

KIC 005371234

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005371234-01 | OBS | No | 495.167657 | 245.200313 | 245.9 | 15.863 | 7.3 | 6.8 | 0.73 | 5205 | 1.23 | 0.30 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 005371234-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS |

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

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

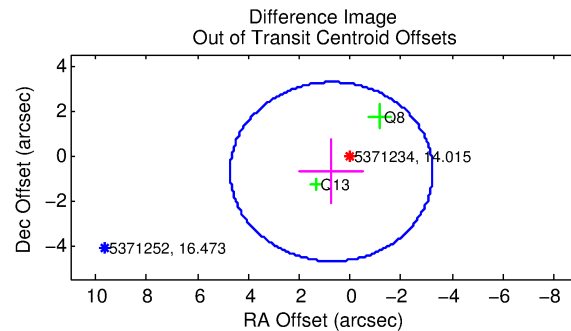
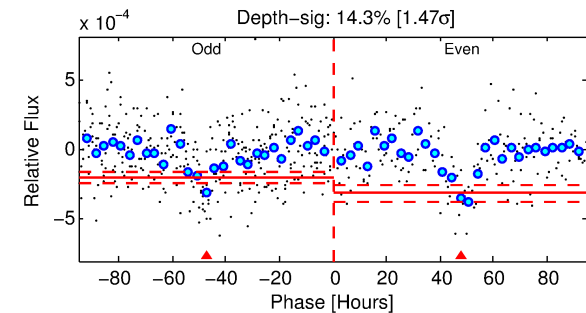
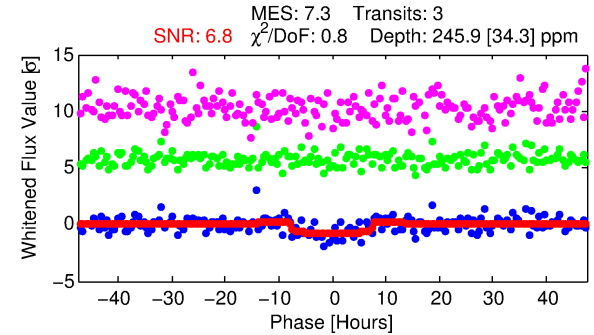
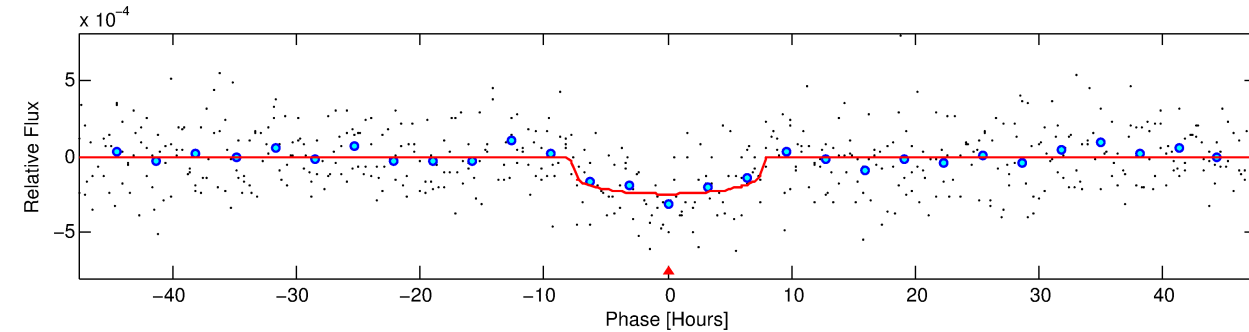
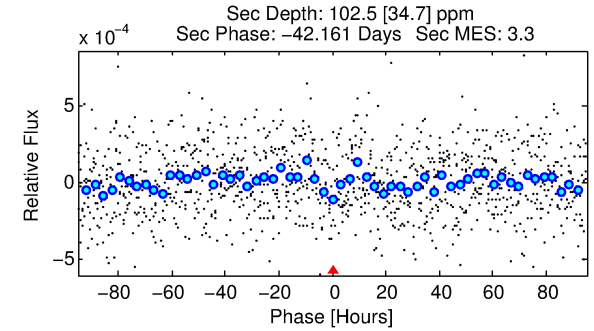
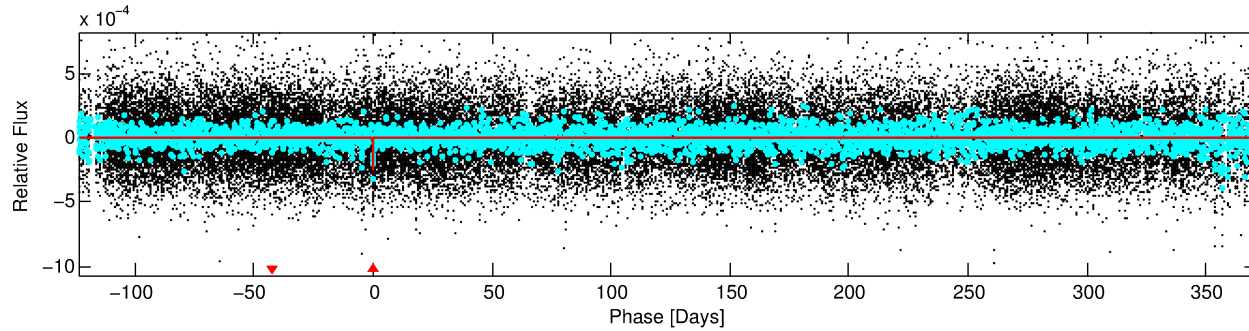
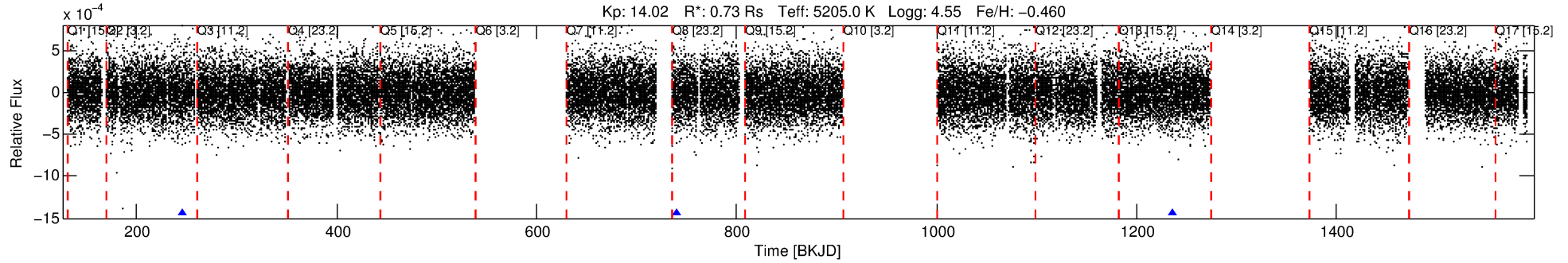
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005371234-01

No Significant Match Found

DV One-Page Summary

KIC: 5371234 Candidate: 1 of 1 Period: 495.168 d



DV Fit Results:

Period = 495.16766 [0.01696] d
Epoch = 245.2003 [0.0217] BKJD
Rp/R* = 0.0153 [0.0078]
a/R* = 174.55 [350.18]
b = 0.70 [1.46]
Seff = 0.30 [0.06]
Teq = 189 [9] K
Rp = 1.23 [0.64] Re
a = 1.0846 [0.1159] AU
Ag = 44070.41 [47925.26] [0.92σ]
Teffp = 4229 [1144] K [3.53σ]

