

# KIC 001868404

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 001868404-01 | OBS      | 7625.01 | 6.126020      | 134.834195   | 47.7        | 1.693            | 7.3 | 7.6 | 1.29                        | 5679            | 1.18                   | 401.70                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments        |
|--------------|----------|------|-------|---|---|---|---|-----------------|
| 001868404-01 | OBS      | FP   | 0.38  | 1 | 0 | 0 | 0 | MOD_NONUNIQ_ALT |

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

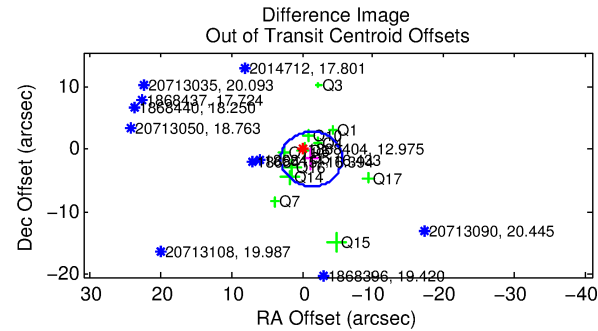
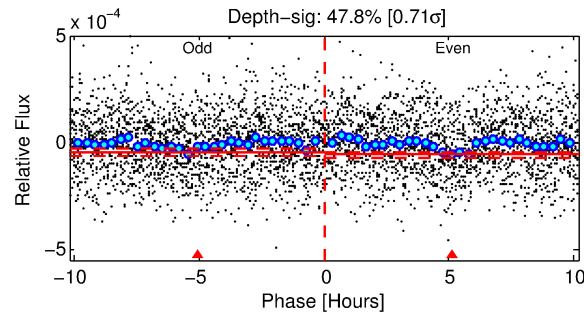
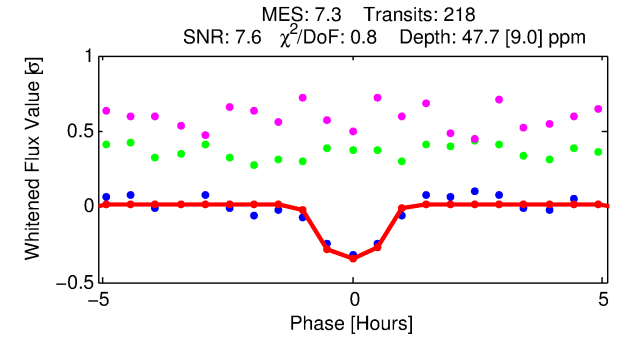
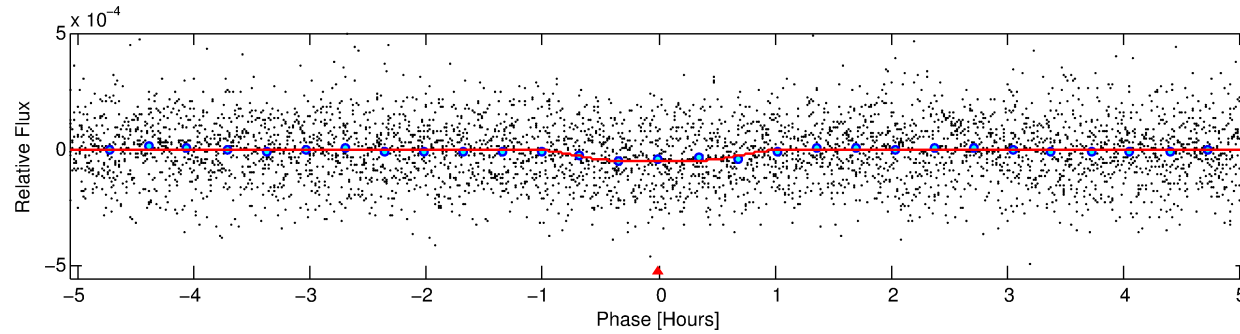
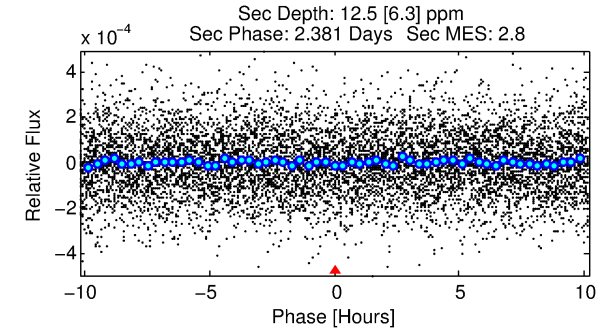
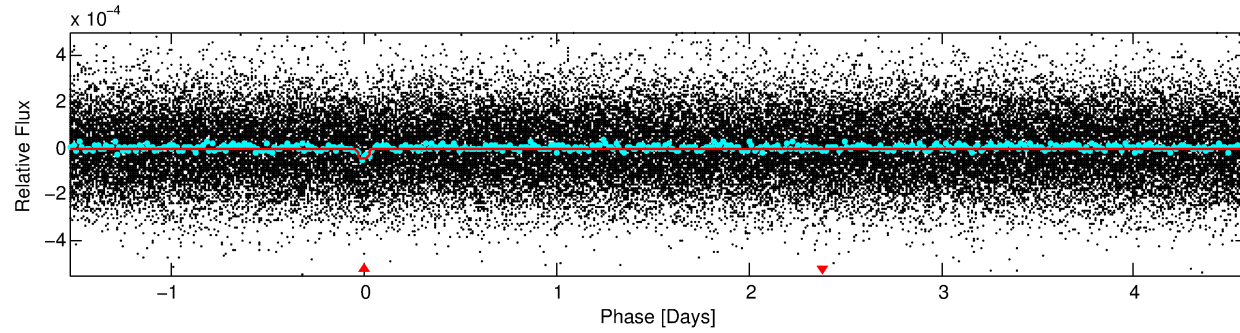
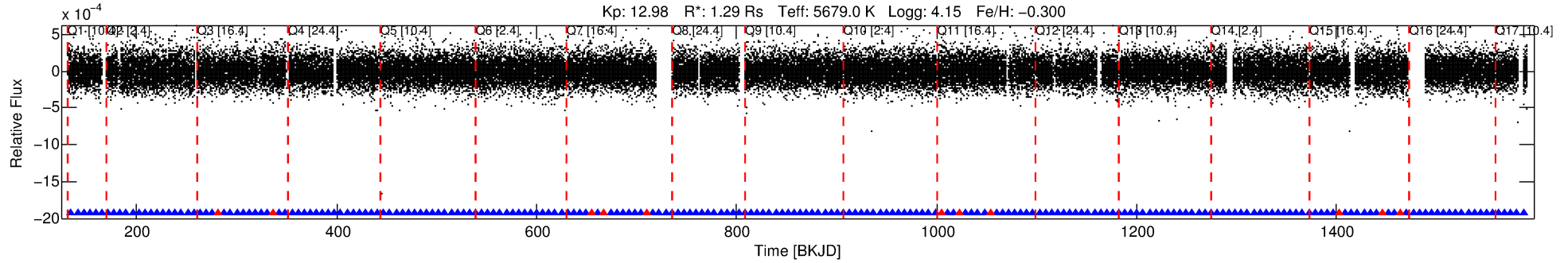
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 001868404-01

No Significant Match Found

# DV One-Page Summary

KIC: 1868404 Candidate: 1 of 1 Period: 6.126 d



## DV Fit Results:

Period = 6.12602 [0.00004] d  
Epoch = 134.8342 [0.0048] BKJD  
Rp/R\* = 0.0084 [0.0039]  
a/R\* = 7.67 [19.09]  
b = 0.97 [0.16]  
Seff = 401.70 [244.04]  
Teq = 1142 [173] K  
Rp = 1.18 [0.67] Re  
a = 0.0619 [0.0218] AU  
Ag = 18.96 [23.19] [0.77σ]  
Teffp = 3683 [987] K [2.54σ]

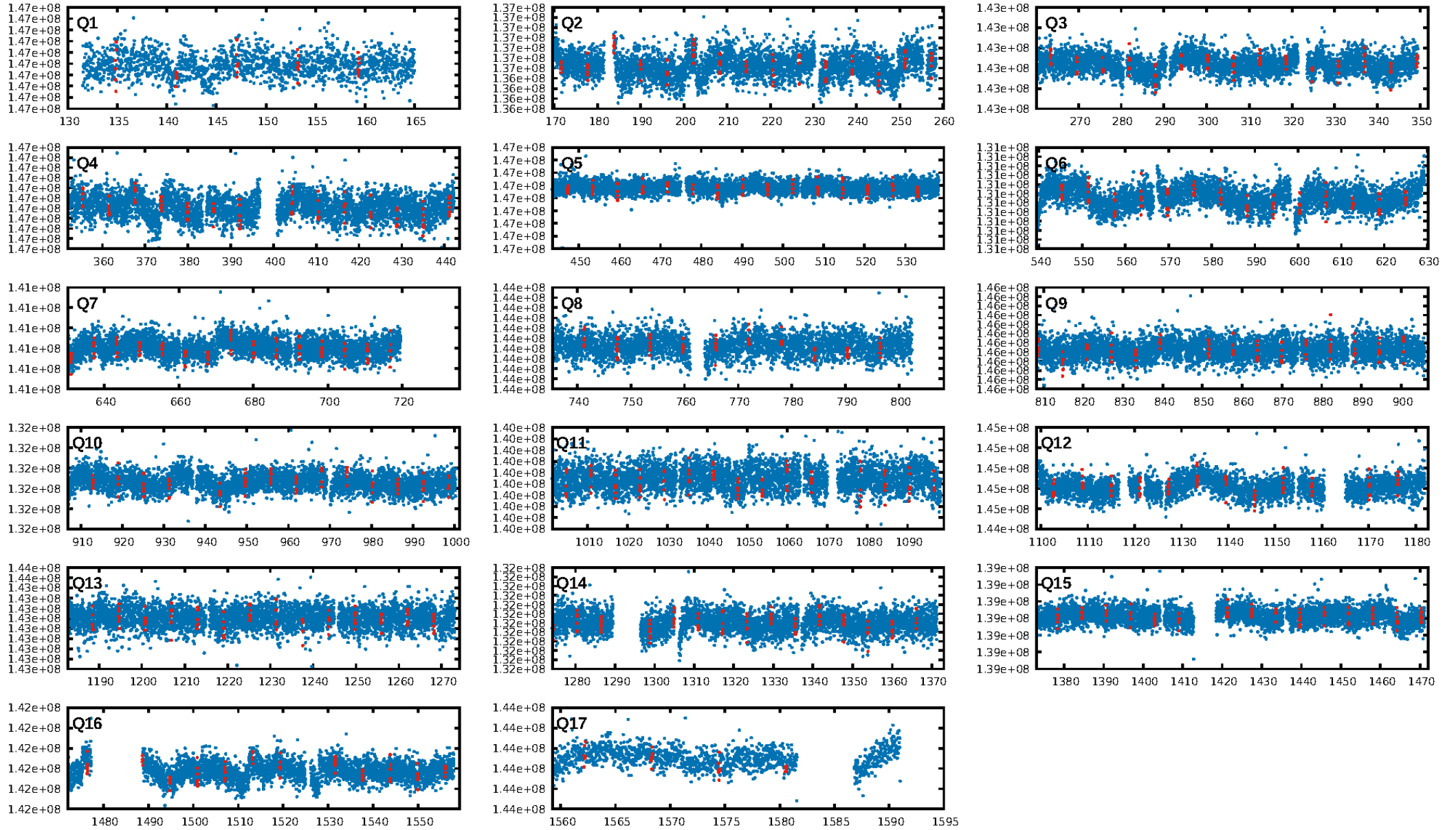
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.68e-13  
RollingBand-fgt: 0.95 [198/209]  
GhostDiagnostic-chr: 1.44  
Centroid-sig: 0.6%  
Centroid-so: 3.145 arcsec [1.77σ]  
OotOffset-rm: 2.041 arcsec [1.40σ]  
KicOffset-rm: 1.885 arcsec [1.36σ]  
OotOffset-st: 3/4/2/3 [12]  
KicOffset-st: 3/4/2/3 [12]  
DiffImageQuality-fgm: 0.17 [2/12]  
DiffImageOverlap-fno: 1.00 [17/17]

