

KIC 008105778

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008105778-01 | OBS | No | 521.404621 | 452.139172 | 675.2 | 17.260 | 9.2 | 8.6 | 0.86 | 5749 | 2.28 | 0.47 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008105778-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

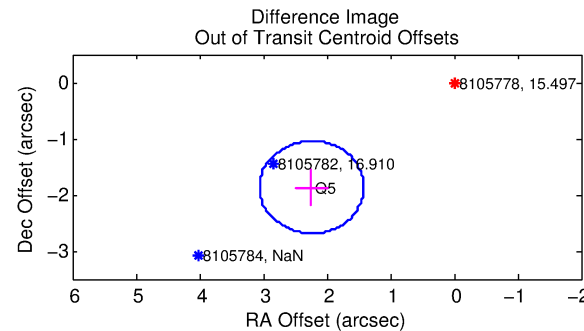
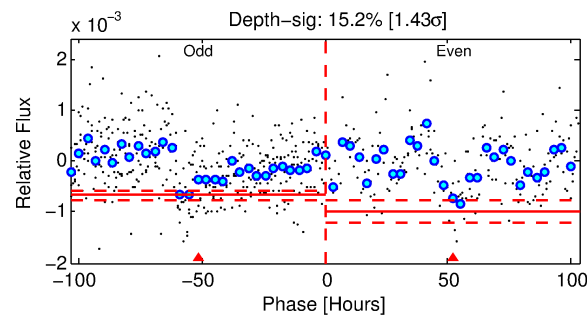
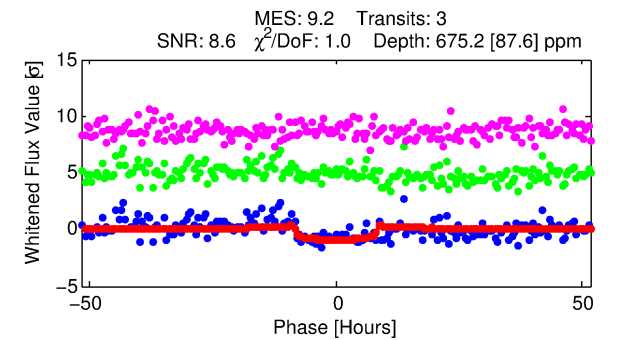
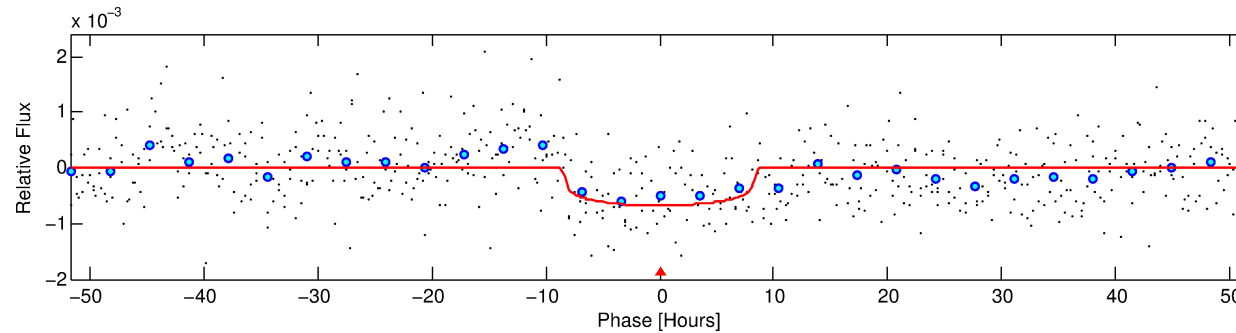
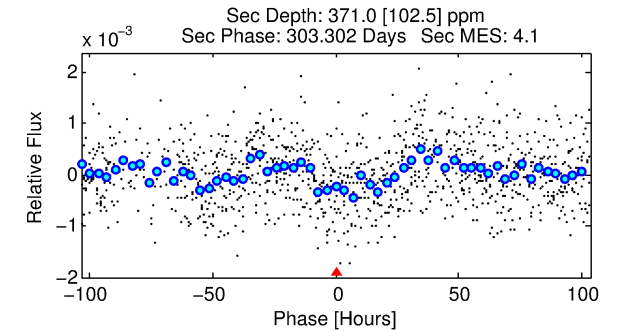
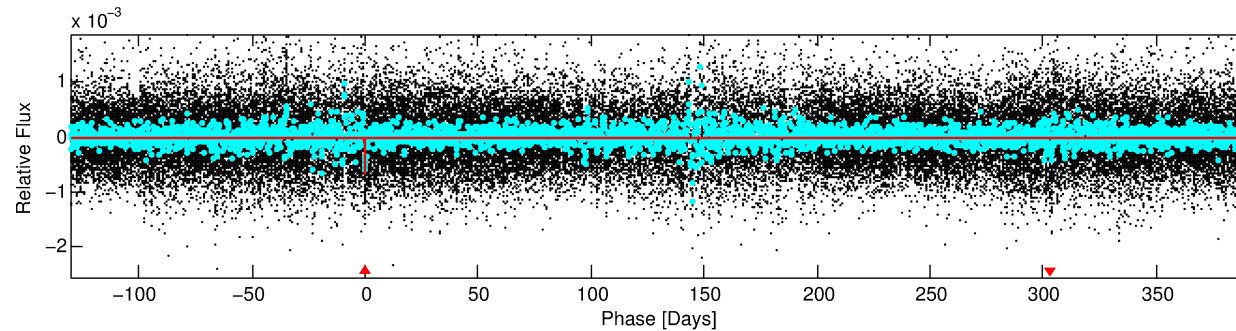
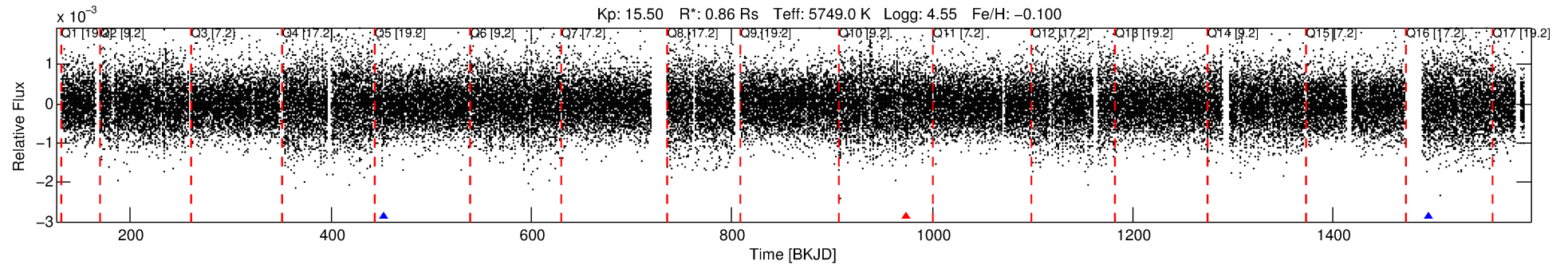
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008105778-01

No Significant Match Found

DV One-Page Summary

KIC: 8105778 Candidate: 1 of 1 Period: 521.405 d



DV Fit Results:

Period = 521.40462 [0.01850] d
Epoch = 452.1392 [0.0220] BKJD
Rp/R* = 0.0242 [0.0179]
a/R* = 212.65 [690.13]
b = 0.45 [5.85]
Seff = 0.47 [0.16]
Teq = 211 [18] K
Rp = 2.28 [1.79] Re
a = 1.2507 [0.2721] AU
Ag = 61542.92 [94926.97] [0.65σ]
Teff = 5133 [1943] K [2.53σ]

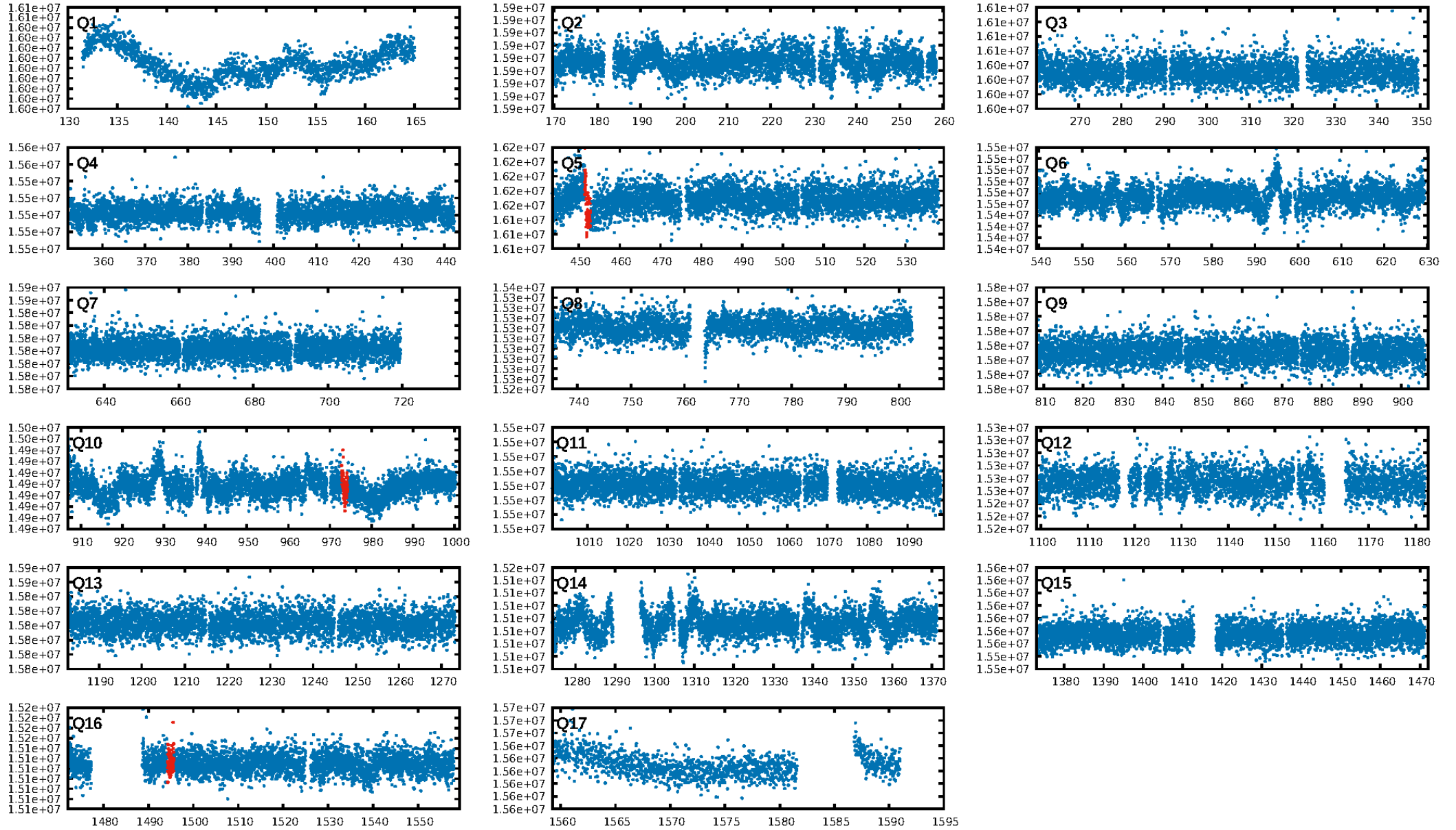
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.32e-12
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 11.99
Centroid-sig: 0.4%
Centroid-so: 3.956 arcsec [2.22σ]
OotOffset-rm: 2.914 arcsec [10.66σ]
KicOffset-rm: 2.886 arcsec [10.56σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

