

KIC 010153434

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010153434-01 | OBS | No | 327.006716 | 252.397465 | 193.2 | 16.668 | 7.7 | 5.2 | 1.19 | 6469 | 1.81 | 2.22 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010153434-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

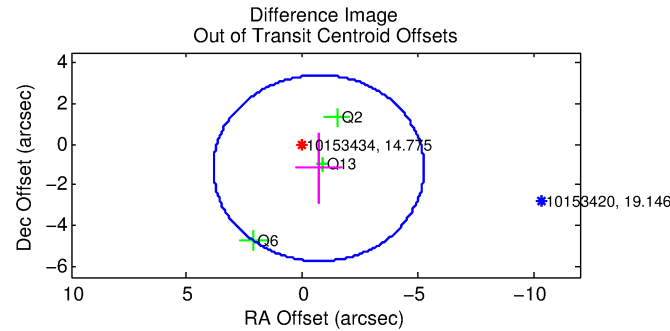
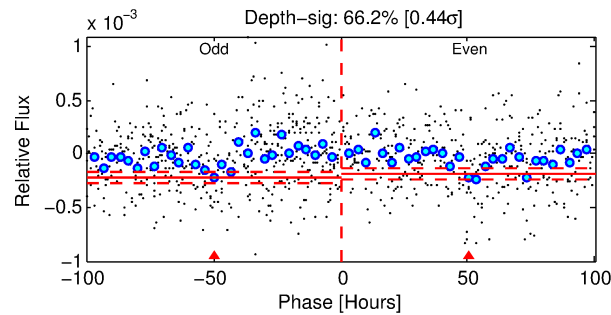
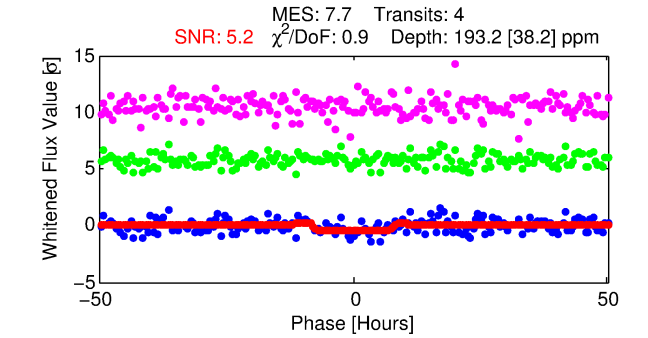
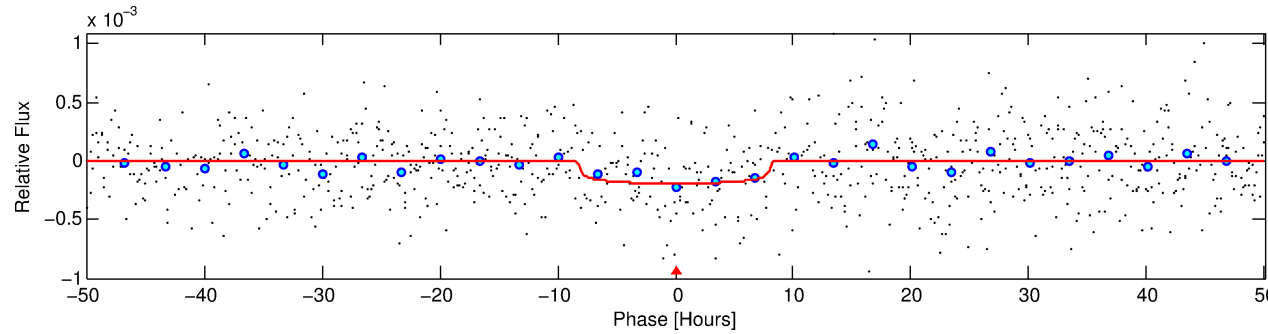
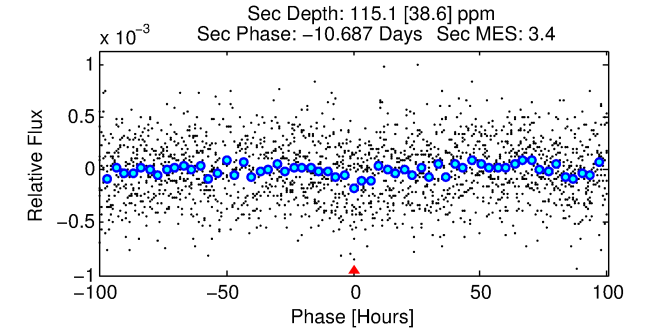
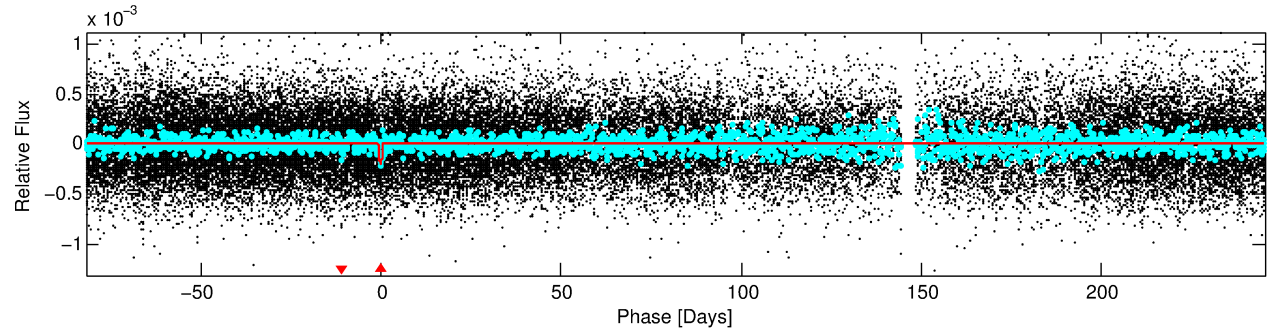
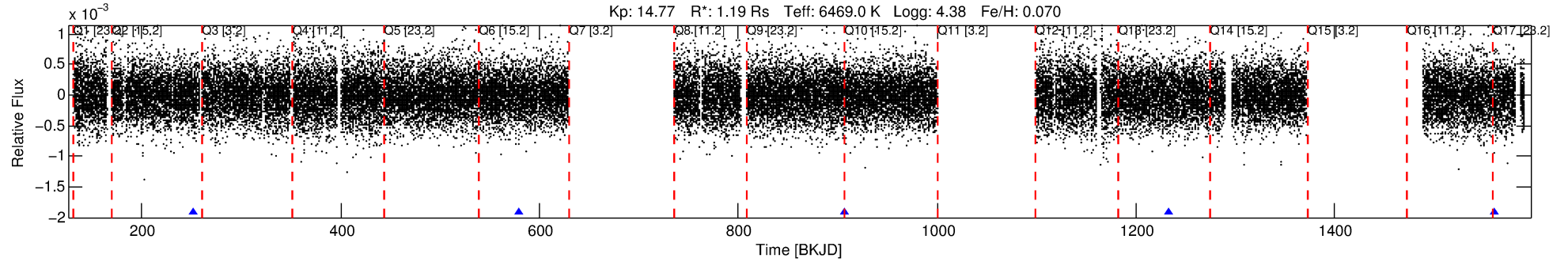
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010153434-01

