

KIC 009334310

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009334310-01 | OBS | No | 366.334601 | 326.782939 | 366.9 | 12.132 | 7.5 | 6.7 | 1.07 | 5456 | 2.17 | 0.94 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009334310-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—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.

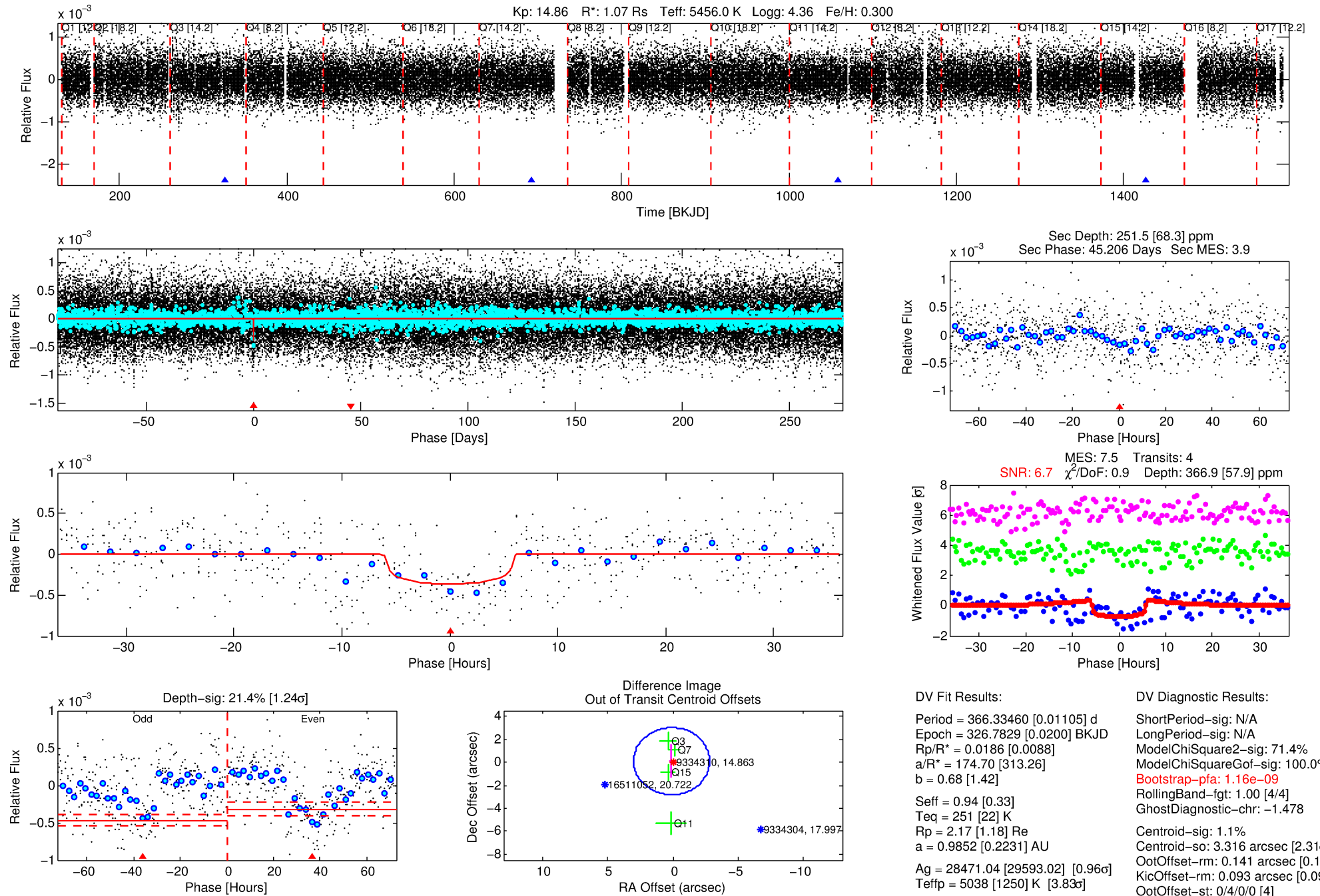
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009334310-01

No Significant Match Found

DV One-Page Summary

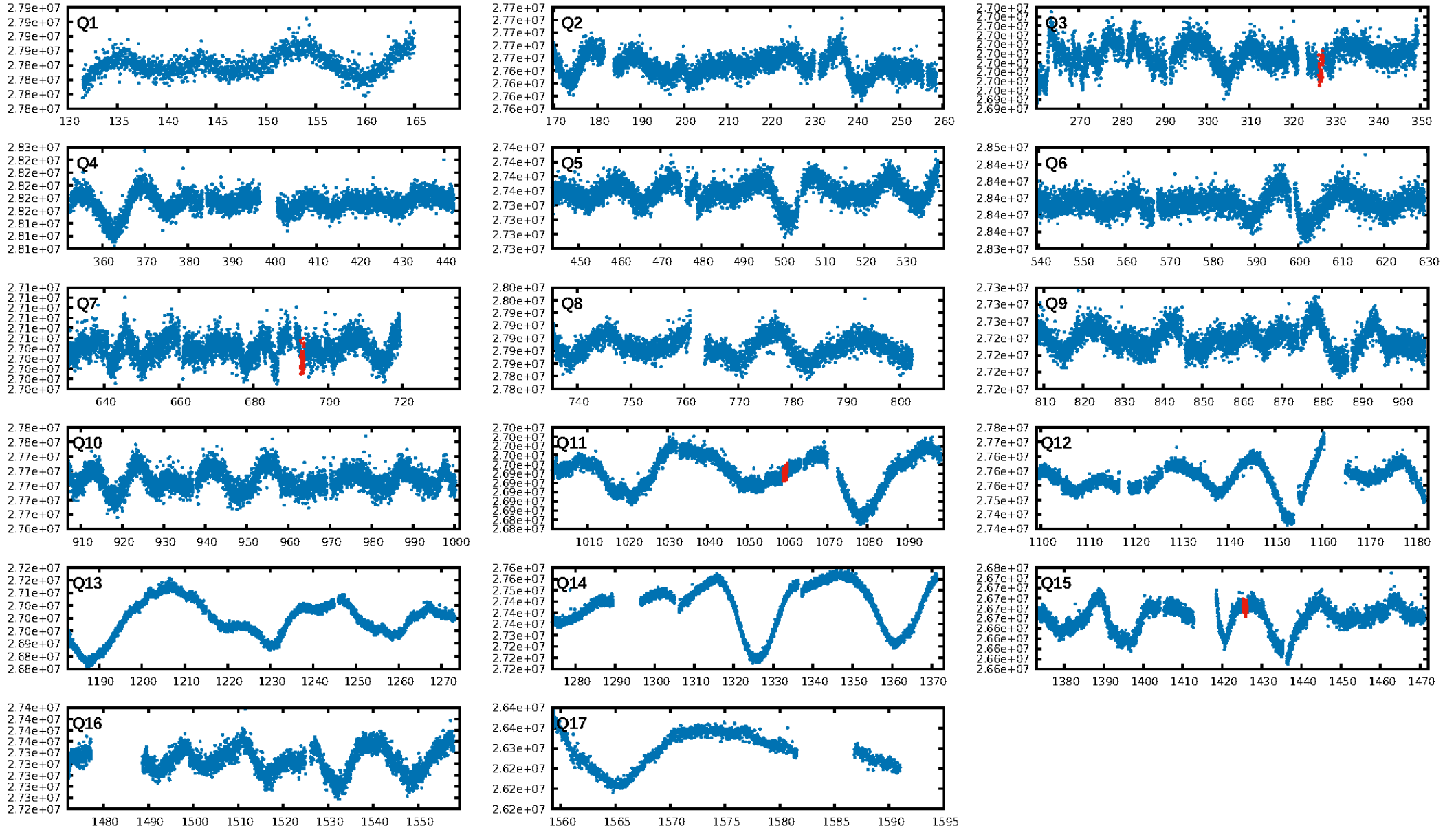
KIC: 9334310 Candidate: 1 of 1 Period: 366.335 d



