

KIC 007368664

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 007368664-01 | OBS | 0614.01 | 12.874716 | 144.272894 | 3845.6 | 2.259 | 217.3 | 219.5 | 1.42 | 5963 | 11.38 | 173.82 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007368664-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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.

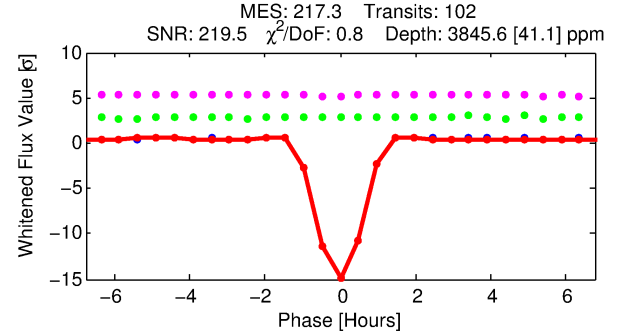
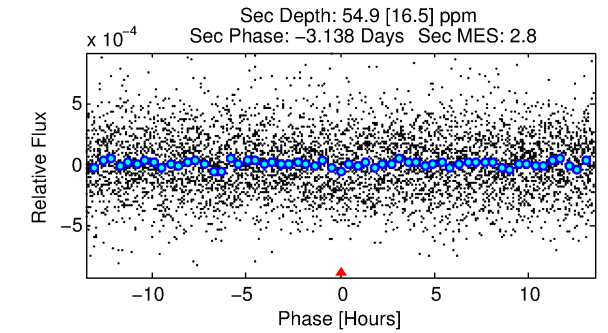
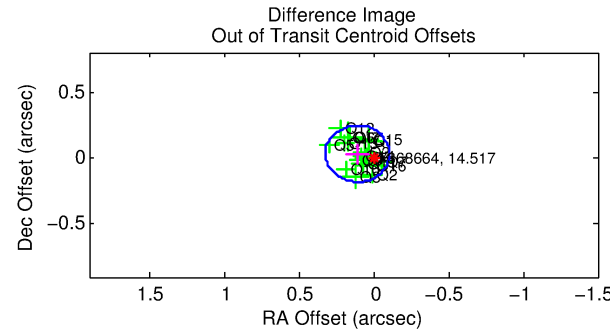
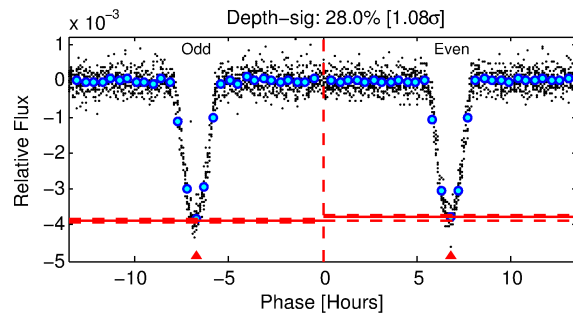
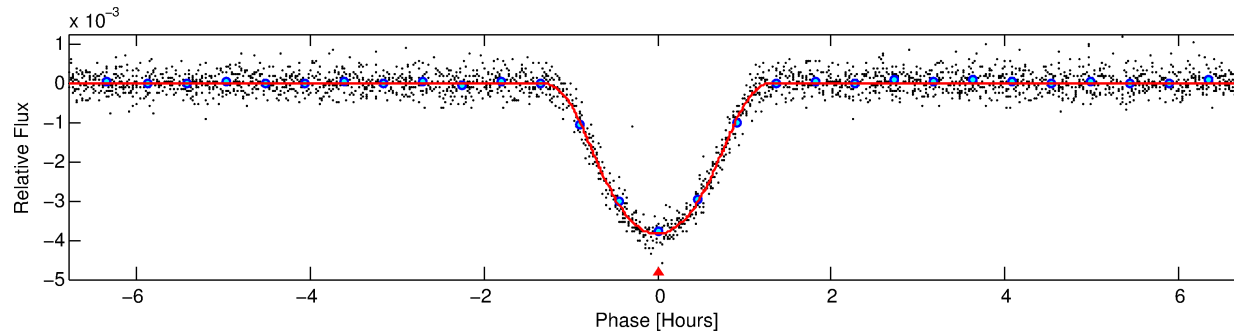
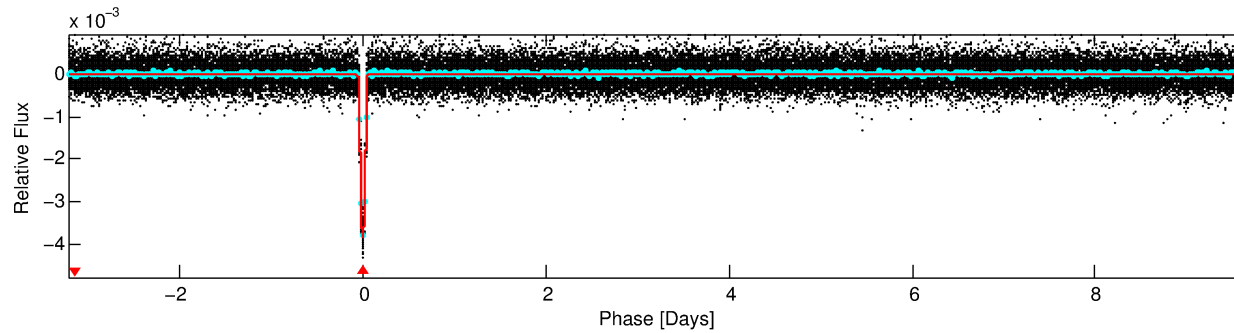
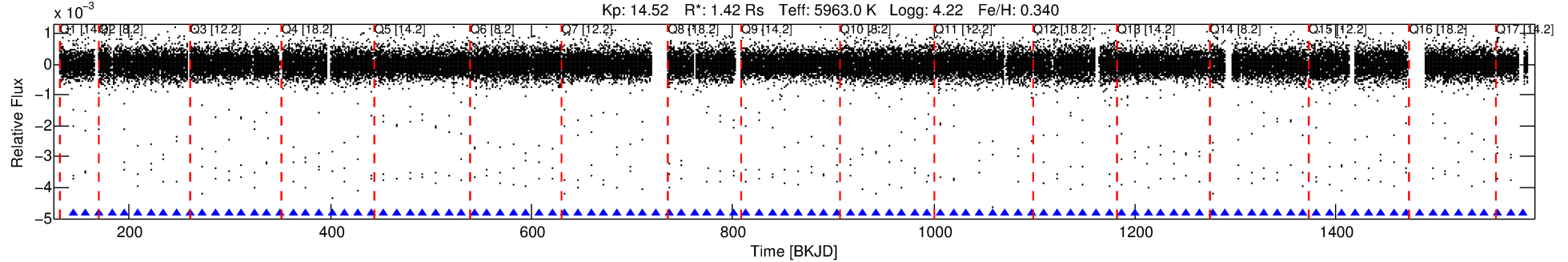
Ephemeris Match Information For 007368664-01

No Significant Match Found

DV One-Page Summary

KIC: 7368664 Candidate: 1 of 1 Period: 12.875 d
KOI: K00614.01 Name: Kepler-434b Corr: 0.995

Kp: 14.52 R*: 1.42 Rs Teff: 5963.0 K Logg: 4.22 Fe/H: 0.340



DV Fit Results:

Period = 12.87472 [0.00000] d
Epoch = 144.2729 [0.0003] BKJD
Rp/R* = 0.0732 [0.0022]
a/R* = 22.77 [0.50]
b = 0.94 [0.01]
Seff = 173.82 [44.20]
Teq = 926 [59] K
Rp = 11.38 [2.02] Re
a = 0.1150 [0.0184] AU
Ag = 3.08 [1.22] [1.71σ]
Teffp = 1897 [148] K [6.09σ]

