

KIC 010404545

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010404545-01 | OBS | 8207.01 | 350.339605 | 184.788049 | 1106.7 | 16.324 | 8.5 | 8.6 | 0.69 | 5188 | 2.76 | 0.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010404545-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—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.

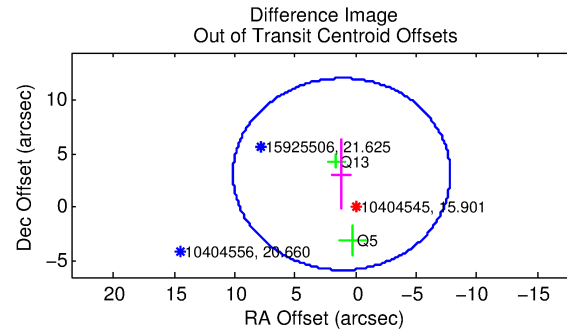
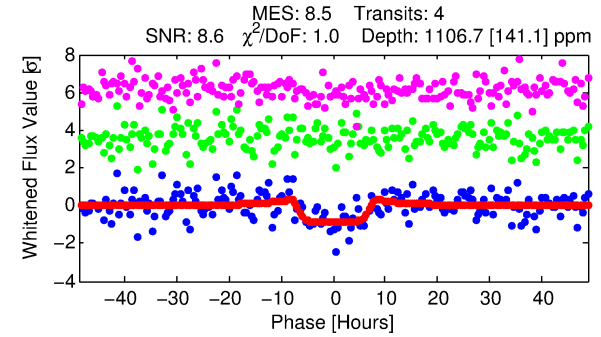
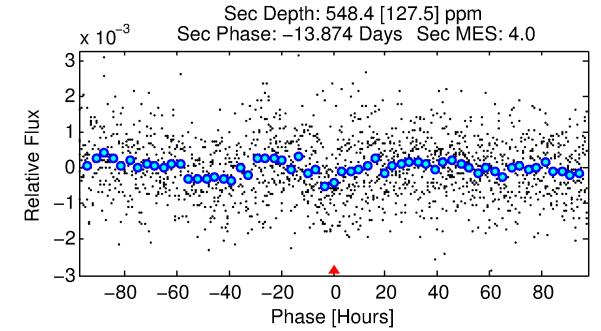
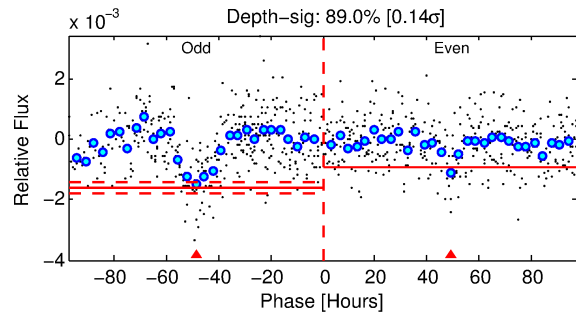
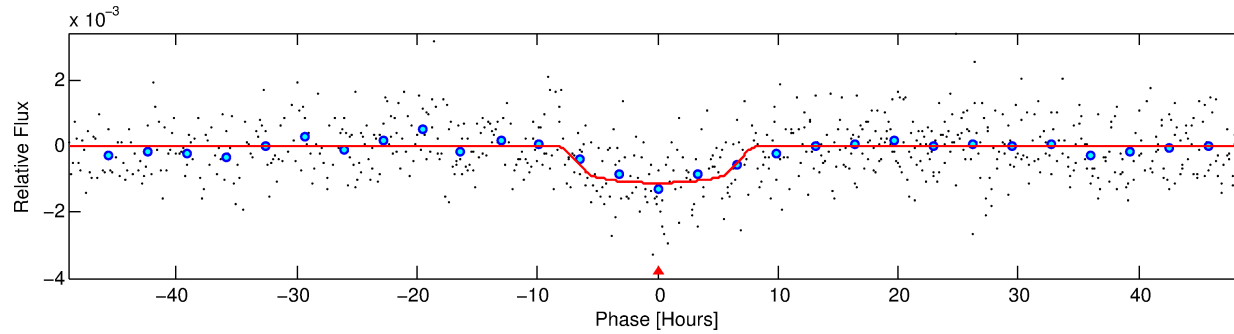
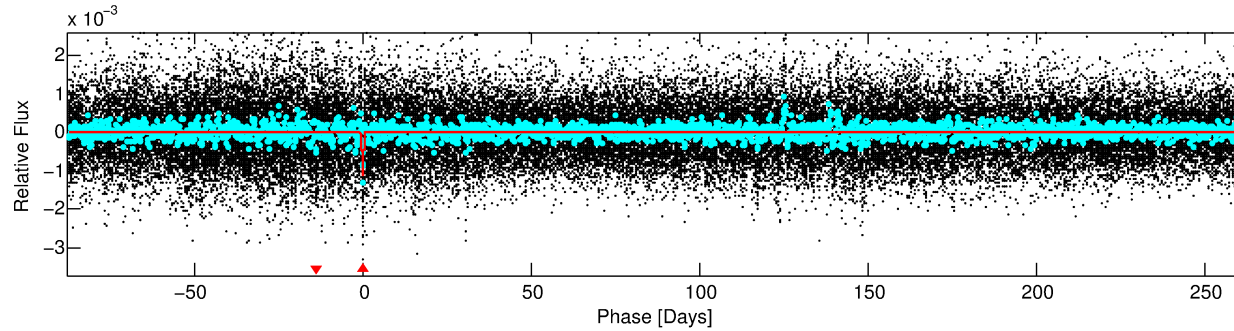
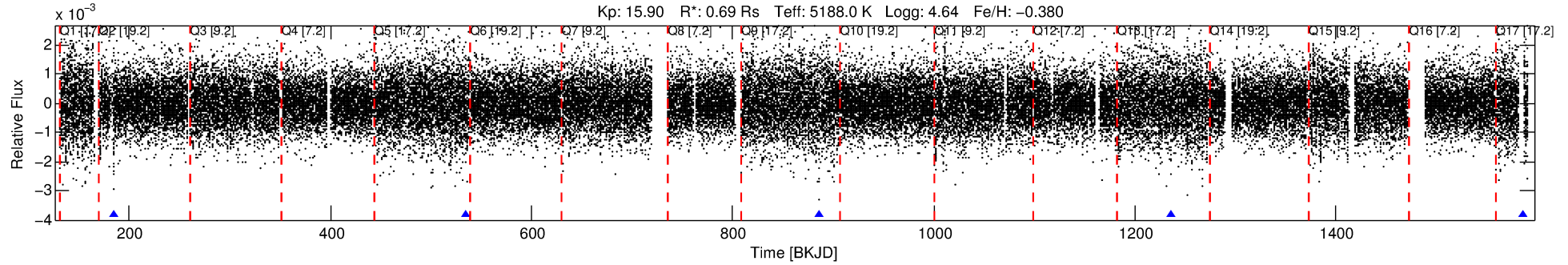
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010404545-01

No Significant Match Found

DV One-Page Summary

KIC: 10404545 Candidate: 1 of 1 Period: 350.340 d



DV Fit Results:

Period = 350.33960 [0.01456] d
Epoch = 184.7880 [0.0262] BKJD
Rp/R* = 0.0367 [0.0042]
a/R* = 84.83 [29.49]
b = 0.90 [0.08]
Seff = 0.39 [0.08]
Teq = 202 [10] K
Rp = 2.76 [0.49] Re
a = 0.8884 [0.0978] AU
Ag = 31245.71 [11267.64] [2.77 σ]
Teffp = 4146 [359] K [11.00 σ]

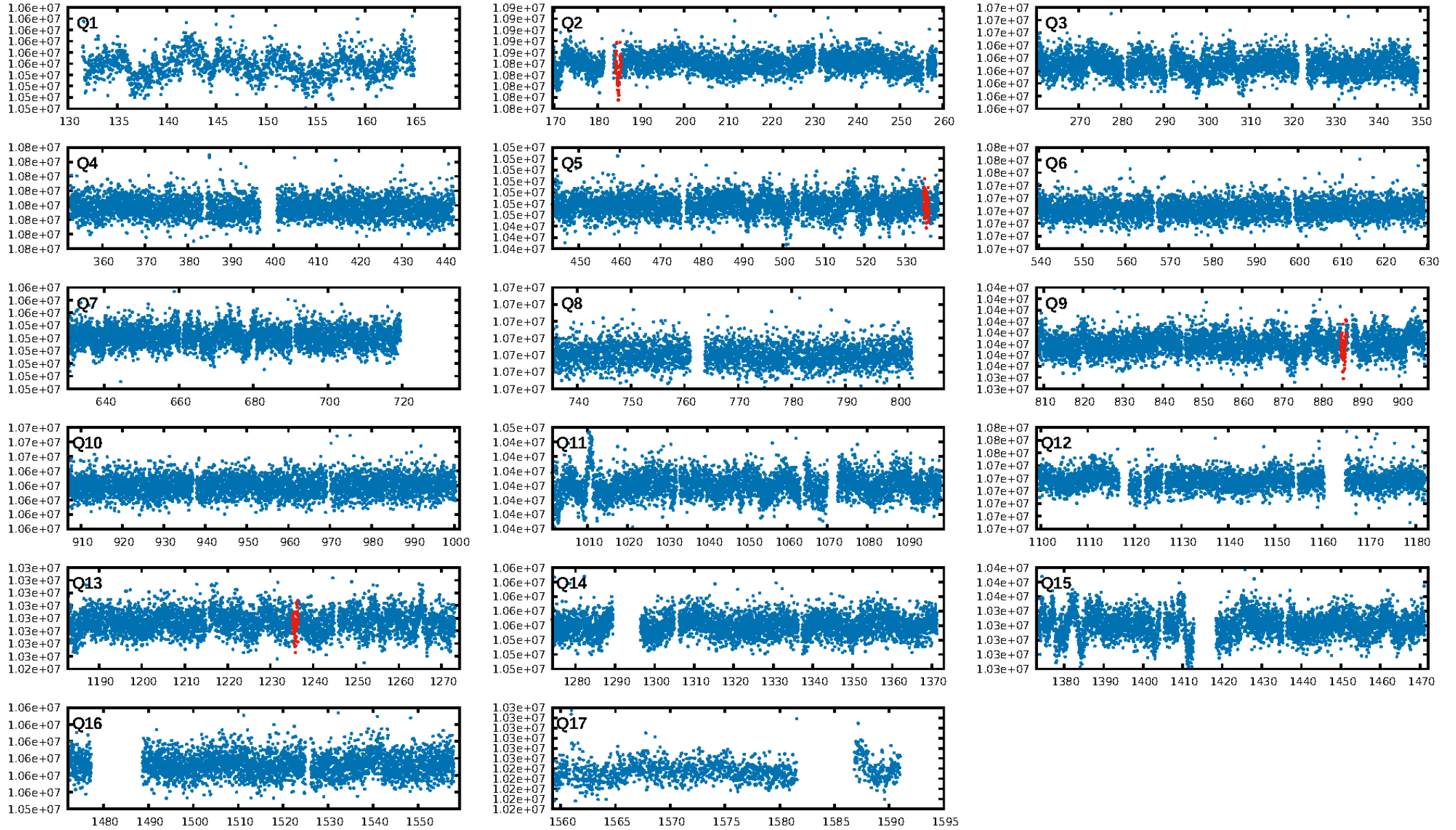
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 1.88e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -21.73
Centroid-sig: 48.4%
Centroid-so: 2.264 arcsec [0.88 σ]
OotOffset-rm: 3.316 arcsec [1.11 σ]
KicOffset-rm: 3.283 arcsec [1.08 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

