

KIC 005392897

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 005392897-01 | OBS | 3342.01 | 42.399297 | 142.465127 | 204596.2 | 18.384 | 3030.4 | 2527.2 | 0.96 | 6153 | 44.60 | 20.49 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005392897-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT |

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.

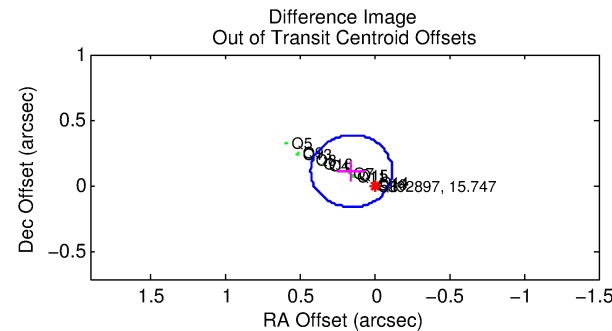
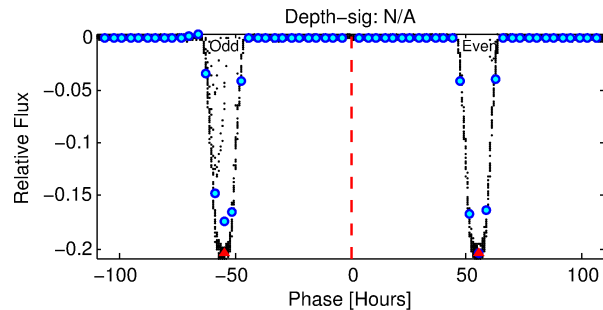
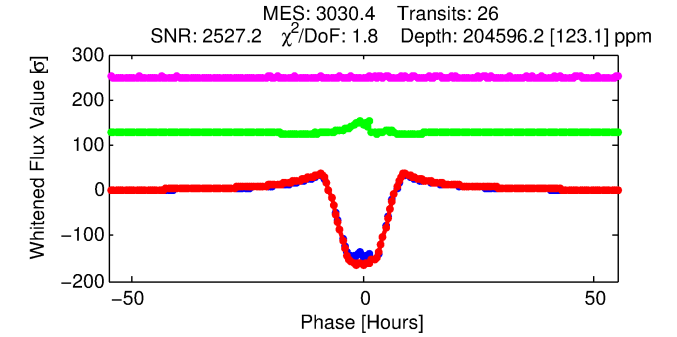
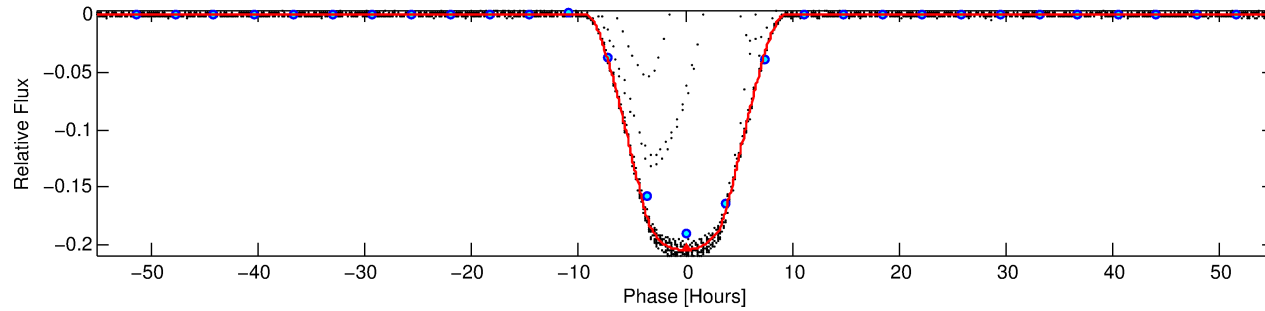
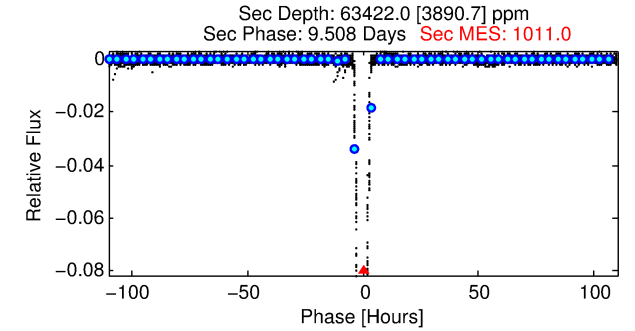
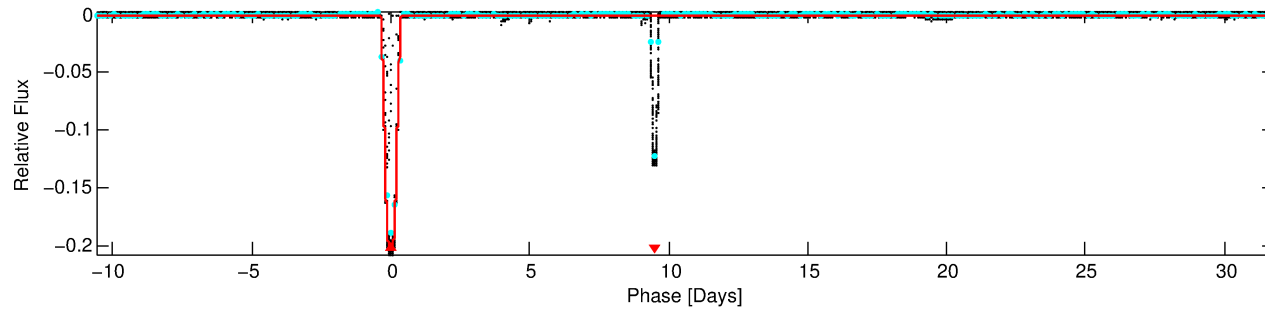
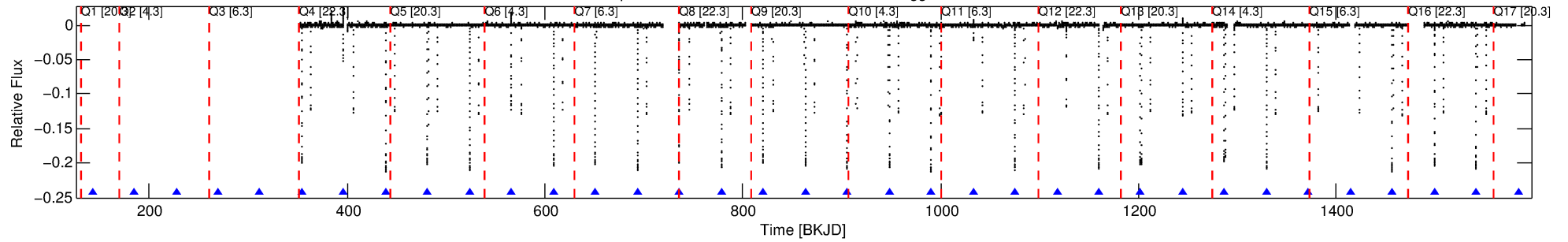
Ephemeris Match Information For 005392897-01

No Significant Match Found

DV One-Page Summary

KIC: 5392897 Candidate: 1 of 1 Period: 42.399 d
KOI: K03342.01 Corr: 0.999

Kp: 15.75 R*: 0.96 Rs Teff: 6153.0 K Logg: 4.49 Fe/H: -0.220



DV Fit Results:

Period = 42.39930 [0.00001] d
Epoch = 142.4651 [0.0002] BKJD
Rp/R* = 0.4249 [0.0002]
a/R* = 24.38 [0.02]
b = 0.34 [0.00]
Seff = 20.49 [8.46]
Teq = 543 [56] K
Rp = 44.60 [14.28] Re
a = 0.2408 [0.0642] AU
Ag = 1017.43 [395.71] [2.57σ]
Teffp = 4737 [194] K [20.82σ]

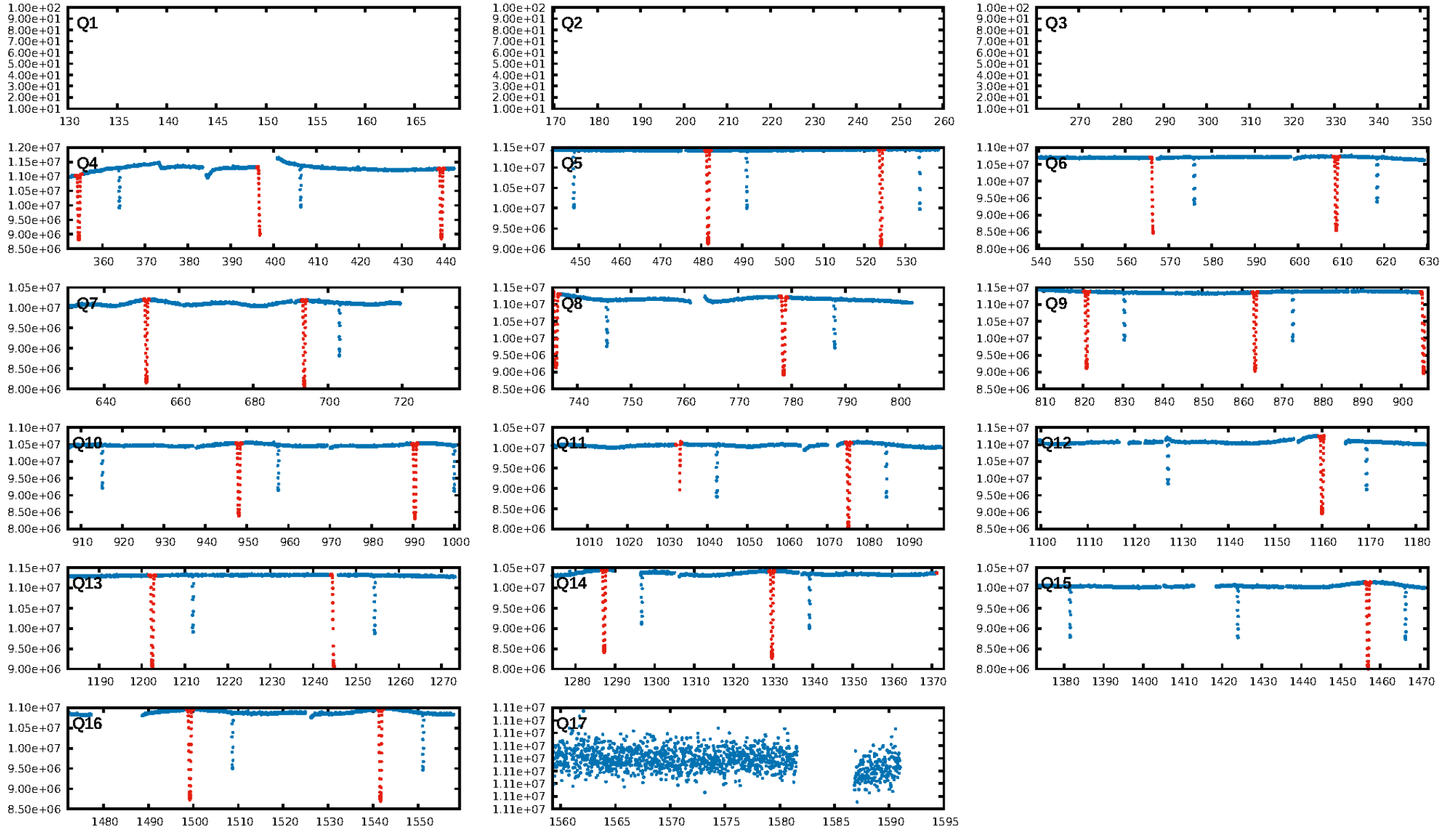
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [26/26]
GhostDiagnostic-chr: 3.015
Centroid-sig: N/A
Centroid-so: 0.636 arcsec [265.96σ]
OotOffset-rm: 0.191 arcsec [2.10σ]
KicOffset-rm: 0.053 arcsec [0.78σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [12/12]

