

KIC 010532030

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010532030-03 | OBS | No | 527.955120 | 516.735452 | 1732.7 | 8.124 | 7.9 | 8.2 | 0.99 | 5321 | 4.62 | 0.46 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010532030-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

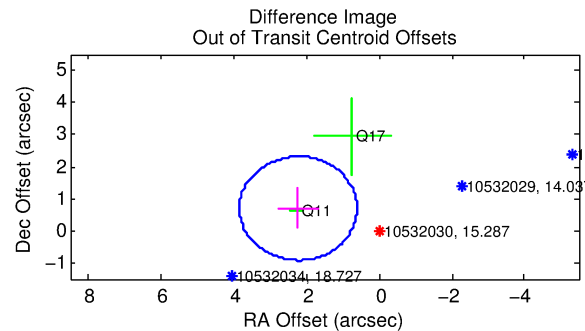
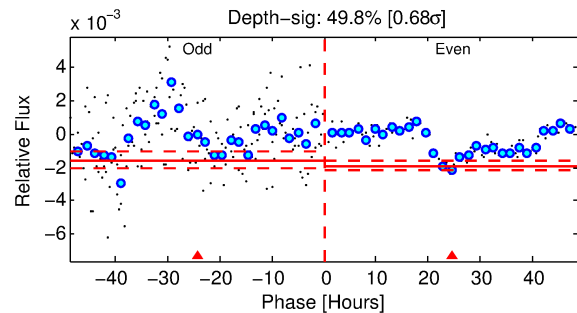
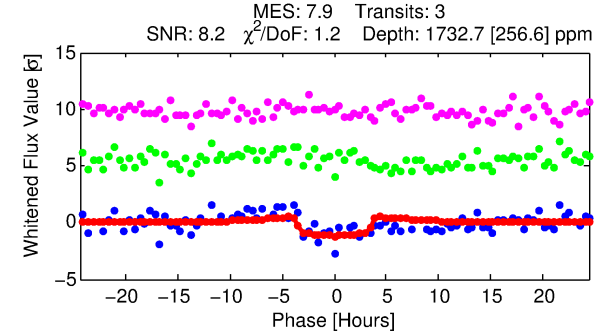
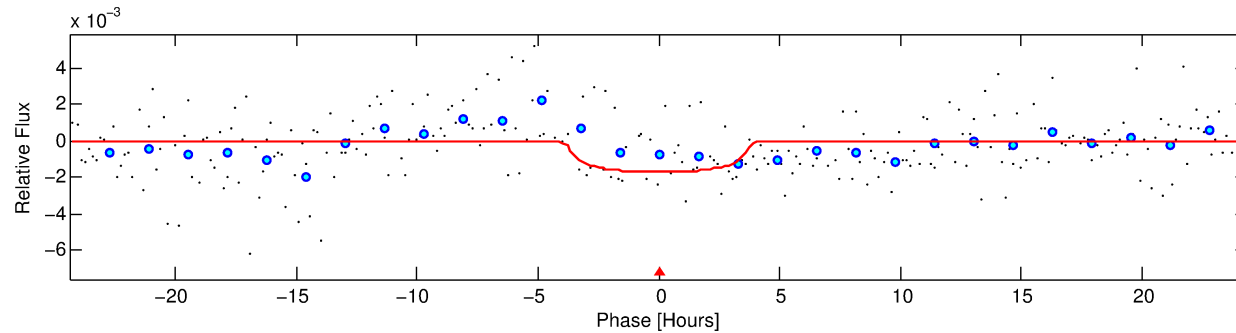
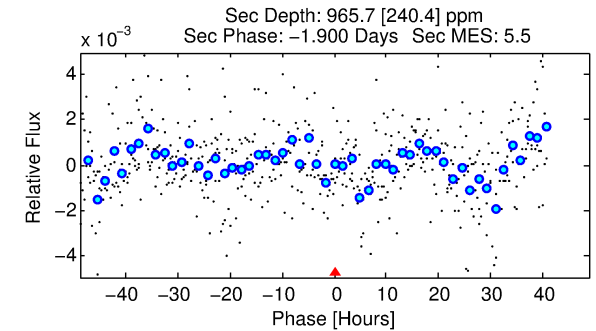
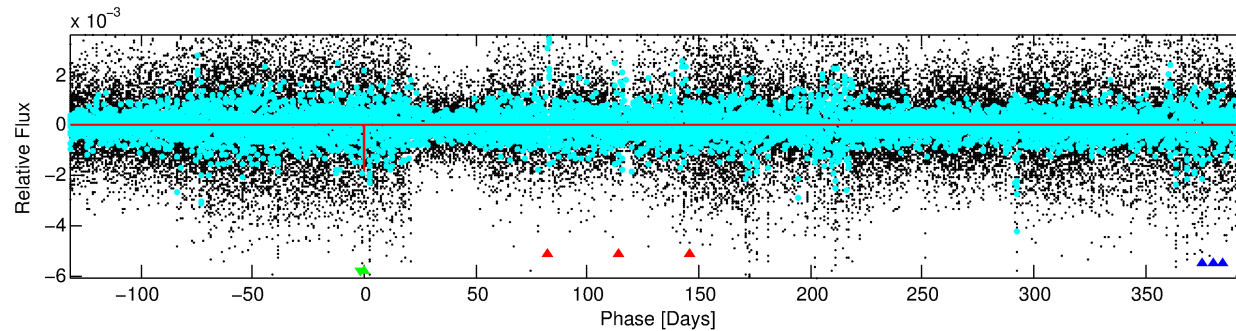
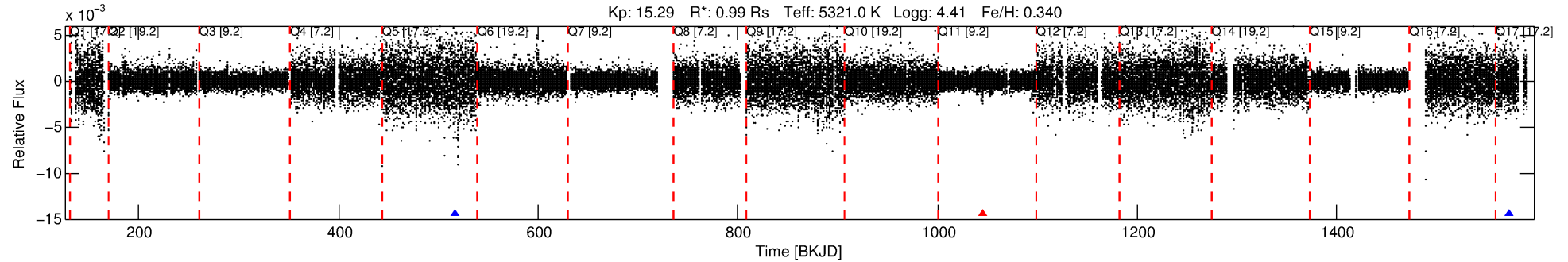
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010532030-03

No Significant Match Found

DV One-Page Summary

KIC: 10532030 Candidate: 3 of 3 Period: 527.955 d



DV Fit Results:

Period = 527.95512 [0.02081] d
Epoch = 516.7355 [0.0249] BKJD
Rp/R* = 0.0426 [0.0092]
a/R* = 332.10 [238.96]
b = 0.80 [0.34]
Seff = 0.46 [0.16]
Teff = 210 [18] K
Rp = 4.62 [1.54] Re
a = 1.2428 [0.2685] AU
Ag = 38460.28 [22746.76] [1.69 σ]
Teffp = 4543 [583] K [7.42 σ]

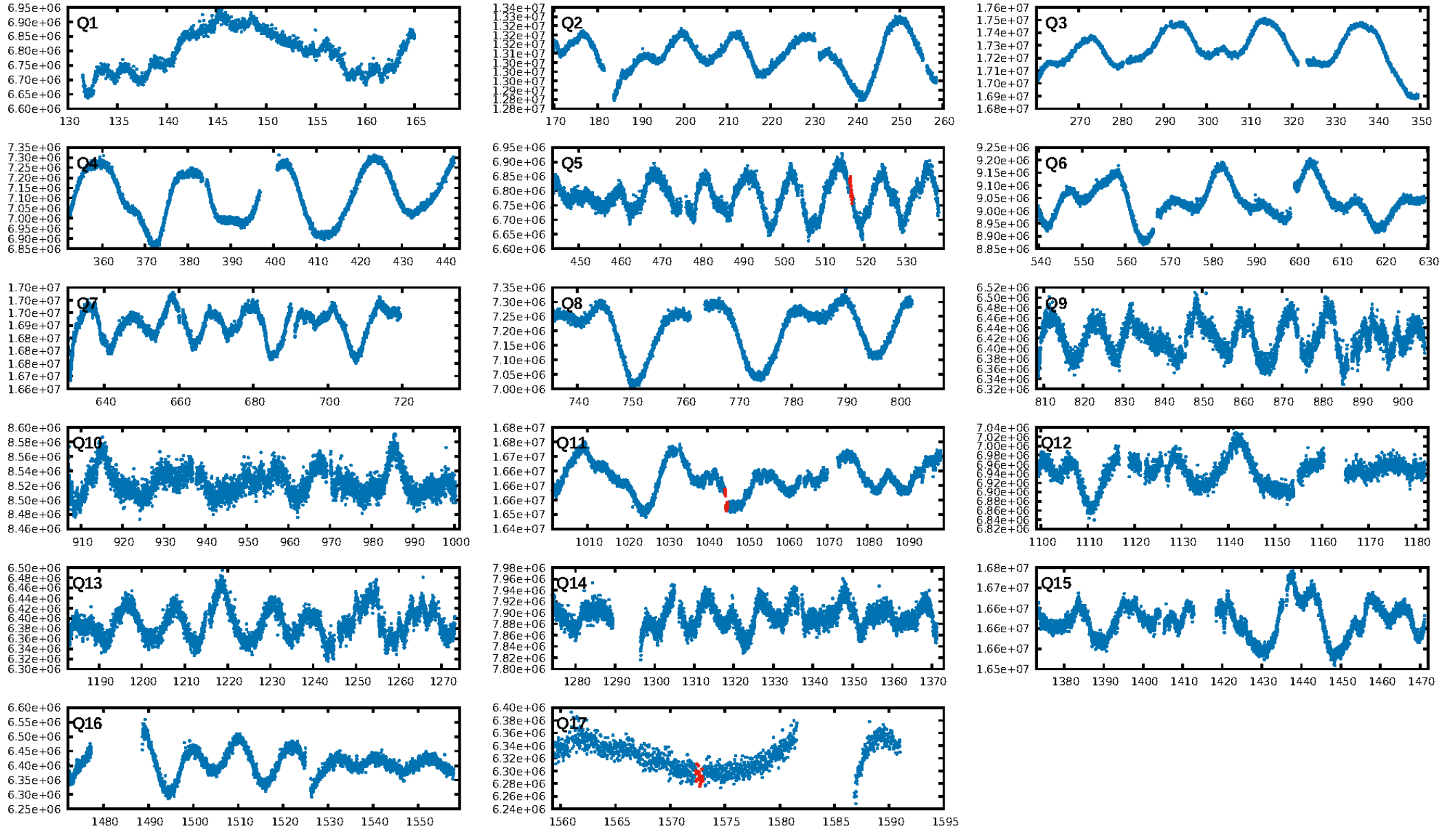
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.10 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 36.5%
ModelChiSquareGof-sig: 79.8%
Bootstrap-pfa: 9.65e-09
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: 0.7921
Centroid-sig: 3.6%
Centroid-so: 1.249 arcsec [2.17 σ]
OotOffset-rm: 2.333 arcsec [4.33 σ]
KicOffset-rm: 1.257 arcsec [2.21 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