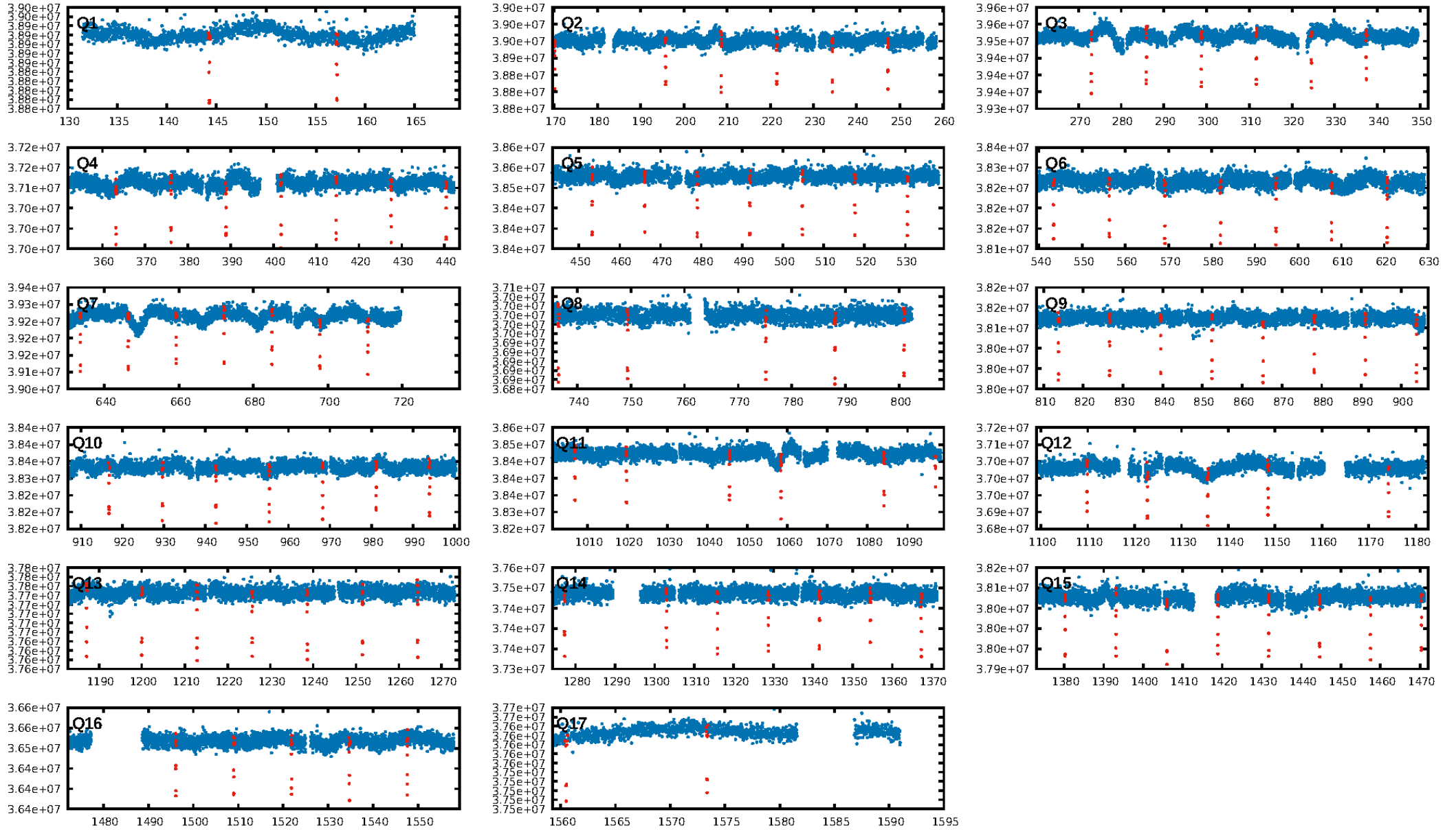
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 90.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [98/98]
GhostDiagnostic-chr: 6.521
Centroid-sig: 0.1%
Centroid-so: 0.069 arcsec [1.21σ]
OotOffset-rm: 0.112 arcsec [1.58σ]
KicOffset-rm: 0.102 arcsec [1.46σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

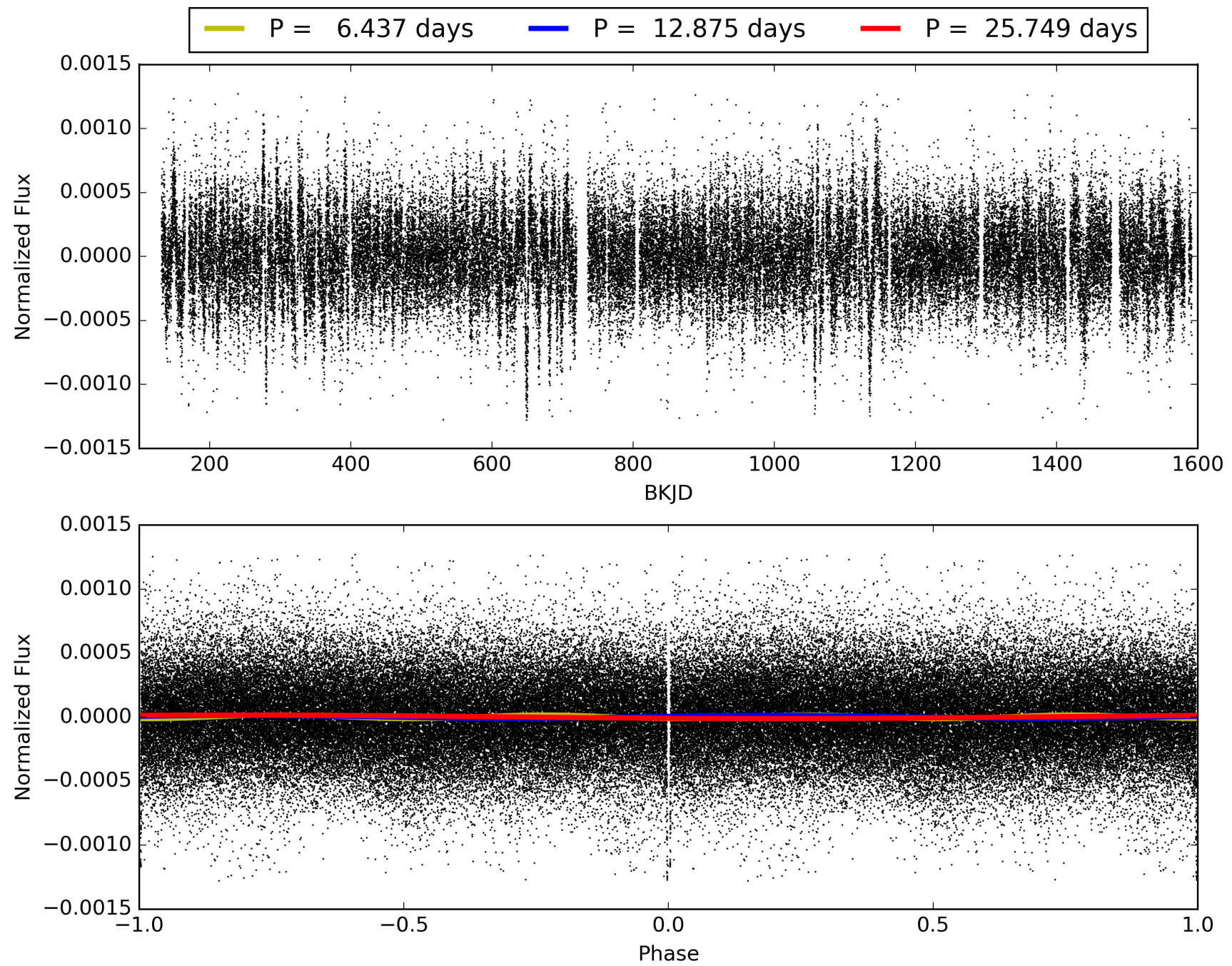
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:27:44 Z

