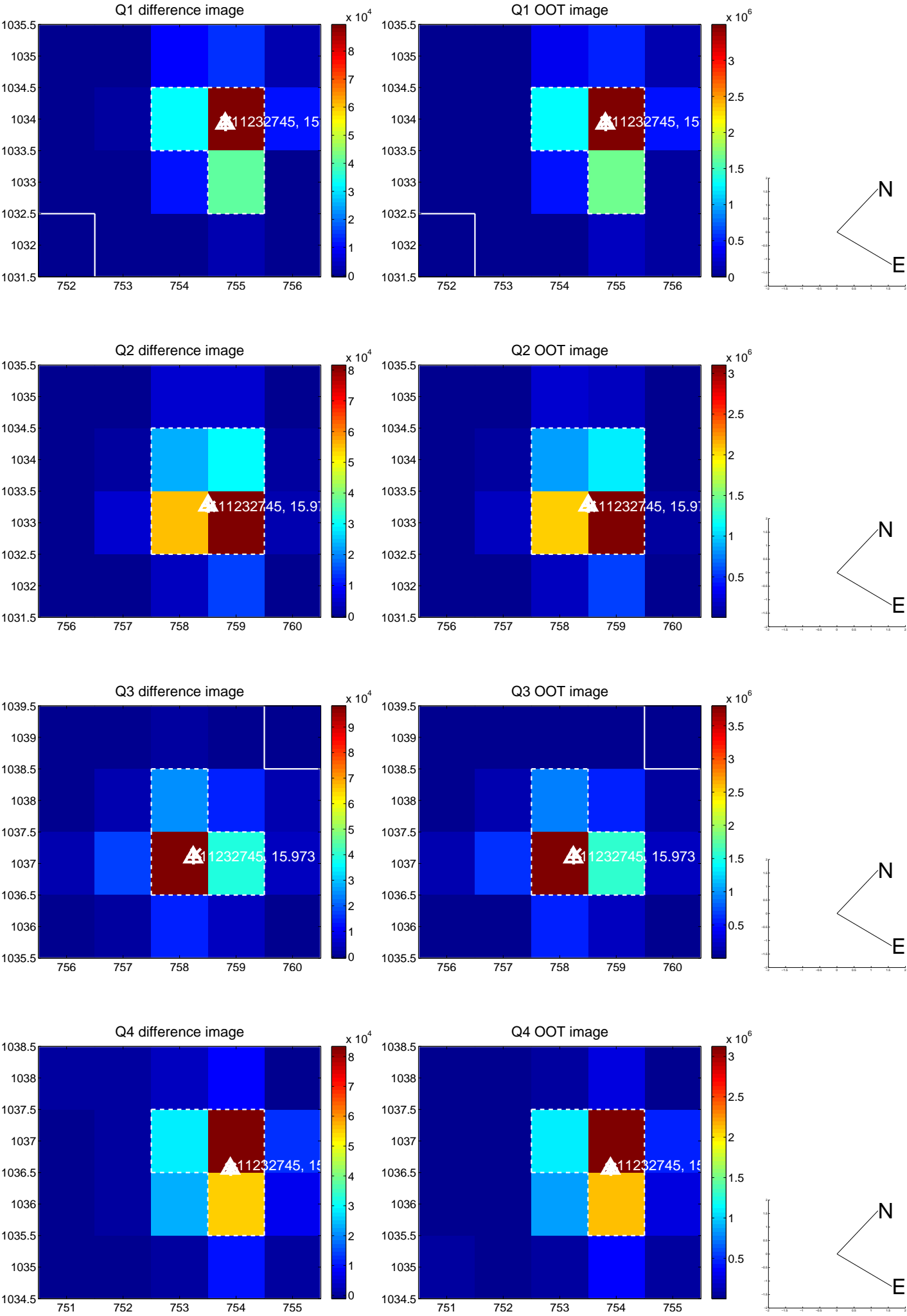


offset from photometric centroids

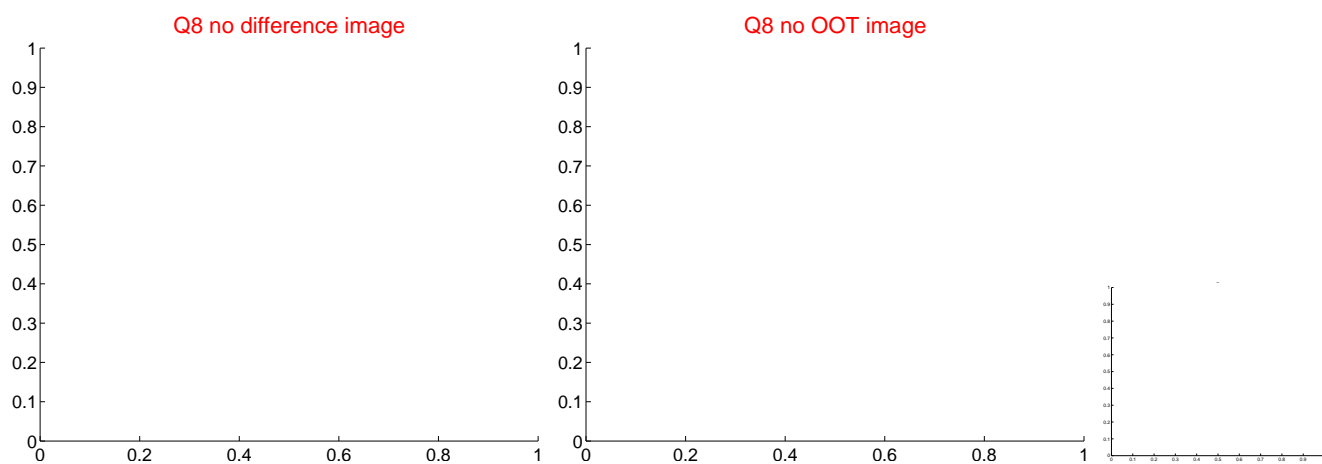