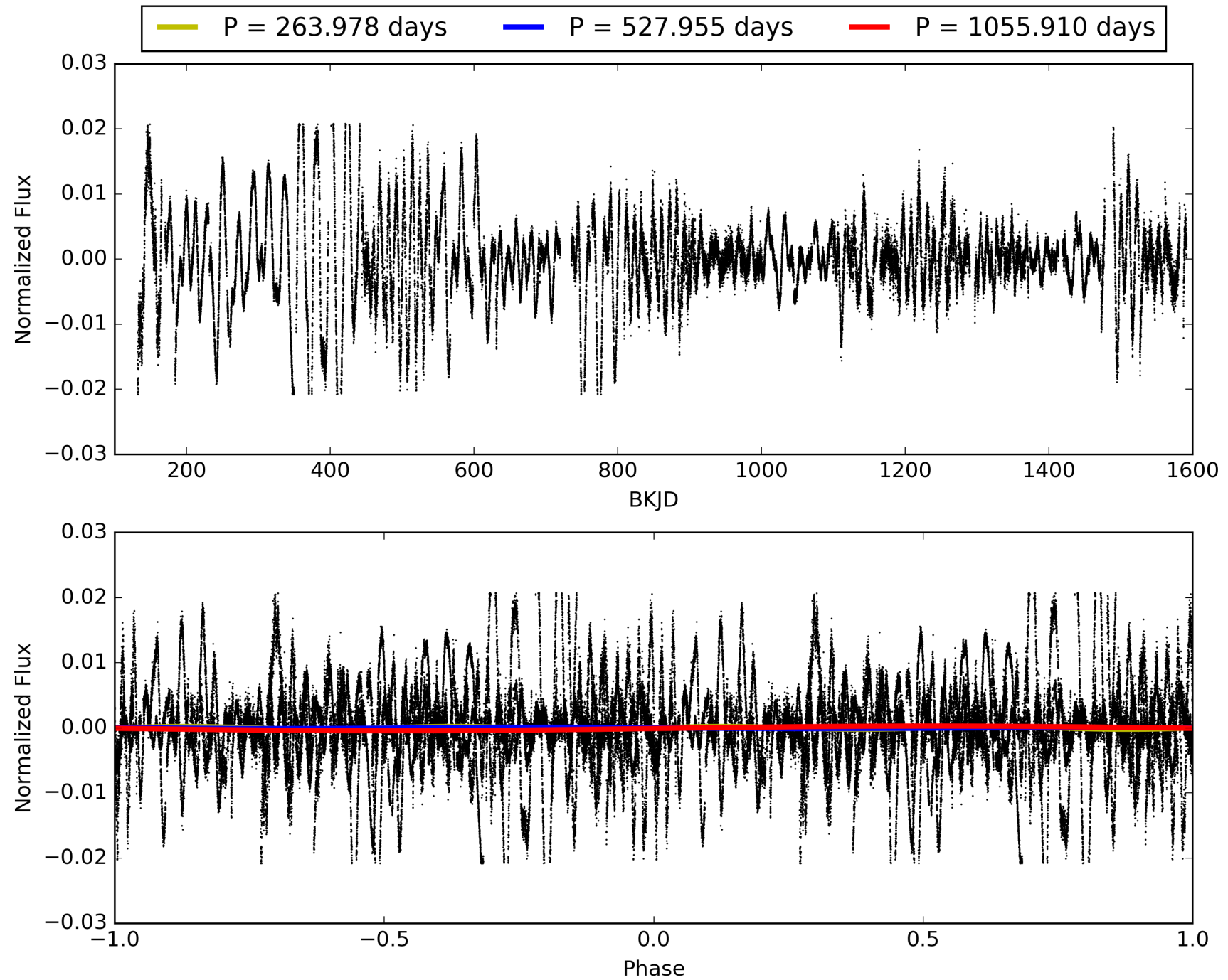
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:40:42 Z