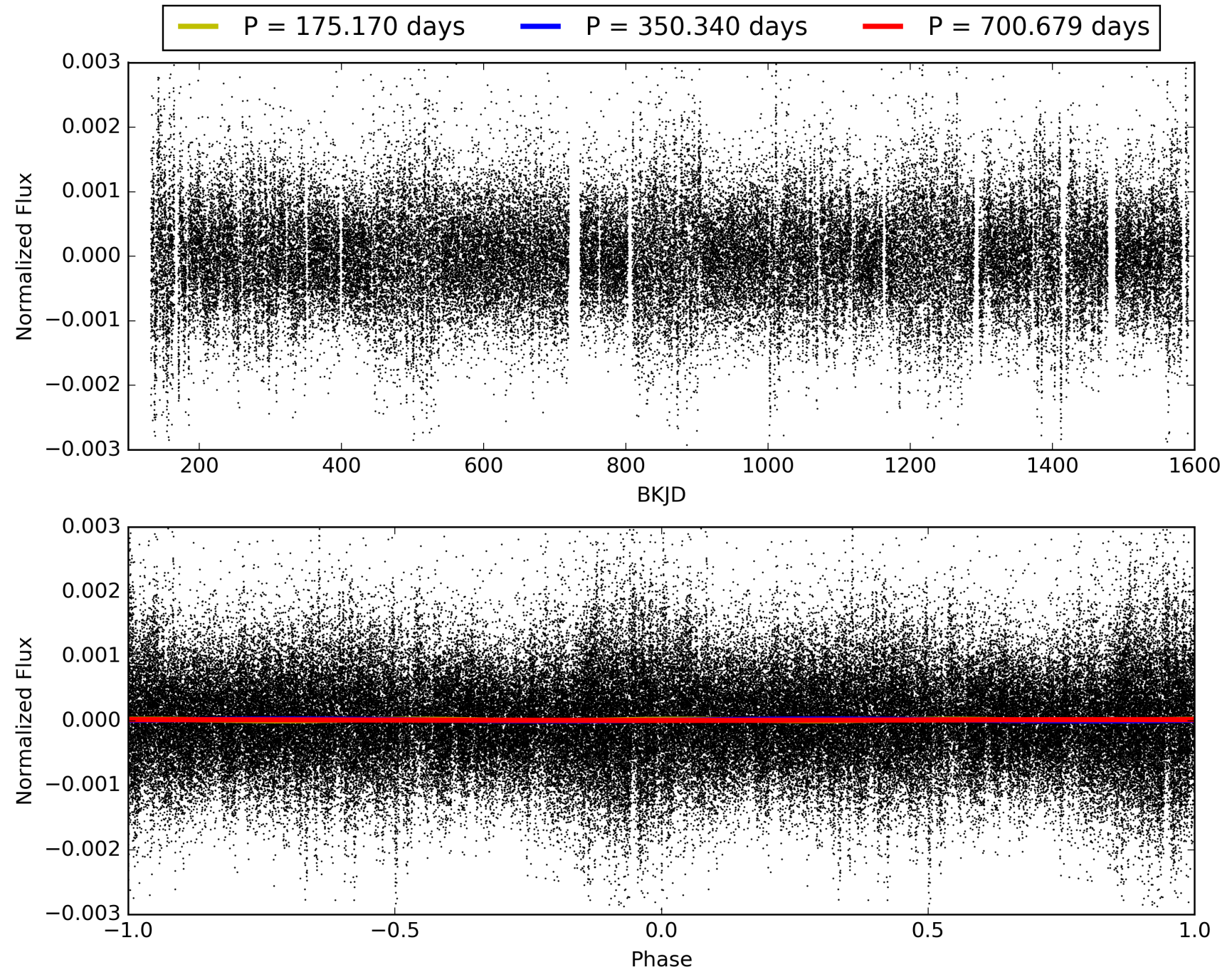
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:24:51 Z