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

TCE 007368664-01, PDC Light Curves

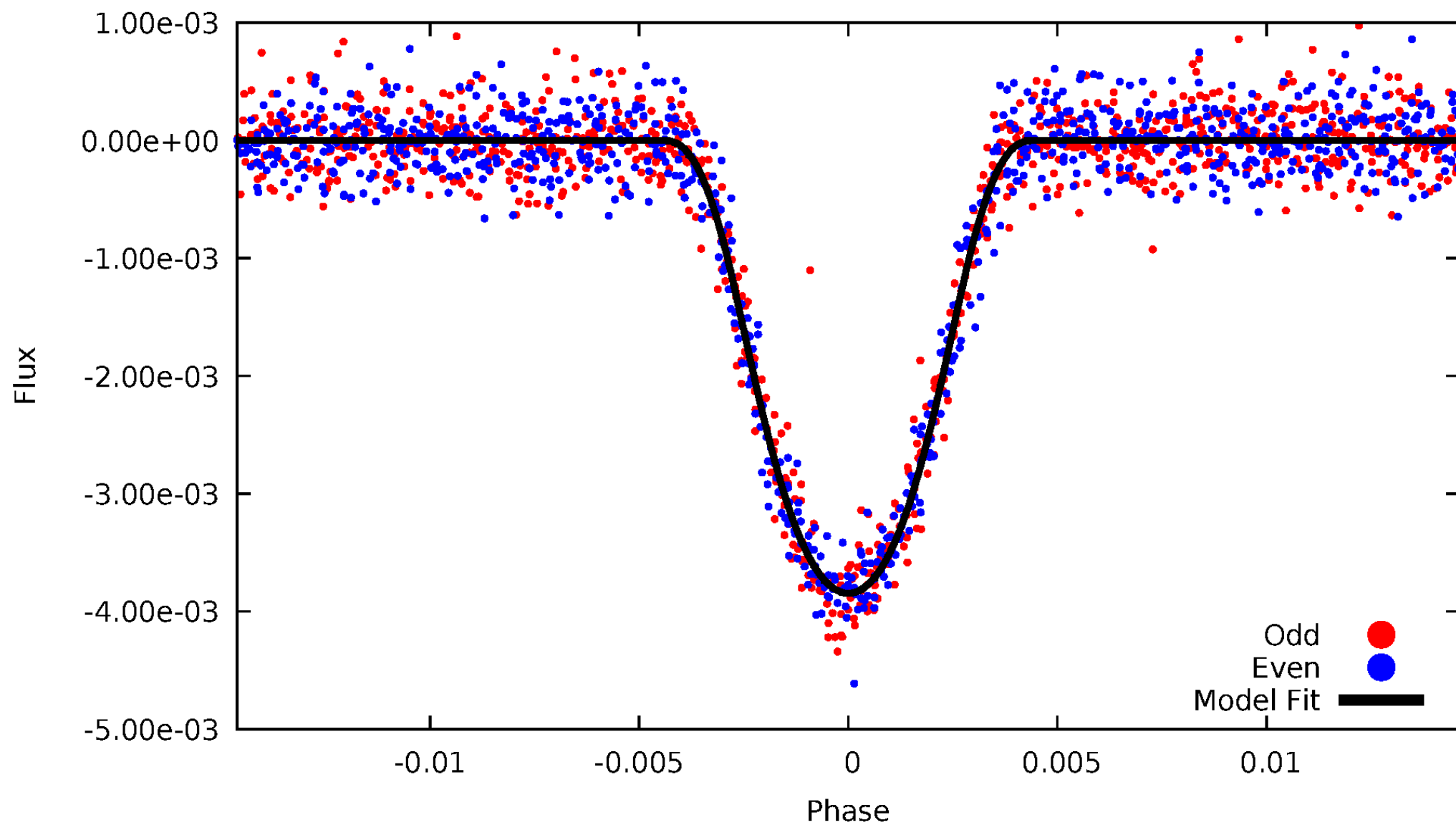


TCE 007368664-01



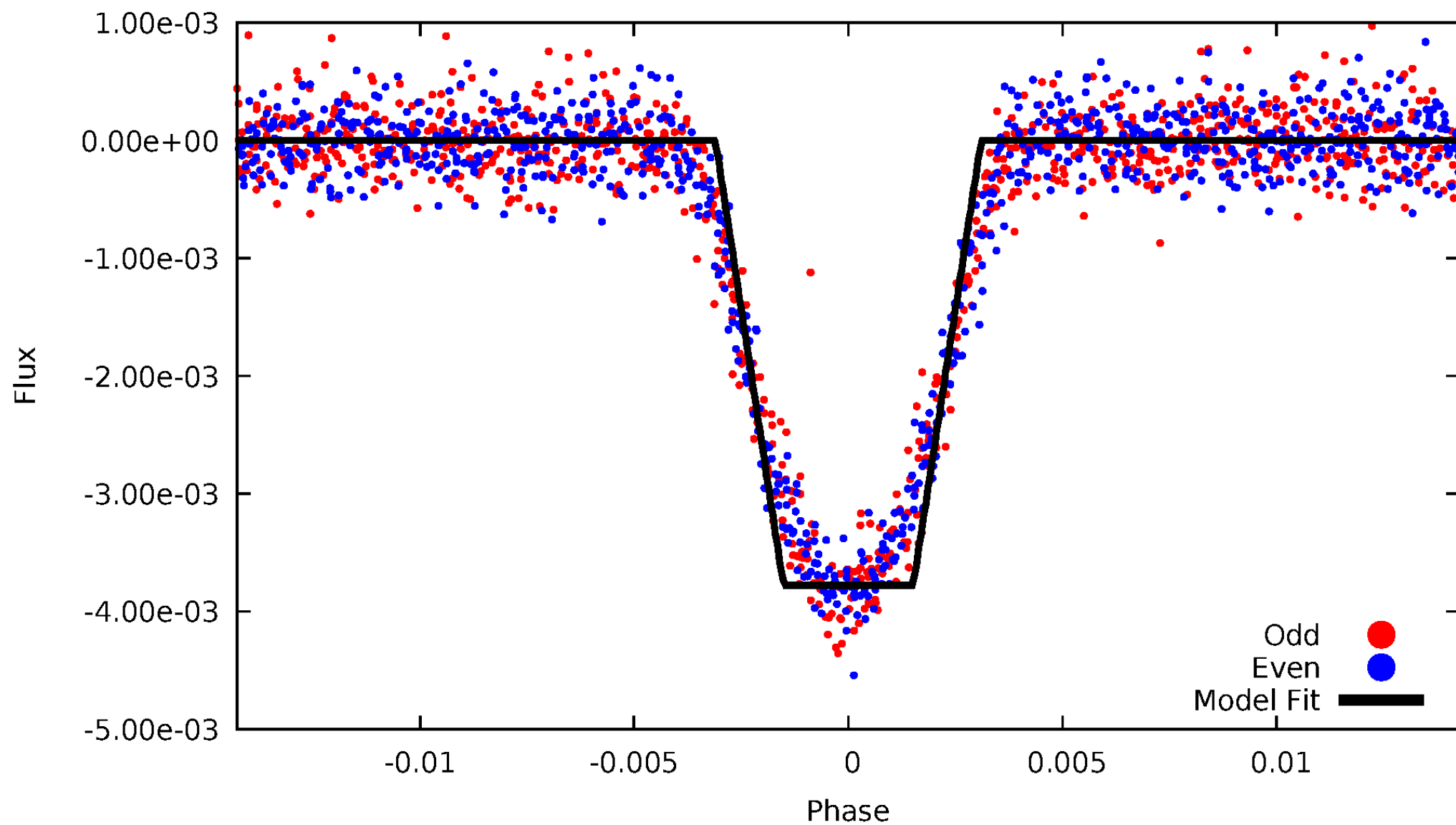
DV Odd/Even

TCE 007368664-01



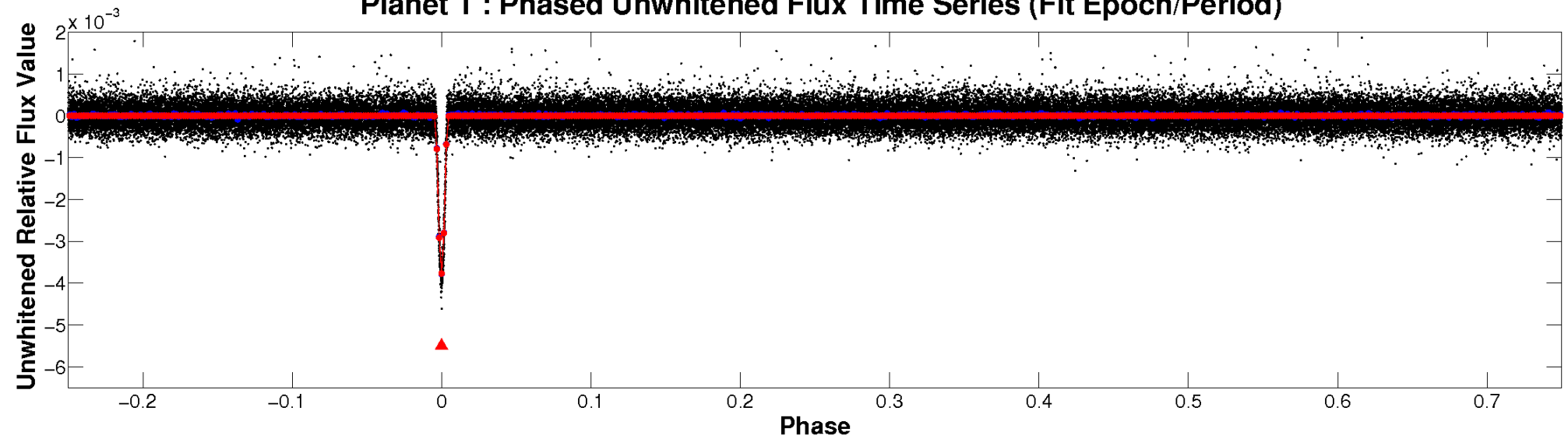
ALT Odd/Even

TCE 007368664-01

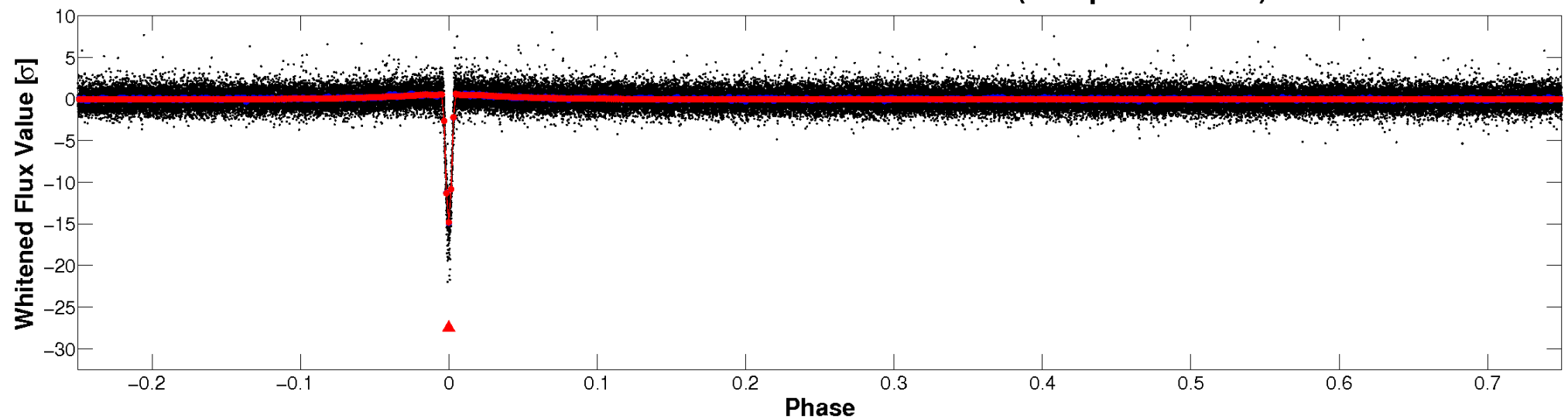


Non-Whitened Vs. Whitened Light Curve

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