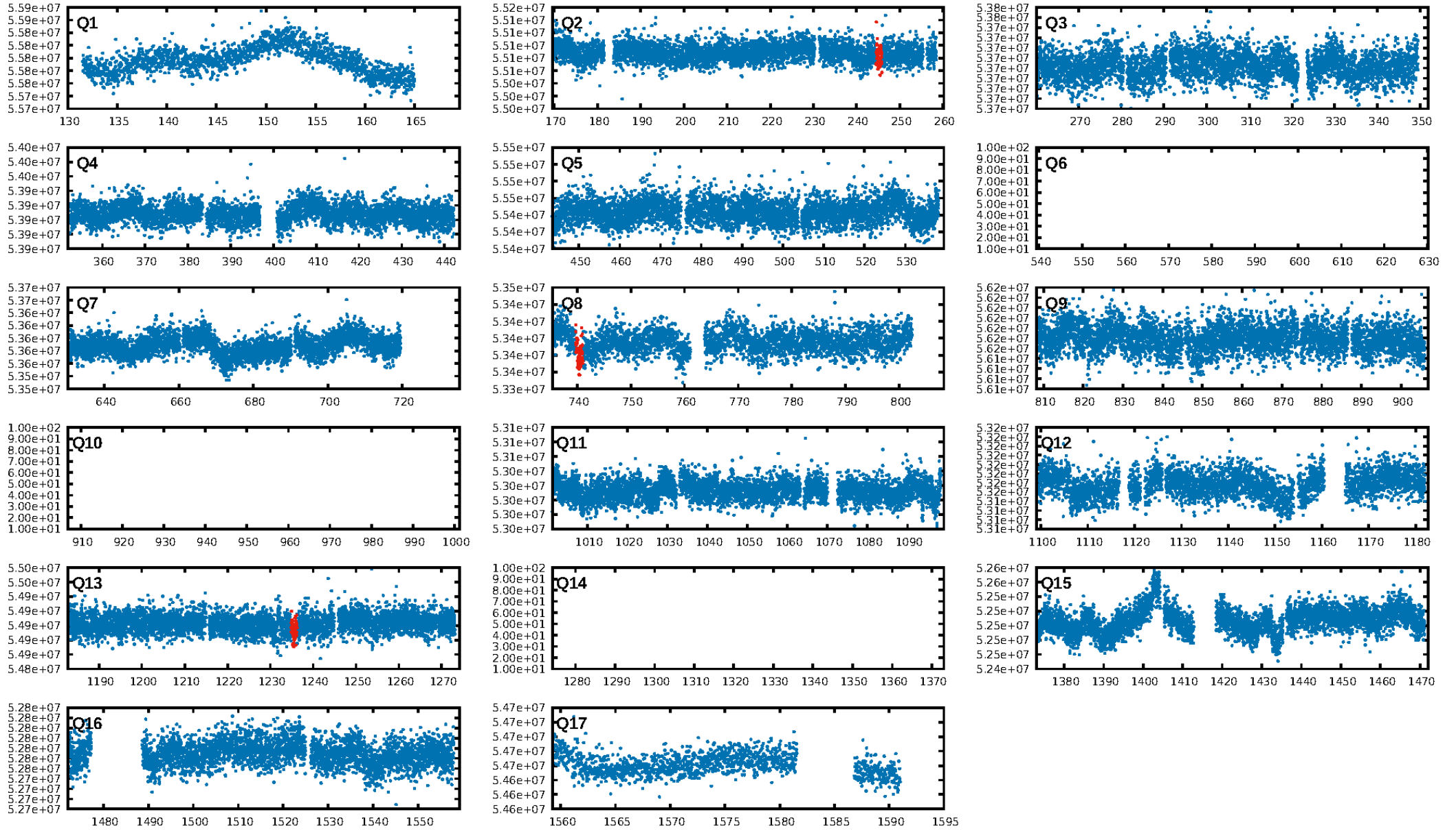
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.85e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -13.99
Centroid-sig: 2.2%
Centroid-so: 3.762 arcsec [1.65σ]
OotOffset-rm: 1.028 arcsec [0.77σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.998 arcsec [0.52σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

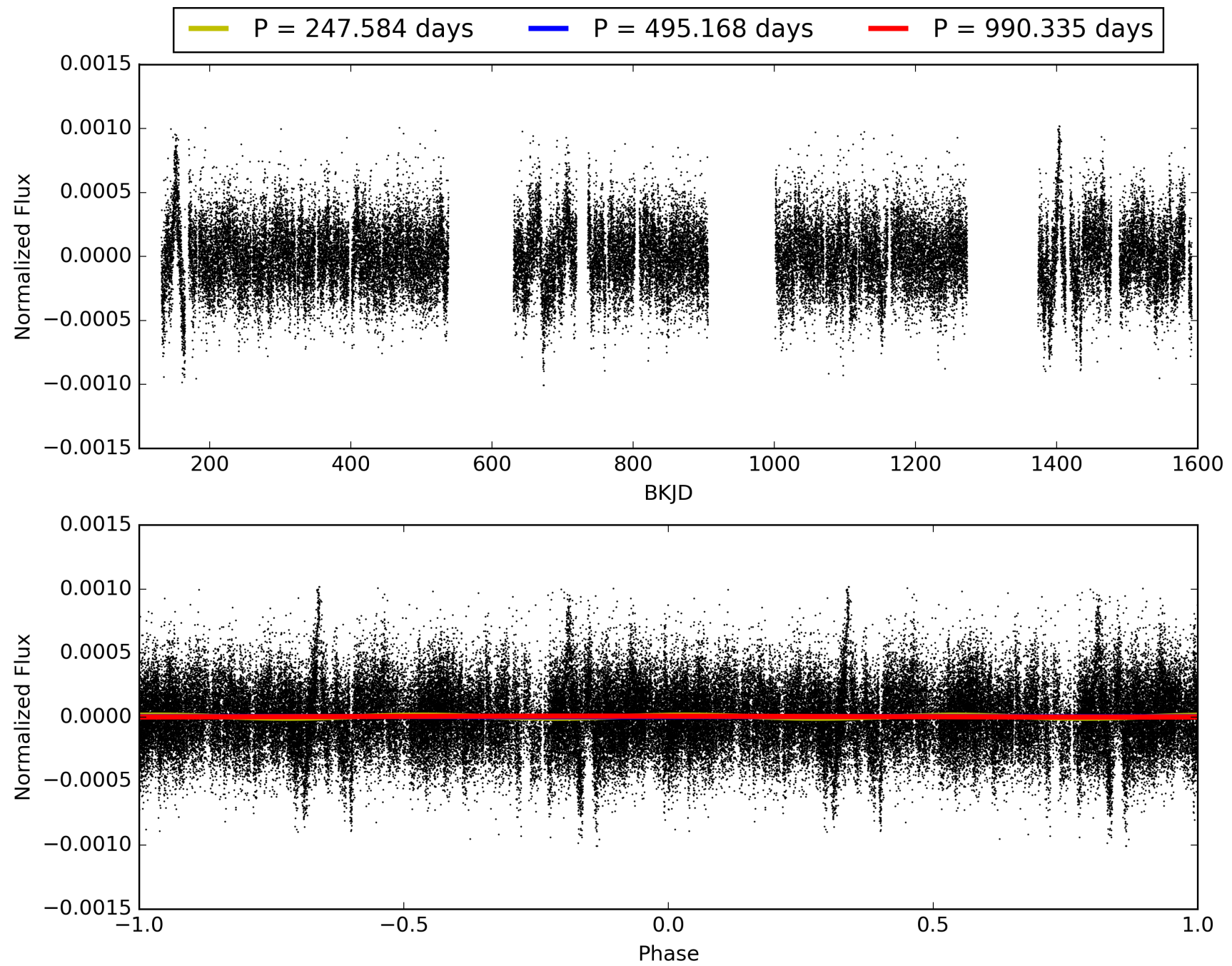
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:47:22 Z

