

KIC 003345751

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003345751-01 | OBS | No | 668.698198 | 208.540036 | 347.5 | 22.344 | 8.3 | 8.4 | 1.17 | 6418 | 2.65 | 0.81 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 003345751-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

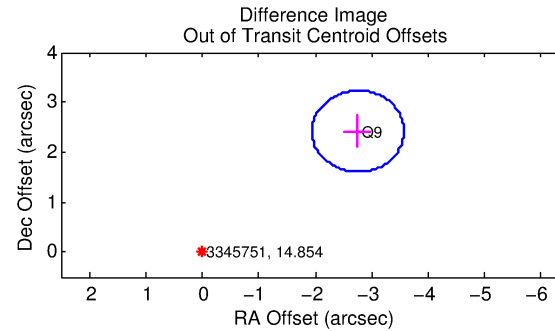
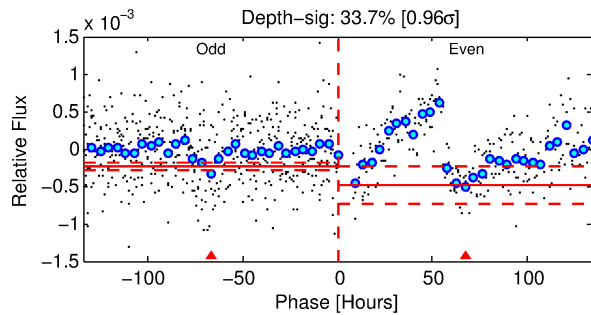
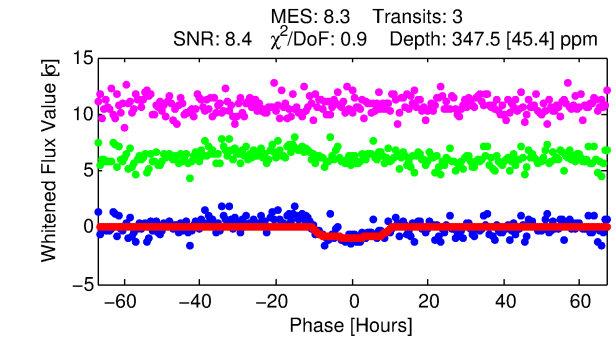
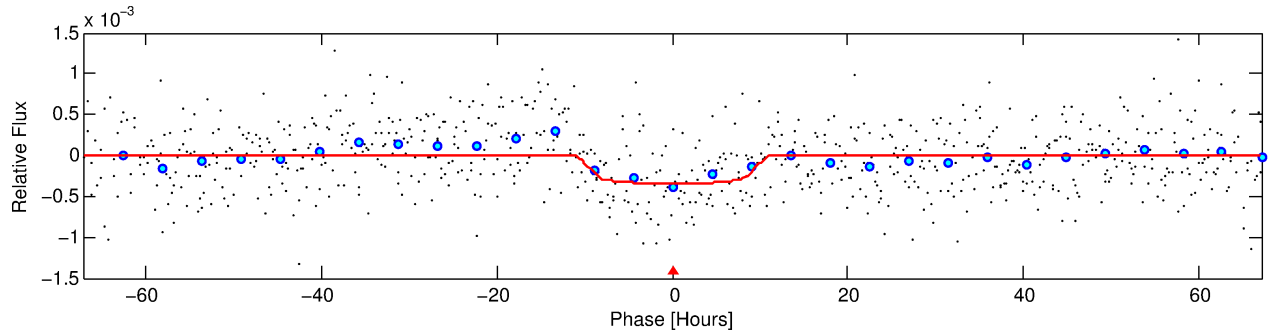
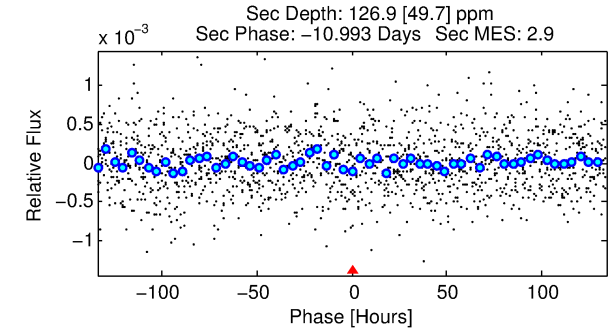
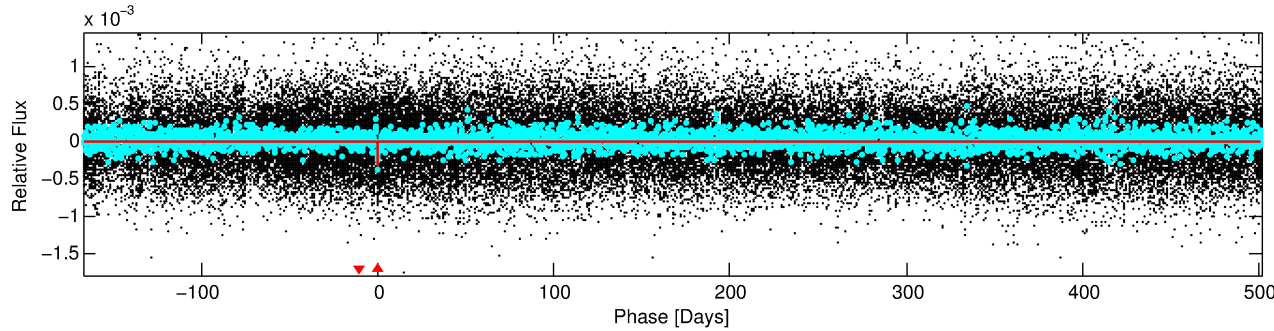
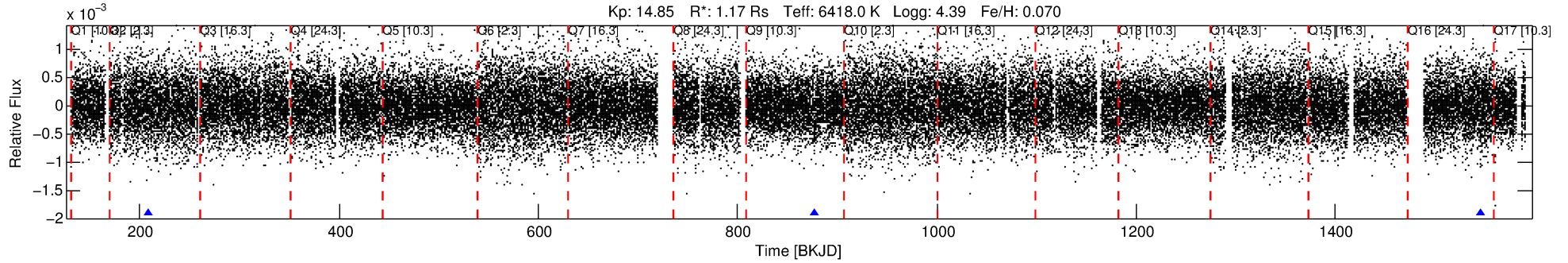
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003345751-01

No Significant Match Found

DV One-Page Summary

KIC: 3345751 Candidate: 1 of 1 Period: 668.698 d



DV Fit Results:

Period = 668.69820 [0.03722] d
Epoch = 208.5400 [0.0495] BKJD
Rp/R* = 0.0208 [0.0025]
a/R* = 93.76 [47.77]
b = 0.93 [0.07]
Seff = 0.81 [0.31]
Teq = 242 [24] K
Rp = 2.65 [0.84] Re
a = 1.6090 [0.4011] AU
Ag = 25701.52 [15054.37] [1.71σ]
Teffp = 4729 [567] K [7.91σ]

