

KIC 011512772

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 011512772-01 | OBS | No | 491.500089 | 248.776838 | 252.2 | 11.830 | 8.3 | 8.0 | 1.45 | 6113 | 2.51 | 1.95 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 011512772-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_SKYE—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.

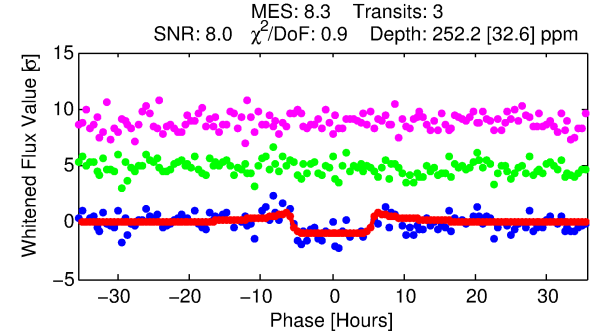
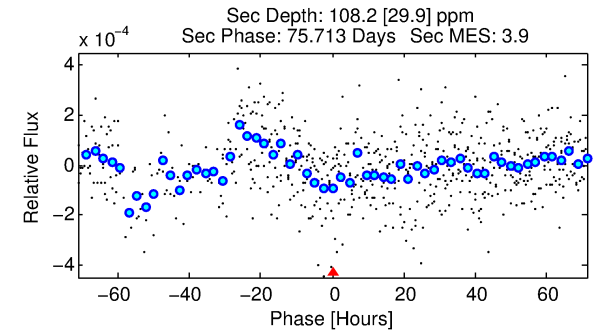
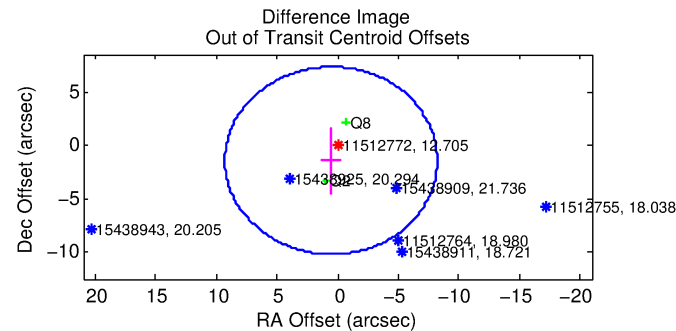
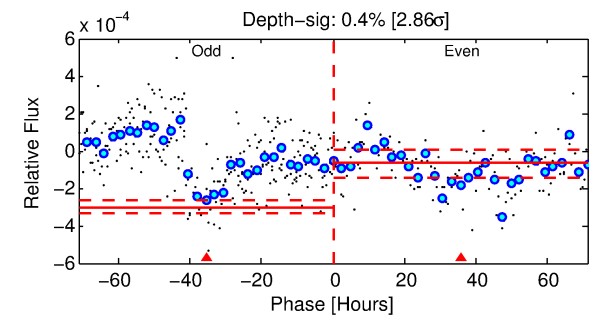
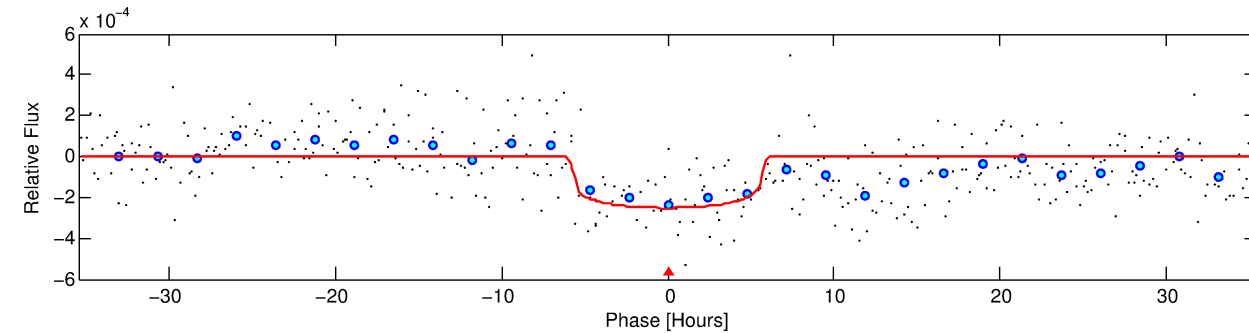
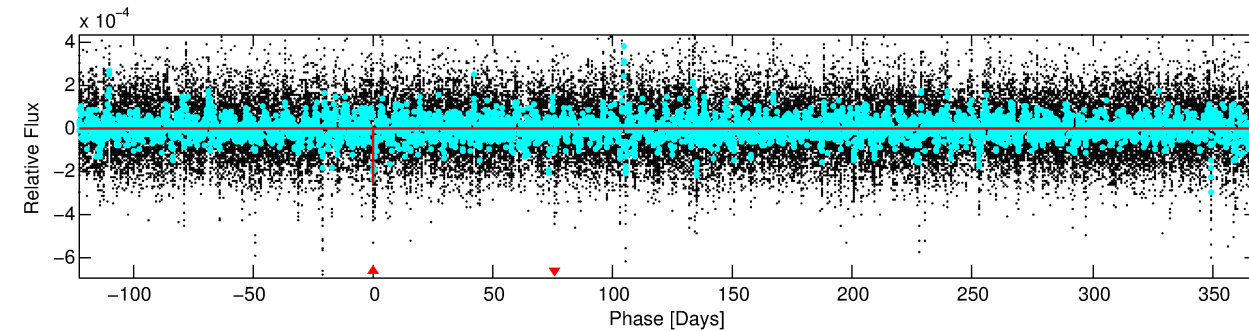
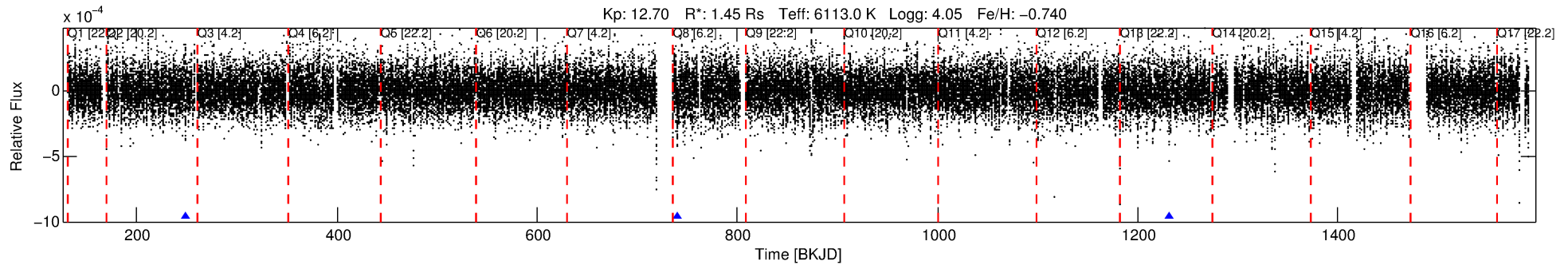
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011512772-01

No Significant Match Found

DV One-Page Summary

KIC: 11512772 Candidate: 1 of 1 Period: 491.500 d



DV Fit Results:

Period = 491.50009 [0.00836] d
Epoch = 248.7768 [0.0101] BKJD
Rp/R* = 0.0159 [0.0039]
a/R* = 211.18 [266.06]
b = 0.77 [0.68]
Seff = 1.95 [1.03]
Teq = 301 [40] K
Rp = 2.51 [1.01] Re
a = 1.1612 [0.3675] AU
Ag = 12737.70 [9792.59] [1.30 σ]
Teffp = 4947 [716] K [6.48 σ]