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

TCE 010404545-01, PDC Light Curves

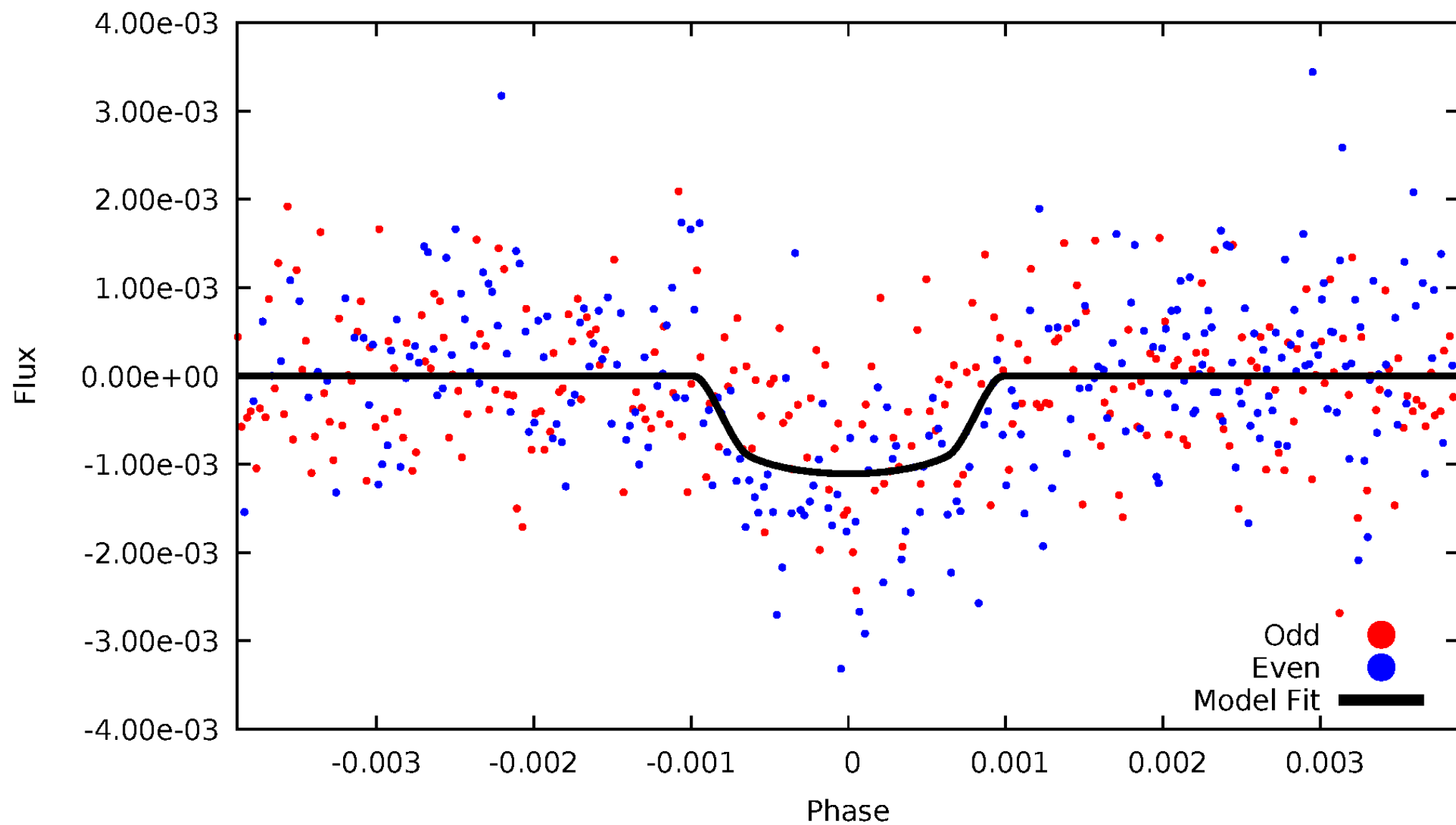


TCE 010404545-01



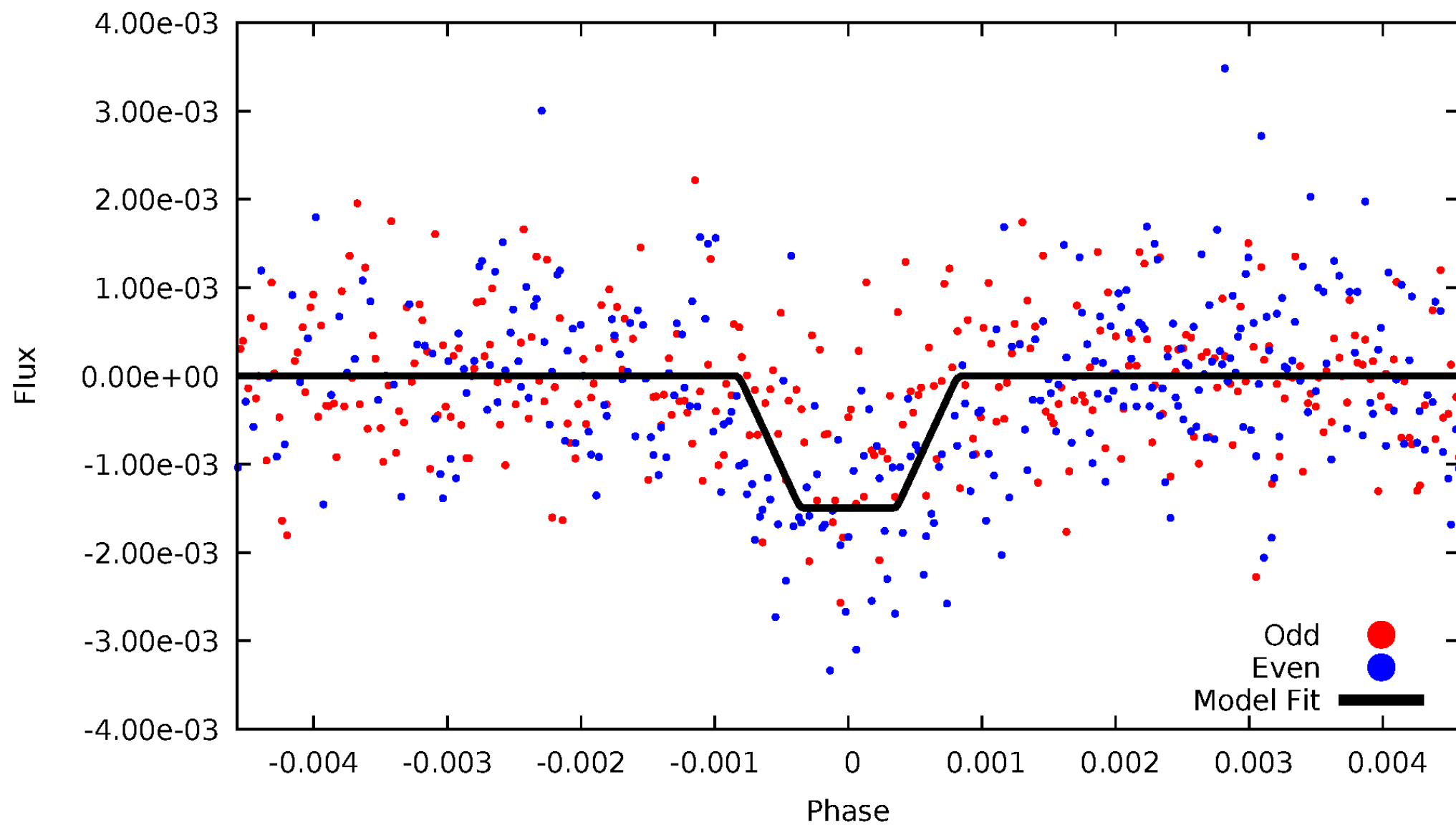
DV Odd/Even

TCE 010404545-01



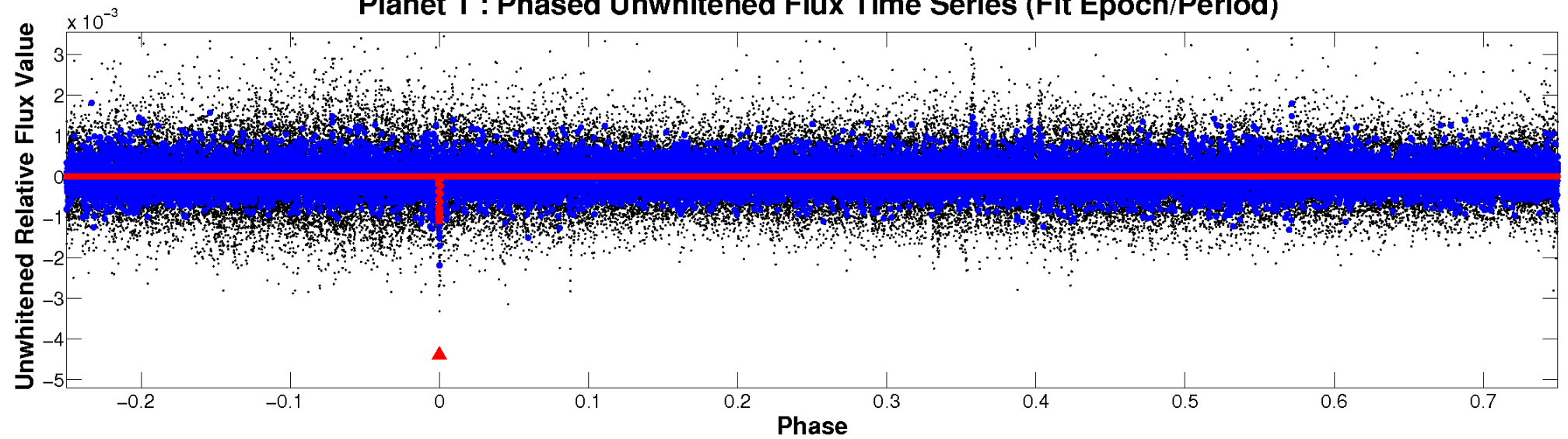
ALT Odd/Even

TCE 010404545-01

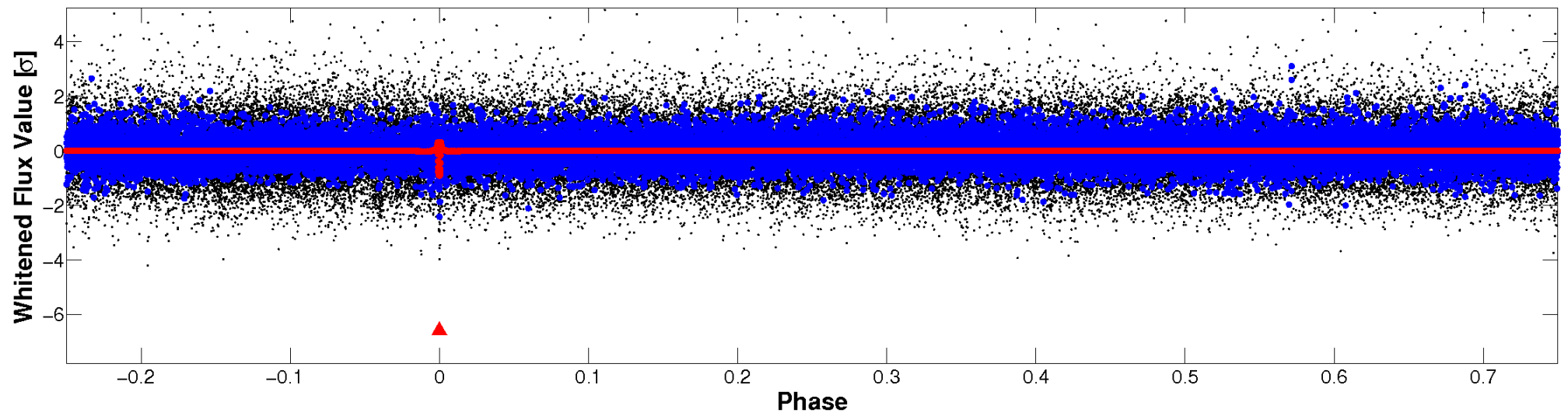


Non-Whitened Vs. Whitened Light Curve

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

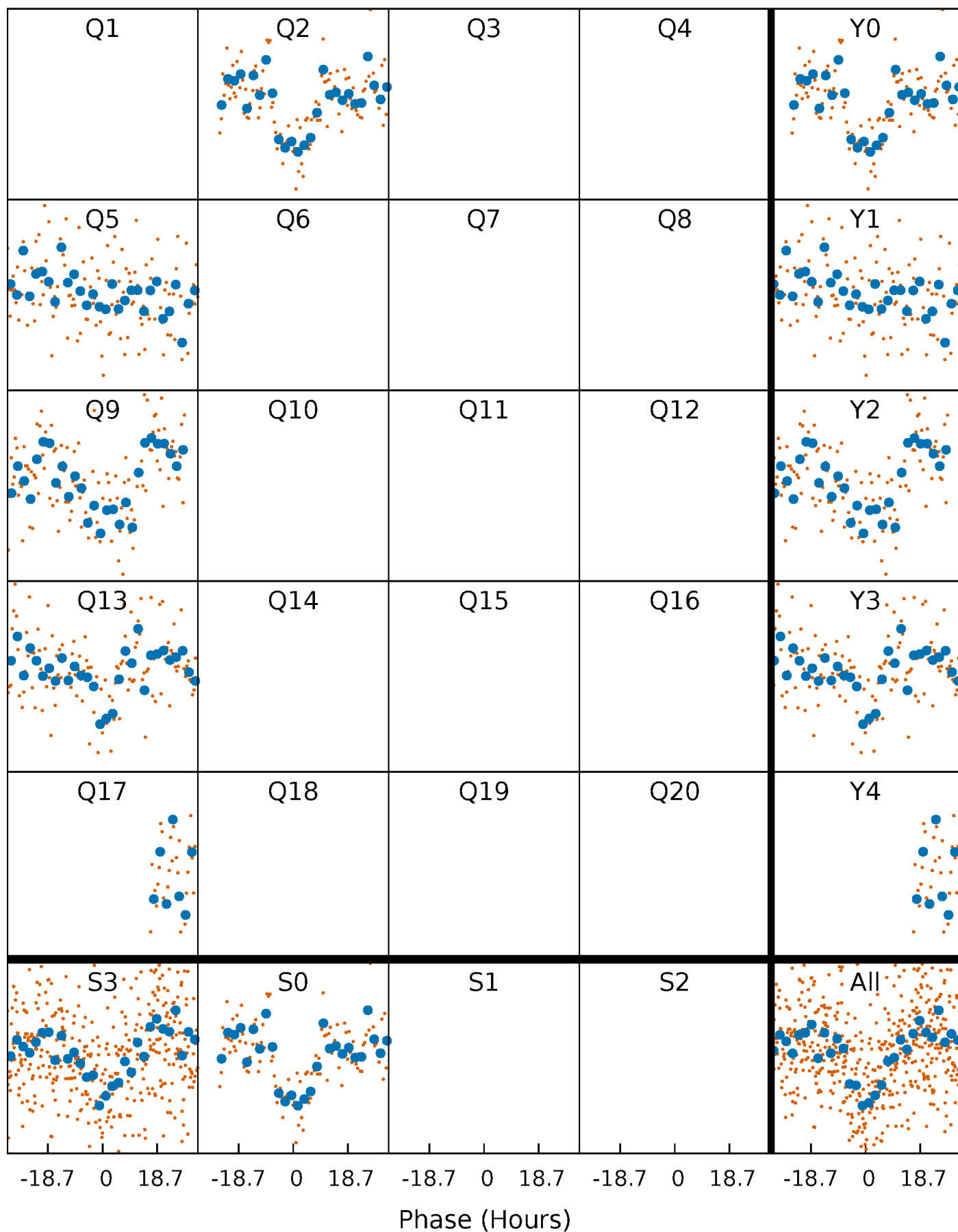