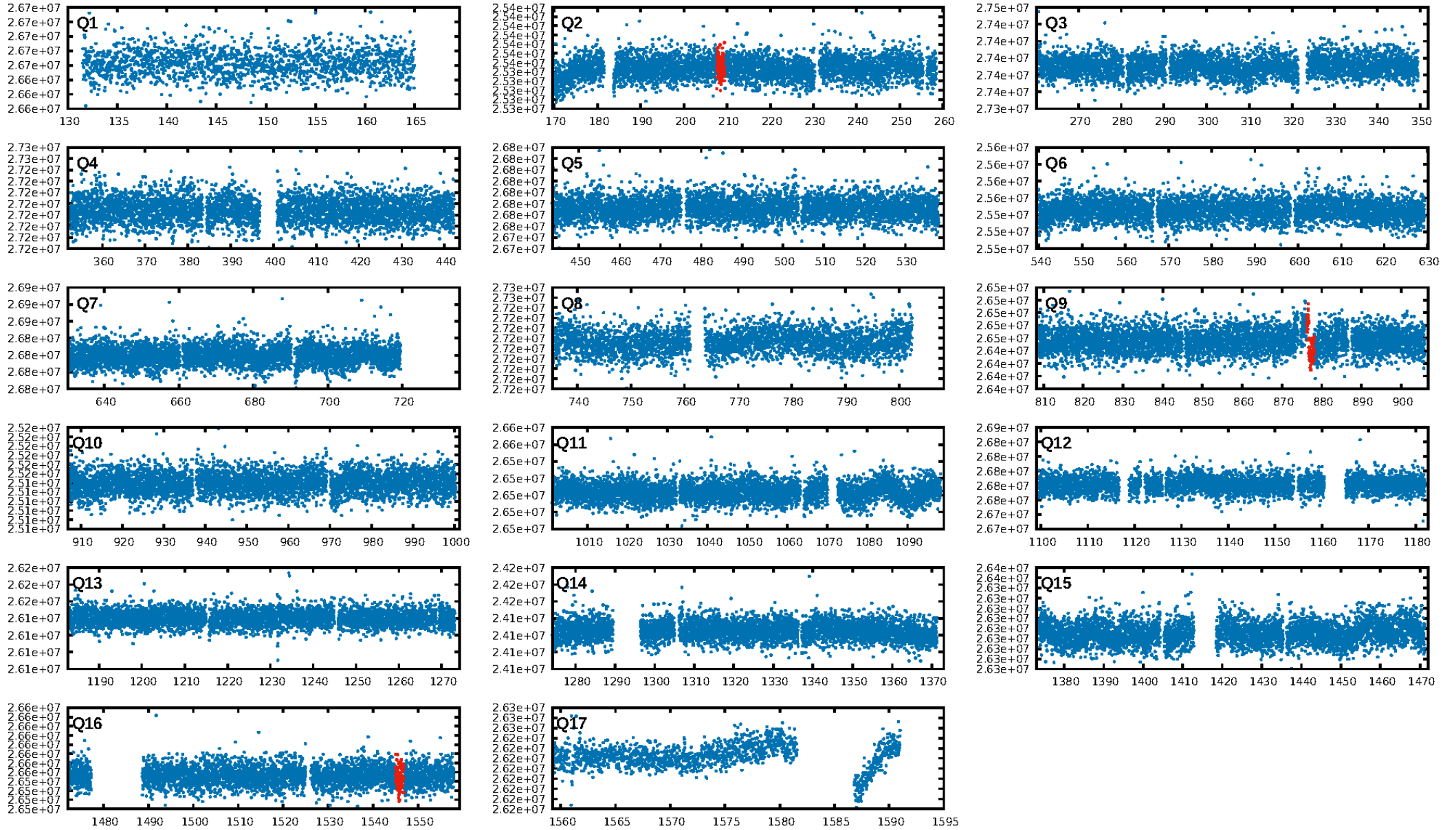
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.43e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.312
Centroid-sig: 11.6%
Centroid-so: 1.363 arcsec [0.89σ]
OotOffset-rm: 3.665 arcsec [13.51σ]
KicOffset-rm: 3.607 arcsec [13.24σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

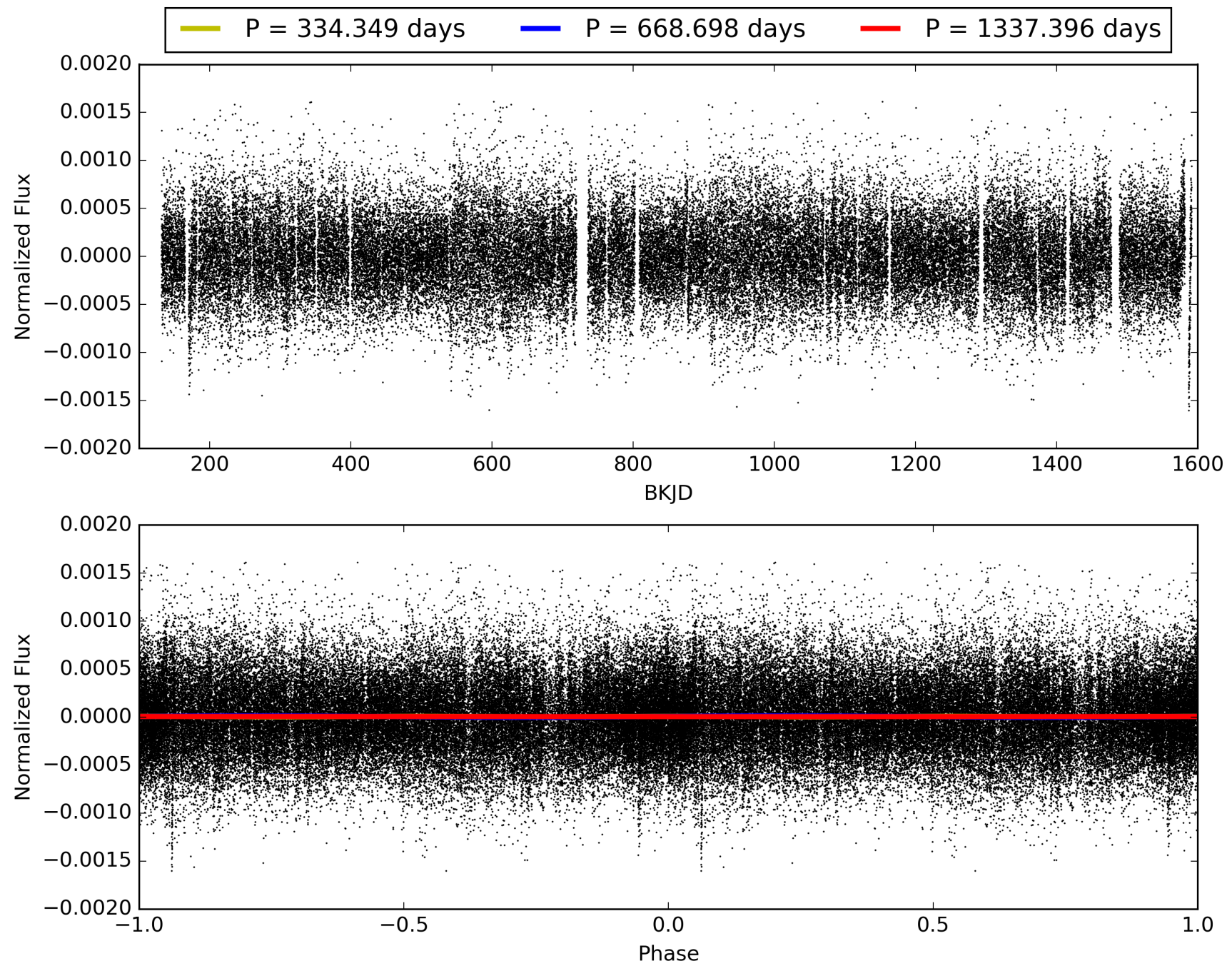
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:41:37 Z