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

TCE 005371234-01, PDC Light Curves

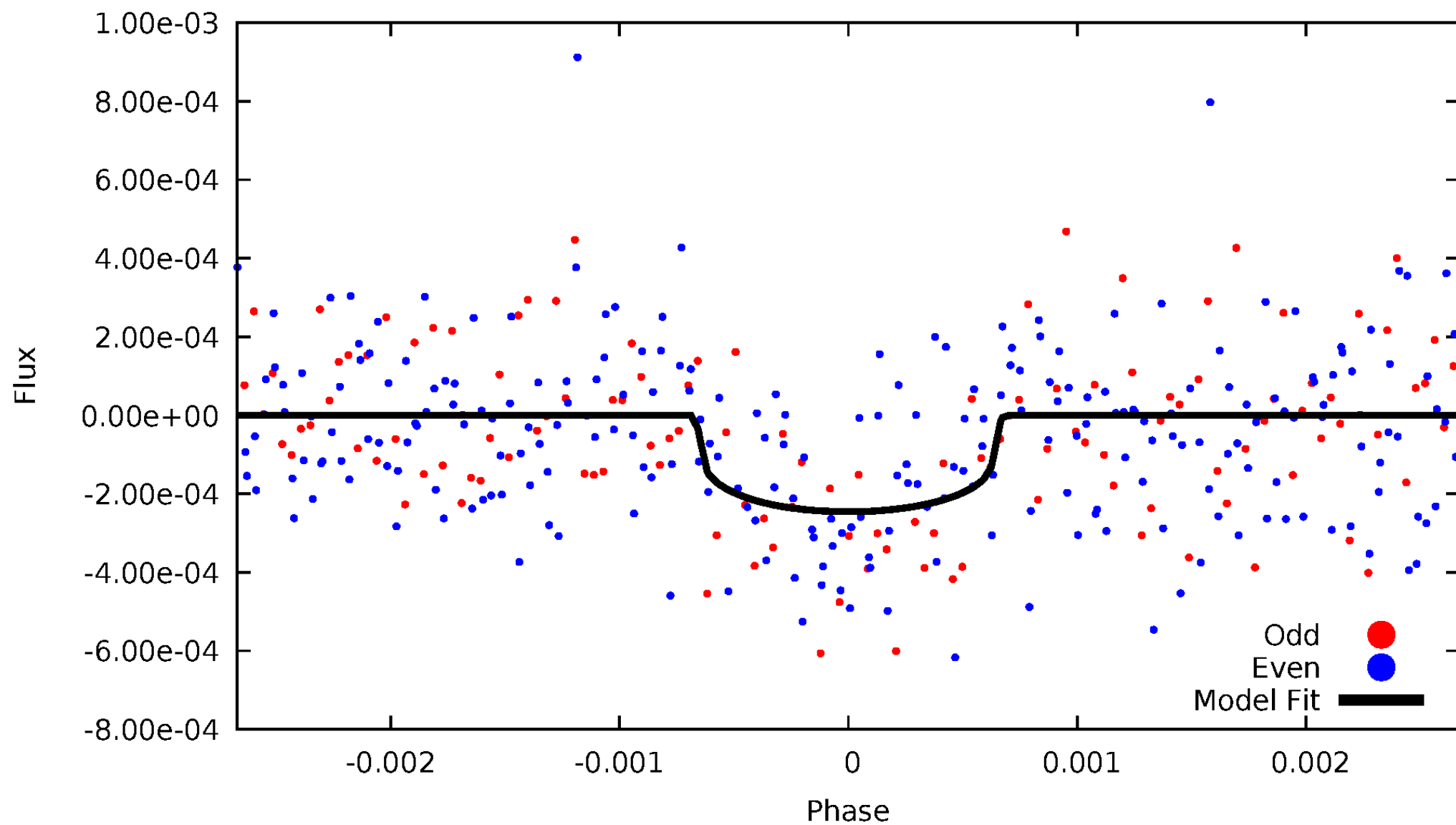


TCE 005371234-01