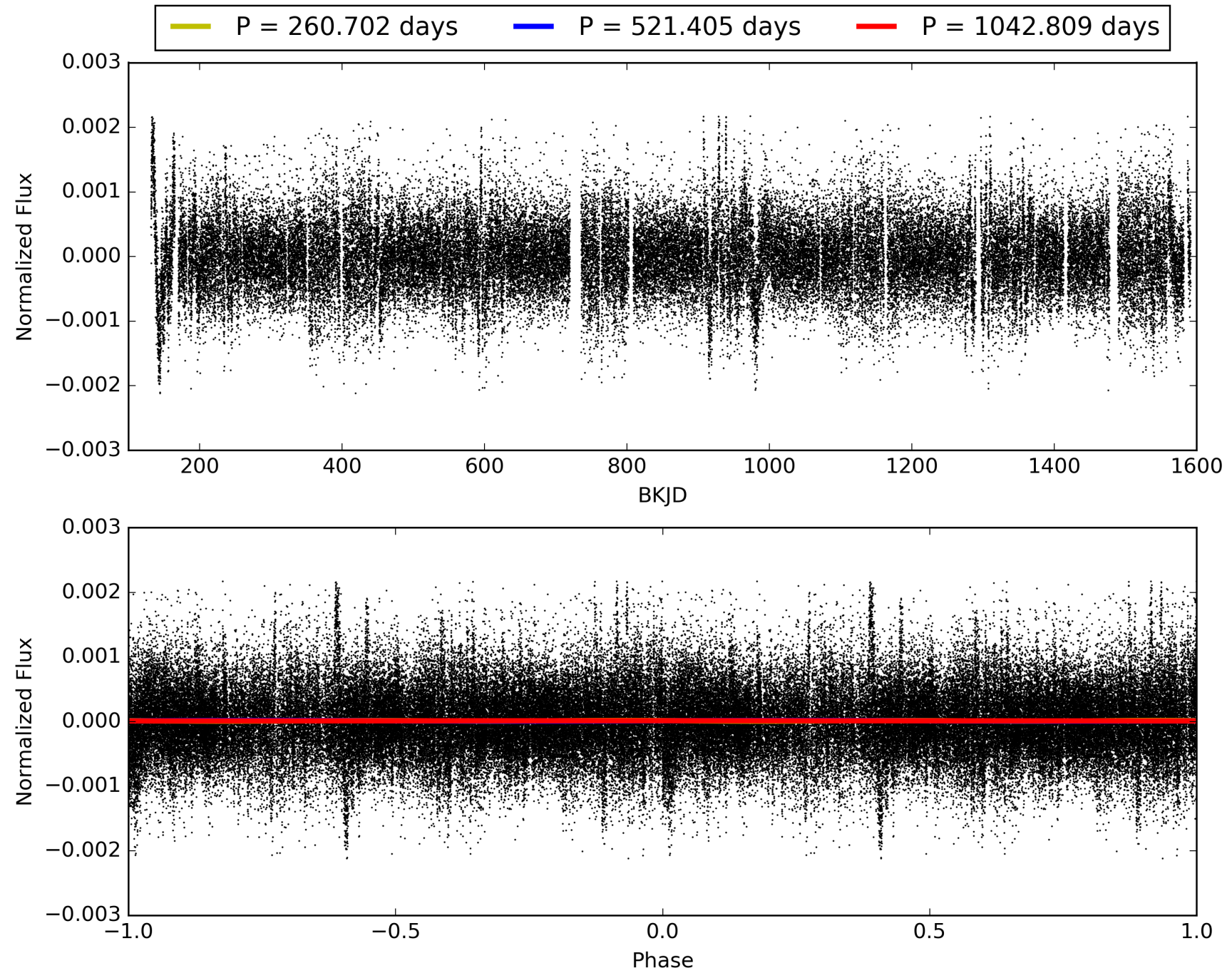
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:35:58 Z