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

TCE 003345751-01, PDC Light Curves

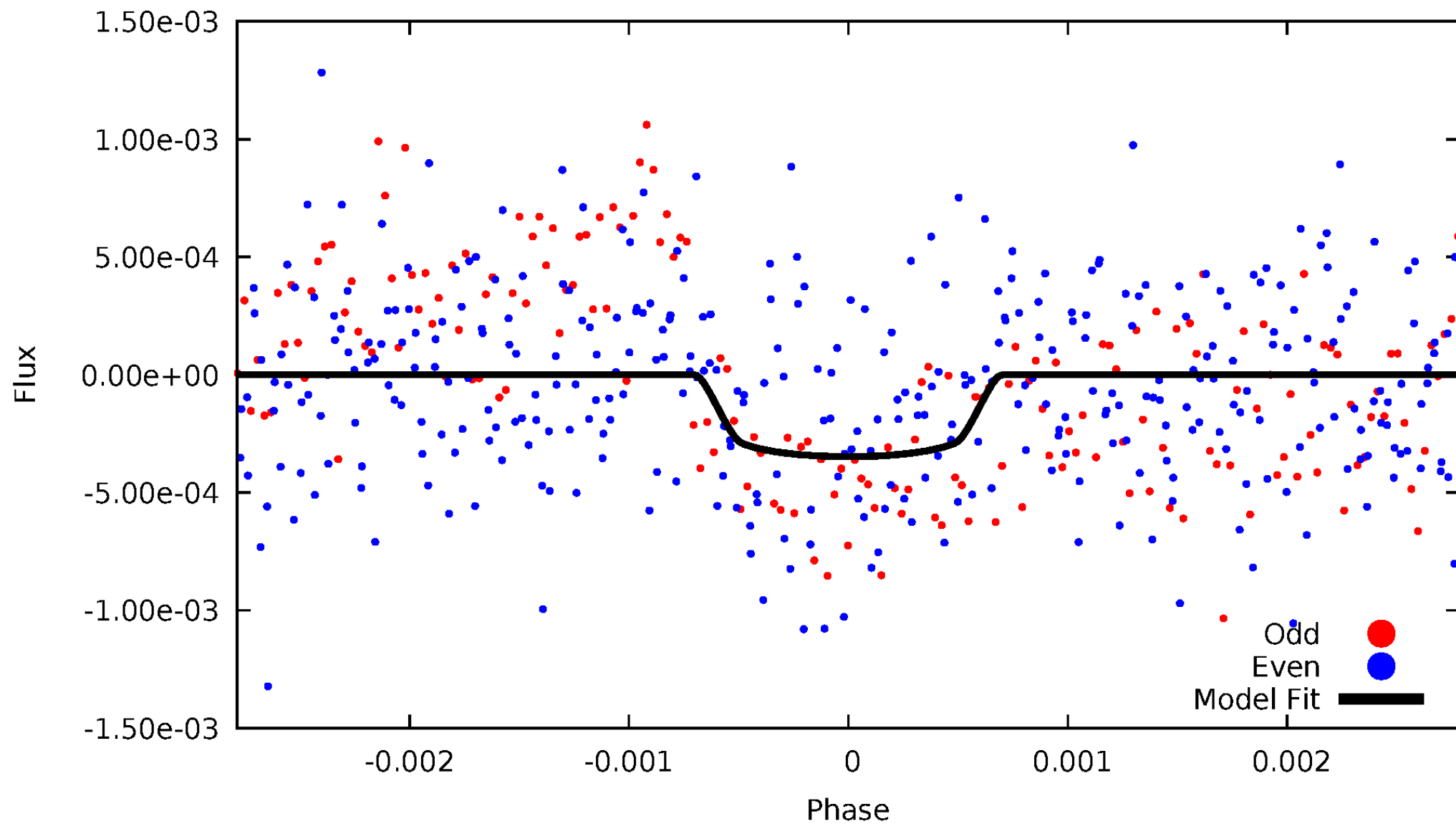


TCE 003345751-01



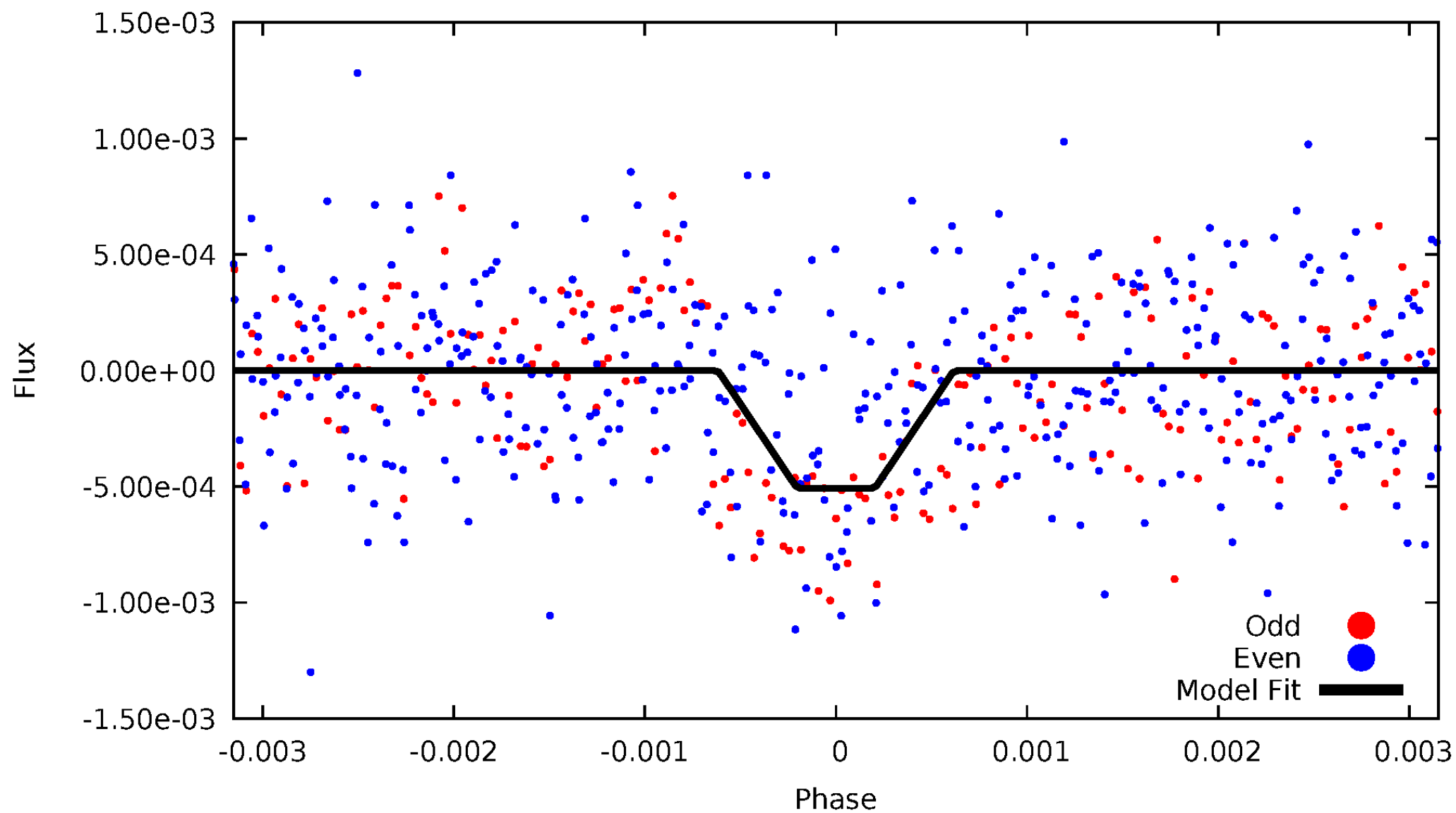
DV Odd/Even

TCE 003345751-01



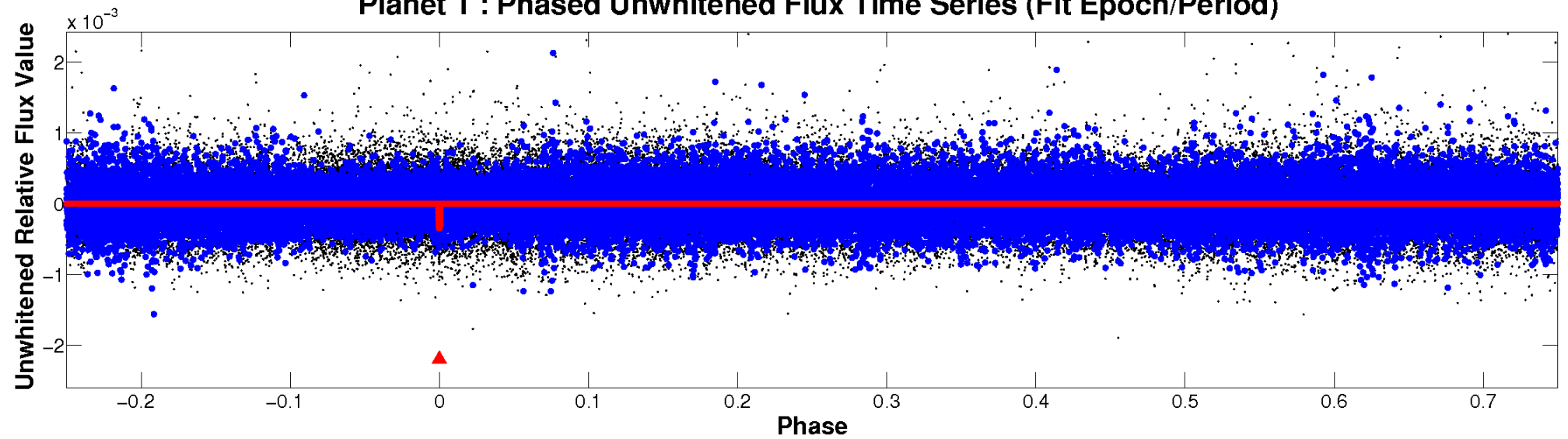
ALT Odd/Even

TCE 003345751-01