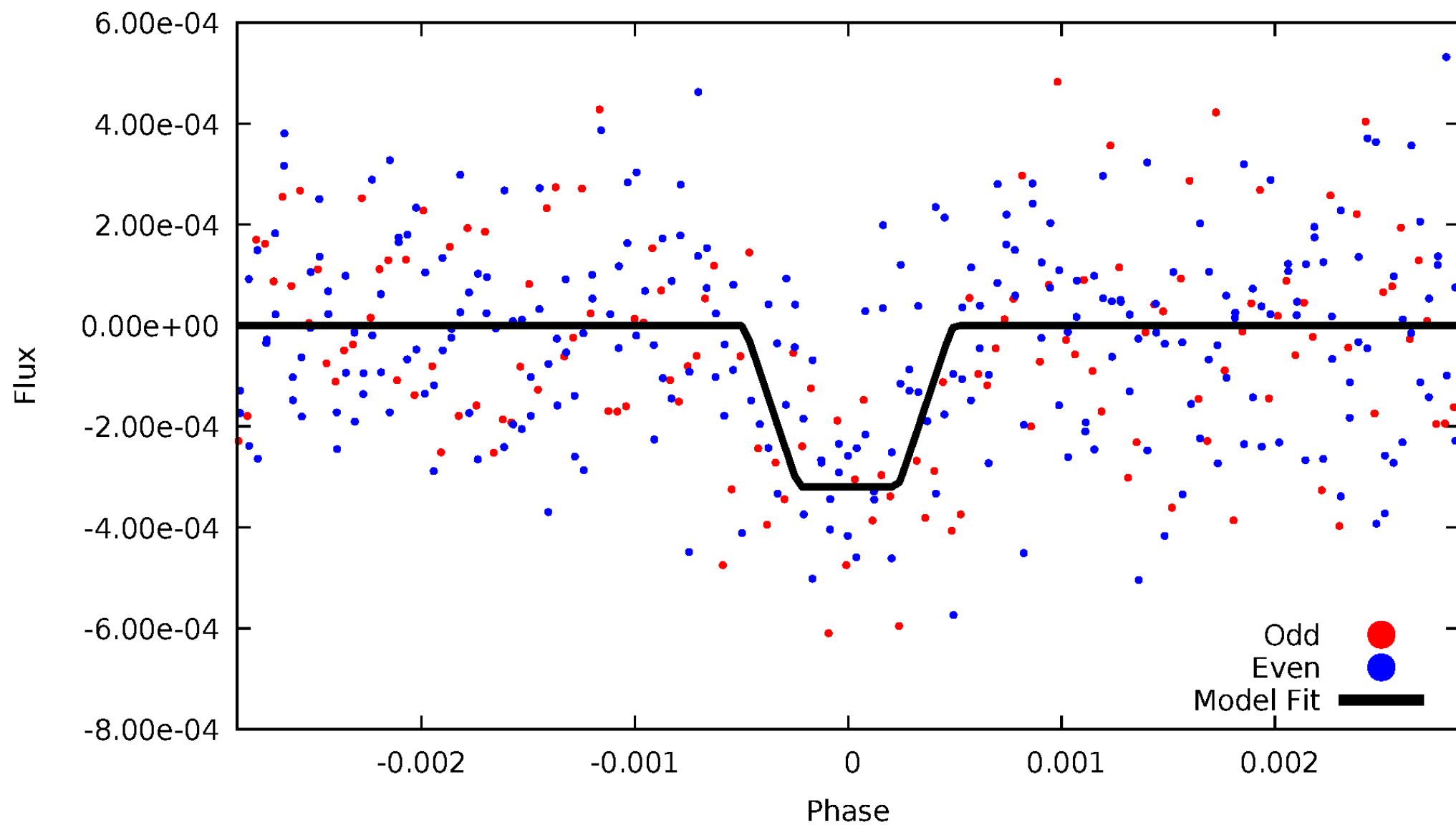
DV Odd/Even

TCE 005371234-01

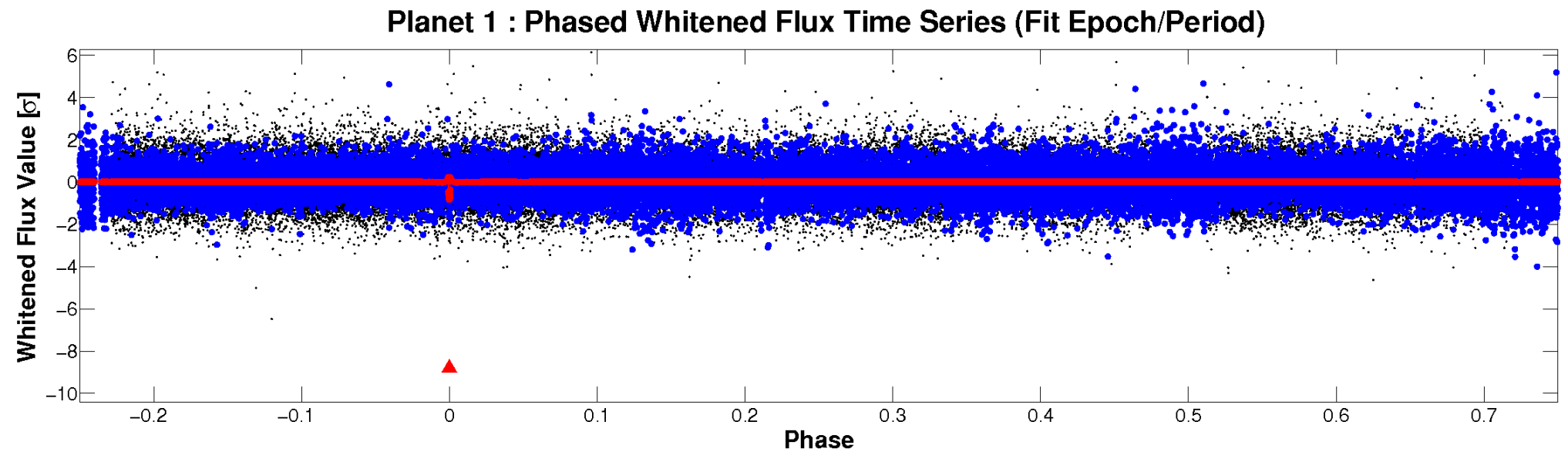
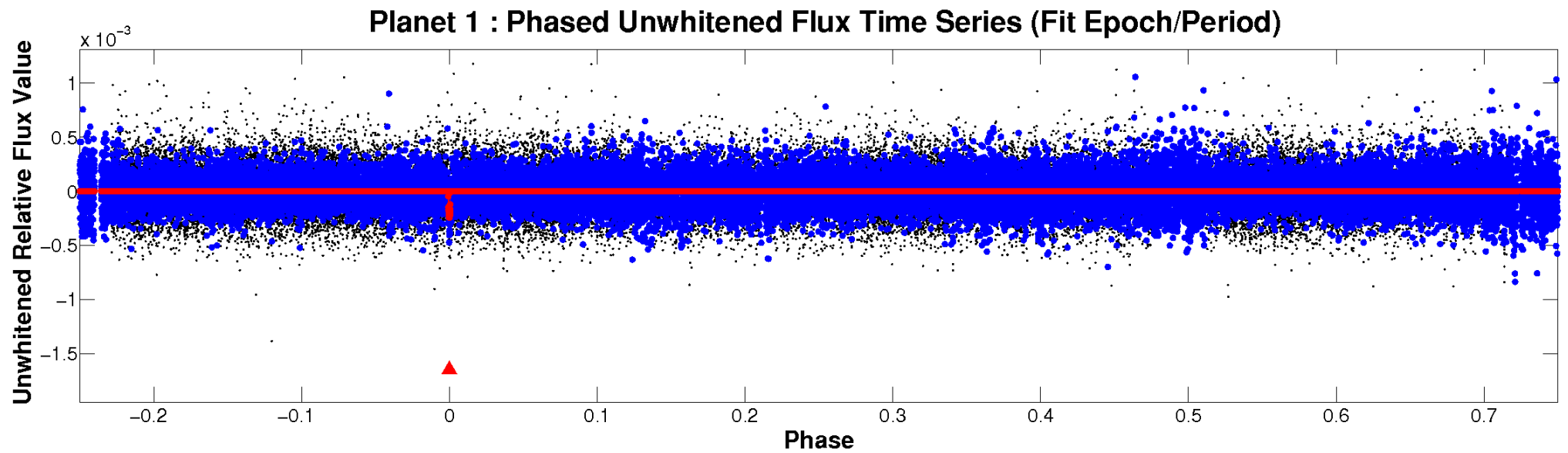