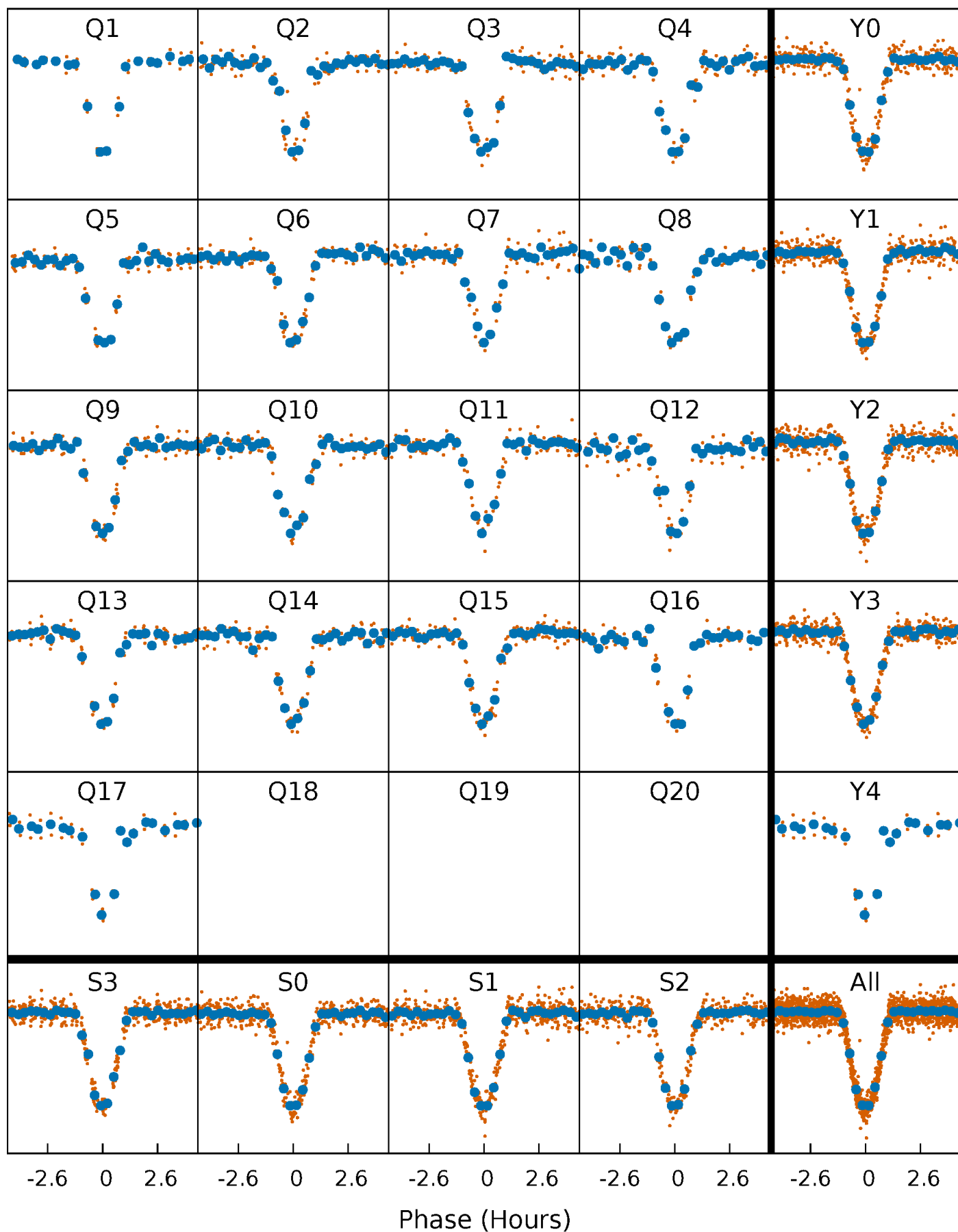


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



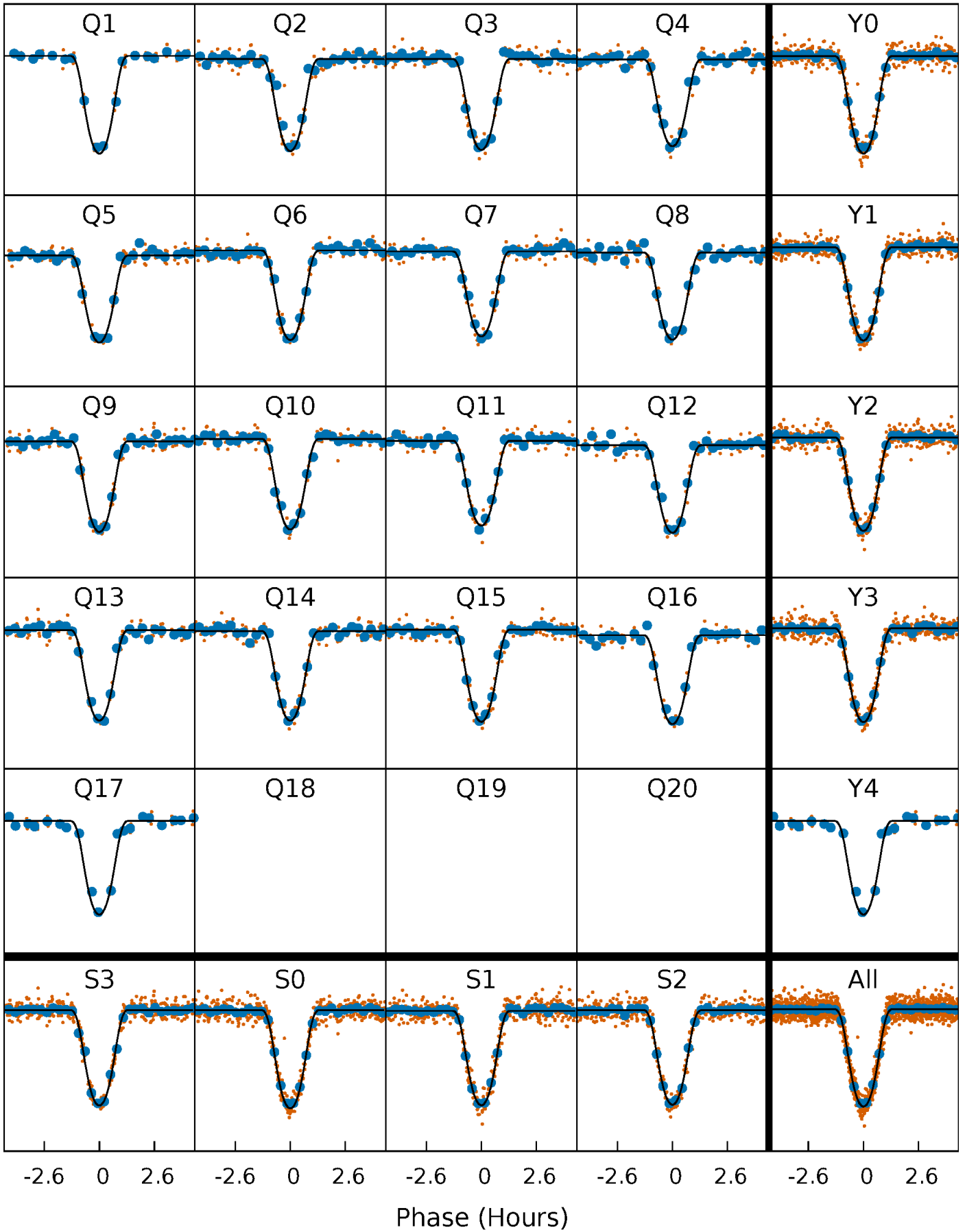
PDC Quarter-Phased Transit Curves

TCE 007368664-01 P= 12.874716 Days $T_0=144.272894$ (BKJD)



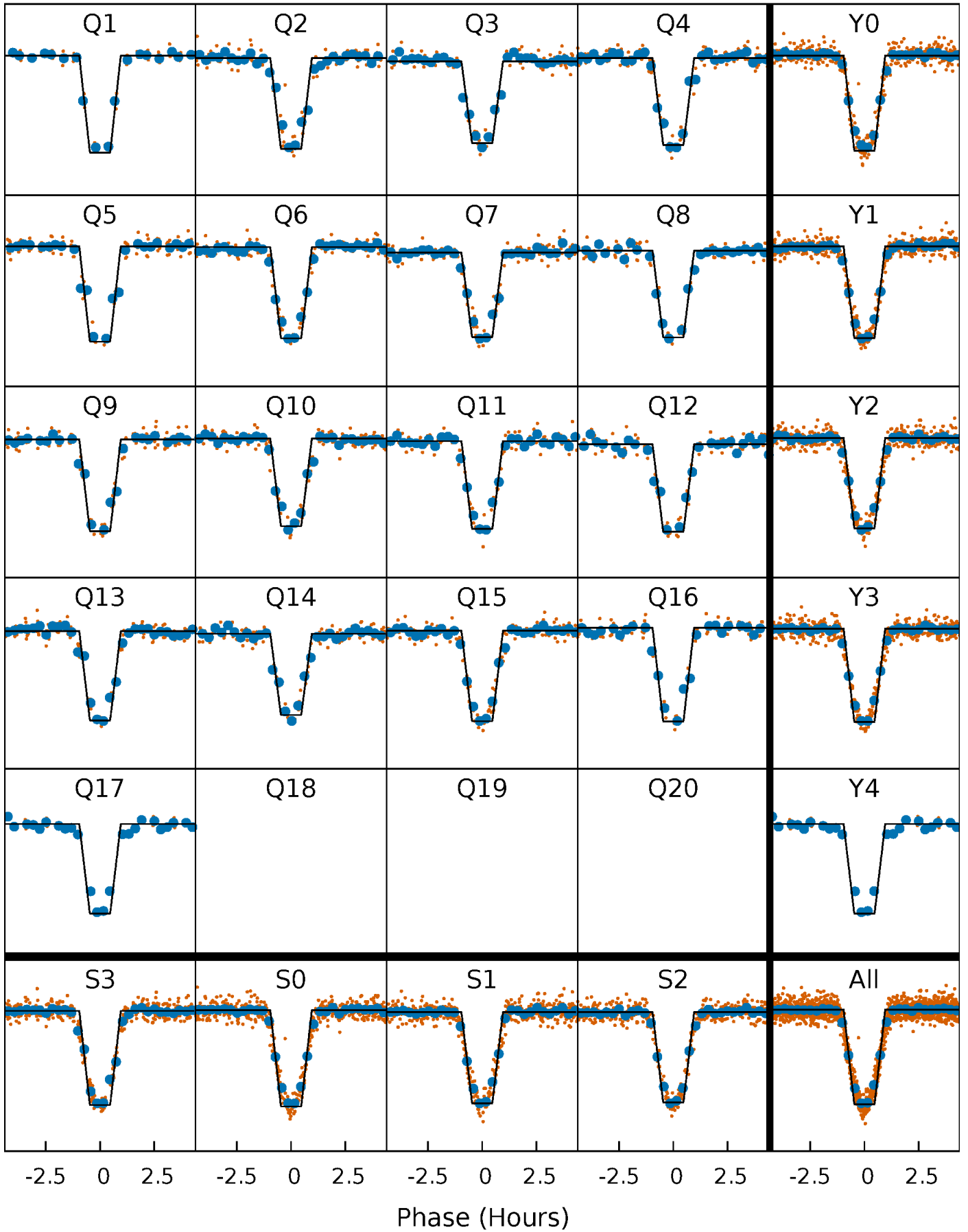
DV Quarter-Phased Transit Curves

TCE 007368664-01 P= 12.874716 Days $T_0=144.272894$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