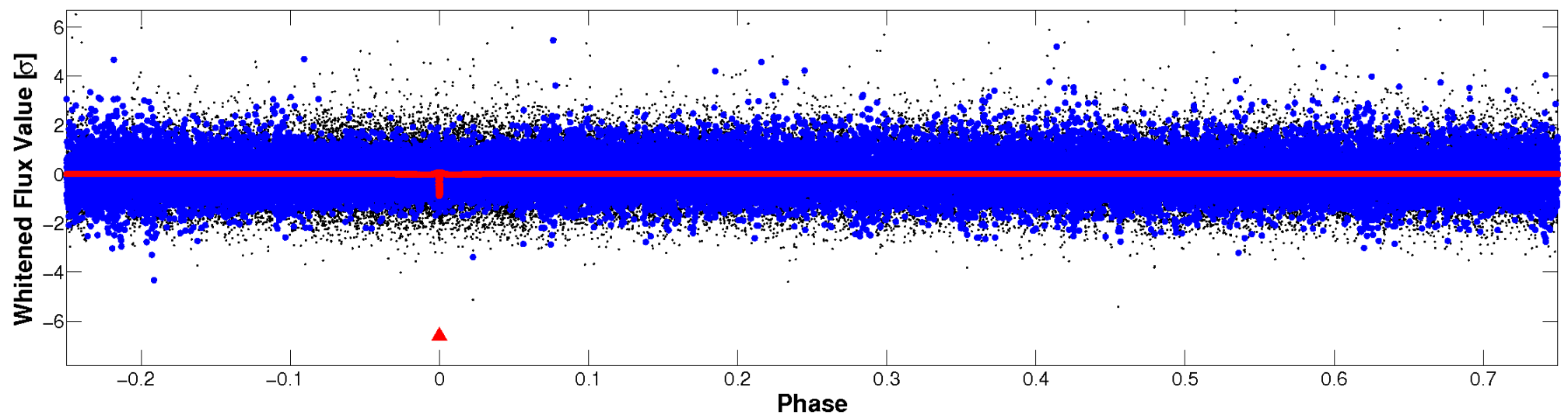


Non-Whitened Vs. Whitened Light Curve

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



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



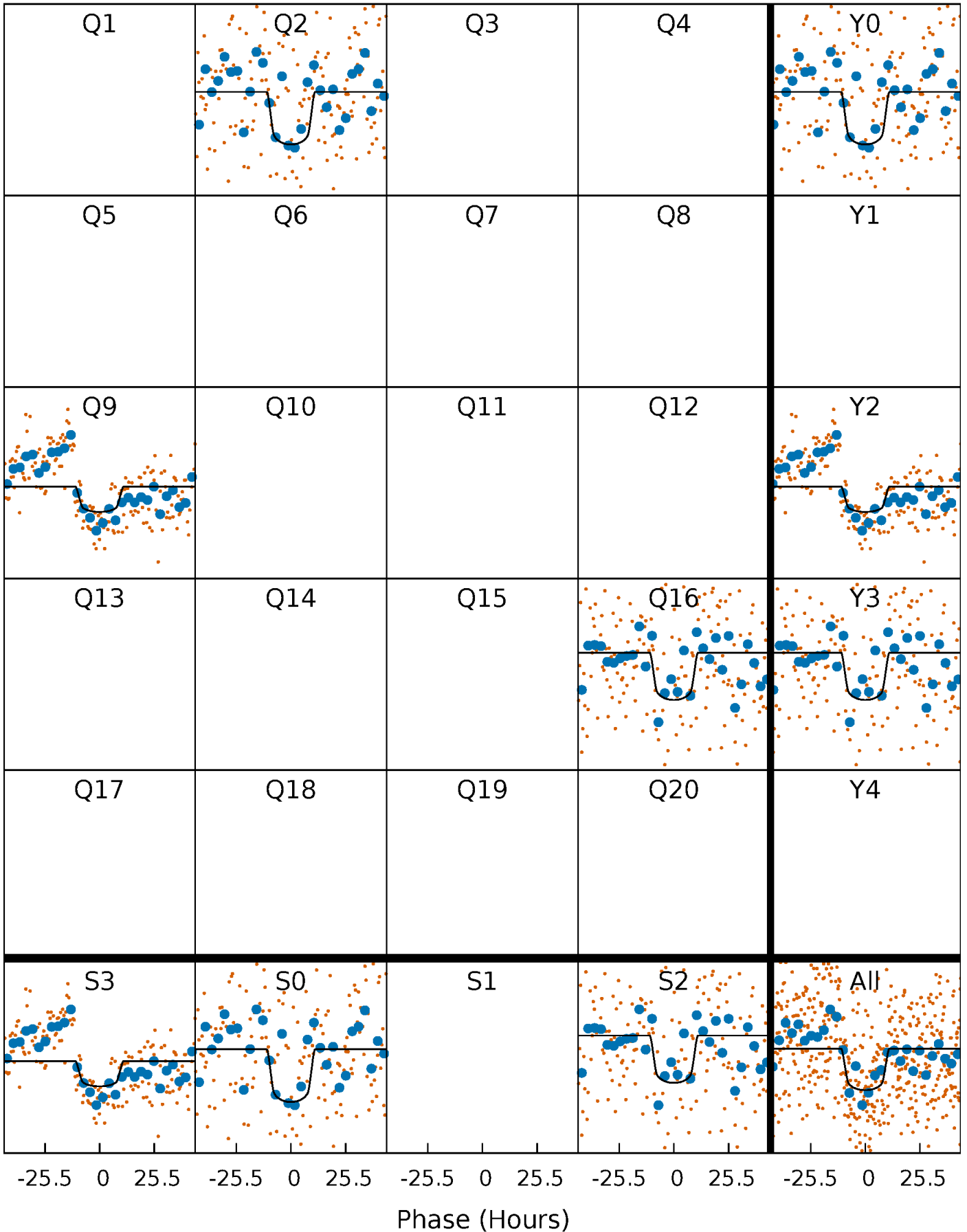
PDC Quarter-Phased Transit Curves

TCE 003345751-01 P=668.698198 Days $T_0=208.540036$ (BKJD)