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



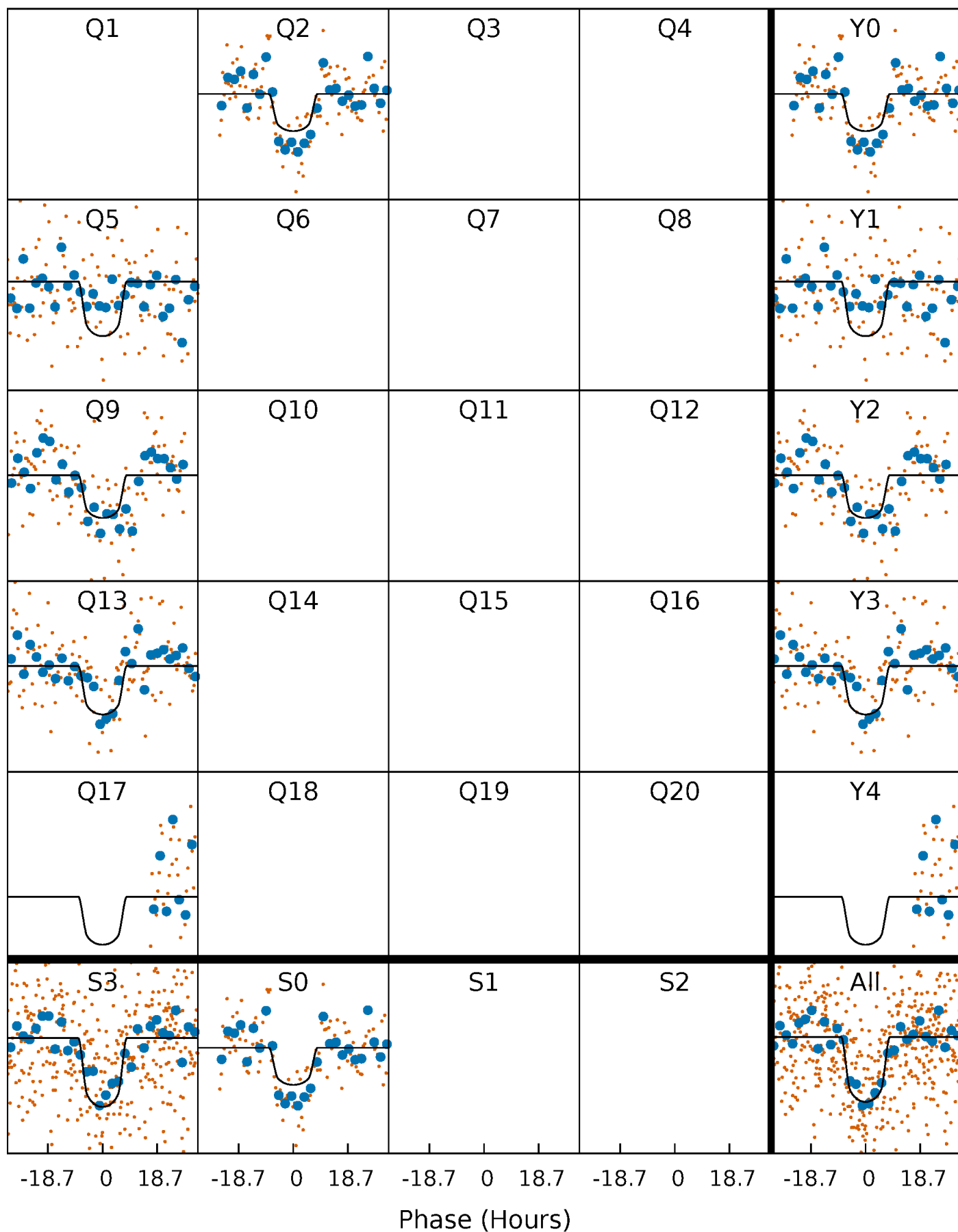
PDC Quarter-Phased Transit Curves

TCE 010404545-01 P=350.339605 Days $T_0=184.788049$ (BKJD)



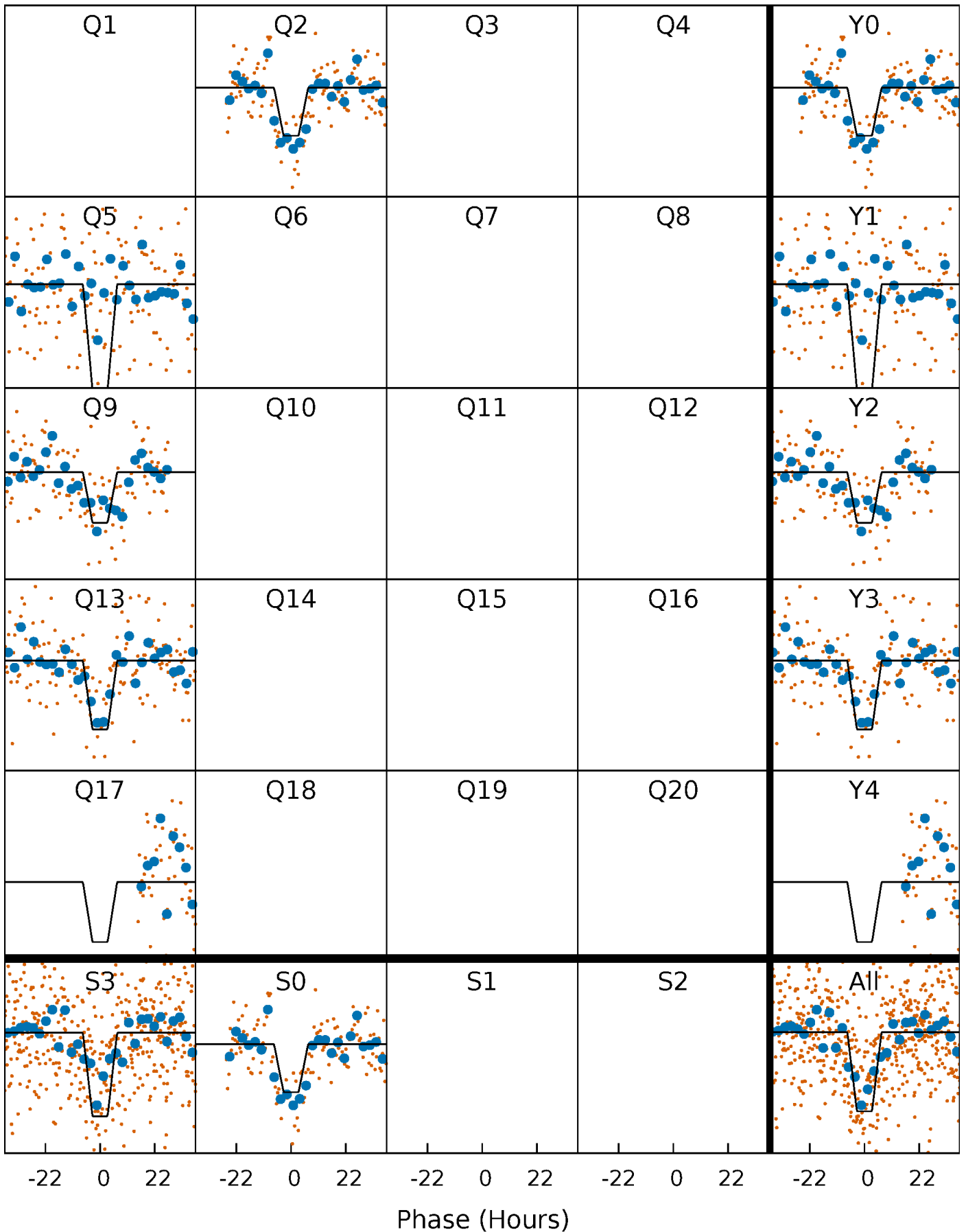
DV Quarter-Phased Transit Curves

TCE 010404545-01 P=350.339605 Days $T_0=184.788049$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

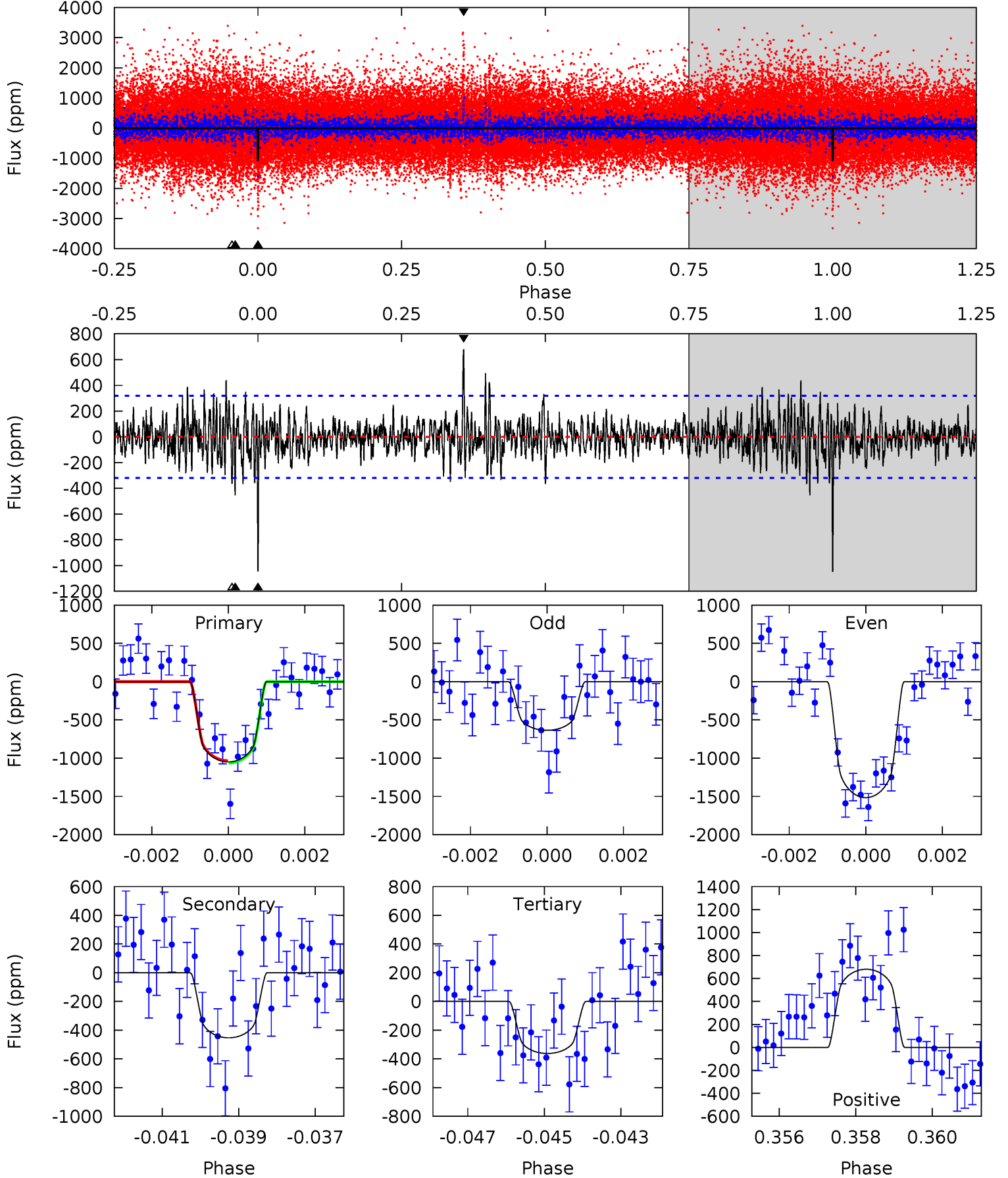
TCE 010404545-01 P=350.347009 Days $T_0=184.804725$ (BKJD)