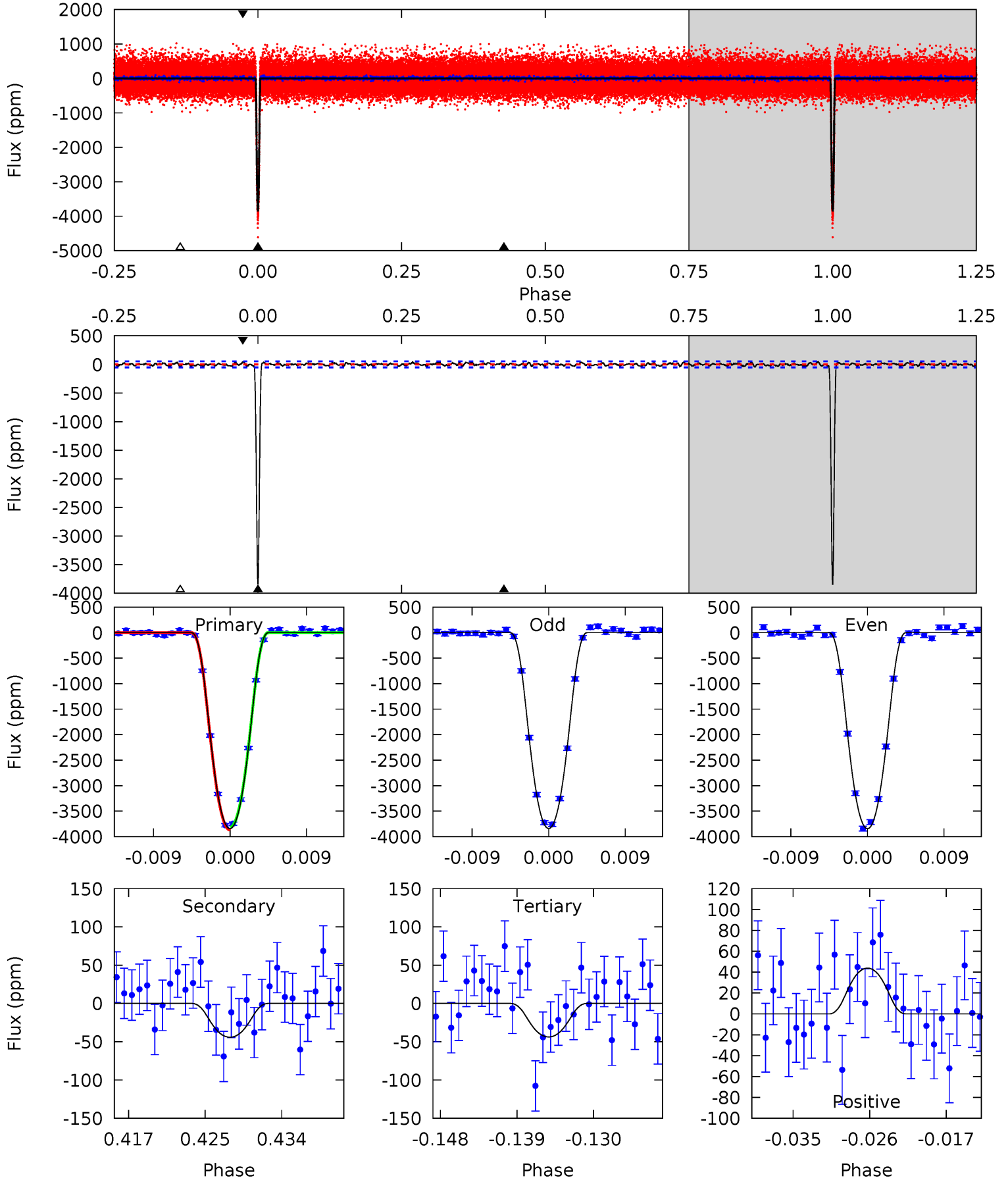
TCE 007368664-01 P= 12.874724 Days $T_0=144.272500$ (BKJD)



DV Model-Shift Uniqueness Test

007368664-01, $P = 12.874716$ Days, $E = 131.398178$ Days

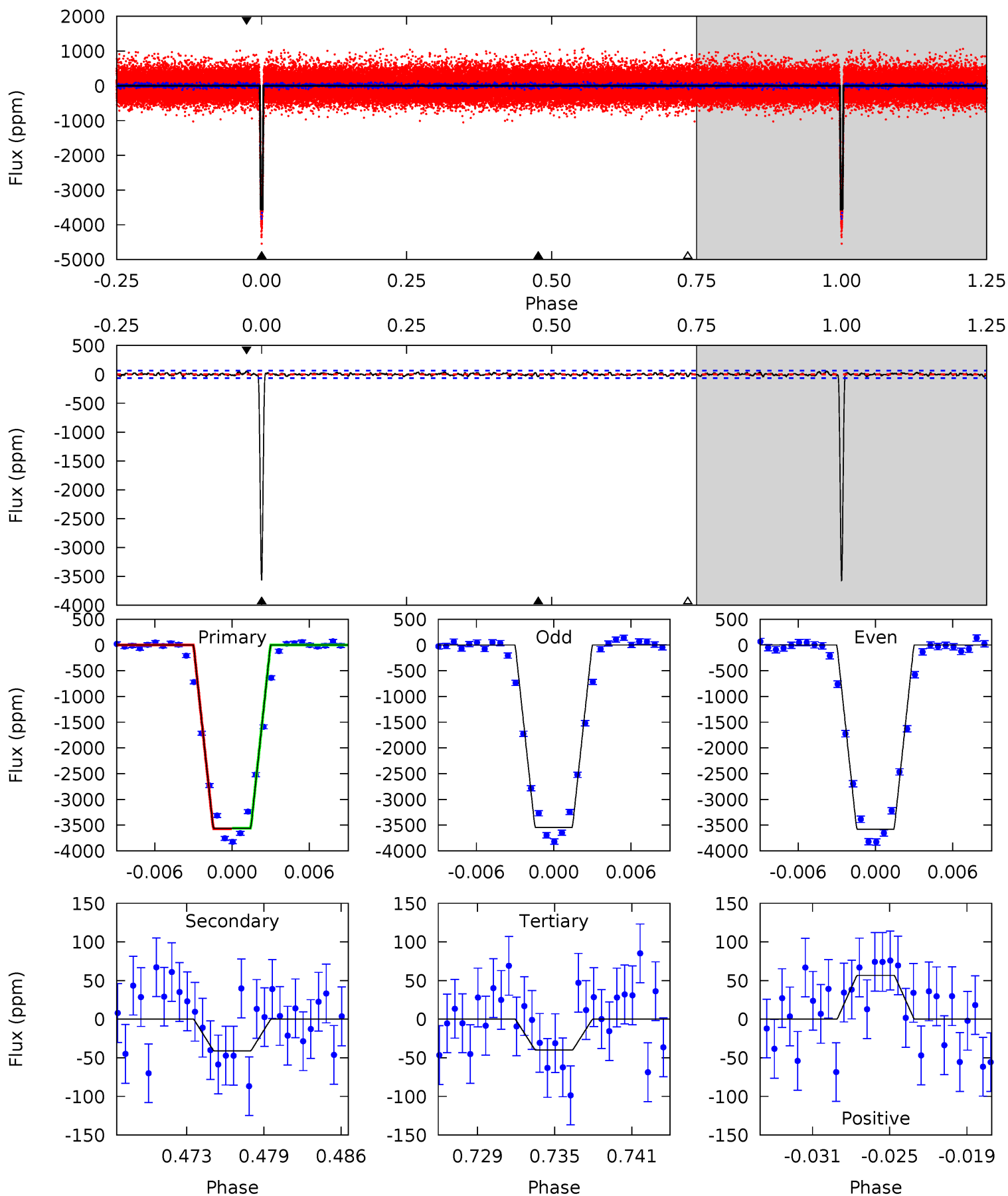
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 363.2 | 4.17 | 4.13 | 4.14 | 5.05 | 2.62 | 1.46 | 359.1 | 359.1 | 0.04 | 0.03 | 0.15 | 1.00 | 0.01 | 2.50 |