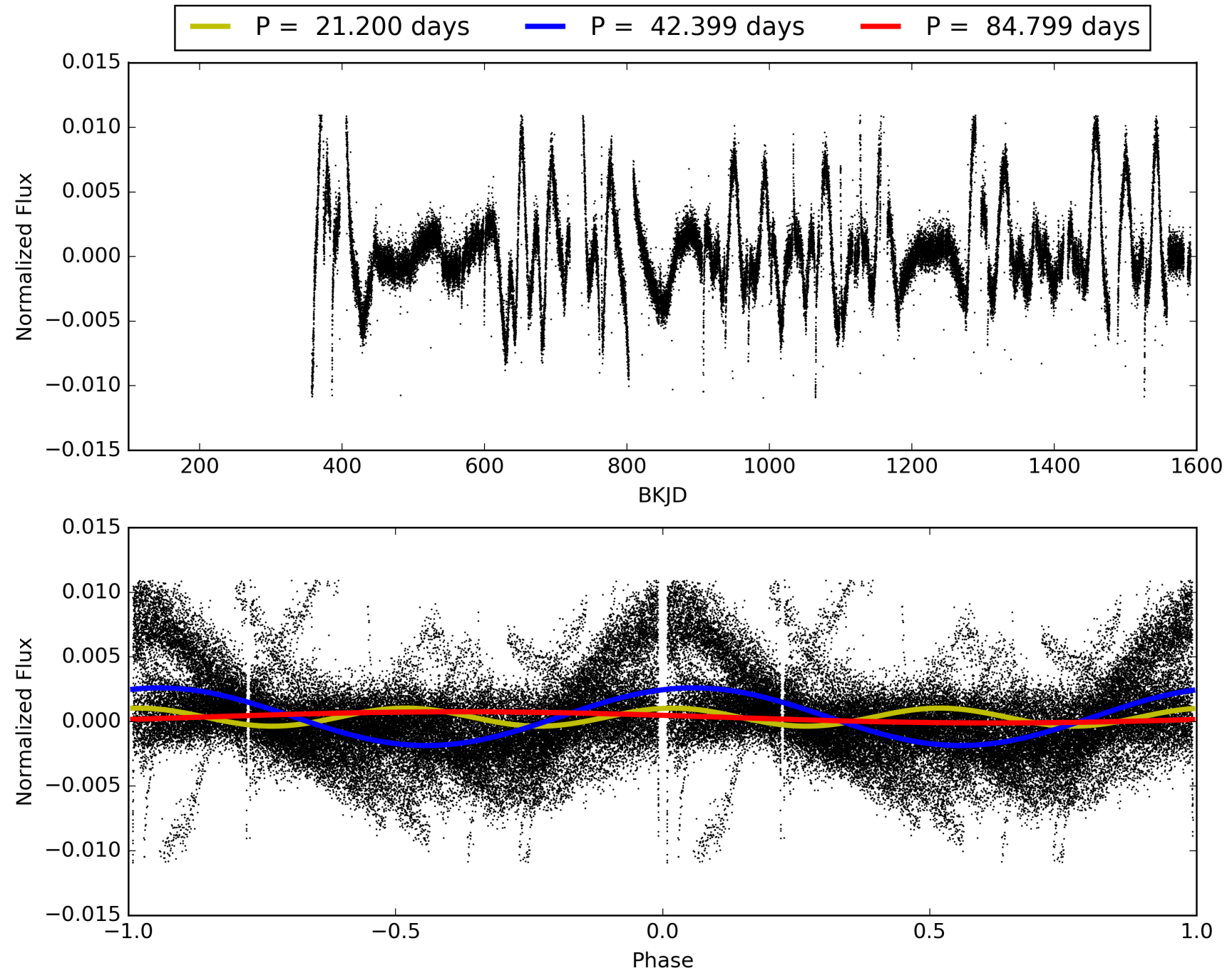
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:19:35 Z