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

TCE 010532030-03, PDC Light Curves

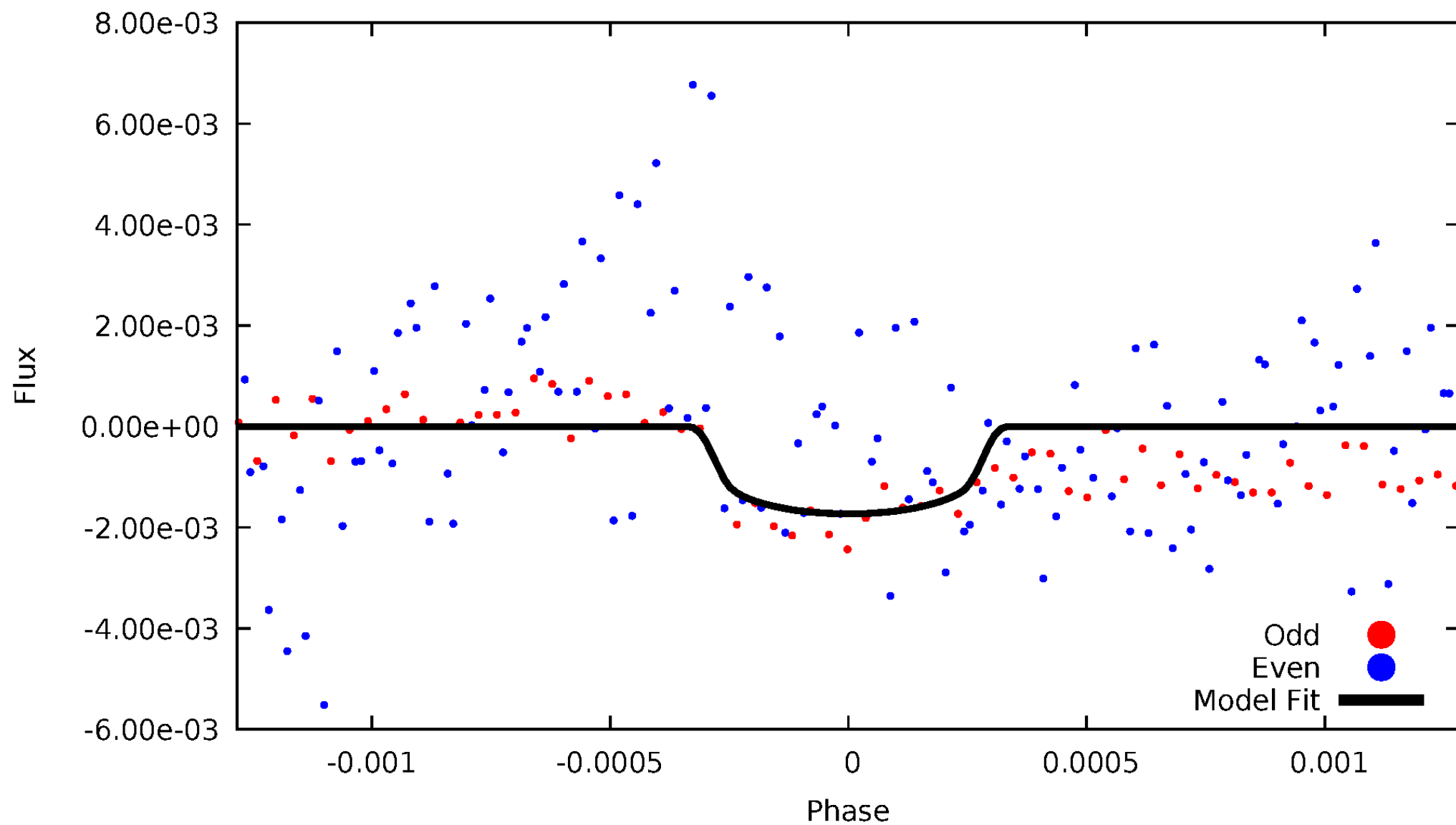


TCE 010532030-03



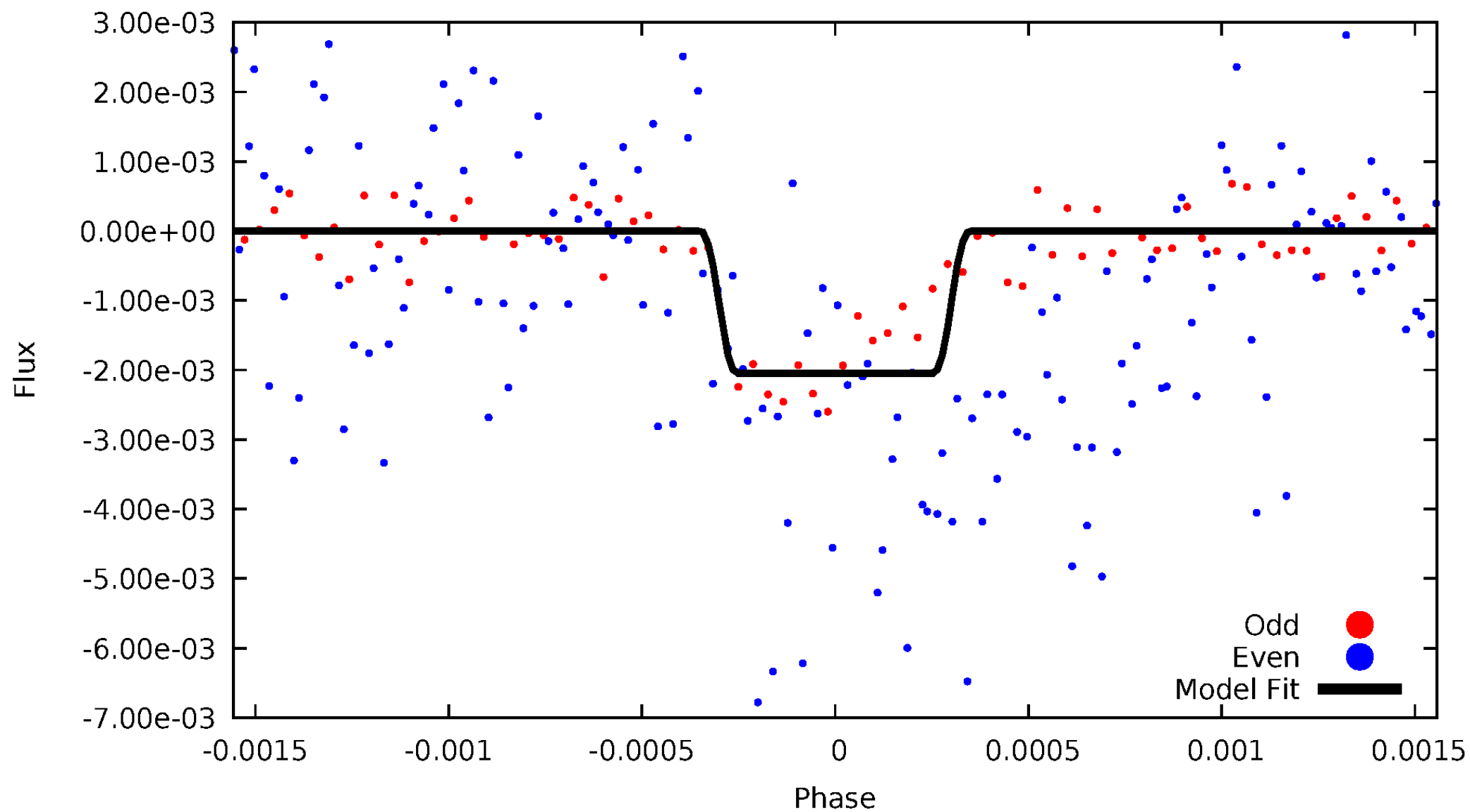
DV Odd/Even

TCE 010532030-03

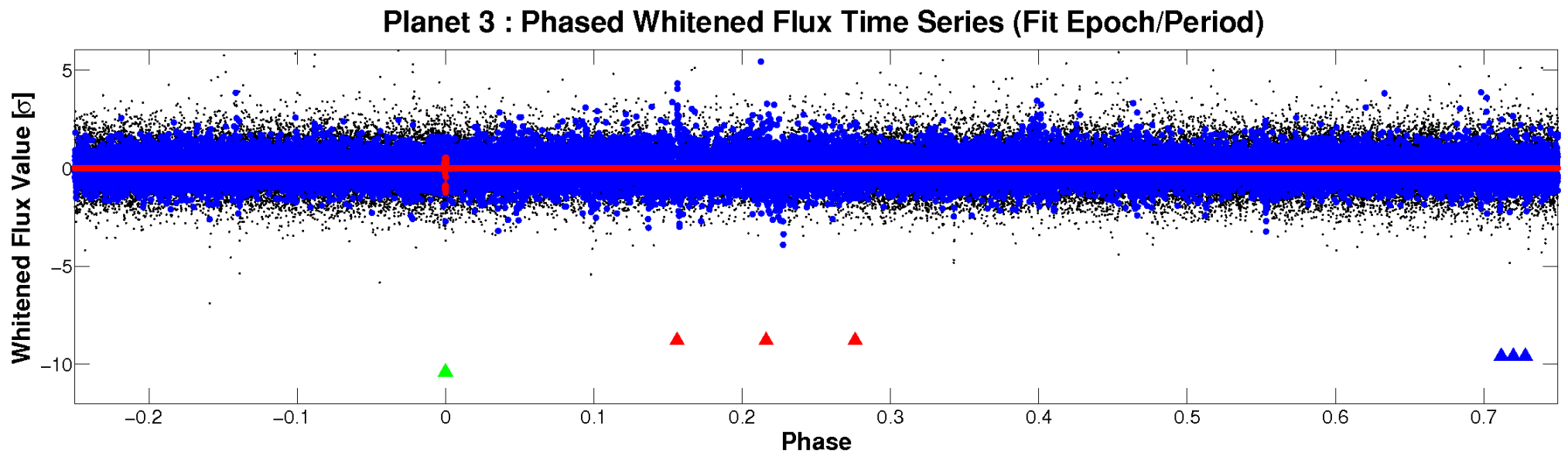
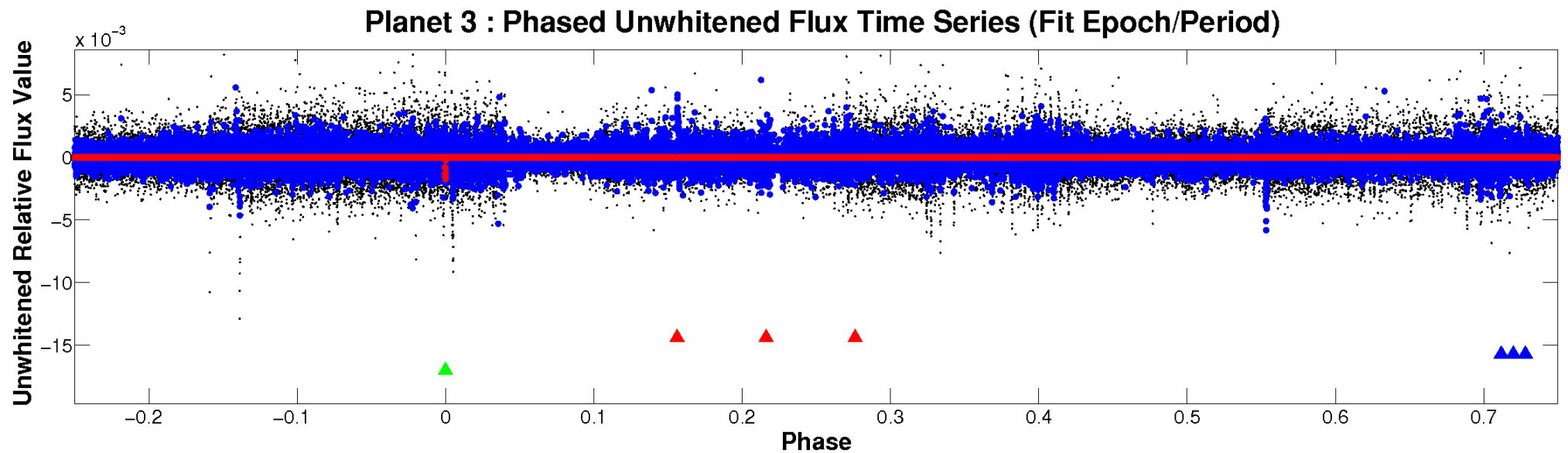


