

KIC 004815965

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 004815965-01 | OBS | No | 300.060017 | 305.792233 | 521.5 | 9.000 | 15.5 | -1.0 | 1.72 | 5263 | 3.85 | 2.92 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 004815965-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_ZUMA—LPP_DV—INCONSISTENT_TRANS—CENT_NOFITS |

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

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

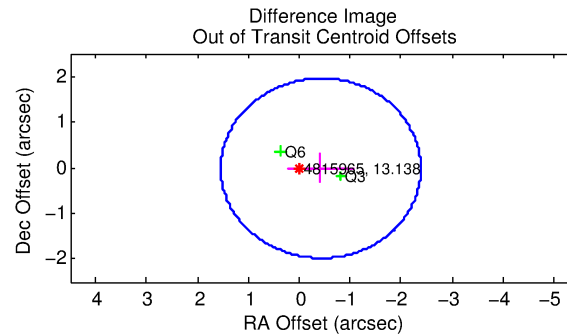
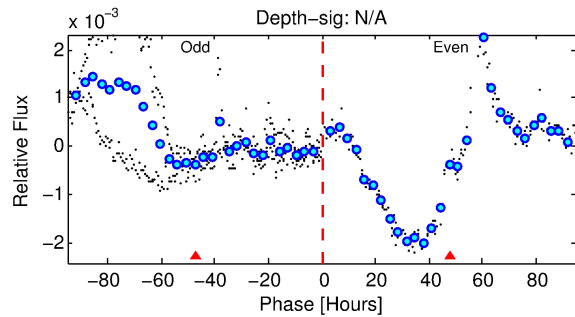
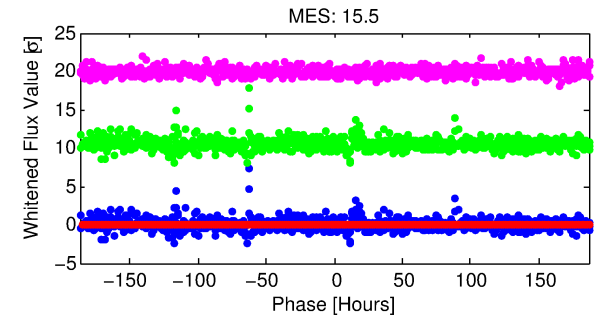
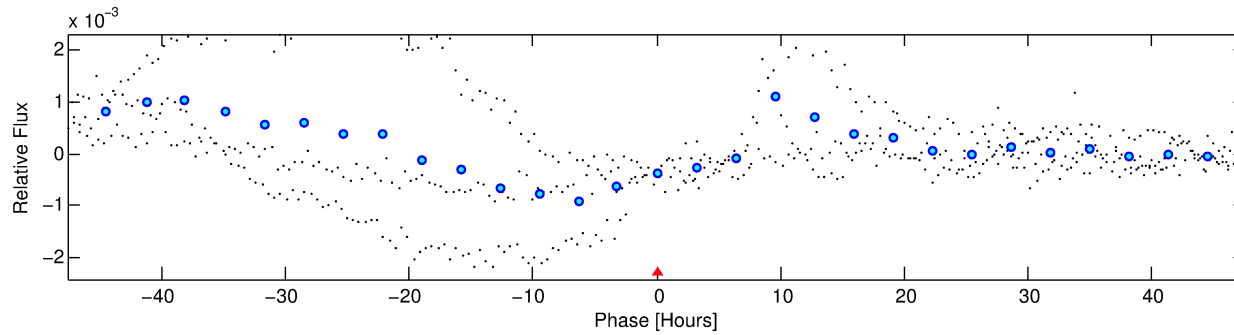
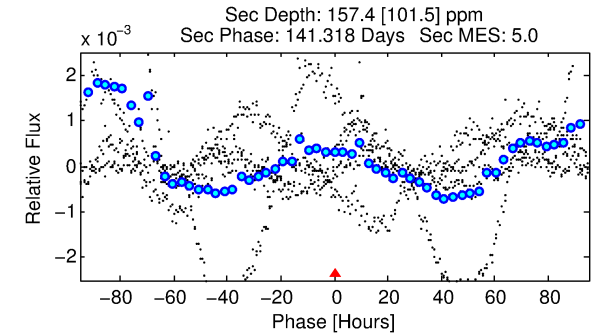
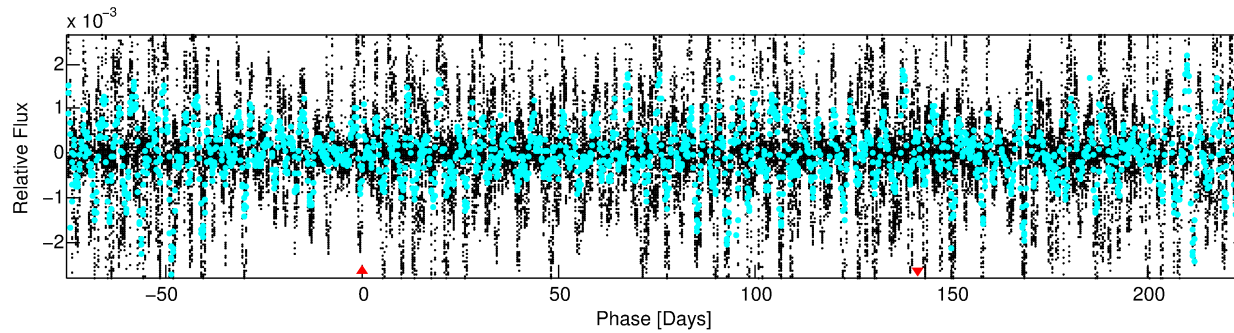
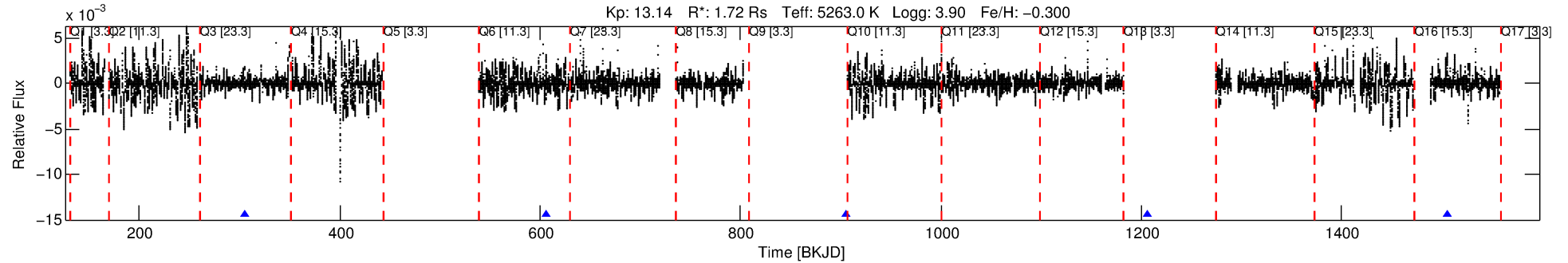
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004815965-01

No Significant Match Found

DV One-Page Summary

KIC: 4815965 Candidate: 1 of 1 Period: 300.060 d



TPS TCE Results:

Period = 300.06002 d
Epoch = 305.7922 BKJD

DV fit results are unavailable

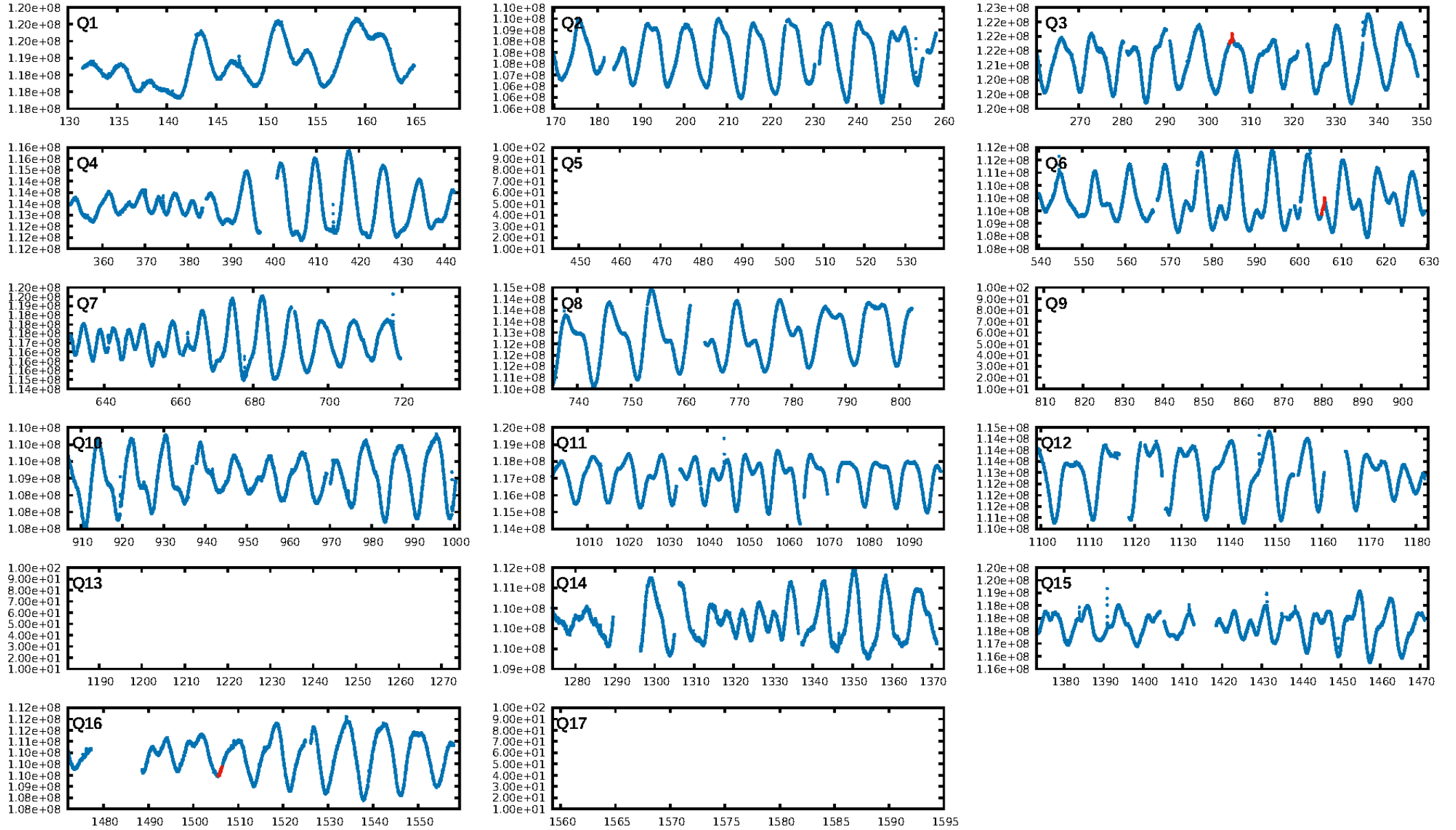
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.38e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.604
Centroid-sig: 89.6%
Centroid-so: 0.857 arcsec [0.29 σ]
OotOffset-rm: 0.426 arcsec [0.65 σ]
KicOffset-rm: 0.460 arcsec [0.78 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

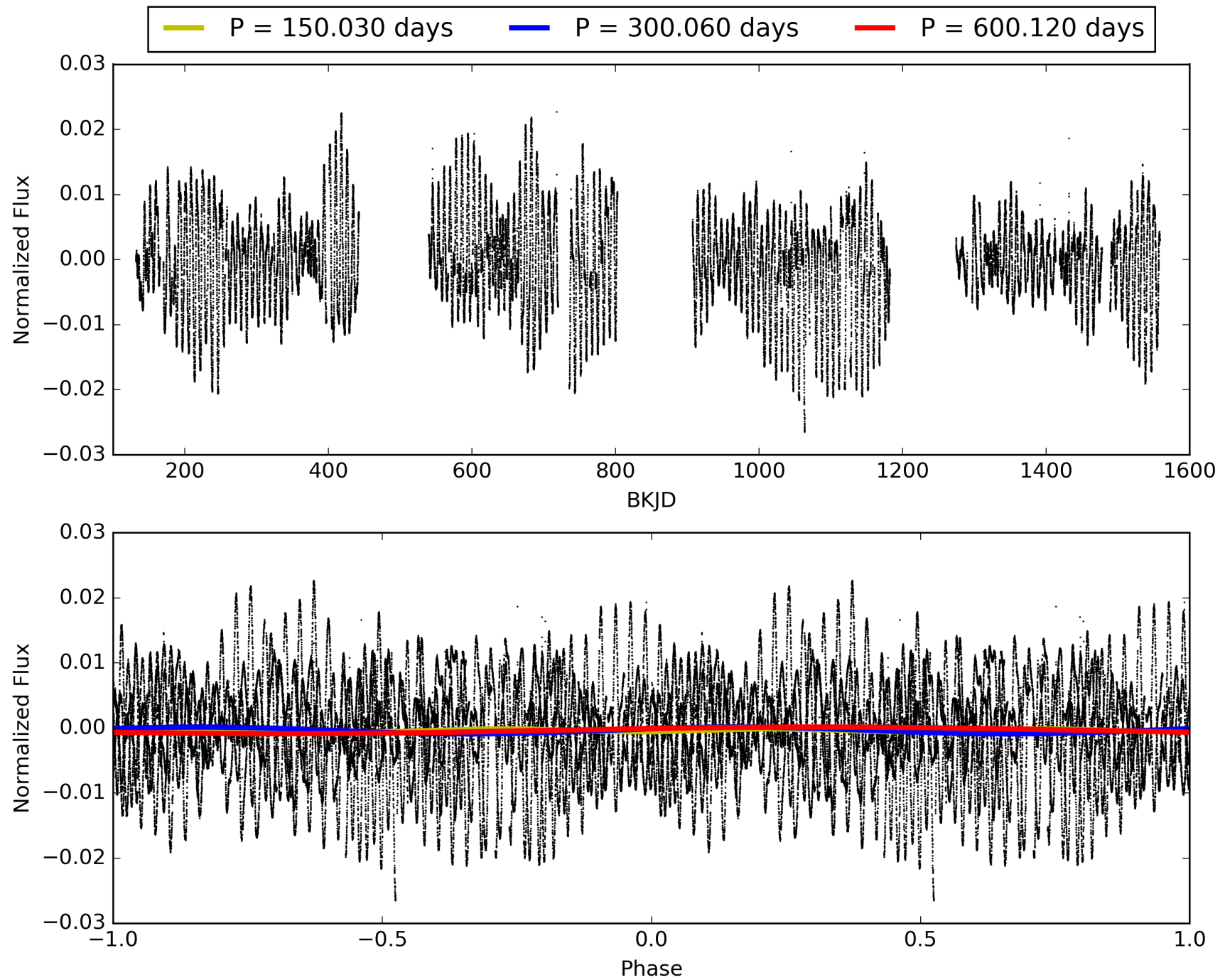
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:17:26 Z