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

TCE 008105778-01, PDC Light Curves

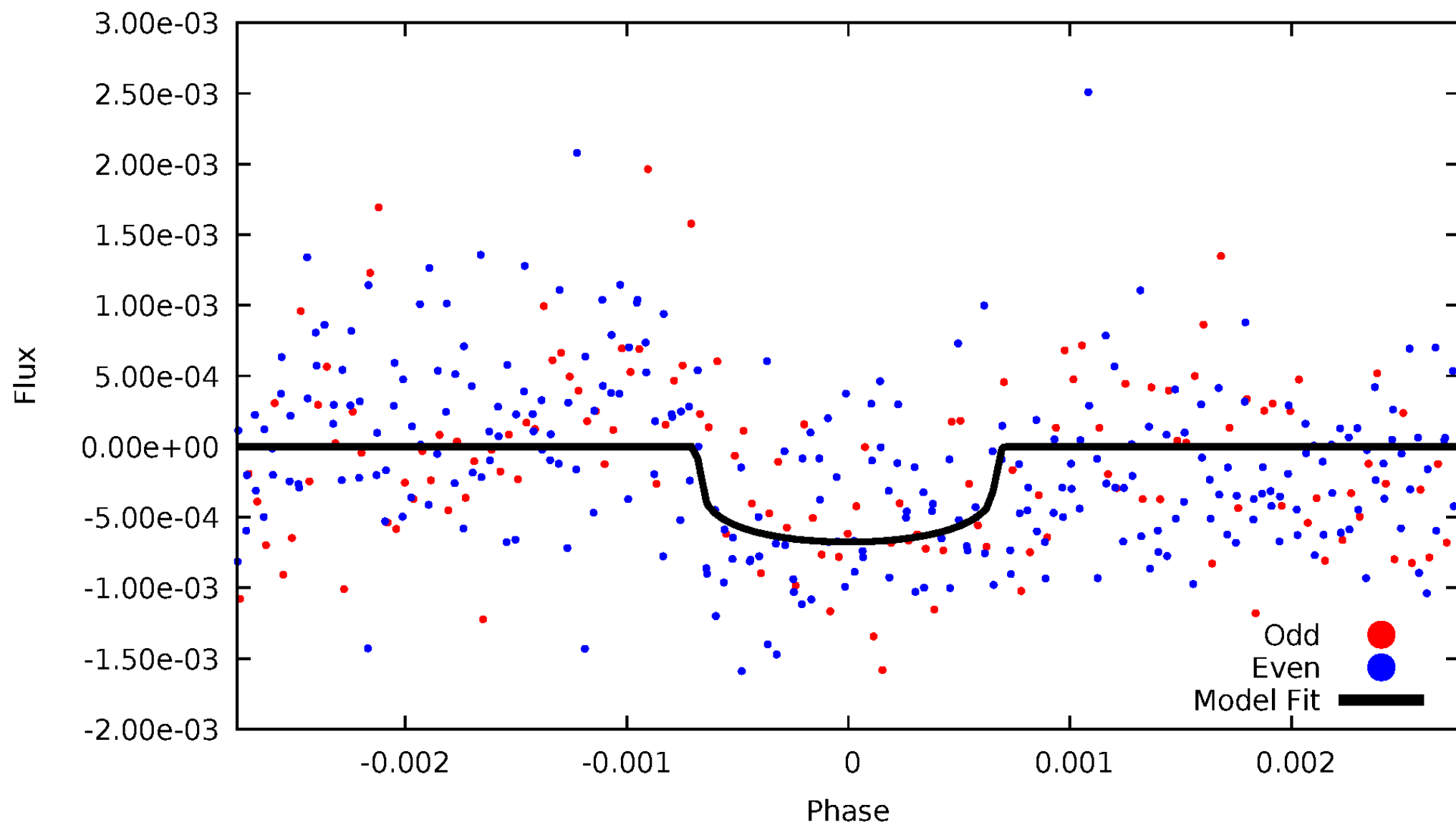


TCE 008105778-01



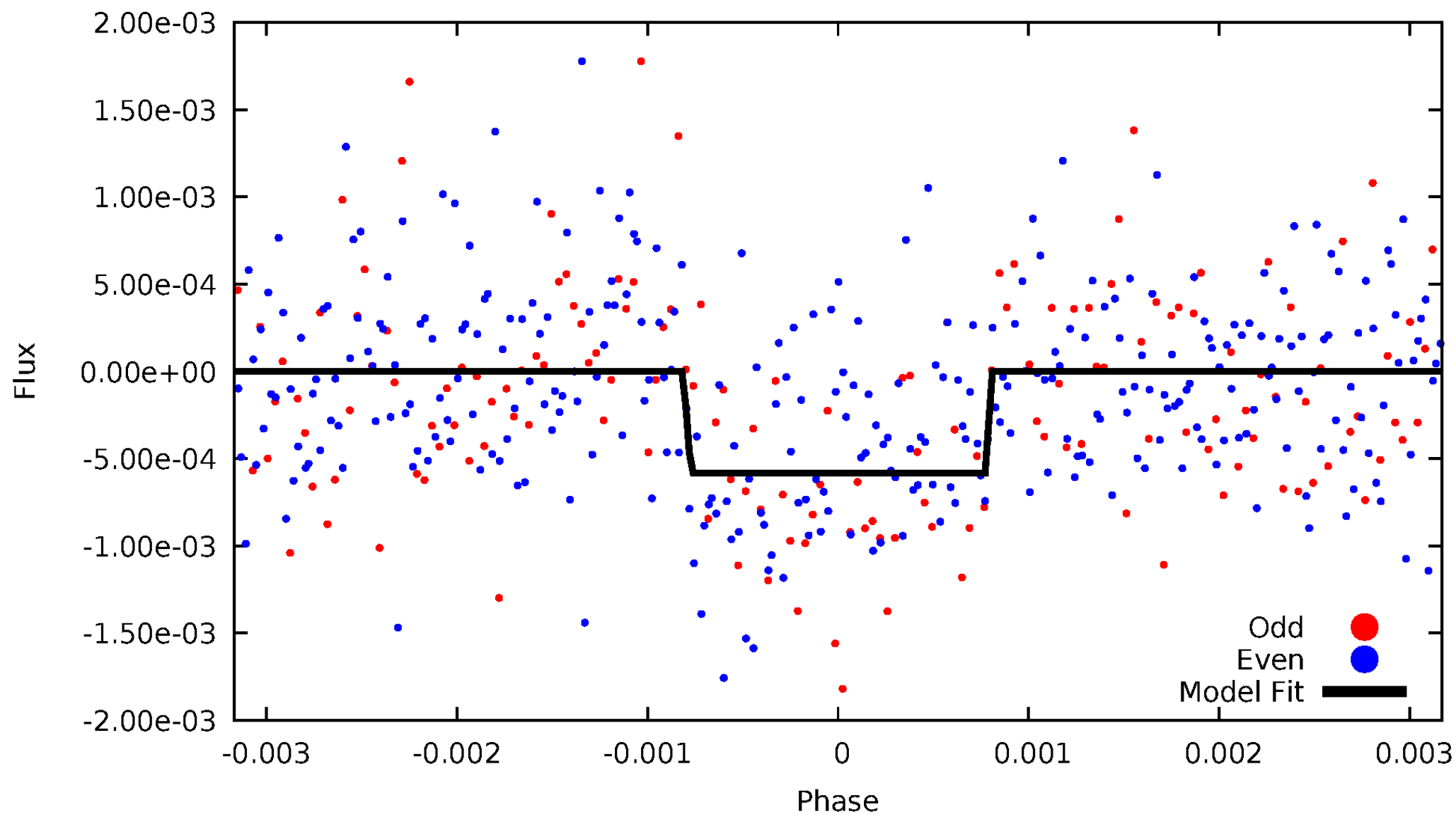
DV Odd/Even

TCE 008105778-01



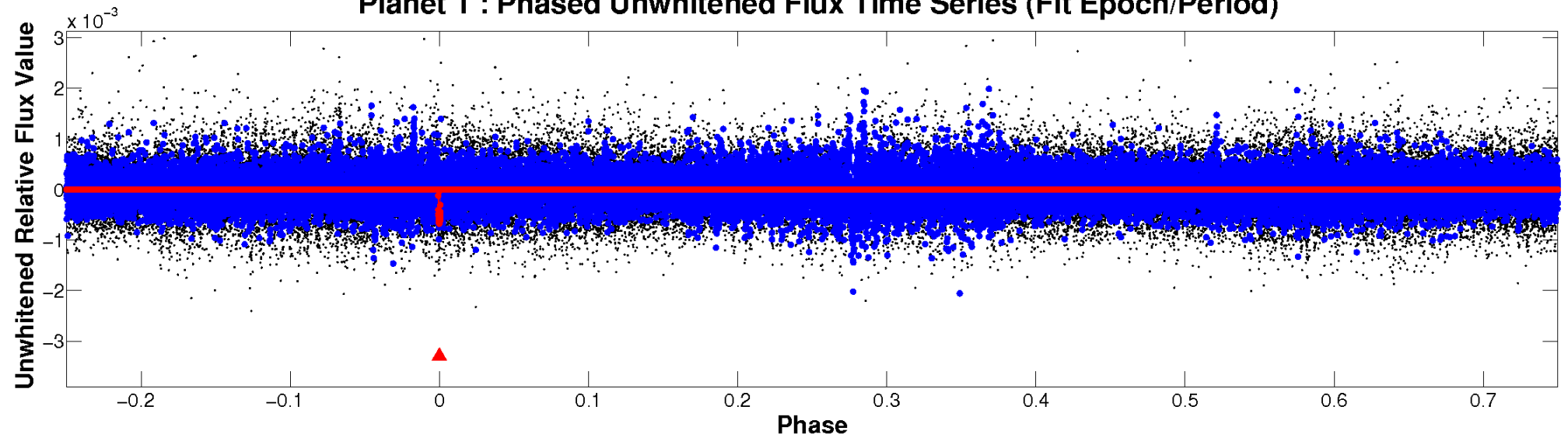
ALT Odd/Even

TCE 008105778-01

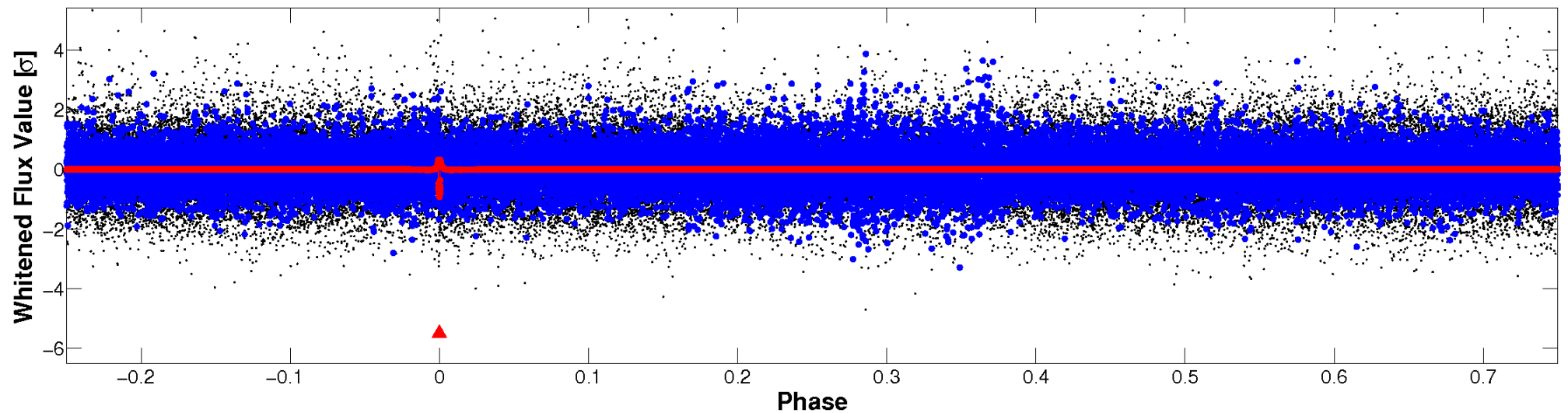


Non-Whitened Vs. Whitened Light Curve

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

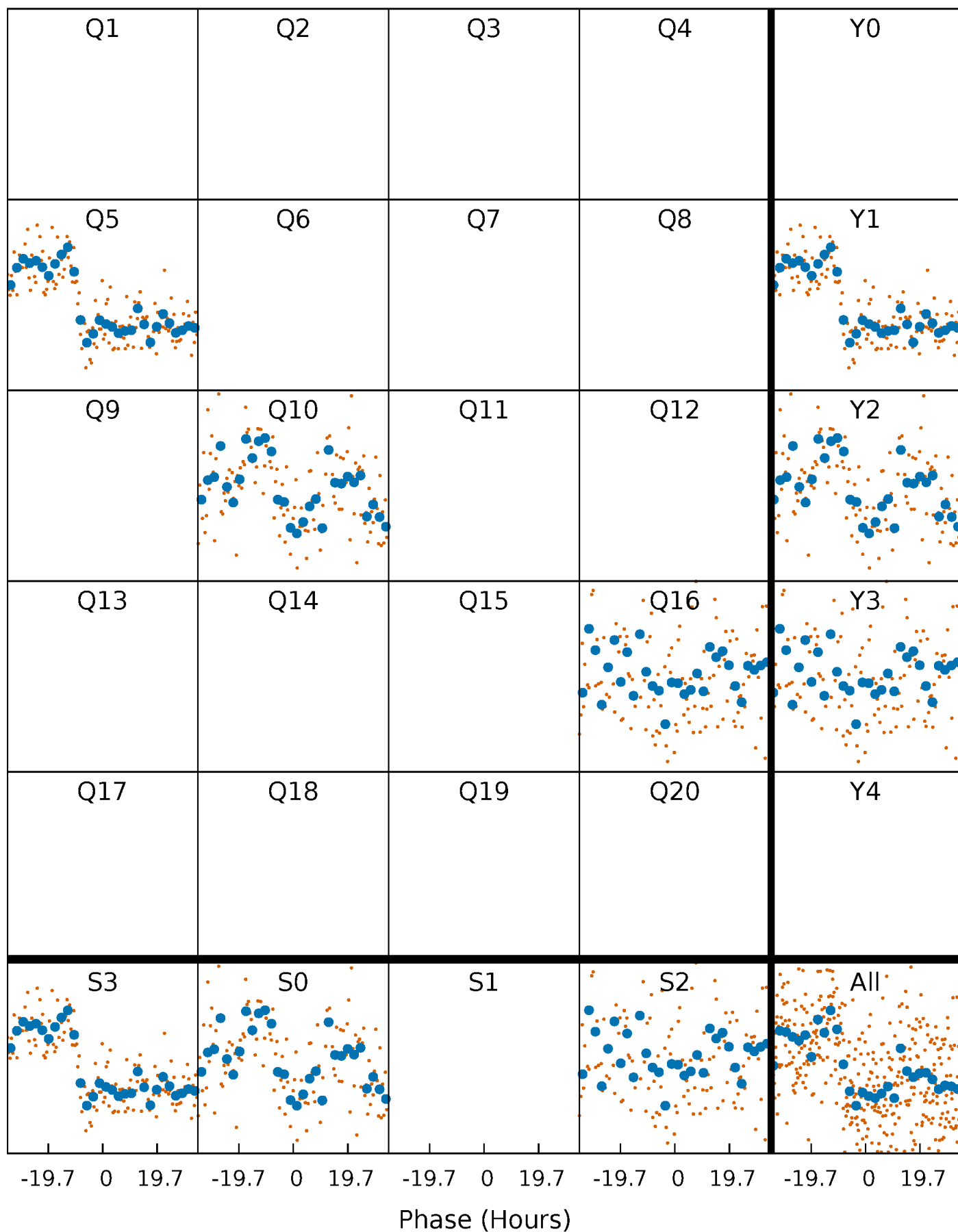