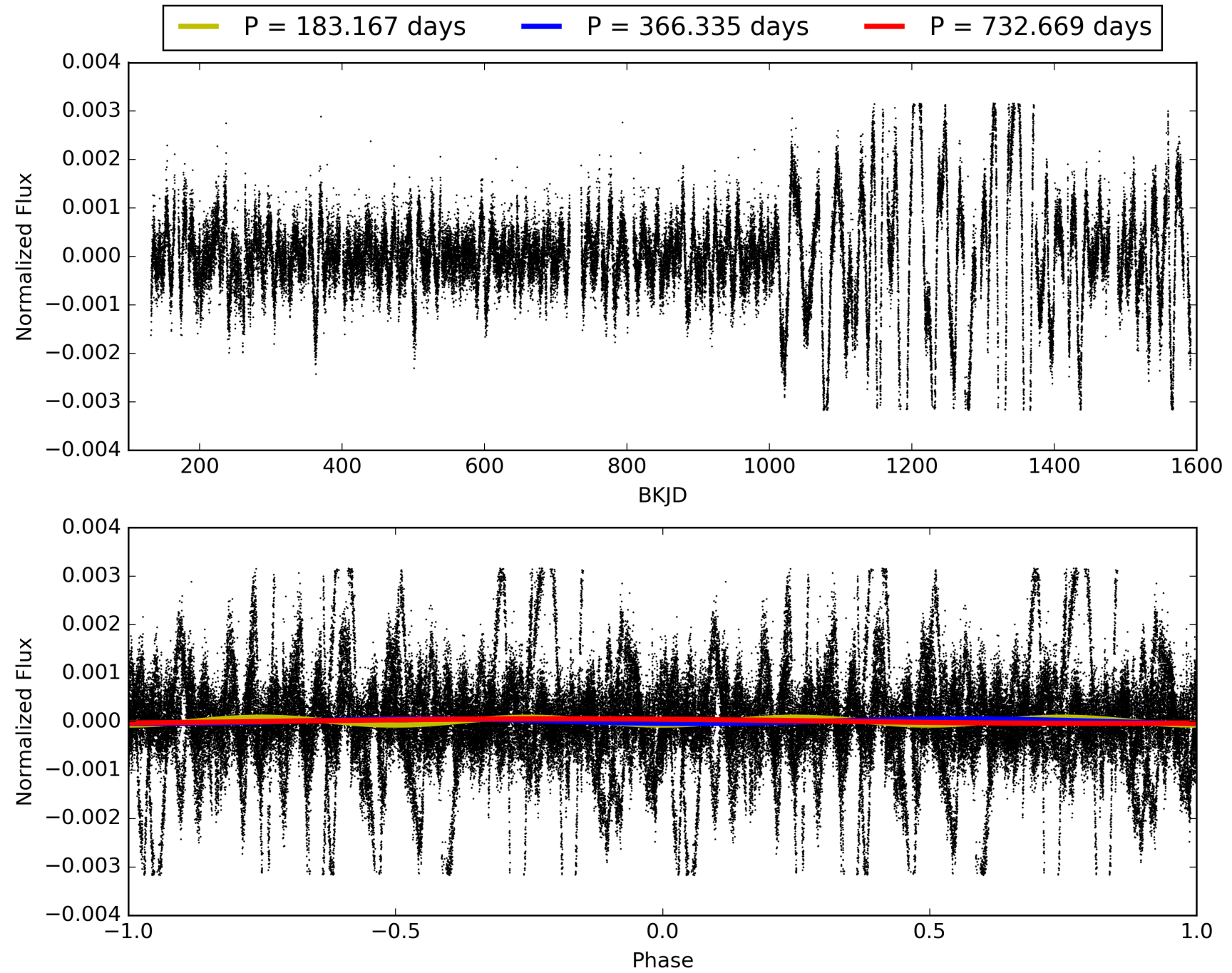
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:37:07 Z