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

TCE 004815965-01, PDC Light Curves

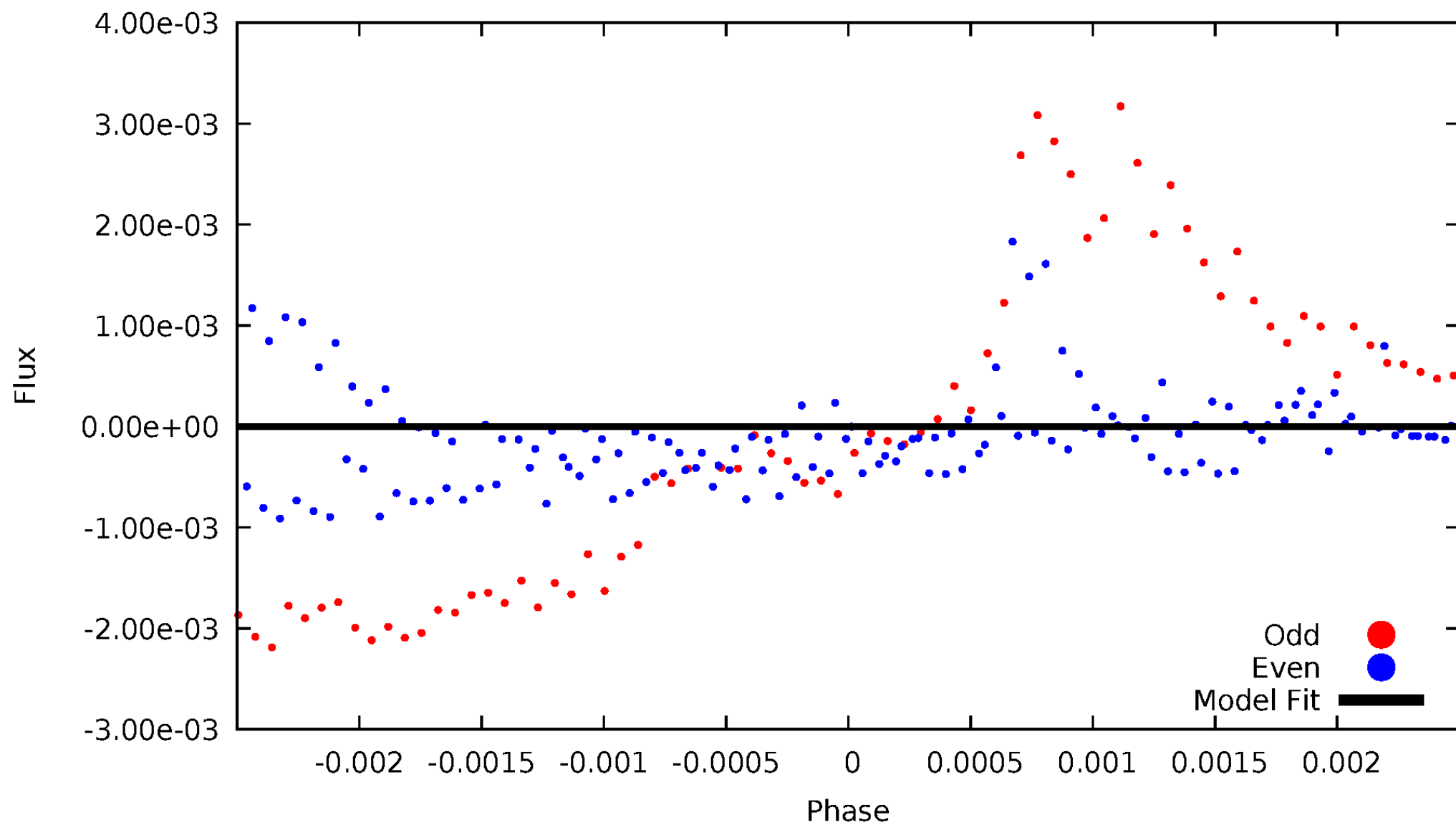


TCE 004815965-01



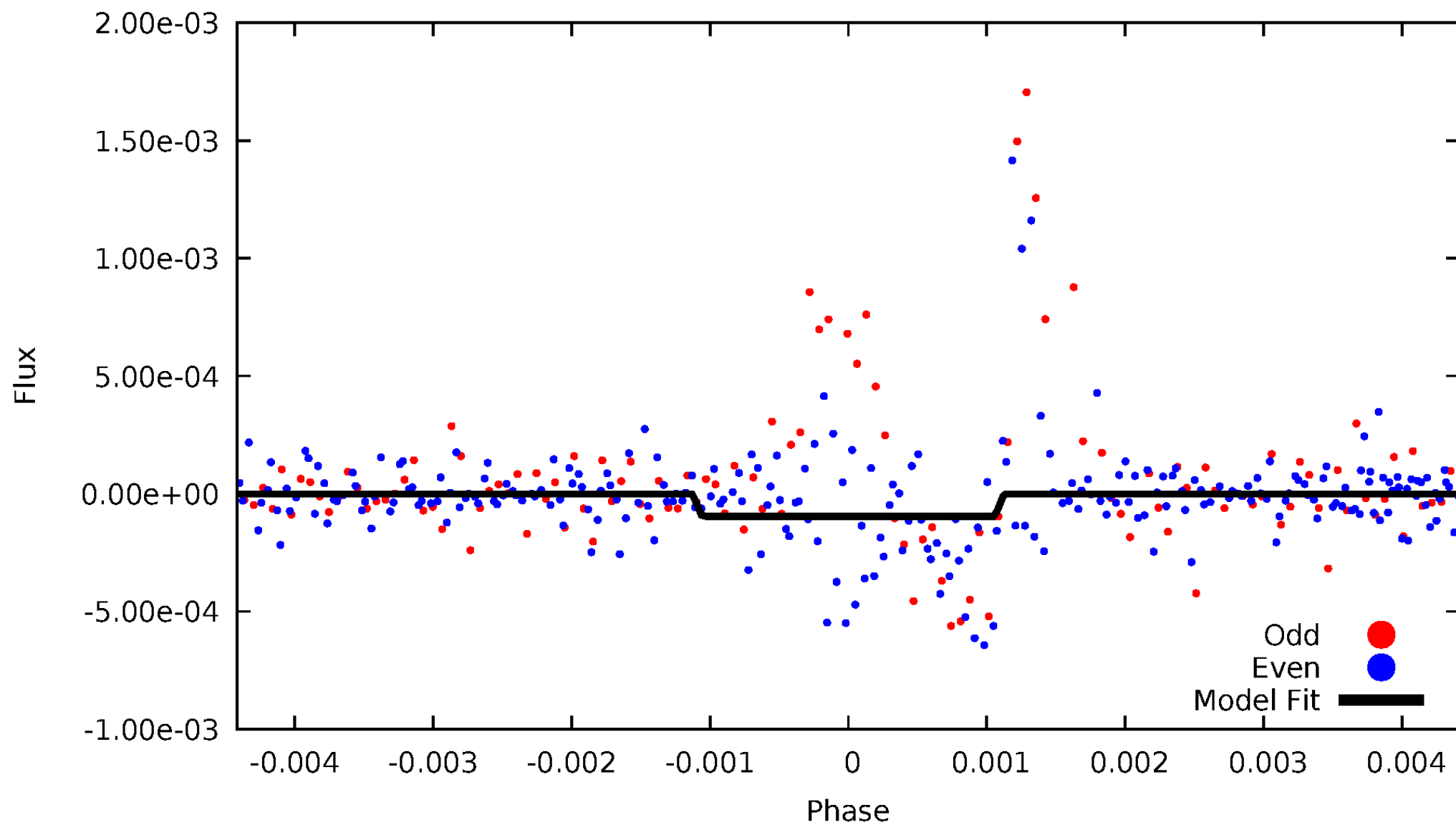
DV Odd/Even

TCE 004815965-01



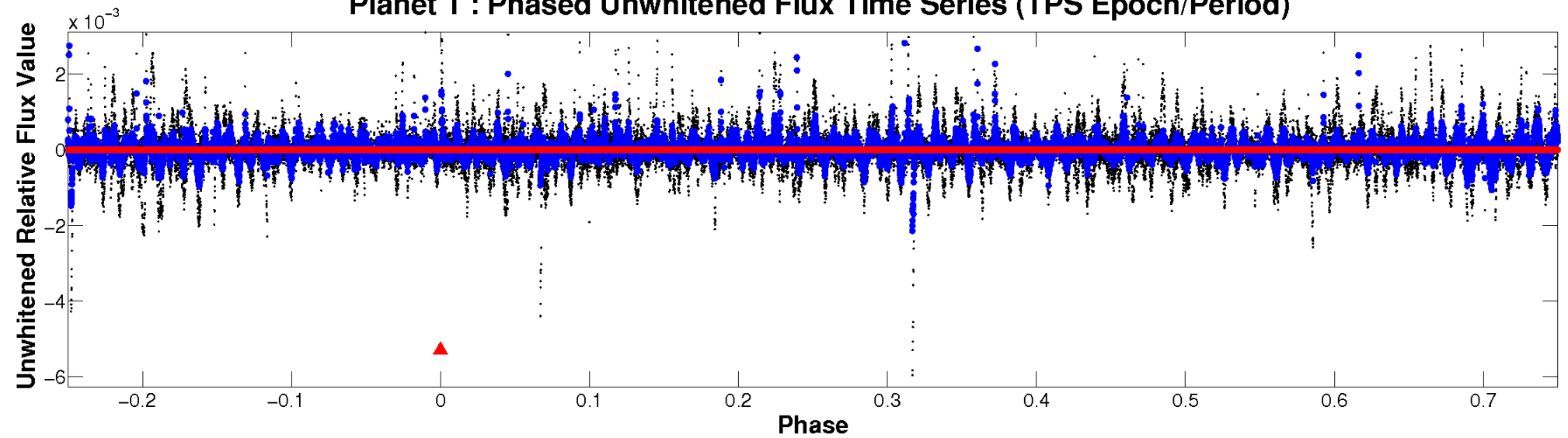