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



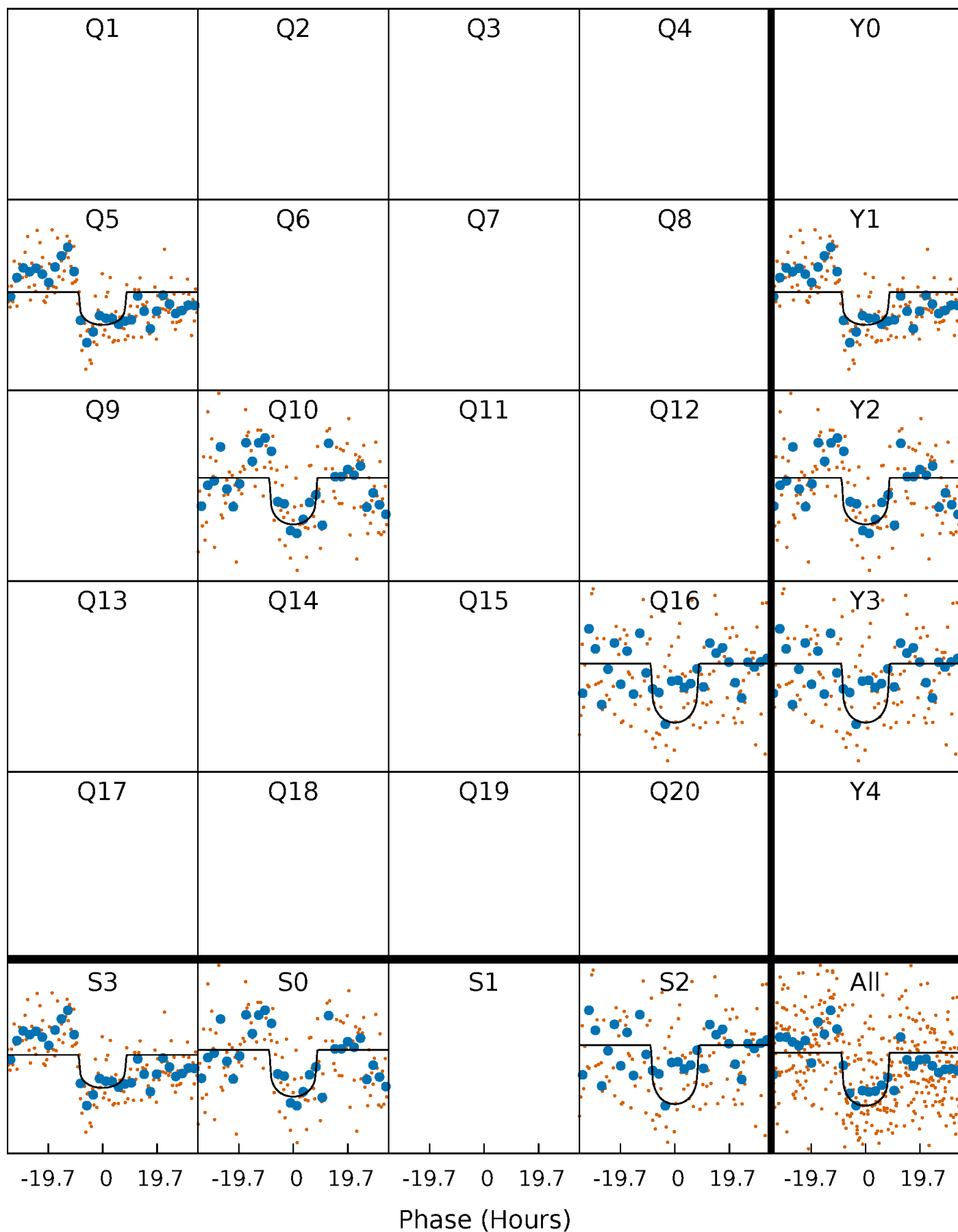
PDC Quarter-Phased Transit Curves

TCE 008105778-01 P=521.404621 Days $T_0=452.139171$ (BKJD)



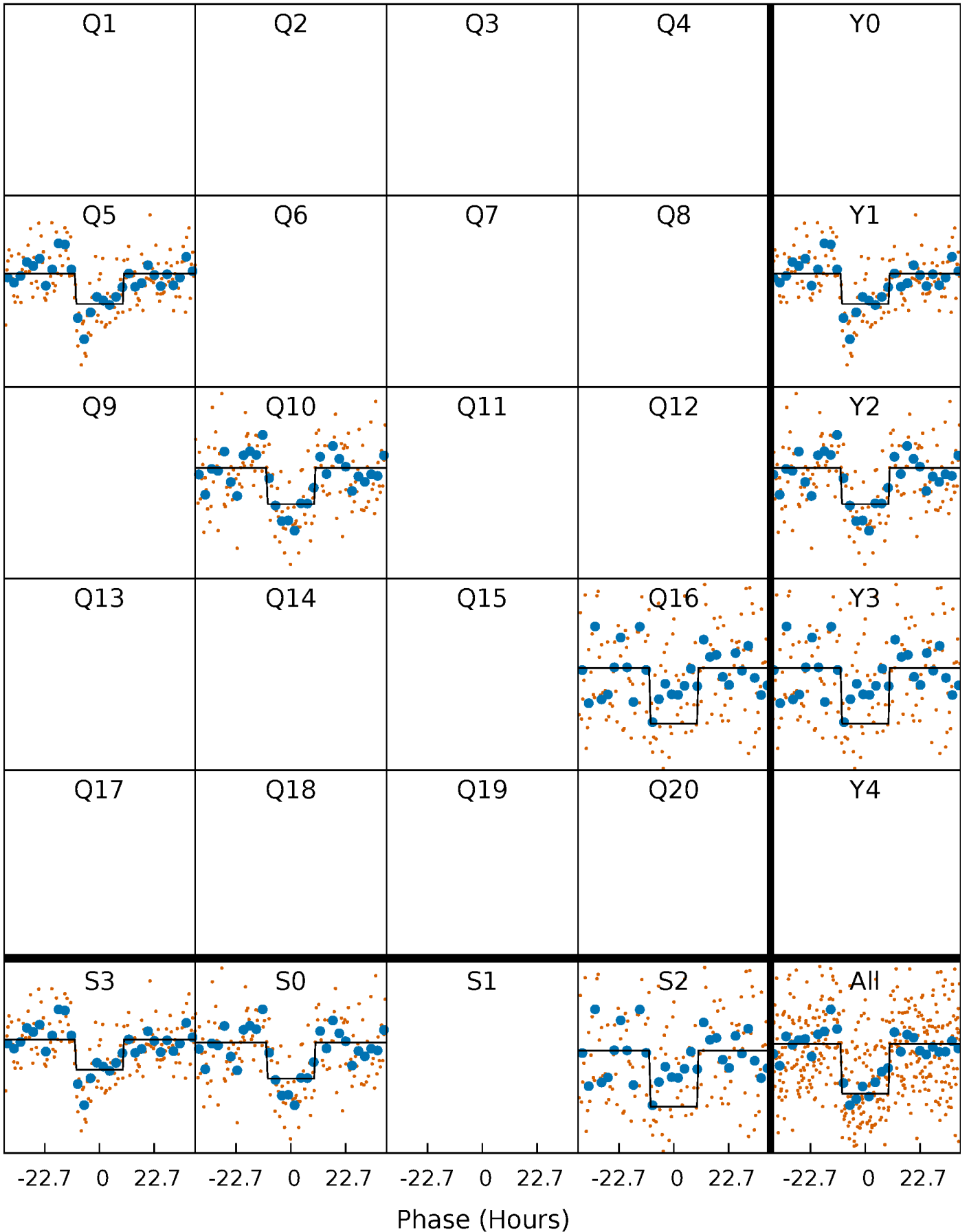
DV Quarter-Phased Transit Curves

TCE 008105778-01 P=521.404621 Days $T_0=452.139171$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

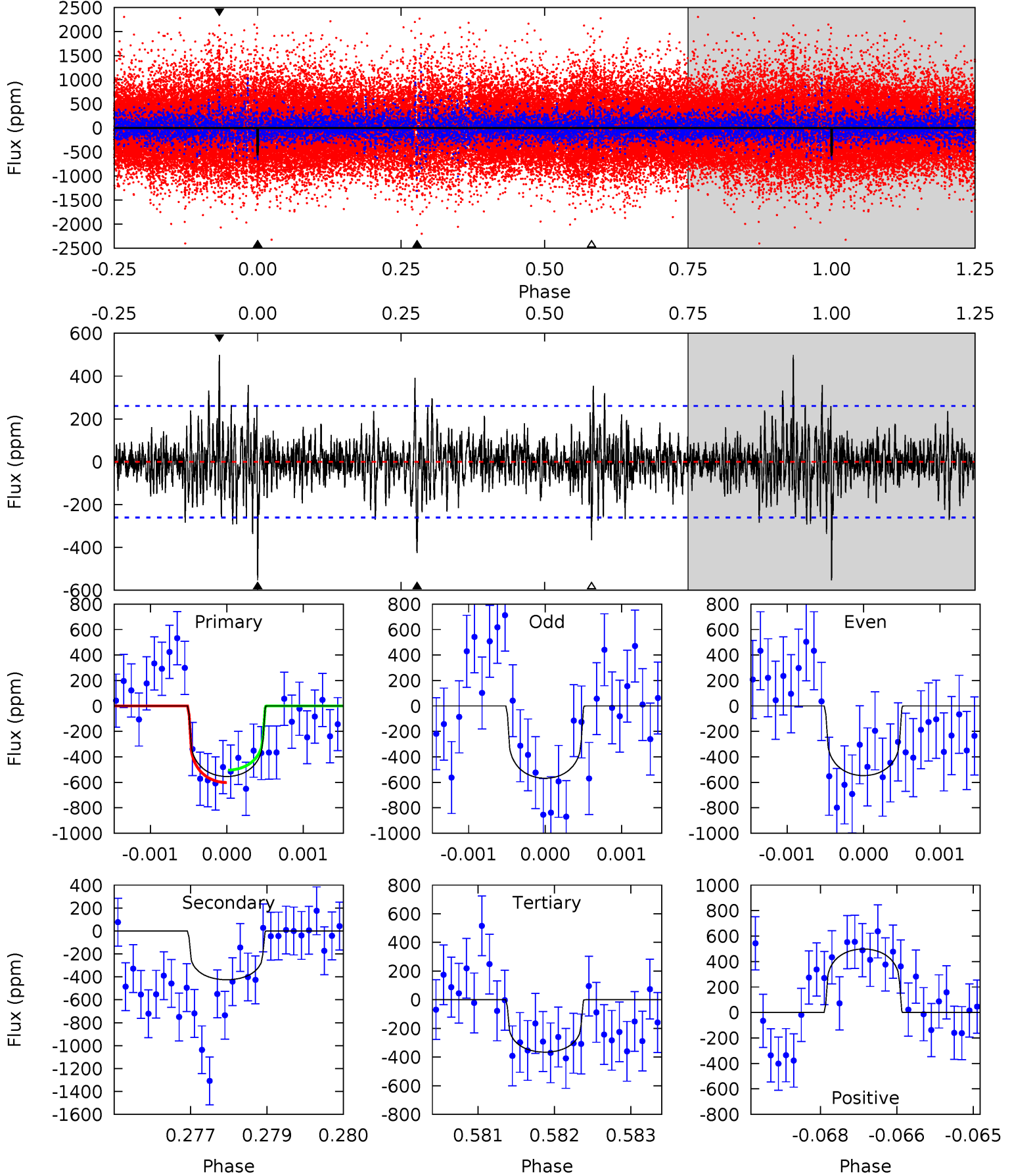
TCE 008105778-01 P=521.409962 Days $T_0=452.201328$ (BKJD)