ALT Odd/Even

TCE 010532030-03

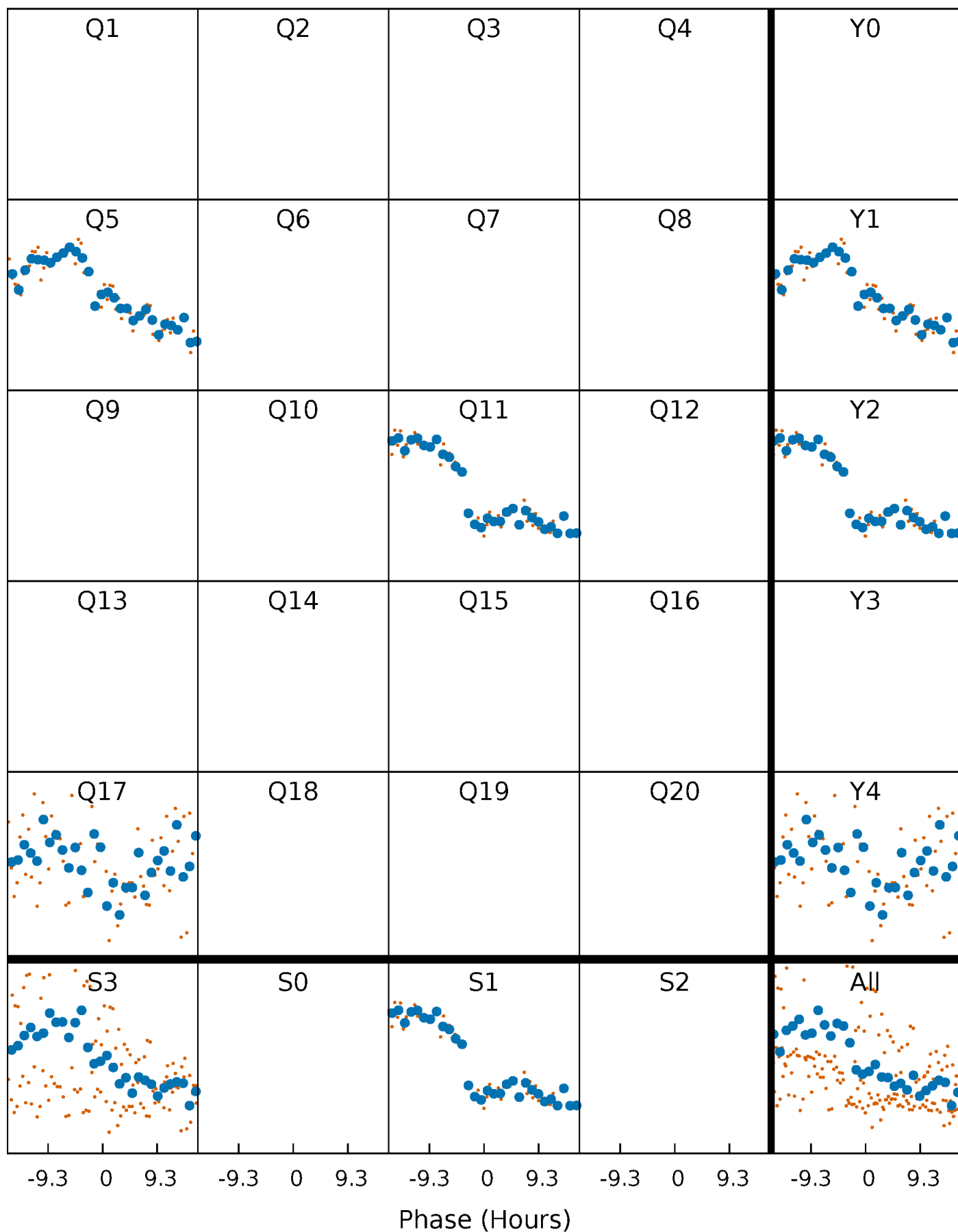


Non-Whitened Vs. Whitened Light Curve



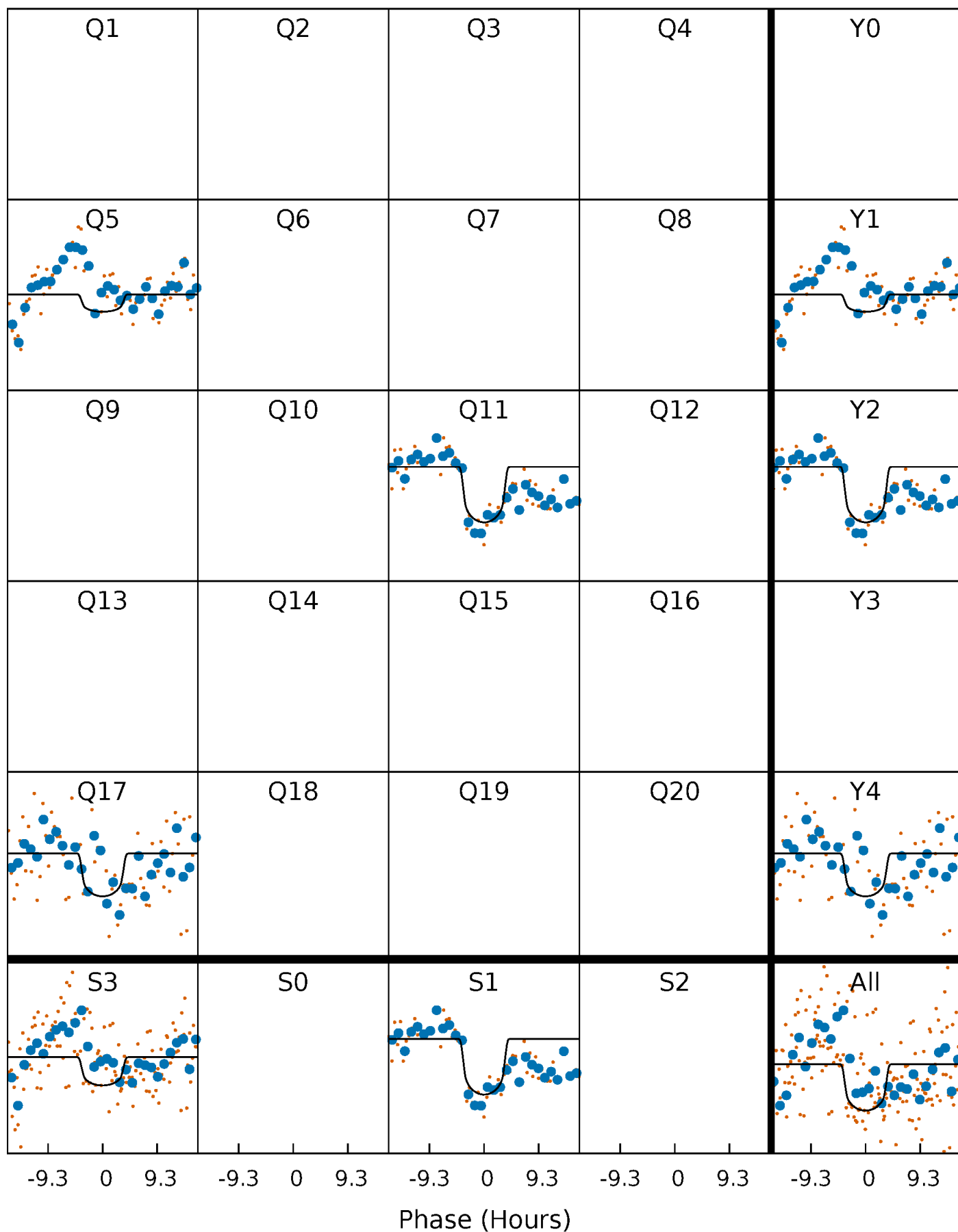
PDC Quarter-Phased Transit Curves

TCE 010532030-03 $P=527.955120$ Days $T_0=516.735452$ (BKJD)



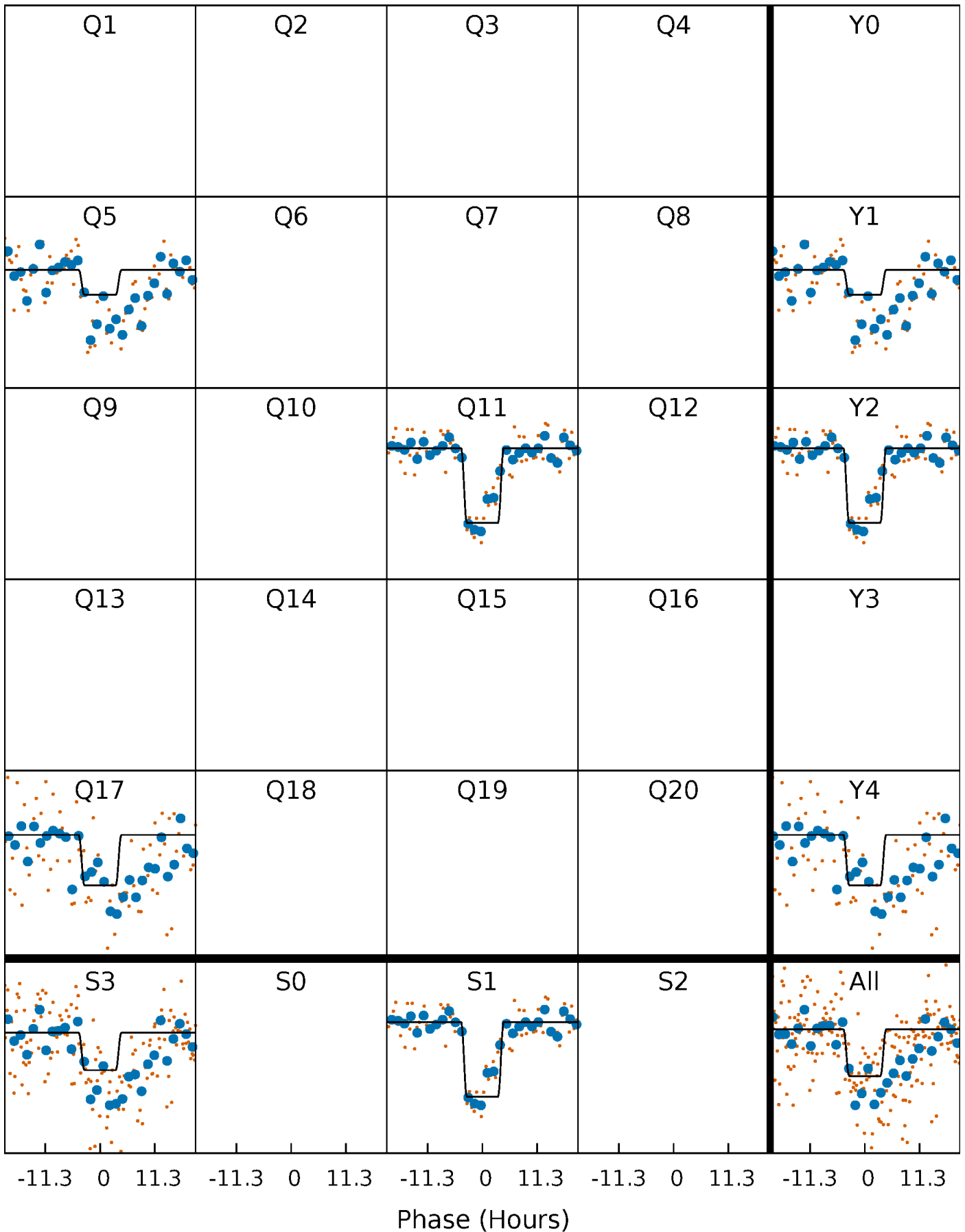
DV Quarter-Phased Transit Curves

TCE 010532030-03 $P=527.955120$ Days $T_0=516.735452$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

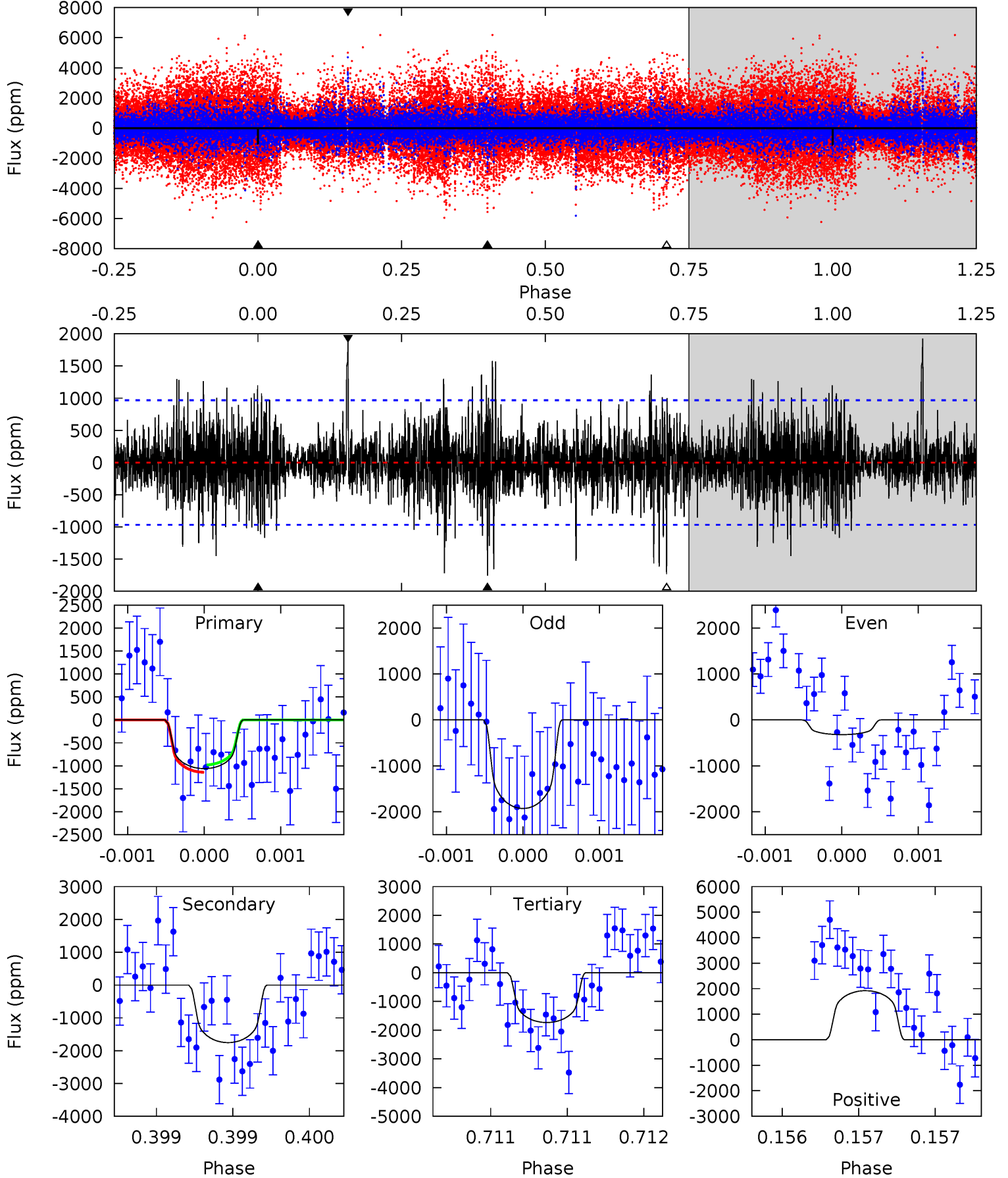
TCE 010532030-03 $P=527.928267$ Days $T_0=516.771100$ (BKJD)