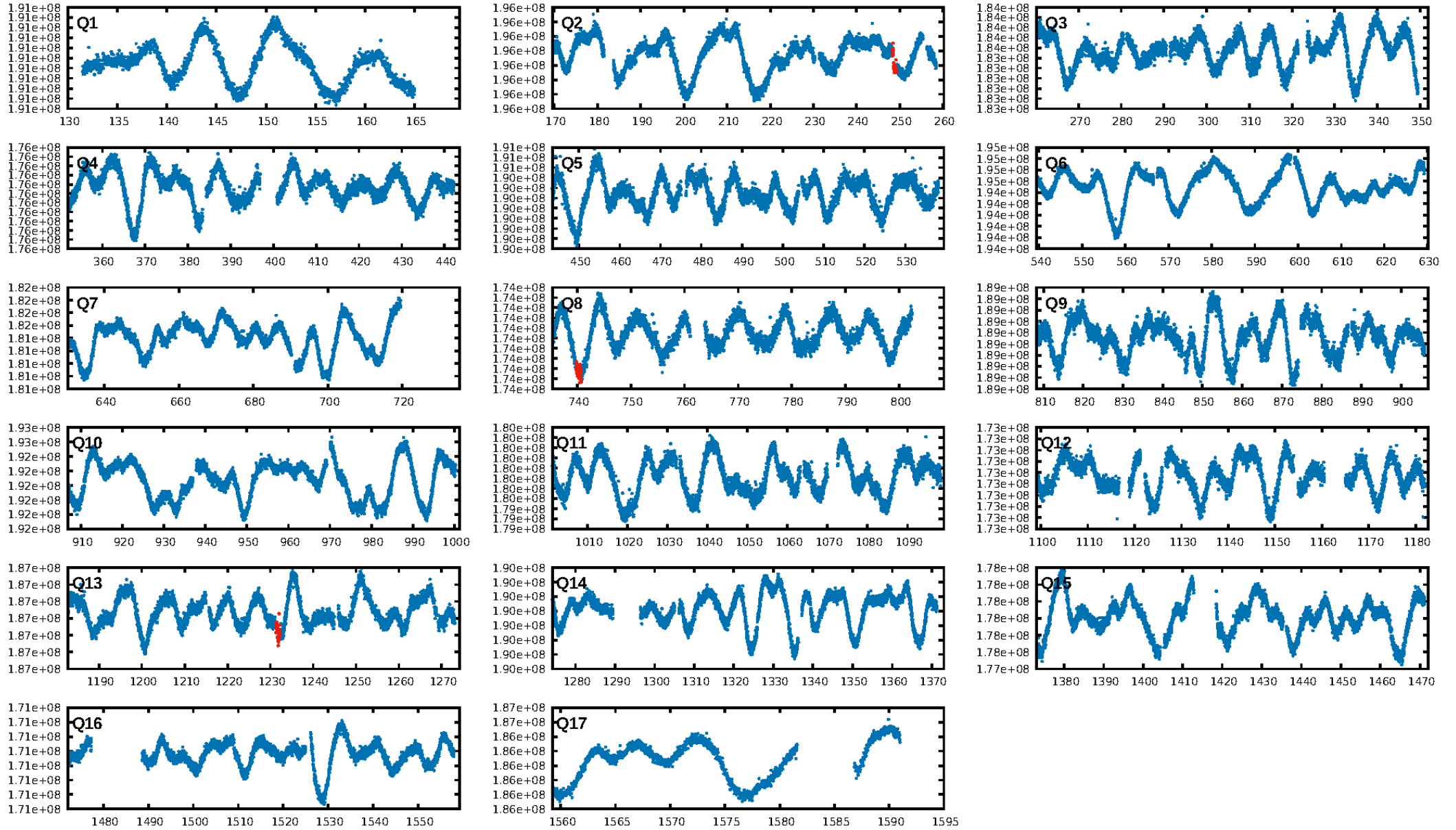
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.21e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.108
Centroid-sig: 0.7%
Centroid-so: 2.155 arcsec [1.80 σ]
OotOffset-rm: 1.531 arcsec [0.52 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 1.539 arcsec [0.54 σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

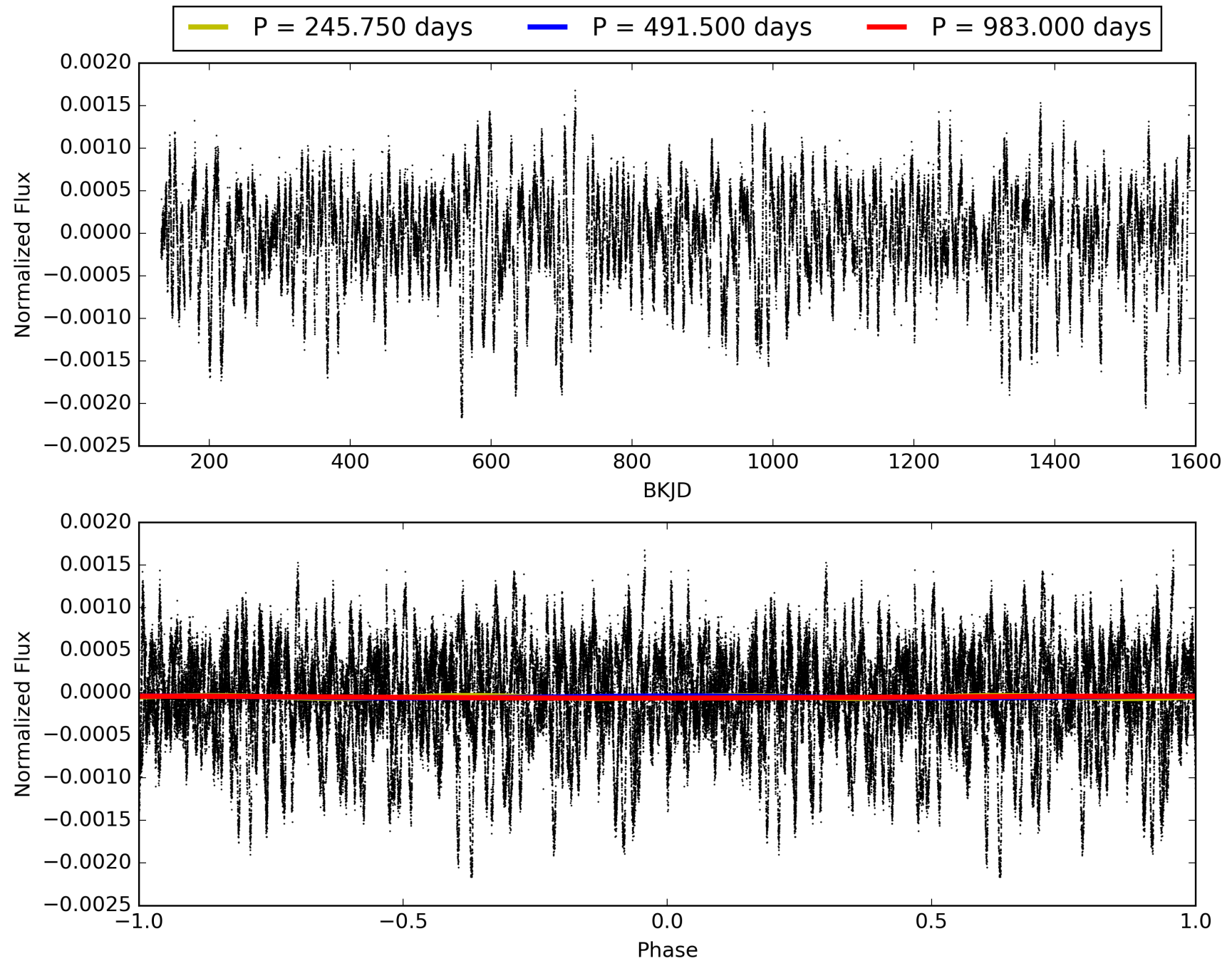
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:49:51 Z