No Significant Match Found

DV One-Page Summary

KIC: 10153434 Candidate: 1 of 1 Period: 327.007 d



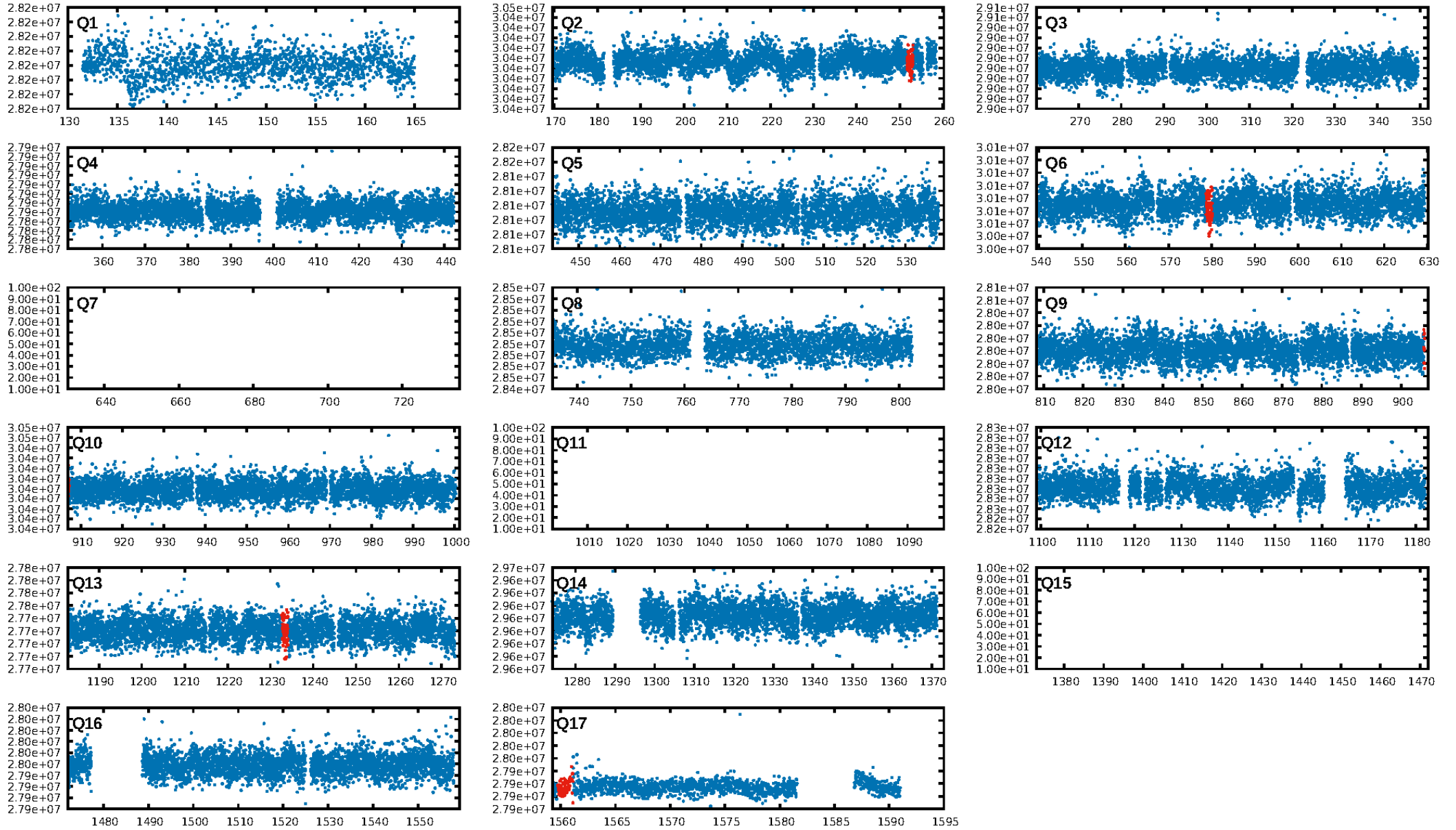
DV Fit Results:

Period = 327.00672 [0.01258] d
Epoch = 252.3975 [0.0323] BKJD
Rp/R* = 0.0139 [0.0056]
a/R* = 99.37 [207.82]
b = 0.77 [1.13]
Seff = 2.22 [0.87]
Teff = 311 [31] K
Rp = 1.81 [0.92] Re
a = 1.0034 [0.2553] AU
Ag = 19472.98 [18558.72] [1.05 σ]
Teffp = 5683 [1265] K [4.25 σ]

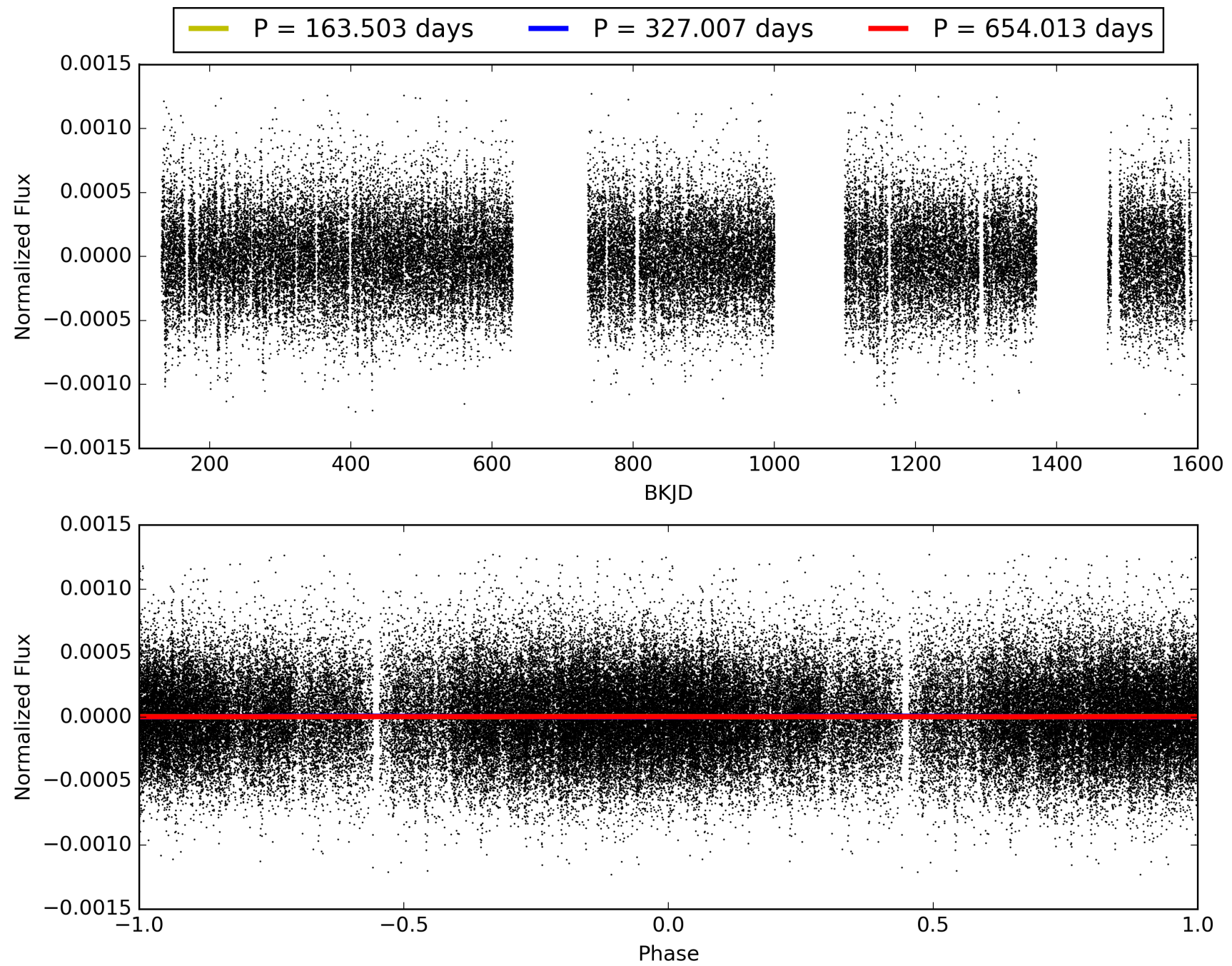
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 69.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.41e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.975
Centroid-sig: 22.2%
Centroid-so: 2.200 arcsec [1.07 σ]
OotOffset-rm: 1.371 arcsec [0.90 σ]
KicOffset-rm: 1.200 arcsec [0.85 σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010153434-01, PDC Light Curves