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

TCE 005392897-01, PDC Light Curves

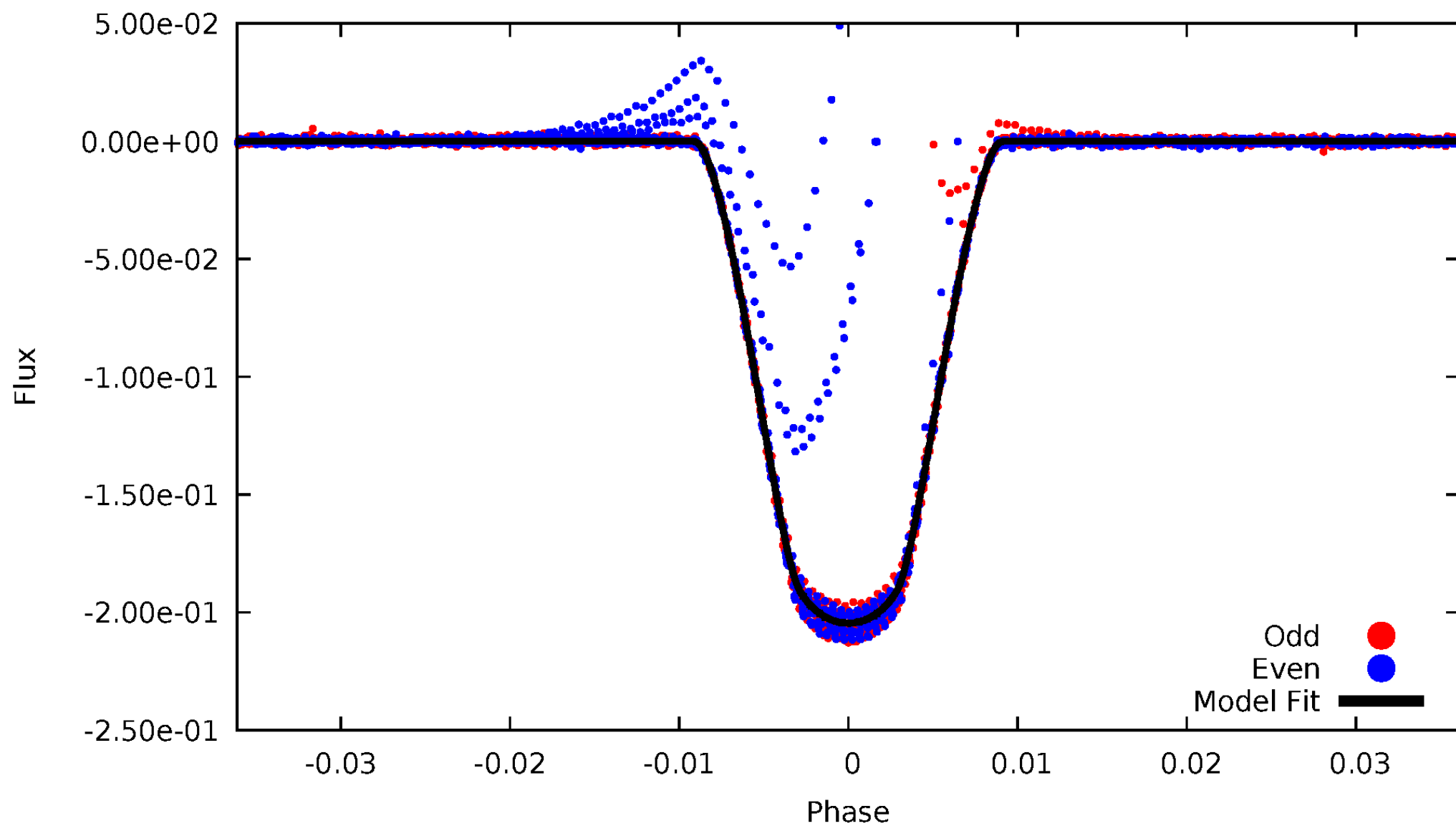


TCE 005392897-01



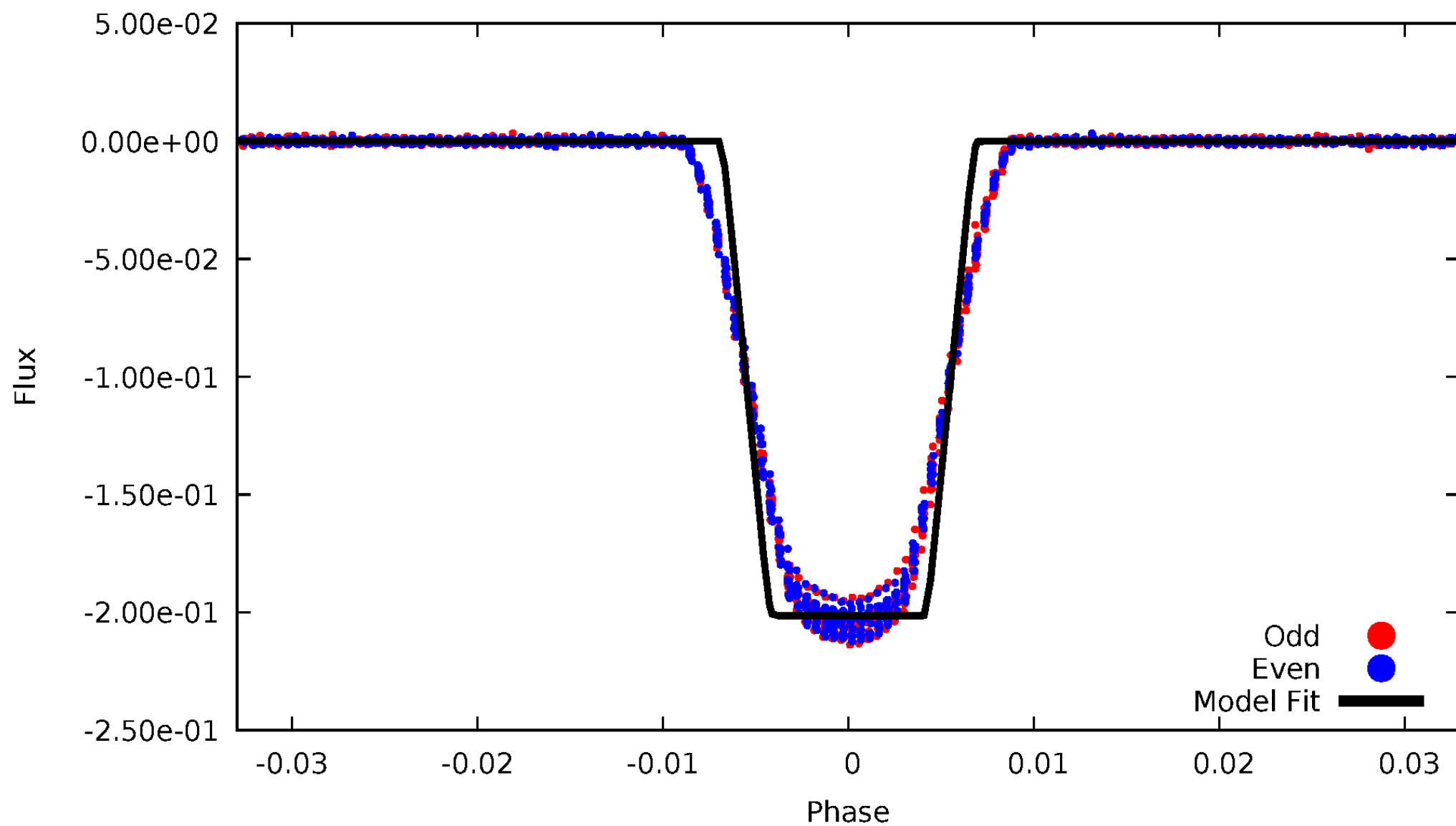
DV Odd/Even

TCE 005392897-01



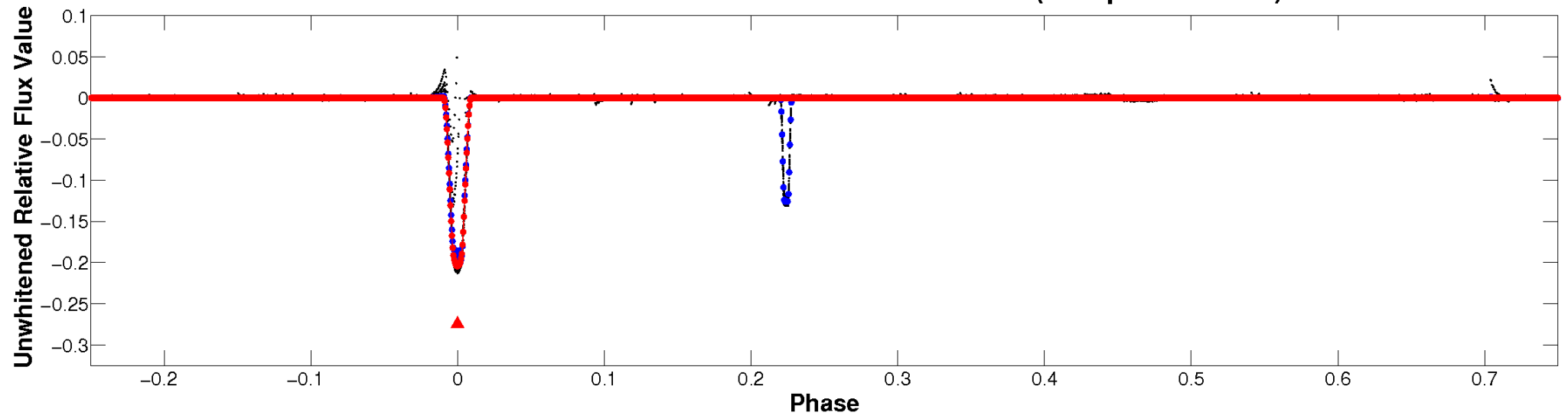
ALT Odd/Even

TCE 005392897-01

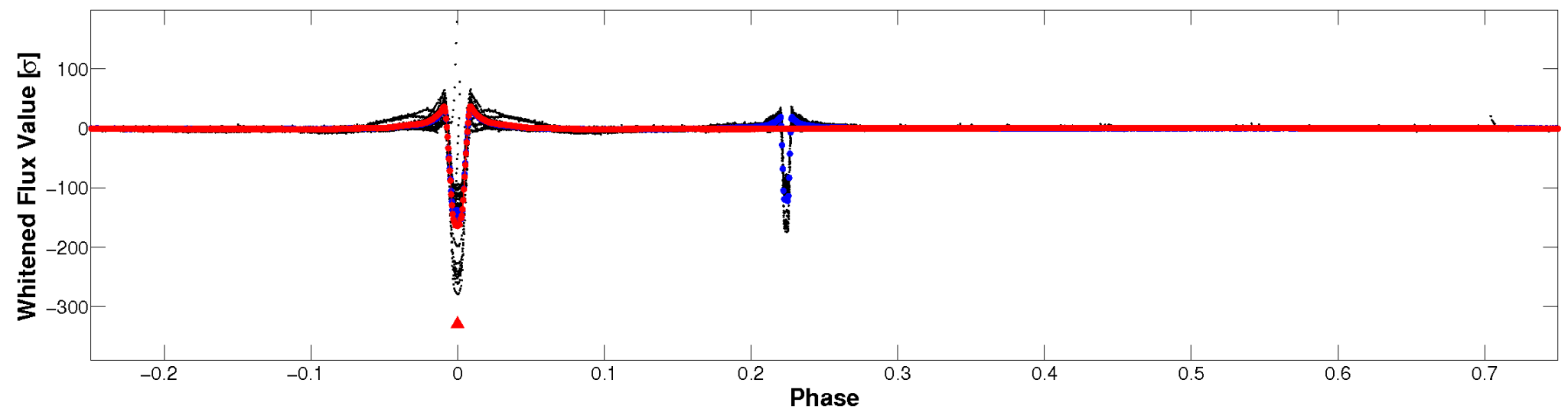


Non-Whitened Vs. Whitened Light Curve

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