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

TCE 011512772-01, PDC Light Curves

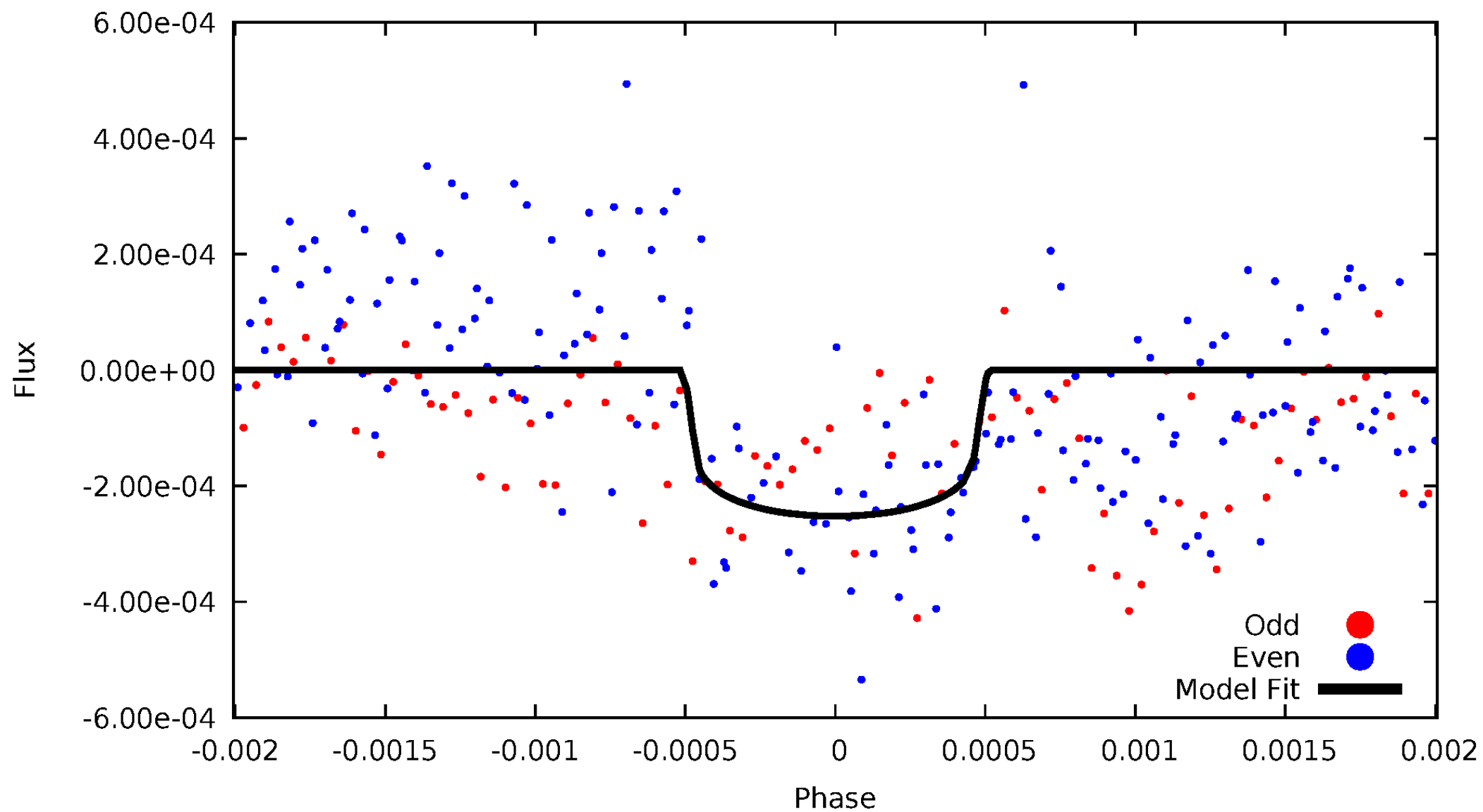


TCE 011512772-01