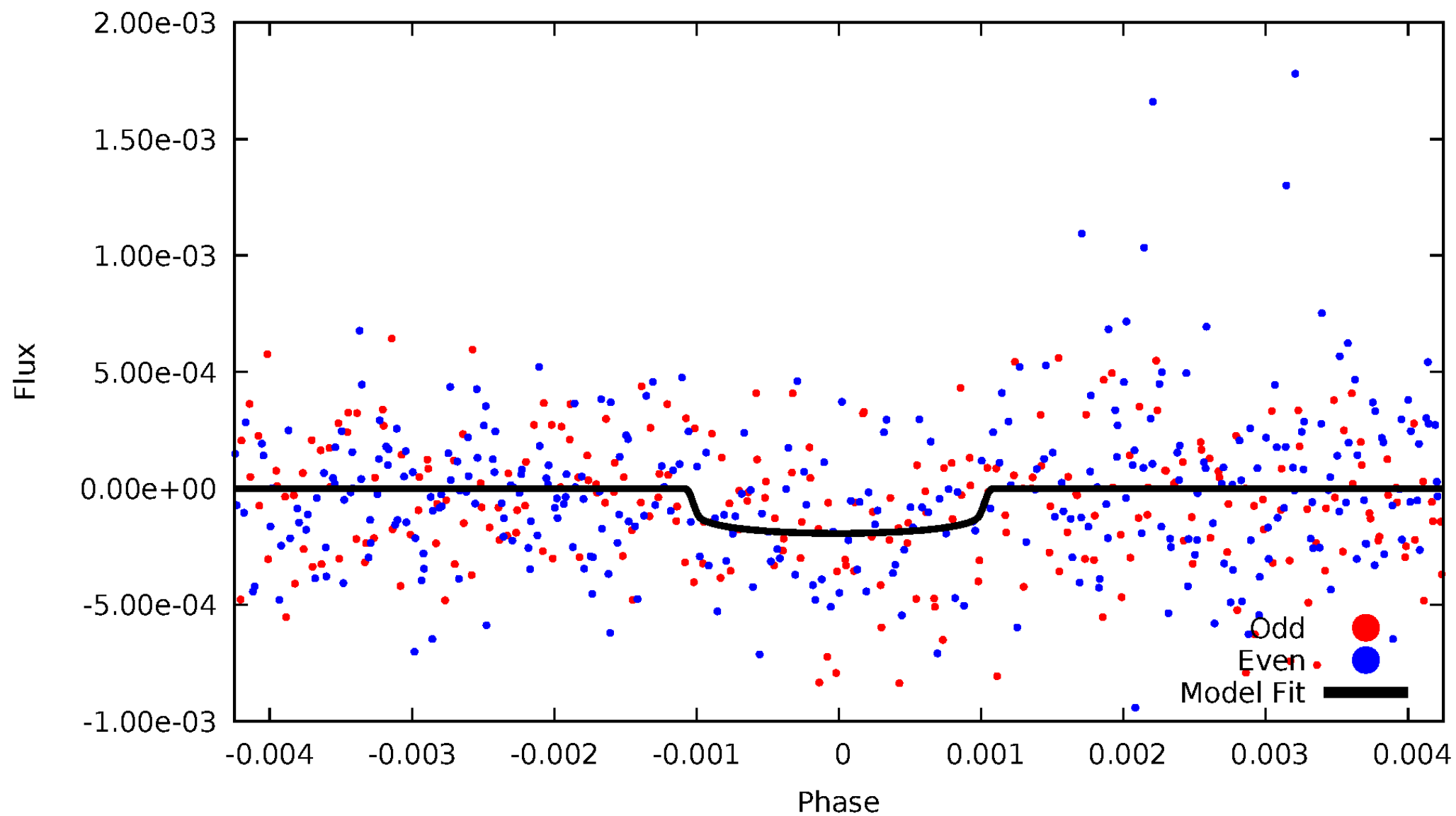


TCE 010153434-01



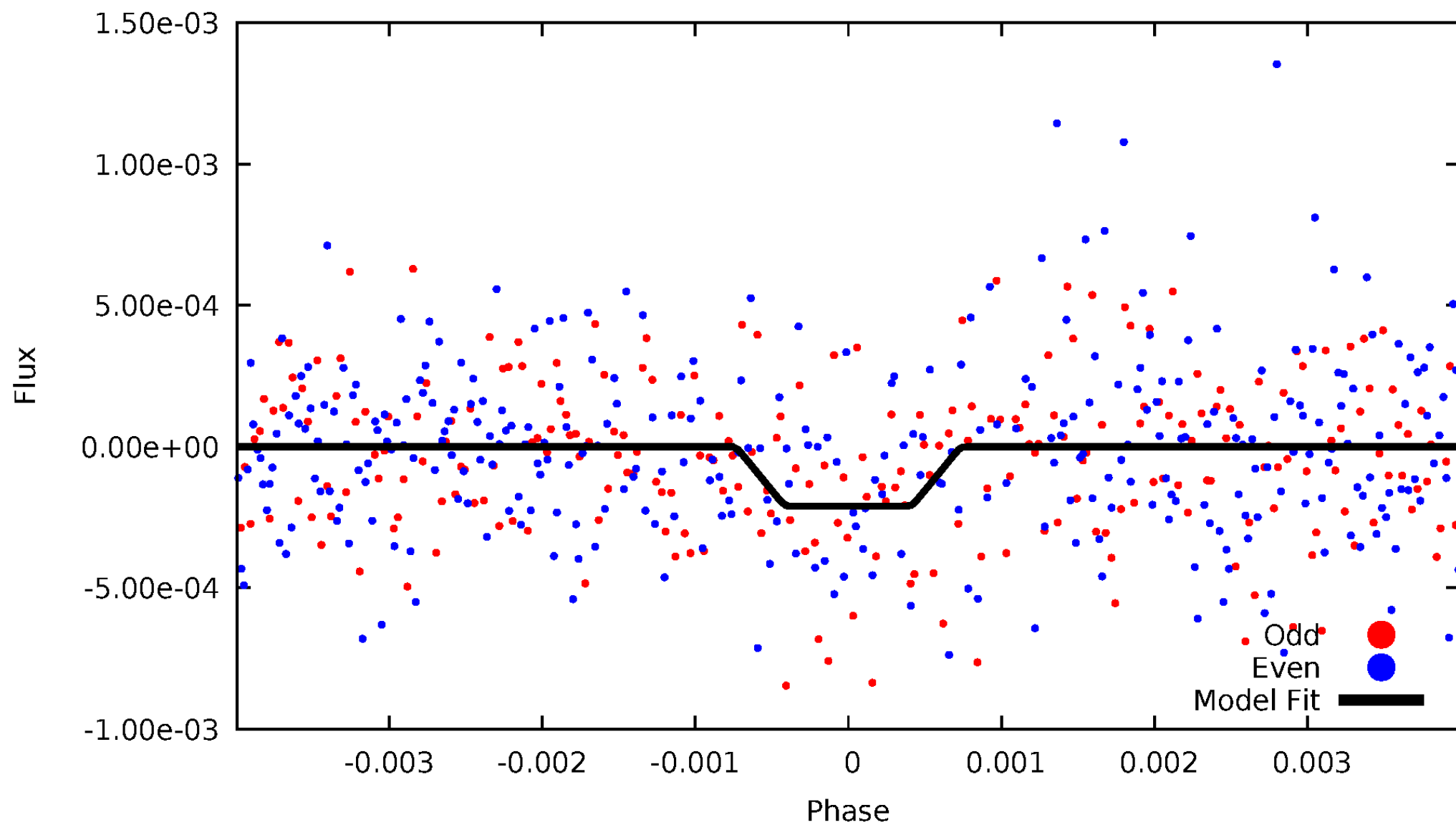
DV Odd/Even

TCE 010153434-01



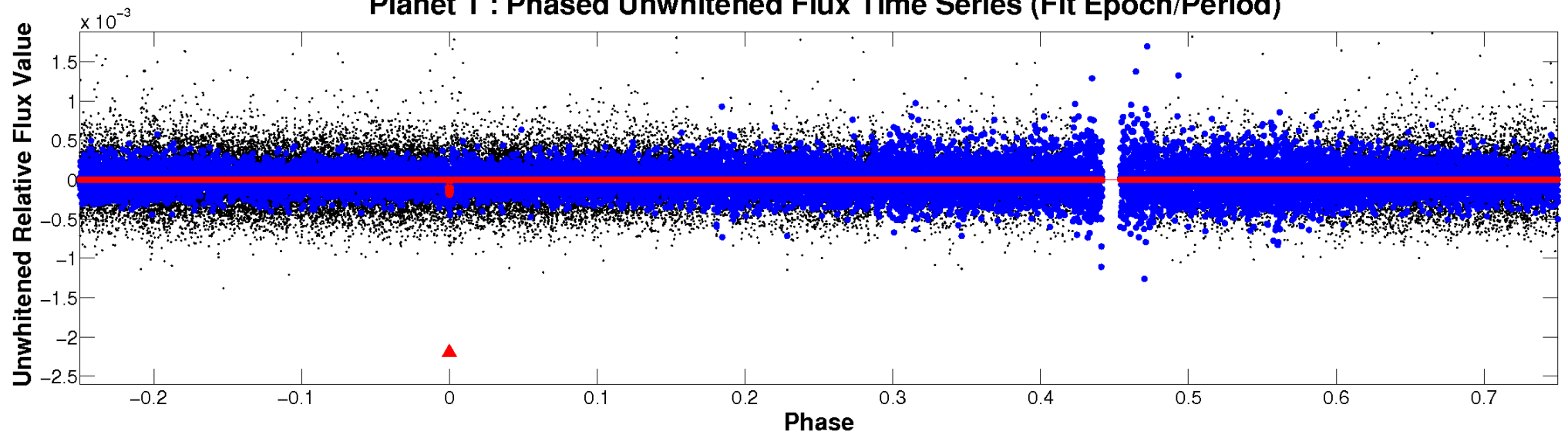
ALT Odd/Even

TCE 010153434-01

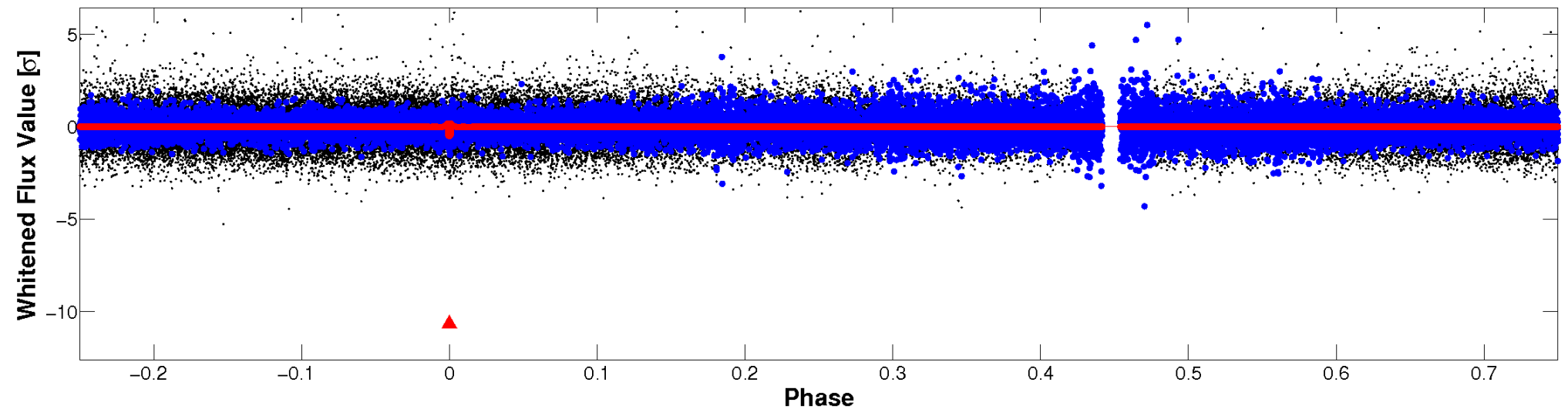


Non-Whitened Vs. Whitened Light Curve