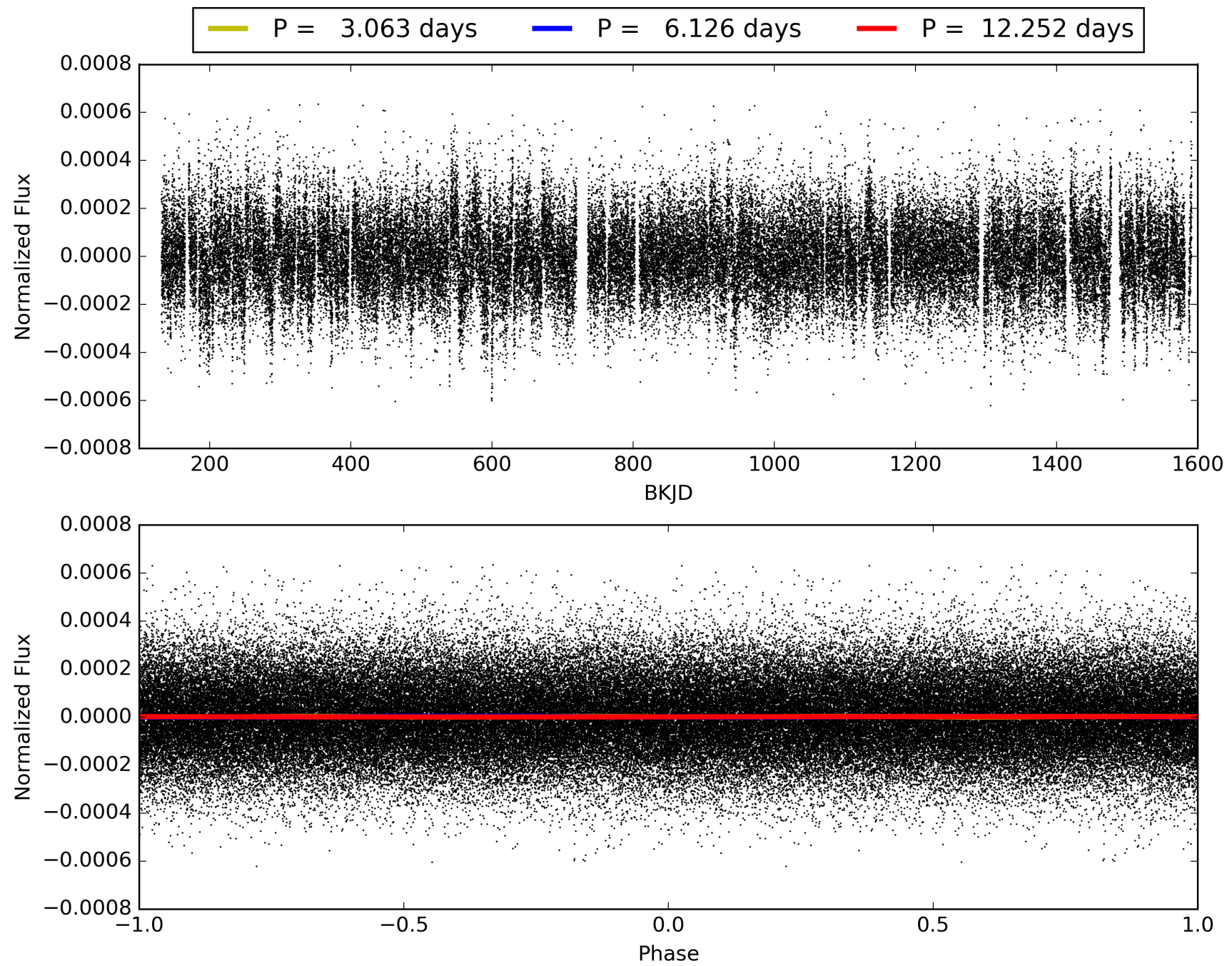
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:28:45 Z