DV Model-Shift Uniqueness Test

010404545-01, P = 350.339605 Days, E = 184.788049 Days

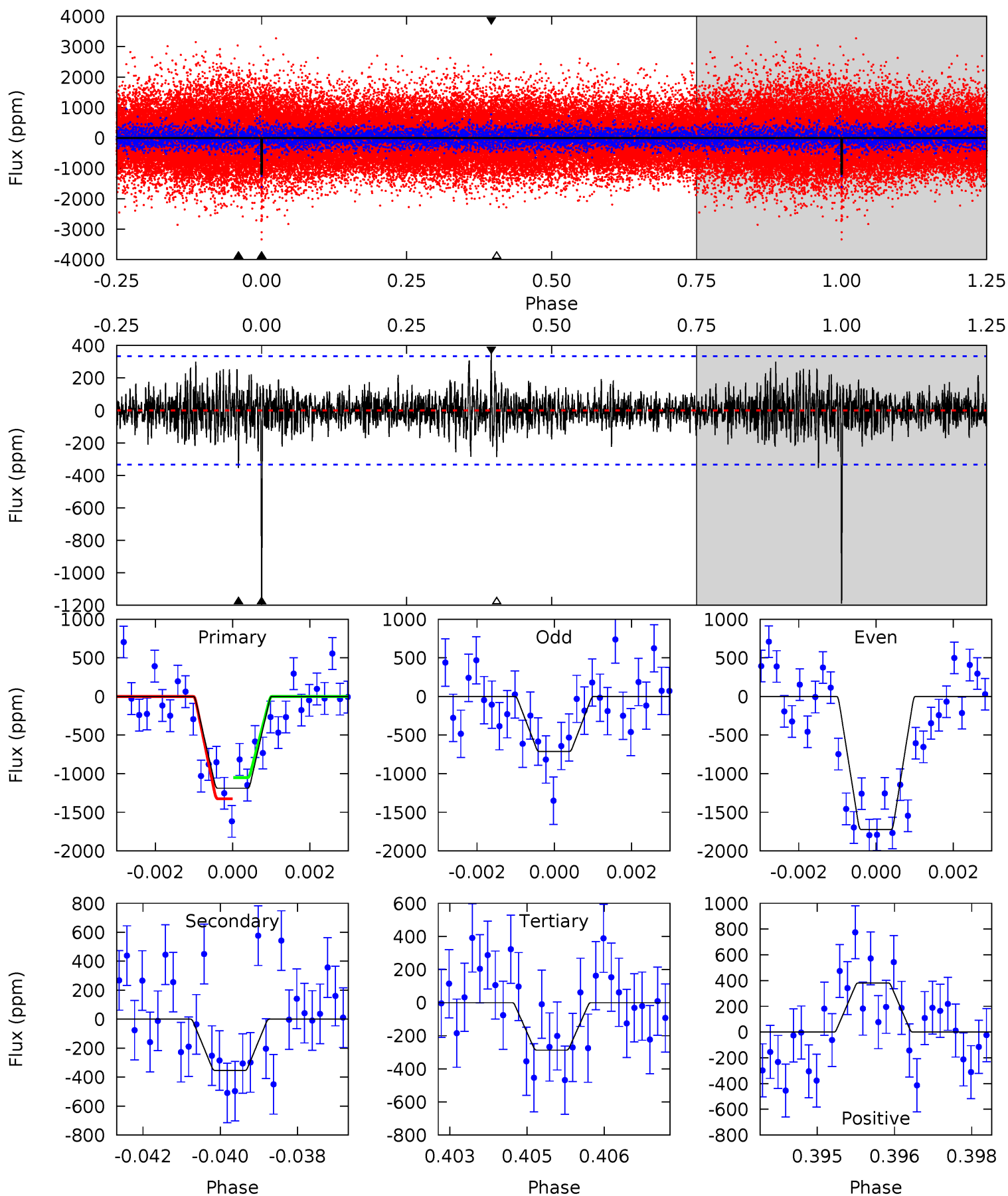
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.5 | 7.59 | 6.07 | 11.4 | 5.33 | 3.10 | 1.93 | 11.5 | 6.16 | 1.52 | -3.80 | 7.35 | 0.97 | 0.39 | 0.27 |



Alt Model-Shift Uniqueness Test

010404545-01, P = 350.347009 Days, E = 184.804725 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.1 | 5.68 | 4.61 | 6.12 | 5.36 | 3.14 | 1.24 | 14.5 | 13.0 | 1.07 | -0.44 | 8.15 | 0.93 | 0.24 | 2.19 |



Stellar Parameters For KIC 010404545

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5188^{+153}_{-153} | $4.642^{+0.033}_{-0.083}$ | $-0.380^{+0.300}_{-0.300}$ | $0.690^{+0.093}_{-0.053}$ | $0.768^{+0.066}_{-0.081}$ | $3.288^{+0.485}_{-0.902}$ |
| | +3%/-3% | +1%/-2% | +79%/-79% | +13%/-8% | +9%/-11% | +15%/-27% |
| 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 010404545-01 / KOI 8207.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|-------------------------|
| DV | -453 ± 60 | $2.80^{+0.40}_{-0.33}$ | 286^{+12}_{-11} | 4180^{+246}_{-205} | 24891^{+7856}_{-6734} |
| Alt. | -354 ± 62 | $2.97^{+0.37}_{-0.40}$ | 285^{+12}_{-10} | 3915^{+244}_{-209} | 17030^{+6677}_{-4462} |

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

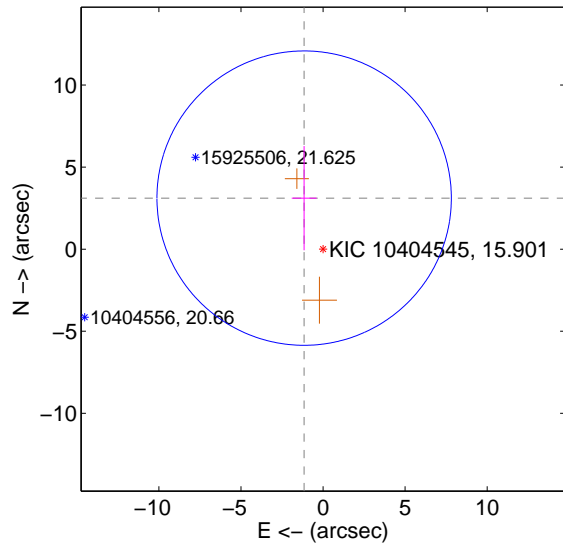
Supplemental centroid analysis for 010404545-01. Kepler magnitude: 15.90. Transit SNR 8.61

There are 0 quarters with good PRF difference image offsets

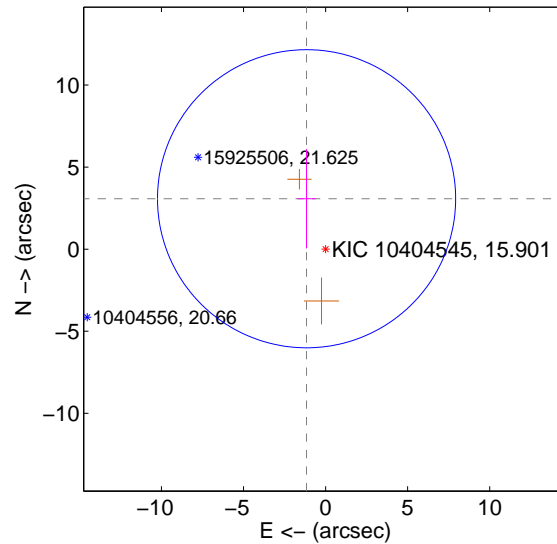
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 3.316 ± 2.989 | 1.11 | 1.151 ± 0.755 | 3.110 ± 3.175 |
| PRF-fit source offset from KIC position | 3.283 ± 3.027 | 1.08 | 1.158 ± 0.551 | 3.072 ± 3.028 |
| photometric centroid source offset | 2.26 ± 2.57 | 0.88 | 2.11 ± 2.63 | 0.82 ± 2.13 |

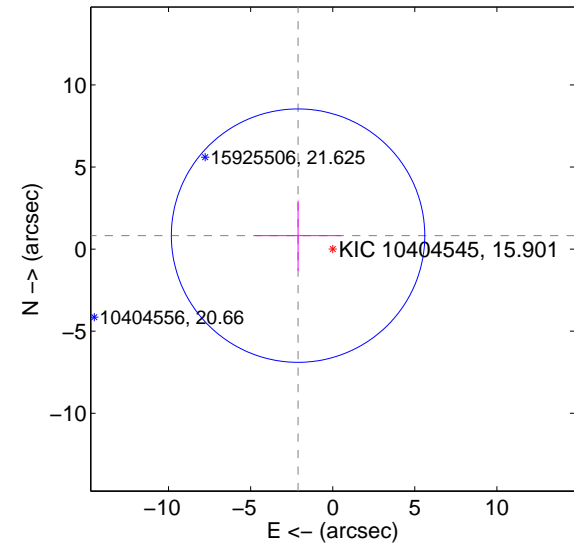
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