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

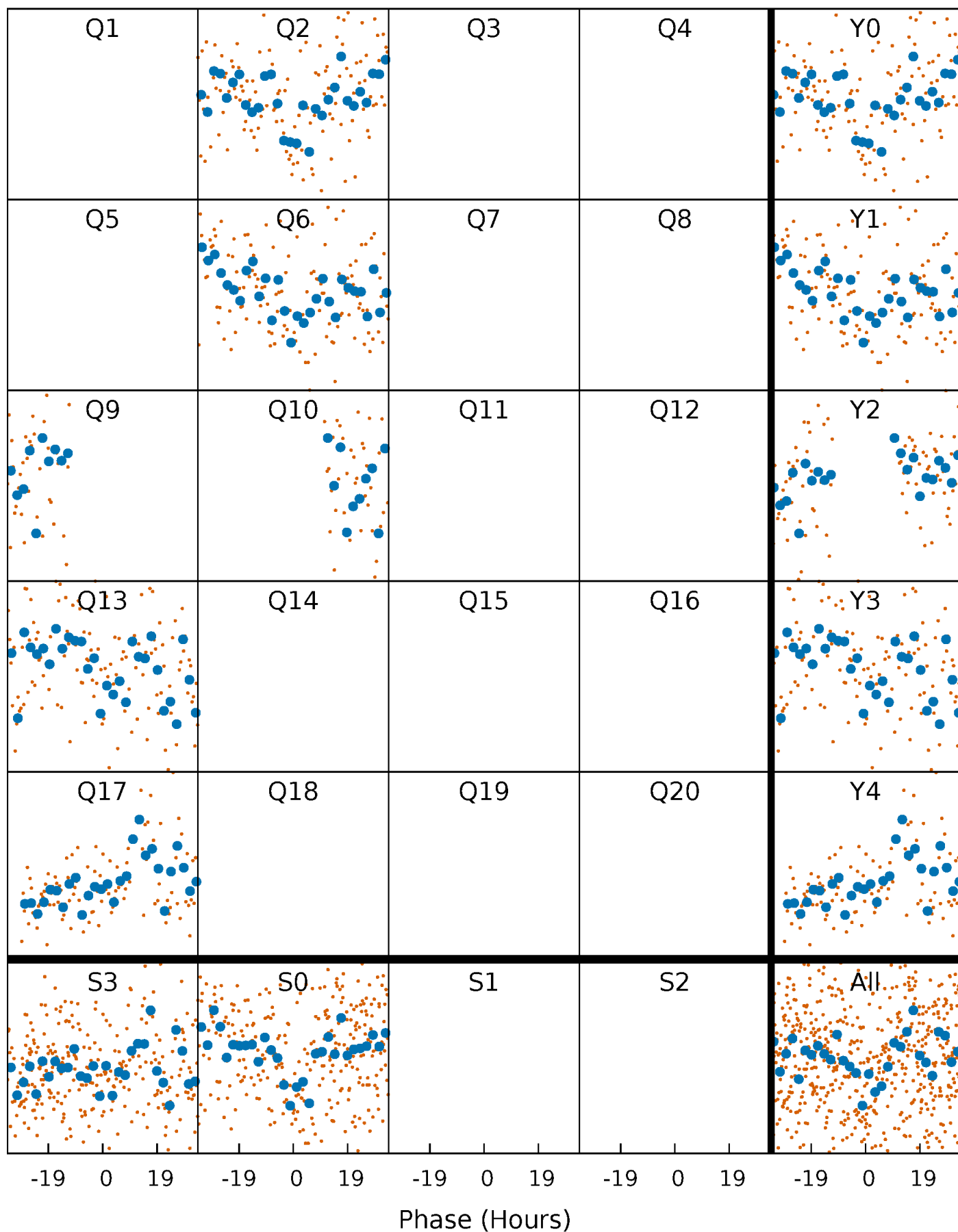


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



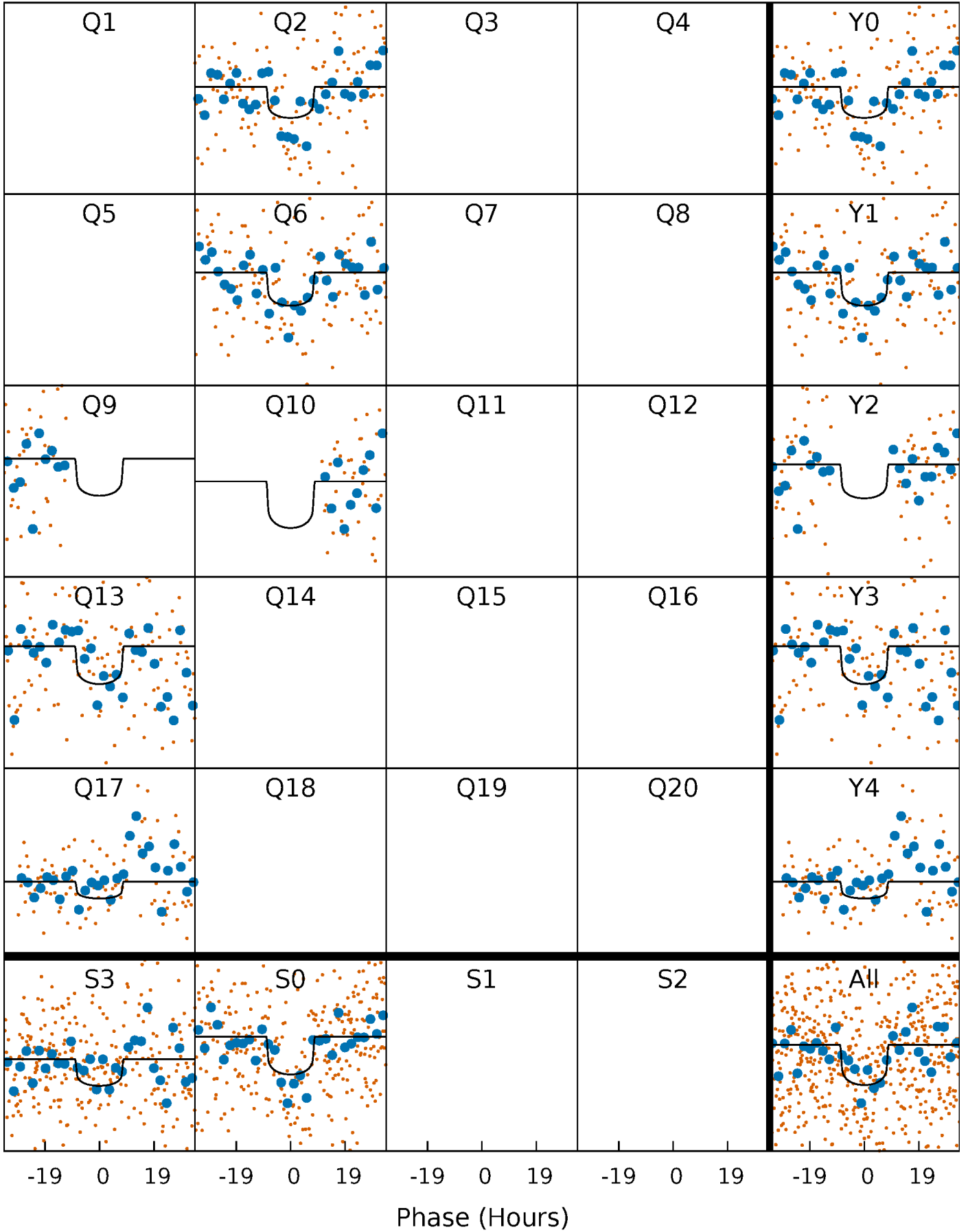
PDC Quarter-Phased Transit Curves

TCE 010153434-01 P=327.006716 Days $T_0=252.397466$ (BKJD)