DV Model-Shift Uniqueness Test

010532030-03, P = 527.955120 Days, E = 516.735452 Days

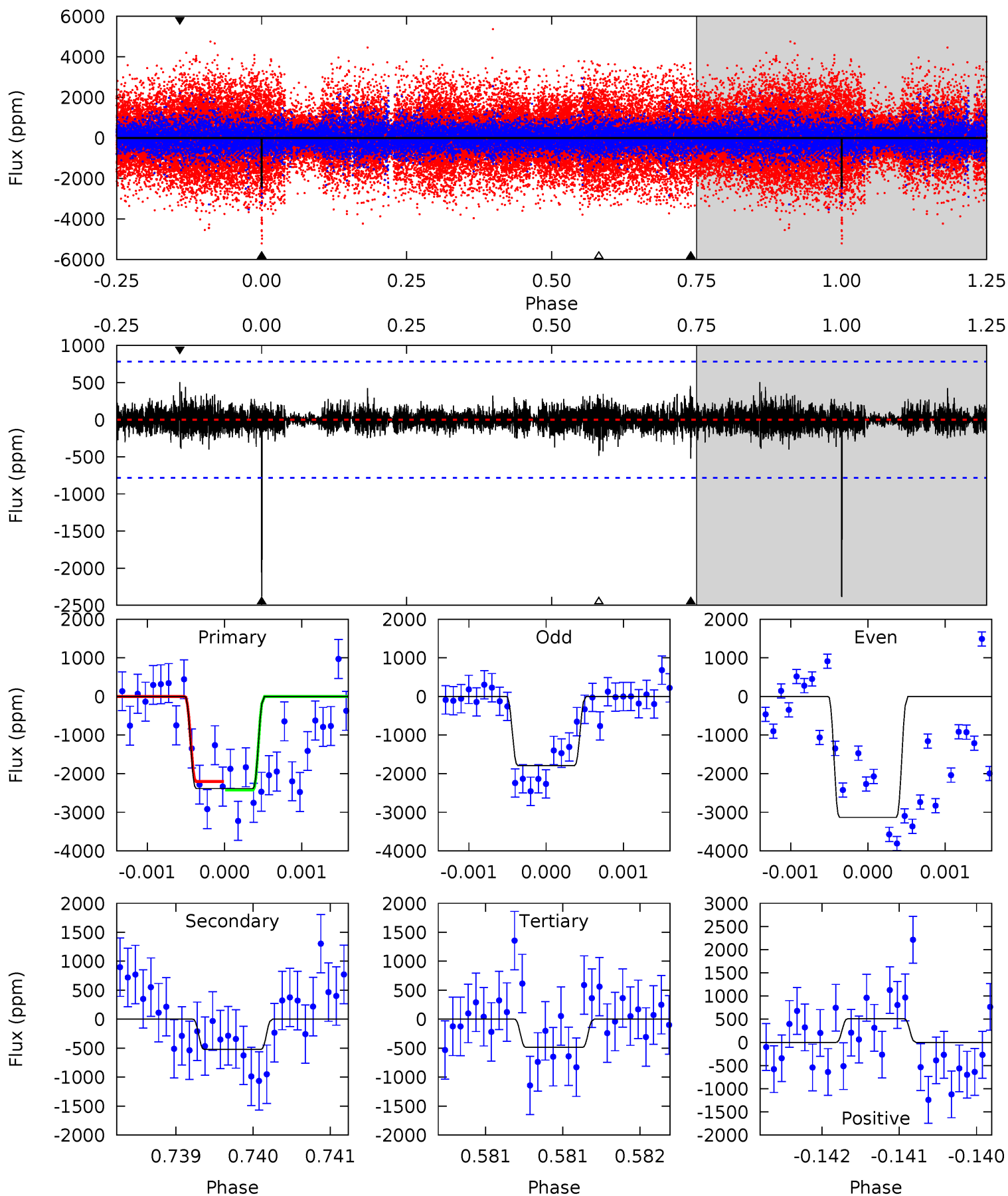
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.06 | 10.0 | 9.90 | 11.0 | 5.53 | 3.41 | 2.00 | -3.84 | -4.92 | 0.12 | -0.96 | 4.26 | 0.70 | 0.52 | 0.46 |



Alt Model-Shift Uniqueness Test

010532030-03, P = 527.928267 Days, E = 516.771100 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 3.67 | 3.42 | 3.57 | 5.52 | 3.40 | 0.65 | 13.4 | 13.2 | 0.25 | 0.10 | 4.44 | 1.26 | 0.18 | 0.78 |



Stellar Parameters For KIC 010532030

| | $T_{\text{eff}} (K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5321^{+159}_{-159} | $4.407^{+0.130}_{-0.174}$ | $0.340^{+0.100}_{-0.300}$ | $0.993^{+0.253}_{-0.156}$ | $0.918^{+0.069}_{-0.069}$ | $1.319^{+0.713}_{-0.635}$ |
| | +3%/-3% | +3%/-4% | +29%/-88% | +25%/-16% | +8%/-8% | +54%/-48% |
| 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 010532030-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -1754 ± 175 | $4.69^{+1.20}_{-1.09}$ | 295^{+19}_{-18} | 5275^{+642}_{-475} | 68445^{+44708}_{-25746} |
| Alt. | -521 ± 142 | $4.94^{+1.24}_{-1.04}$ | 294^{+20}_{-17} | 4018^{+417}_{-310} | 17301^{+12861}_{-6939} |

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

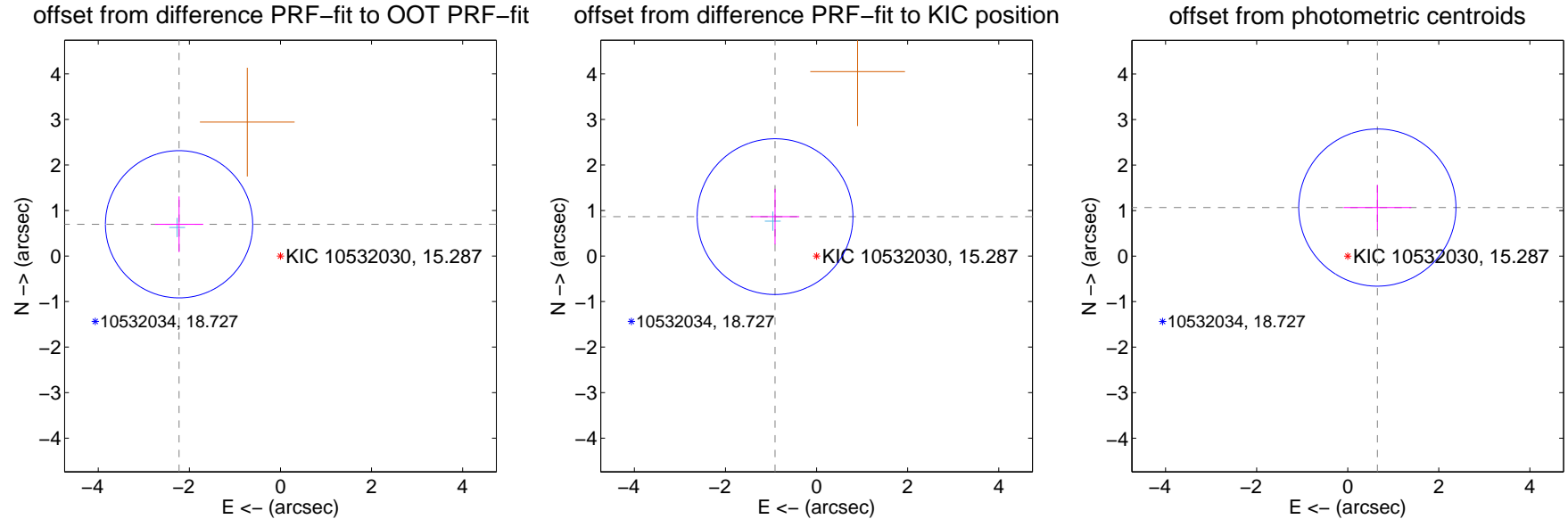
DV Centroid Data

Supplemental centroid analysis for 010532030-03. Kepler magnitude: 15.29. Transit SNR 8.18