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

# TCE 001868404-01, PDC Light Curves

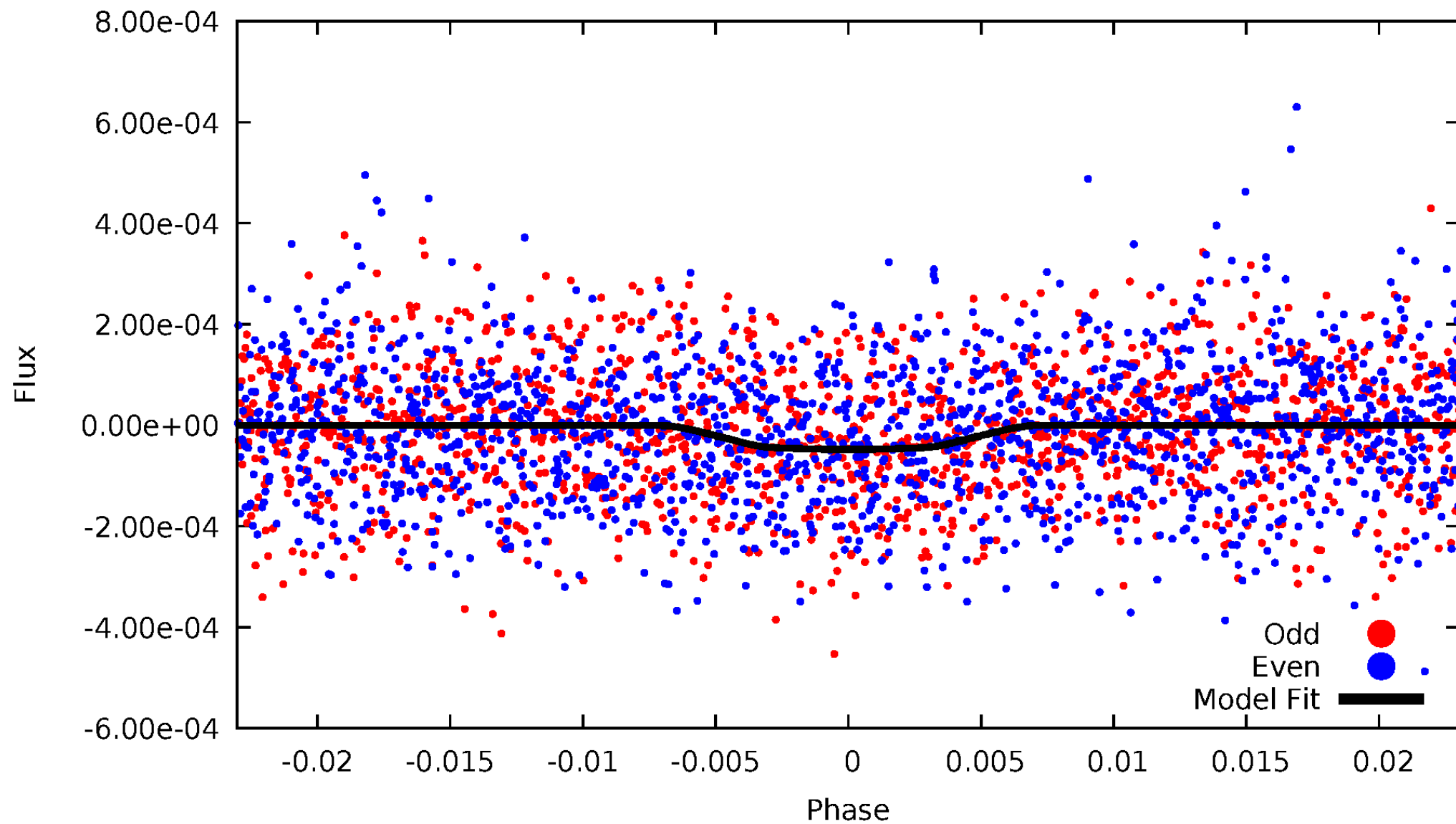


TCE 001868404-01



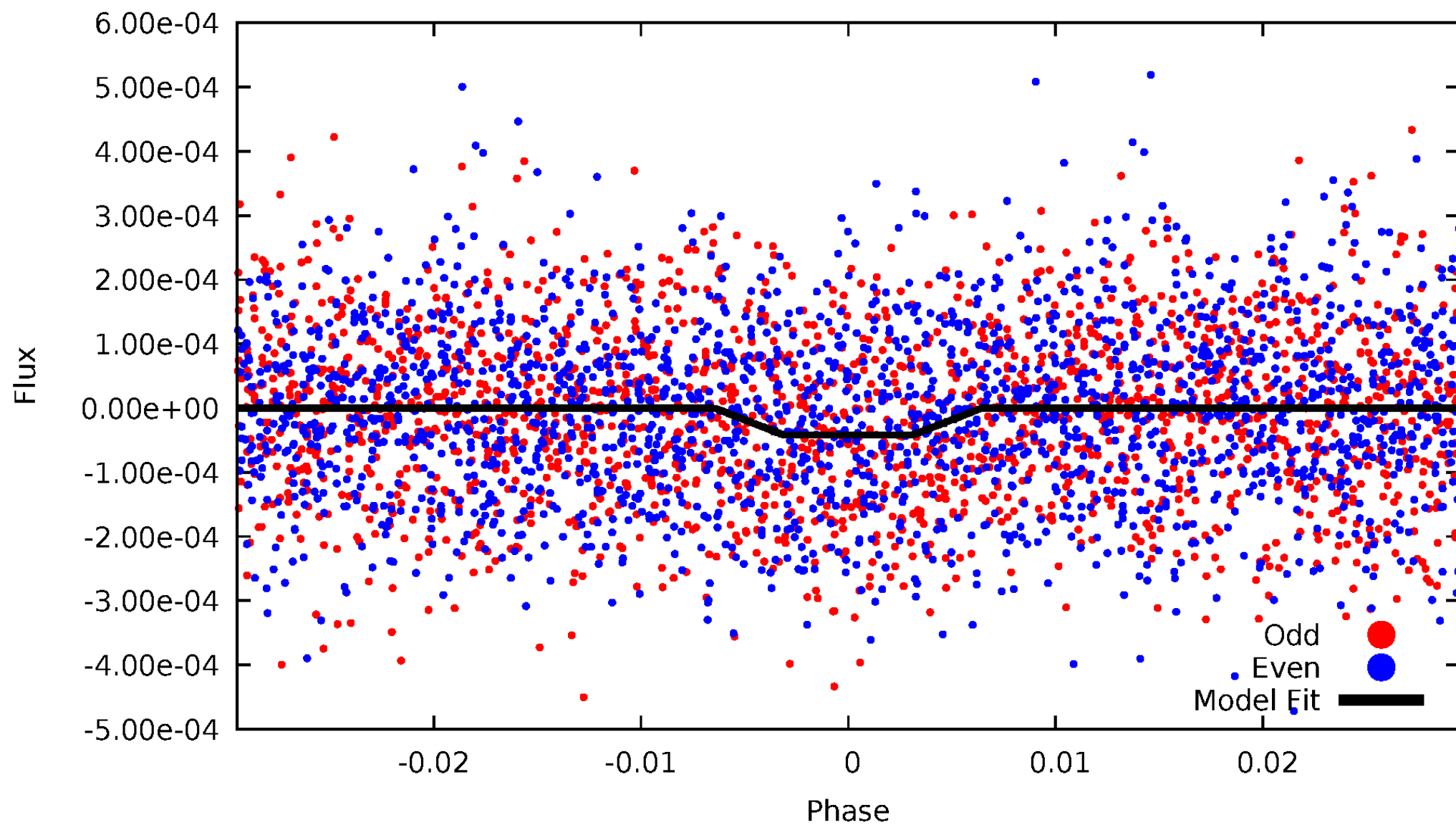
# DV Odd/Even

TCE 001868404-01



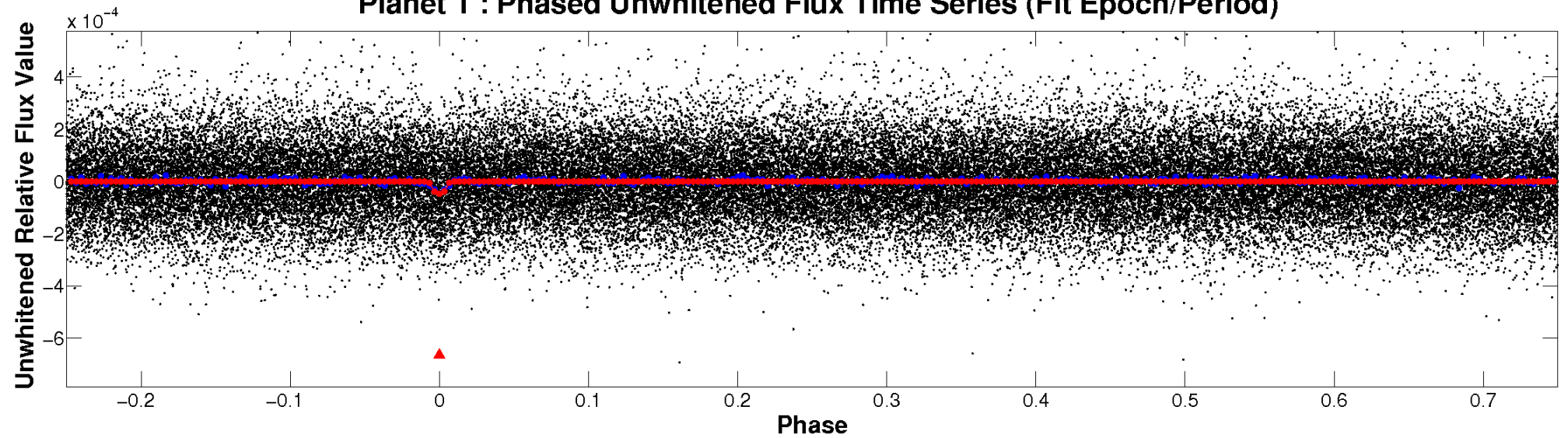
# ALT Odd/Even

TCE 001868404-01

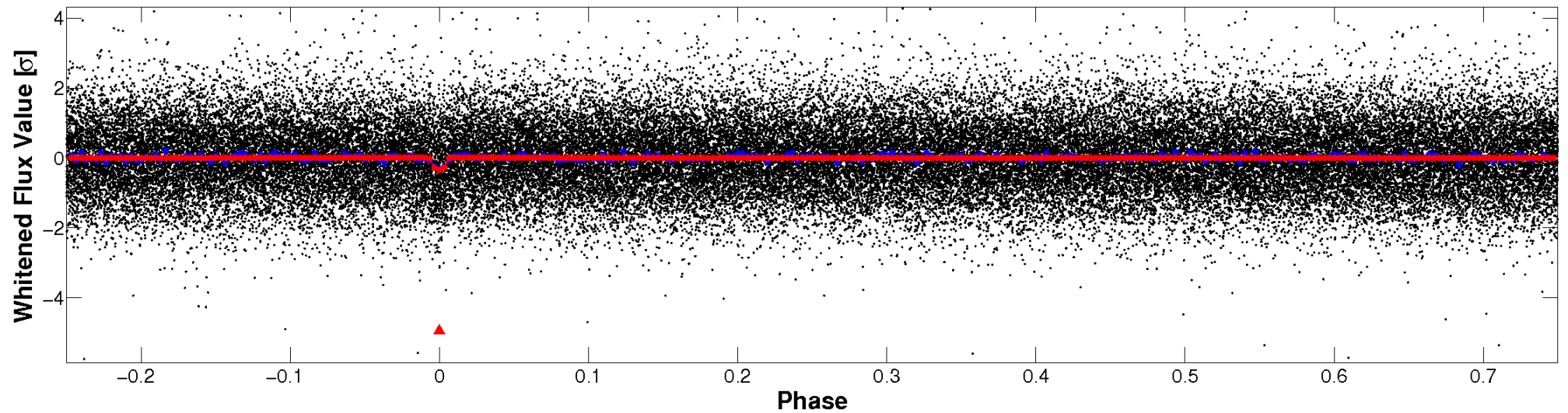


# Non-Whitened Vs. Whitened Light Curve

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

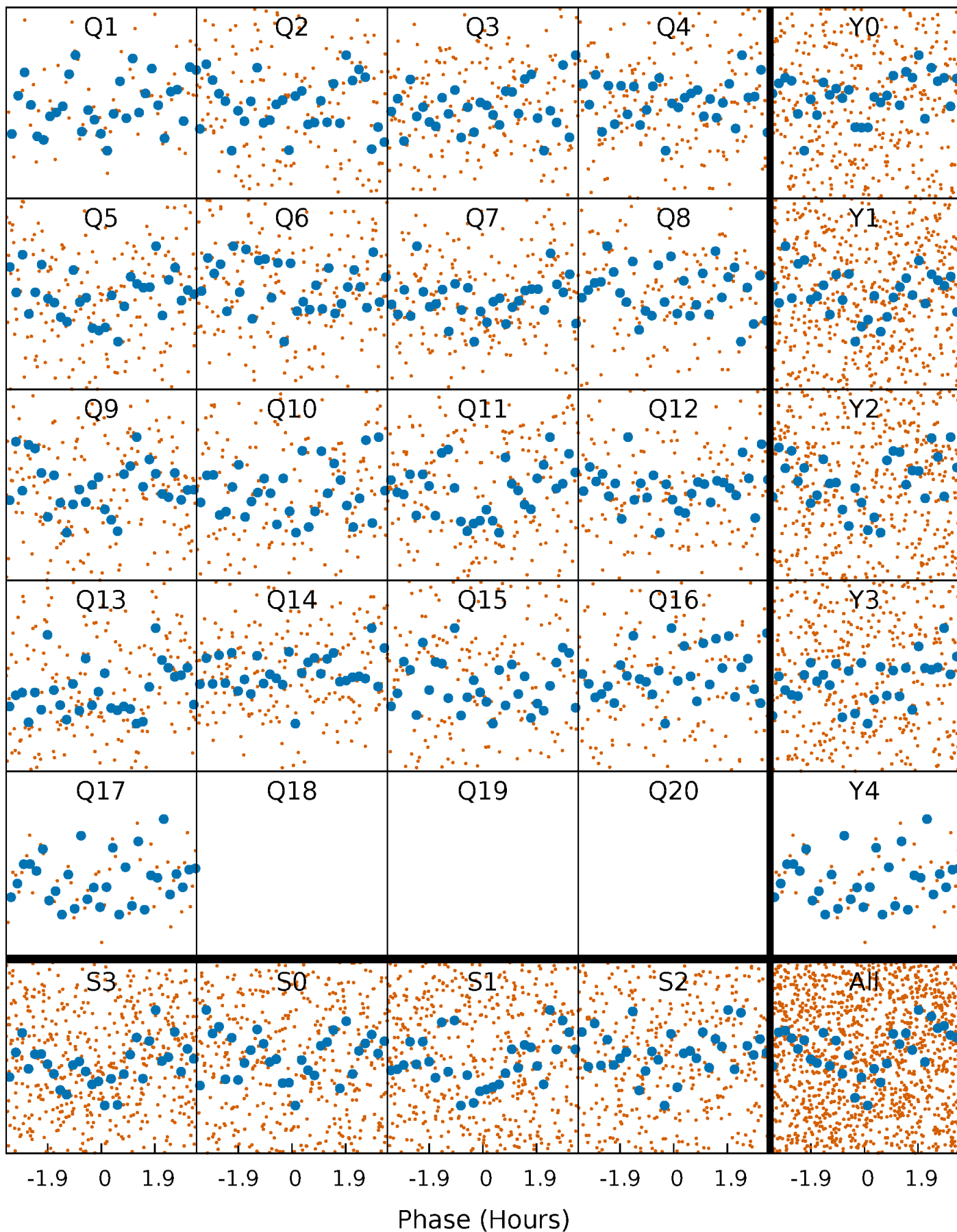


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



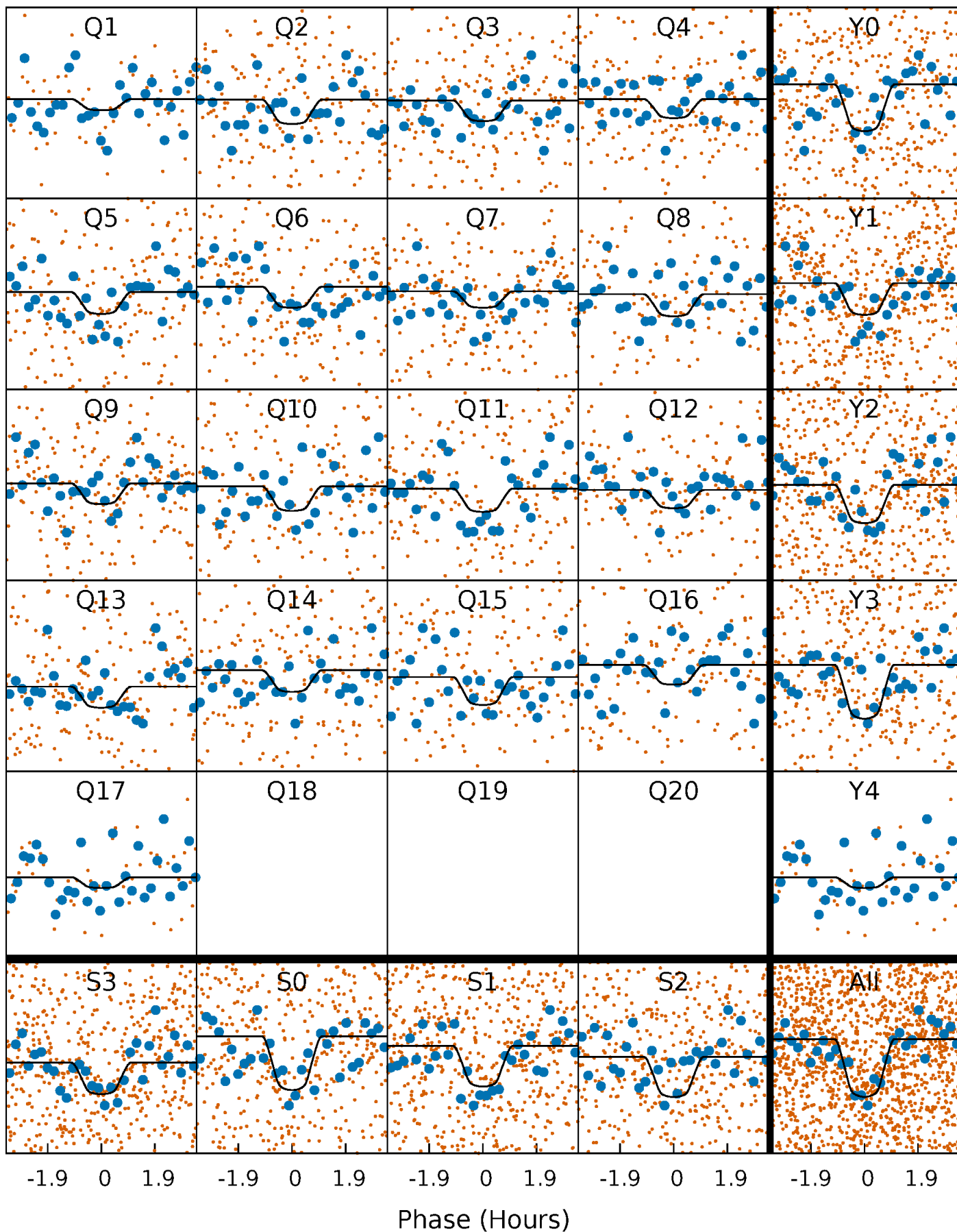
# PDC Quarter-Phased Transit Curves

TCE 001868404-01 P= 6.126020 Days  $T_0=134.834195$  (BKJD)