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

TCE 009334310-01, PDC Light Curves

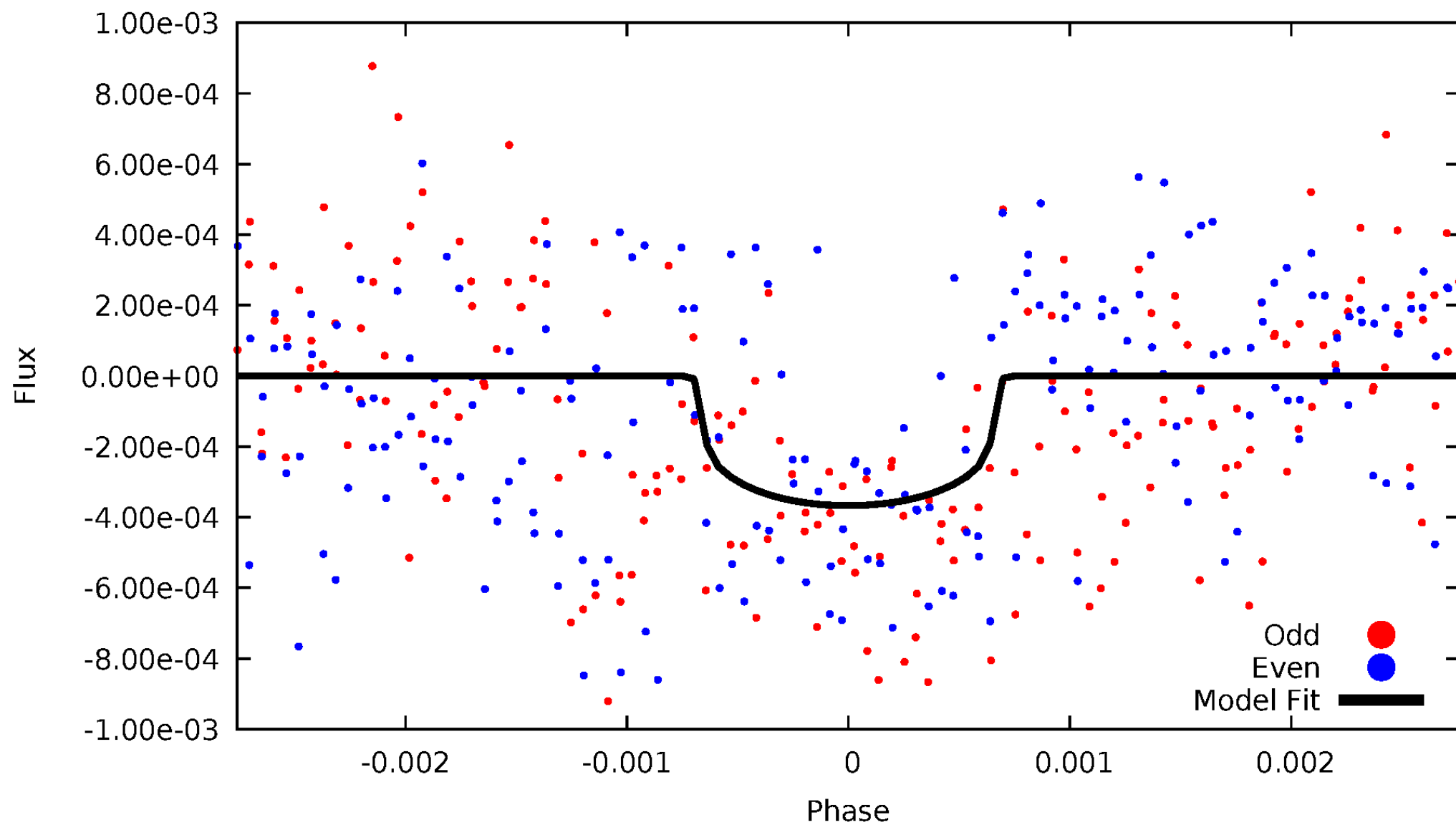


TCE 009334310-01



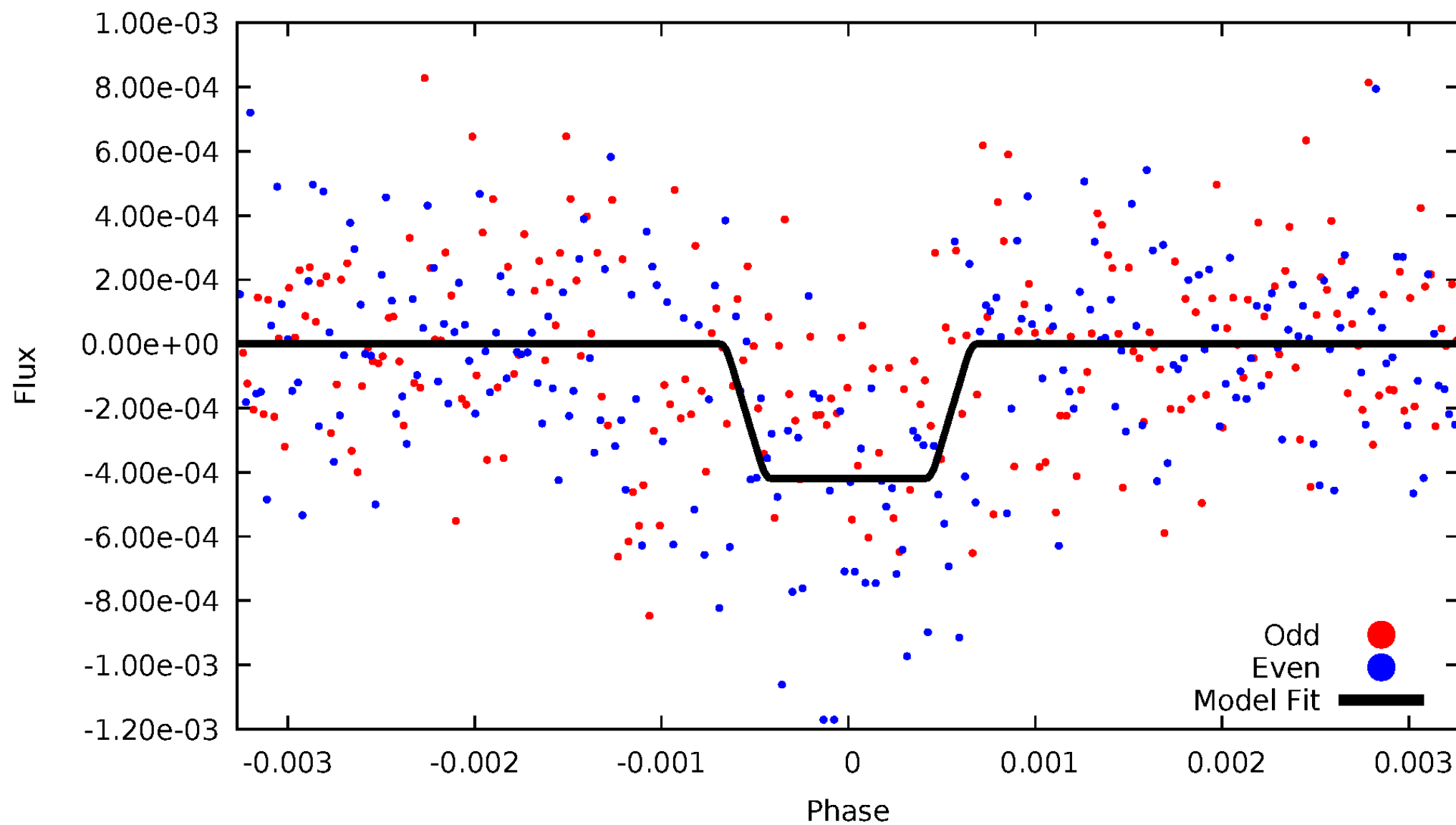
DV Odd/Even

TCE 009334310-01

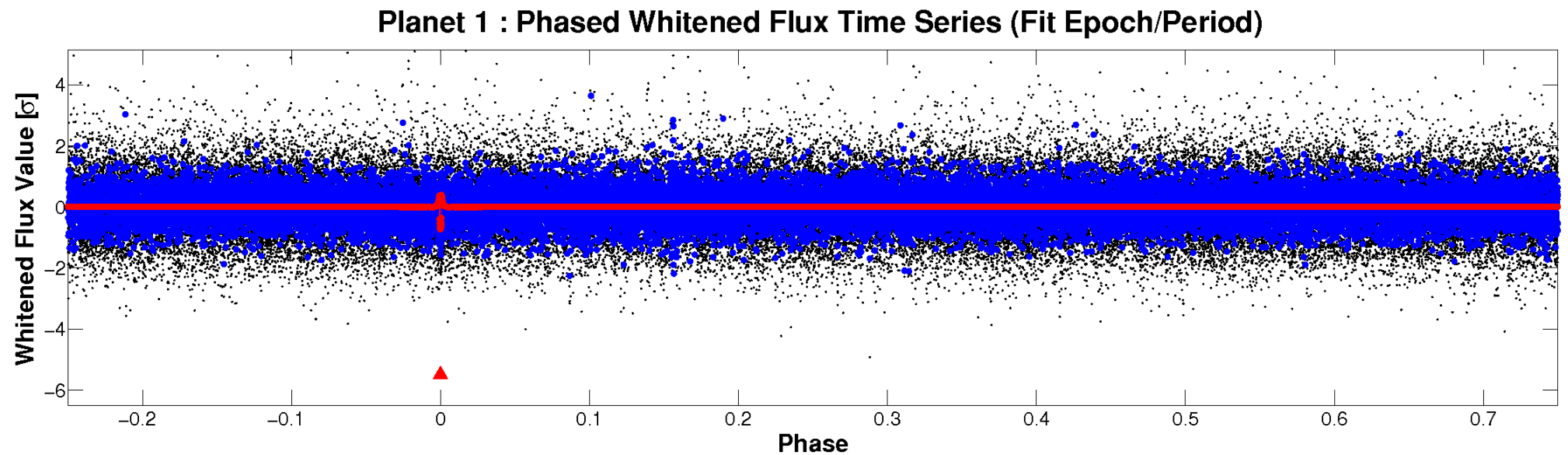
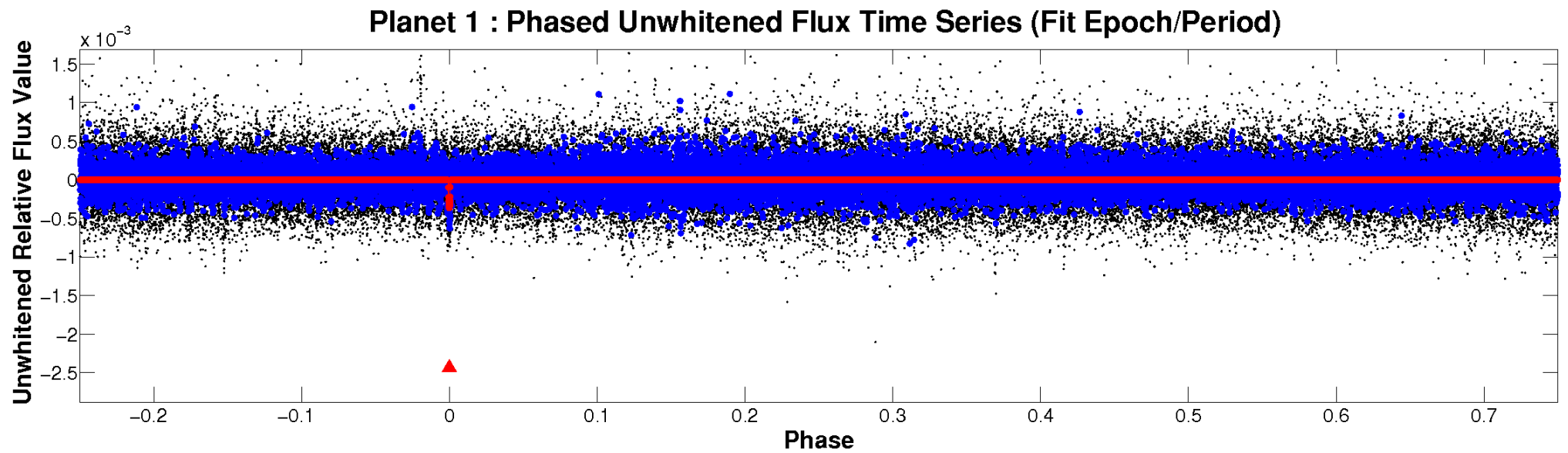