ALT Odd/Even

TCE 004815965-01



Non-Whitened Vs. Whitened Light Curve

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

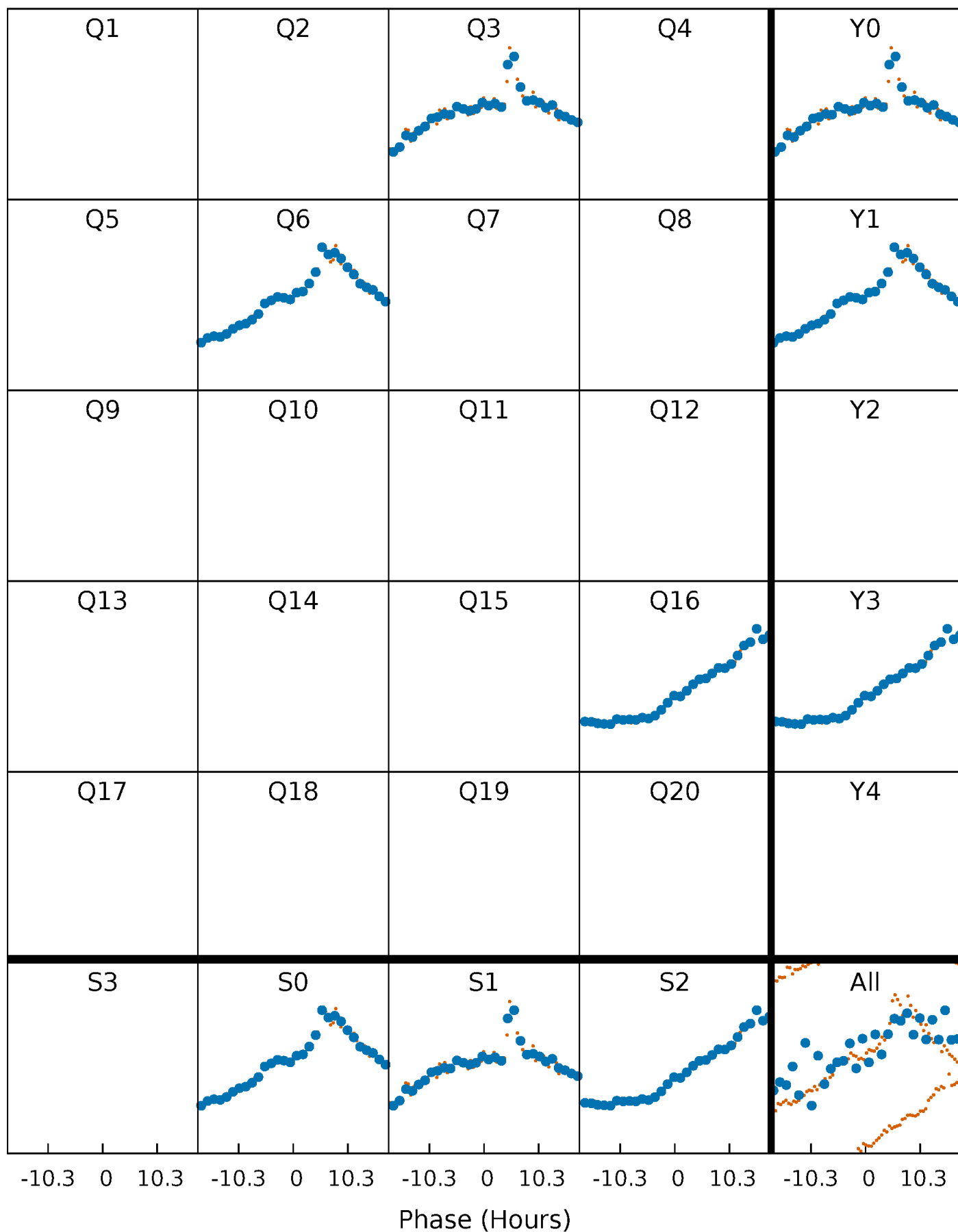


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



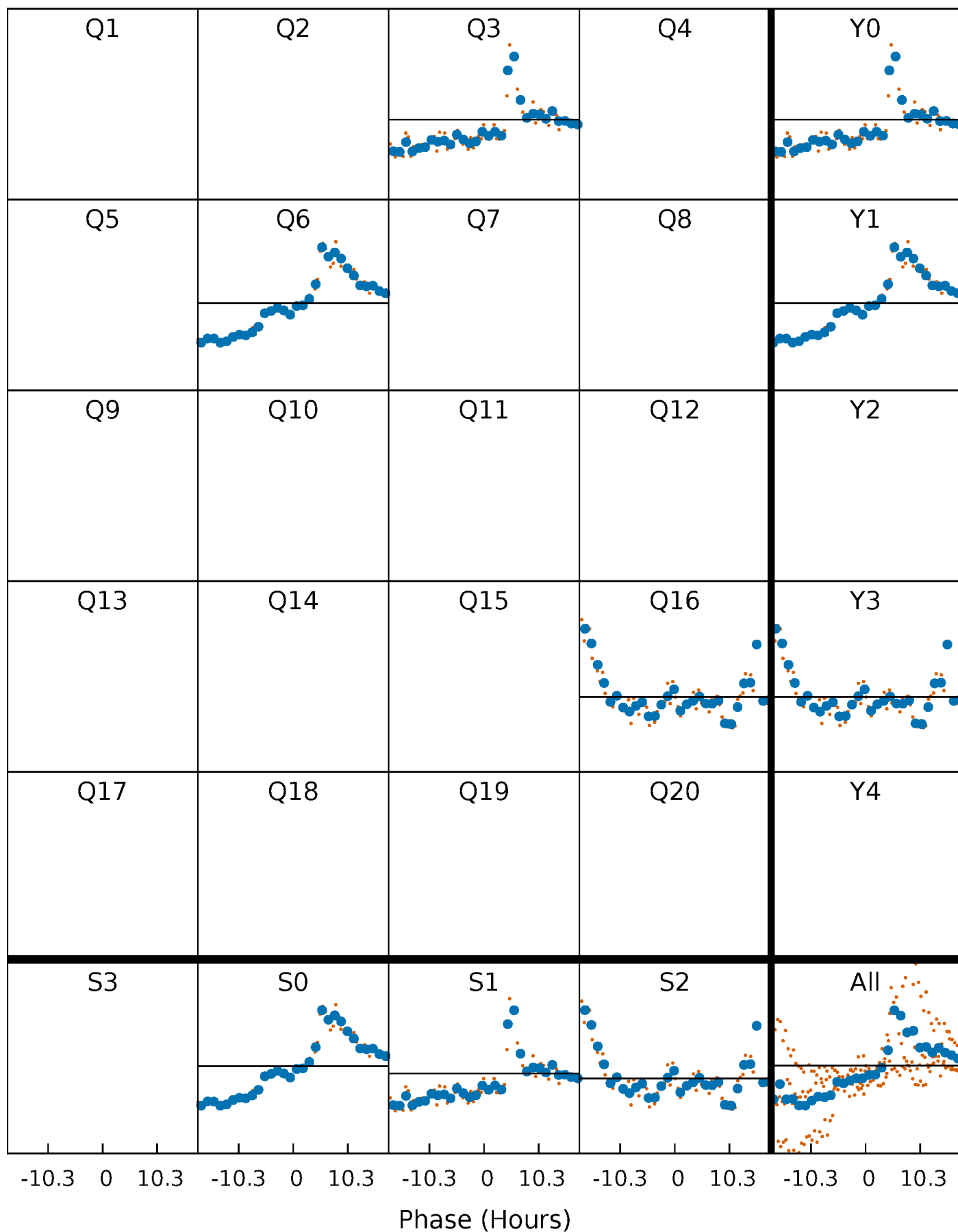