Alt Model-Shift Uniqueness Test

007368664-01, P = 12.874724 Days, E = 131.397776 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 279.8 | 3.21 | 3.14 | 4.45 | 5.12 | 2.74 | 1.13 | 276.6 | 275.3 | 0.07 | -1.25 | 1.35 | 1.00 | 0.02 | 0.55 |



Stellar Parameters For KIC 007368664

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5963^{+80}_{-80} | $4.218^{+0.143}_{-0.117}$ | $0.340^{+0.100}_{-0.150}$ | $1.424^{+0.249}_{-0.249}$ | $1.220^{+0.086}_{-0.086}$ | $0.595^{+0.409}_{-0.208}$ |
| | +1%/-1% | +3%/-3% | +29%/-44% | +17%/-17% | +7%/-7% | +69%/-35% |
| Source | SPE76 | SPE76 | SPE76 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007368664-01 / KOI 0614.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|--------------|-------------------------|--------------------|----------------------|---------------------------|
| DV | -44 ± 11 | $11.29^{+1.16}_{-1.07}$ | 1291^{+59}_{-61} | 2563^{+91}_{-100} | $2.443^{+0.855}_{-0.665}$ |
| Alt. | -41 ± 13 | $9.50^{+1.08}_{-0.97}$ | 1292^{+66}_{-63} | 2663^{+119}_{-139} | $3.184^{+1.414}_{-1.085}$ |

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

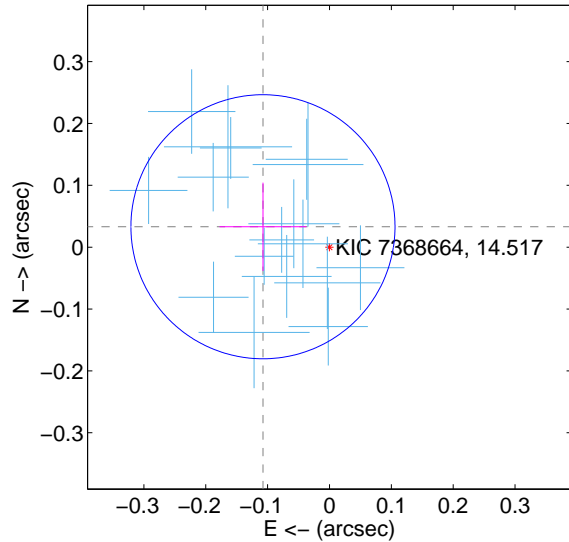
Supplemental centroid analysis for 007368664-01. Kepler magnitude: 14.52. Transit SNR 219.48

There are 17 quarters with good PRF difference image offsets

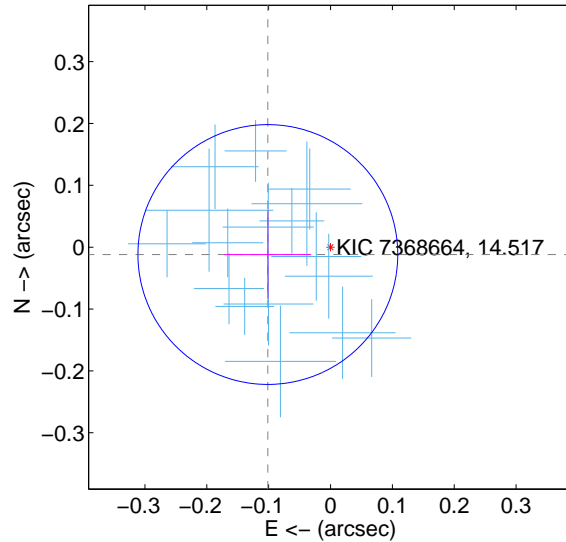
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.112 ± 0.071 | 1.58 | 0.108 ± 0.070 | 0.033 ± 0.071 |
| PRF-fit source offset from KIC position | 0.102 ± 0.070 | 1.46 | 0.101 ± 0.070 | -0.012 ± 0.071 |
| photometric centroid source offset | 0.07 ± 0.06 | 1.21 | 0.00 ± 0.06 | -0.07 ± 0.06 |

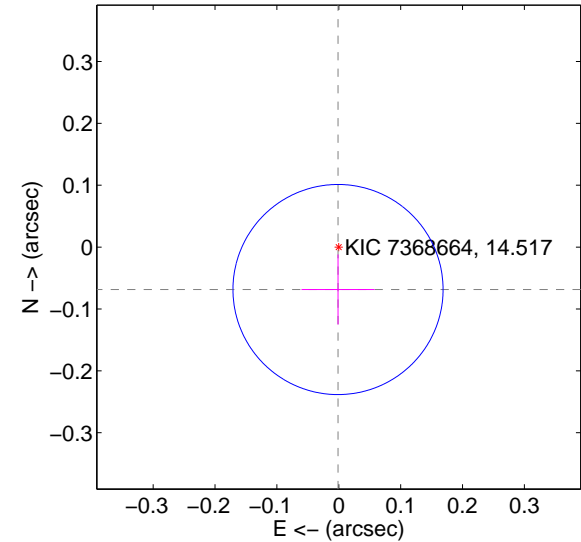
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