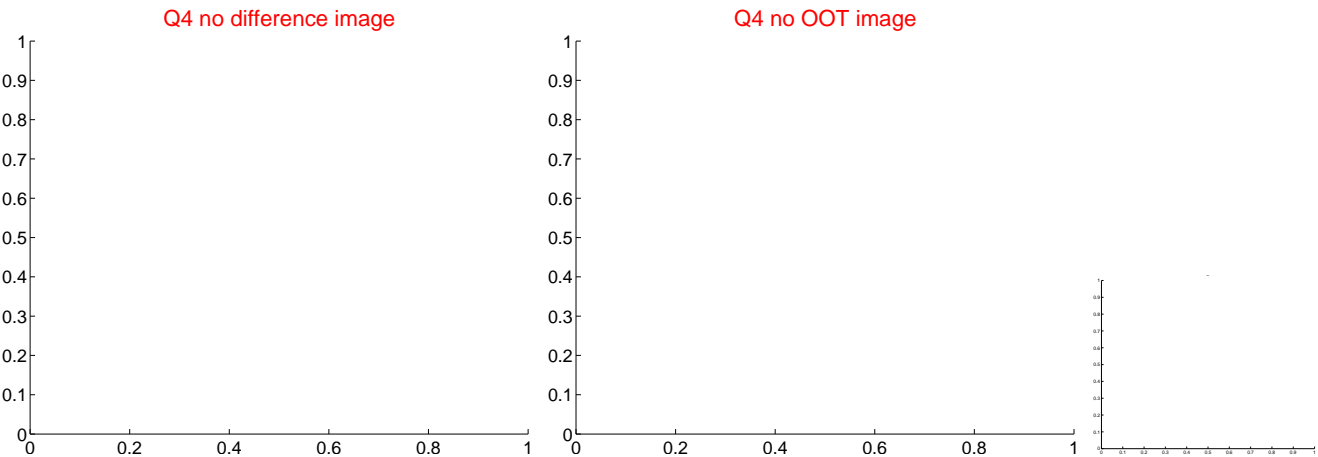
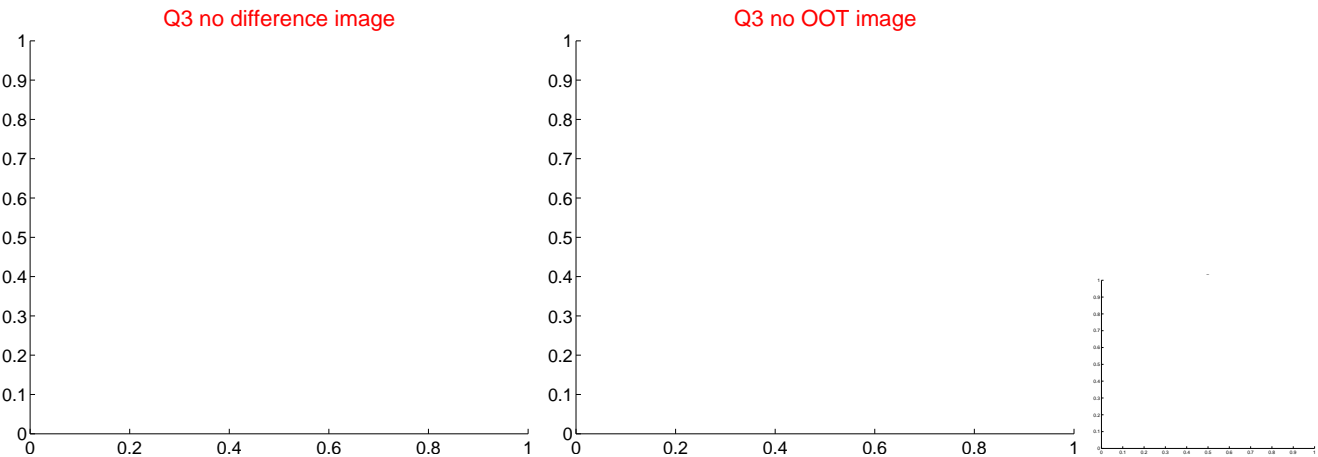
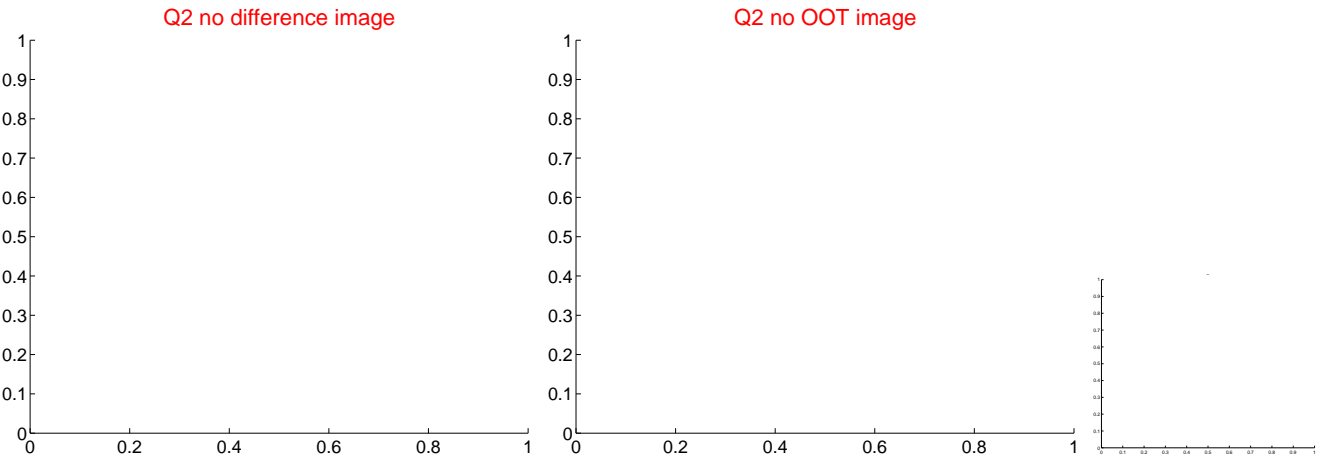
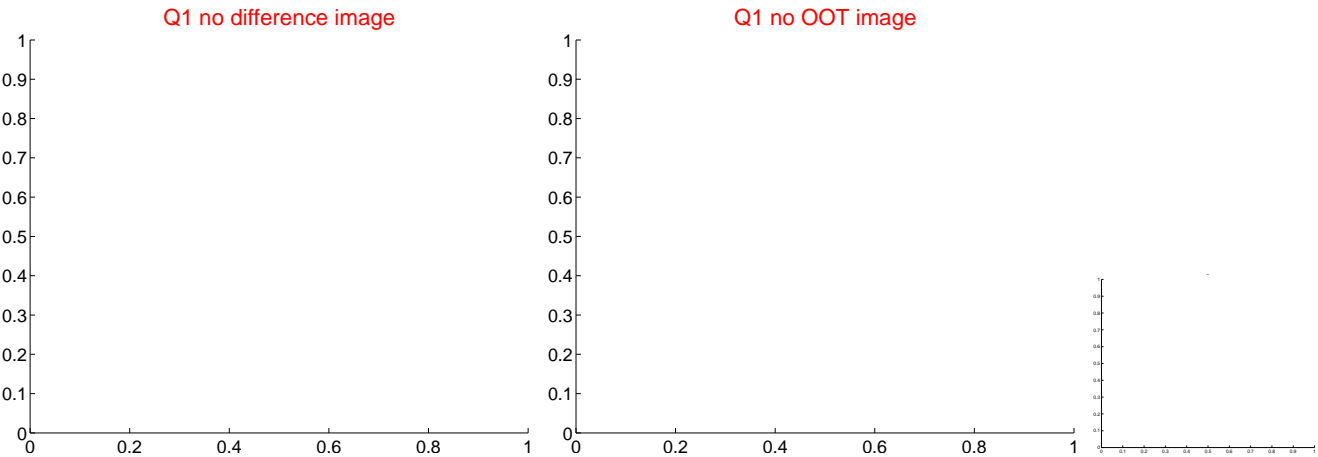


offset from photometric centroids

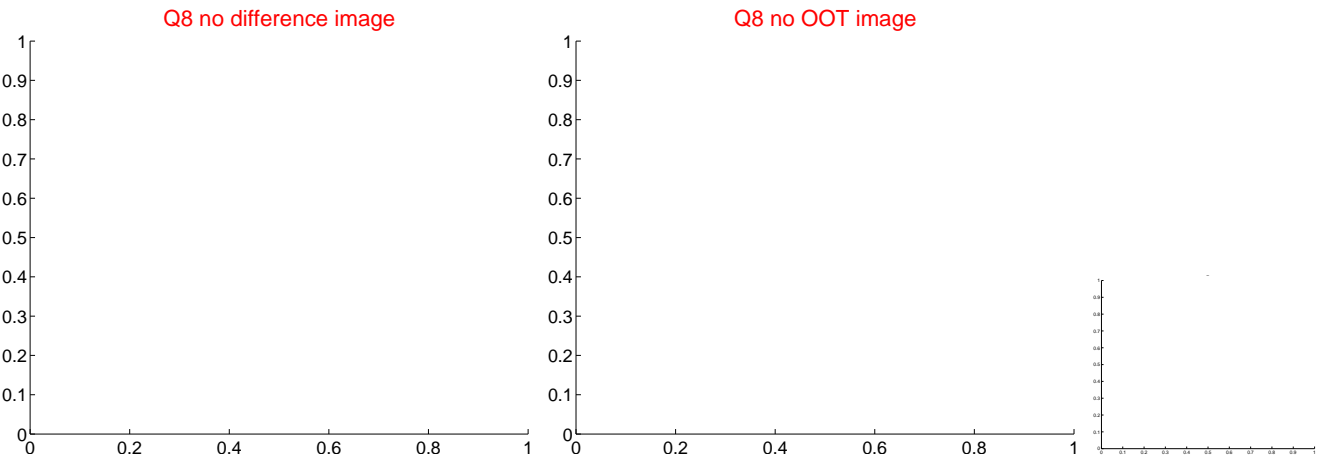
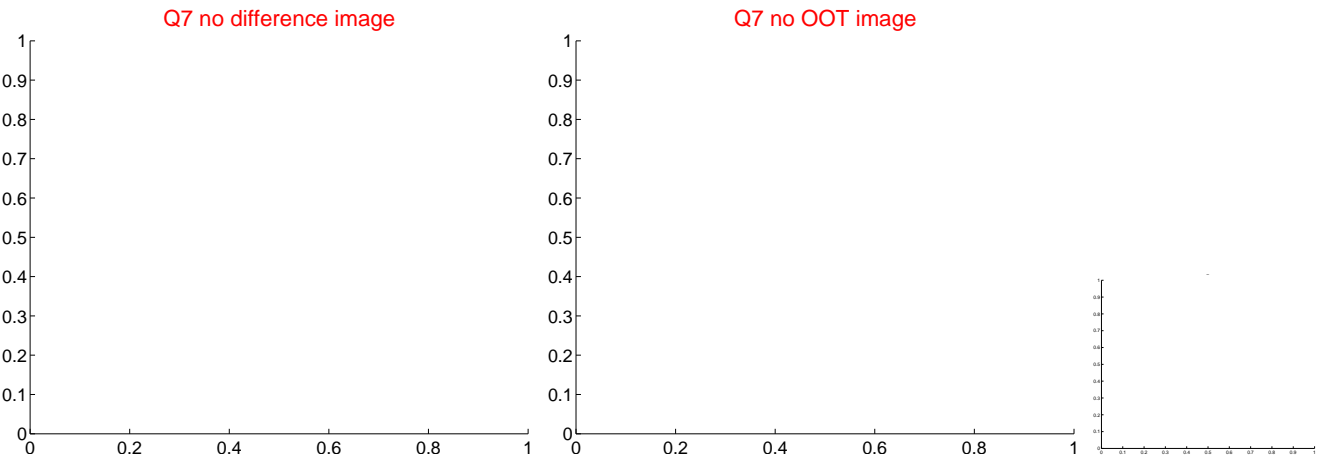
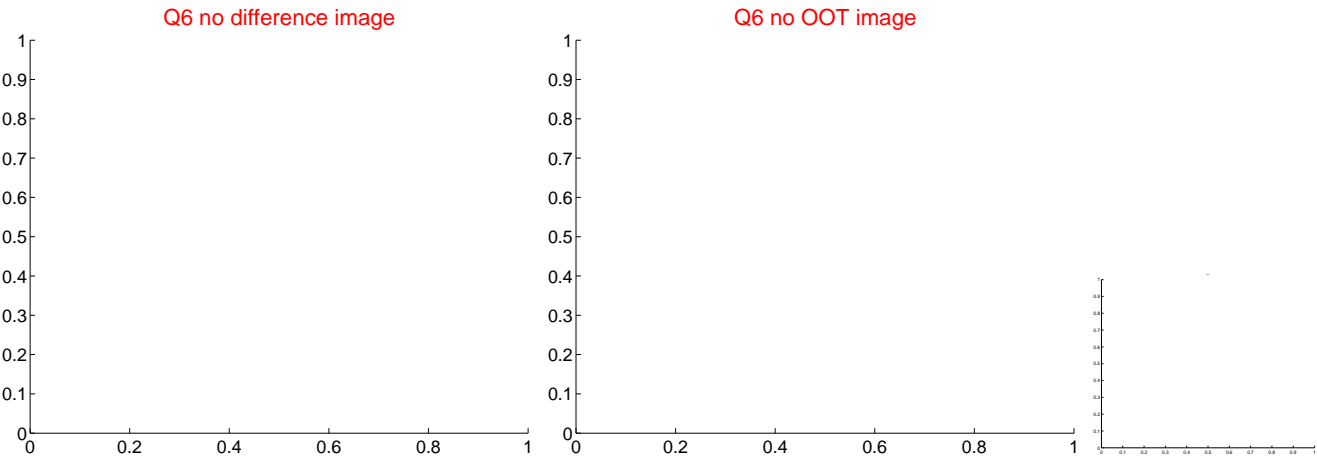
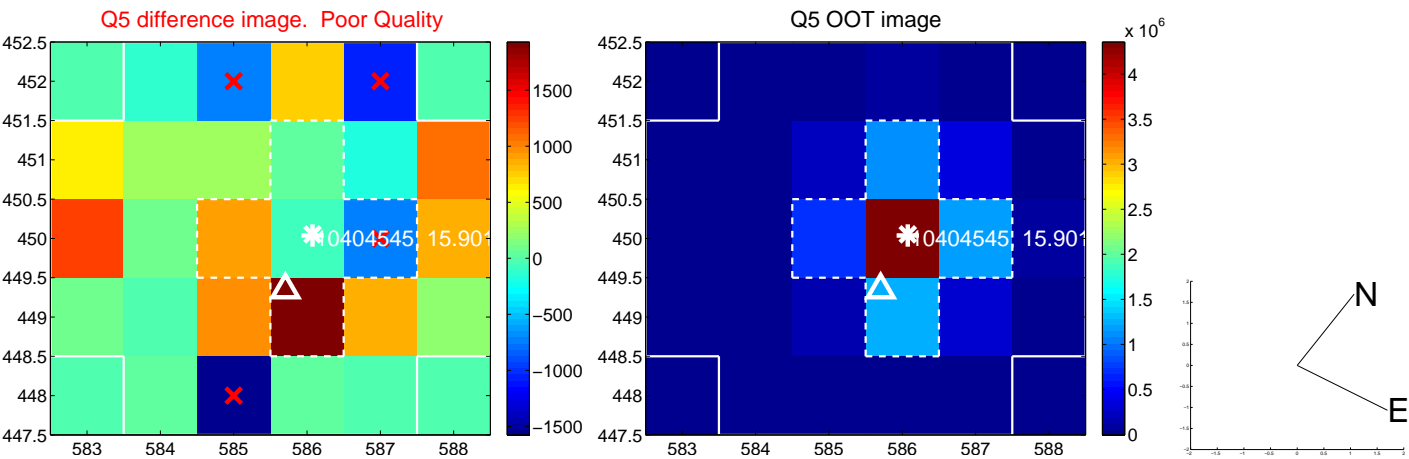