DV Model-Shift Uniqueness Test

008105778-01, P = 521.404621 Days, E = 452.139171 Days

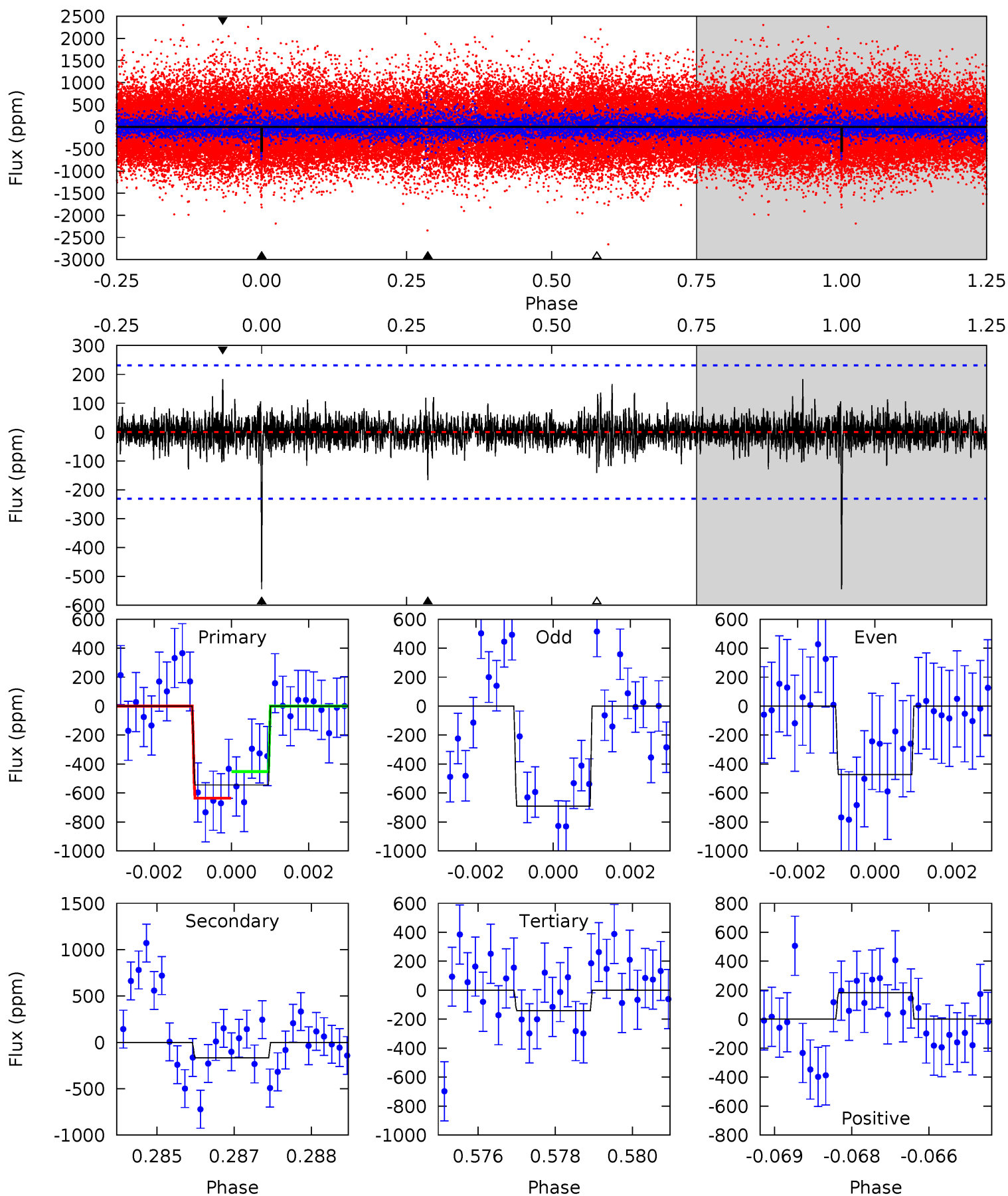
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.5 | 8.81 | 7.57 | 10.3 | 5.39 | 3.20 | 1.75 | 3.90 | 1.15 | 1.24 | -1.51 | 0.20 | 0.98 | 0.47 | 1.01 |



Alt Model-Shift Uniqueness Test

008105778-01, P = 521.409962 Days, E = 452.201328 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 | 3.88 | 3.29 | 4.26 | 5.37 | 3.15 | 0.77 | 9.35 | 8.38 | 0.59 | -0.39 | 2.37 | 0.79 | 0.25 | 2.14 |



Stellar Parameters For KIC 008105778

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5749^{+153}_{-170} | $4.547^{+0.033}_{-0.176}$ | $-0.100^{+0.300}_{-0.300}$ | $0.864^{+0.221}_{-0.074}$ | $0.961^{+0.095}_{-0.116}$ | $2.097^{+0.368}_{-1.001}$ |
| | +3%/-3% | +1%/-4% | +300%/-300% | +26%/-9% | +10%/-12% | +18%/-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 008105778-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|----------------------------|
| DV | -425 ± 48 | $2.61^{+1.64}_{-1.52}$ | 302^{+17}_{-13} | 5157^{+2764}_{-945} | $53223^{+243757}_{-33593}$ |
| Alt. | -167 ± 43 | $2.68^{+1.65}_{-1.56}$ | 302^{+18}_{-13} | 4206^{+1935}_{-692} | 19287^{+91410}_{-12538} |

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

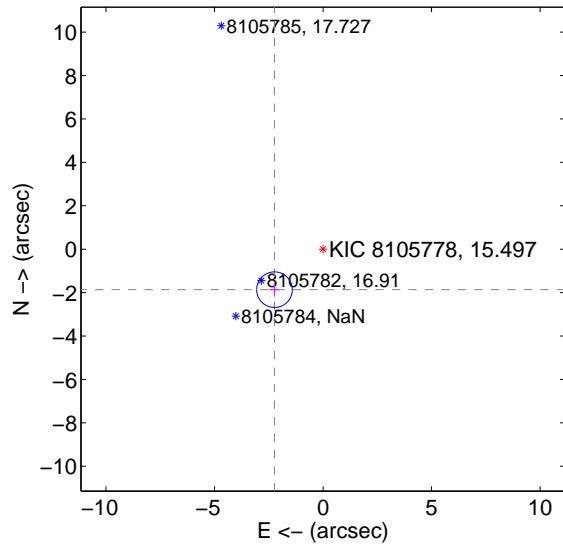
Supplemental centroid analysis for 008105778-01. Kepler magnitude: 15.50. Transit SNR 8.59

There are 1 quarters with good PRF difference image offsets

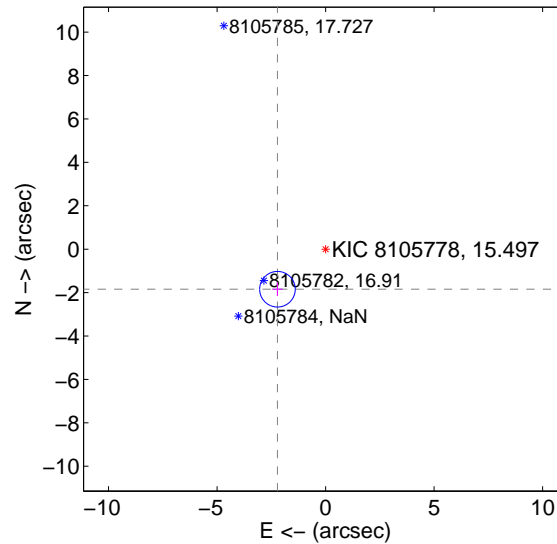
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.914 ± 0.273 | 10.66 | 2.238 ± 0.239 | -1.867 ± 0.316 |
| PRF-fit source offset from KIC position | 2.886 ± 0.273 | 10.56 | 2.218 ± 0.239 | -1.846 ± 0.316 |
| photometric centroid source offset | 3.96 ± 1.78 | 2.22 | 3.05 ± 1.65 | 2.51 ± 1.95 |

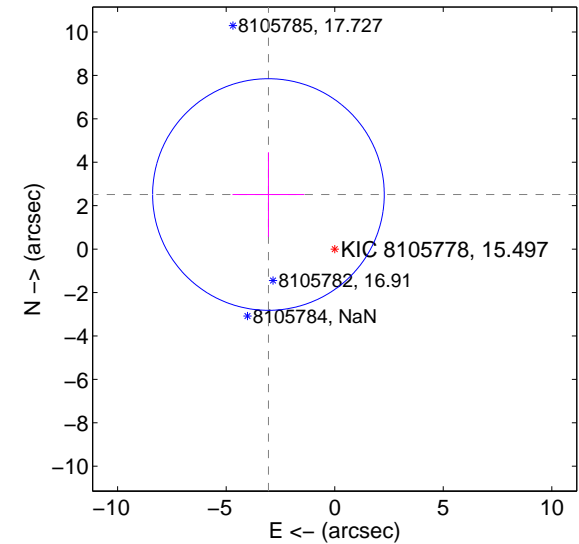
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