PDC Quarter-Phased Transit Curves

TCE 004815965-01 P=300.060017 Days $T_0=305.792233$ (BKJD)



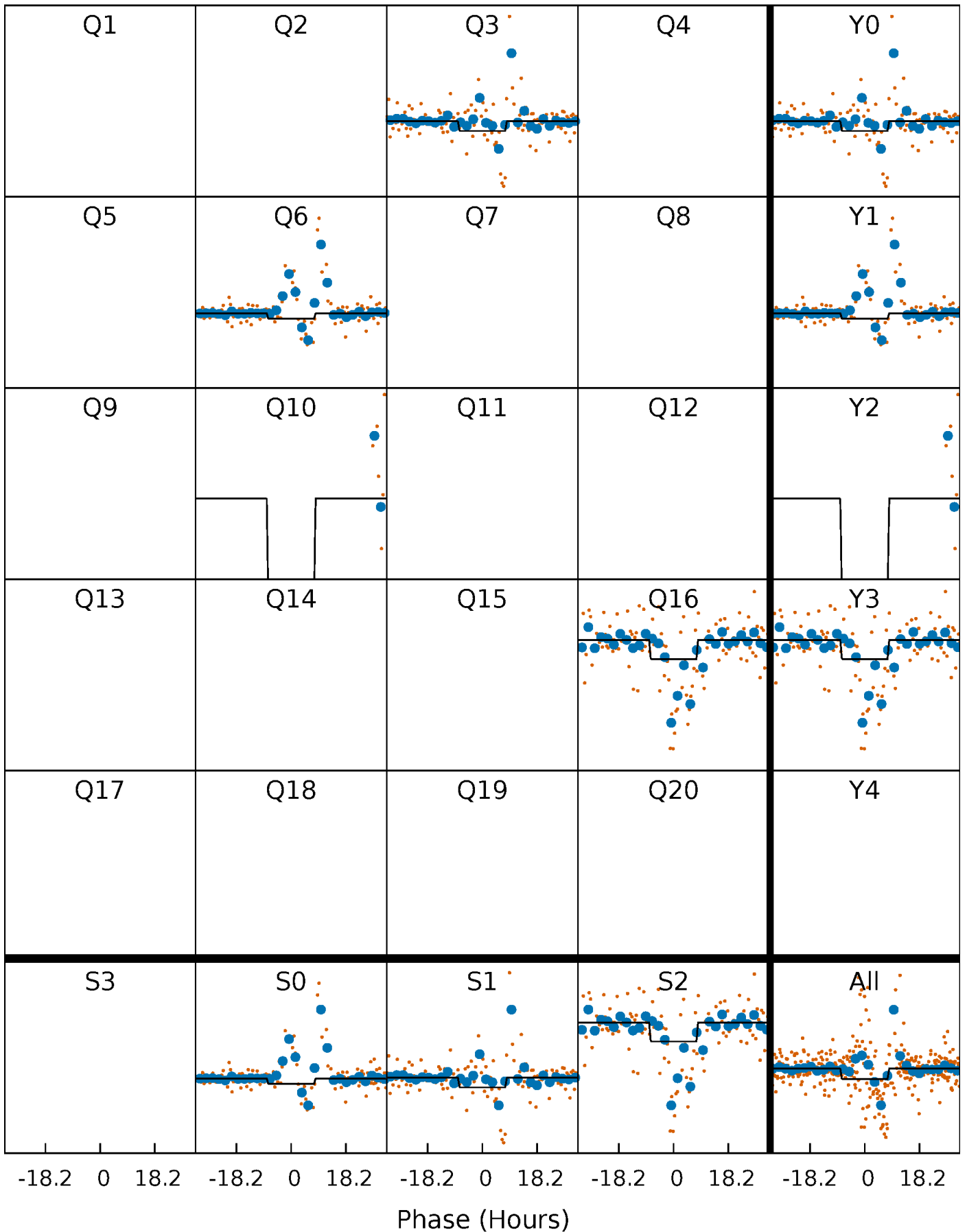
DV Quarter-Phased Transit Curves

TCE 004815965-01 P=300.060017 Days $T_0=305.792233$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