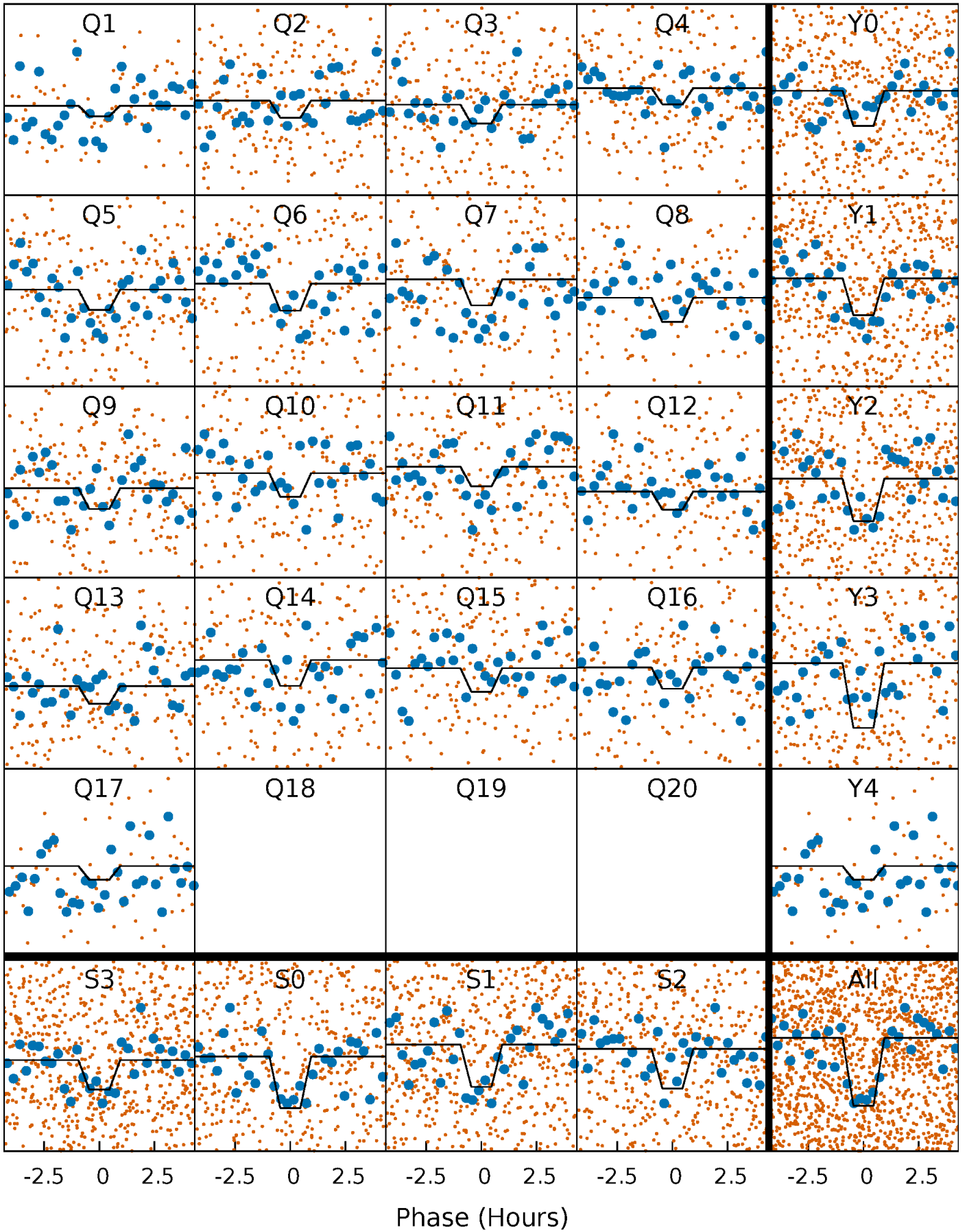
# DV Quarter-Phased Transit Curves

TCE 001868404-01 P= 6.126020 Days  $T_0=134.834195$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

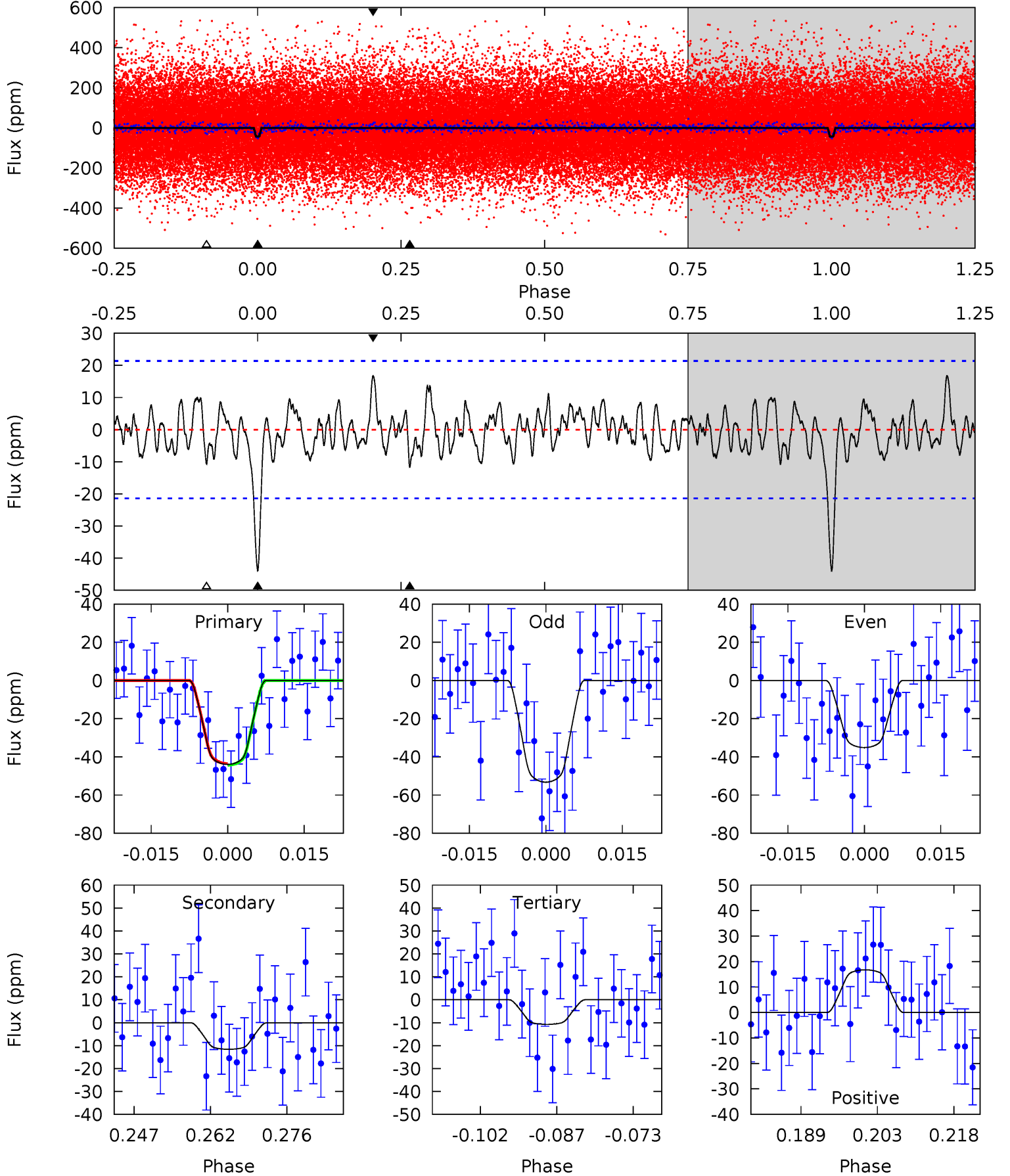
TCE 001868404-01 P= 6.125997 Days  $T_0=134.836905$  (BKJD)



# DV Model-Shift Uniqueness Test

001868404-01, P = 6.126020 Days, E = 128.708175 Days

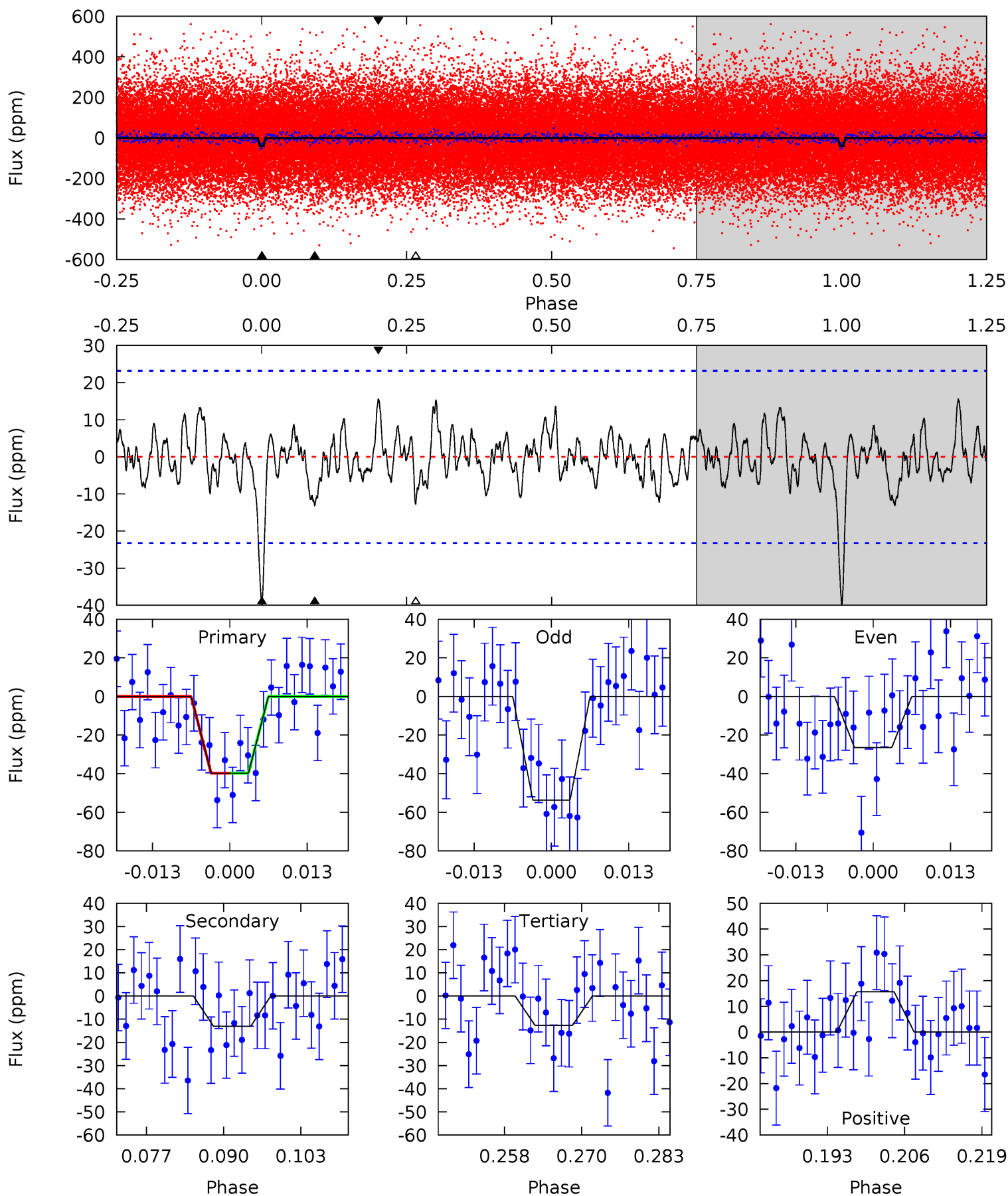
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.2 | 2.69 | 2.49 | 3.88 | 4.95            | 2.44            | 1.20             | 7.69    | 6.30    | 0.20    | -1.19   | 2.10    | 0.89 | 0.28  | 0.09 |