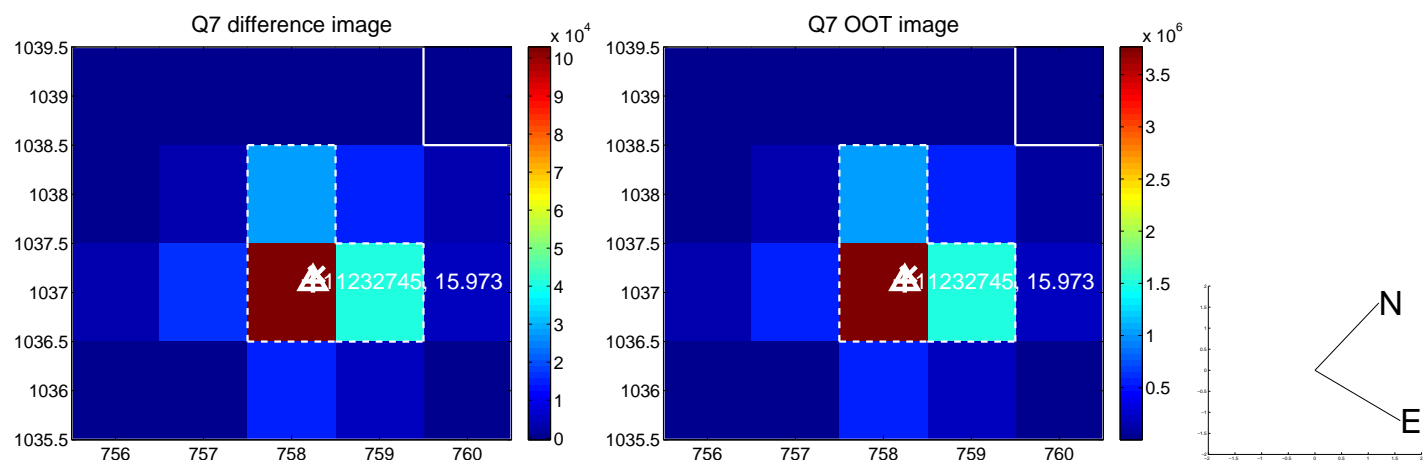
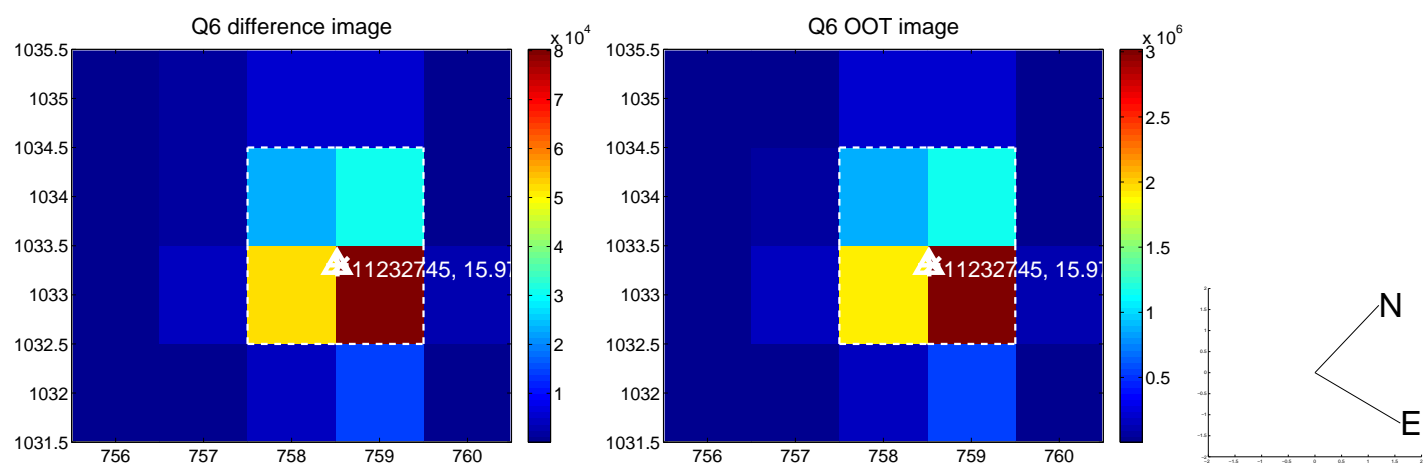