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

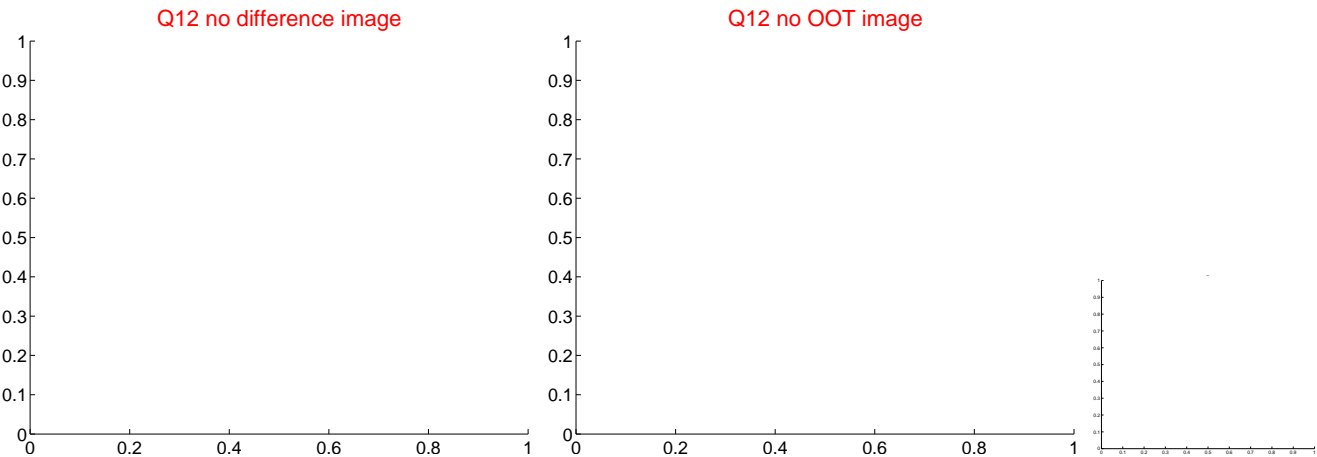
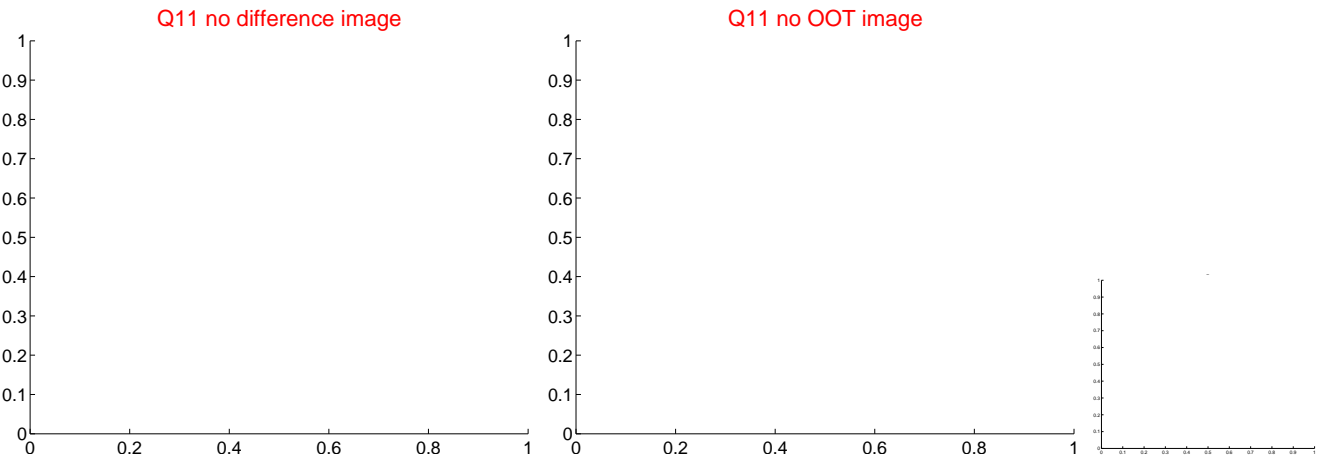
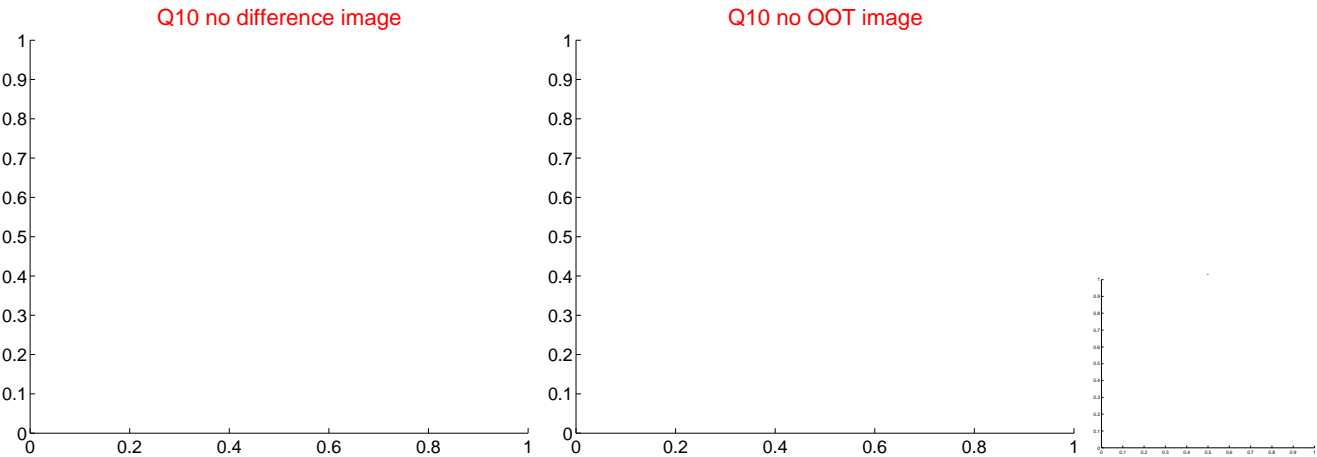
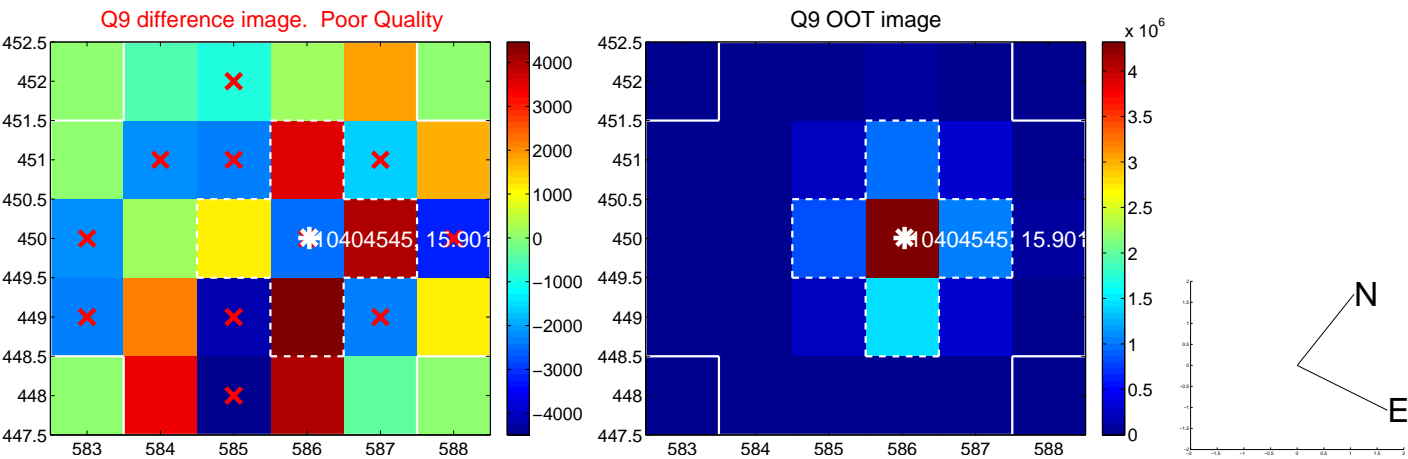
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