# Alt Model-Shift Uniqueness Test

001868404-01, P = 6.125997 Days, E = 128.710908 Days

| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.53 | 2.81 | 2.73 | 3.36 | 4.98            | 2.49            | 1.10             | 5.80    | 5.18    | 0.08    | -0.55   | 2.92    | 0.89 | 0.28  | 0.01 |



### Stellar Parameters For KIC 001868404

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5679^{+152}_{-152}$ | $4.146^{+0.364}_{-0.196}$ | $-0.300^{+0.300}_{-0.250}$ | $1.286^{+0.411}_{-0.411}$ | $0.844^{+0.117}_{-0.078}$ | $0.559^{+1.435}_{-0.274}$                 |
|        | +3%/-3%              | +9%/-5%                   | +100%/-83%                 | +32%/-32%                 | +14%/-9%                  | +257%/-49%                                |
| 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 001868404-01 / KOI 7625.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$  |
|---------|-------------|------------------------|----------------------|-----------------------|-------------------|
| DV      | $-12 \pm 4$ | $1.15^{+0.60}_{-0.53}$ | $1569^{+142}_{-144}$ | $3900^{+1035}_{-547}$ | $19^{+52}_{-12}$  |
| Alt.    | $-13 \pm 5$ | $0.93^{+0.55}_{-0.47}$ | $1572^{+142}_{-153}$ | $4313^{+1570}_{-732}$ | $31^{+105}_{-20}$ |

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

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

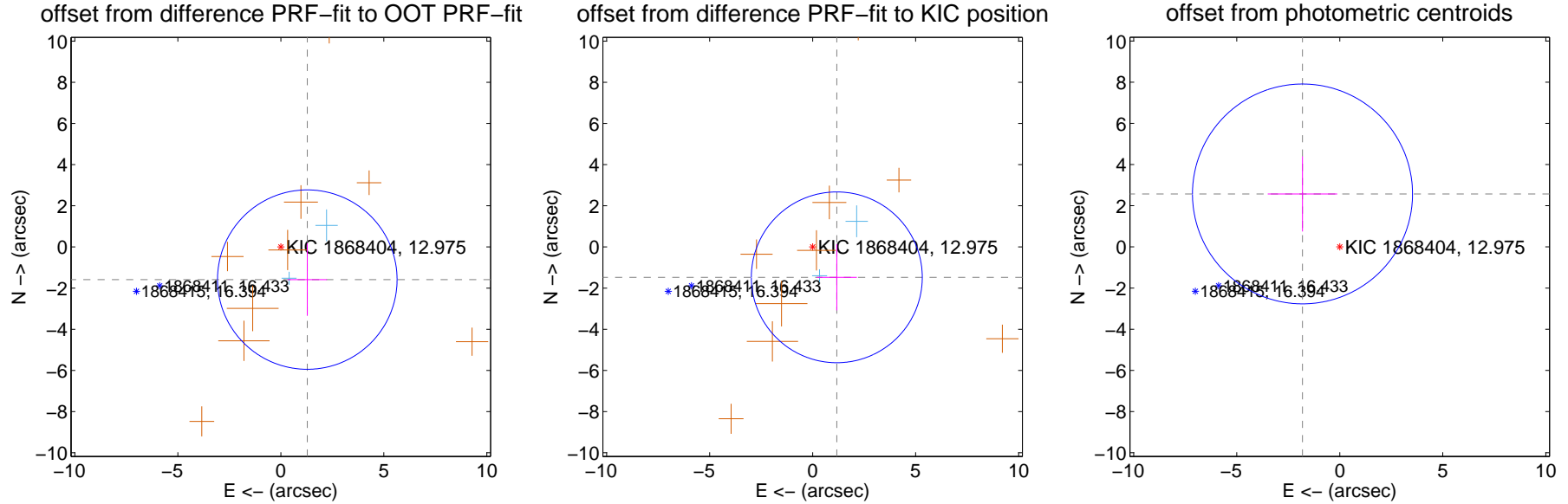
## DV Centroid Data

Supplemental centroid analysis for 001868404-01. Kepler magnitude: 12.97. Transit SNR 7.58

There are 2 quarters with good PRF difference image offsets

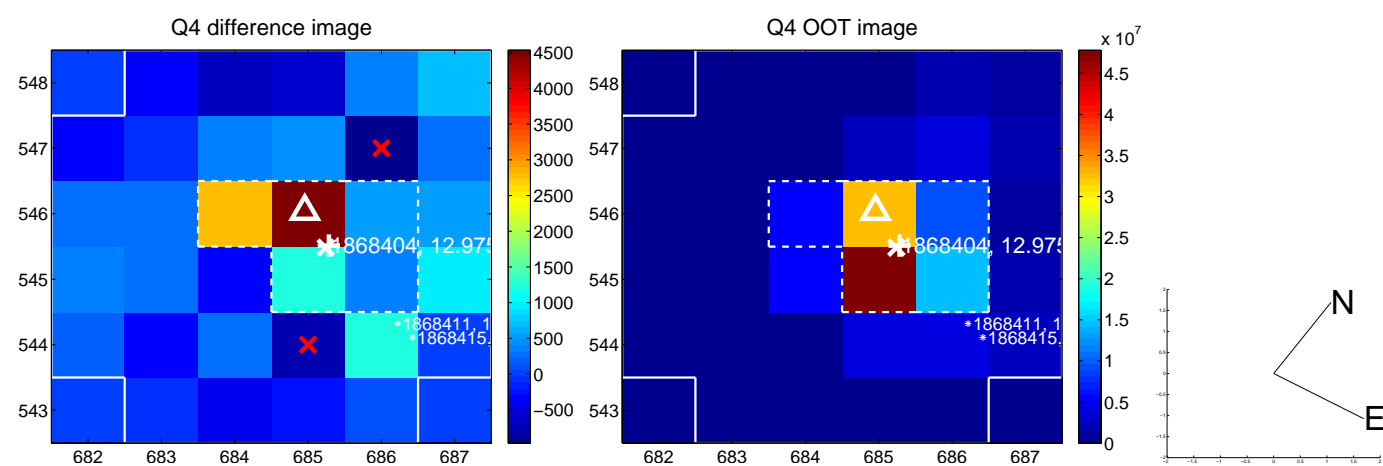
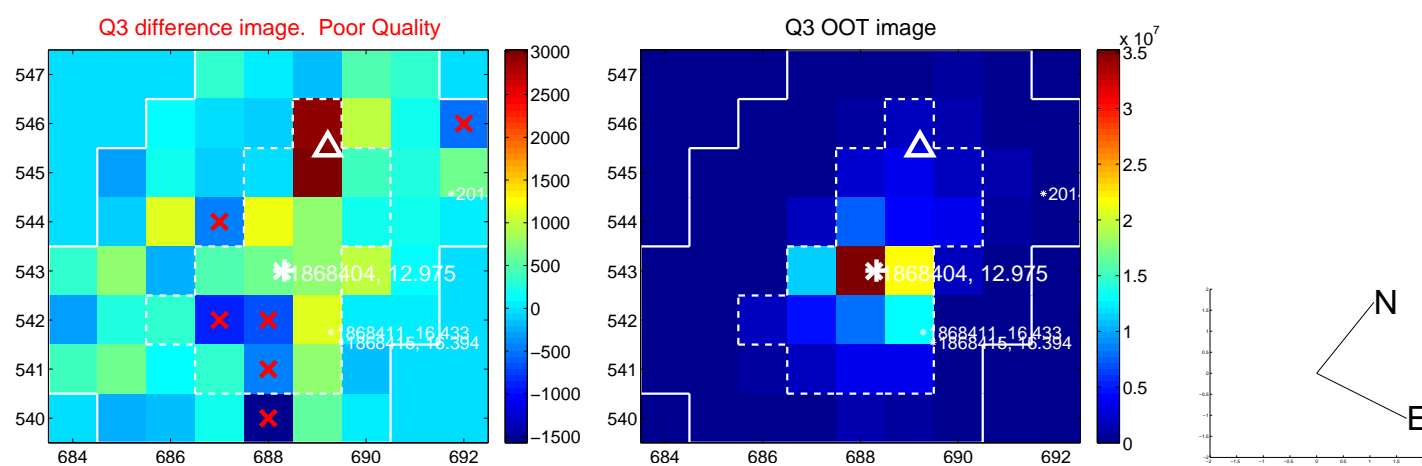
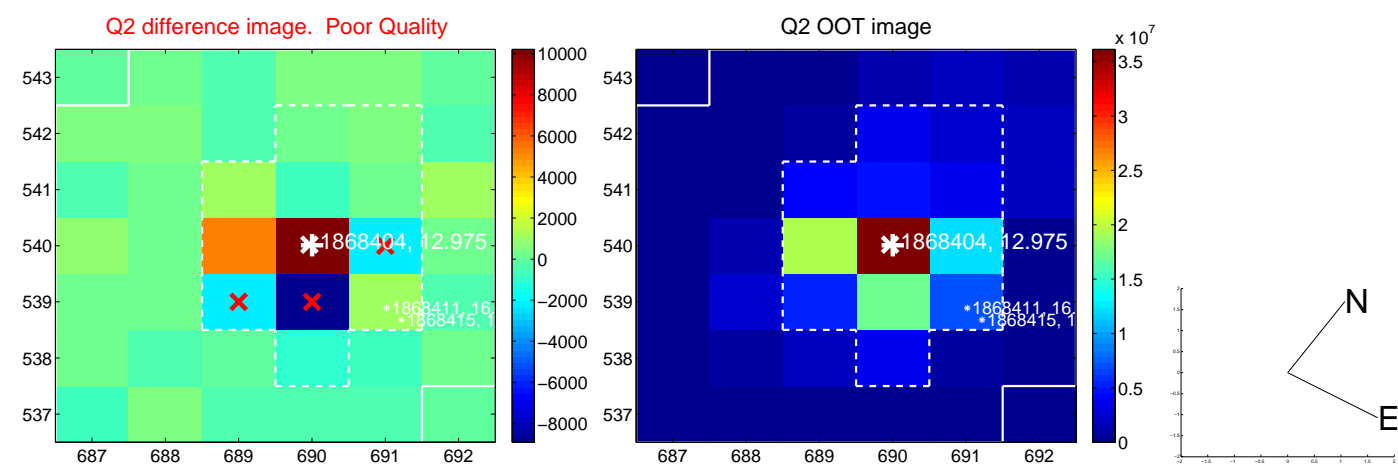
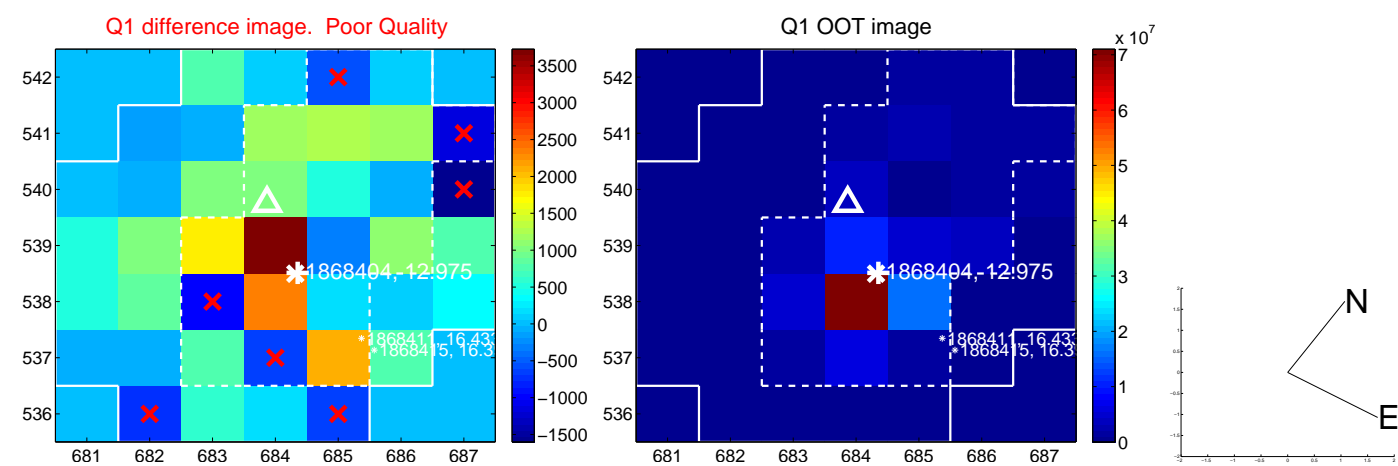
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $2.041 \pm 1.453$  | 1.40                | $-1.284 \pm 0.955$ | $-1.586 \pm 1.762$ |
| PRF-fit source offset from KIC position | $1.885 \pm 1.383$  | 1.36                | $-1.172 \pm 0.974$ | $-1.476 \pm 1.606$ |
| photometric centroid source offset      | $3.14 \pm 1.78$    | 1.77                | $1.81 \pm 1.69$    | $2.57 \pm 1.82$    |