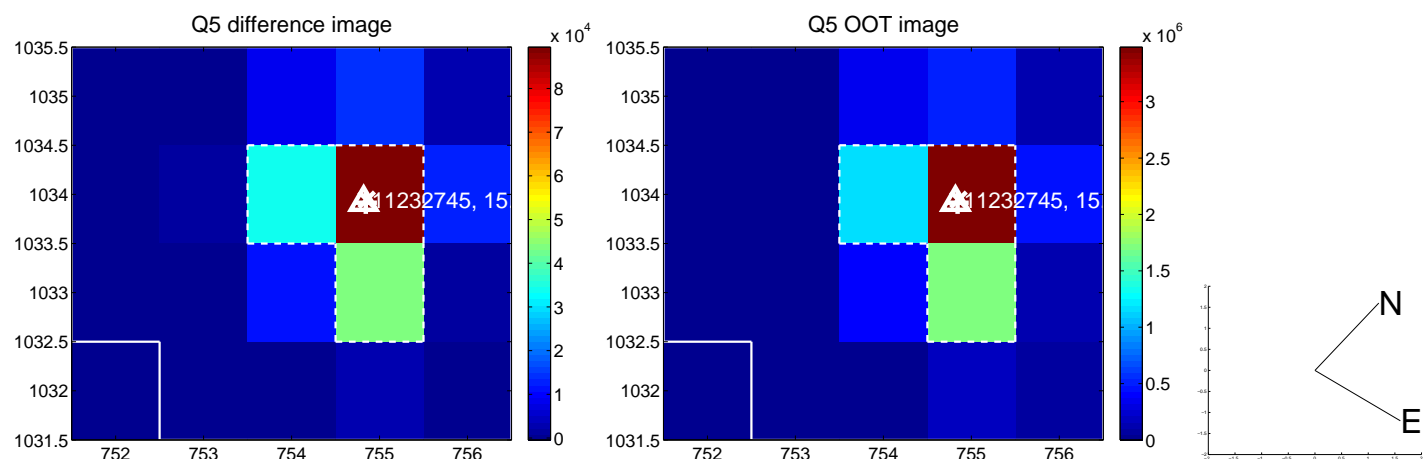


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

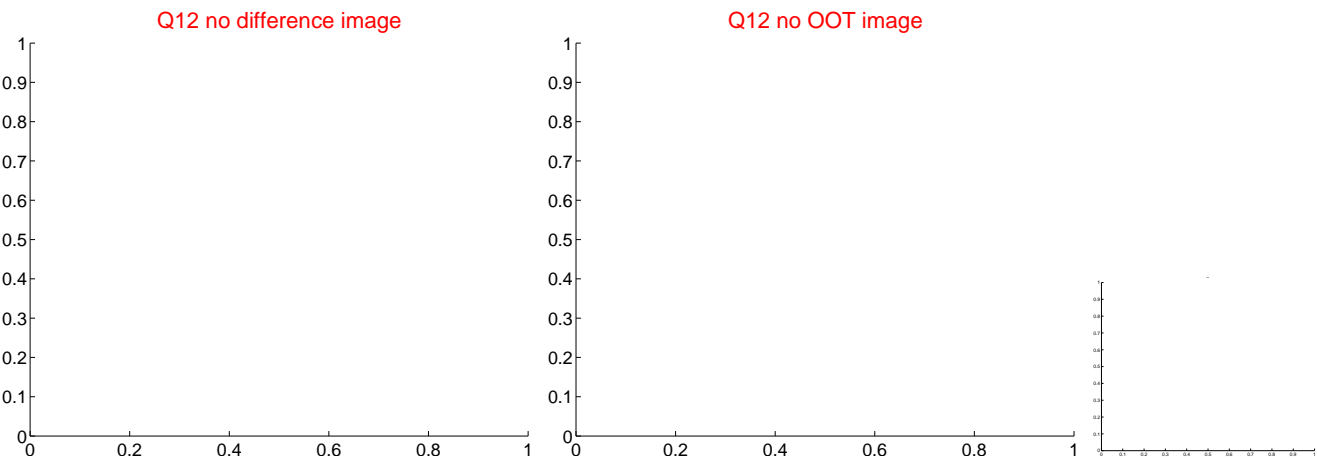