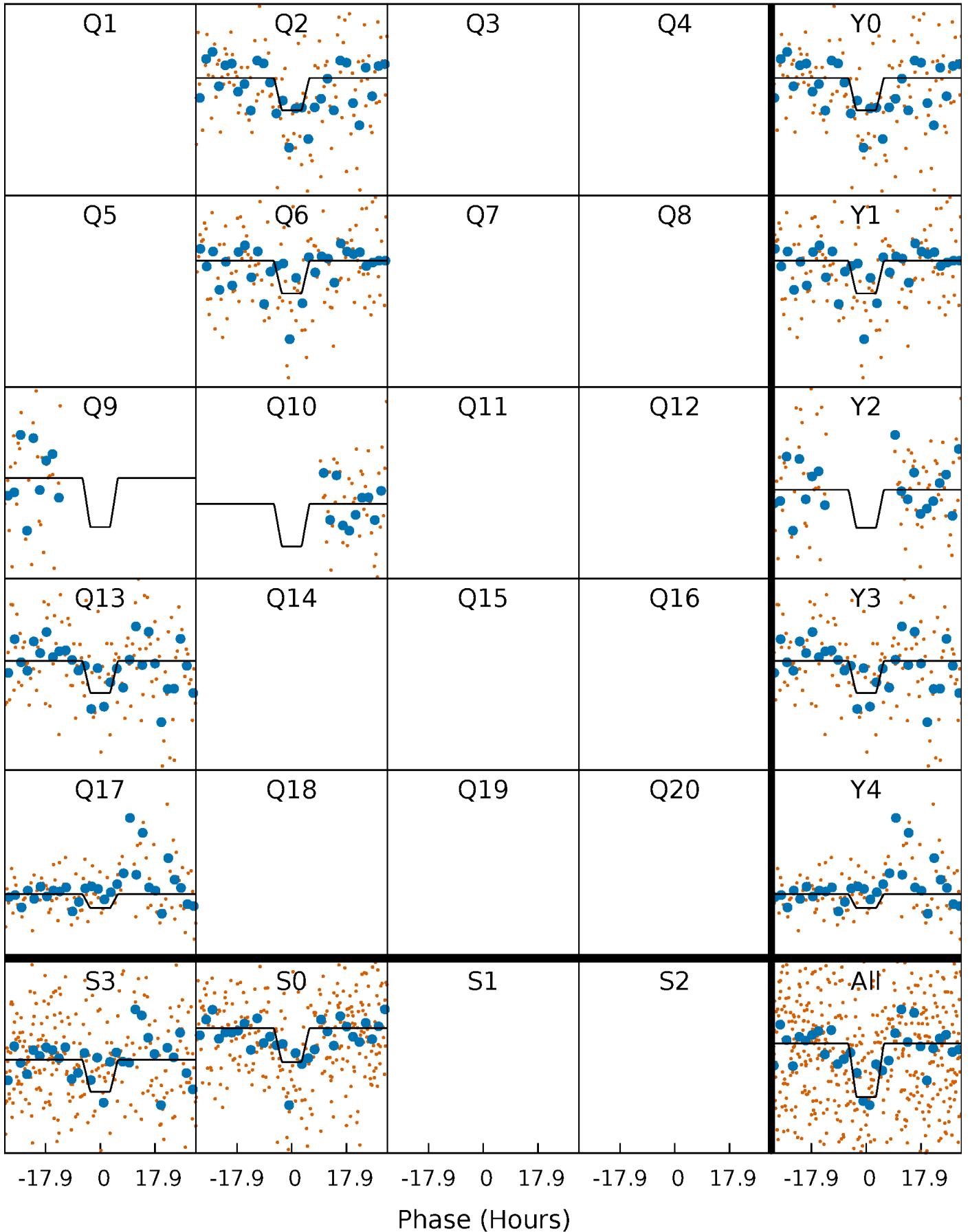
DV Quarter-Phased Transit Curves

TCE 010153434-01 P=327.006716 Days $T_0=252.397466$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

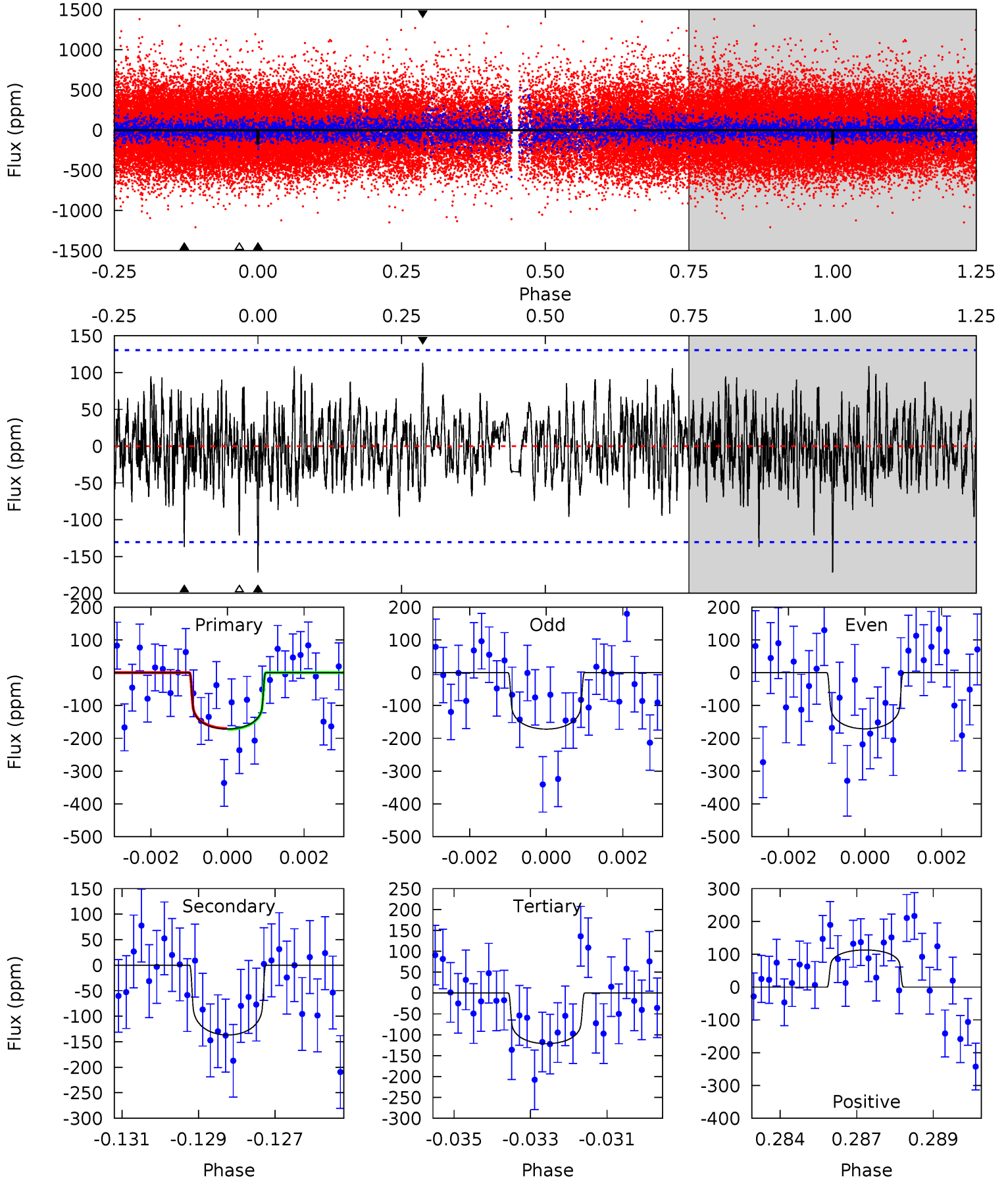
TCE 010153434-01 P=327.032317 Days $T_0=252.408598$ (BKJD)