There are 1 quarters with good PRF difference image offsets

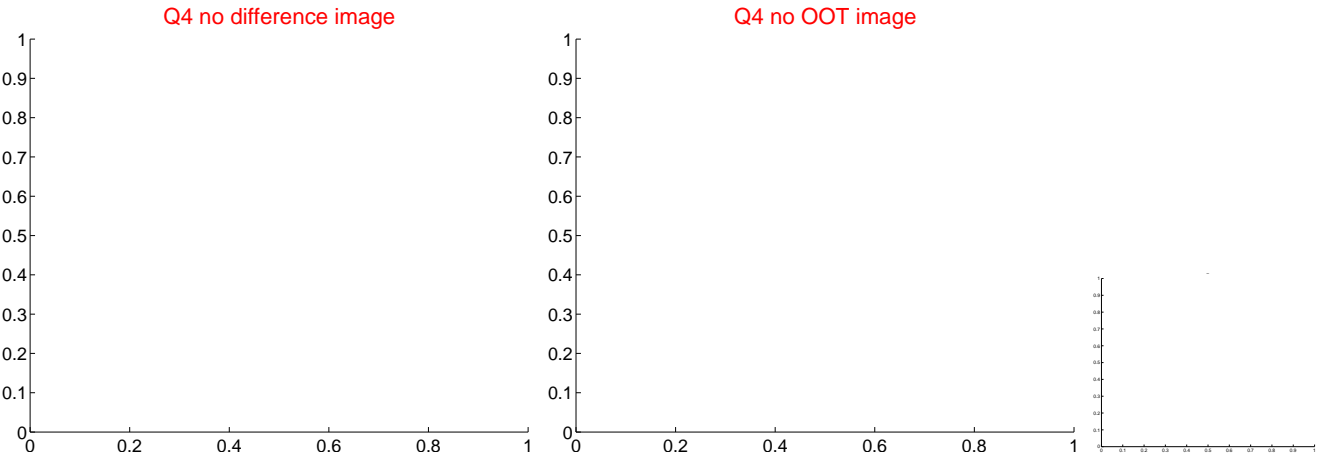
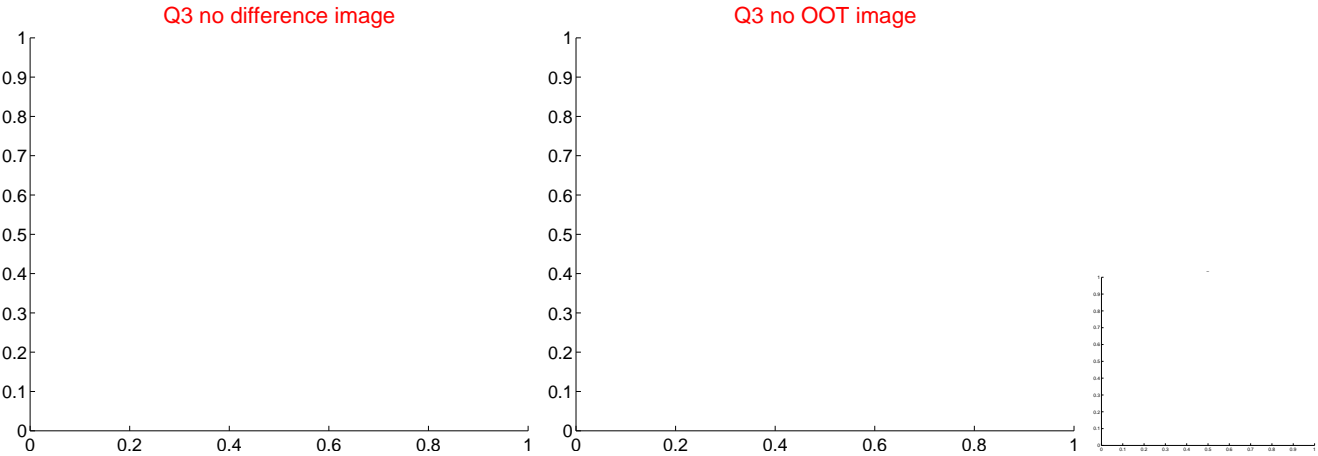
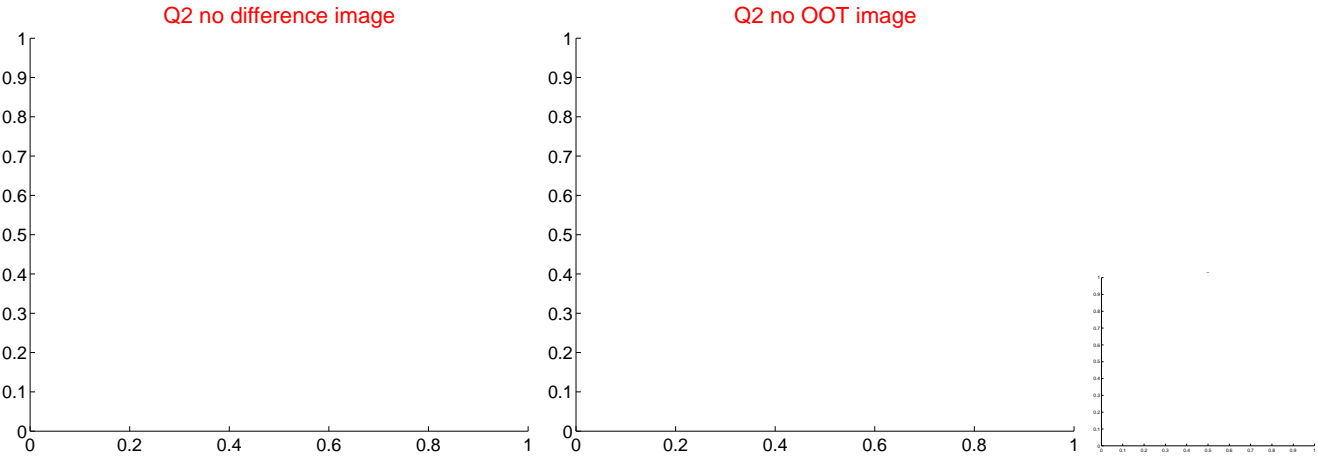
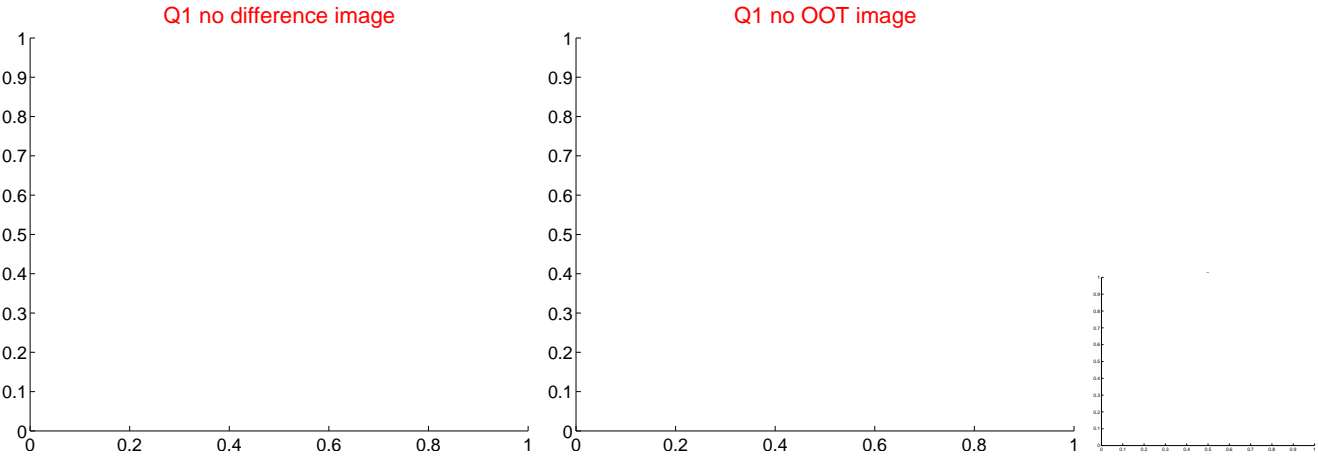
The direct PRF centroid is offset from the target star catalog position by about 1.97 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 2.333 \pm 0.539 | 4.33 | 2.227 ± 0.531 | 0.697 ± 0.610 |
| PRF-fit source offset from KIC position | 1.257 ± 0.570 | 2.21 | 0.912 ± 0.531 | 0.865 ± 0.610 |
| photometric centroid source offset | 1.25 ± 0.58 | 2.17 | -0.65 ± 0.74 | 1.07 ± 0.50 |

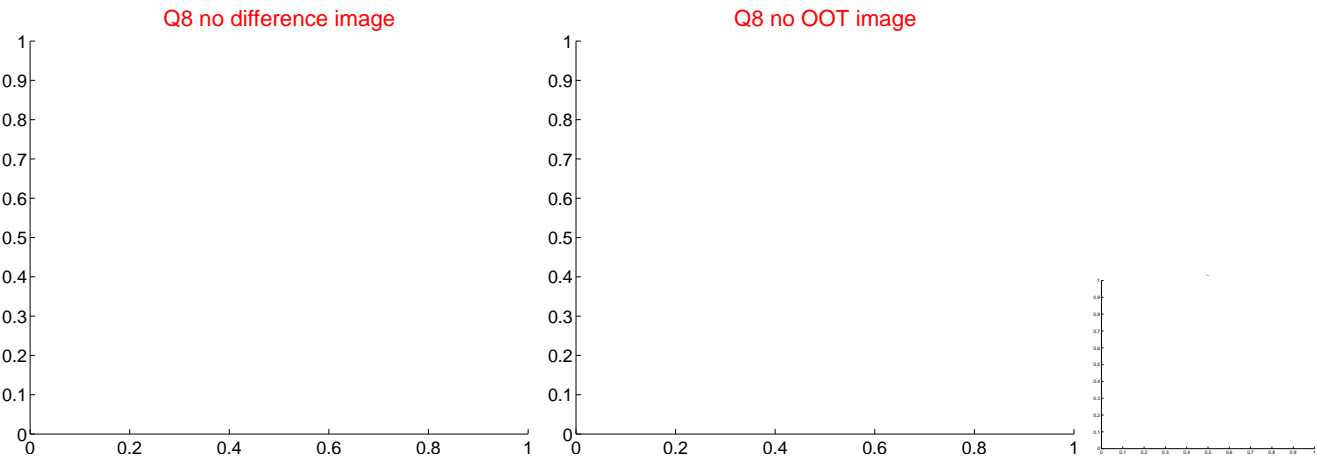
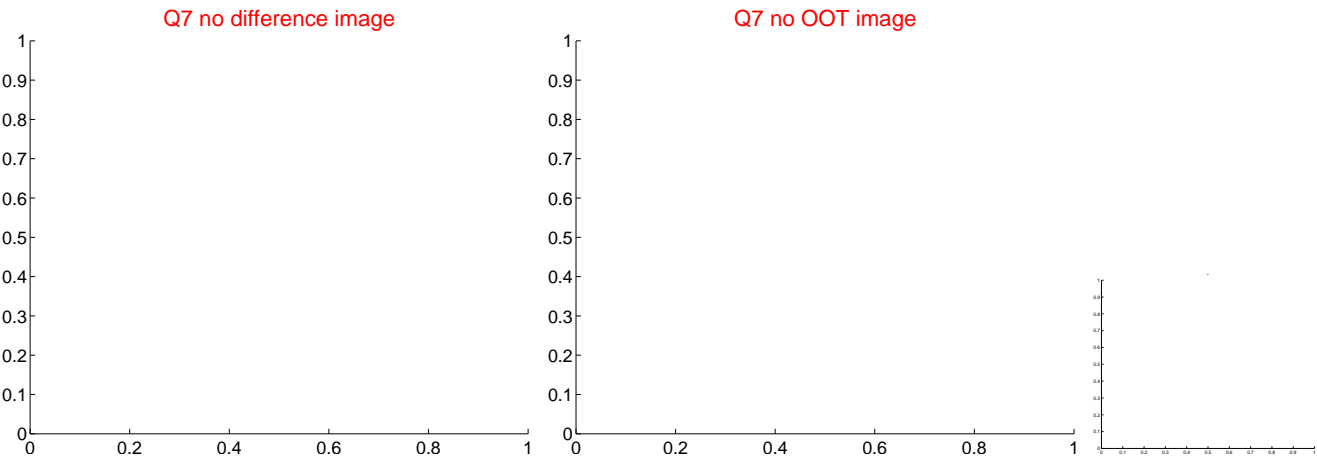
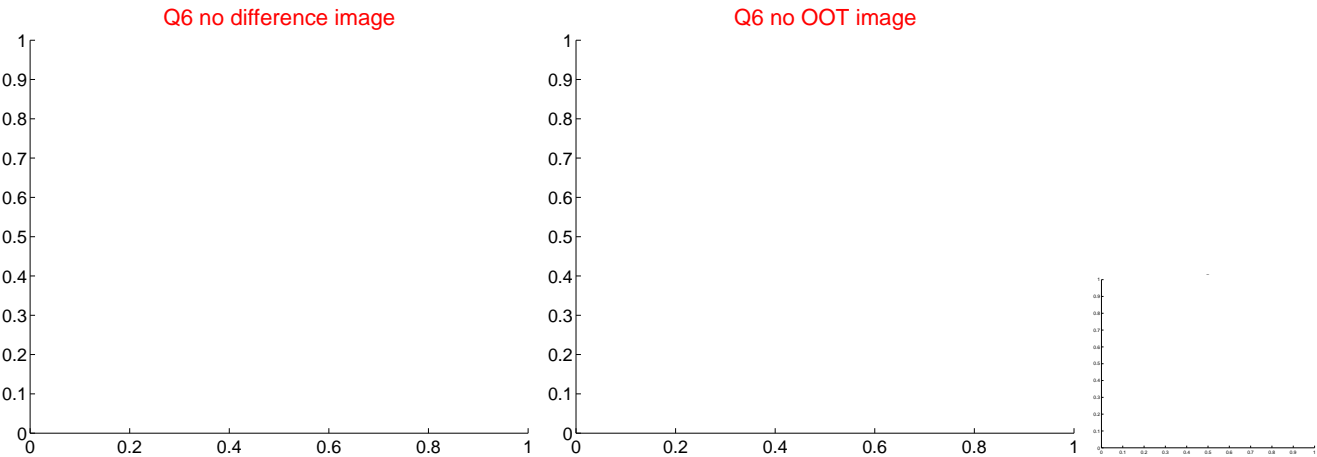
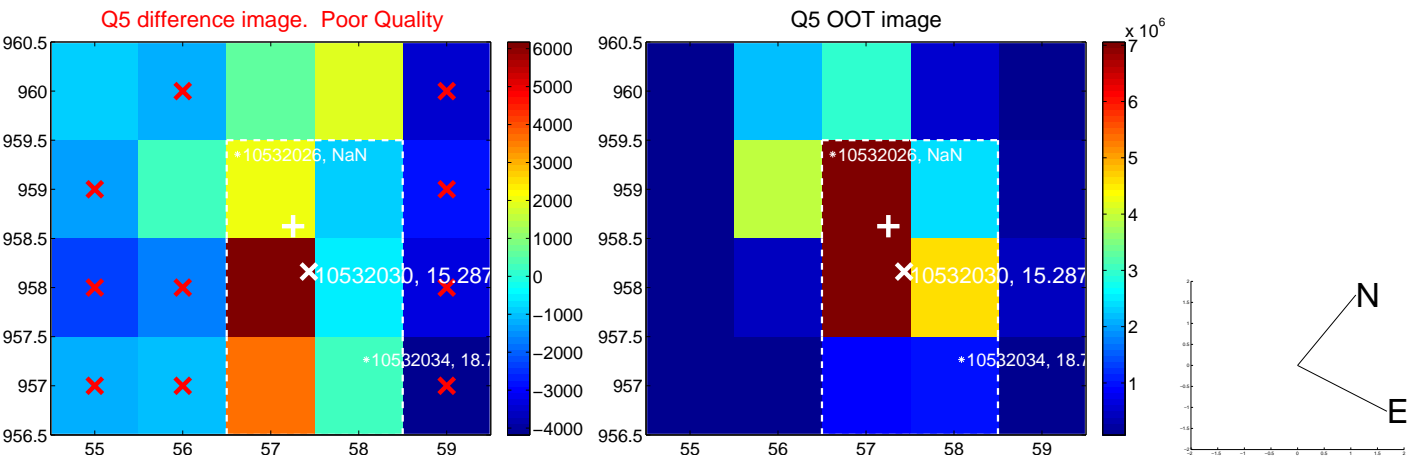