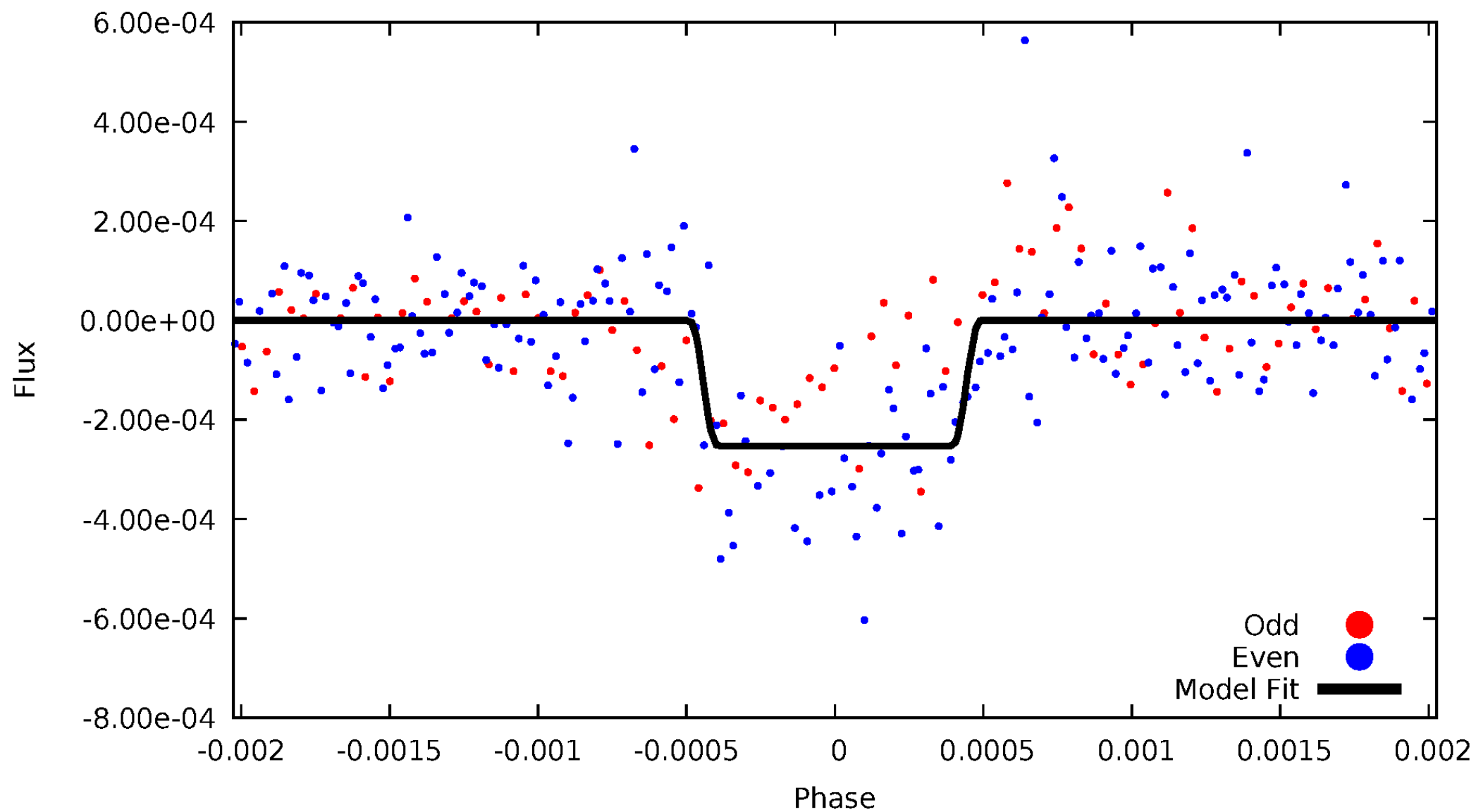
DV Odd/Even

TCE 011512772-01

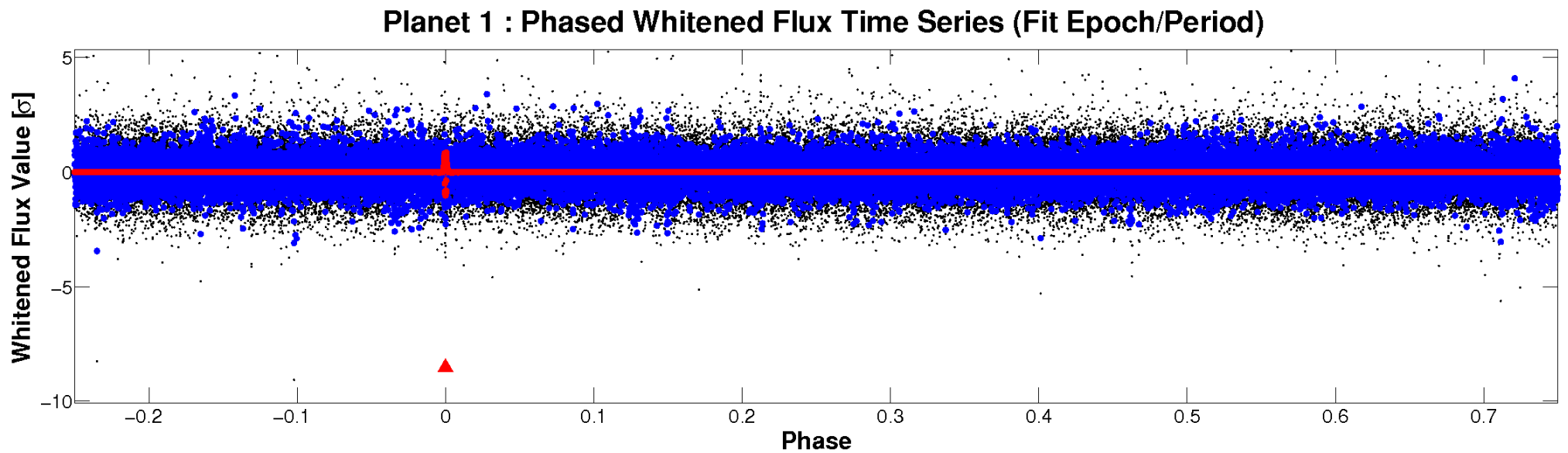
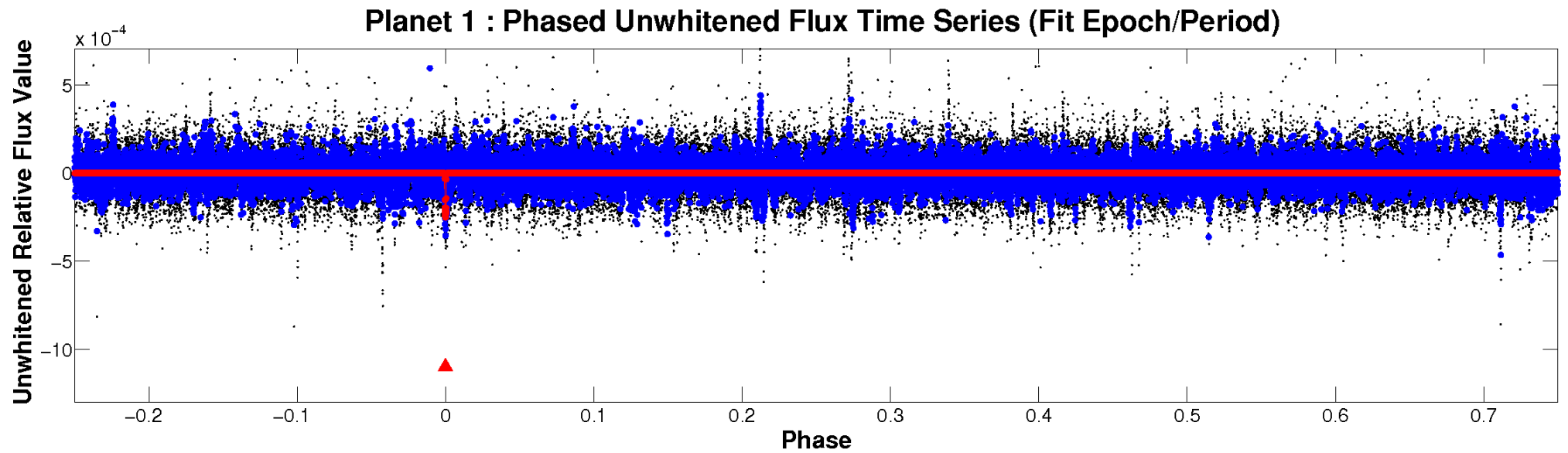