ALT Odd/Even

TCE 005371234-01

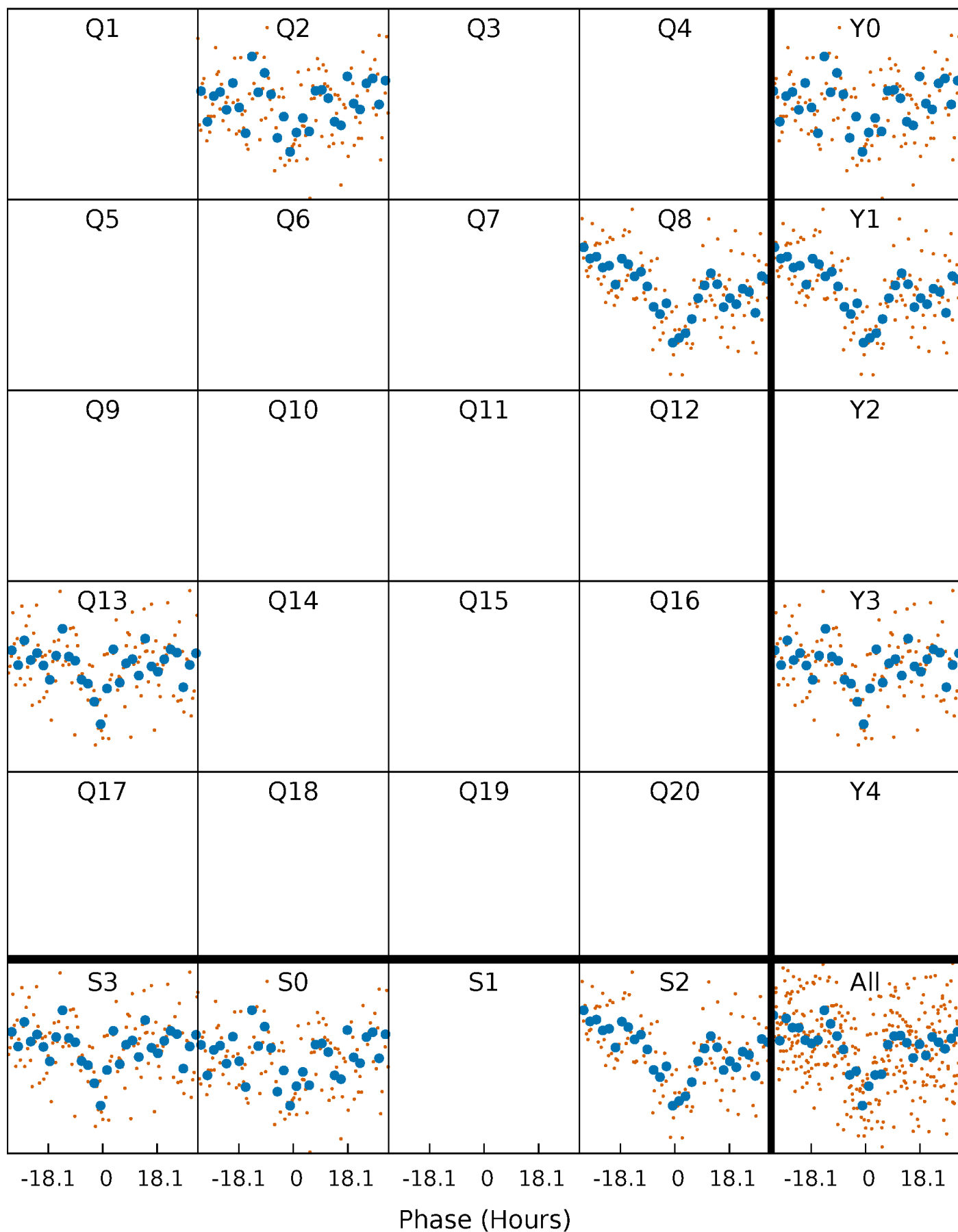


Non-Whitened Vs. Whitened Light Curve



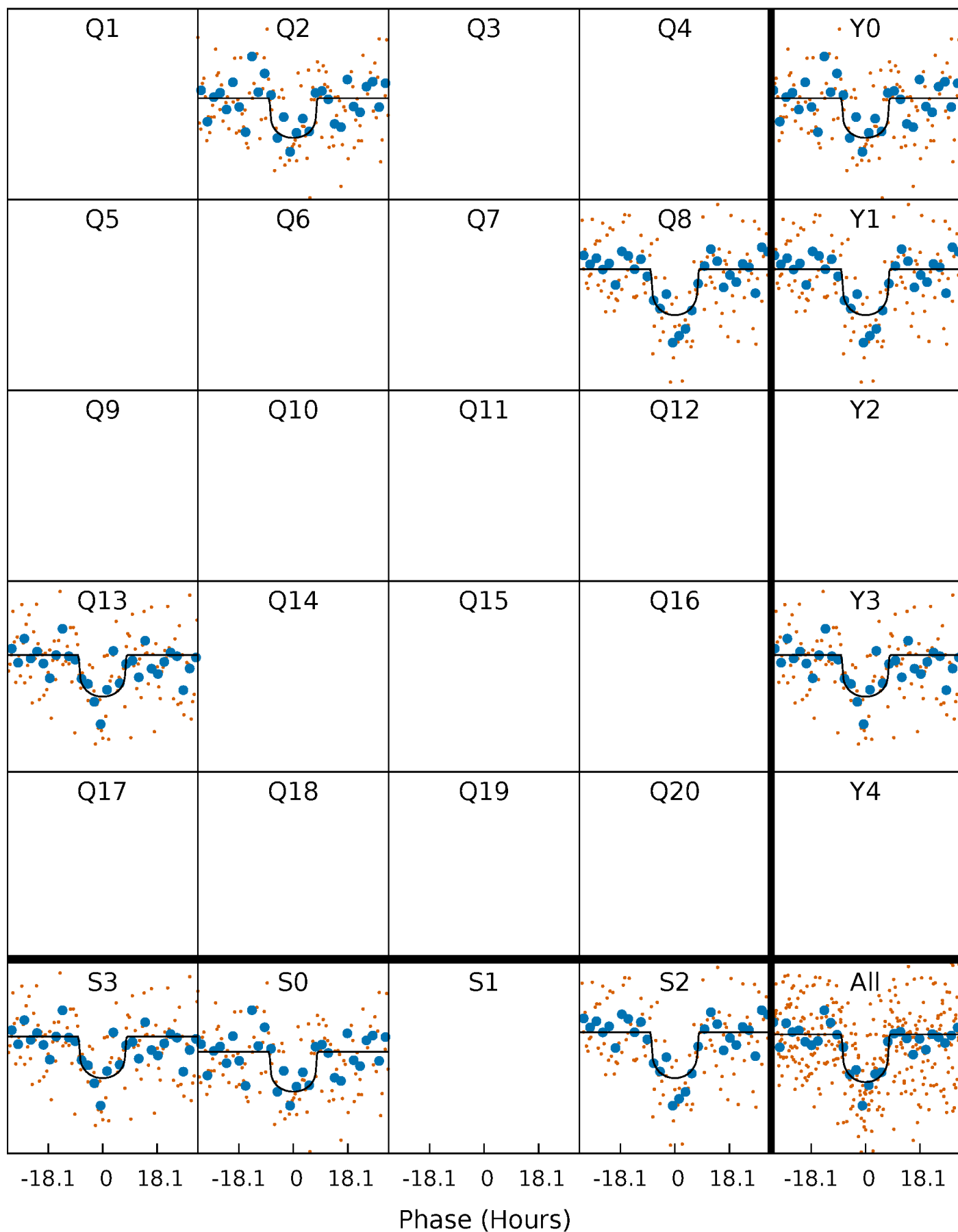
PDC Quarter-Phased Transit Curves

TCE 005371234-01 P=495.167657 Days $T_0=245.200313$ (BKJD)