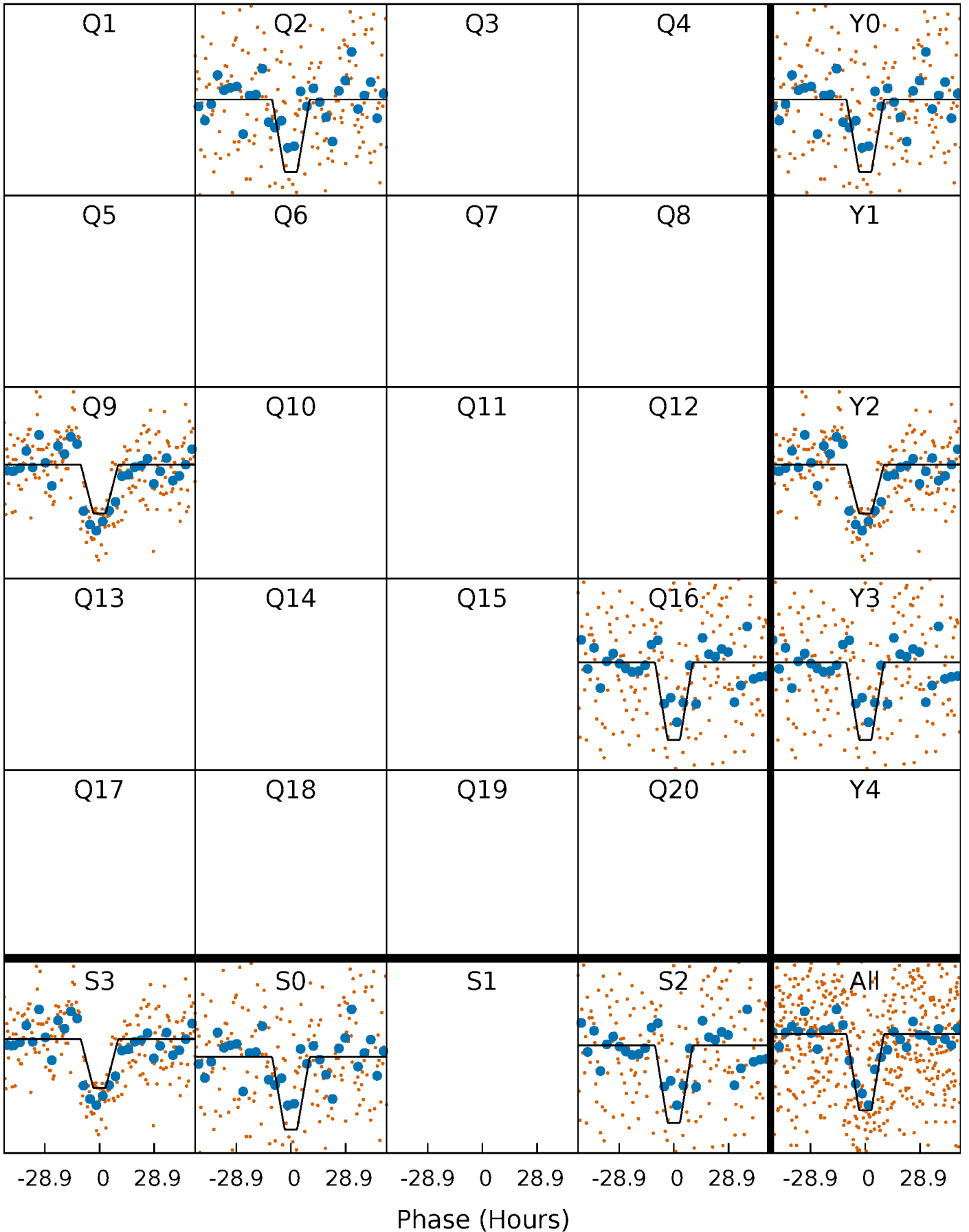
DV Quarter-Phased Transit Curves

TCE 003345751-01 P=668.698198 Days $T_0=208.540036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

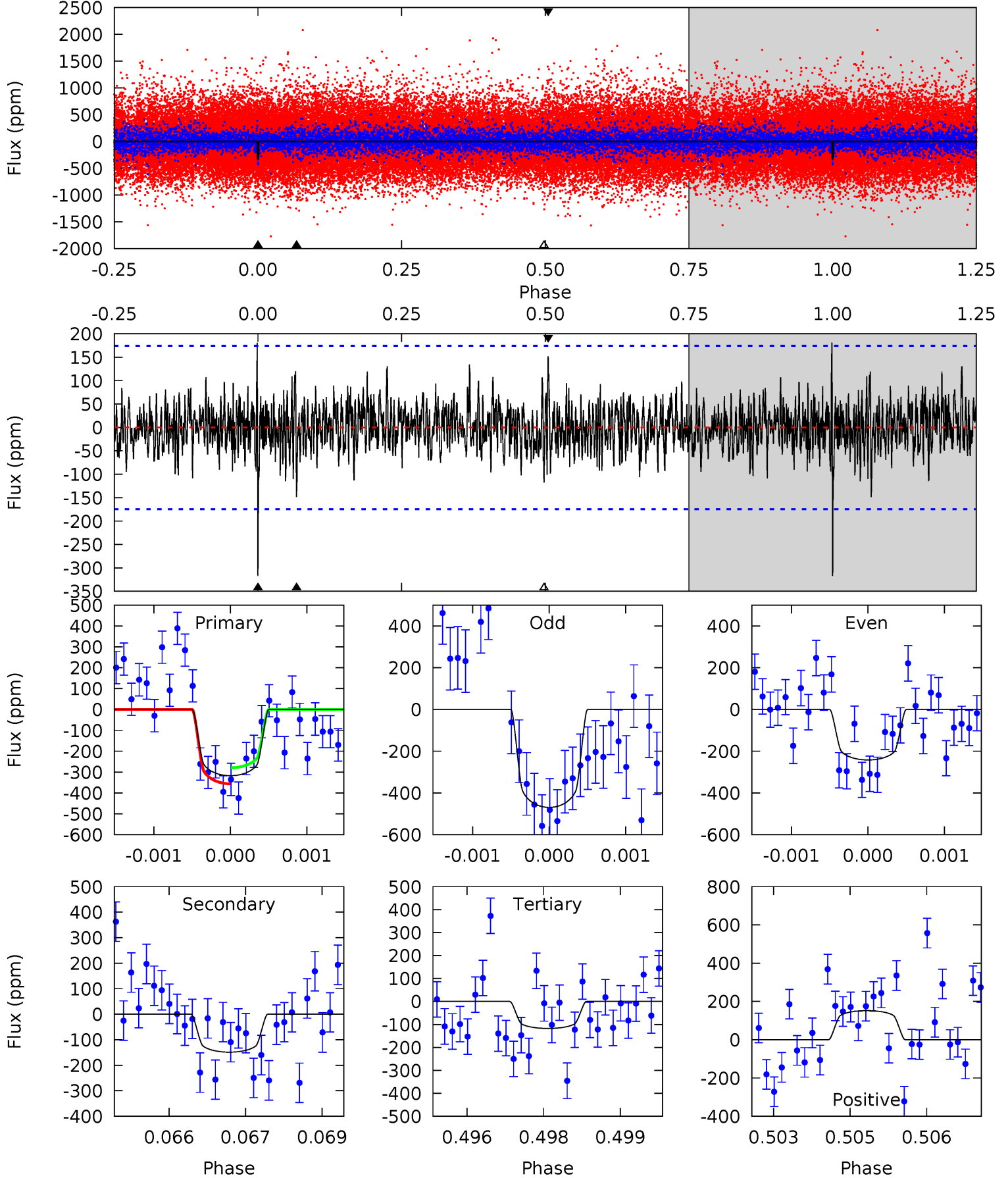
TCE 003345751-01 P=668.586083 Days $T_0=208.610157$ (BKJD)