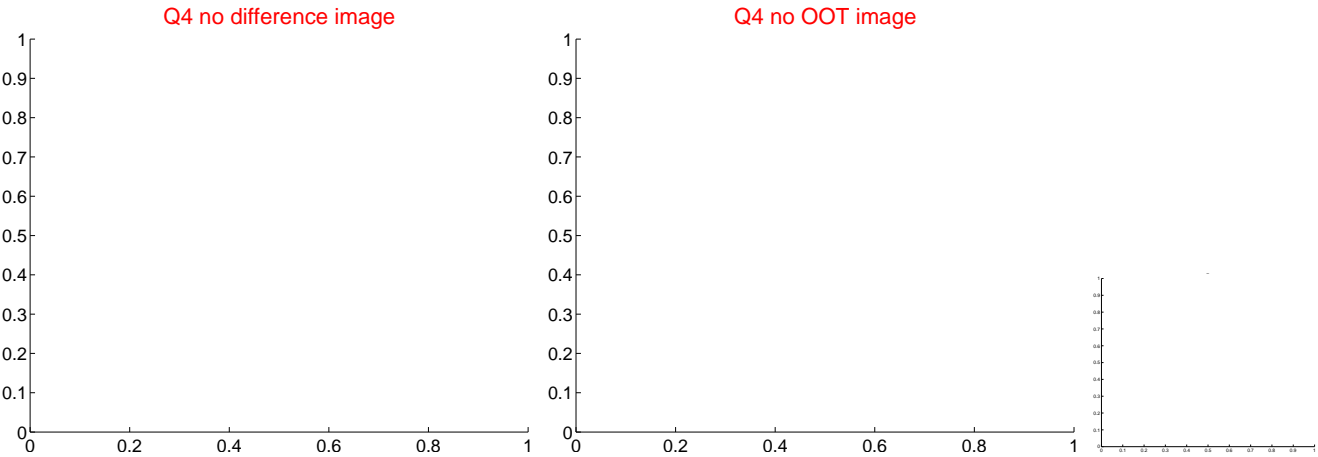
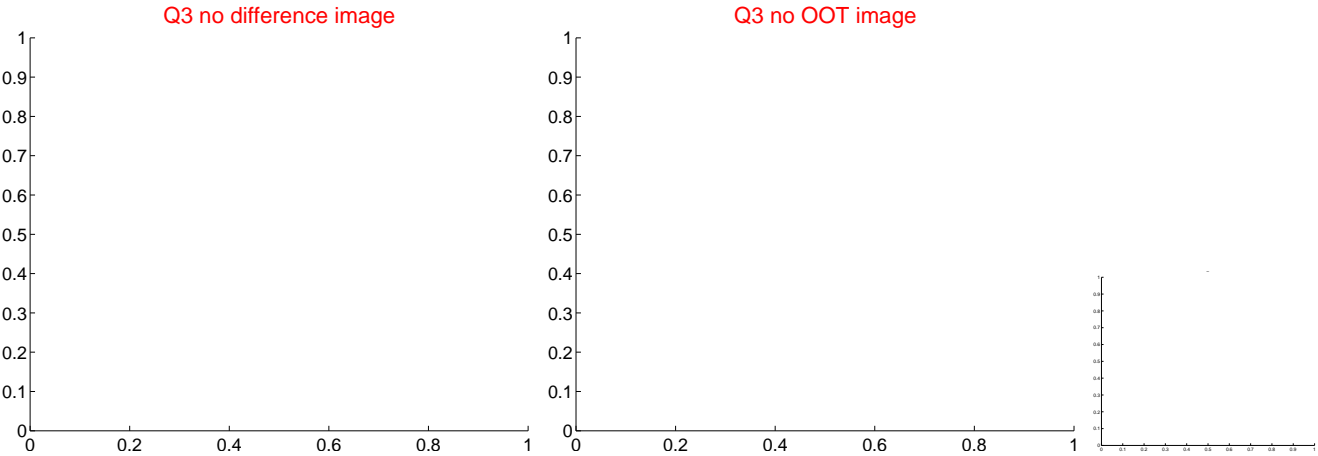
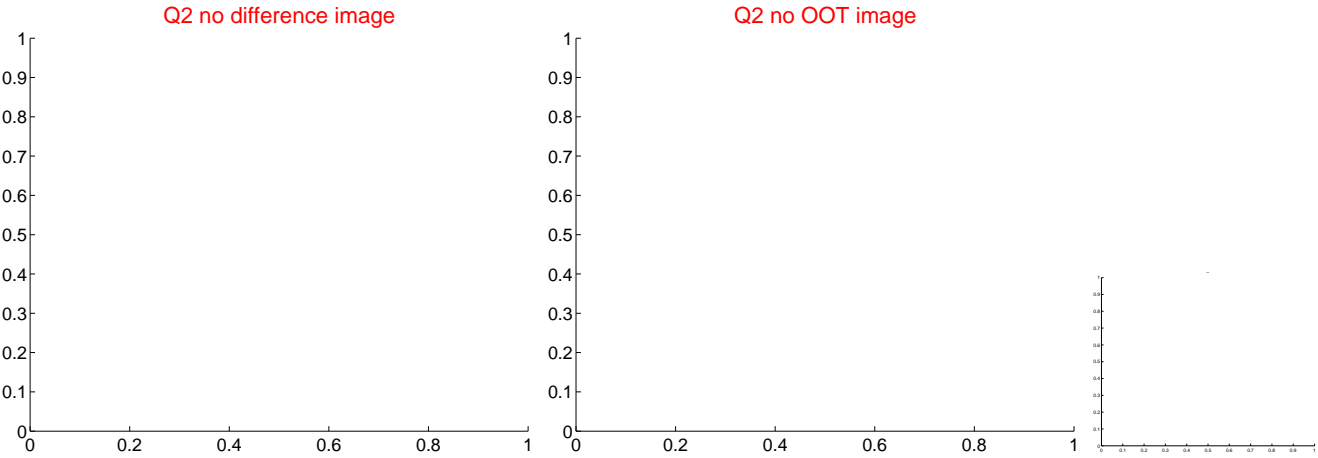
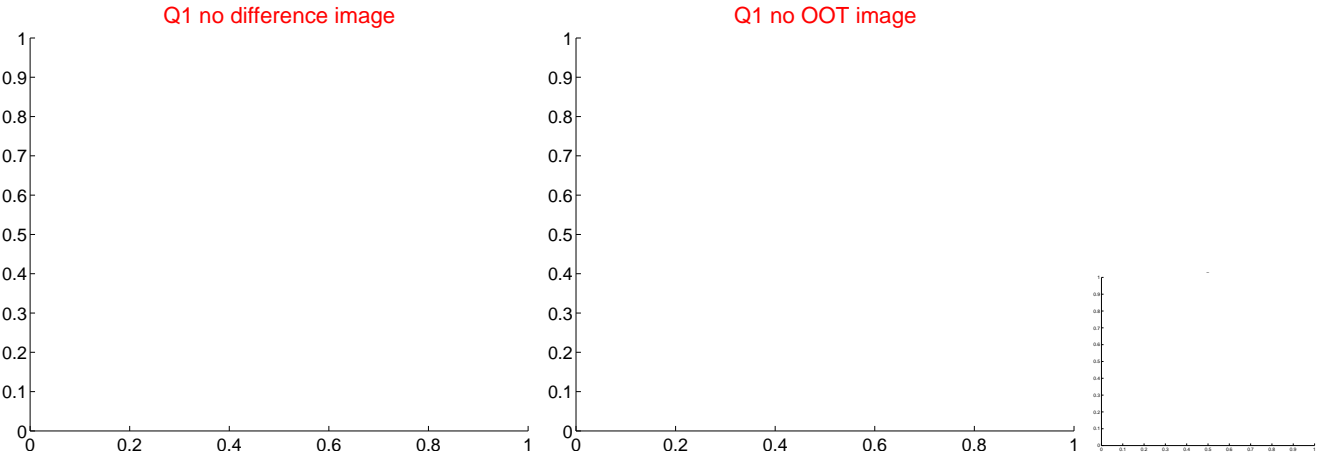