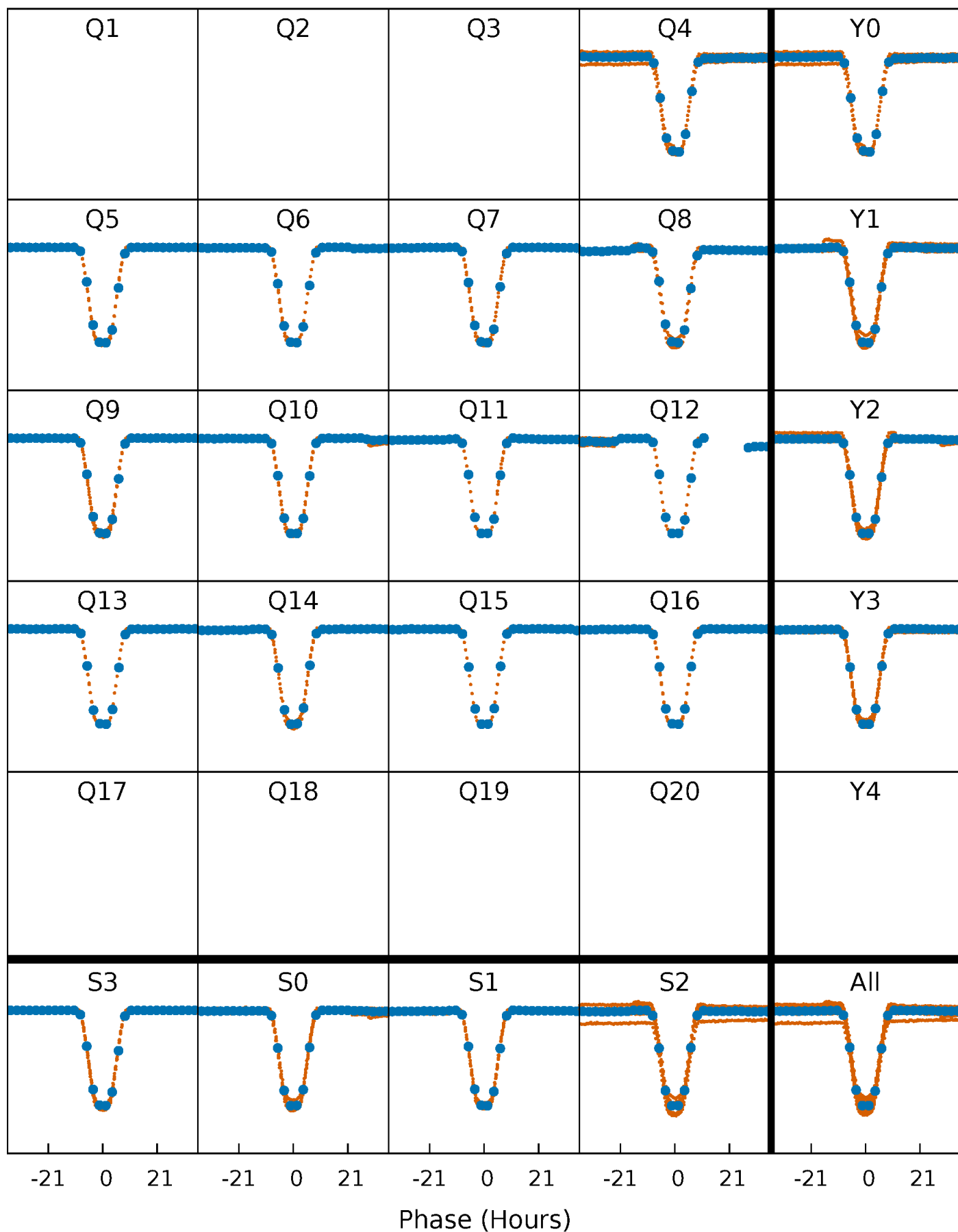


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



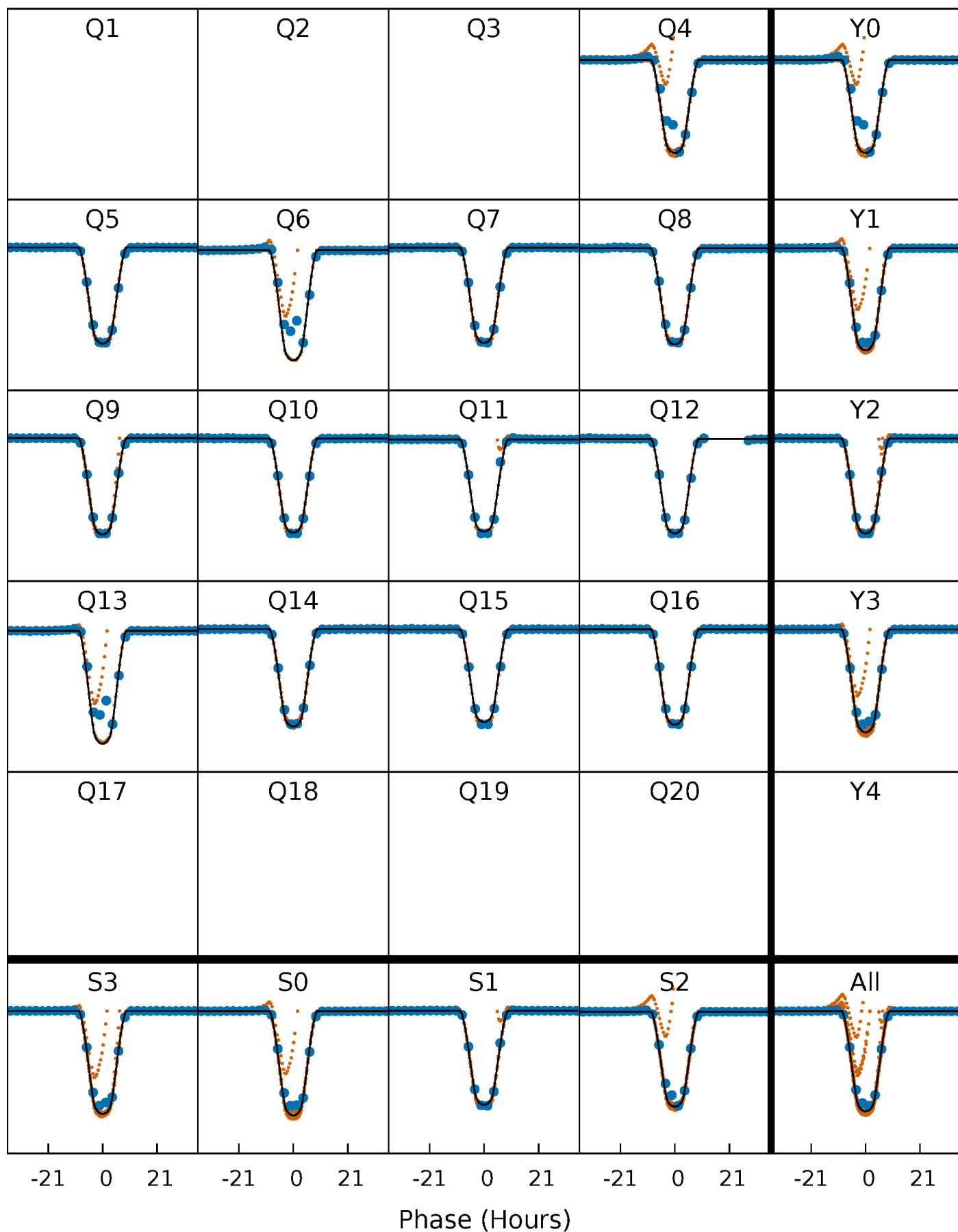
PDC Quarter-Phased Transit Curves

TCE 005392897-01 P= 42.399297 Days $T_0=142.465127$ (BKJD)



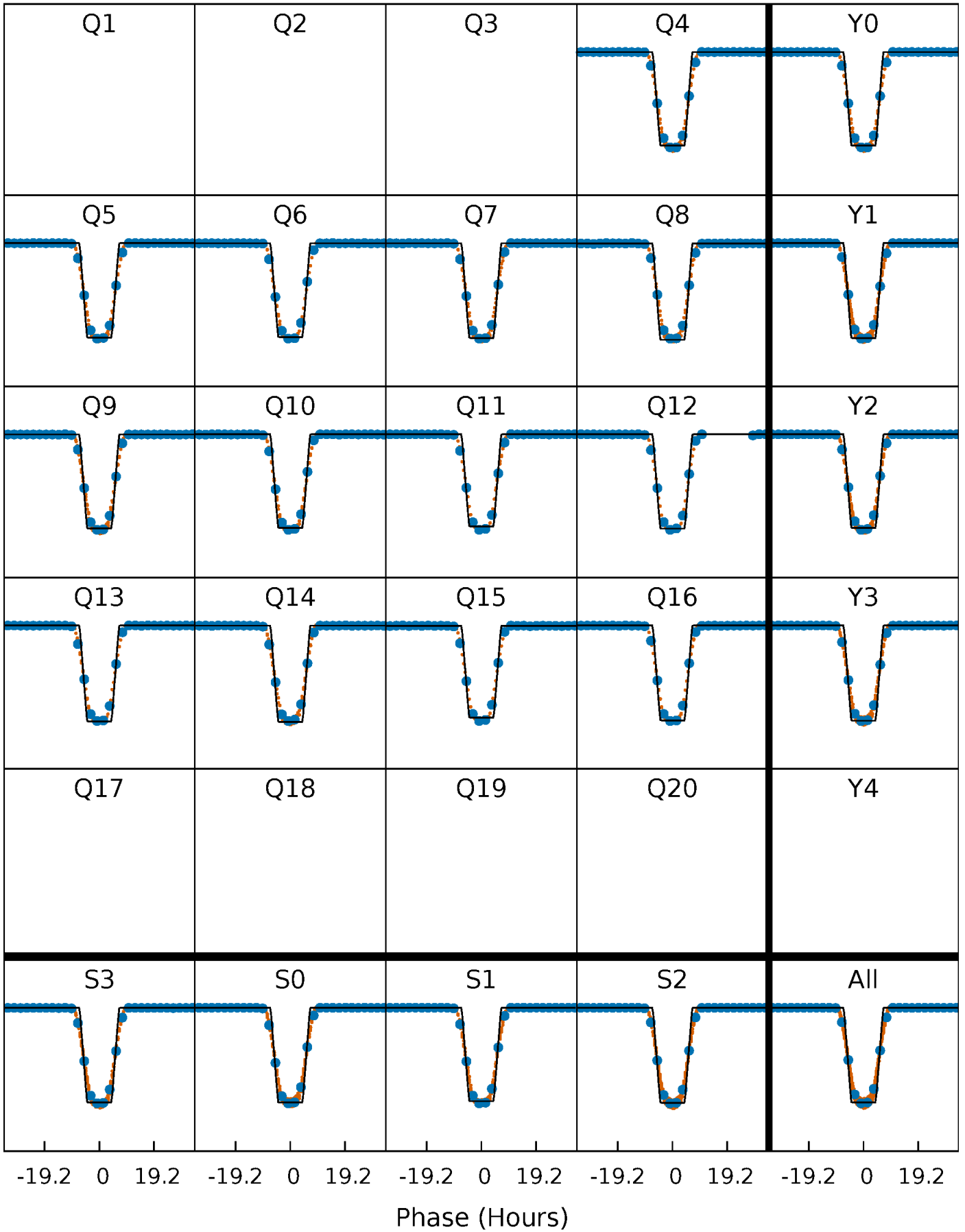
DV Quarter-Phased Transit Curves

TCE 005392897-01 P= 42.399297 Days $T_0=142.465127$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