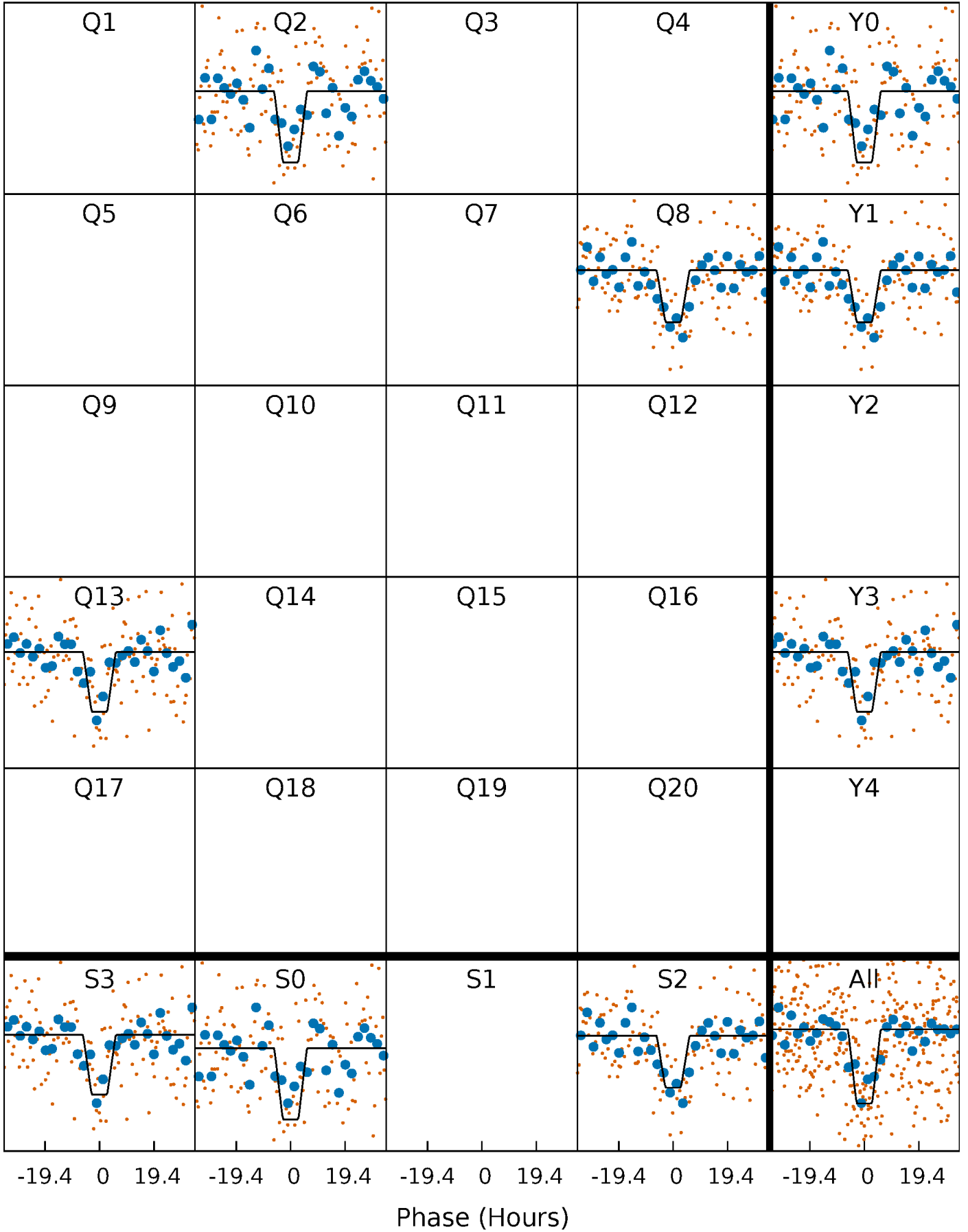
DV Quarter-Phased Transit Curves

TCE 005371234-01 P=495.167657 Days $T_0=245.200313$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

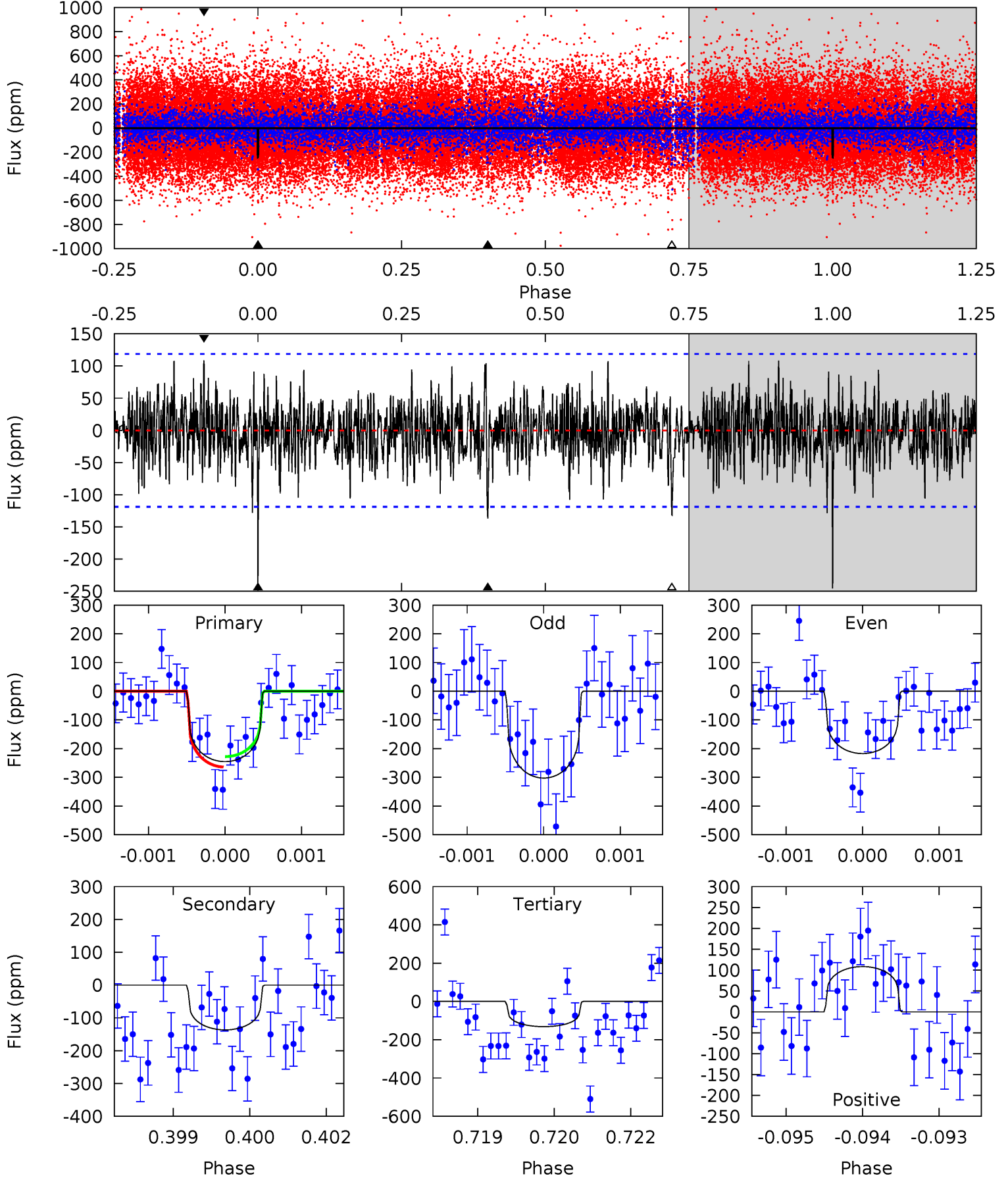
TCE 005371234-01 $P=495.166459$ Days $T_0=245.187479$ (BKJD)