ALT Odd/Even

TCE 011512772-01

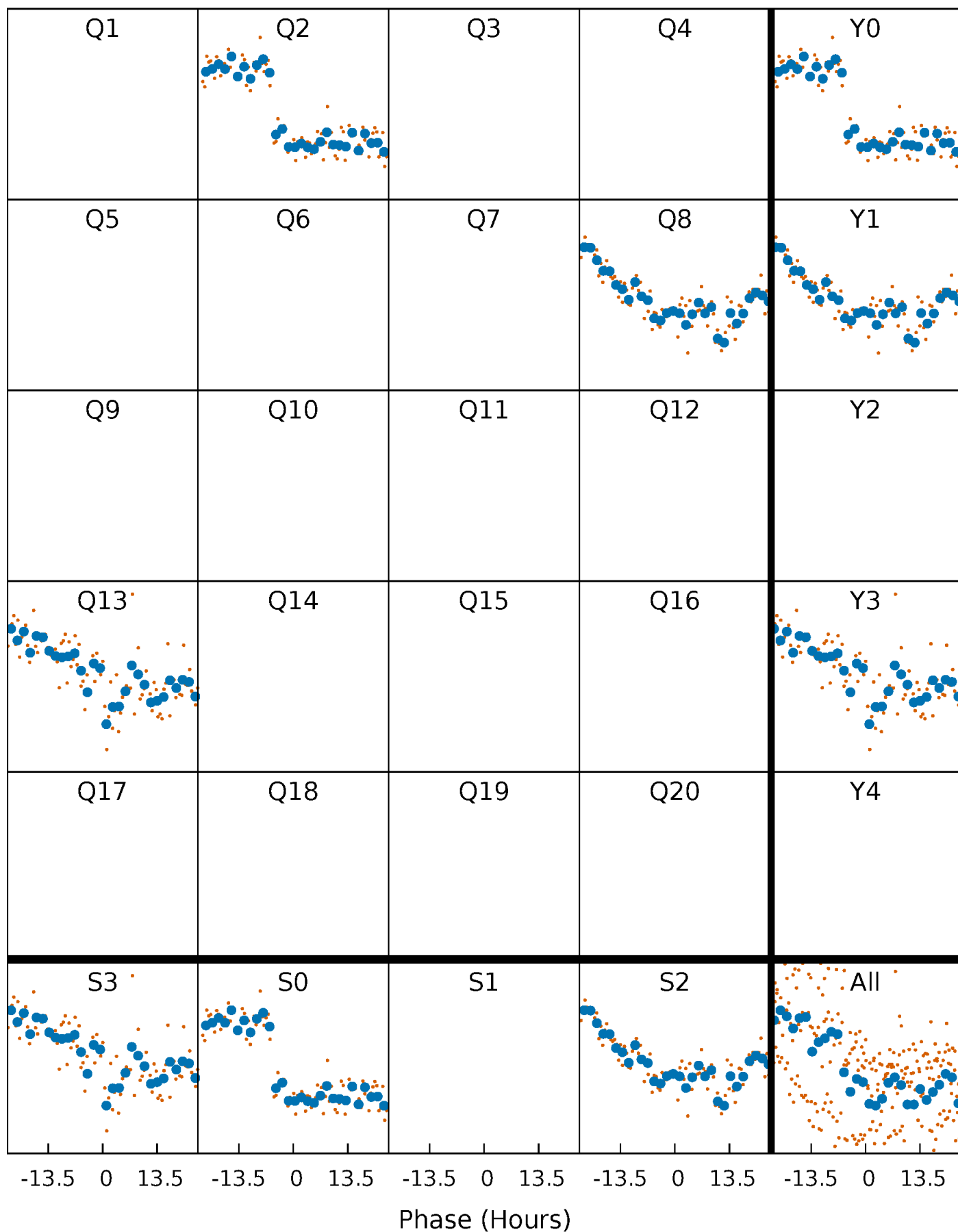


Non-Whitened Vs. Whitened Light Curve



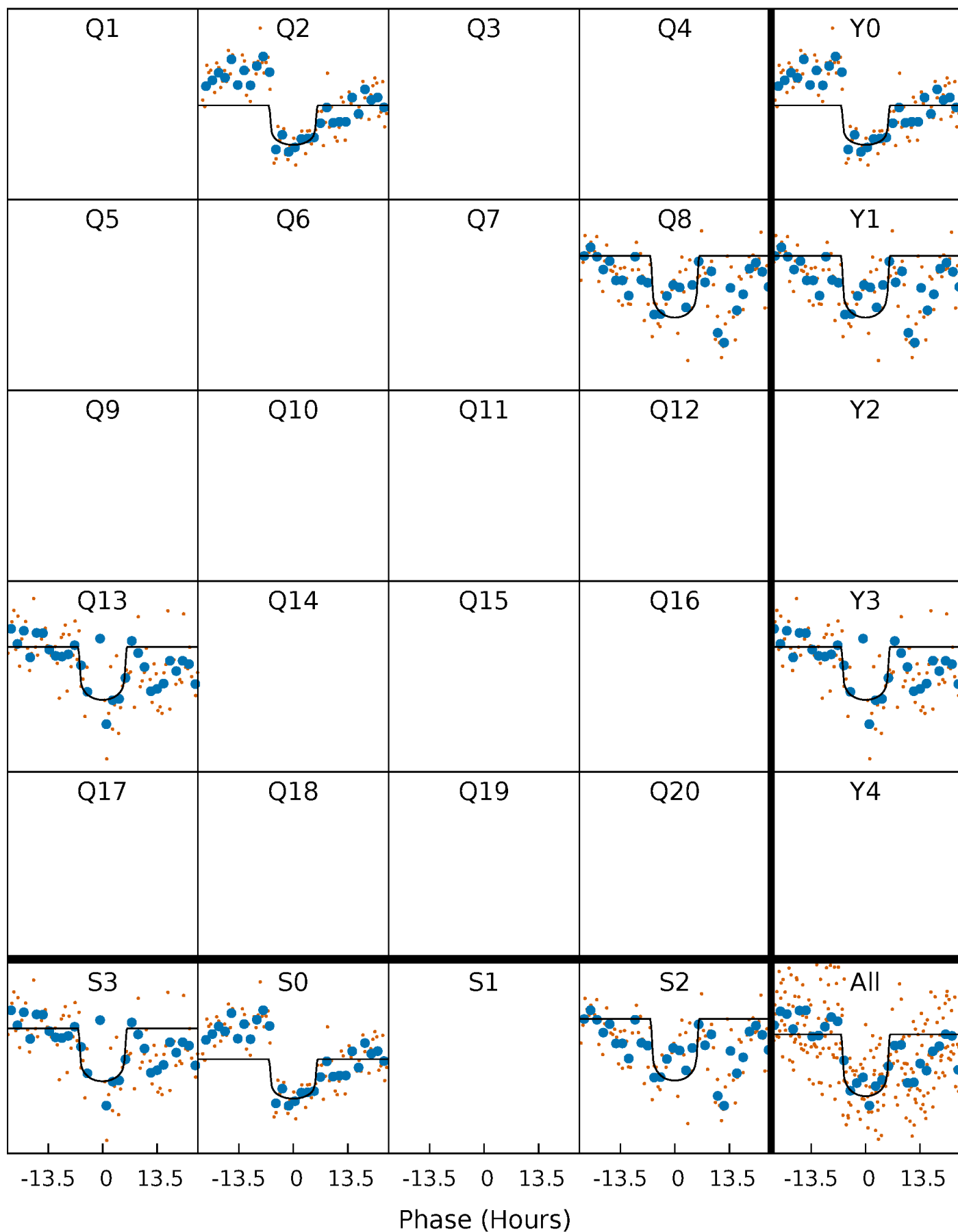
PDC Quarter-Phased Transit Curves

TCE 011512772-01 P=491.500089 Days $T_0=248.776838$ (BKJD)



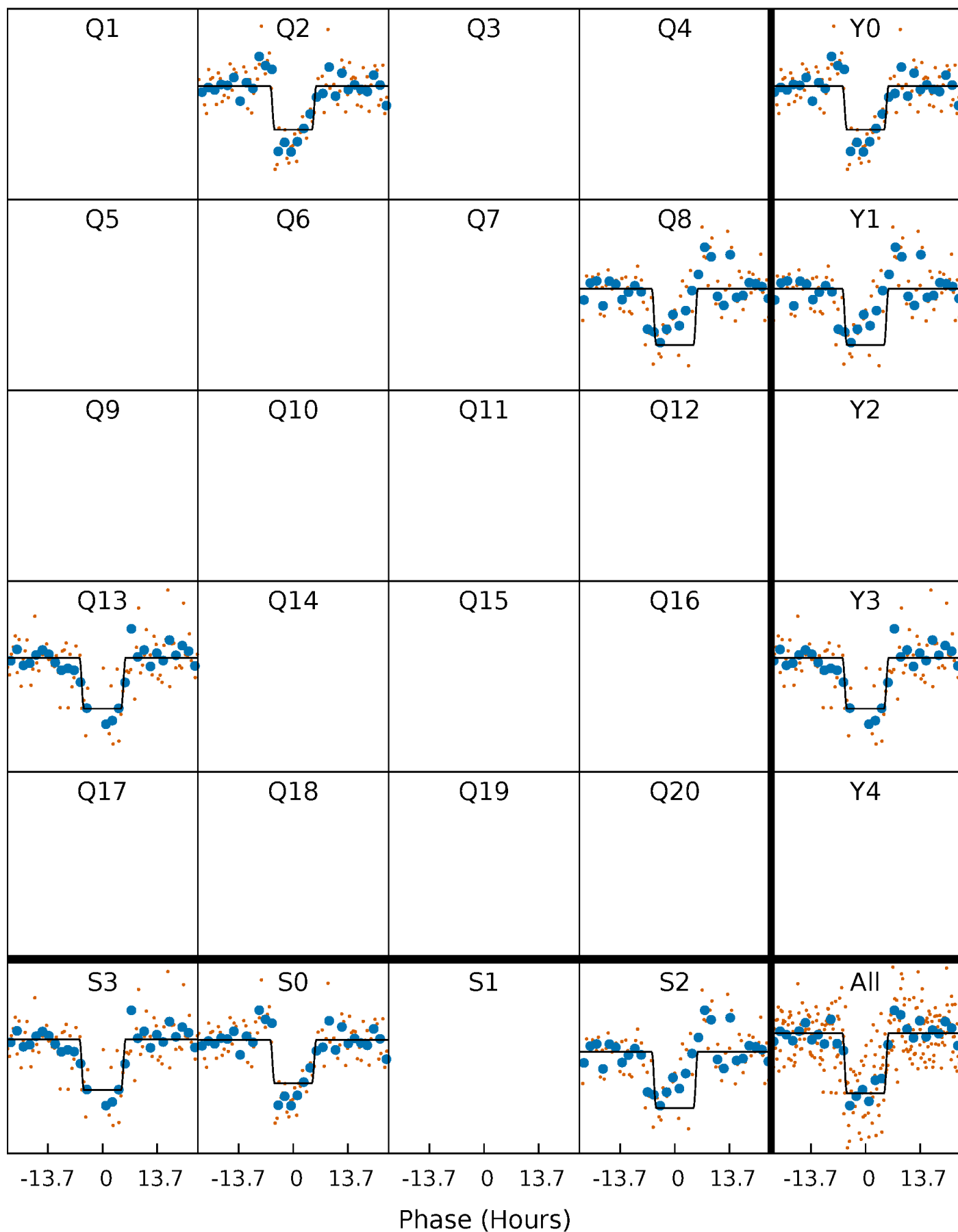
DV Quarter-Phased Transit Curves

TCE 011512772-01 P=491.500089 Days $T_0=248.776838$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