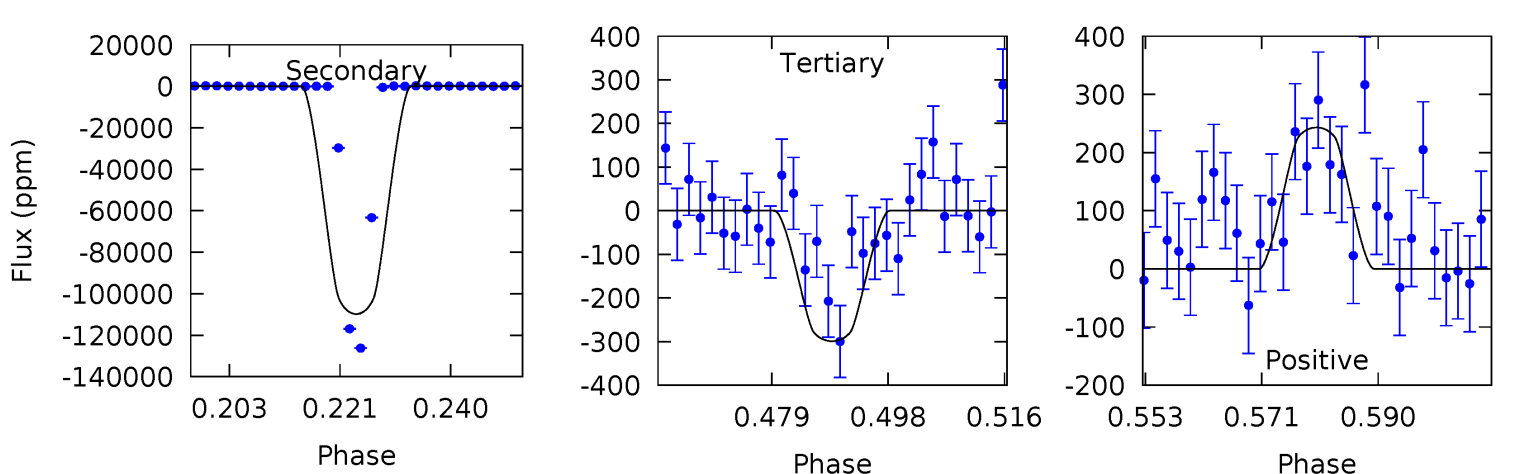
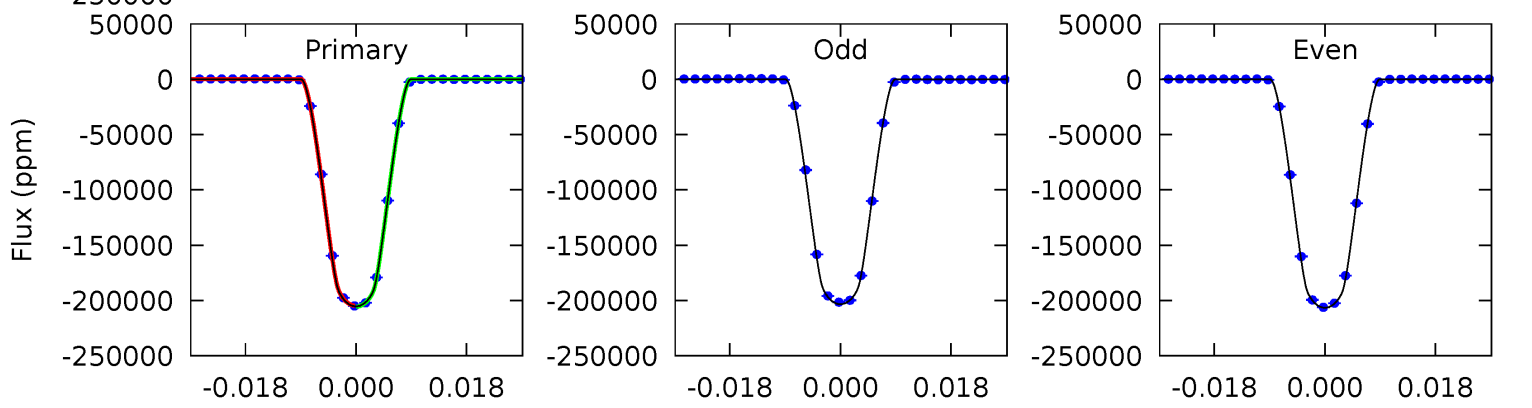
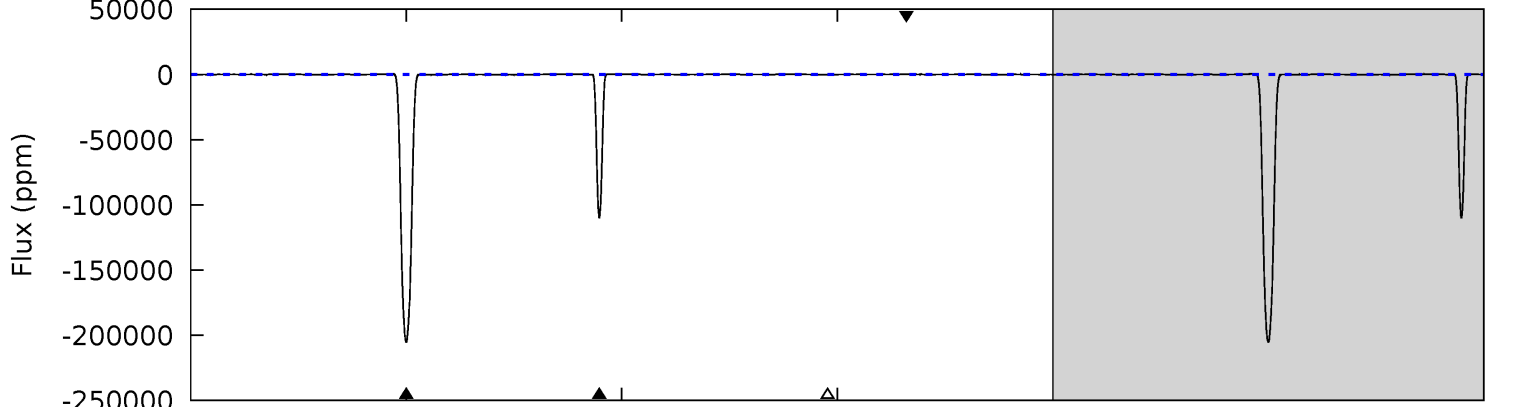
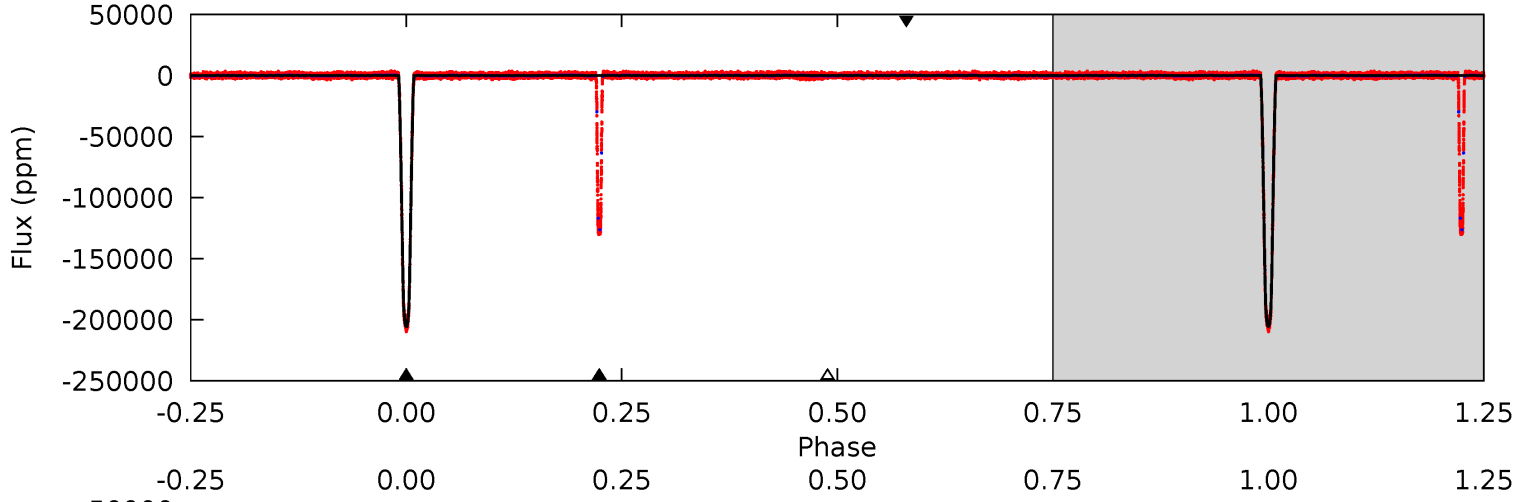
TCE 005392897-01 P= 42.399664 Days $T_0=142.458302$ (BKJD)