DV Model-Shift Uniqueness Test

005371234-01, P = 495.167657 Days, E = 245.200313 Days

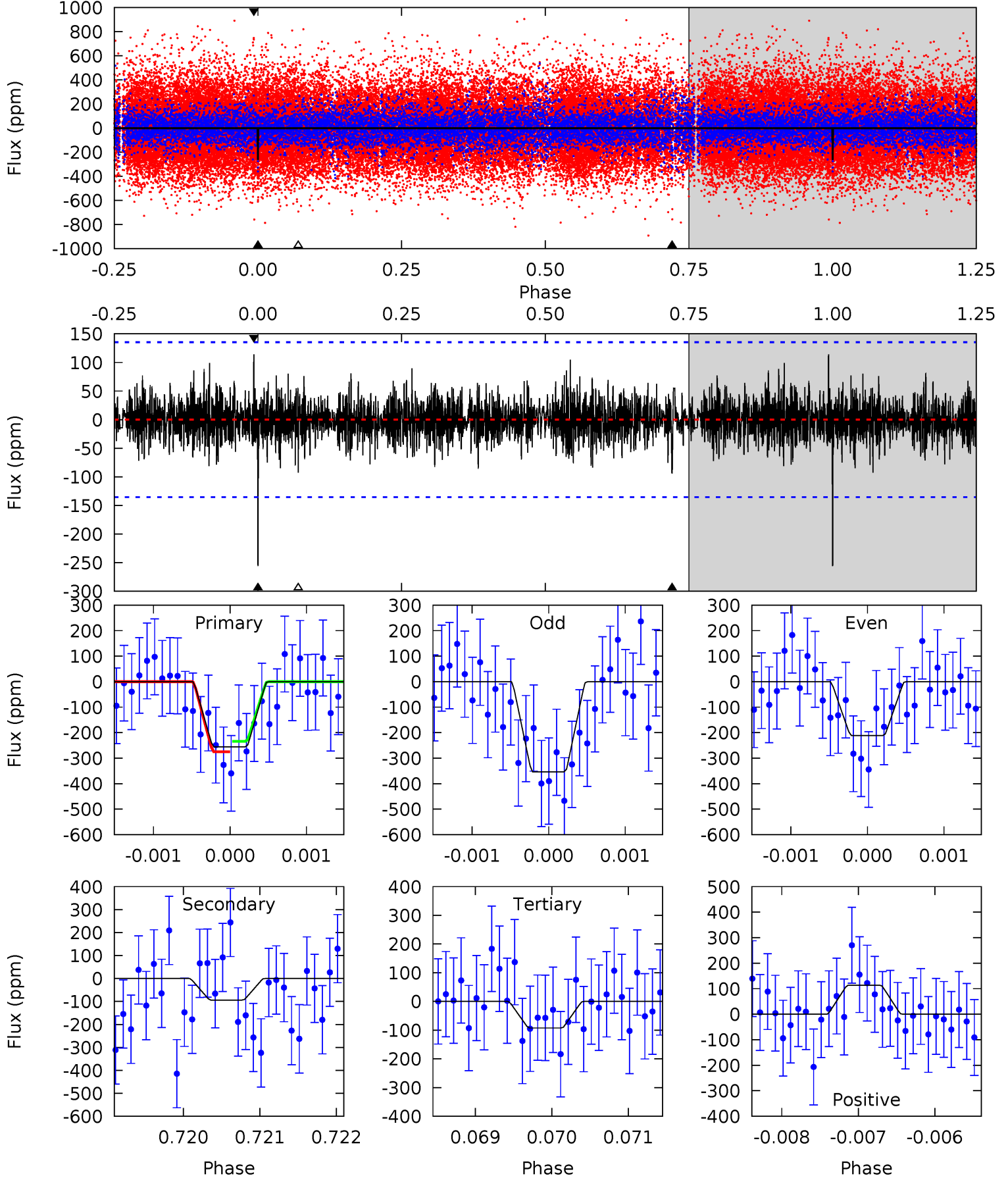
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.2 | 6.21 | 5.99 | 4.93 | 5.40 | 3.20 | 1.52 | 5.17 | 6.22 | 0.22 | 1.28 | 1.84 | 1.07 | 0.31 | 0.82 |



Alt Model-Shift Uniqueness Test

005371234-01, P = 495.166459 Days, E = 245.187479 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.3 | 3.78 | 3.72 | 4.58 | 5.45 | 3.28 | 1.06 | 6.56 | 5.70 | 0.06 | -0.80 | 2.71 | 1.09 | 0.31 | 0.83 |



Stellar Parameters For KIC 005371234

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5205^{+155}_{-155} | $4.549^{+0.088}_{-0.072}$ | $-0.460^{+0.350}_{-0.300}$ | $0.733^{+0.091}_{-0.083}$ | $0.694^{+0.101}_{-0.043}$ | $2.481^{+0.926}_{-0.567}$ |
| | +3%/-3% | +2%/-2% | +76%/-65% | +12%/-11% | +15%/-6% | +37%/-23% |
| 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 005371234-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|----------------------------|
| DV | -137 ± 22 | $1.22^{+0.68}_{-0.60}$ | 263^{+10}_{-12} | 4661^{+1684}_{-744} | $59889^{+174772}_{-35642}$ |
| Alt. | -94 ± 25 | $1.45^{+0.61}_{-0.62}$ | 263^{+11}_{-11} | 4048^{+1006}_{-475} | 28780^{+60070}_{-15305} |

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 $A_{obs} \gg 1.0$

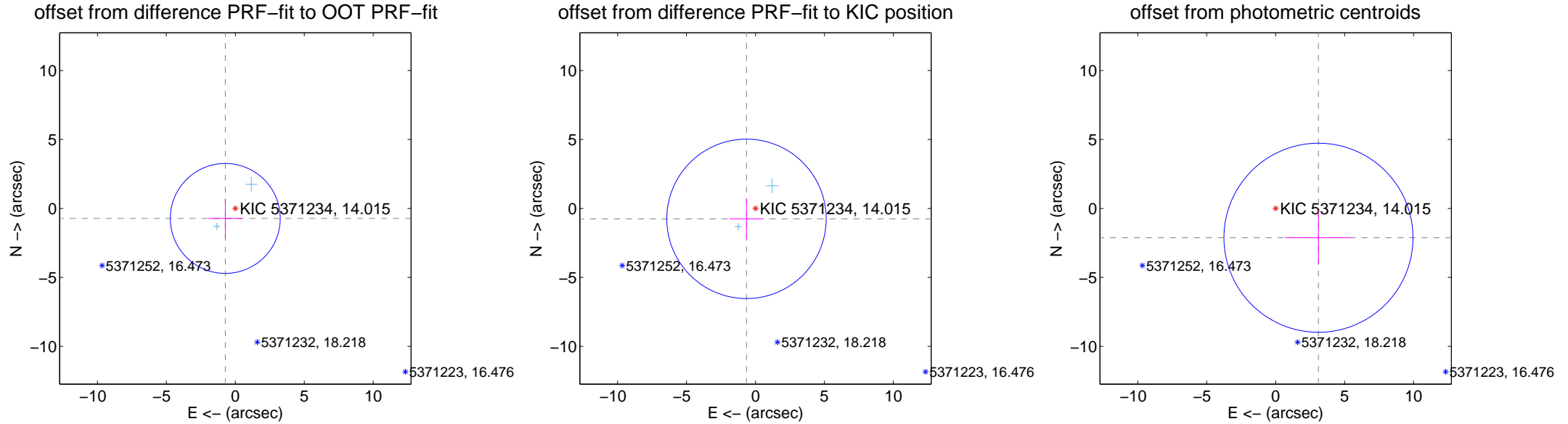
DV Centroid Data

Supplemental centroid analysis for 005371234-01. Kepler magnitude: 14.02. Transit SNR 6.83

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.028 ± 1.328 | 0.77 | 0.729 ± 1.253 | -0.725 ± 1.401 |
| PRF-fit source offset from KIC position | 0.998 ± 1.926 | 0.52 | 0.654 ± 1.233 | -0.755 ± 1.481 |
| photometric centroid source offset | 3.76 ± 2.28 | 1.65 | -3.10 ± 2.43 | -2.12 ± 1.93 |