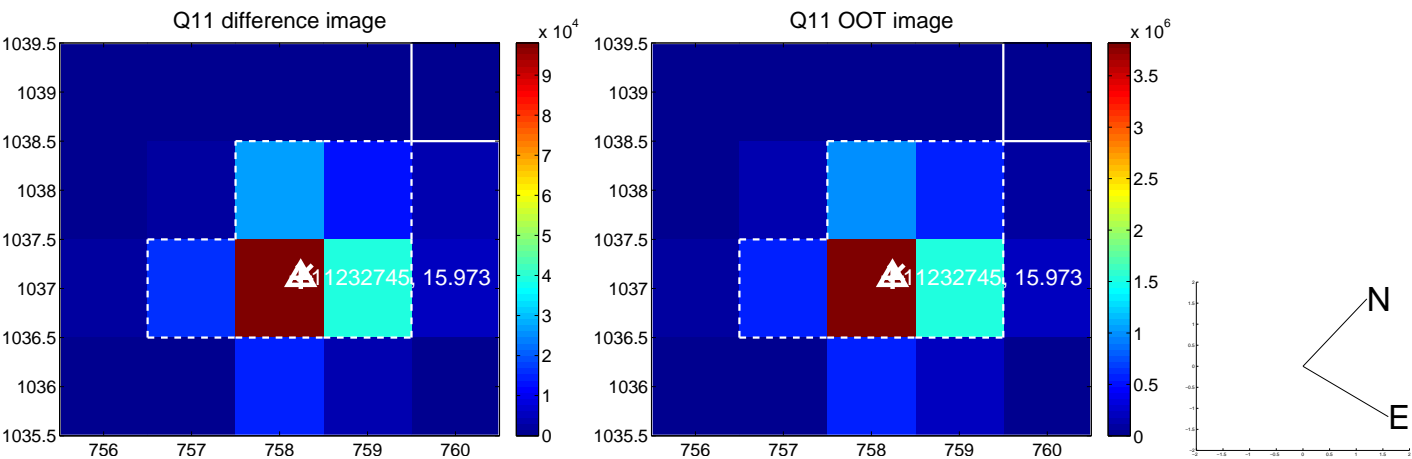
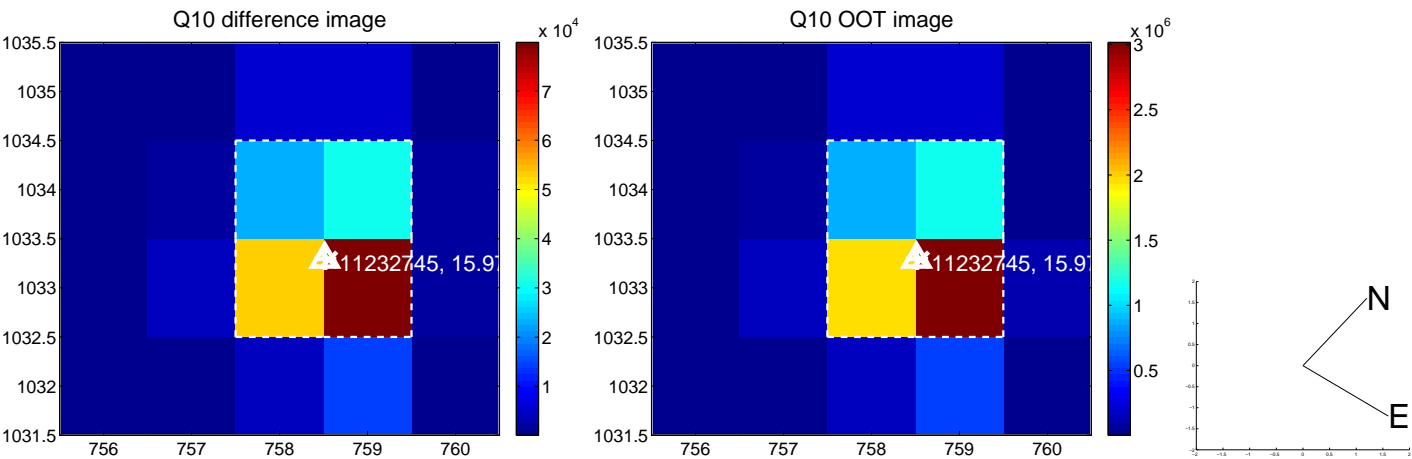