DV Model-Shift Uniqueness Test

005392897-01, P = 42.399297 Days, E = 142.465127 Days

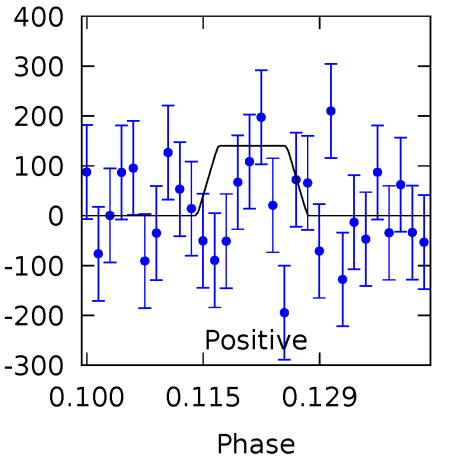
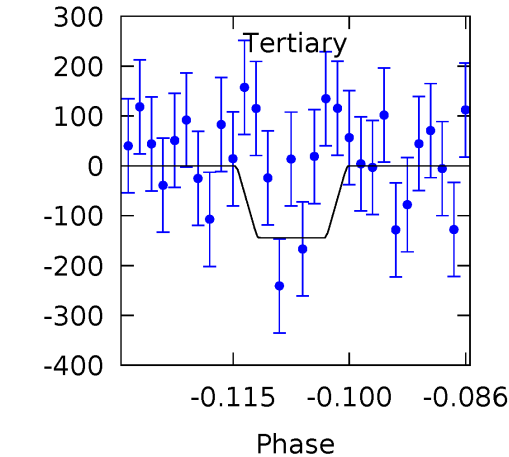
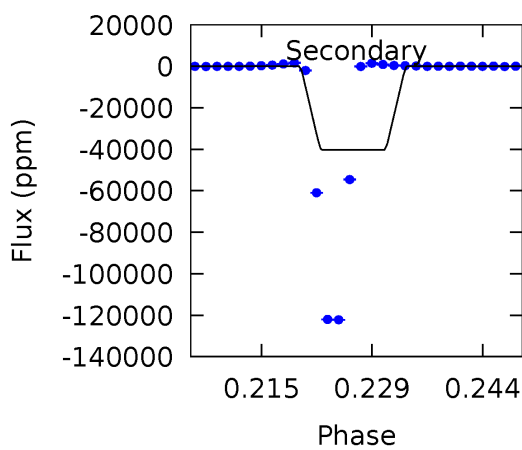
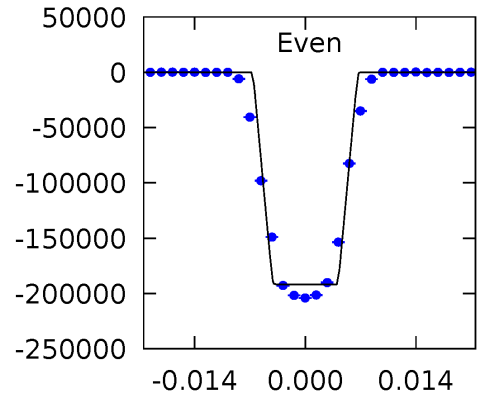
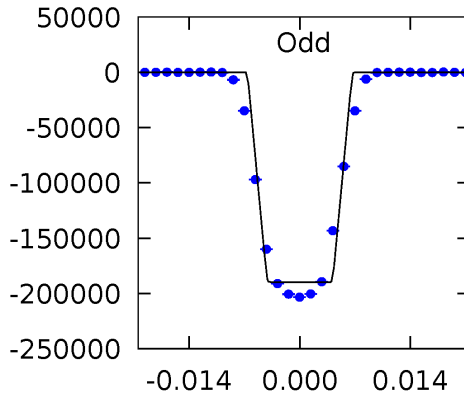
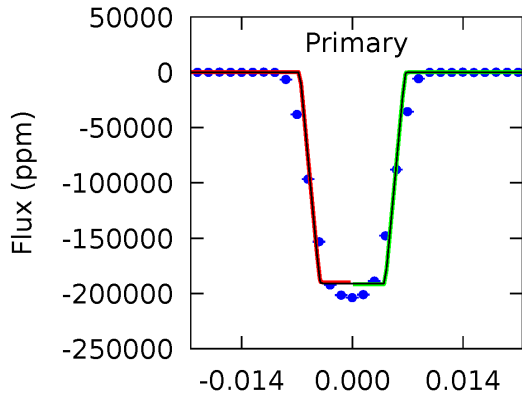
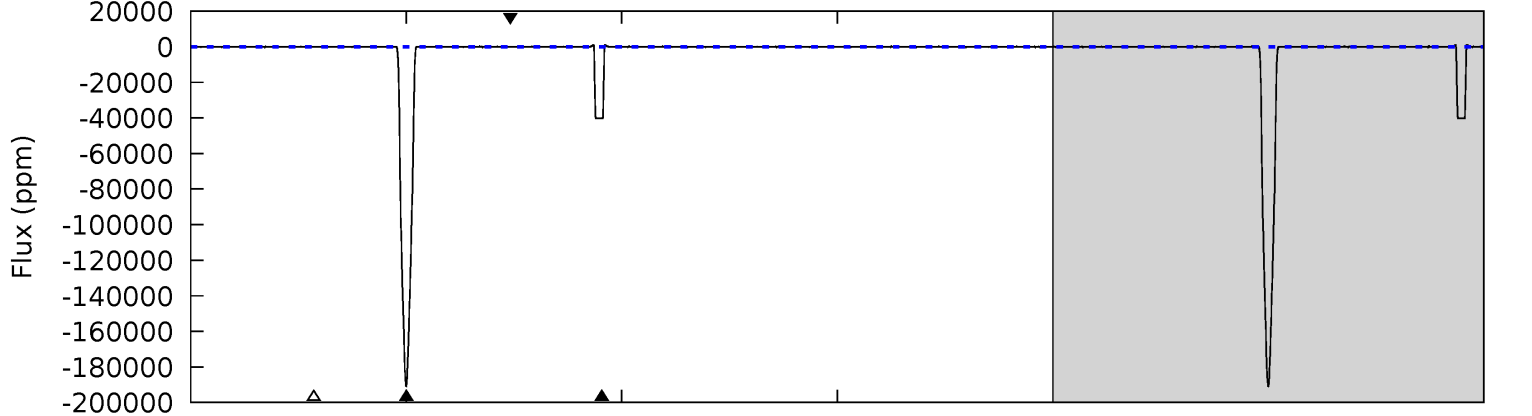
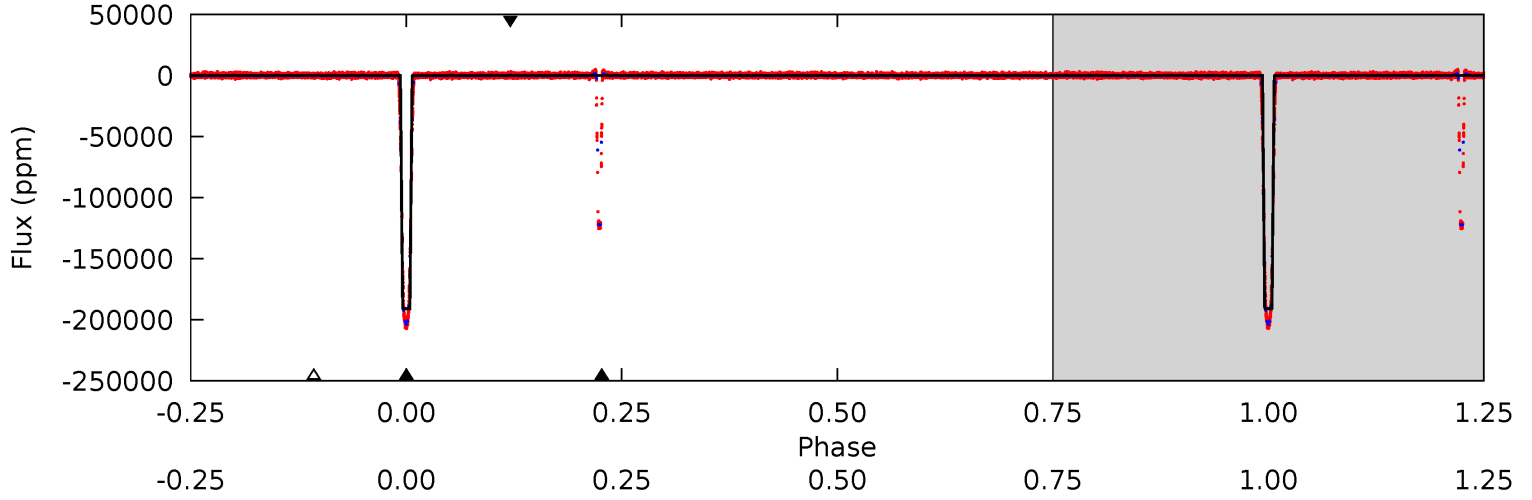
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 6035 | 3228 | 8.79 | 7.15 | 4.91 | 2.36 | 3.05 | 6026 | 6028 | 3220 | 3221 | 46.9 | 0.90 | 0.00 | 0 |



Alt Model-Shift Uniqueness Test

005392897-01, P = 42.399664 Days, E = 142.458302 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4656 | 983.3 | 3.53 | 3.42 | 4.96 | 2.45 | 0.96 | 4653 | 4653 | 979.7 | 979.8 | 24.4 | 1.00 | 0.01 | 3.13 |



Stellar Parameters For KIC 005392897

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6153^{+191}_{-233} | $4.487^{+0.052}_{-0.208}$ | $-0.220^{+0.250}_{-0.300}$ | $0.962^{+0.308}_{-0.096}$ | $1.036^{+0.139}_{-0.139}$ | $1.641^{+0.451}_{-0.851}$ |
| | +3%/-4% | +1%/-5% | +114%/-136% | +32%/-10% | +13%/-13% | +27%/-52% |
| Source | KIC0 | 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 005392897-01 / KOI 3342.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|------------------|-------------------------|-------------------|----------------------|----------------------|
| DV | -109805 ± 34 | $44.98^{+8.04}_{-2.69}$ | 771^{+54}_{-40} | 5595^{+169}_{-187} | 1870^{+247}_{-484} |
| Alt. | -40307 ± 41 | $48.01^{+8.30}_{-3.40}$ | 774^{+60}_{-40} | 4370^{+121}_{-122} | 567^{+72}_{-142} |

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

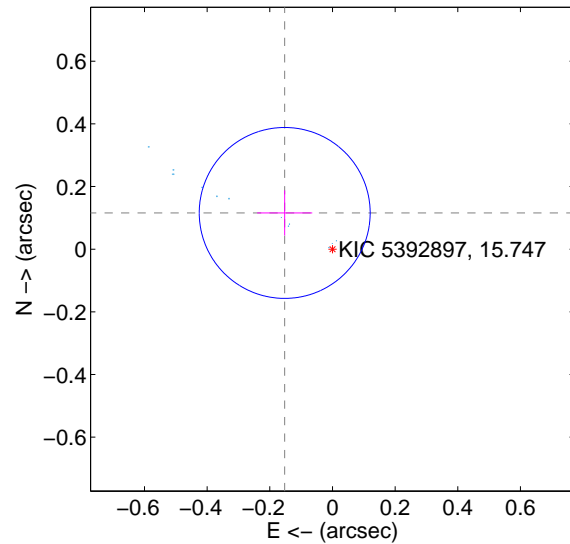
Supplemental centroid analysis for 005392897-01. Kepler magnitude: 15.75. Transit SNR 2527.17

There are 12 quarters with good PRF difference image offsets

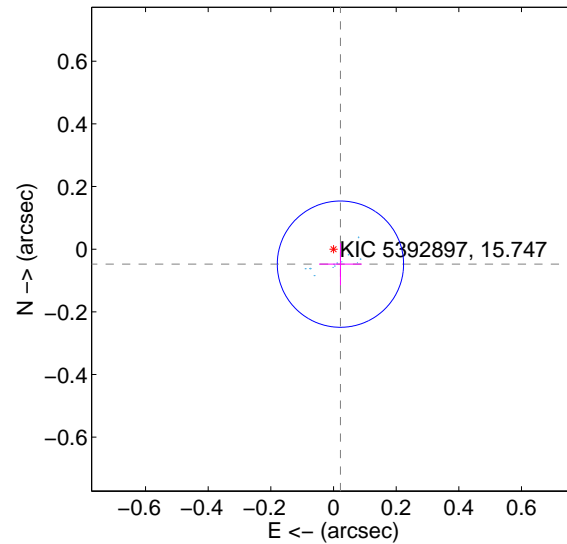
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.191 ± 0.091 | 2.10 | 0.152 ± 0.088 | 0.116 ± 0.072 |
| PRF-fit source offset from KIC position | 0.053 ± 0.067 | 0.78 | -0.022 ± 0.068 | -0.048 ± 0.067 |
| photometric centroid source offset | 0.64 ± 0.00 | 265.96 | -0.15 ± 0.00 | -0.62 ± 0.00 |