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



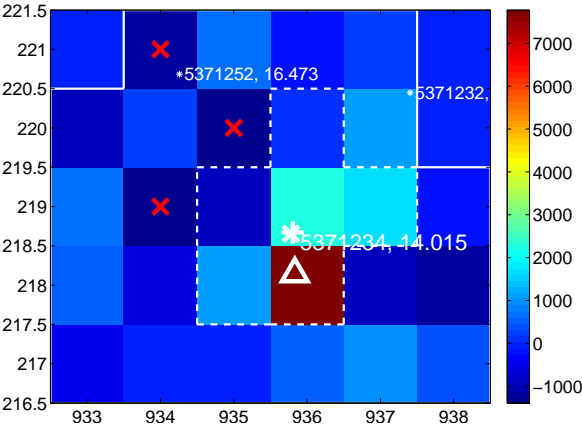
Q7 no difference image



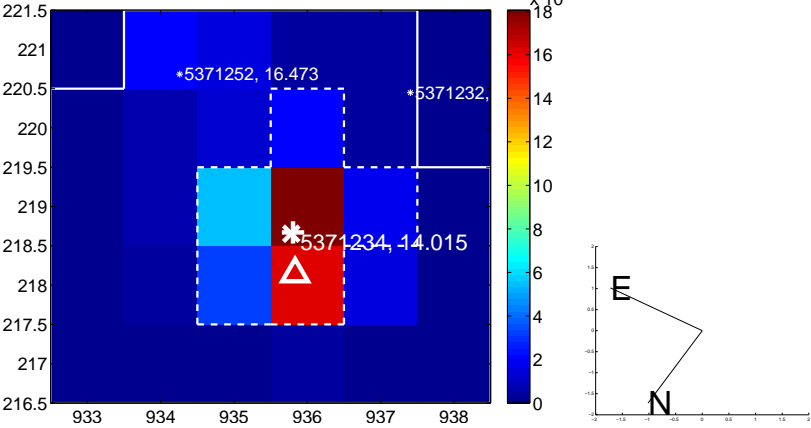
Q7 no OOT image



Q8 difference image



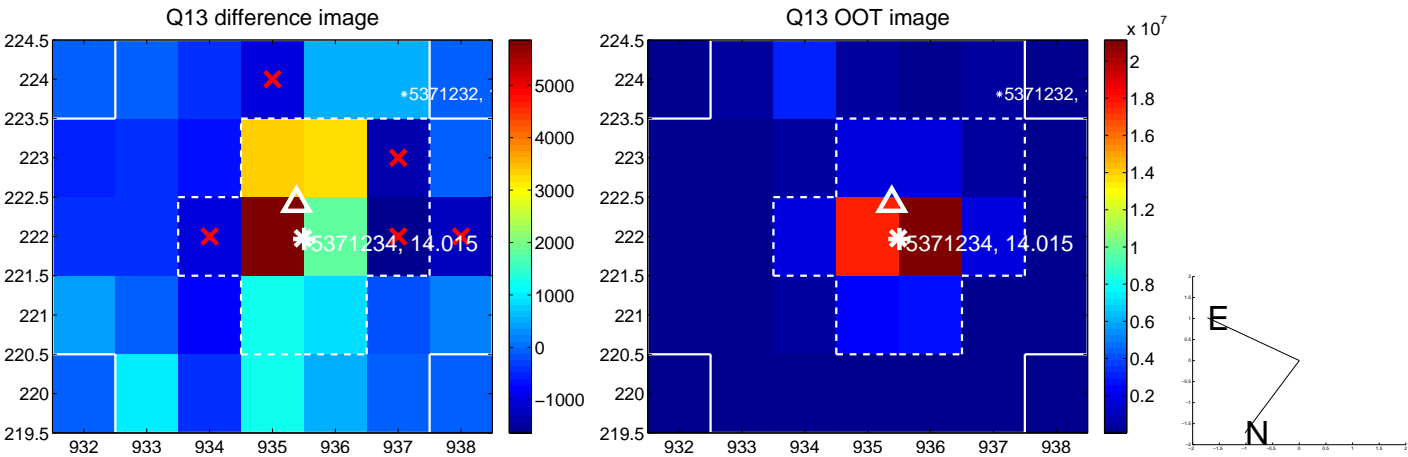
Q8 OOT image



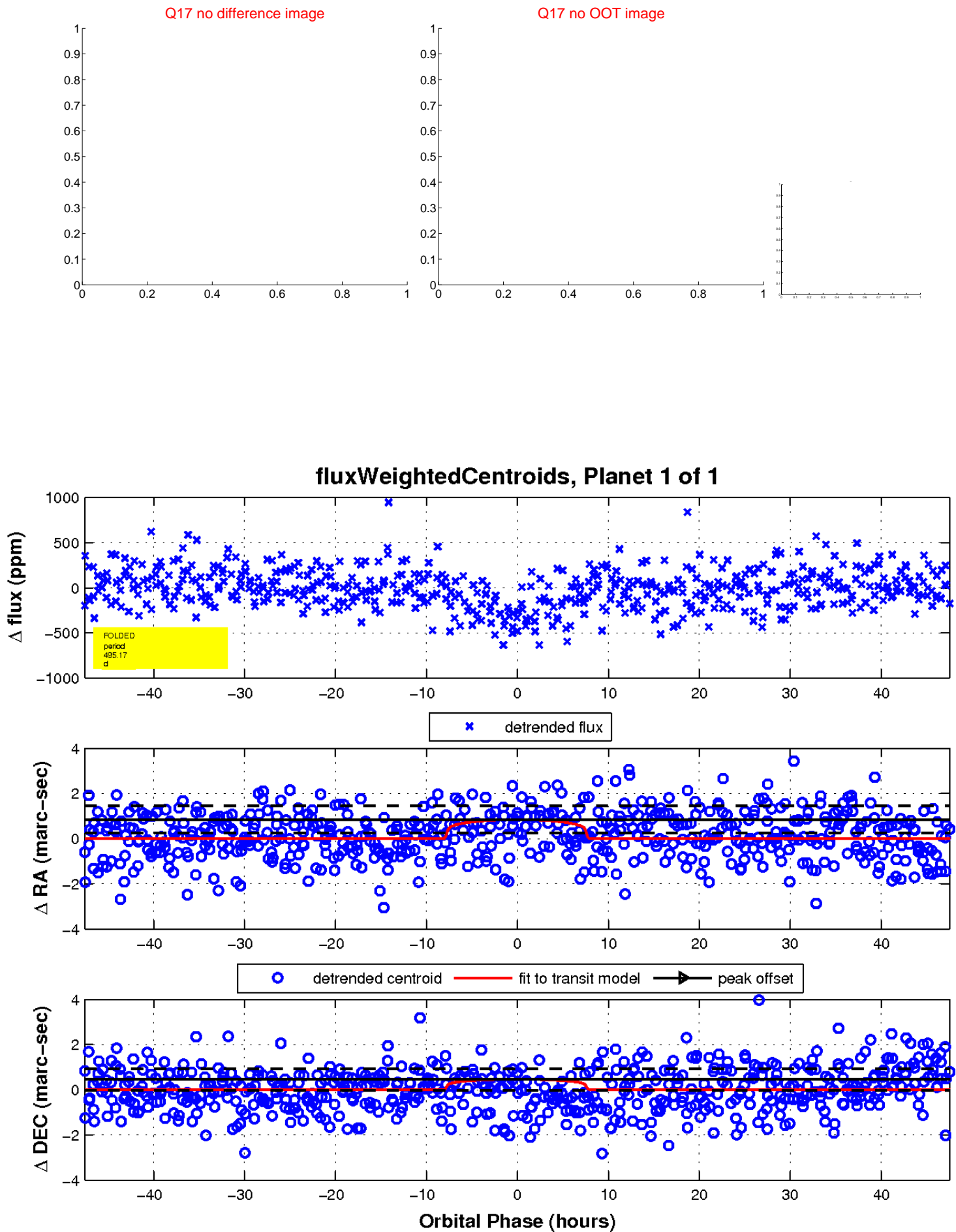
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