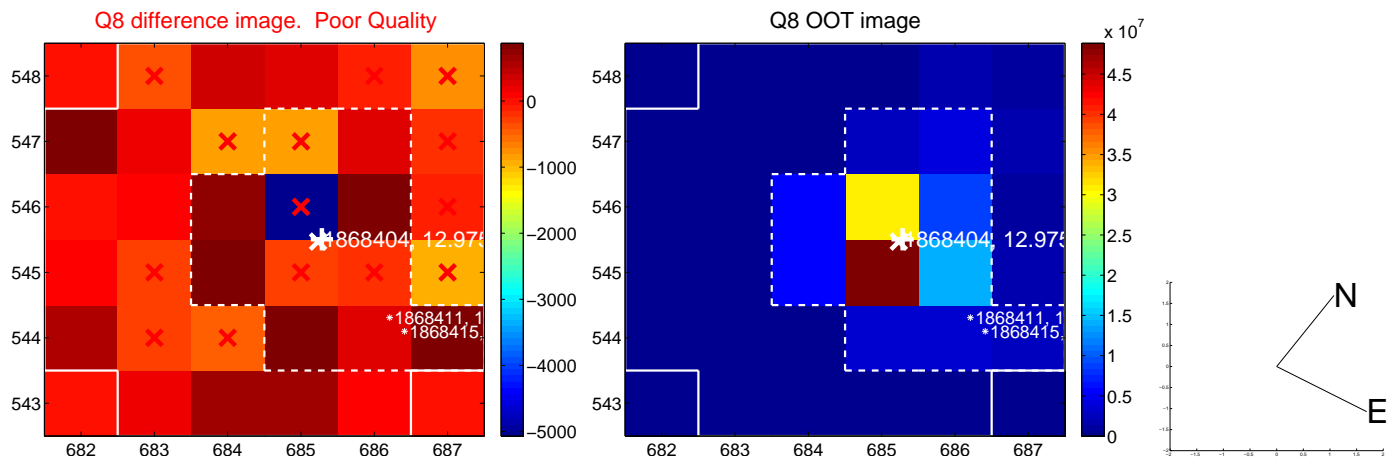
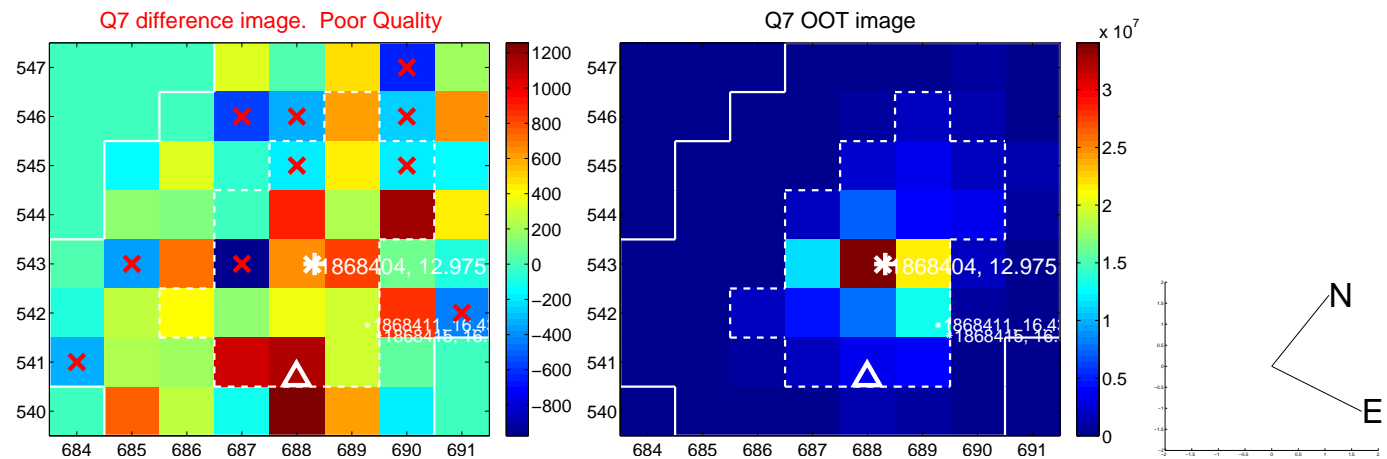
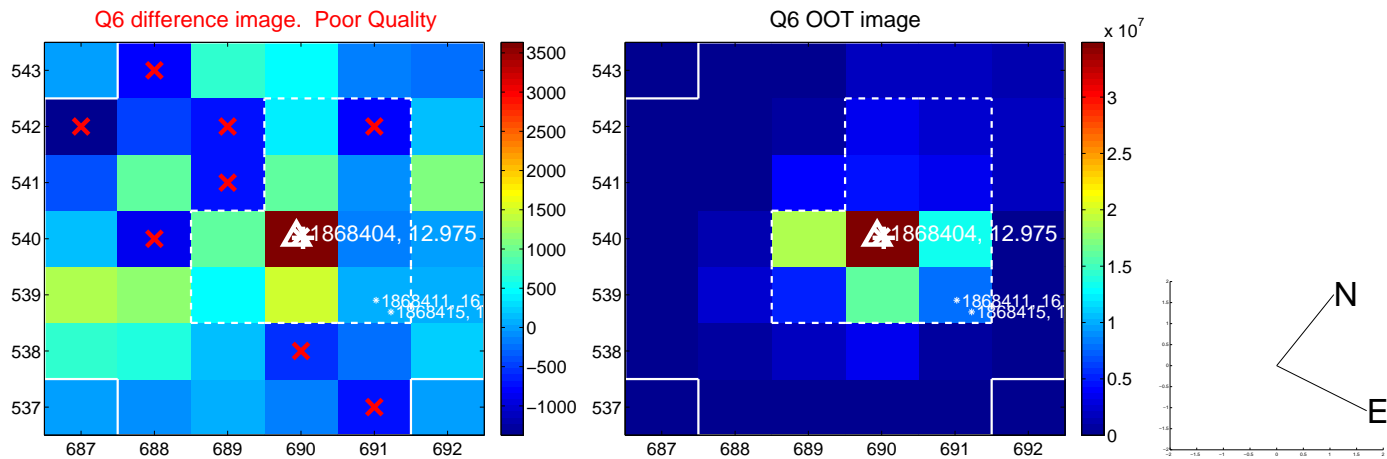
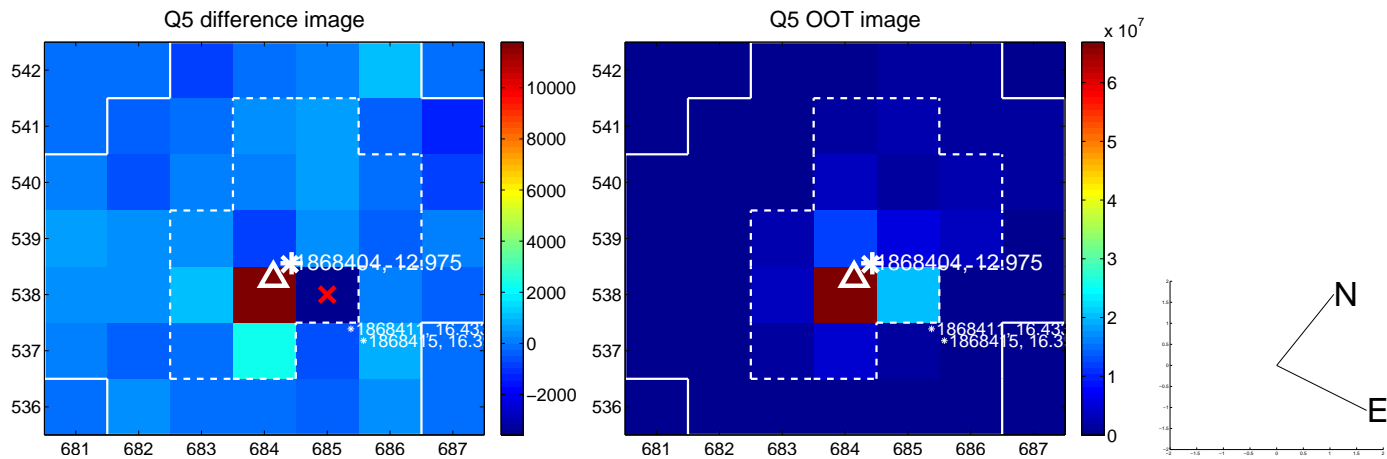