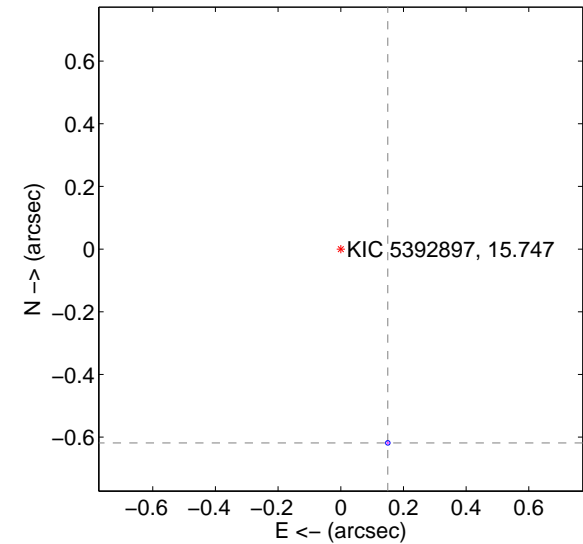
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



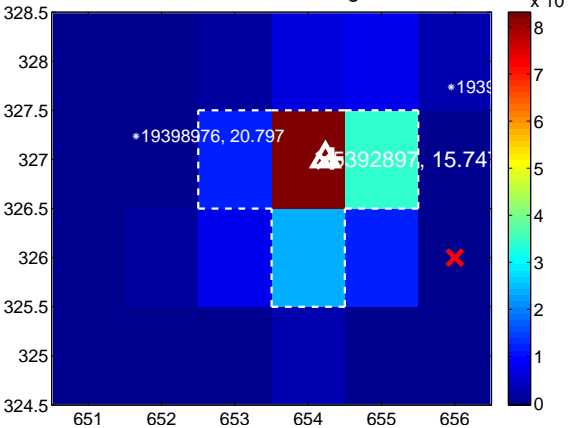
Q3 no difference image



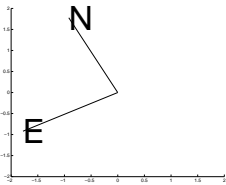
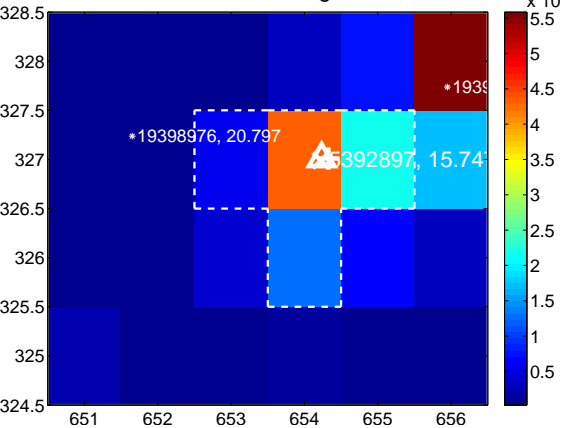
Q3 no OOT image



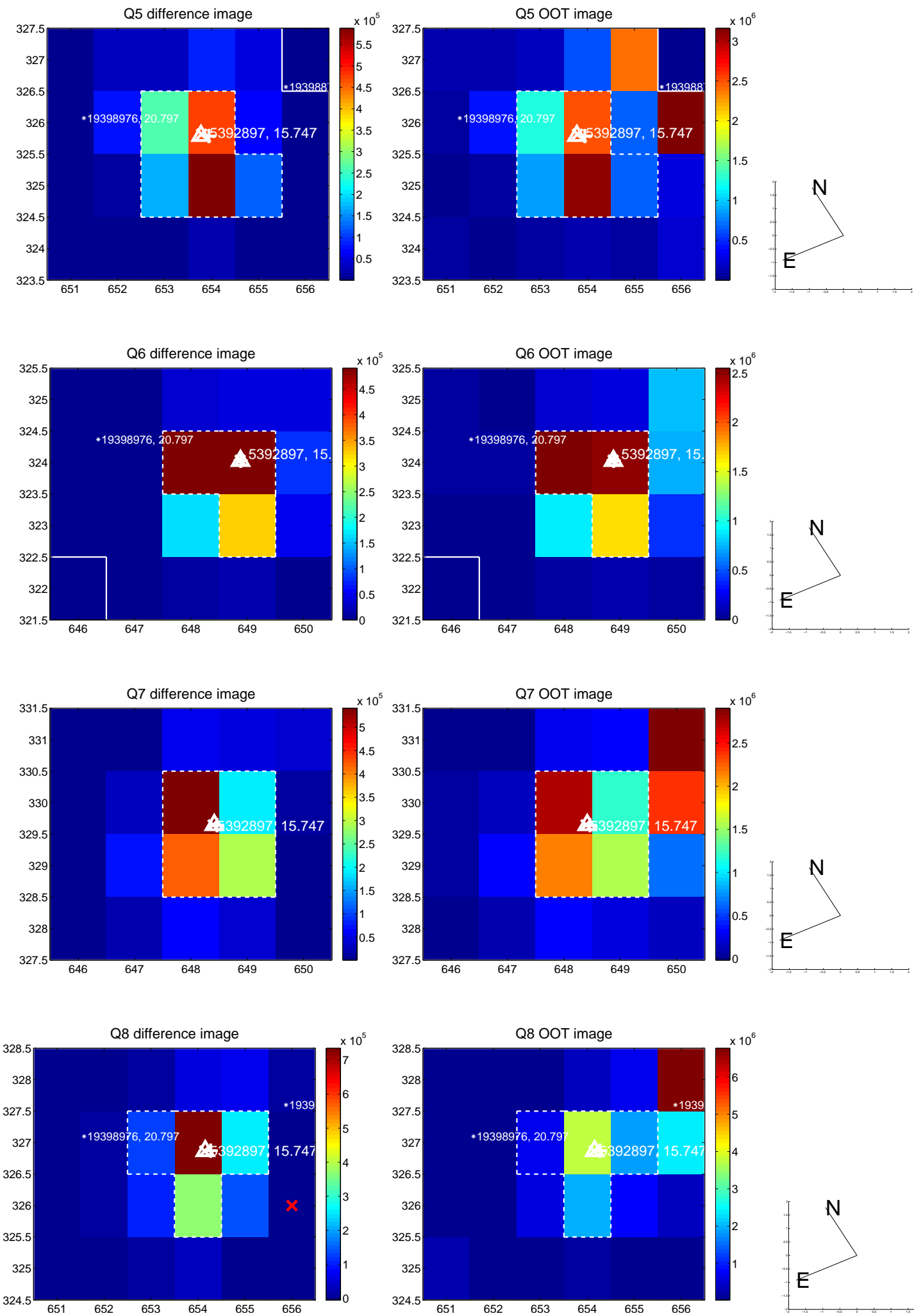
Q4 difference image



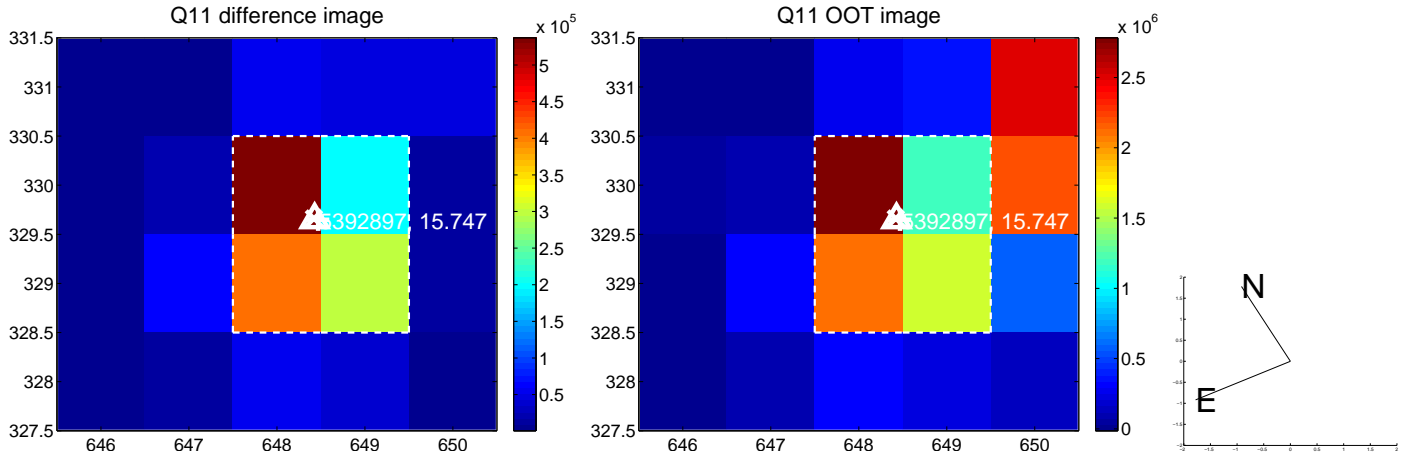
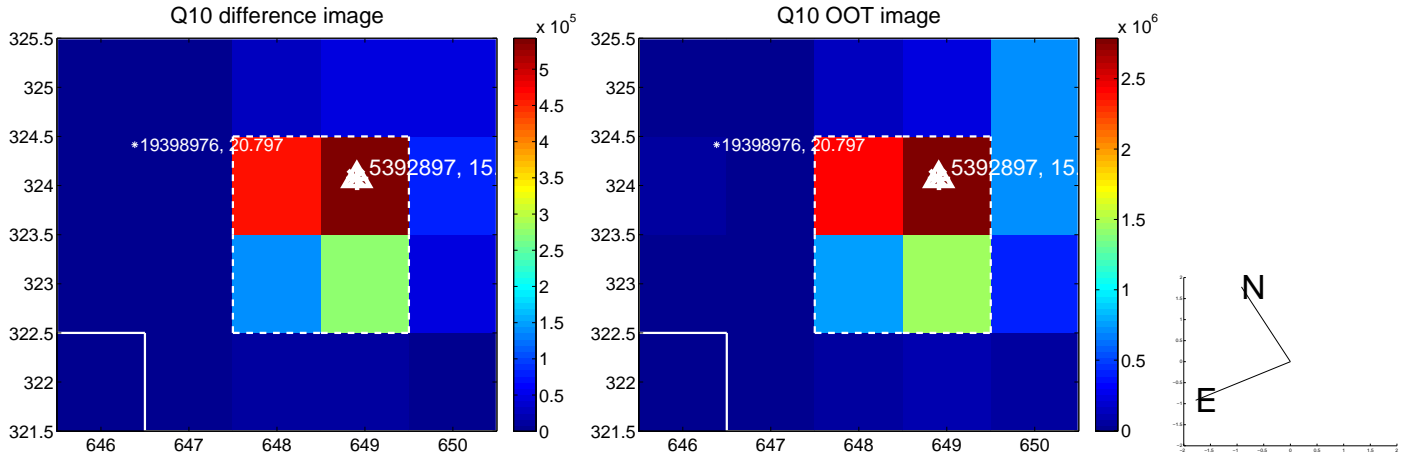
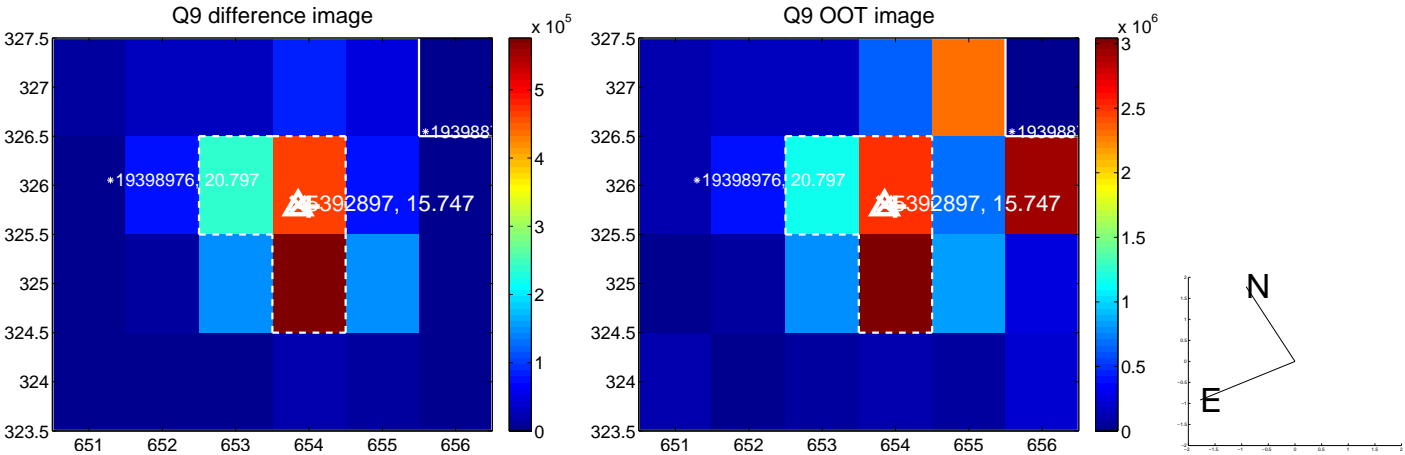
Q4 OOT image