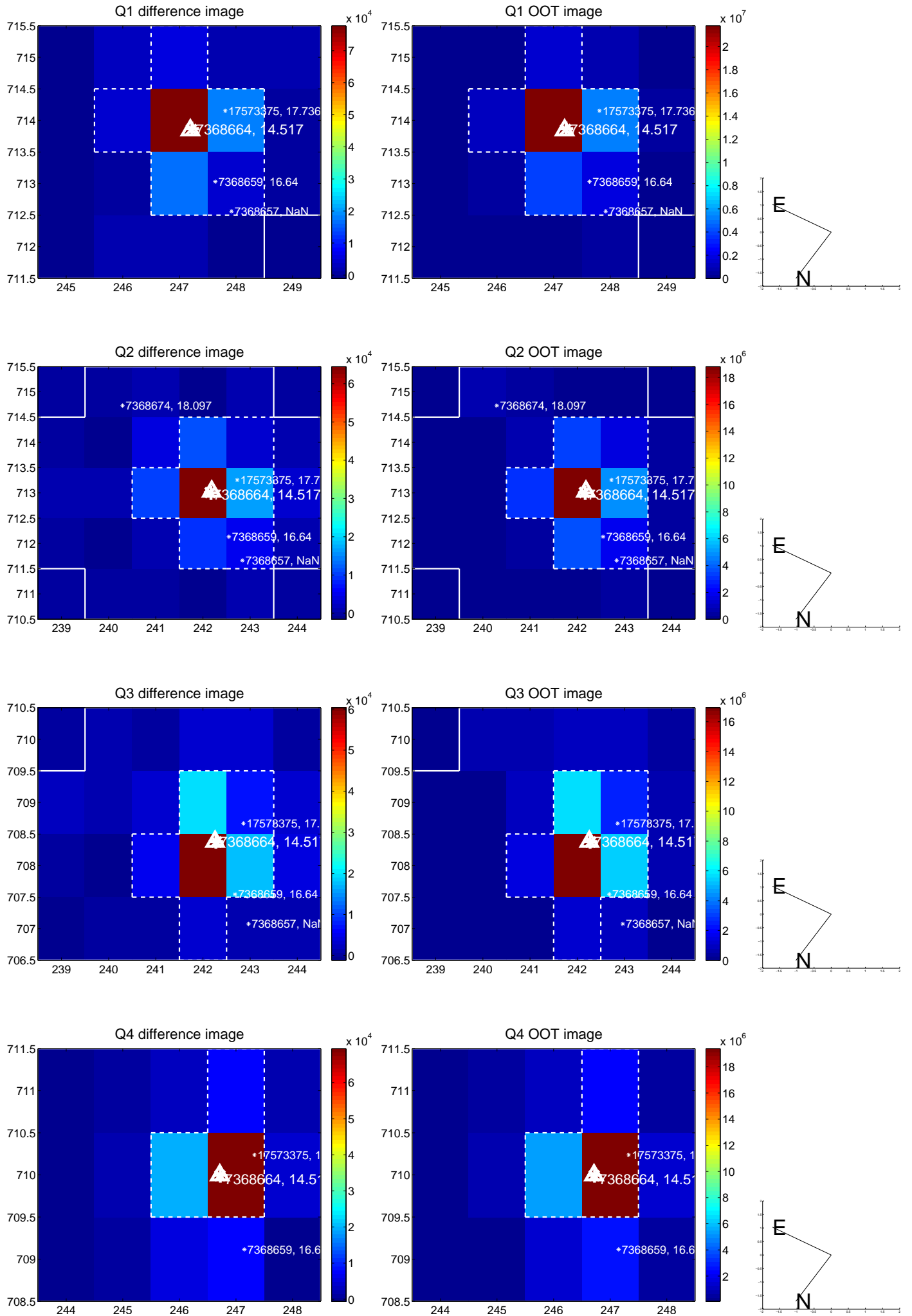


offset from photometric centroids

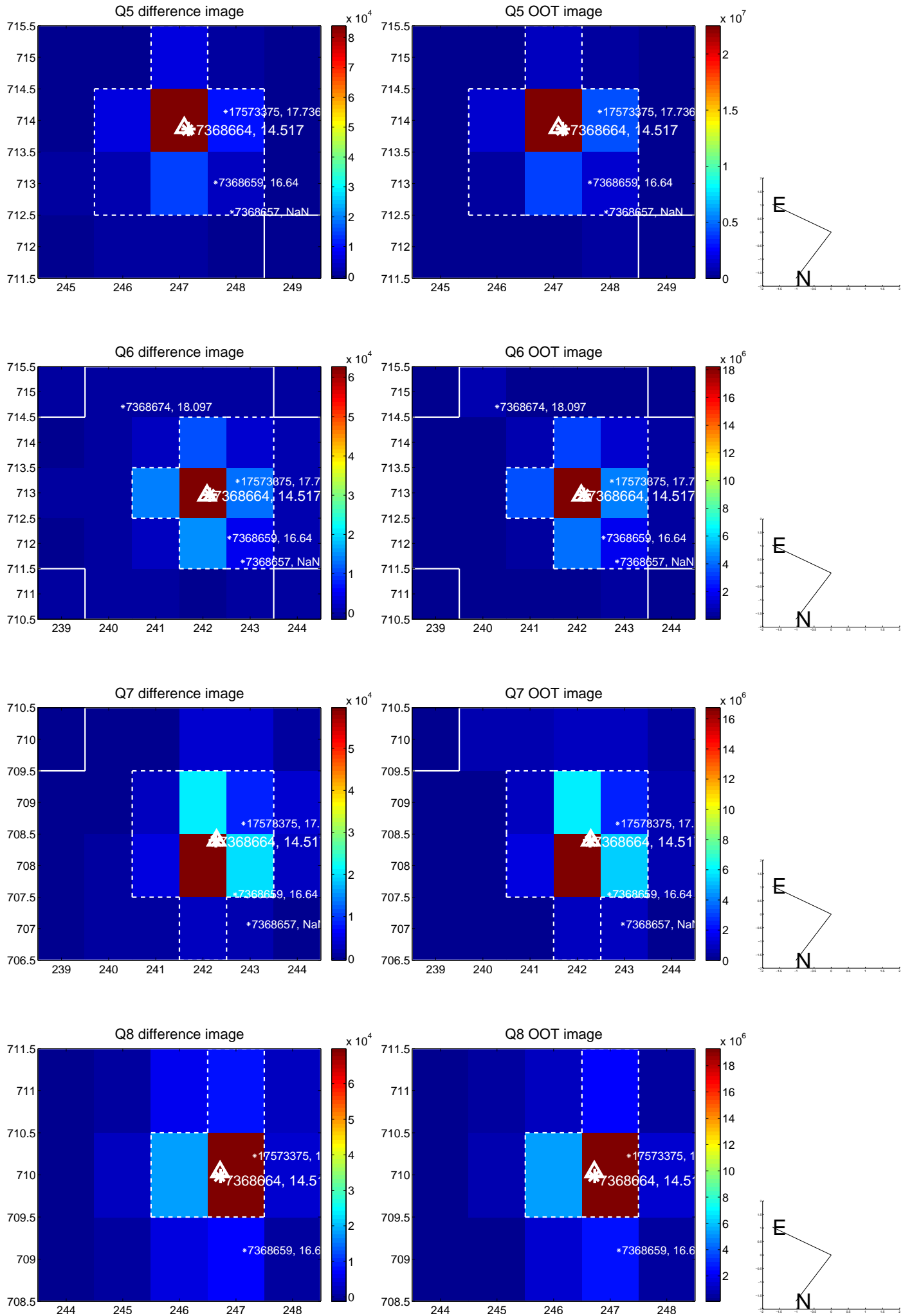


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

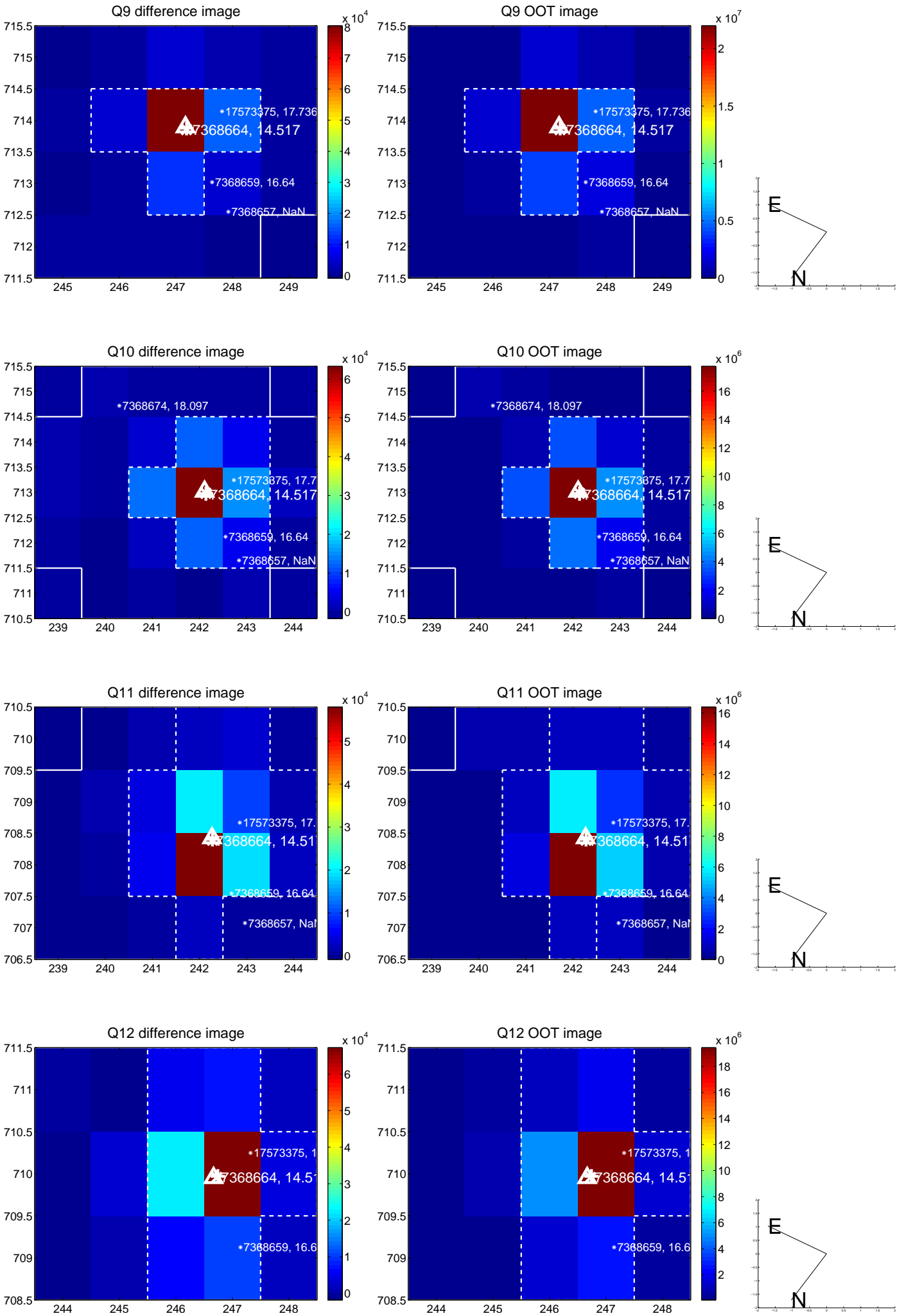
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