offset from photometric centroids

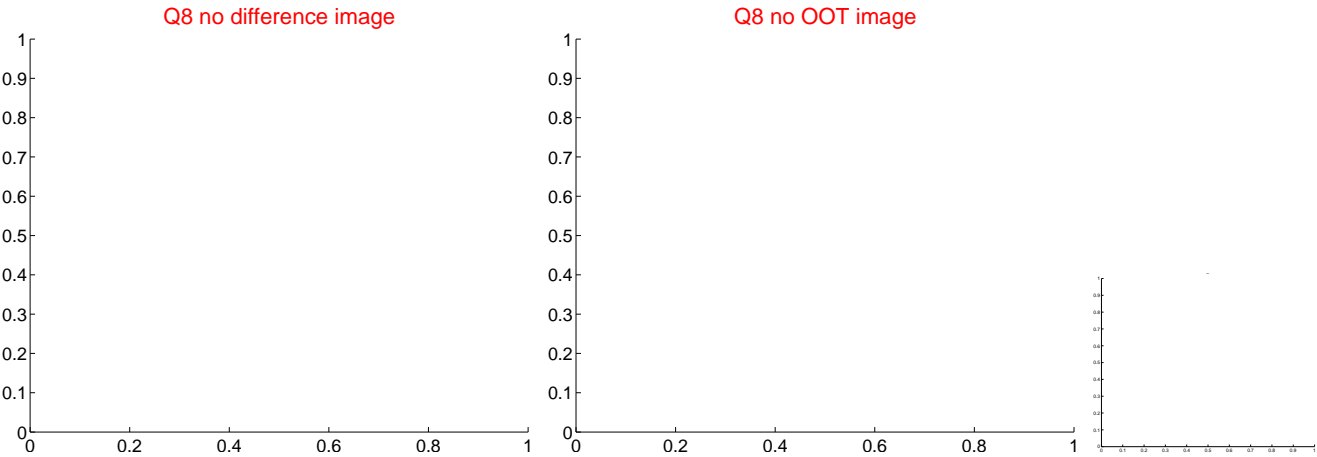
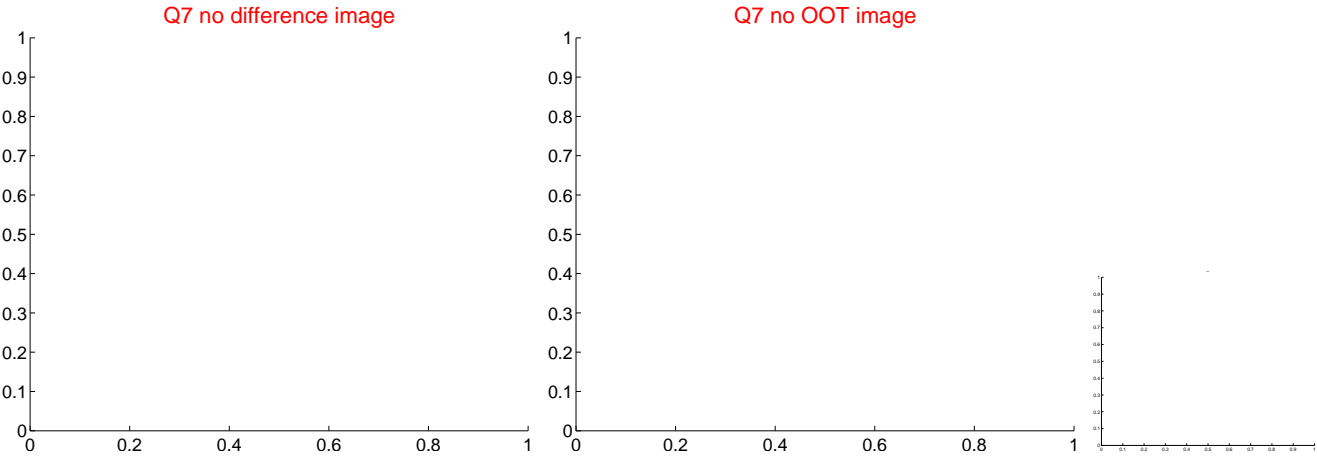
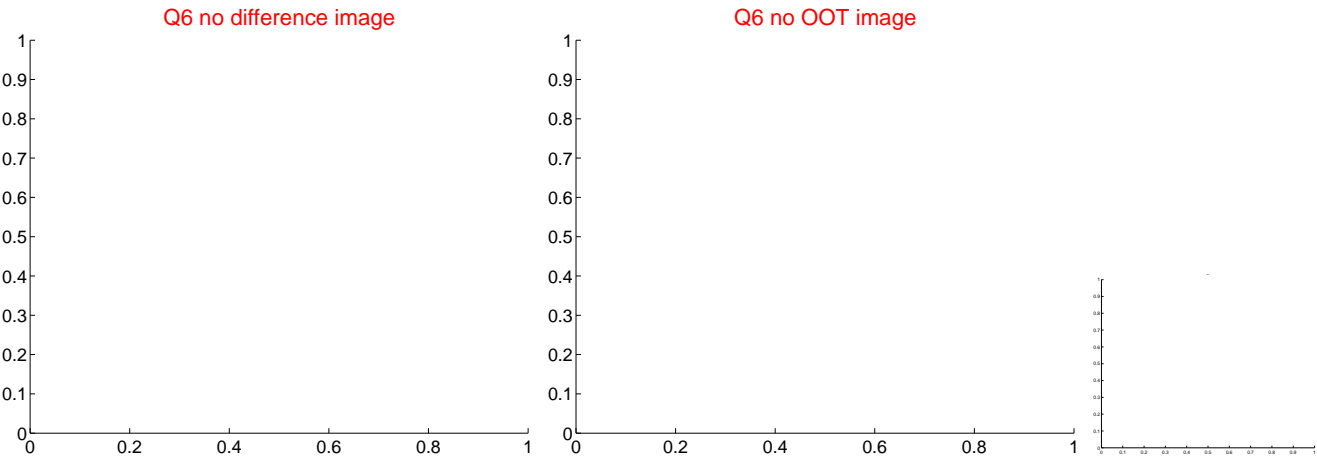
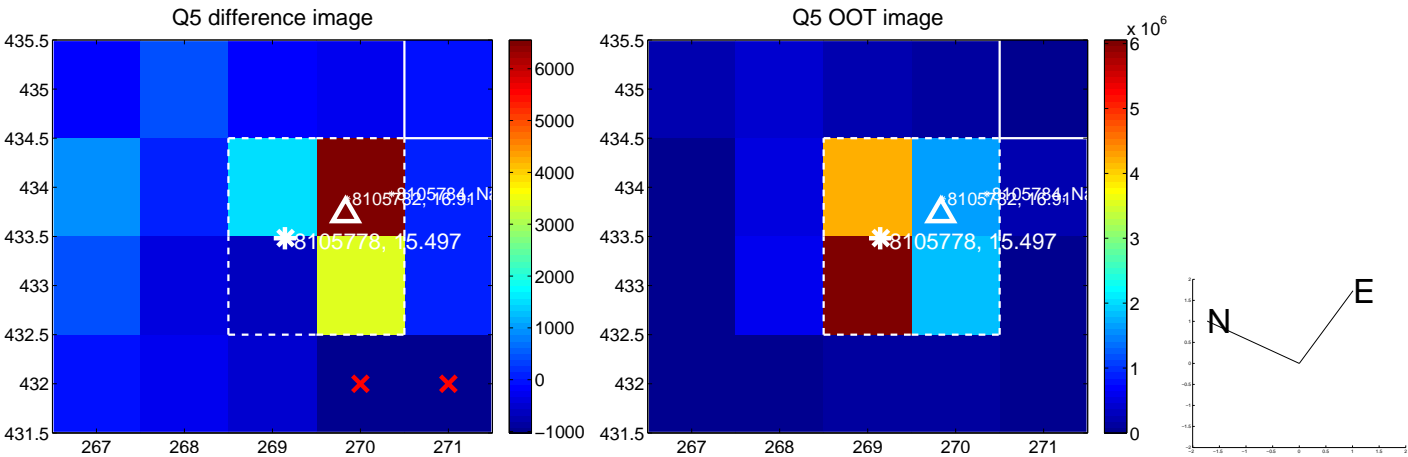


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

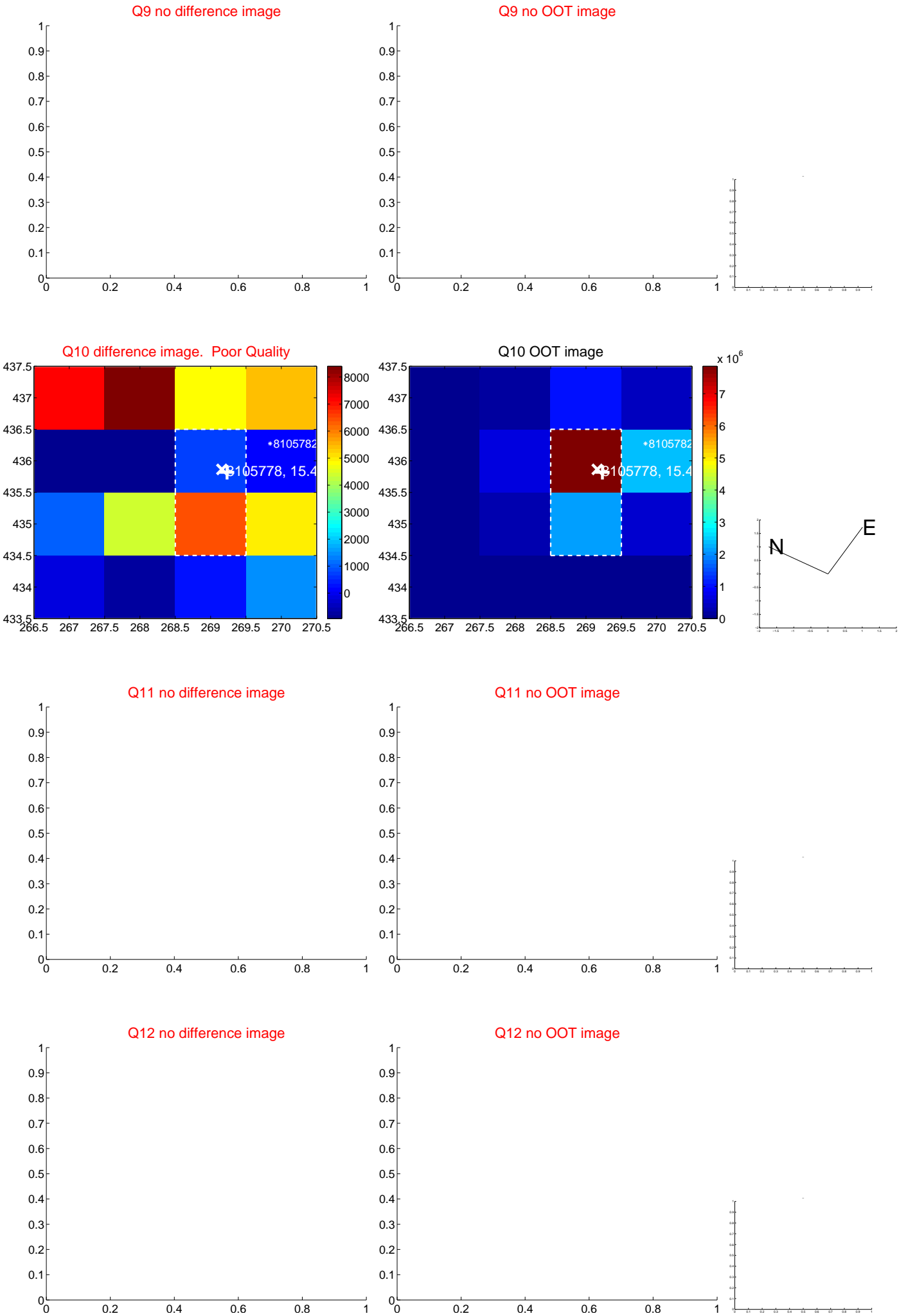
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