DV Model-Shift Uniqueness Test

003345751-01, P = 668.698198 Days, E = 208.540036 Days

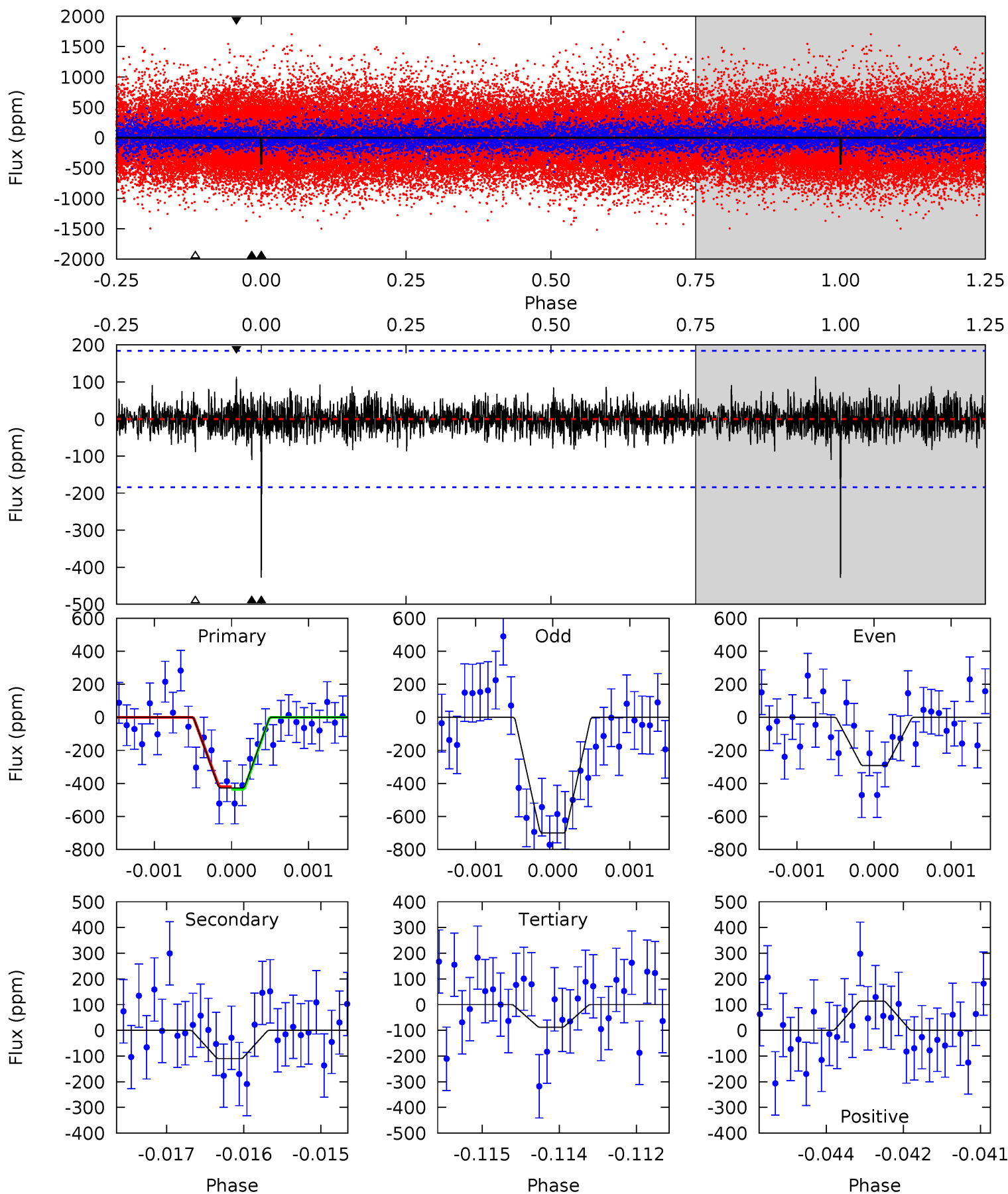
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.79 | 4.59 | 3.63 | 4.70 | 5.39 | 3.19 | 1.21 | 6.17 | 5.10 | 0.96 | -0.11 | 3.26 | 1.10 | 0.36 | 1.19 |



Alt Model-Shift Uniqueness Test

003345751-01, P = 668.586083 Days, E = 208.610157 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 | 3.23 | 2.58 | 3.35 | 5.41 | 3.23 | 0.81 | 9.99 | 9.23 | 0.65 | -0.12 | 5.59 | 1.37 | 0.21 | 0.24 |



Stellar Parameters For KIC 003345751

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6418^{+157}_{-224} | $4.395^{+0.062}_{-0.200}$ | $0.070^{+0.250}_{-0.350}$ | $1.171^{+0.345}_{-0.148}$ | $1.241^{+0.152}_{-0.185}$ | $1.090^{+0.303}_{-0.572}$ |
| | +2%/-3% | +1%/-5% | +357%/-500% | +29%/-13% | +12%/-15% | +28%/-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 003345751-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|---------------------------|
| DV | -149 ± 32 | $2.72^{+0.52}_{-0.39}$ | 344^{+20}_{-18} | 4966^{+404}_{-350} | 27677^{+10554}_{-10059} |
| Alt. | -110 ± 34 | $2.98^{+0.52}_{-0.46}$ | 343^{+23}_{-18} | 4502^{+390}_{-344} | 16574^{+8964}_{-6087} |

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

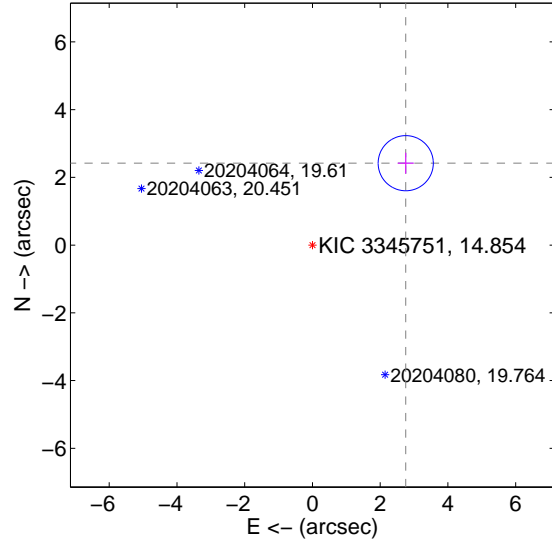
Supplemental centroid analysis for 003345751-01. Kepler magnitude: 14.85. Transit SNR 8.42

There are 1 quarters with good PRF difference image offsets

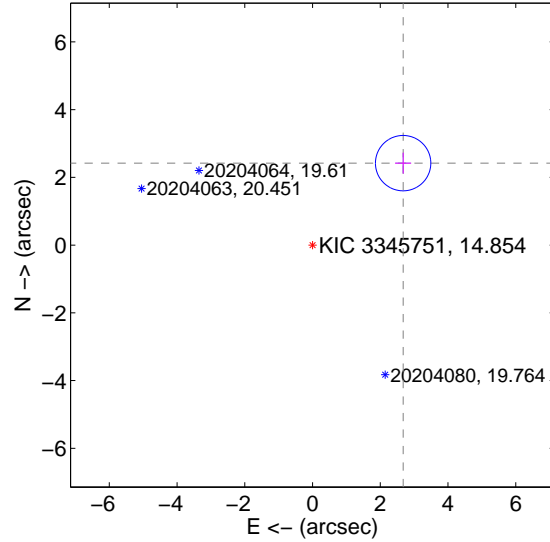
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 3.665 ± 0.271 | 13.51 | -2.754 ± 0.238 | 2.418 ± 0.310 |
| PRF-fit source offset from KIC position | 3.607 ± 0.272 | 13.24 | -2.675 ± 0.238 | 2.420 ± 0.310 |
| photometric centroid source offset | 1.36 ± 1.53 | 0.89 | -0.34 ± 1.83 | 1.32 ± 1.51 |

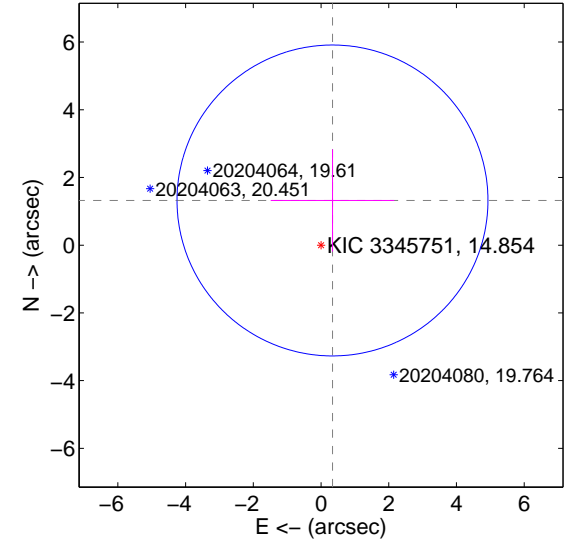
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