DV Model-Shift Uniqueness Test

010153434-01, P = 327.006716 Days, E = 252.397466 Days

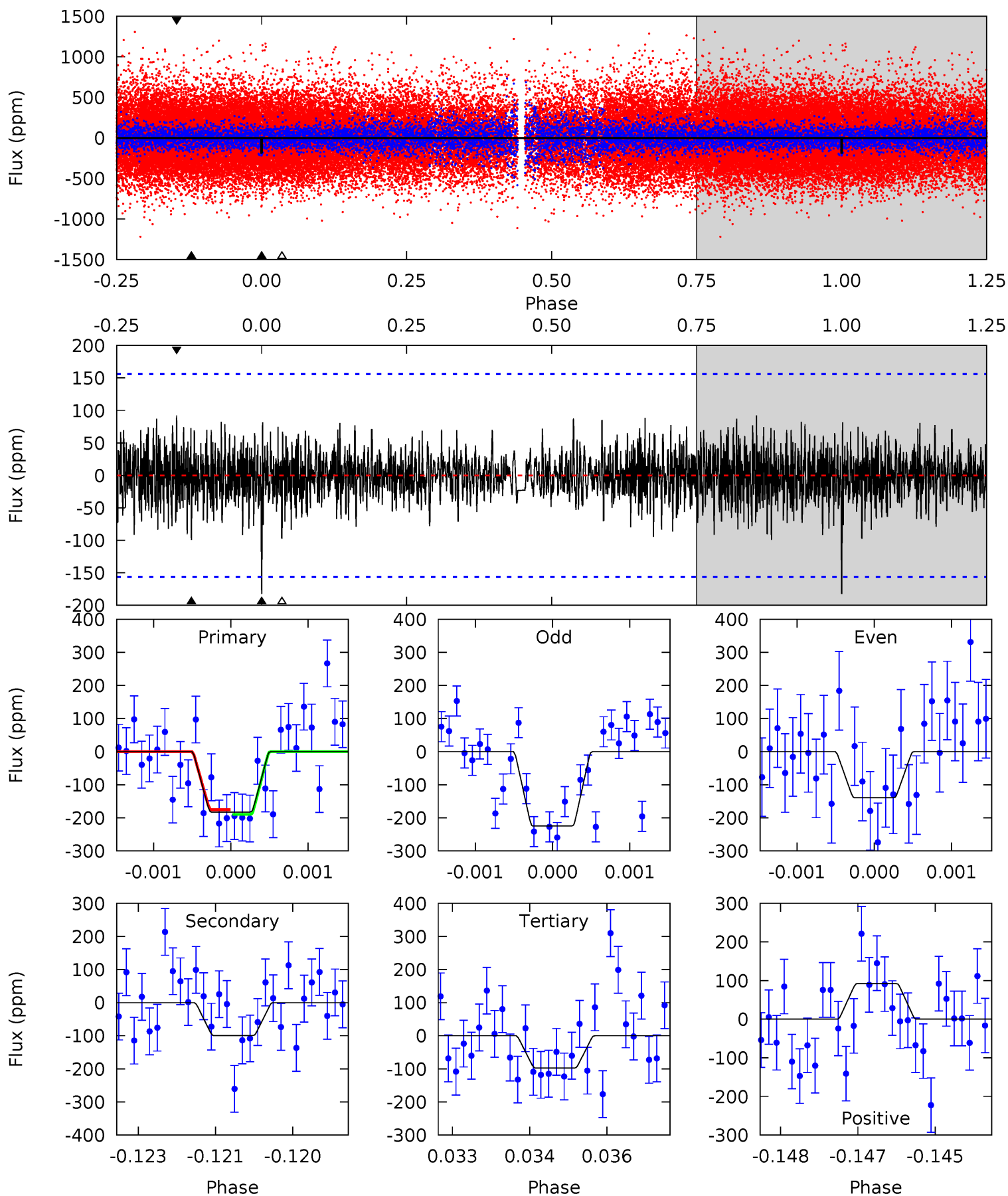
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.99 | 5.57 | 4.94 | 4.60 | 5.31 | 3.06 | 1.43 | 2.05 | 2.39 | 0.63 | 0.97 | 0.02 | 1.00 | 0.40 | 0.06 |



Alt Model-Shift Uniqueness Test

010153434-01, P = 327.032317 Days, E = 252.408598 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.29 | 3.43 | 3.36 | 3.18 | 5.38 | 3.17 | 1.00 | 2.92 | 3.11 | 0.06 | 0.25 | 1.47 | 0.81 | 0.34 | 0.25 |



Stellar Parameters For KIC 010153434

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6469^{+157}_{-224} | $4.385^{+0.062}_{-0.200}$ | $0.070^{+0.200}_{-0.350}$ | $1.193^{+0.363}_{-0.156}$ | $1.260^{+0.144}_{-0.199}$ | $1.047^{+0.287}_{-0.542}$ |
| | +2%/-3% | +1%/-5% | +286%/-500% | +30%/-13% | +11%/-16% | +27%/-52% |
| 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 010153434-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|---------------------------|
| DV | -137 ± 25 | $1.88^{+0.83}_{-0.77}$ | 442^{+30}_{-21} | 5835^{+1977}_{-811} | 20036^{+40308}_{-10636} |
| Alt. | -99 ± 29 | $1.97^{+0.82}_{-0.72}$ | 442^{+31}_{-22} | 5306^{+1492}_{-749} | 13035^{+23888}_{-6944} |

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 $A_{obs} \gg 1.0$

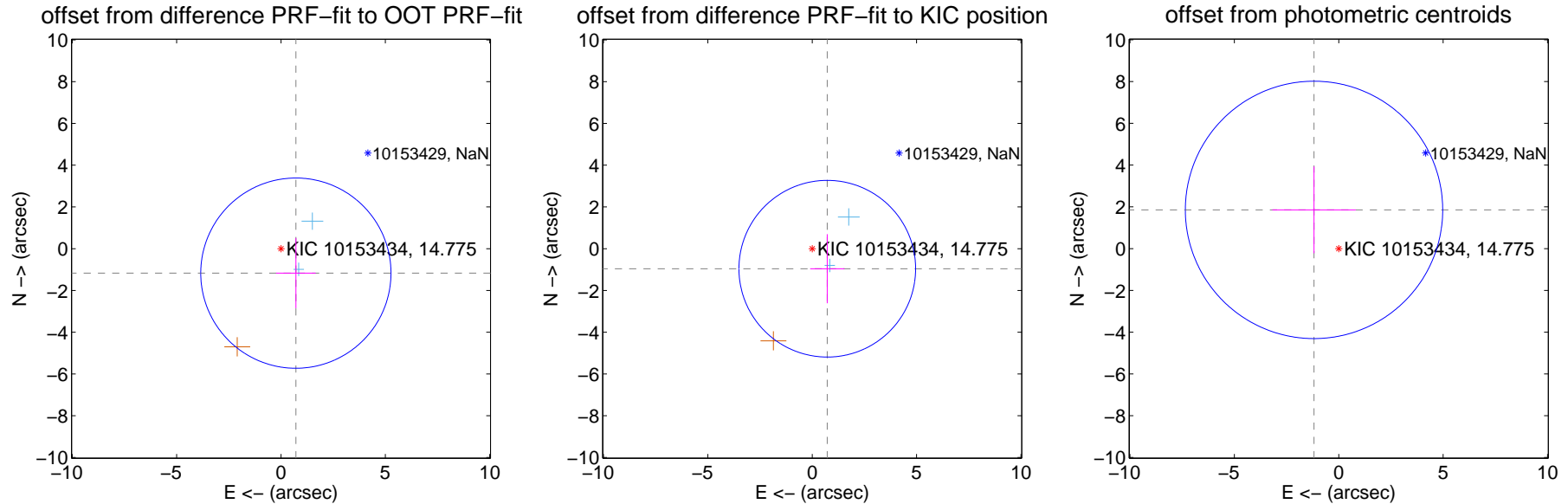
DV Centroid Data

Supplemental centroid analysis for 010153434-01. Kepler magnitude: 14.78. Transit SNR 5.21