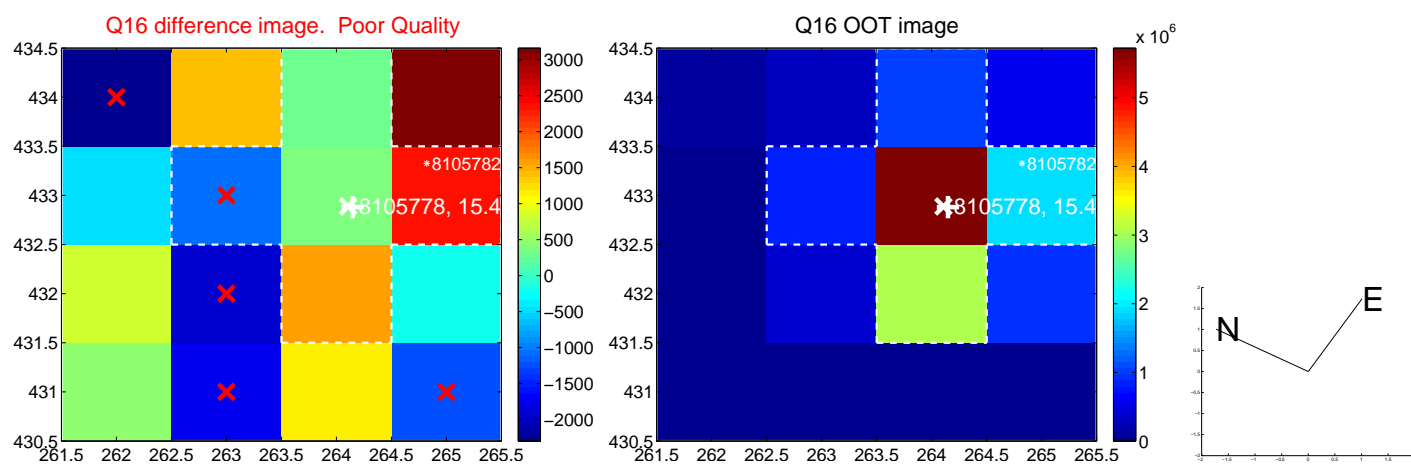
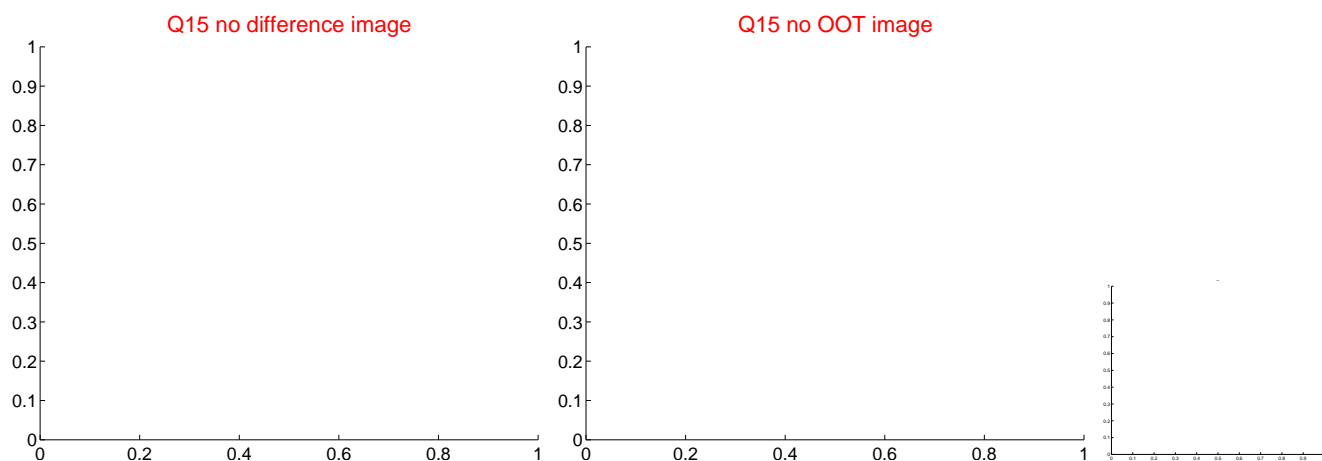
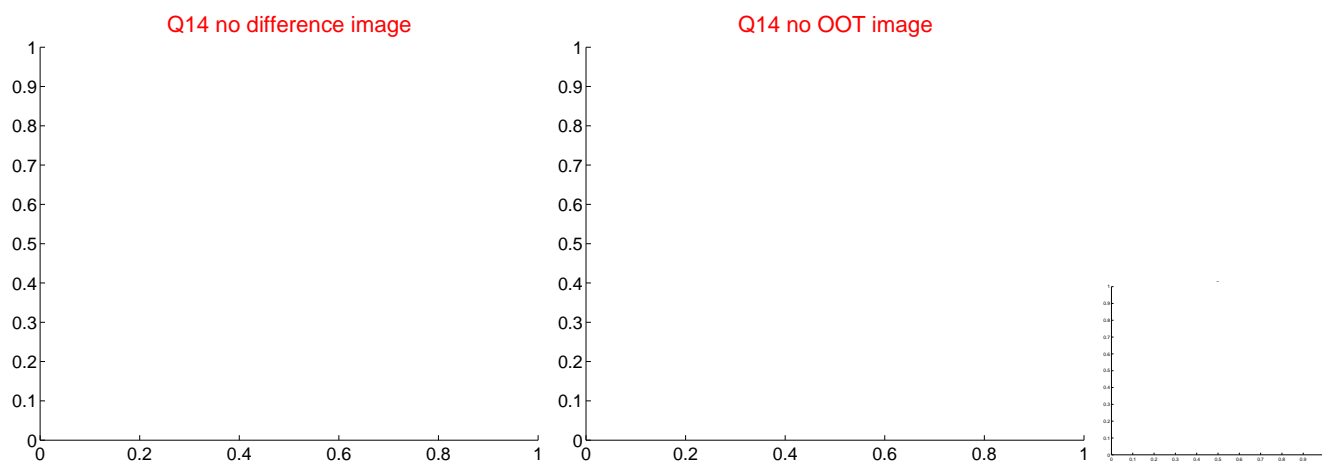
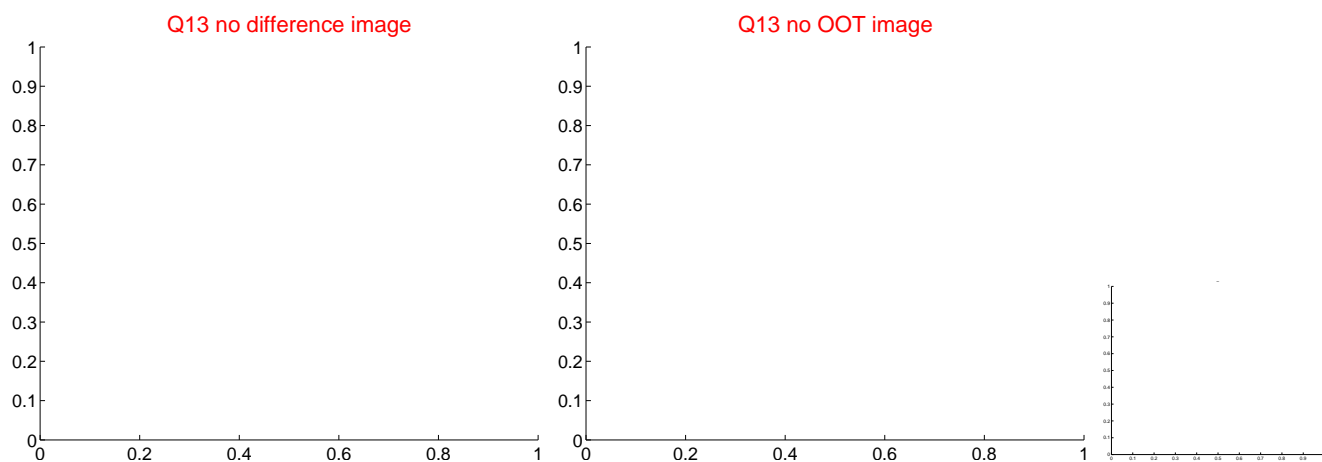
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



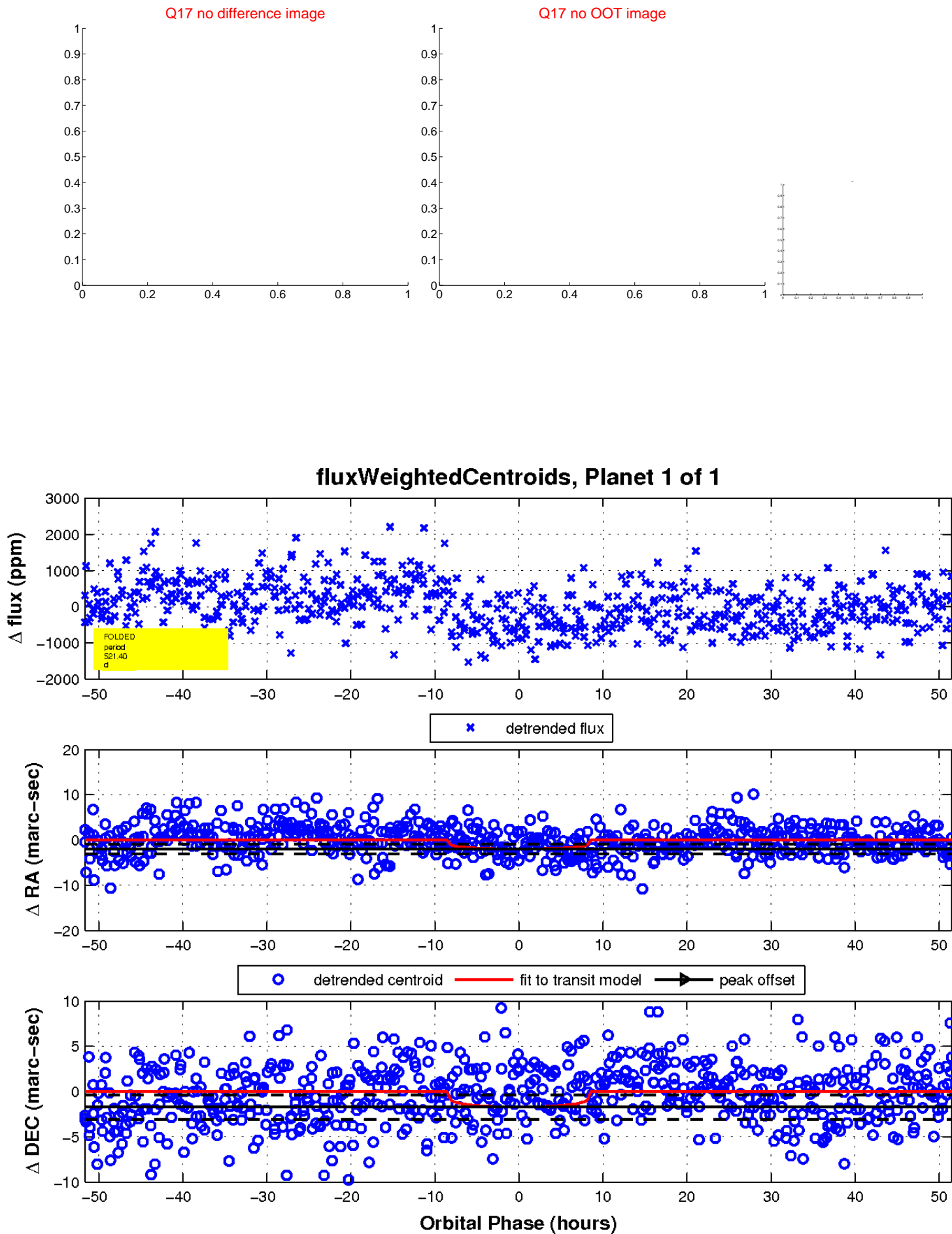
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