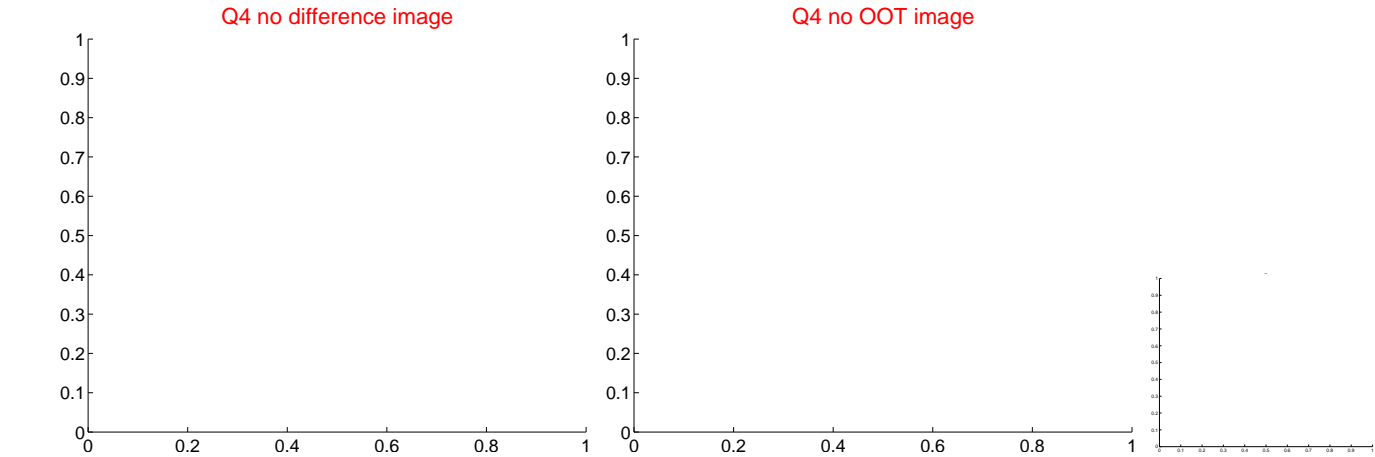
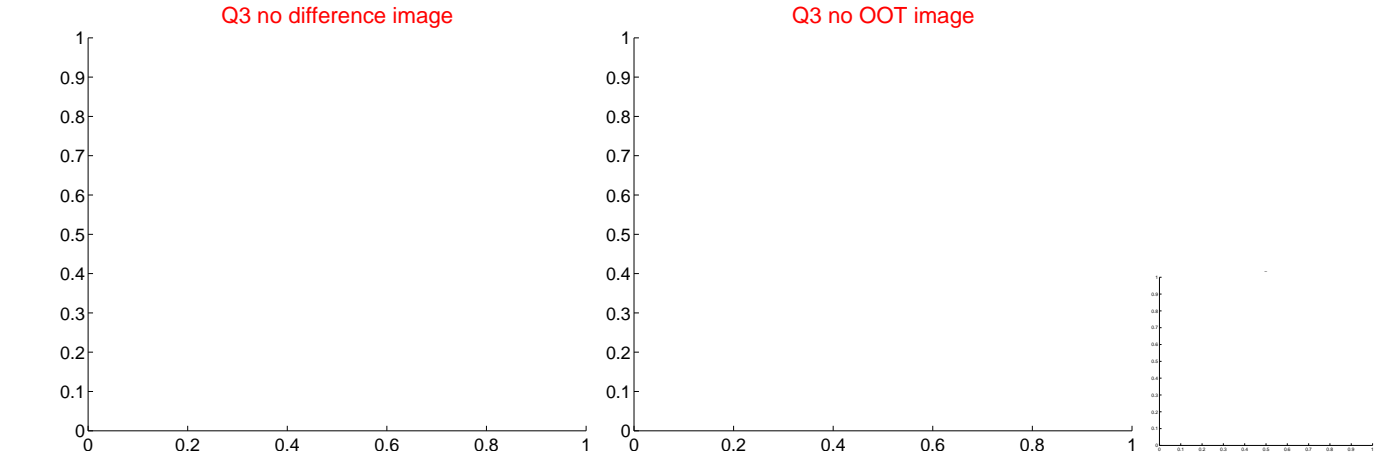
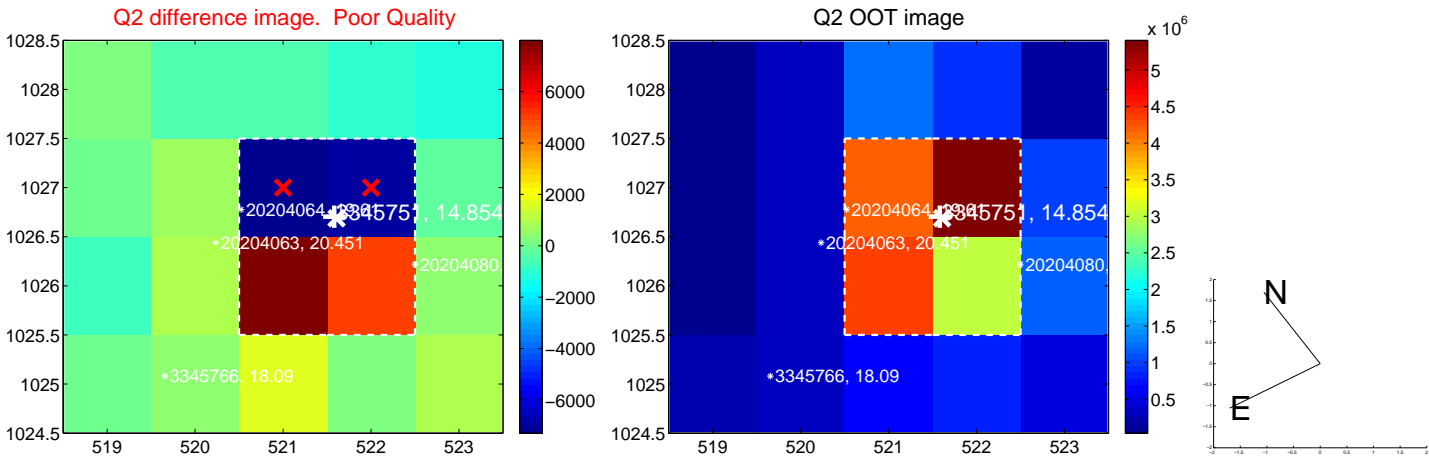
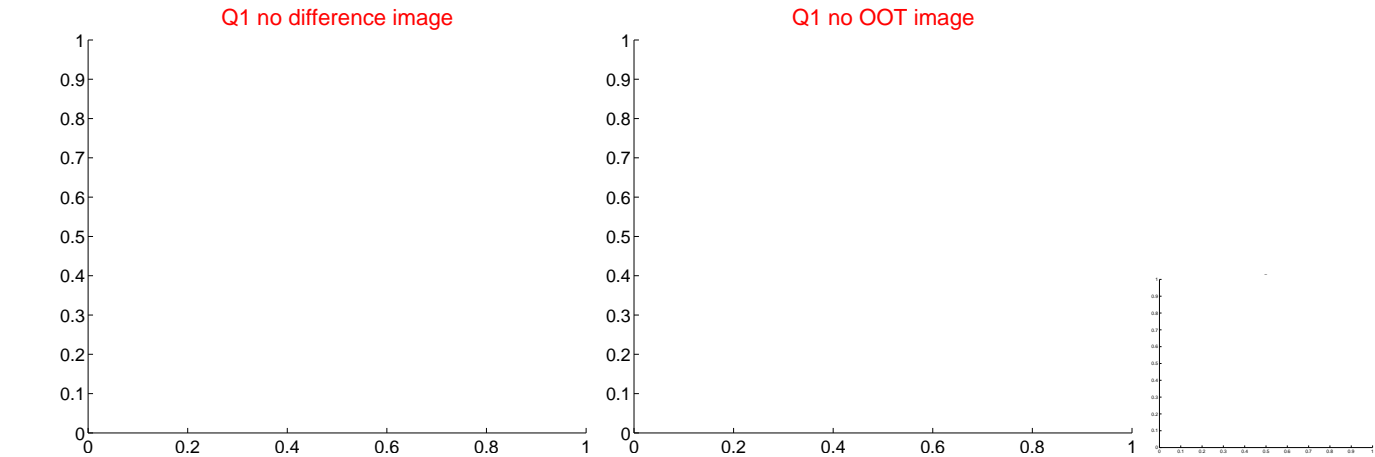


offset from photometric centroids



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.