There are 2 quarters with good PRF difference image offsets

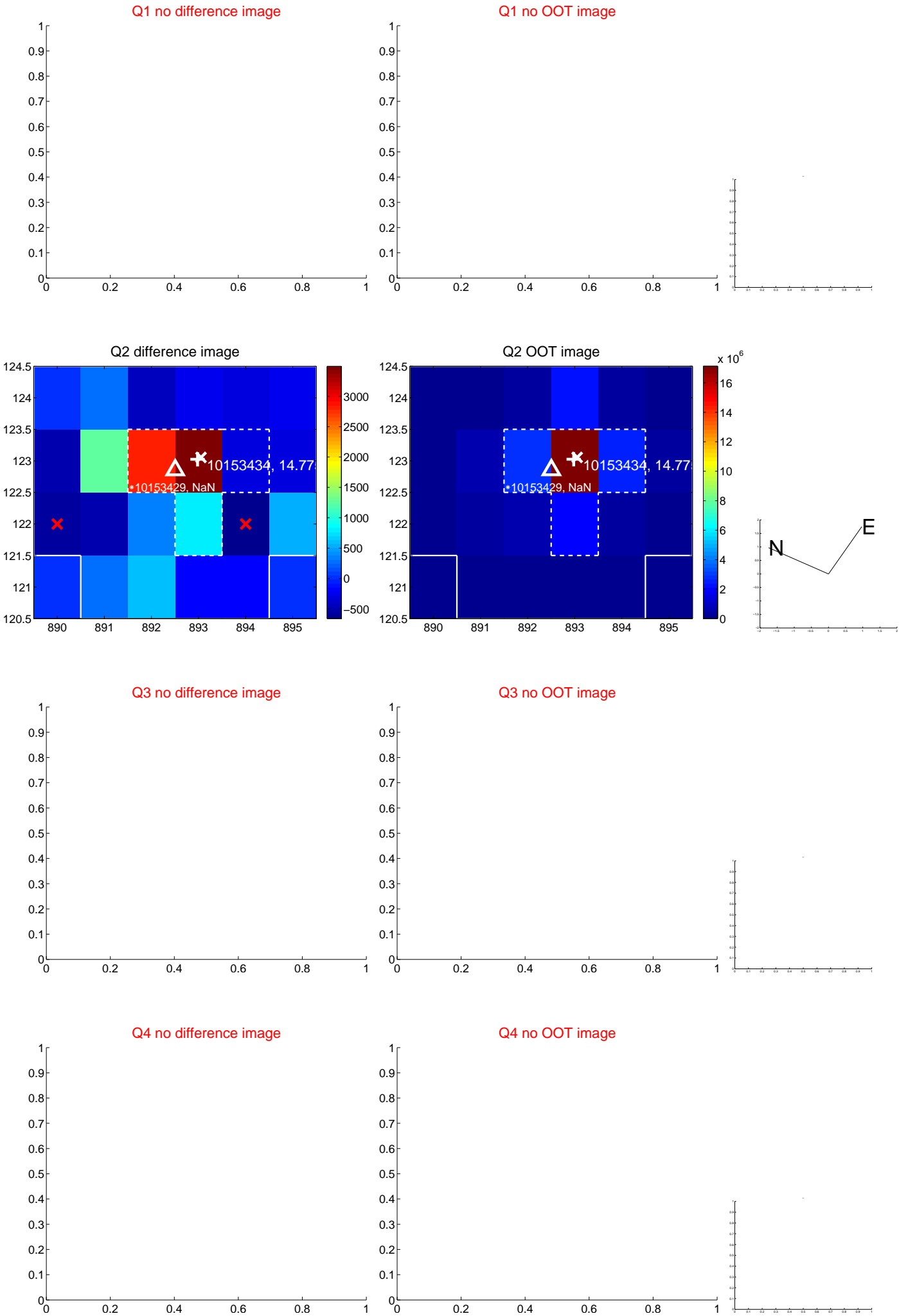
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.371 ± 1.519 | 0.90 | -0.712 ± 0.947 | -1.171 ± 1.682 |
| PRF-fit source offset from KIC position | 1.200 ± 1.410 | 0.85 | -0.721 ± 0.820 | -0.959 ± 1.653 |
| photometric centroid source offset | 2.20 ± 2.05 | 1.07 | 1.18 ± 2.00 | 1.85 ± 2.08 |

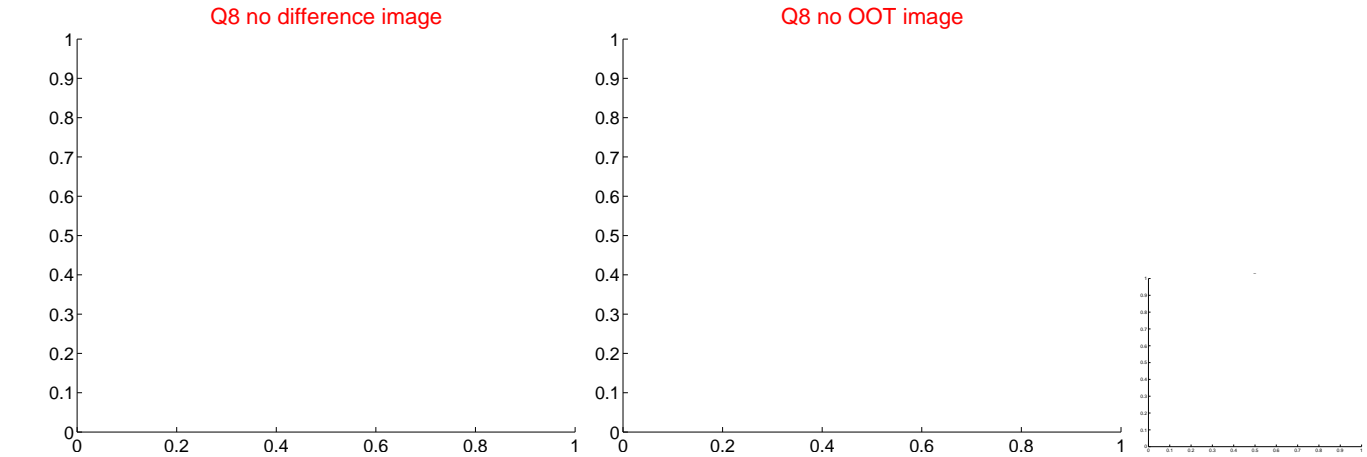
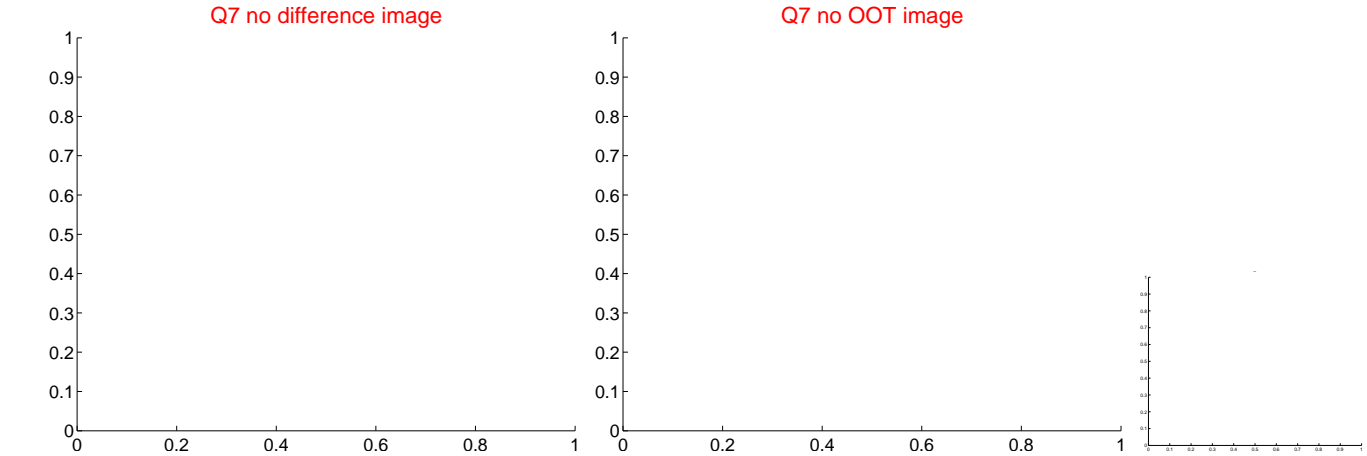
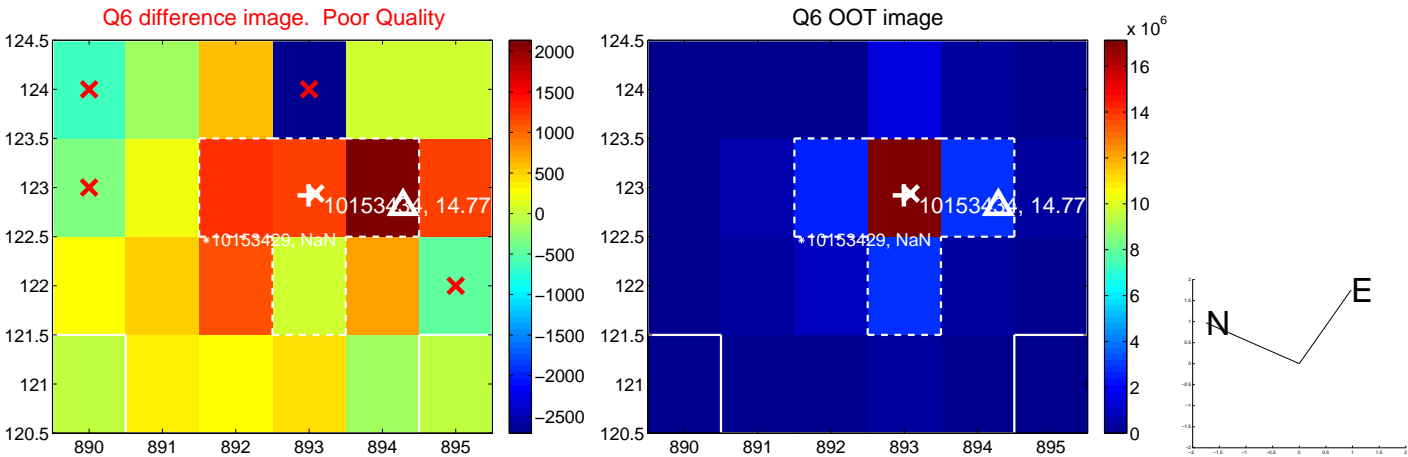
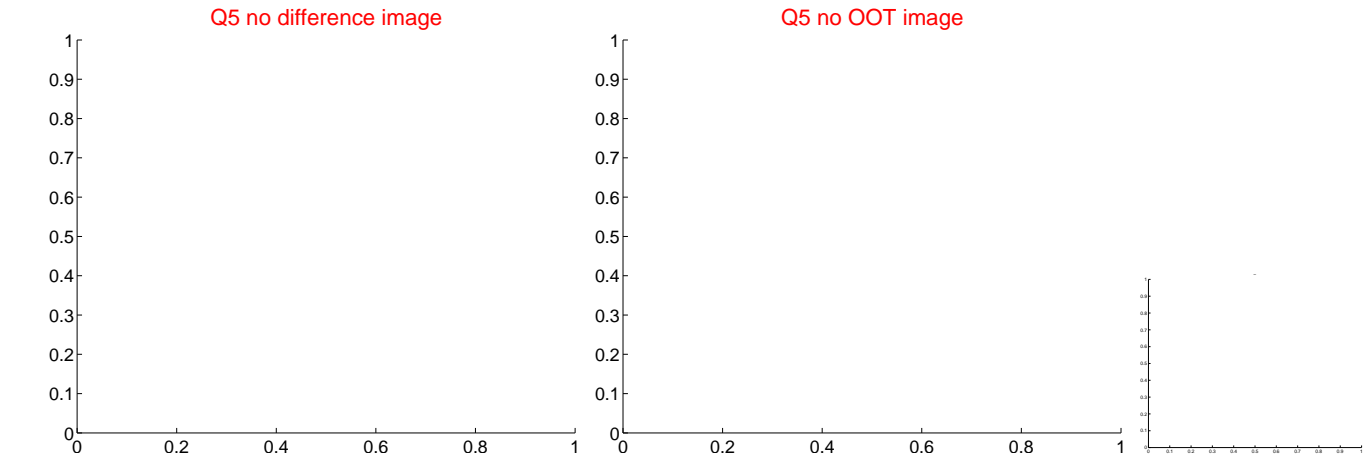