ALT Odd/Even

TCE 009334310-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 009334310-01 P=366.334602 Days $T_0=326.782939$ (BKJD)



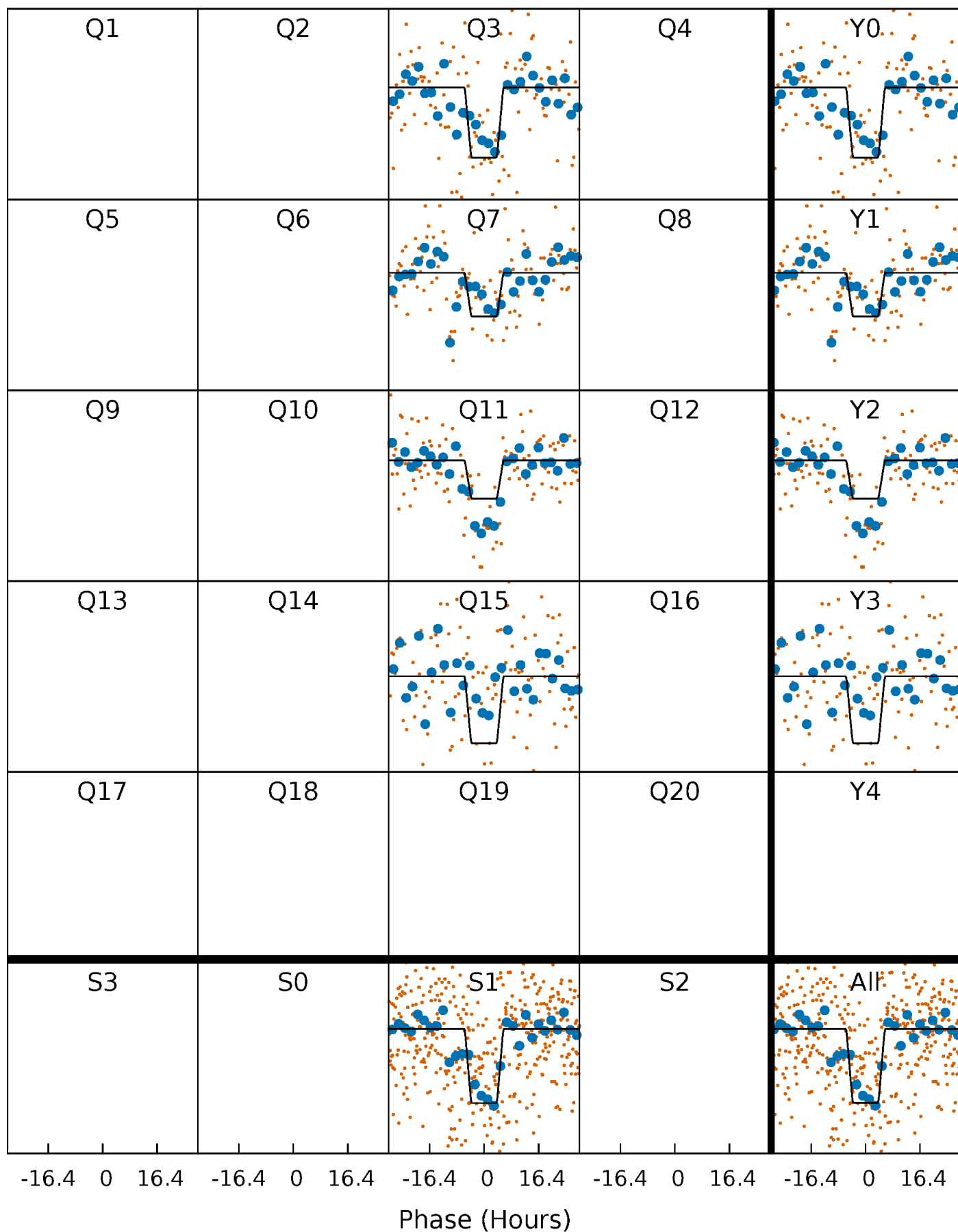
DV Quarter-Phased Transit Curves

TCE 009334310-01 P=366.334602 Days $T_0=326.782939$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