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

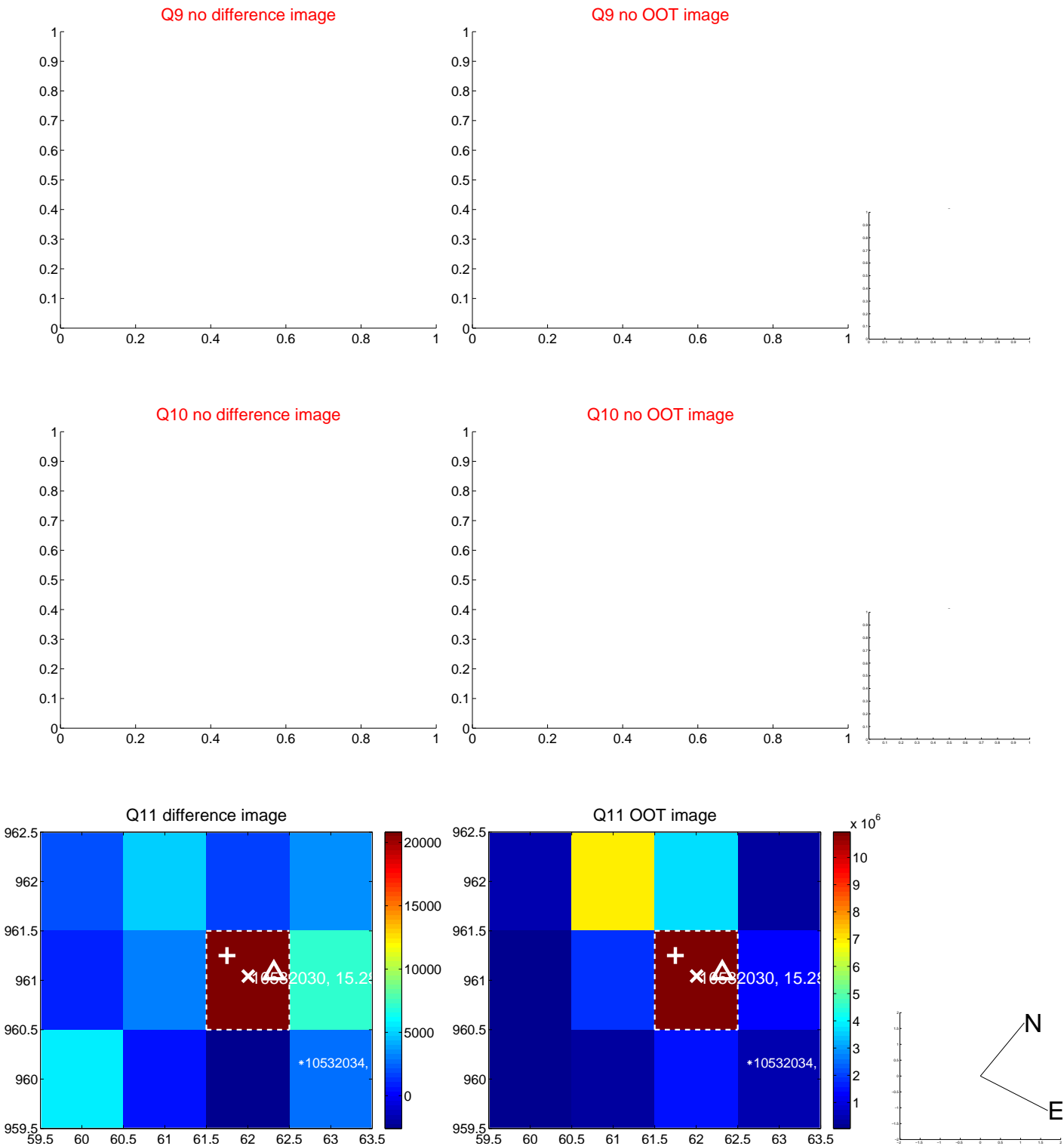
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