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



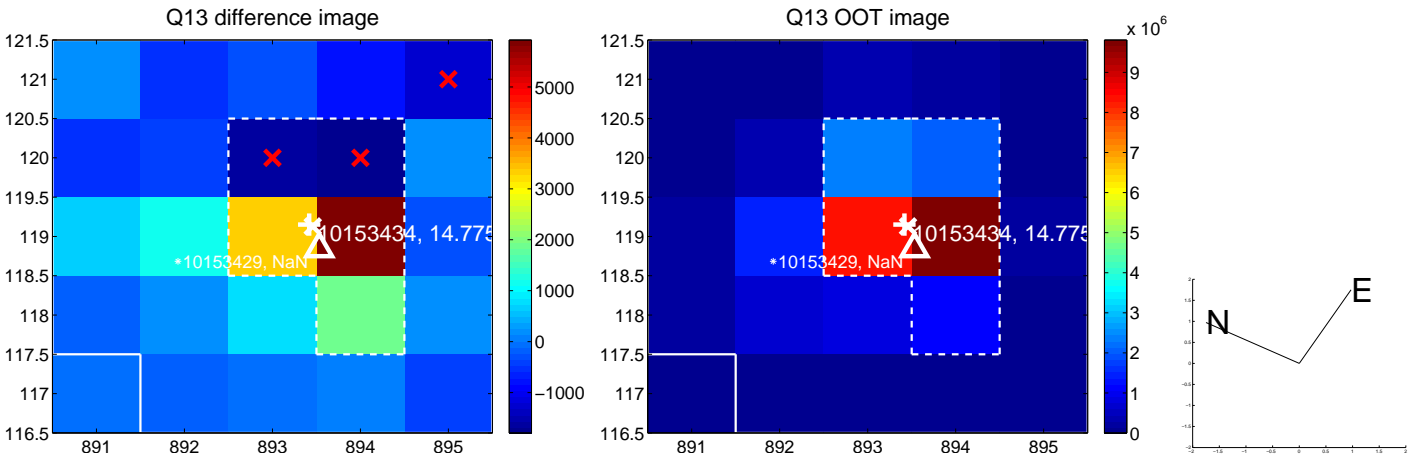
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



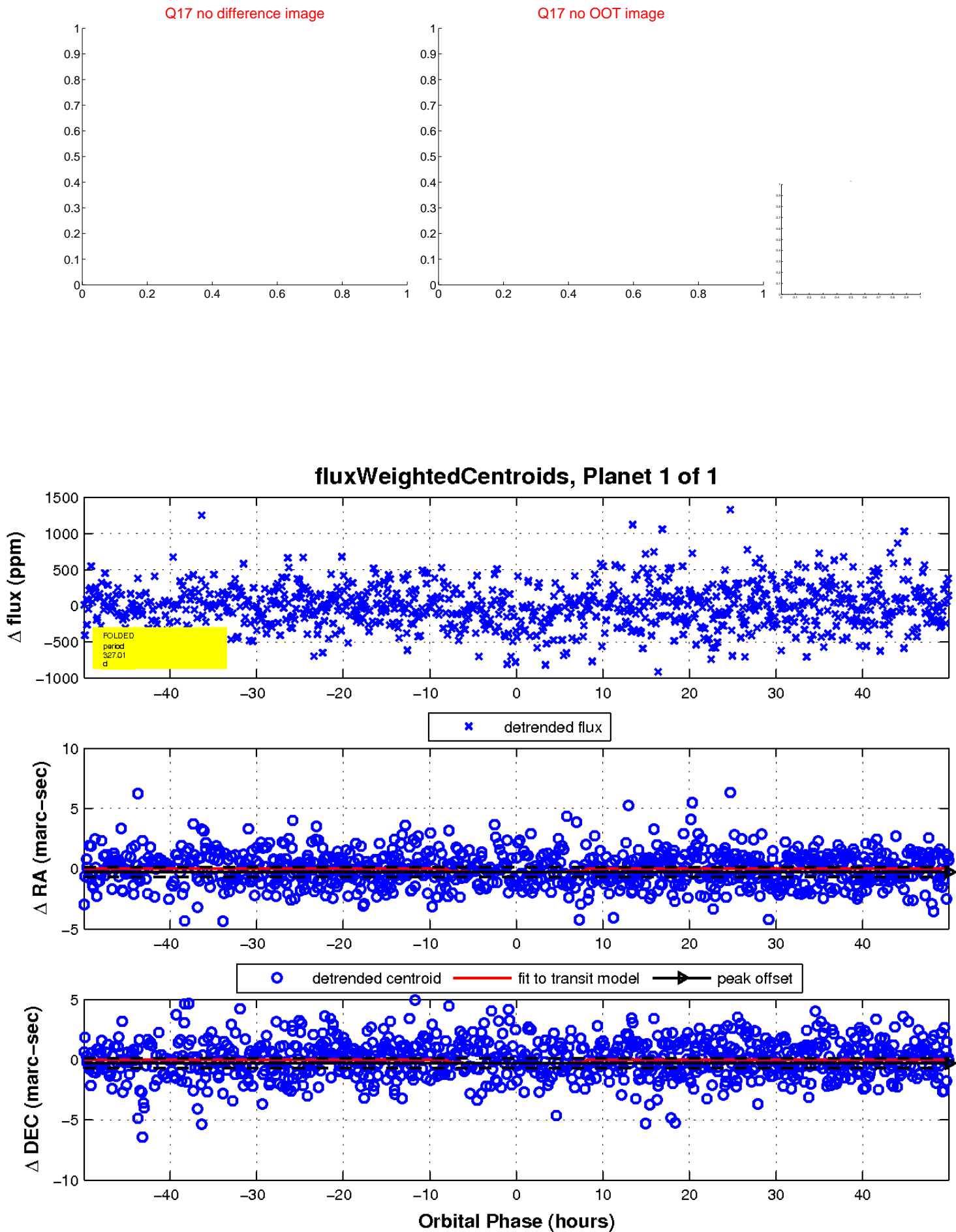
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image

Declination