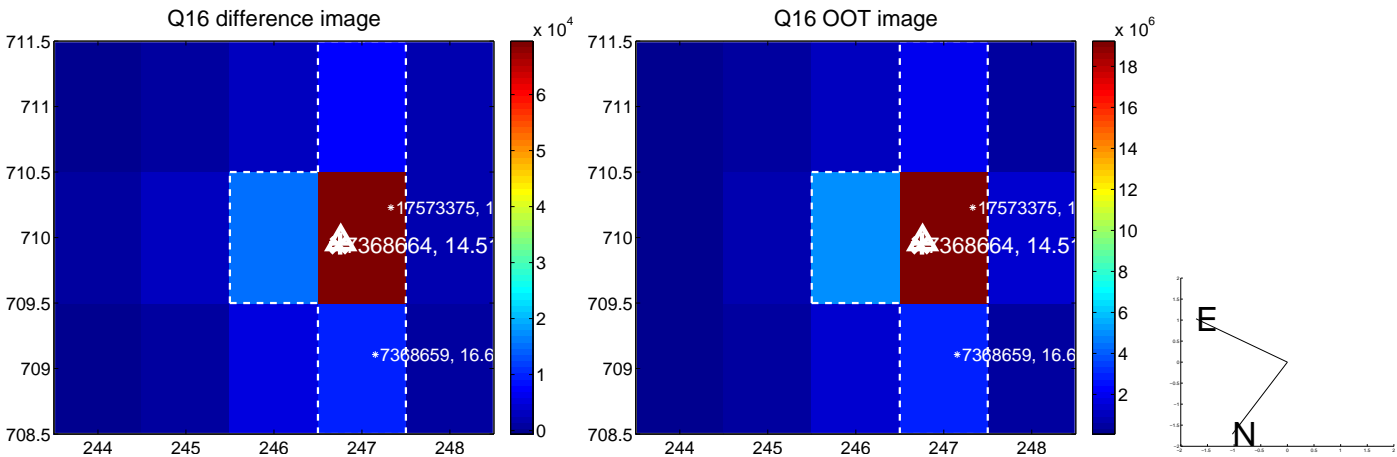
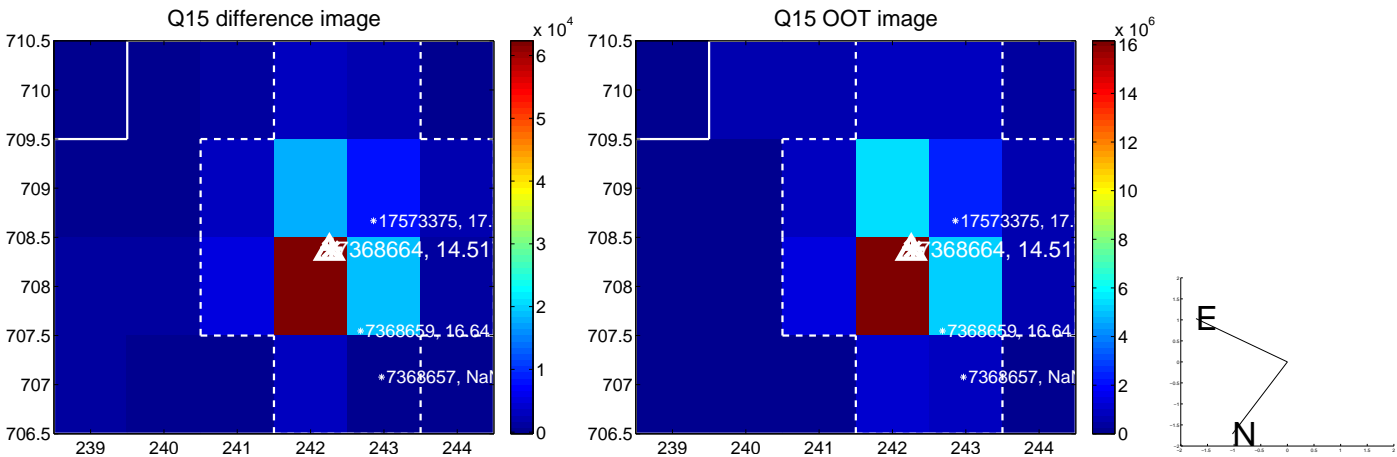
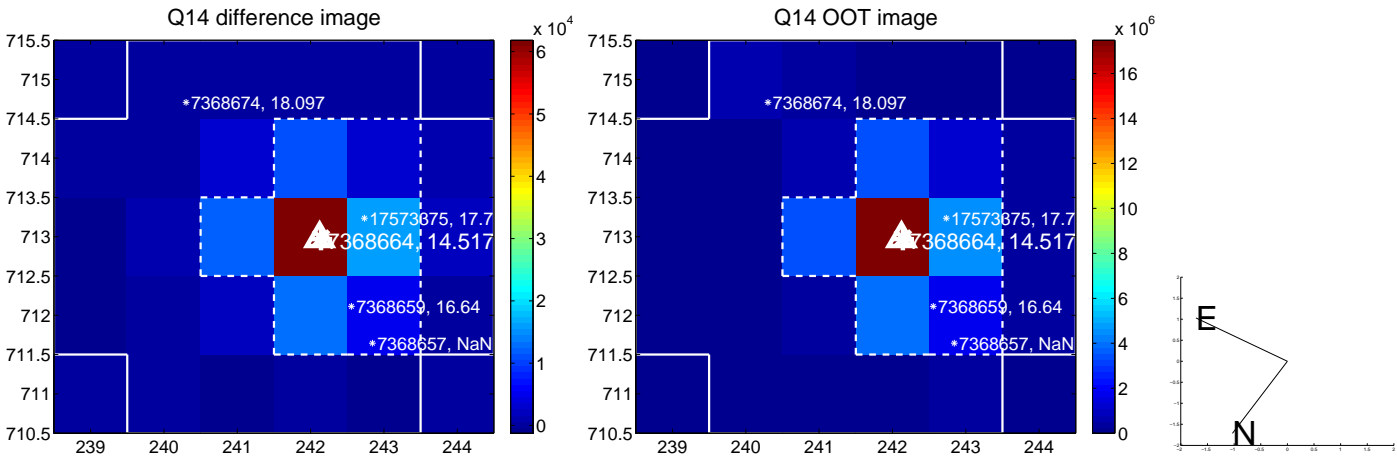
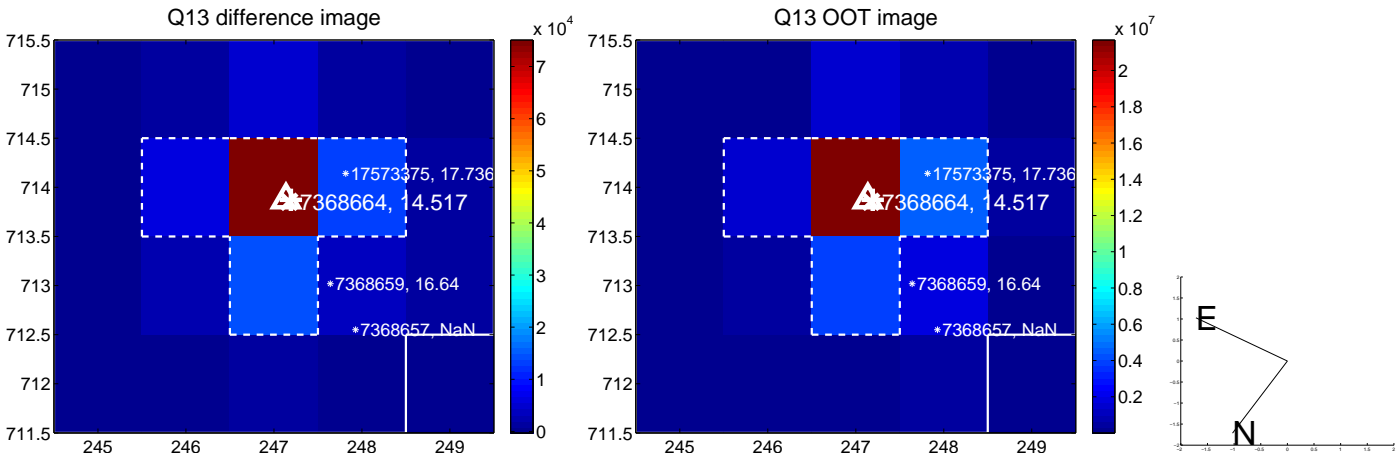
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



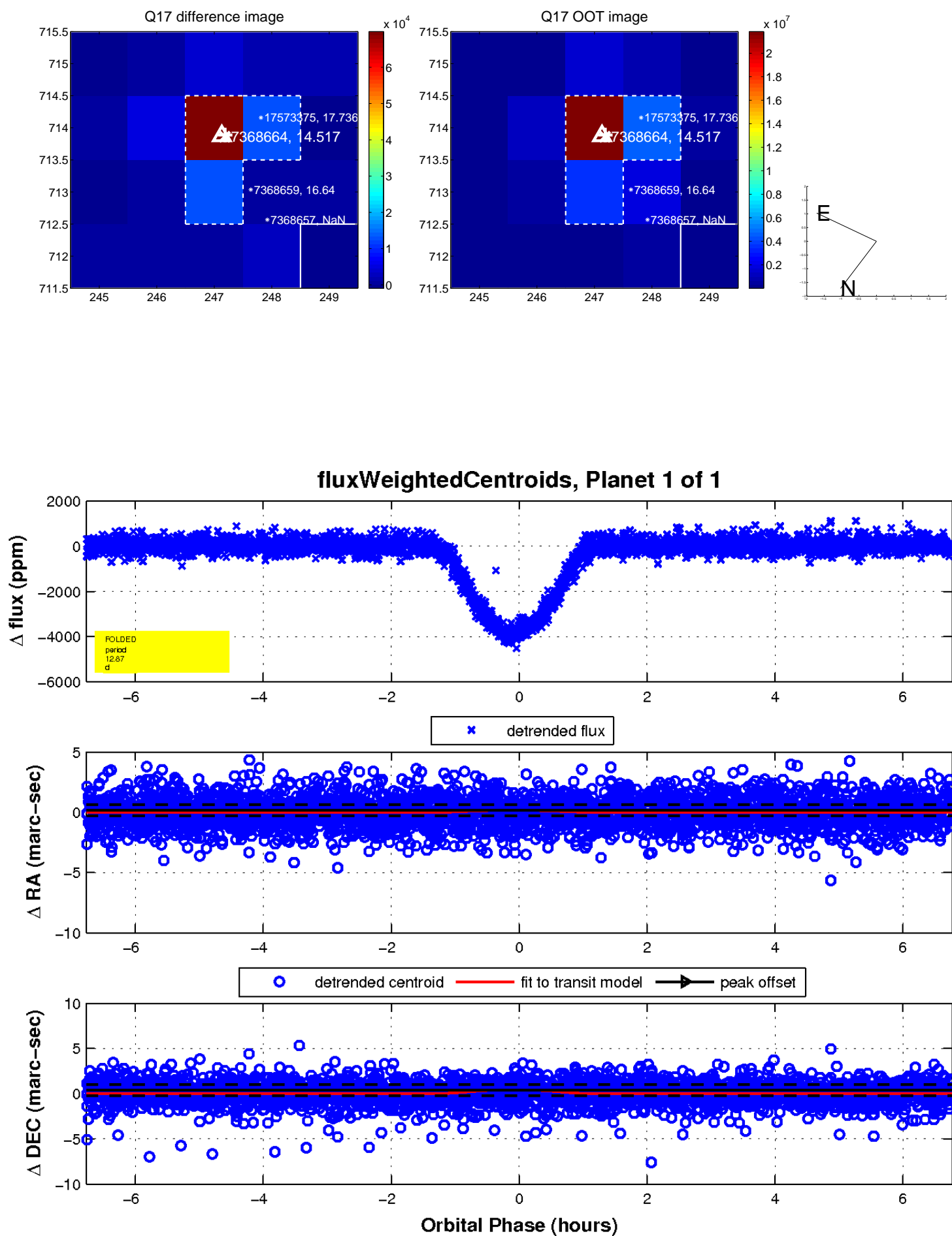
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