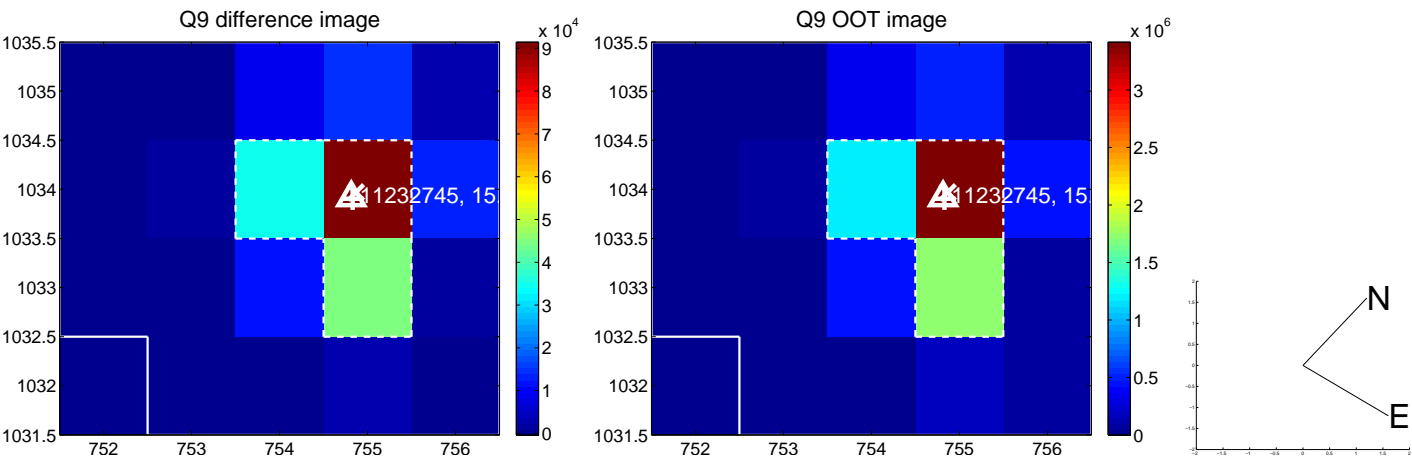
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



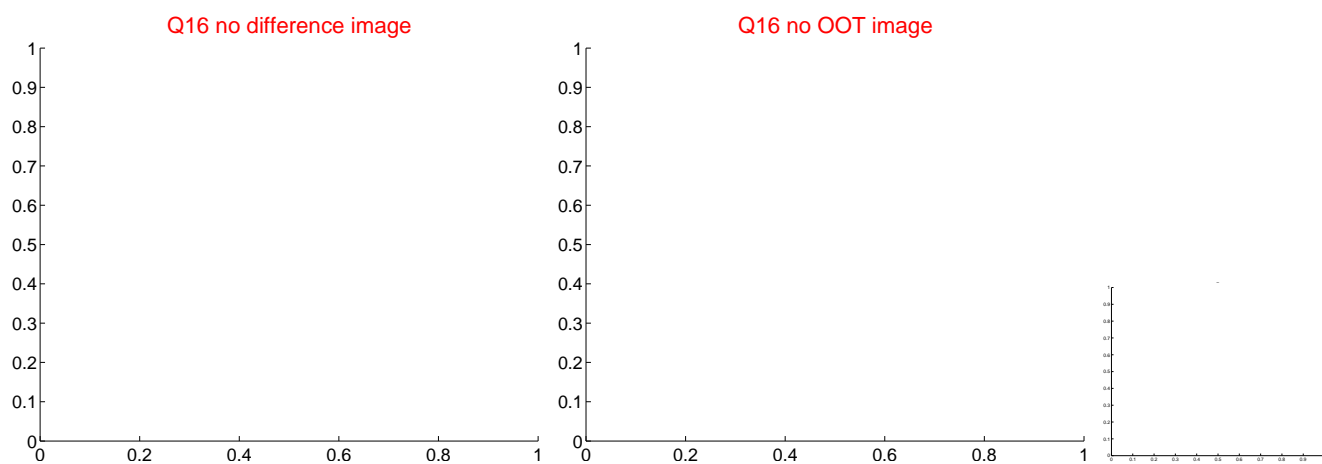