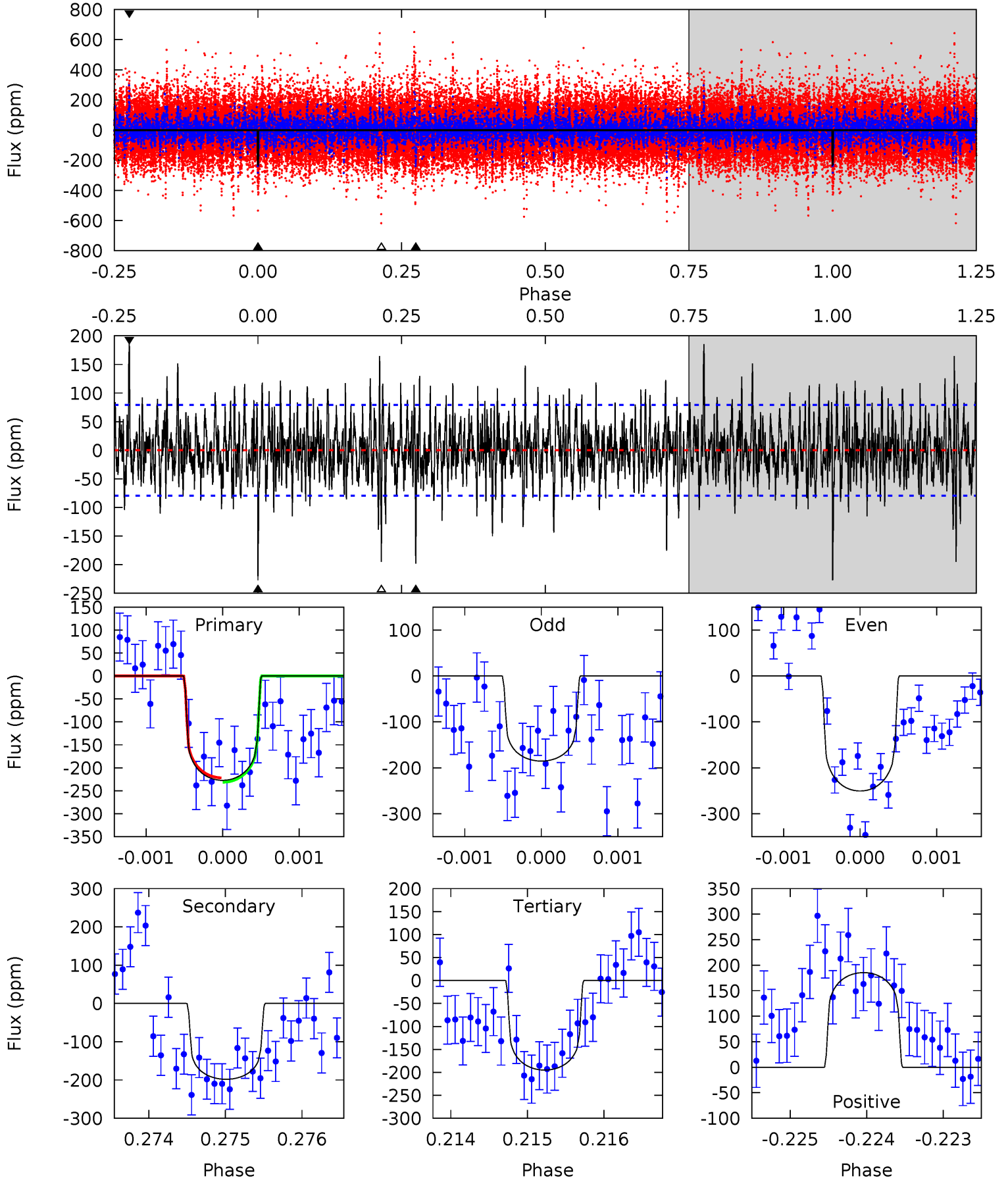
TCE 011512772-01 P=491.502041 Days $T_0=248.766771$ (BKJD)



DV Model-Shift Uniqueness Test

011512772-01, P = 491.500089 Days, E = 248.776838 Days

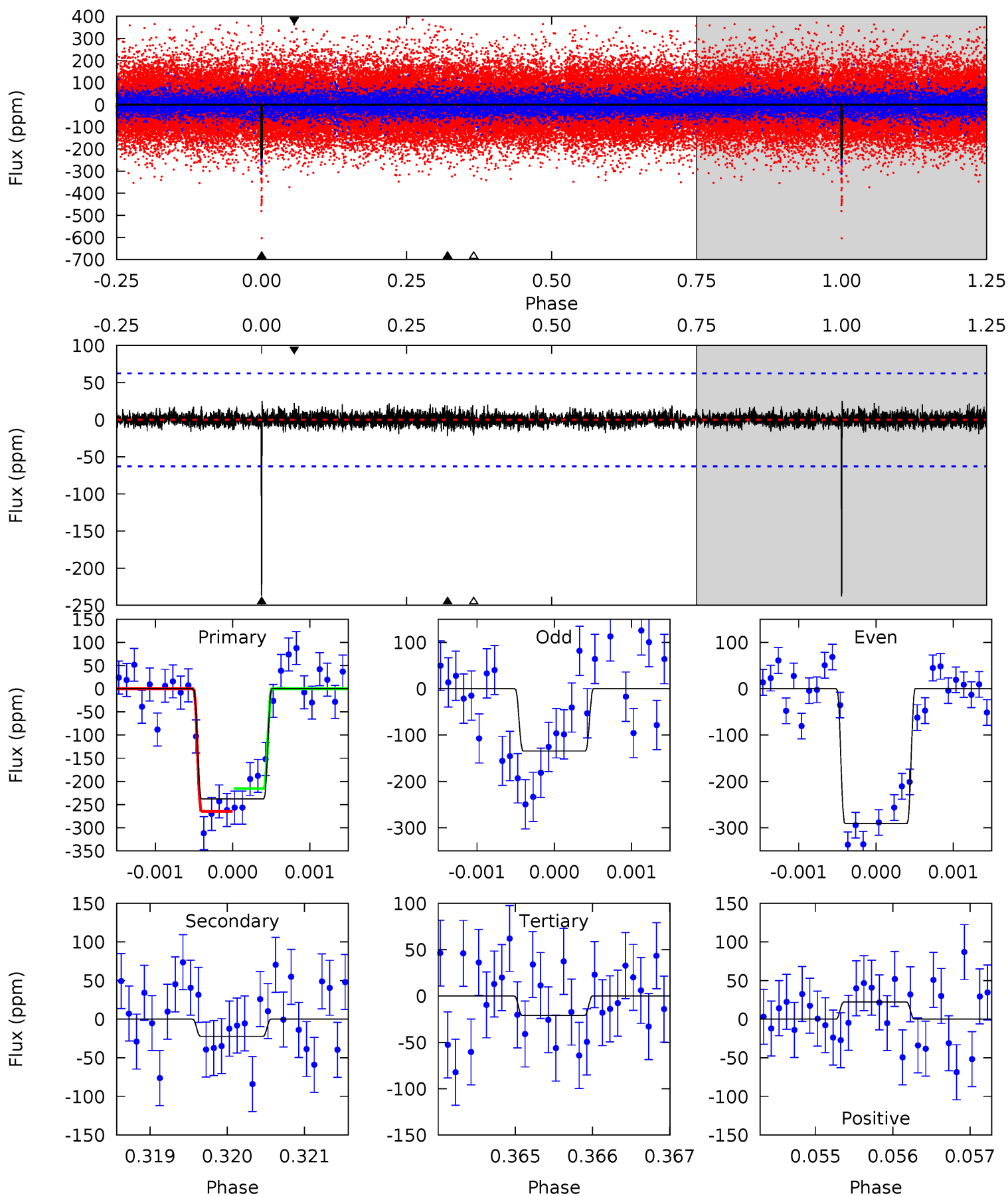
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.6 | 13.6 | 13.4 | 12.7 | 5.45 | 3.29 | 2.90 | 2.21 | 2.87 | 0.21 | 0.87 | 2.10 | 0.94 | 0.45 | 0.32 |