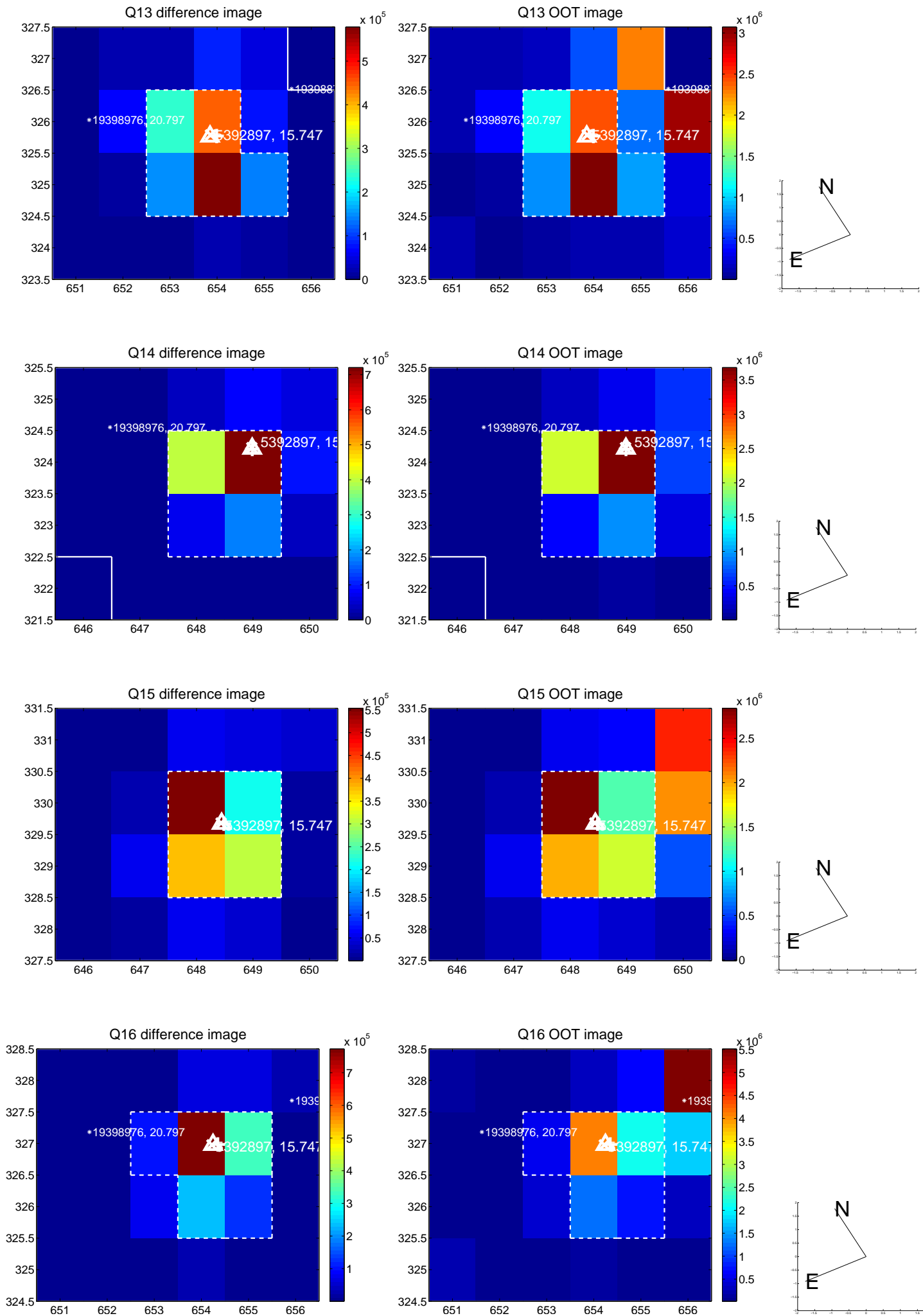
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



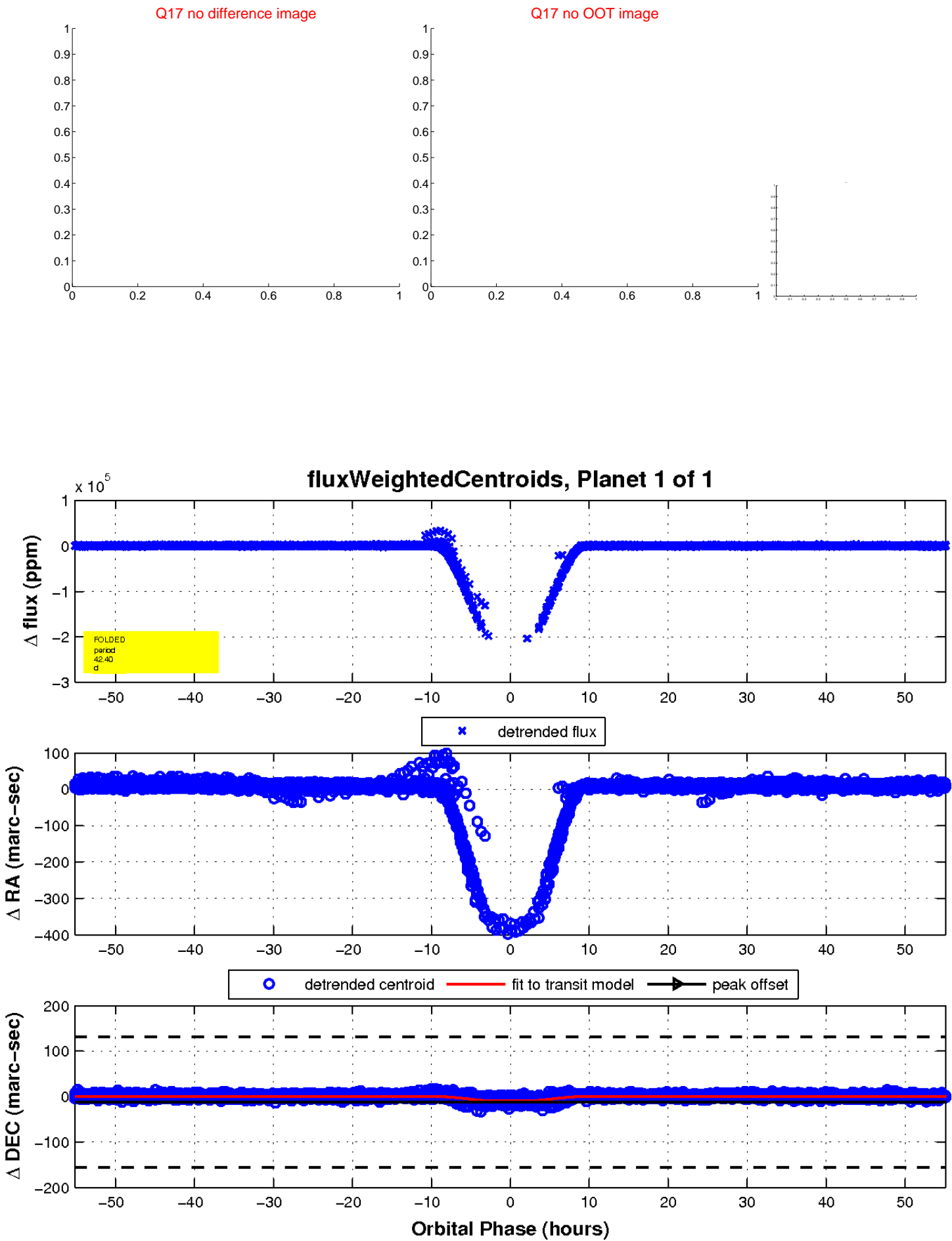
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