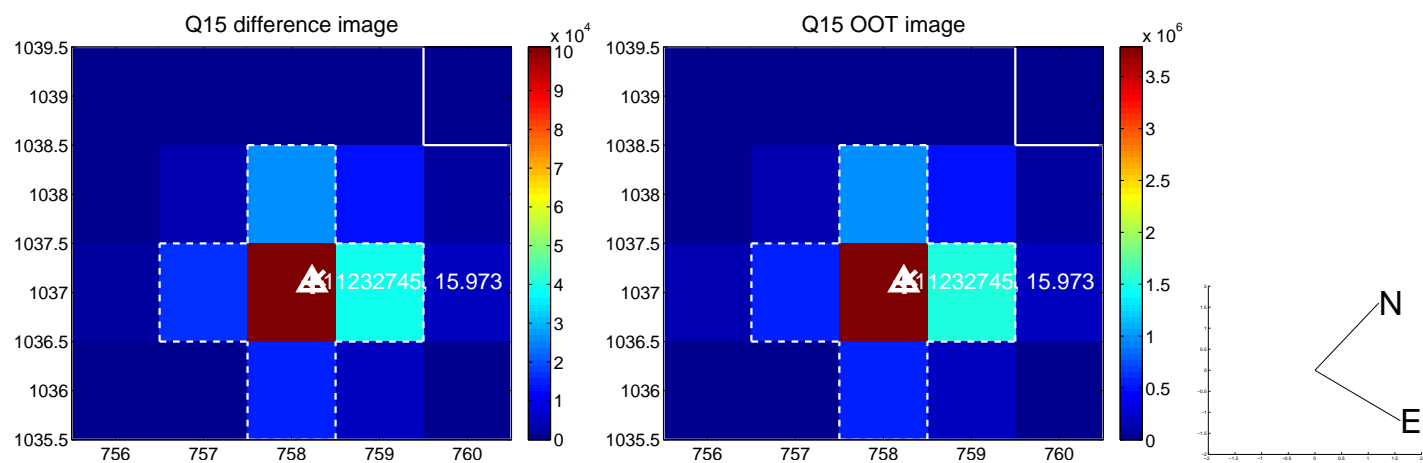
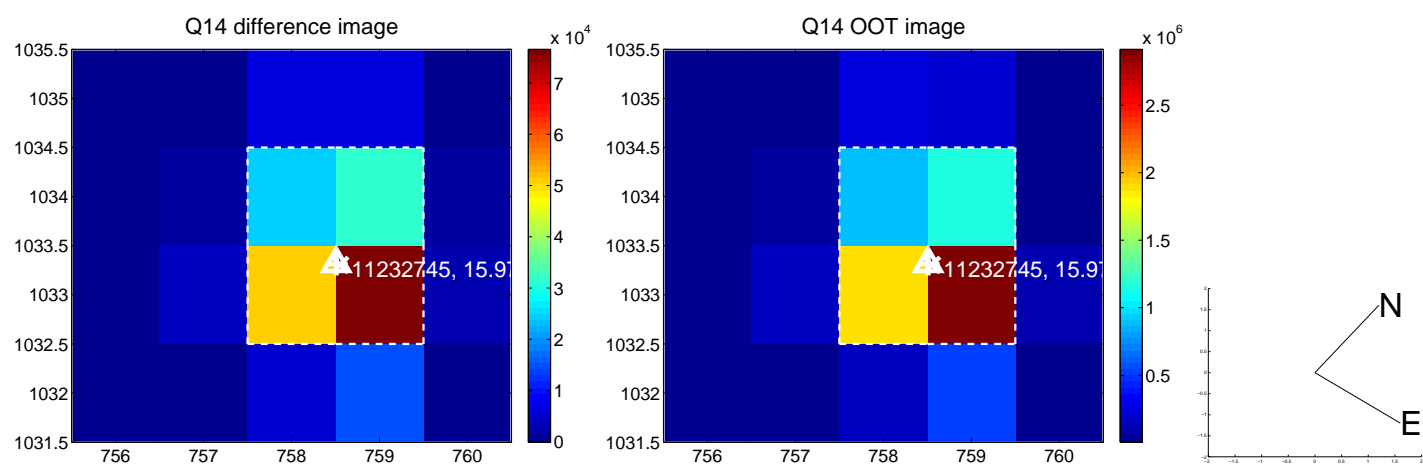