Alt Model-Shift Uniqueness Test

011512772-01, P = 491.502041 Days, E = 248.766771 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.7 | 1.94 | 1.83 | 1.94 | 5.46 | 3.30 | 0.45 | 18.9 | 18.8 | 0.11 | -0.00 | 6.47 | 0.83 | 0.10 | 2.13 |



Stellar Parameters For KIC 011512772

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6113^{+168}_{-152} | $4.053^{+0.308}_{-0.132}$ | $-0.740^{+0.300}_{-0.200}$ | $1.448^{+0.305}_{-0.457}$ | $0.864^{+0.120}_{-0.070}$ | $0.401^{+0.770}_{-0.145}$ |
| | +3%/-2% | +8%/-3% | +41%/-27% | +21%/-32% | +14%/-8% | +192%/-36% |
| Source | PHO1 | FLK73 | 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 011512772-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -198 ± 15 | $2.40^{+0.76}_{-0.69}$ | 414^{+28}_{-34} | 5748^{+964}_{-583} | 26348^{+25547}_{-11624} |
| Alt. | -22 ± 11 | $2.42^{+0.74}_{-0.67}$ | 415^{+30}_{-37} | 3686^{+528}_{-435} | 2745^{+3420}_{-1666} |

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

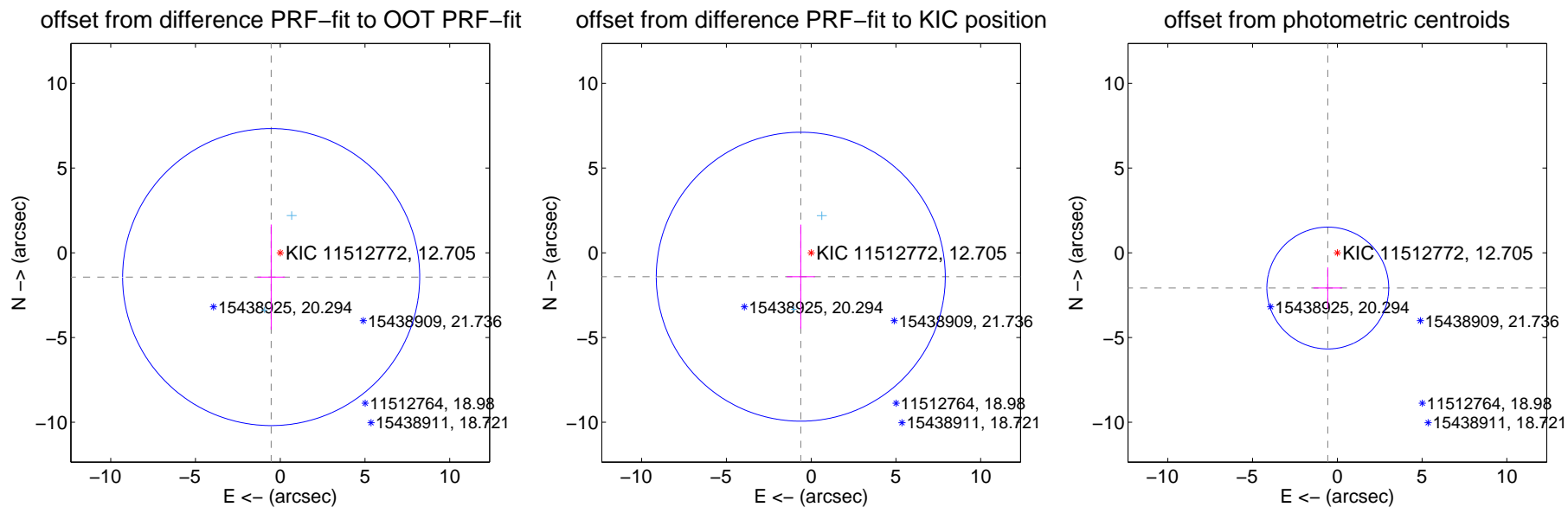
DV Centroid Data

Supplemental centroid analysis for 011512772-01. Kepler magnitude: 12.71. Transit SNR 8.04

There are 2 quarters with good PRF difference image offsets

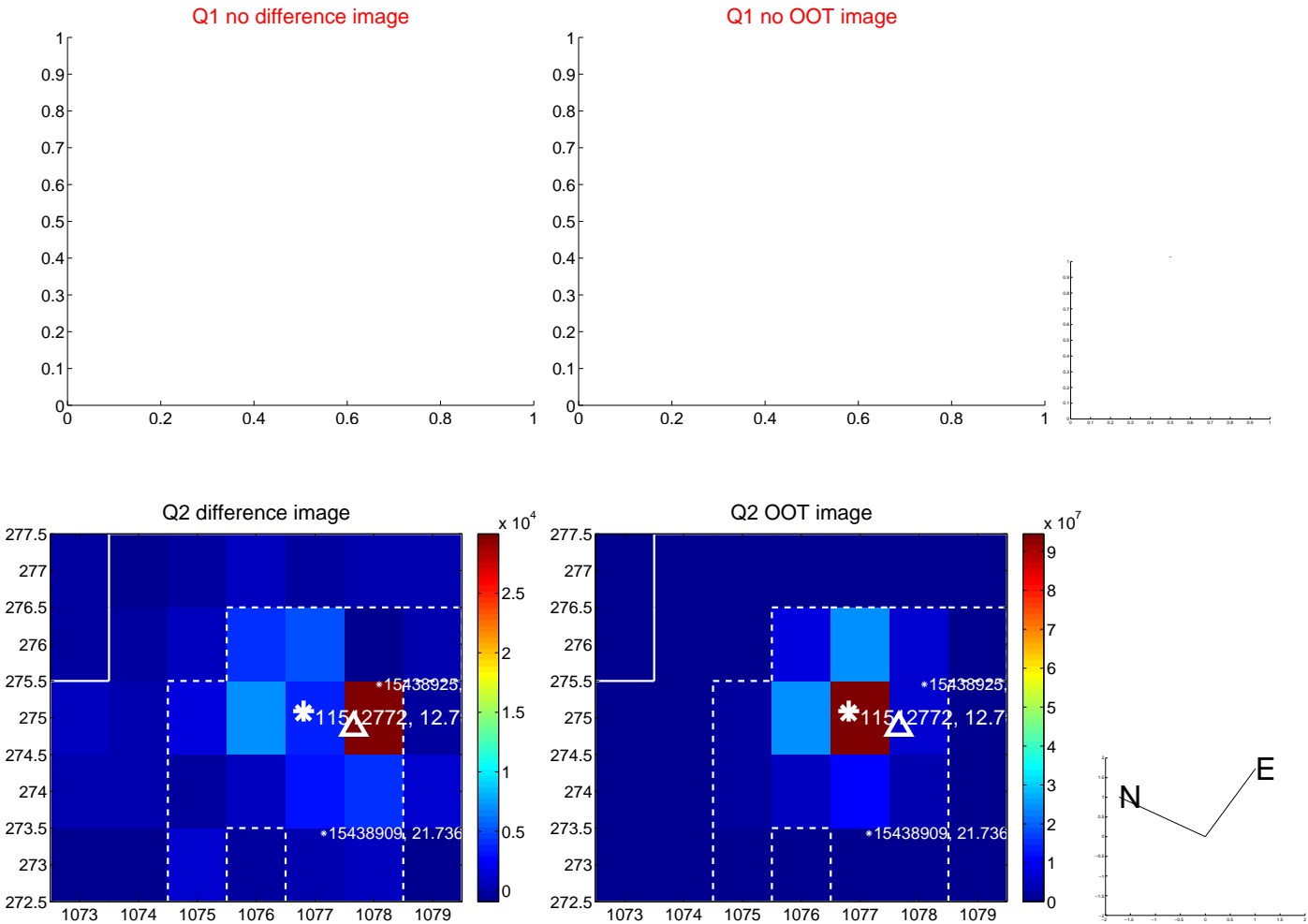
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.531 ± 2.922 | 0.52 | 0.536 ± 0.809 | -1.434 ± 3.104 |
| PRF-fit source offset from KIC position | 1.539 ± 2.842 | 0.54 | 0.613 ± 0.831 | -1.412 ± 3.078 |
| photometric centroid source offset | 2.15 ± 1.20 | 1.80 | 0.56 ± 0.85 | -2.08 ± 1.22 |