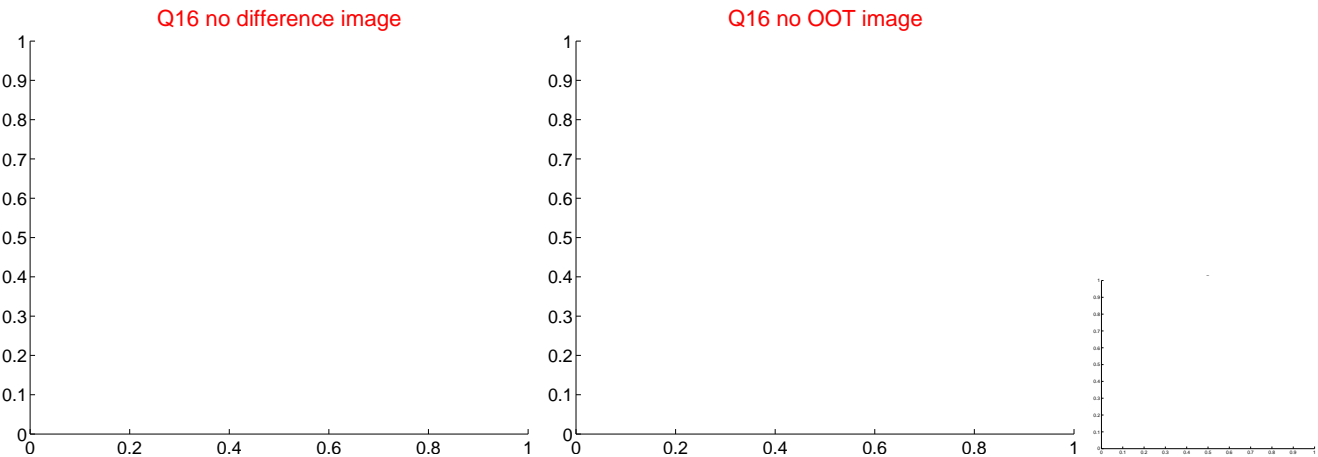
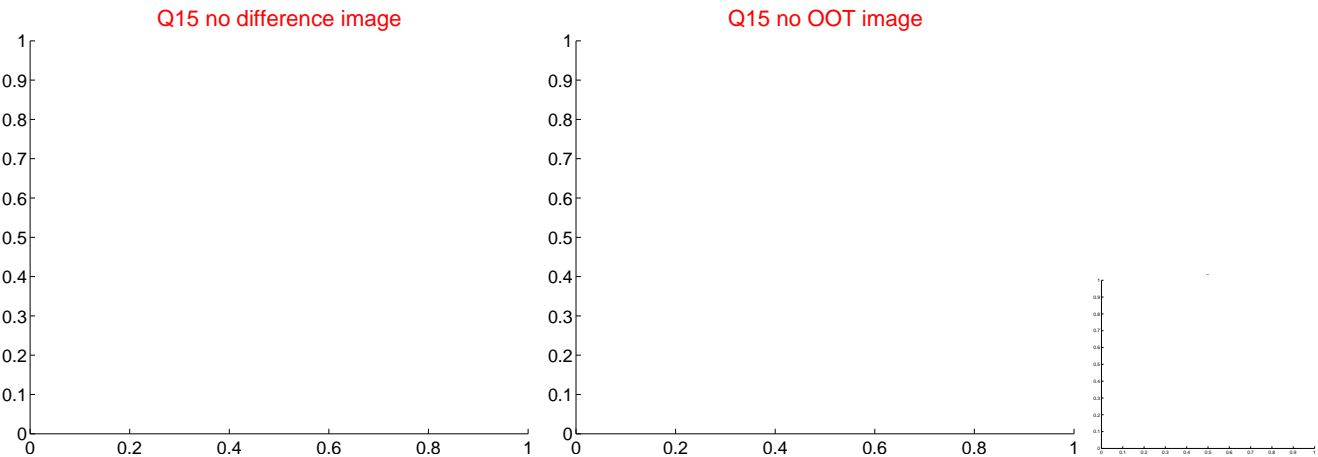
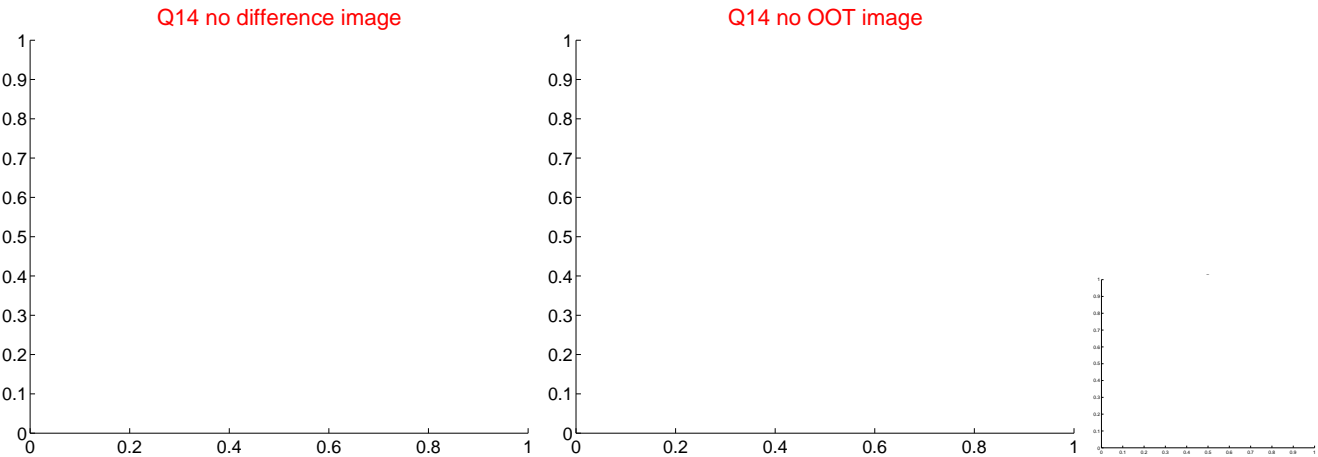
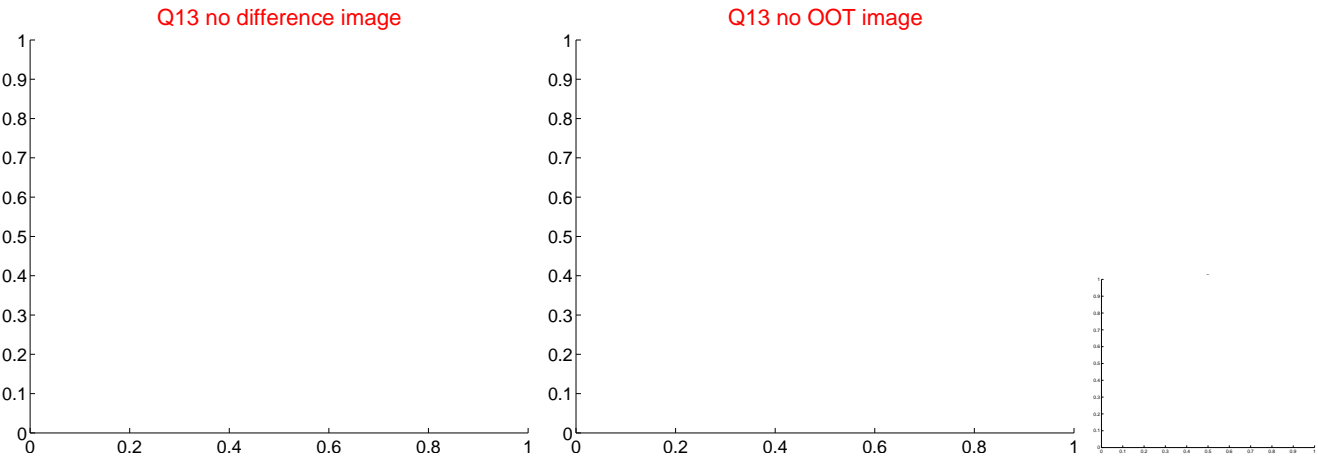
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



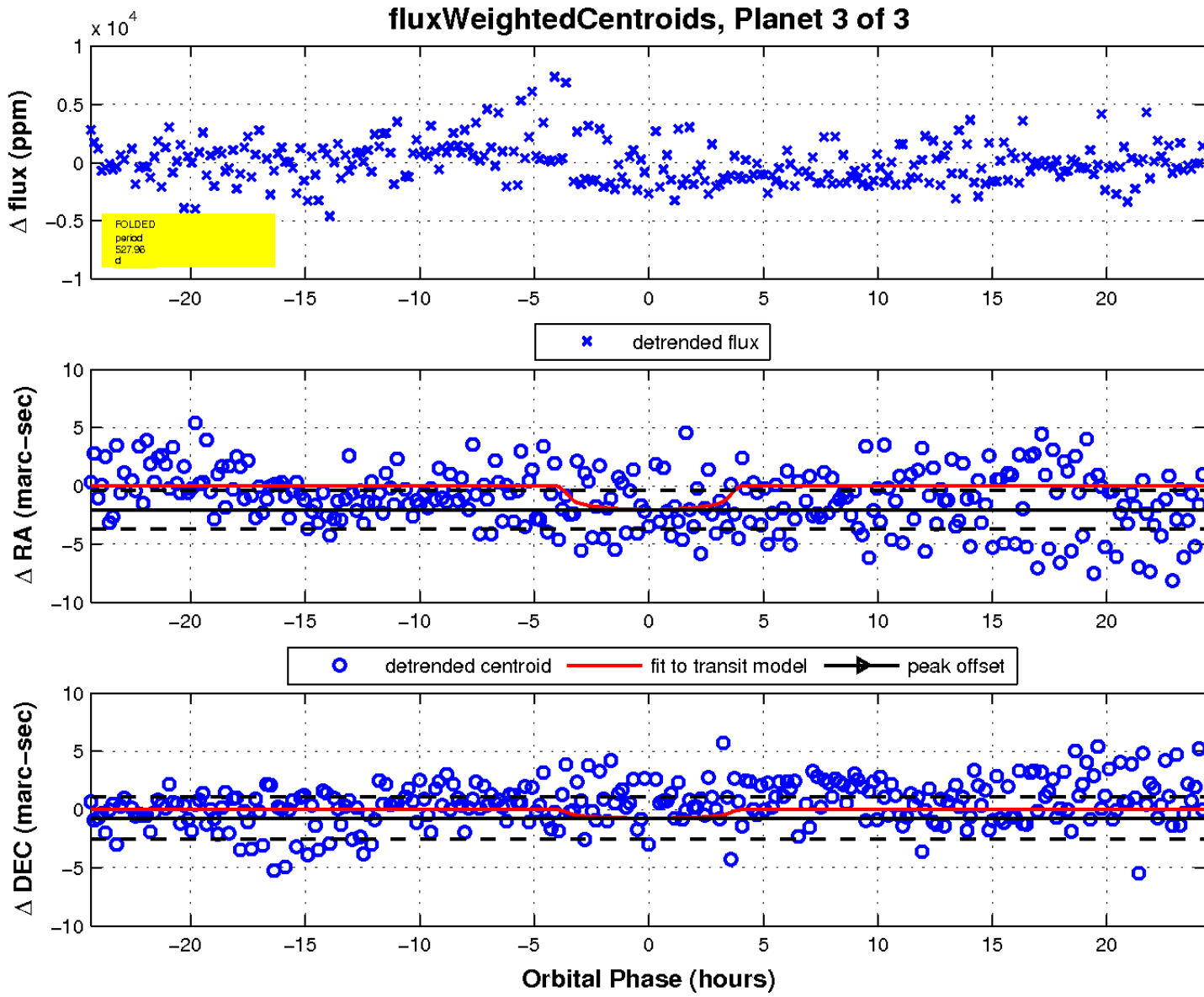
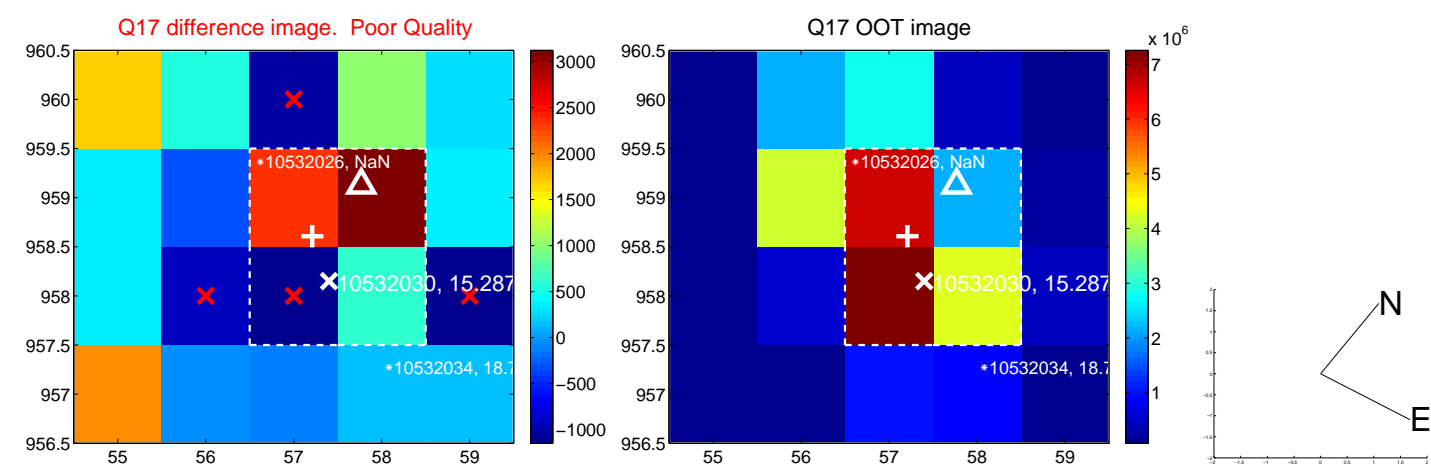
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \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