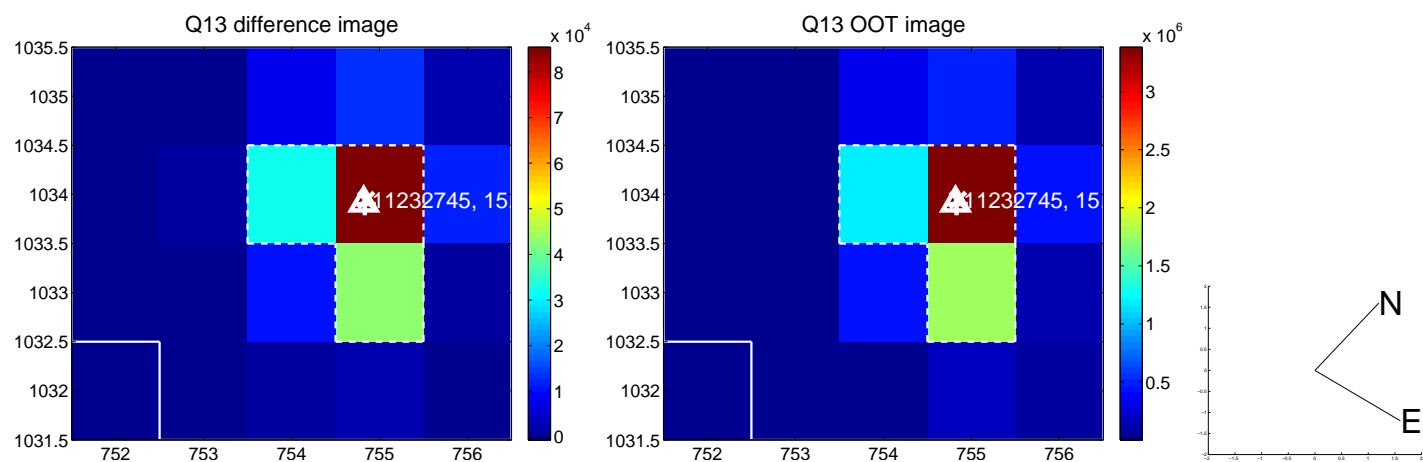
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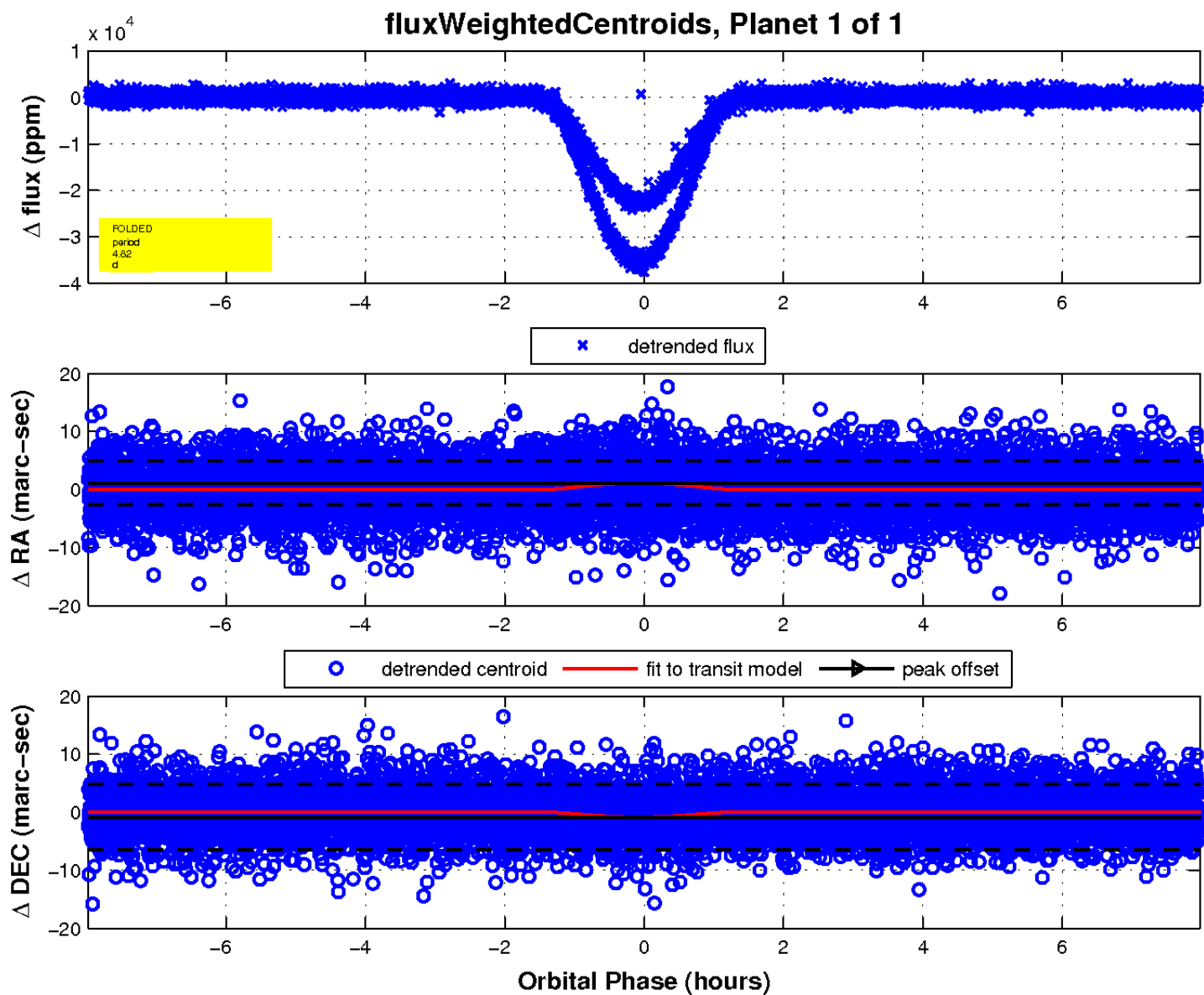