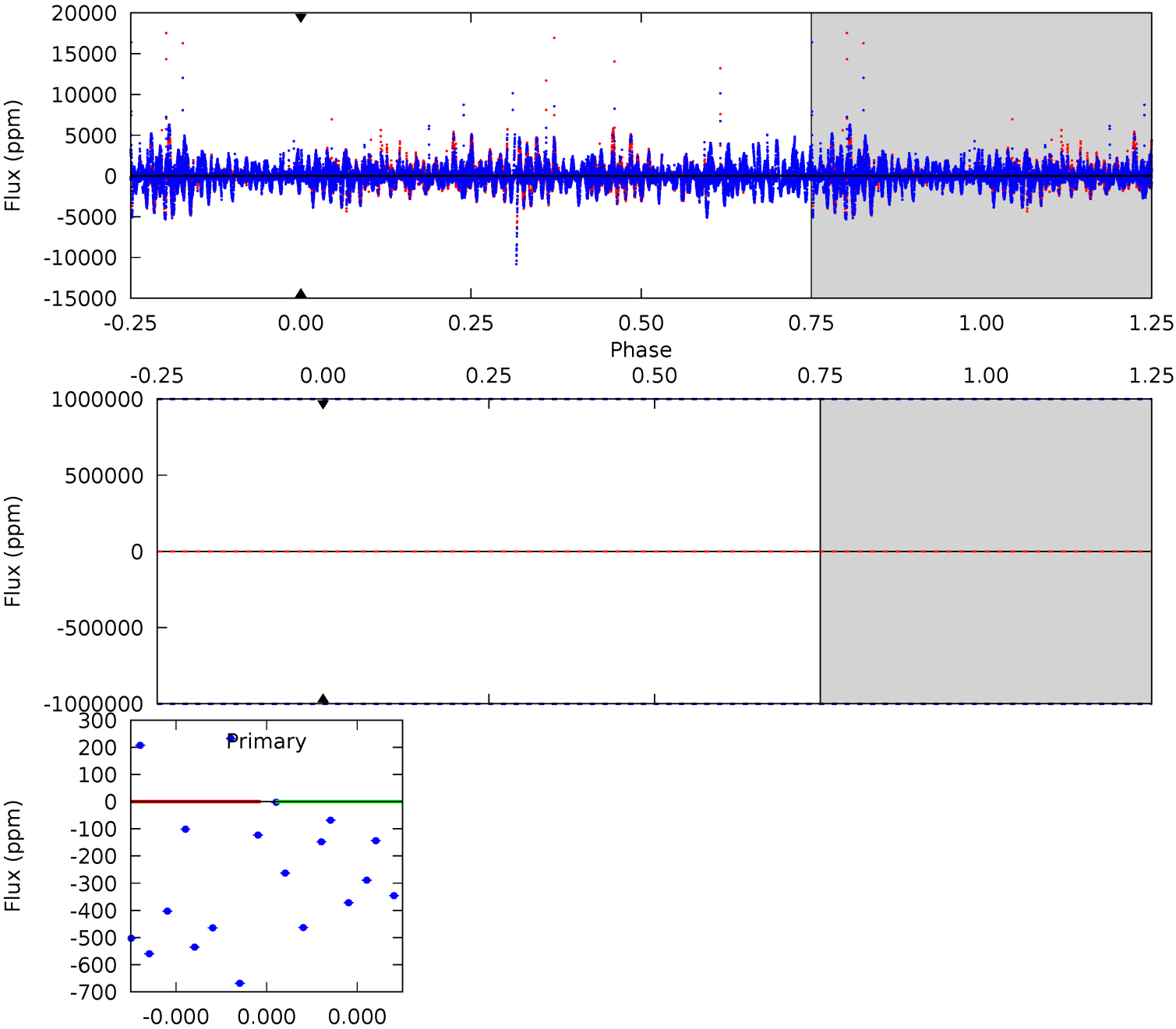
TCE 004815965-01 P=300.060017 Days $T_0=305.638126$ (BKJD)



DV Model-Shift Uniqueness Test

004815965-01, P = 300.060017 Days, E = 5.732216 Days

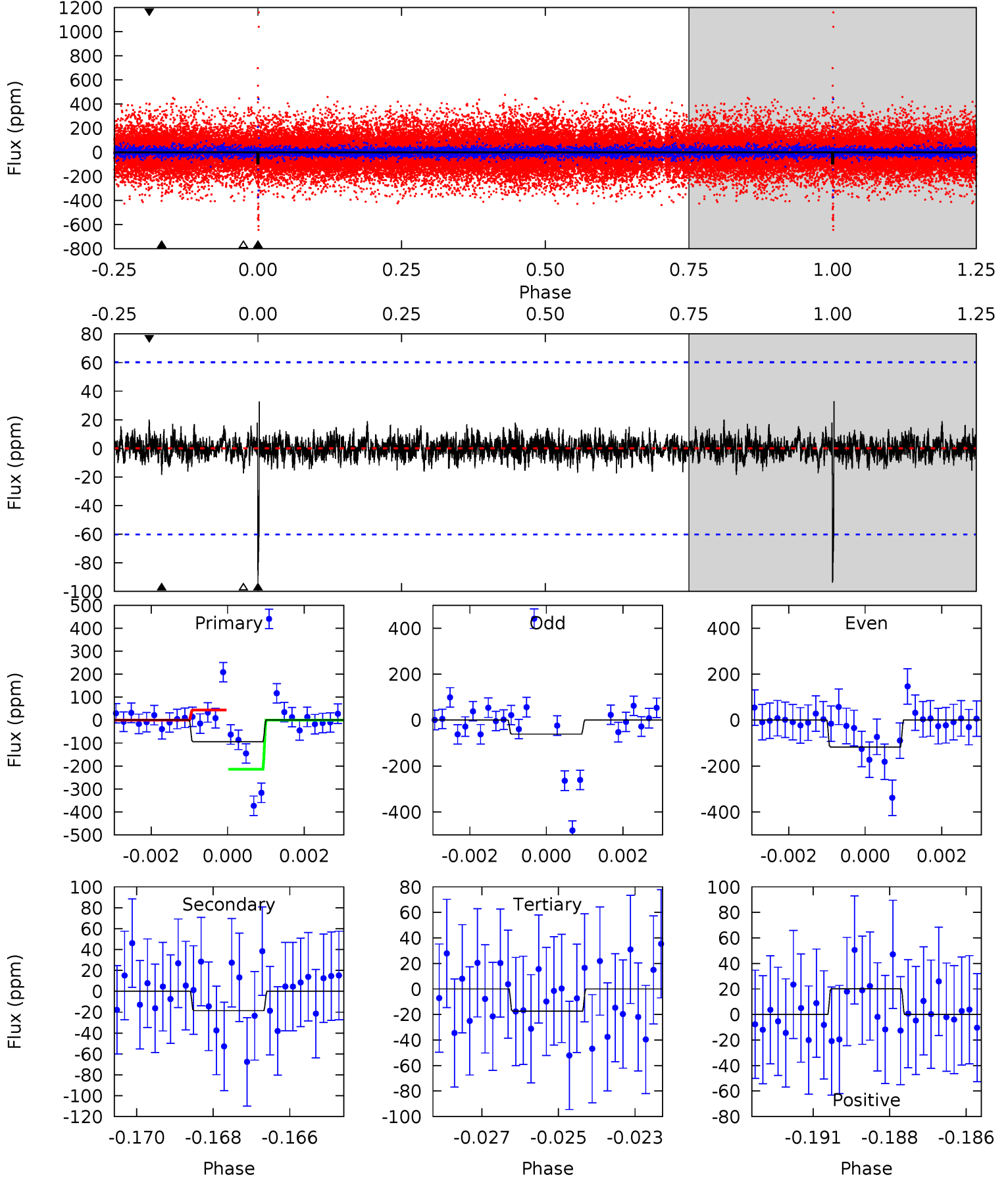
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