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

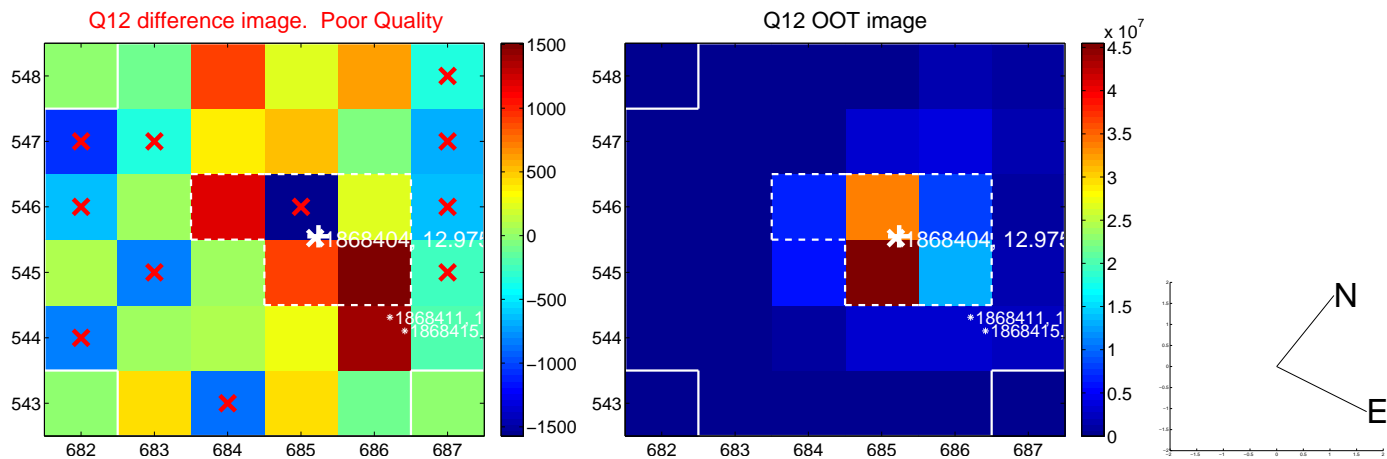
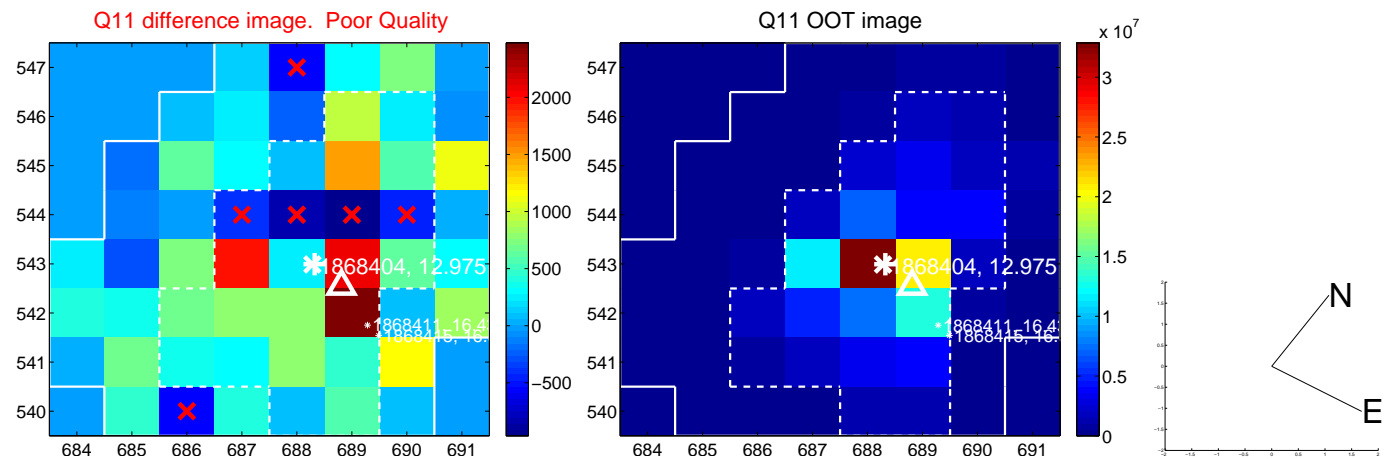
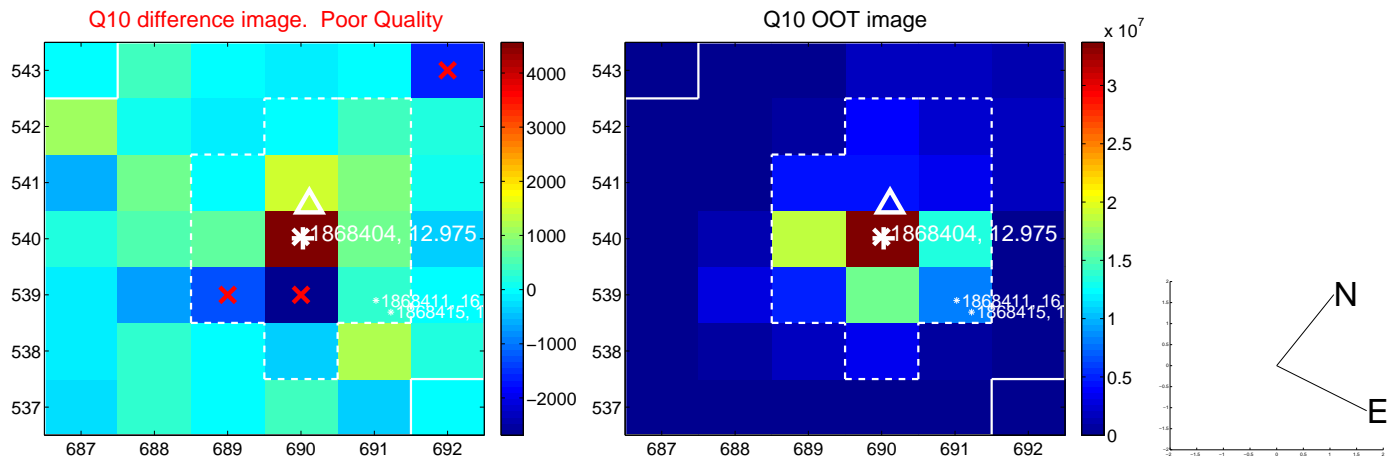
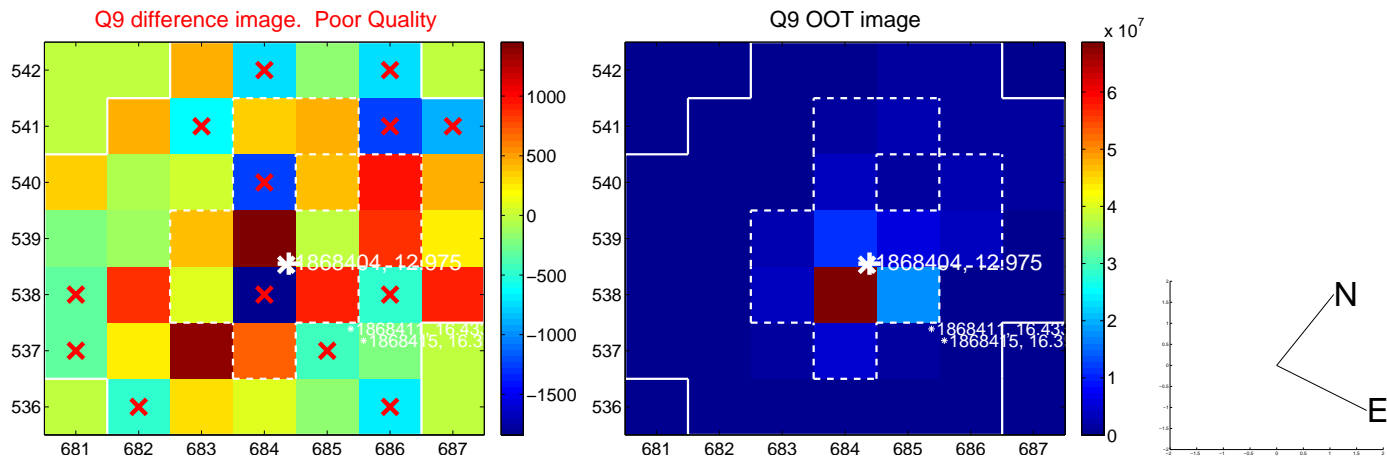
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



