

# KIC 007700871

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007700871-01 | OBS      | 0088.01 | 2.589842      | 133.882512   | 77.1        | 2.847            | 57.5 | 49.4 | 0.81                        | 5761            | 0.85                   | 533.70                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                        |
|--------------|----------|------|-------|---|---|---|---|---------------------------------|
| 007700871-01 | OBS      | FP   | 0.00  | 0 | 0 | 1 | 0 | CENT_RESOLVED_OFFSET—HALO_GHOST |

**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 007700871-01

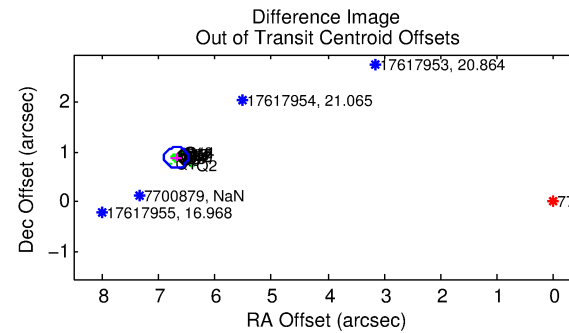
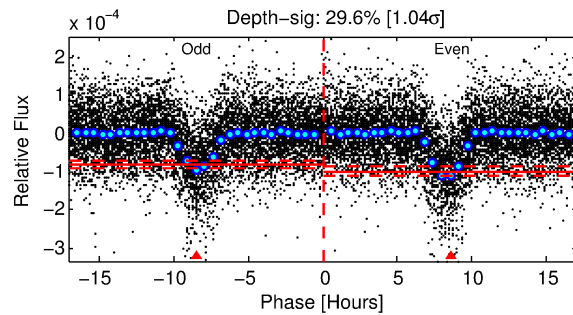
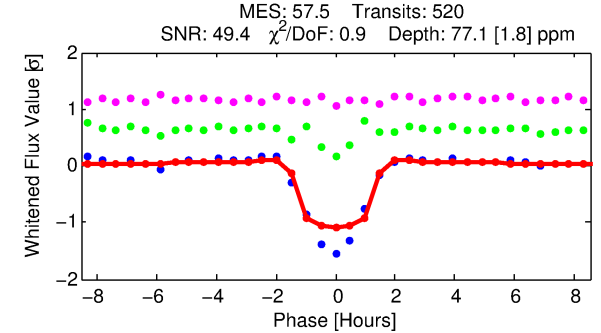
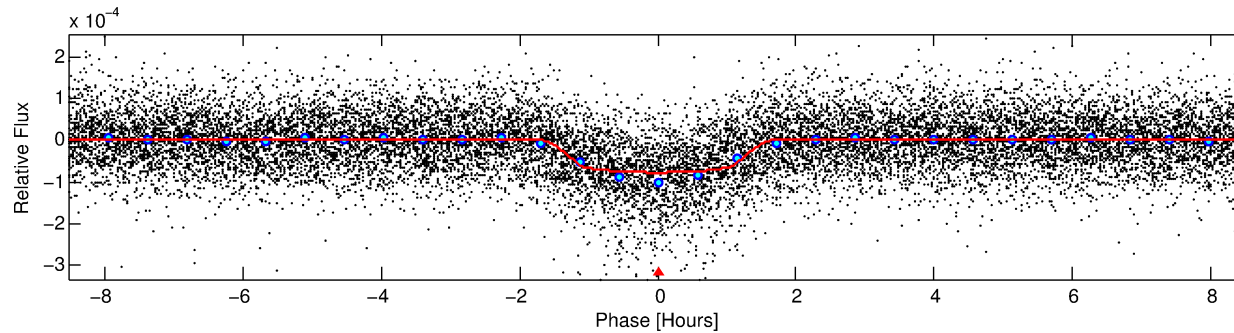
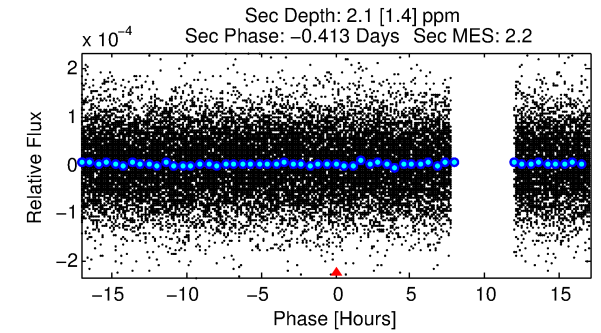
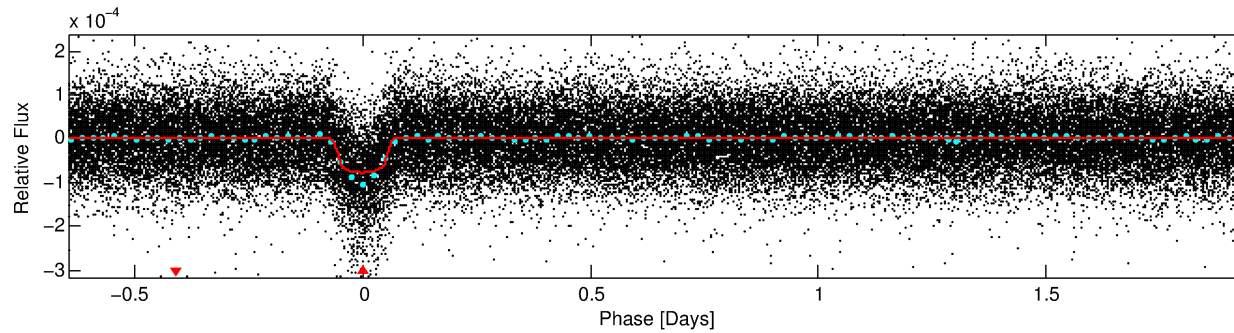
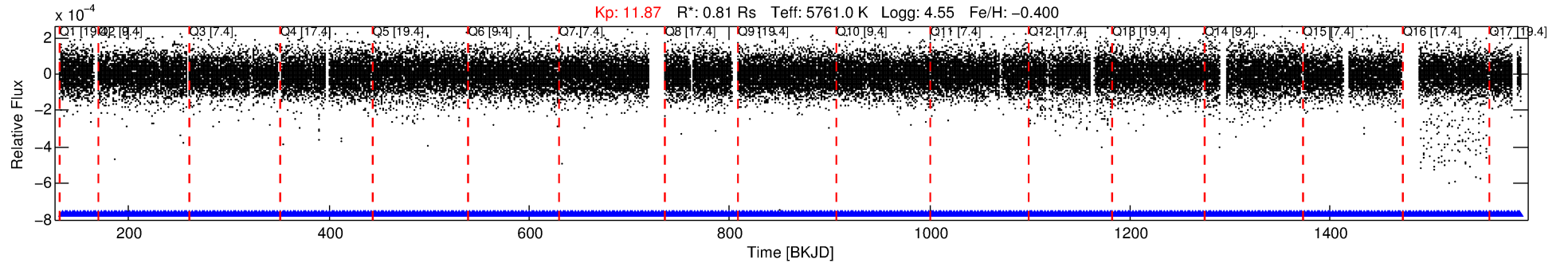
No Significant Match Found