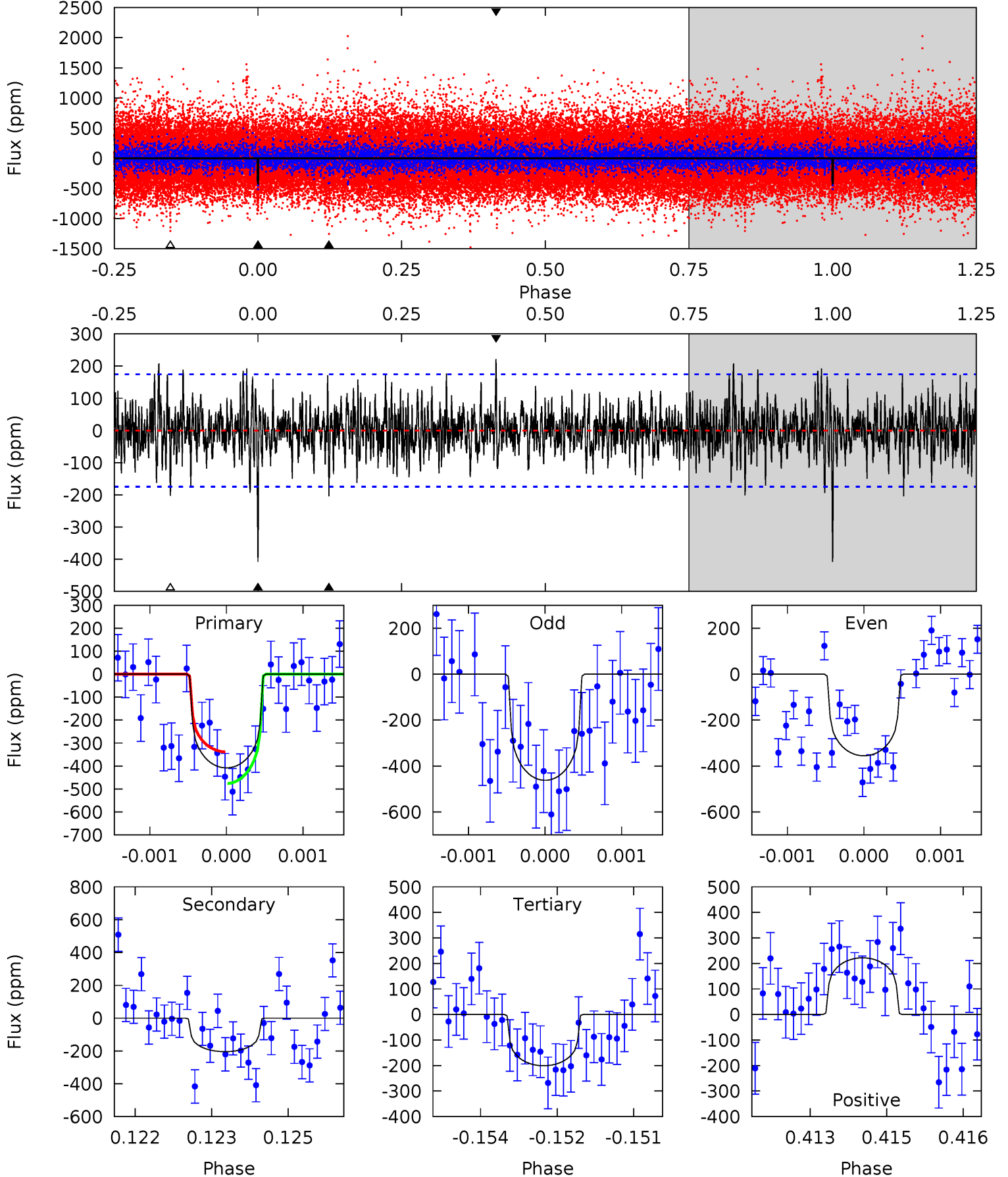
TCE 009334310-01 P=366.360108 Days $T_0=326.749703$ (BKJD)



DV Model-Shift Uniqueness Test

009334310-01, P = 366.334602 Days, E = 326.782939 Days

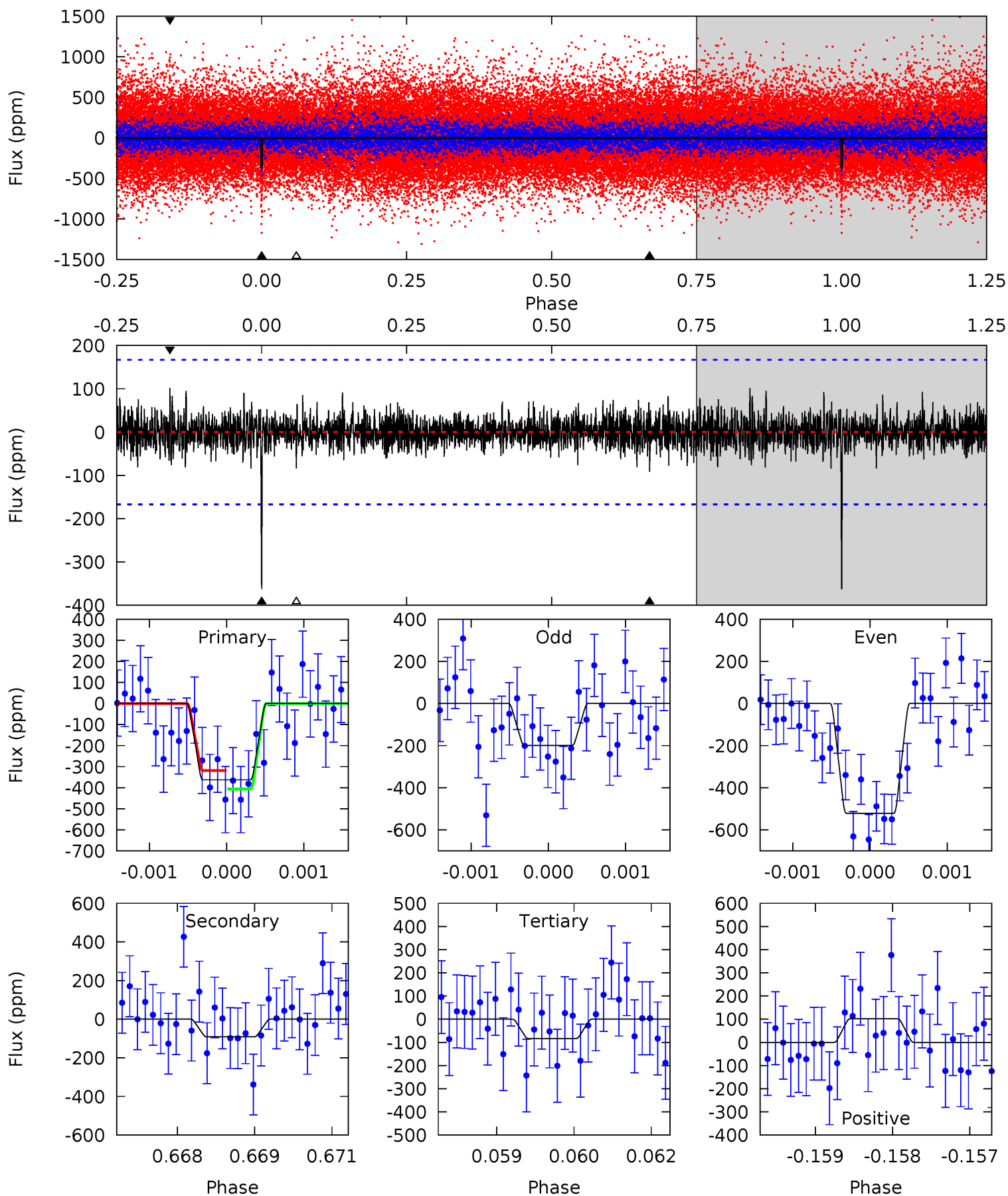
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.6 | 6.31 | 6.20 | 6.85 | 5.38 | 3.18 | 1.69 | 6.40 | 5.74 | 0.11 | -0.54 | 1.65 | 0.91 | 0.35 | 2.13 |