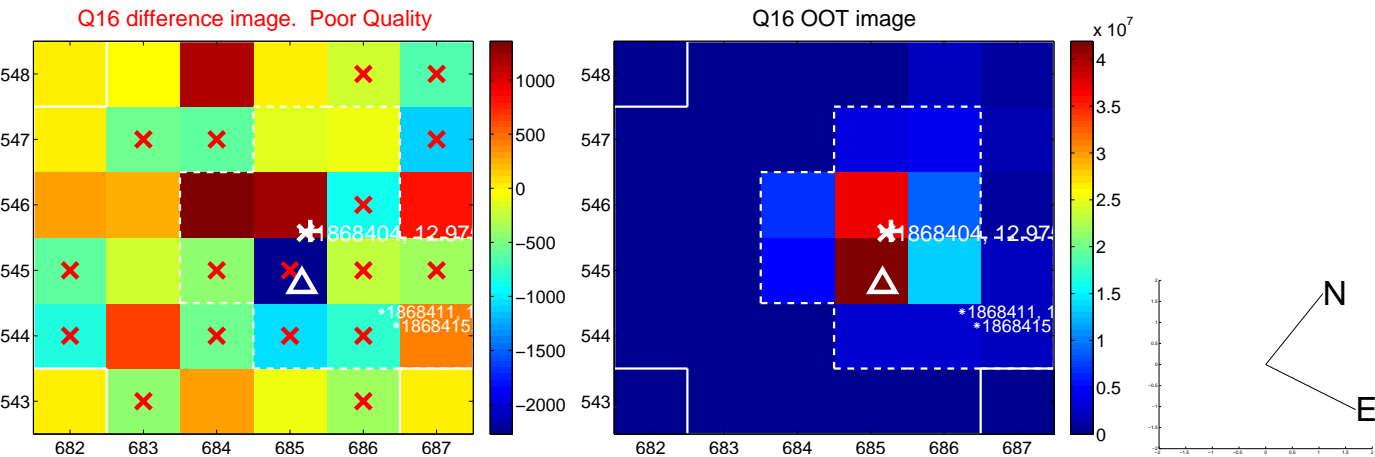
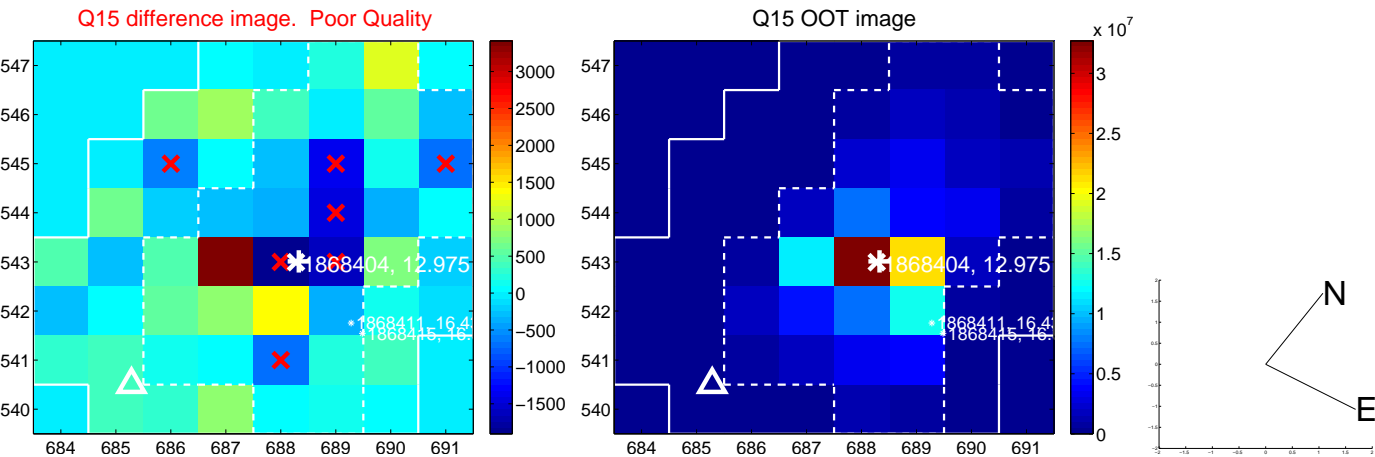
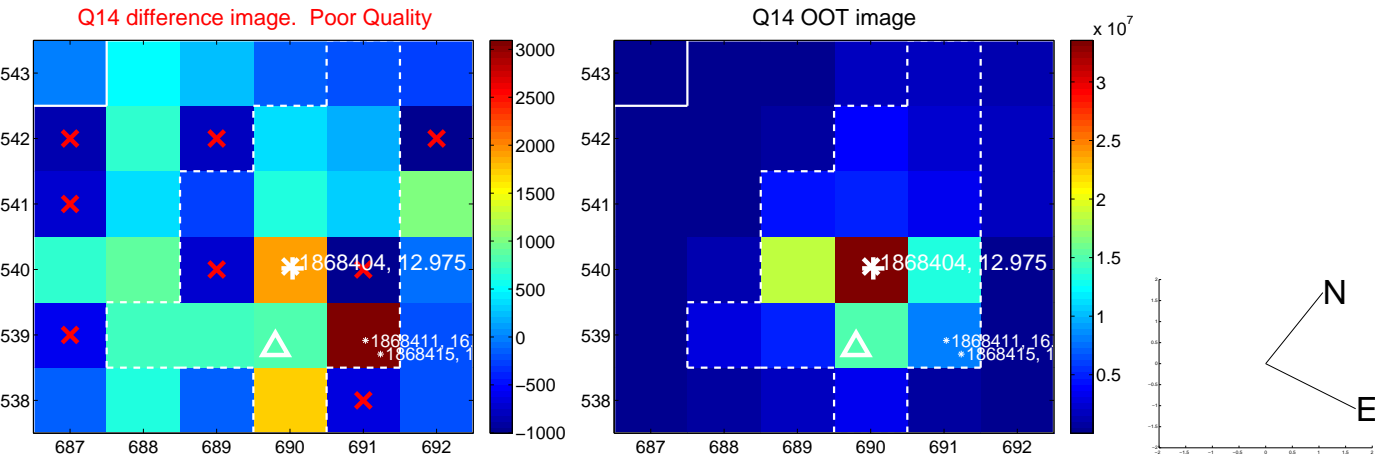
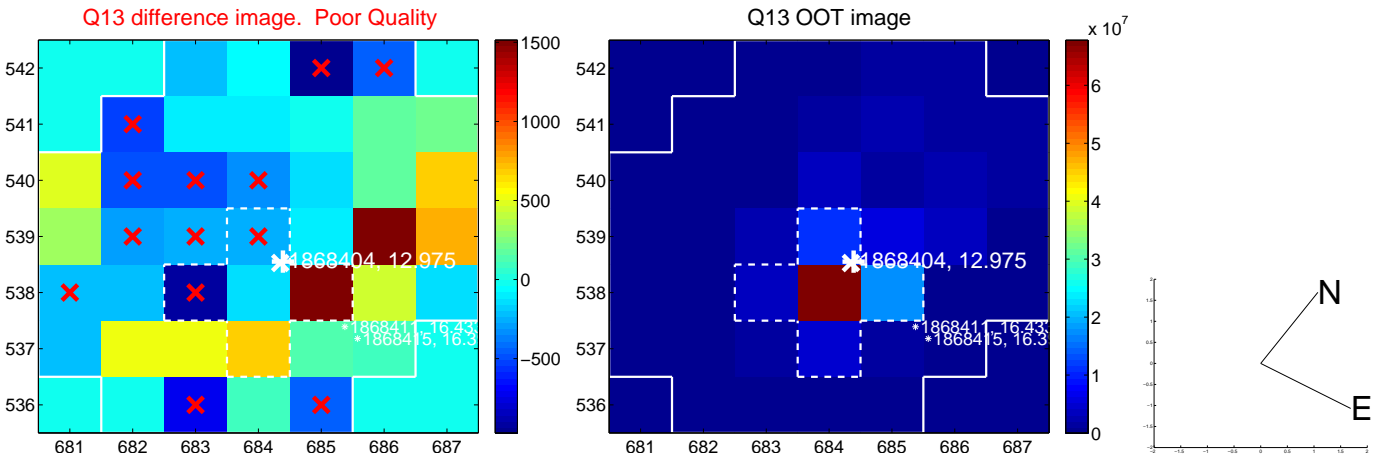
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



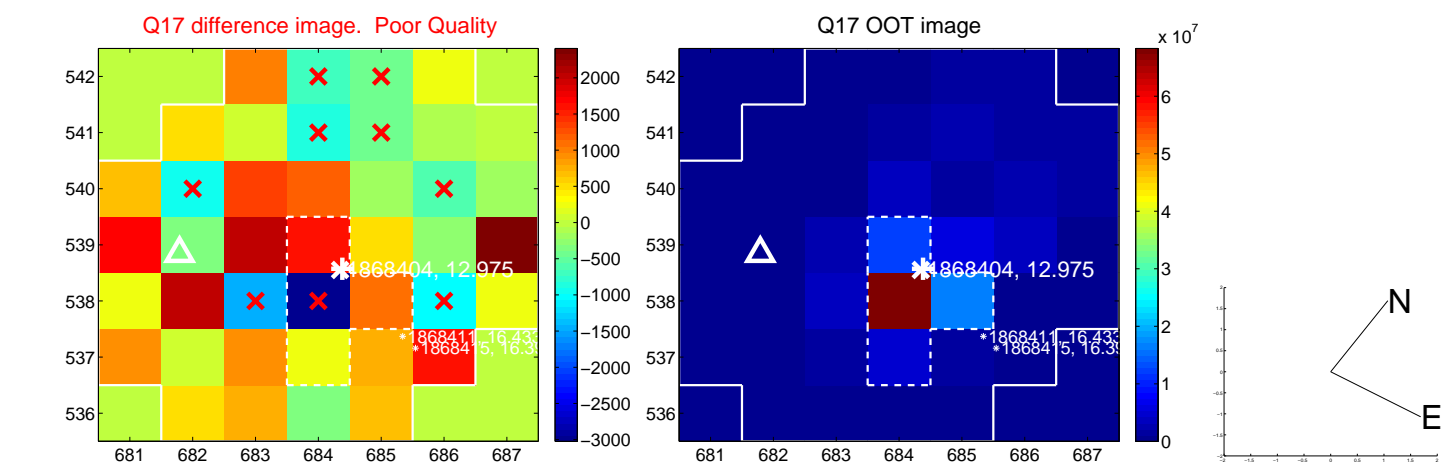
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



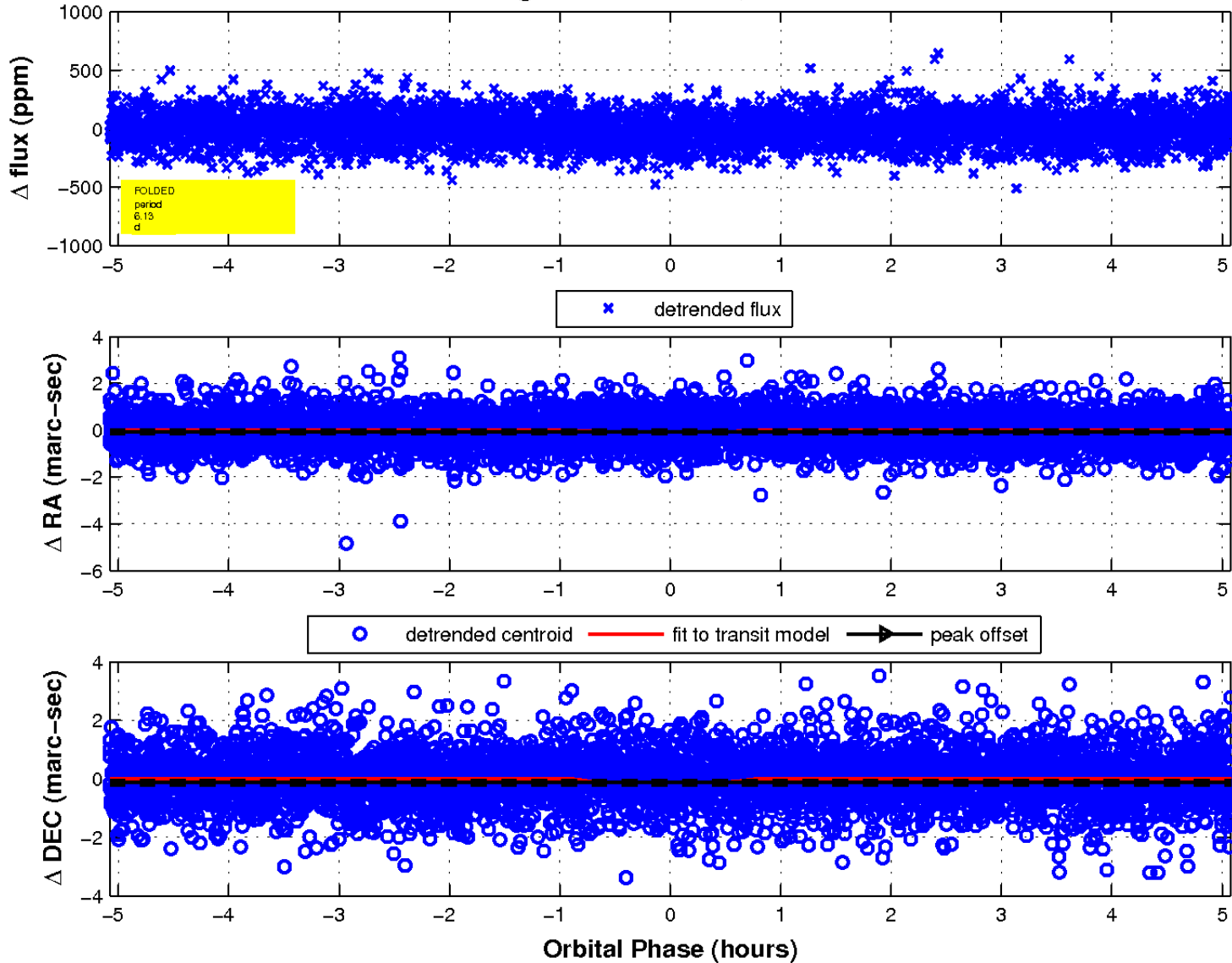
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