004815965-01, P = 300.060017 Days, E = 5.578109 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 8.26 | 1.63 | 1.53 | 1.77 | 5.30 | 3.05 | 0.44 | 6.73 | 6.48 | 0.10 | -0.14 | 2.35 | 0.83 | 0.26 | 0 |



Stellar Parameters For KIC 004815965

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5263^{+158}_{-142} | $3.901^{+0.650}_{-0.300}$ | $-0.300^{+0.350}_{-0.250}$ | $1.721^{+0.992}_{-0.992}$ | $0.861^{+0.121}_{-0.121}$ | $0.238^{+2.539}_{-0.147}$ |
| | +3%/-3% | +17%/-8% | +117%/-83% | +58%/-58% | +14%/-14% | +1066%/-62% |
| 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 004815965-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|--------------------------|----------------------|--------------------------|----------------------------|
| DV | 0 ± 1000000 | $12.15^{+16.22}_{-8.35}$ | 458^{+65}_{-79} | 4579^{+14559}_{-20316} | $4707^{+653073}_{-379135}$ |
| Alt. | -19 ± 11 | $11.94^{+15.77}_{-8.34}$ | 458^{+67}_{-78} | 2186^{+676}_{-385} | 42^{+404}_{-37} |

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

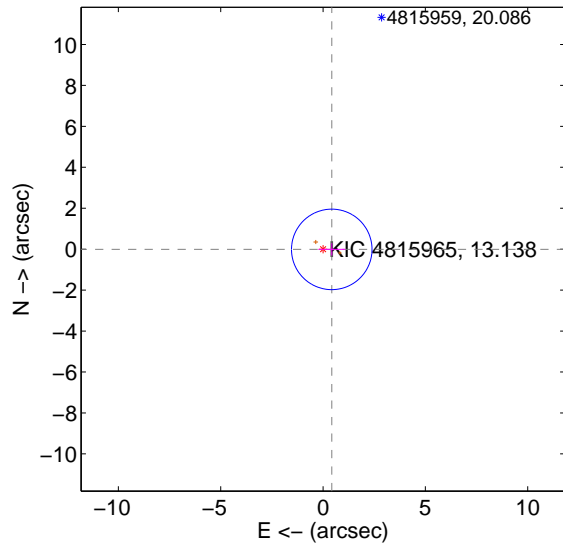
Supplemental centroid analysis for 004815965-01. Kepler magnitude: 13.14. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

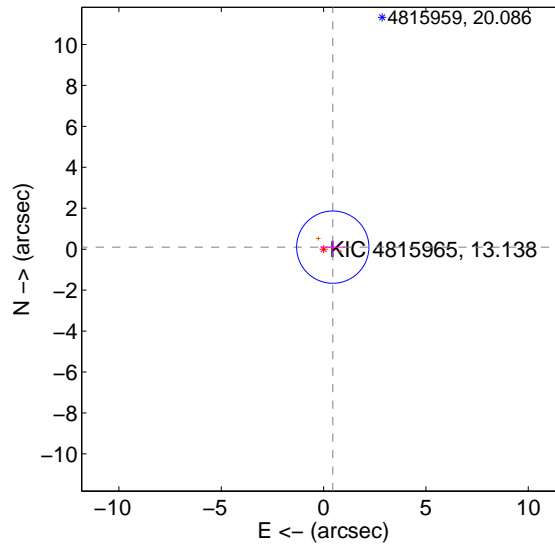
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.426 ± 0.655 | 0.65 | -0.426 ± 0.656 | -0.011 ± 0.299 |
| PRF-fit source offset from KIC position | 0.460 ± 0.588 | 0.78 | -0.449 ± 0.598 | 0.099 ± 0.347 |
| photometric centroid source offset | 0.86 ± 3.00 | 0.29 | -0.02 ± 2.58 | 0.86 ± 3.00 |

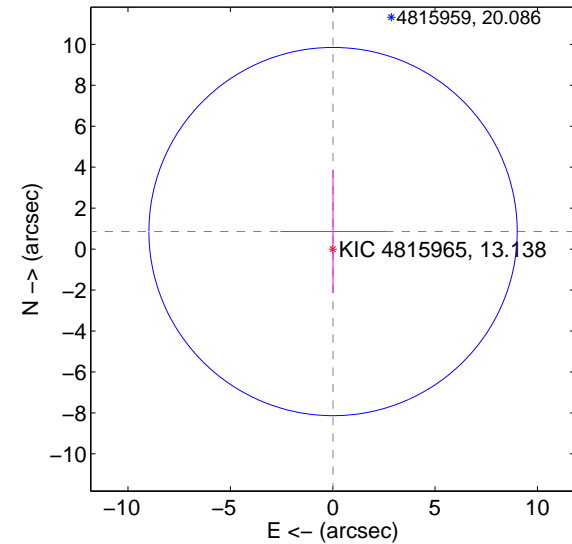
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