Alt Model-Shift Uniqueness Test

009334310-01, P = 366.360108 Days, E = 326.749703 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.7 | 2.96 | 2.71 | 3.27 | 5.40 | 3.21 | 0.80 | 9.01 | 8.44 | 0.26 | -0.31 | 5.23 | 1.20 | 0.22 | 1.42 |



Stellar Parameters For KIC 009334310

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5456^{+164}_{-147} | $4.357^{+0.149}_{-0.182}$ | $0.300^{+0.150}_{-0.250}$ | $1.070^{+0.286}_{-0.167}$ | $0.950^{+0.082}_{-0.074}$ | $1.092^{+0.758}_{-0.512}$ |
| | +3%/-3% | +3%/-4% | +50%/-83% | +27%/-16% | +9%/-8% | +69%/-47% |
| 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 009334310-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -204 ± 32 | $2.17^{+1.07}_{-1.01}$ | 352^{+26}_{-20} | 4893^{+1583}_{-724} | 23440^{+54647}_{-12967} |
| Alt. | -92 ± 31 | $2.31^{+1.14}_{-1.05}$ | 351^{+23}_{-21} | 4039^{+1131}_{-553} | 8722^{+21743}_{-5172} |

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

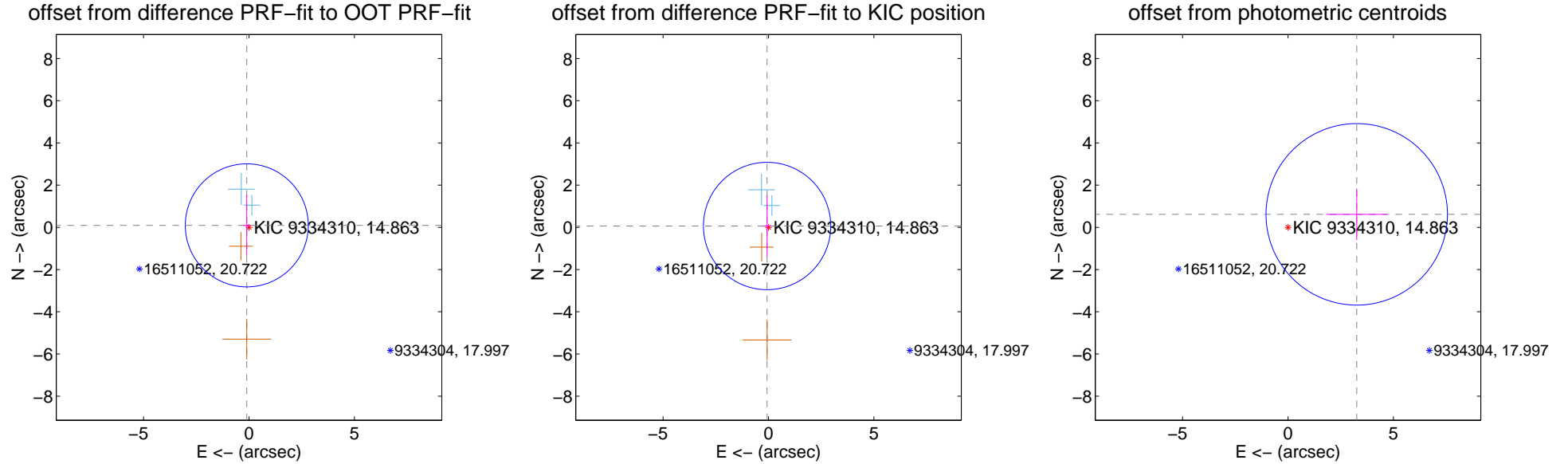
DV Centroid Data

Supplemental centroid analysis for 009334310-01. Kepler magnitude: 14.86. Transit SNR 6.71

There are 2 quarters with good PRF difference image offsets

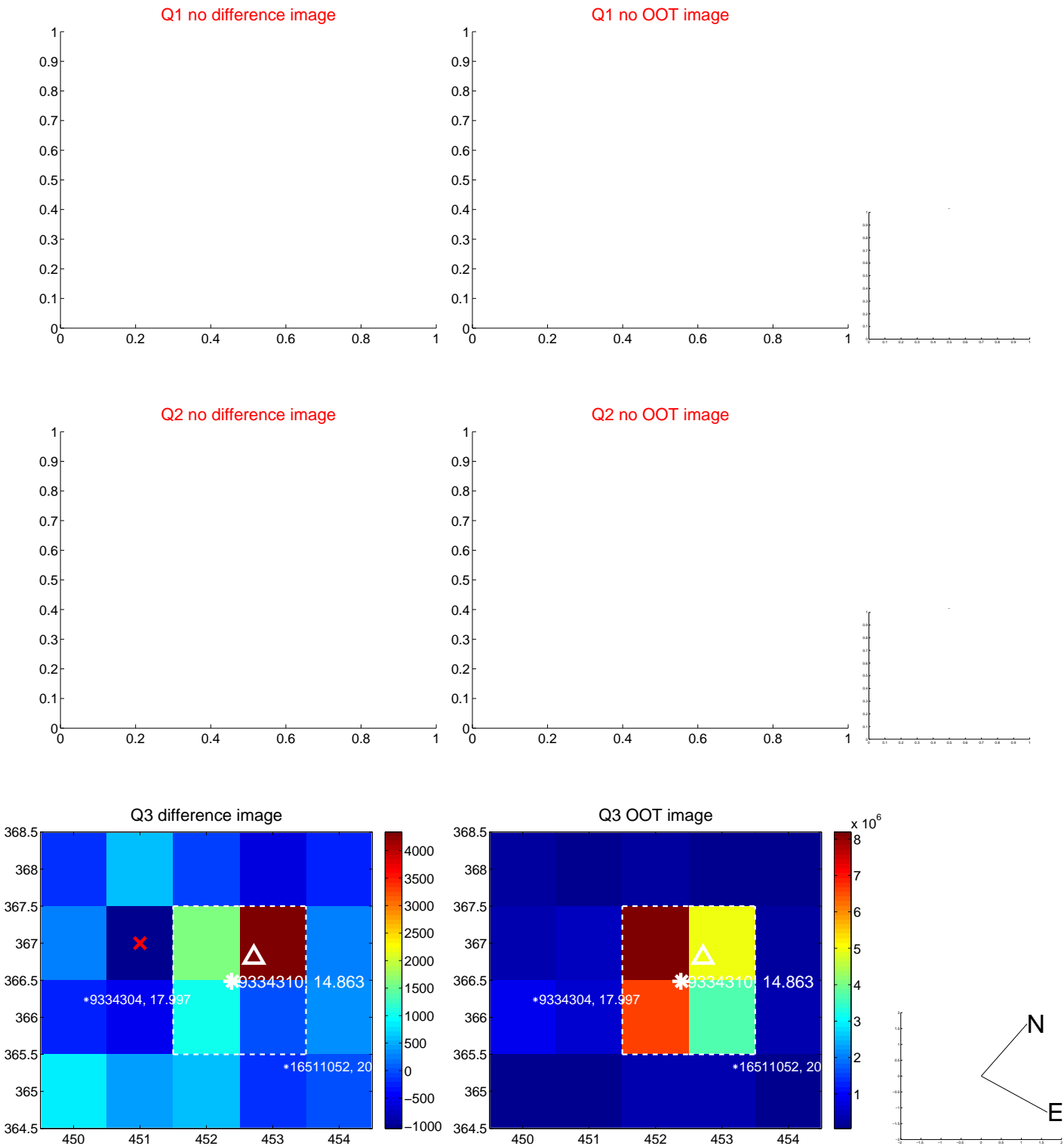
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.141 ± 0.972 | 0.14 | 0.105 ± 0.175 | 0.094 ± 1.438 |
| PRF-fit source offset from KIC position | 0.093 ± 1.006 | 0.09 | 0.067 ± 0.168 | 0.064 ± 1.443 |
| photometric centroid source offset | 3.32 ± 1.43 | 2.31 | -3.26 ± 1.44 | 0.62 ± 1.22 |