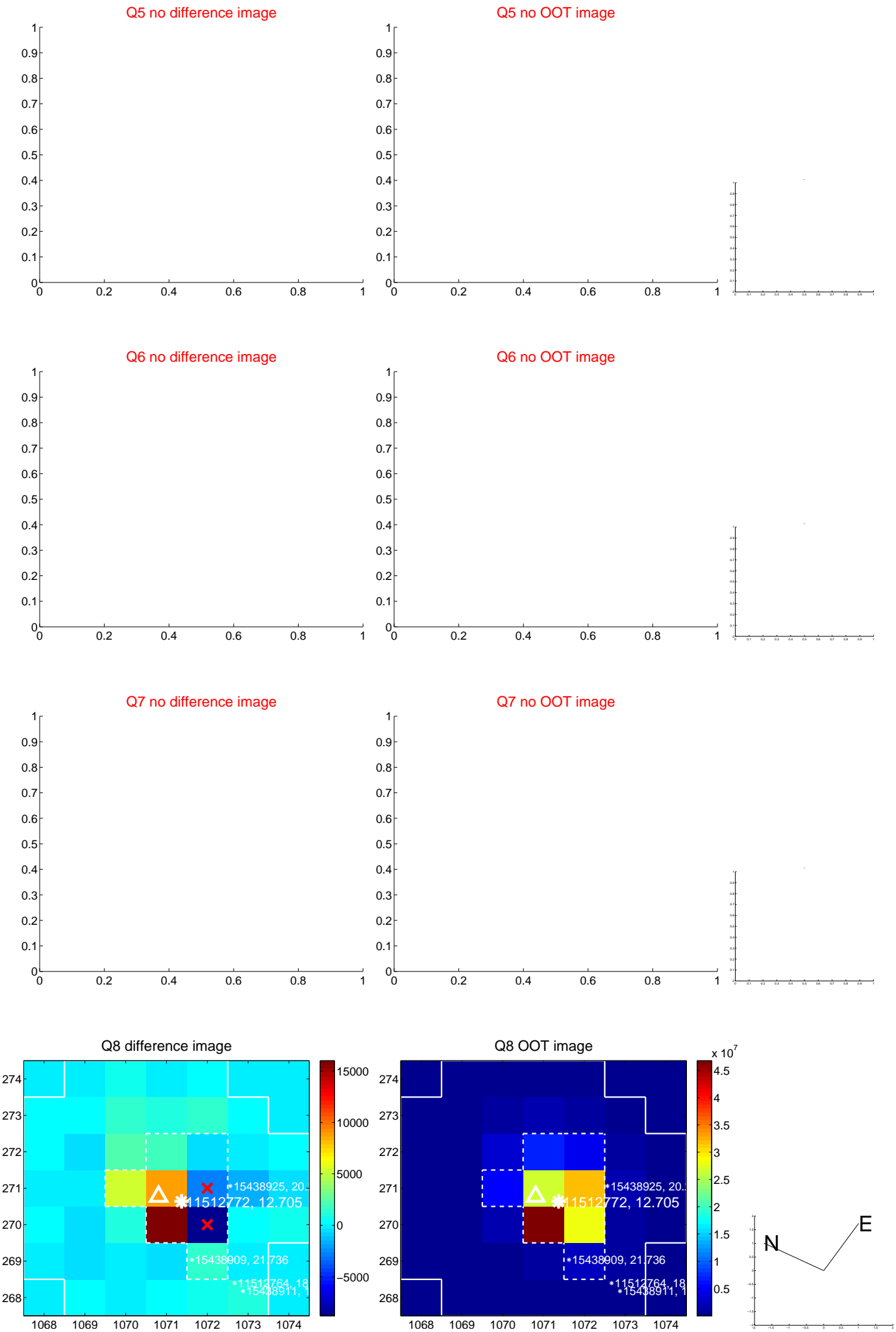


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



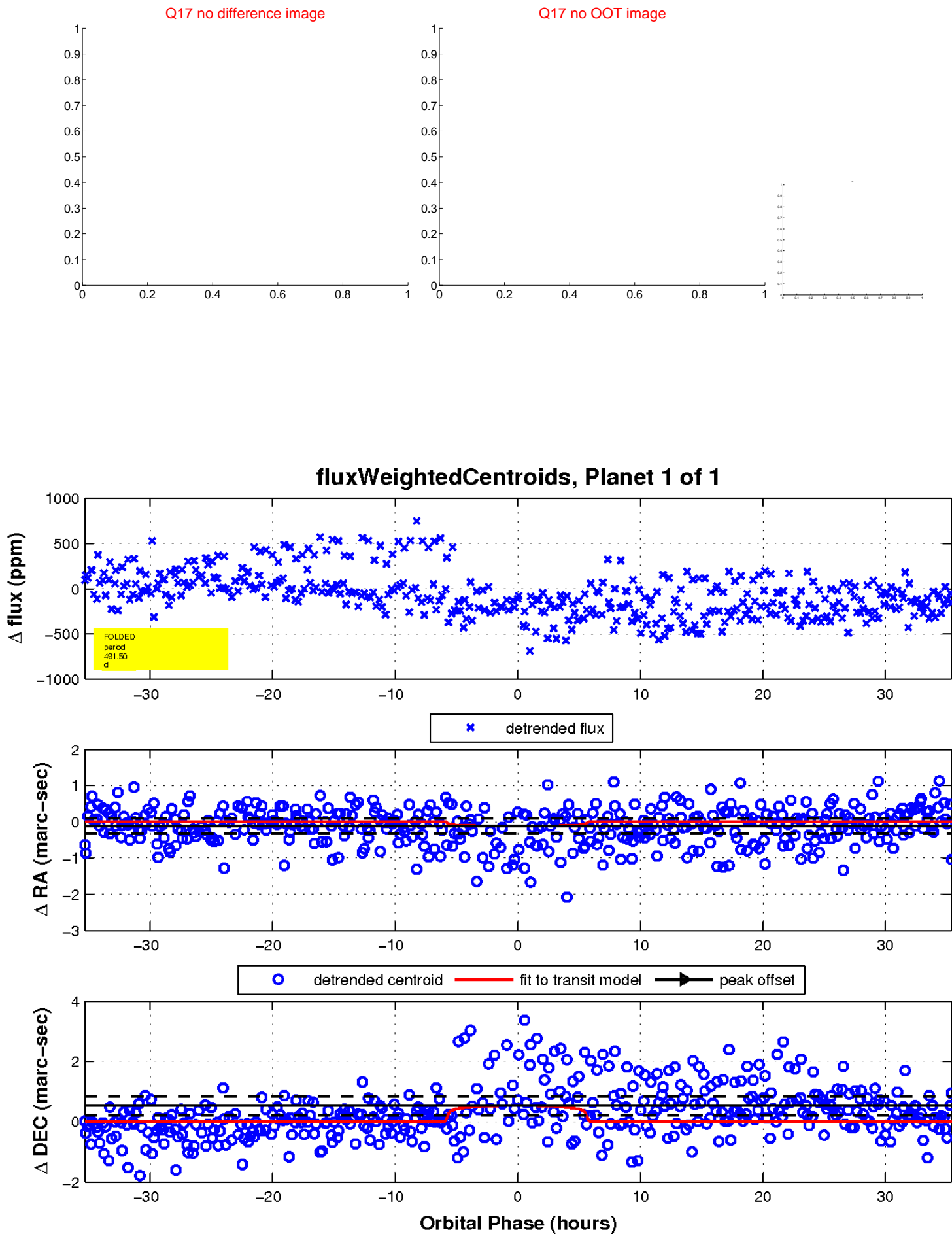
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