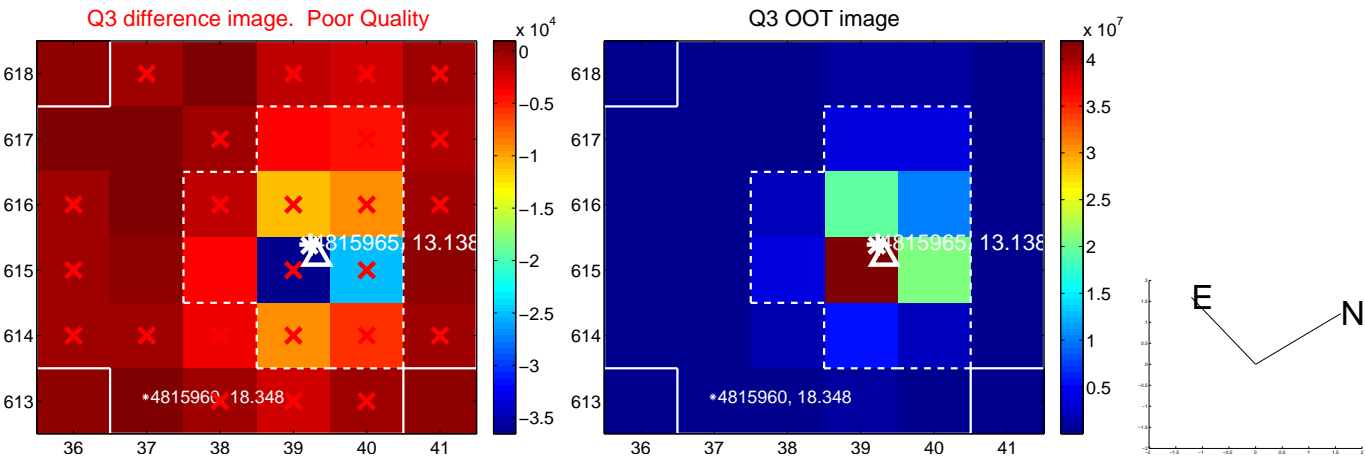


offset from photometric centroids



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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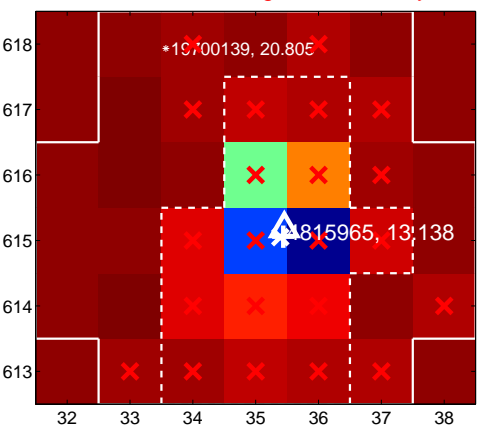
Q5 no difference image



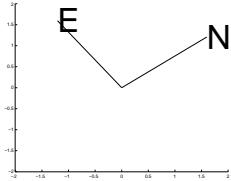
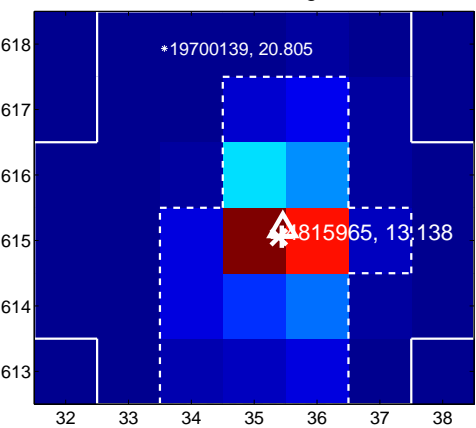
Q5 no OOT image



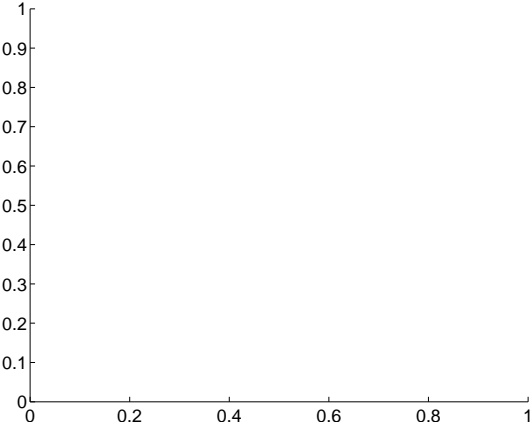
Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image



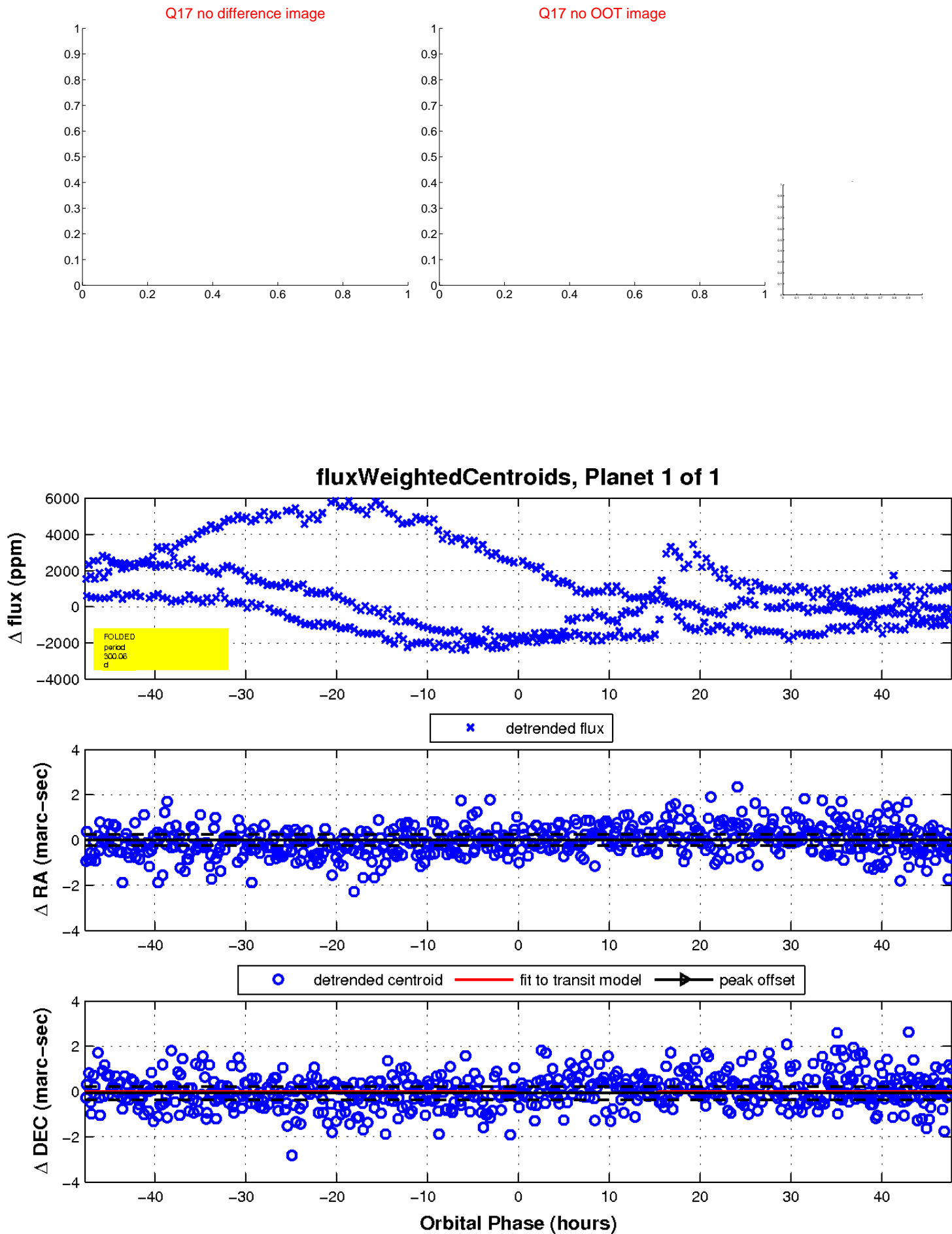
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