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

Q5 no difference image



Q5 no OOT image



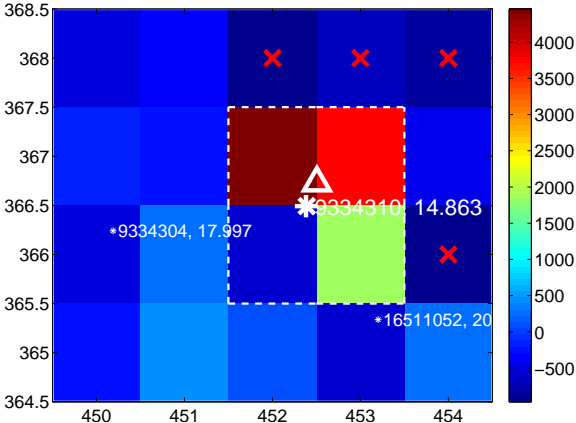
Q6 no difference image



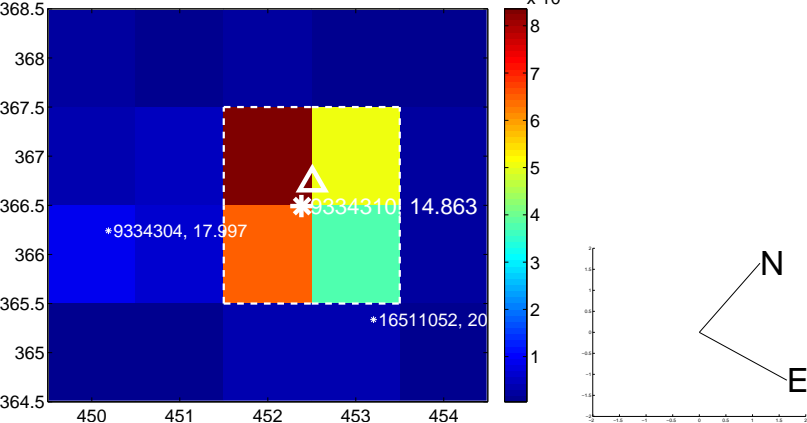
Q6 no OOT image



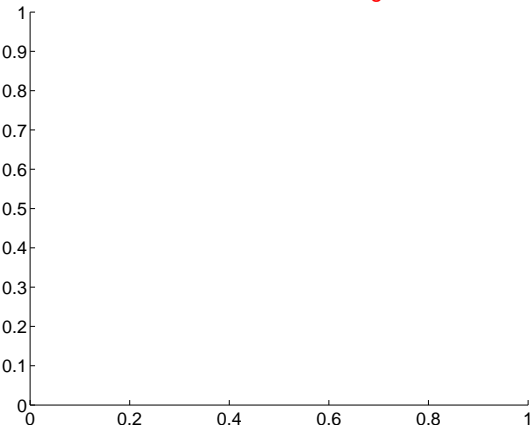
Q7 difference image



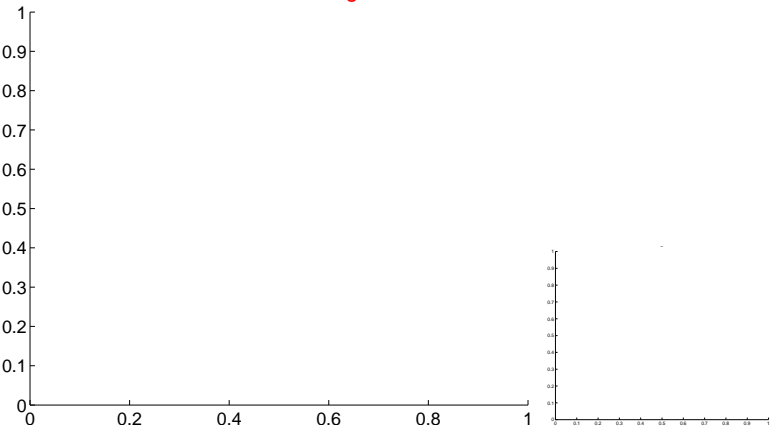
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