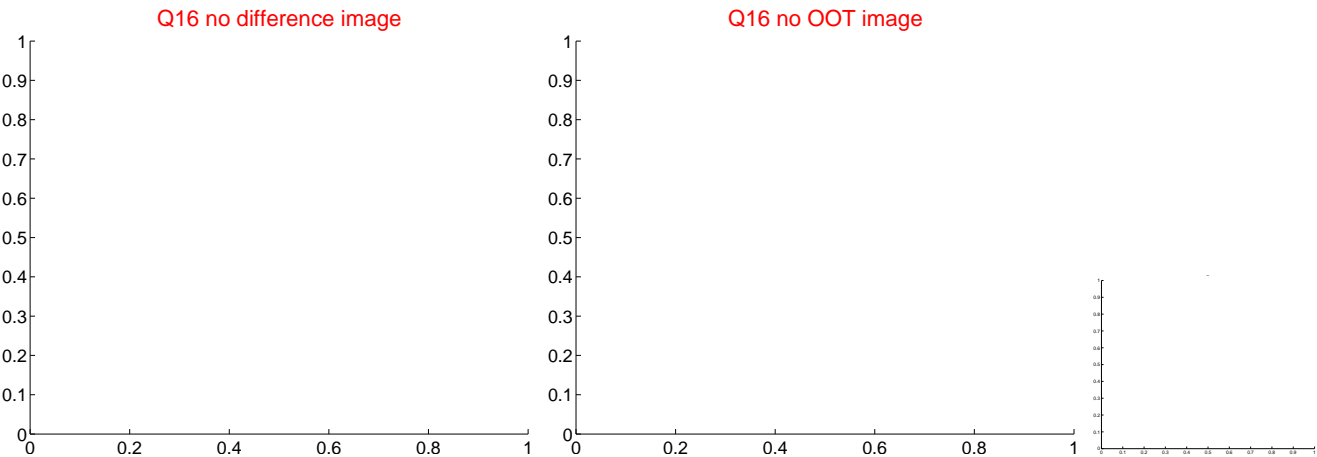
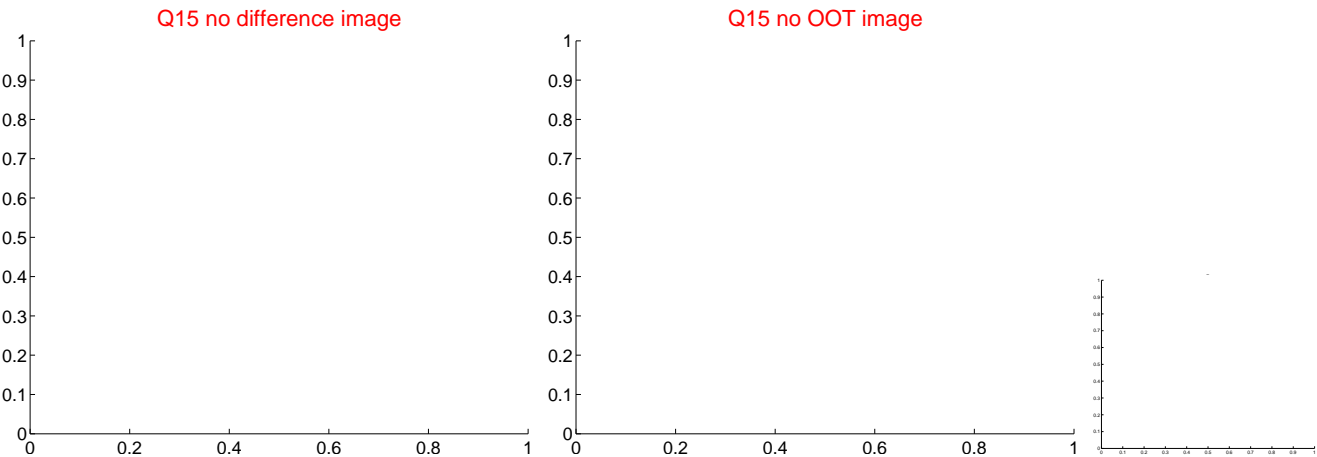
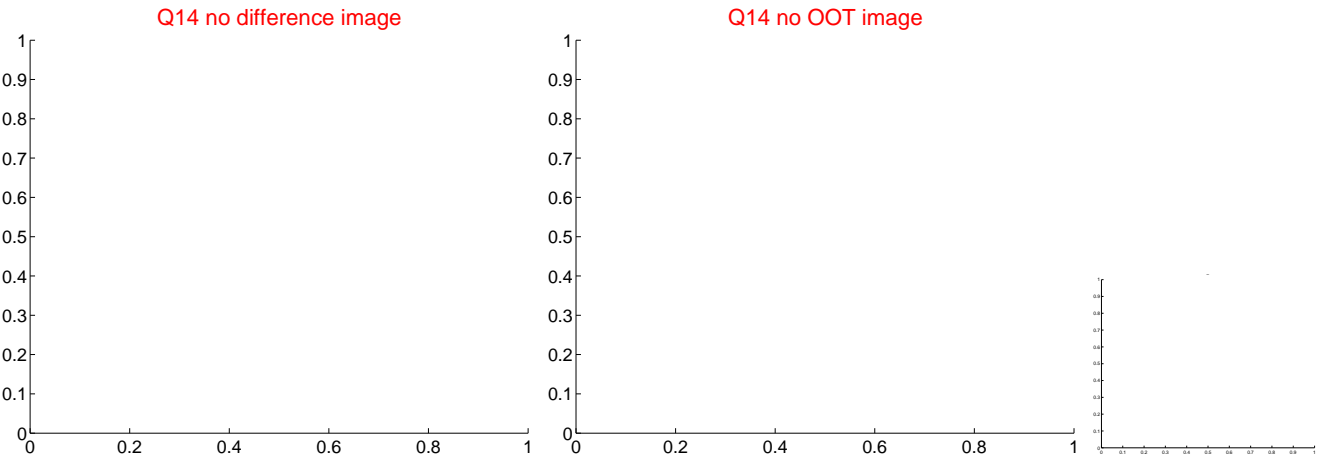
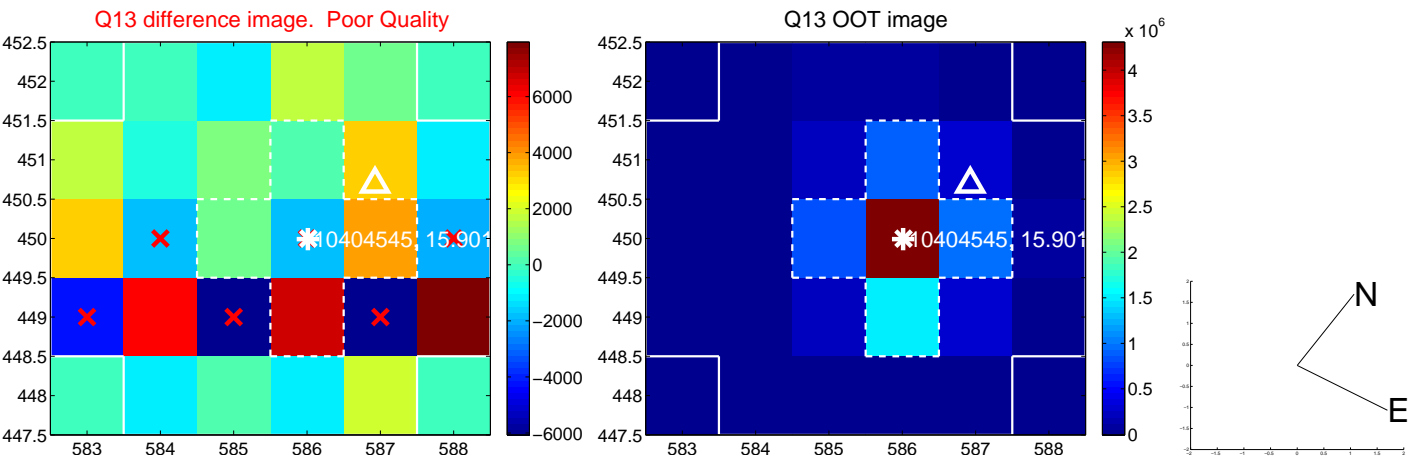
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



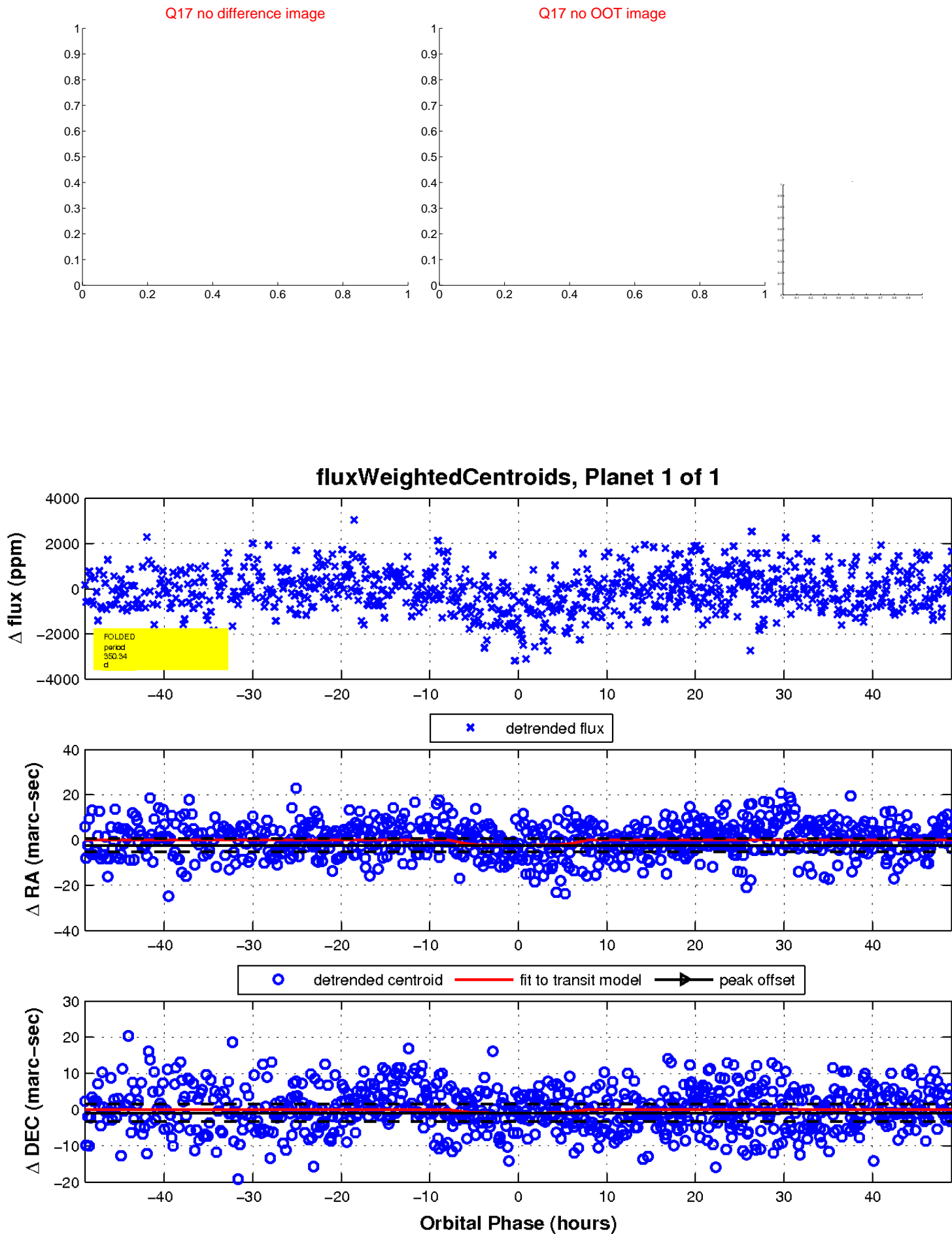
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white ×: 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