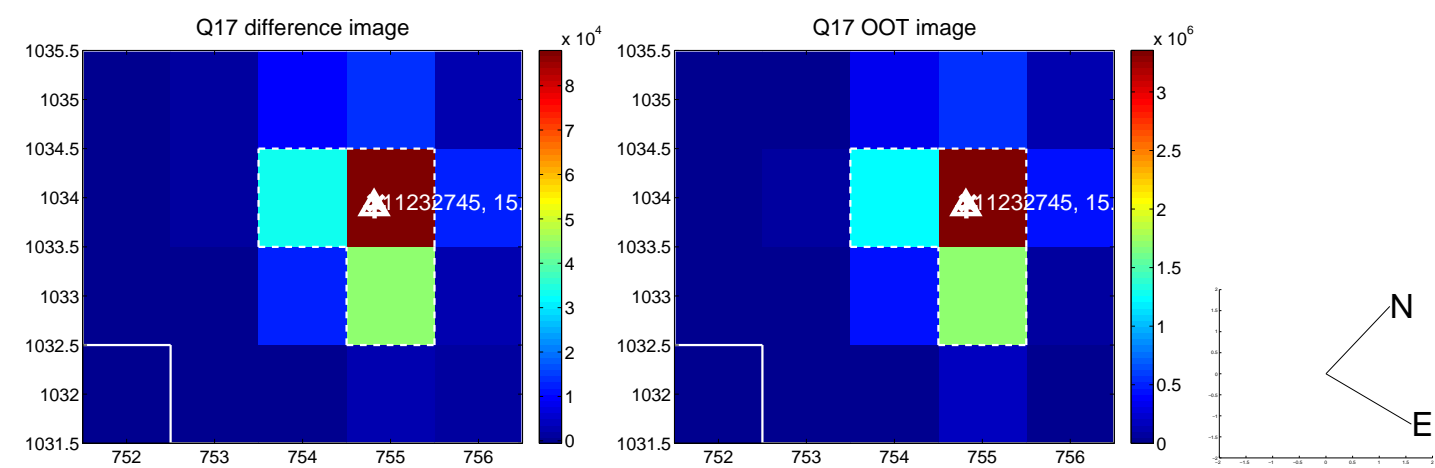
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