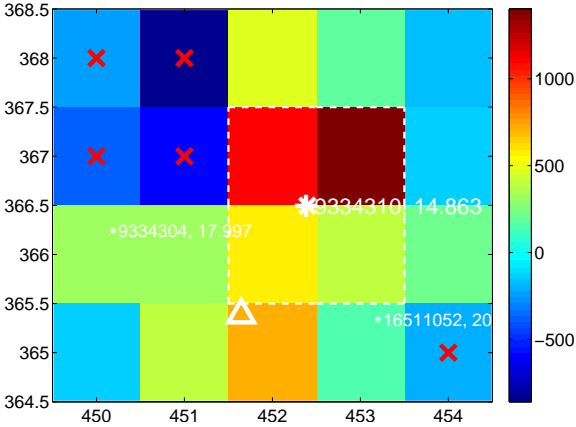
Q10 no difference image



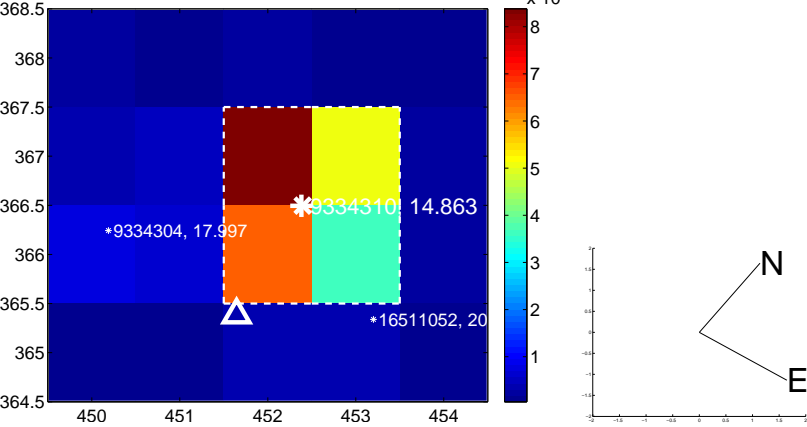
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



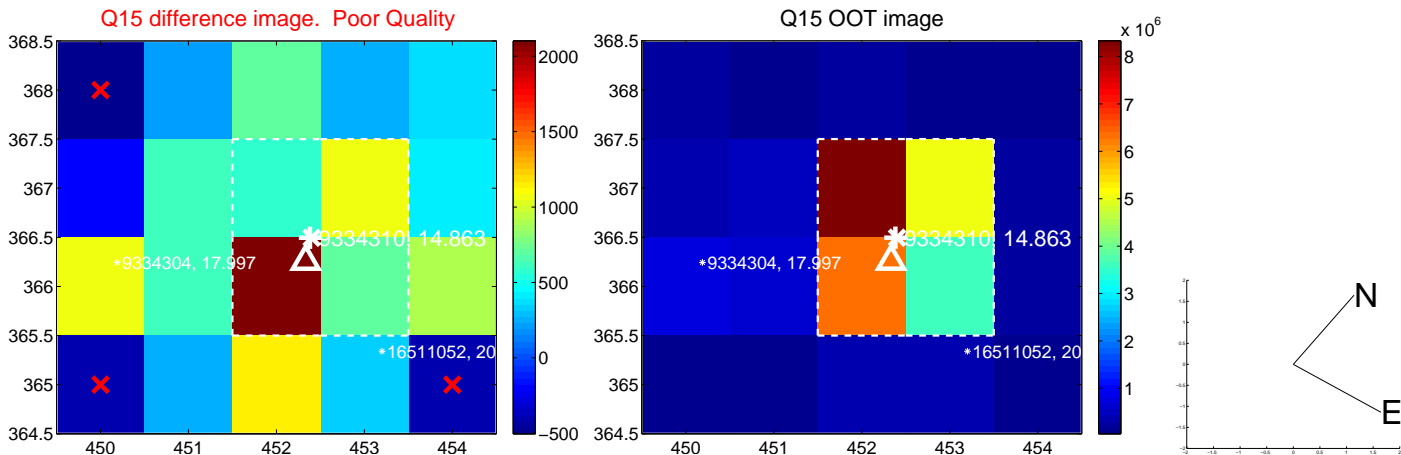
Q12 no difference image



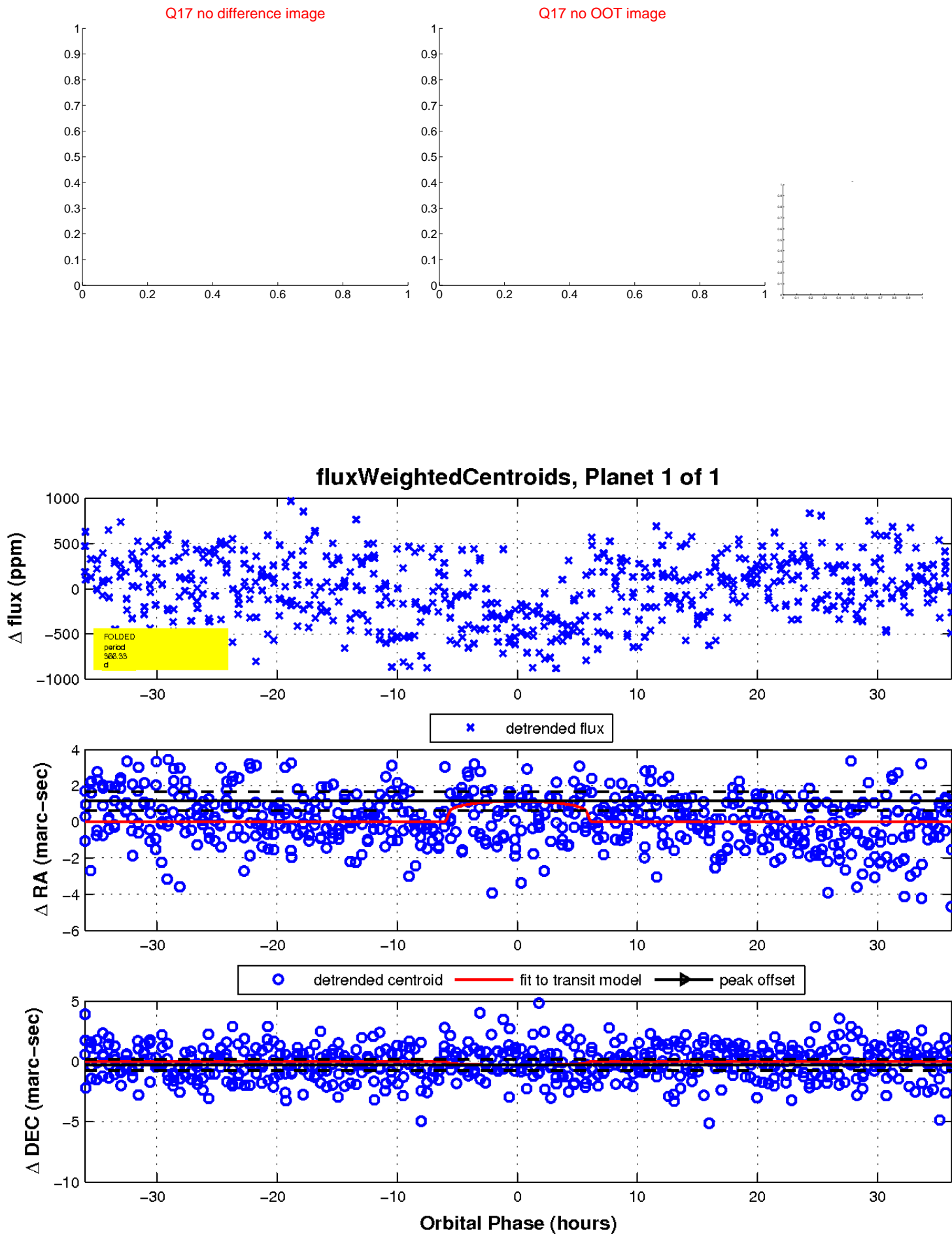
Q12 no OOT image



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.



UKIRT Image

Declination