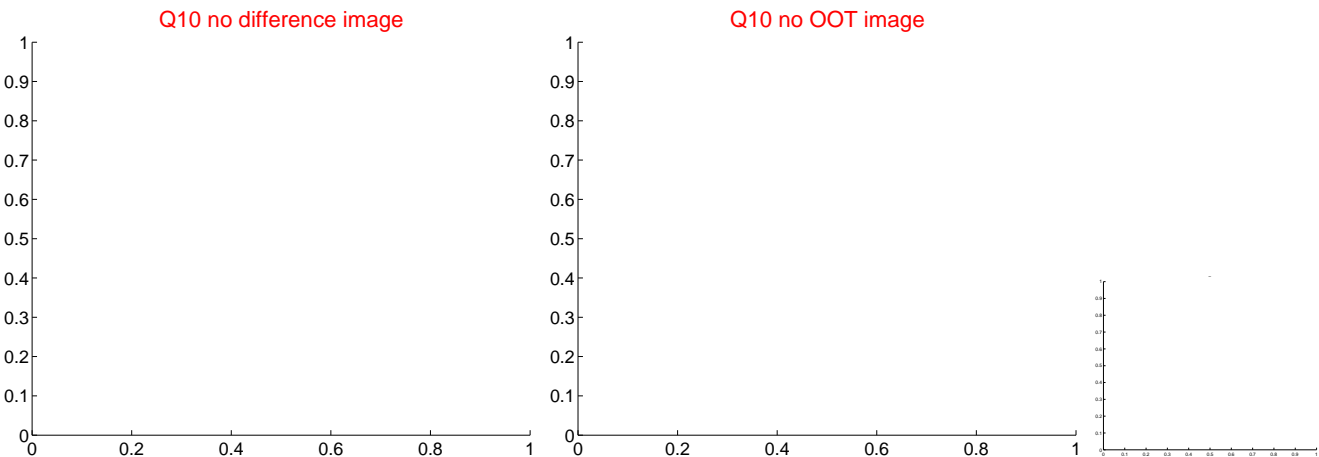
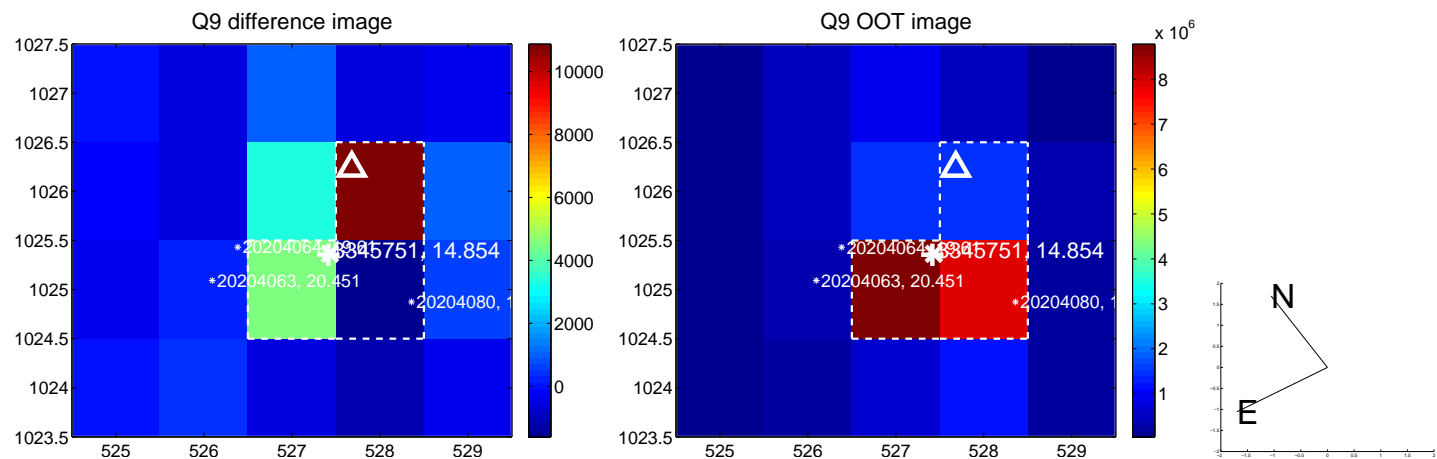
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



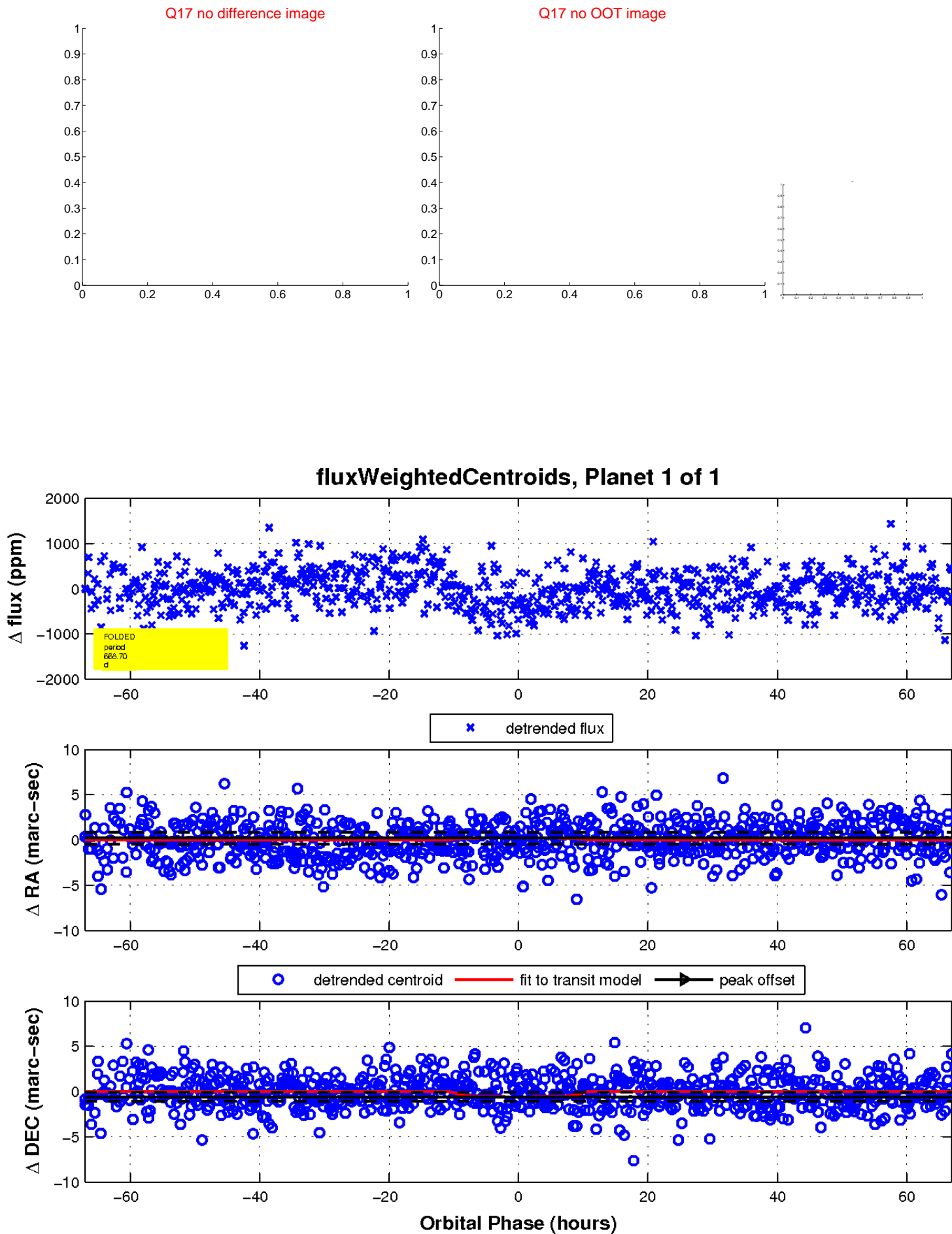
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