# DV One-Page Summary

KIC: 7700871 Candidate: 1 of 1 Period: 2.590 d

KOI: K00088 Corr: No Ephemeris Match

Kp: 11.87 R\*: 0.81 Rs Teff: 5761.0 K Logg: 4.55 Fe/H: -0.400



## DV Fit Results:

Period = 2.58984 [0.00000] d  
Epoch = 133.8825 [0.0008] BKJD  
Rp/R\* = 0.0096 [0.0012]  
a/R\* = 3.19 [1.78]  
b = 0.91 [0.12]  
Seff = 533.70 [135.49]  
Teq = 1226 [78] K  
Rp = 0.85 [0.19] Re  
a = 0.0350 [0.0054] AU  
Ag = 1.91 [1.46] [0.62σ]  
Teff = 2227 [412] K [2.39σ]

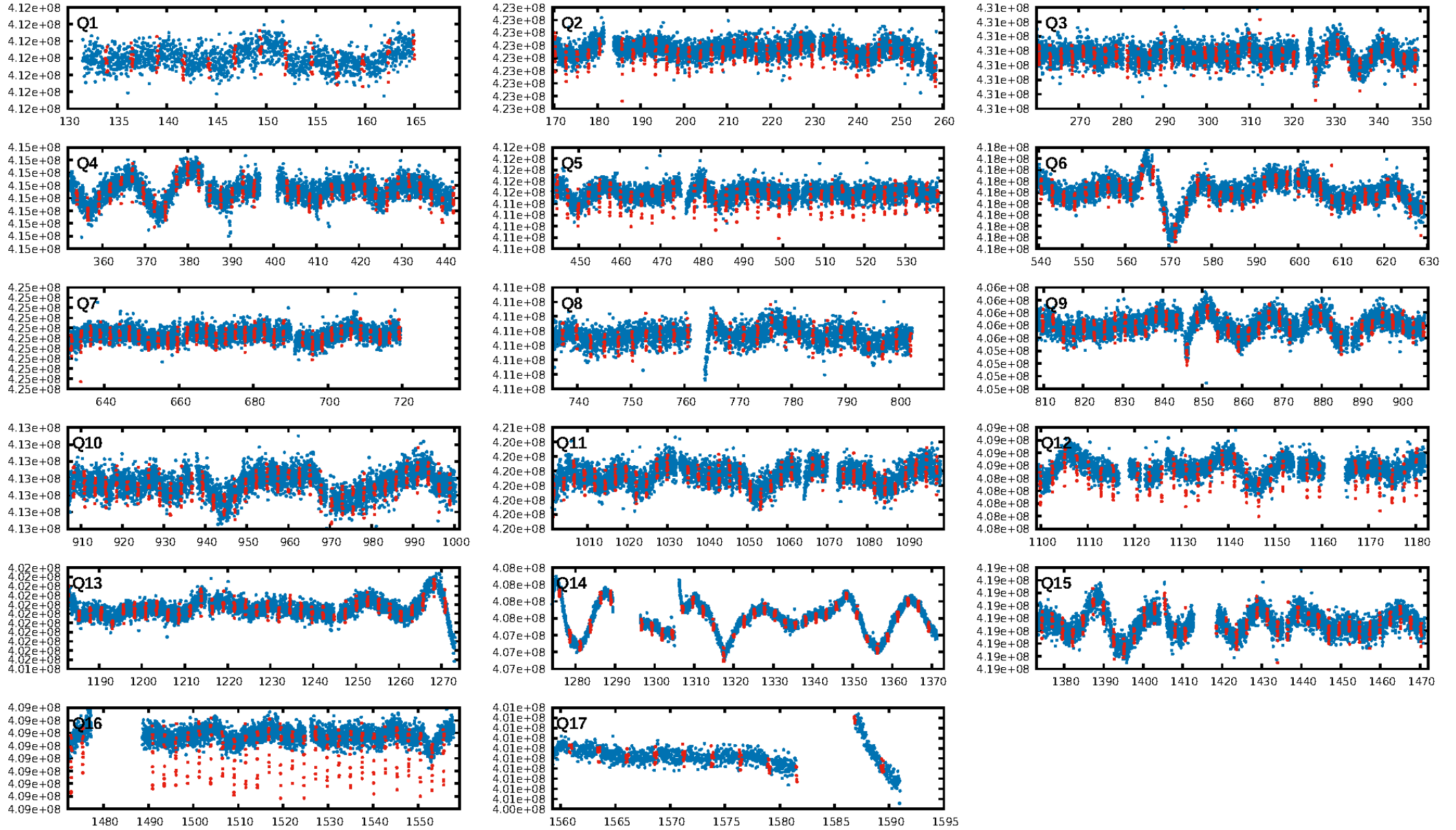
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [496/496]  
GhostDiagnostic-chr: -0.1945  
Centroid-sig: 0.0%  
Centroid-so: 27.767 arcsec [134.56σ]  
OotOffset-rm: 6.737 arcsec [96.29σ]  
KicOffset-rm: 6.753 arcsec [96.98σ]  
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]

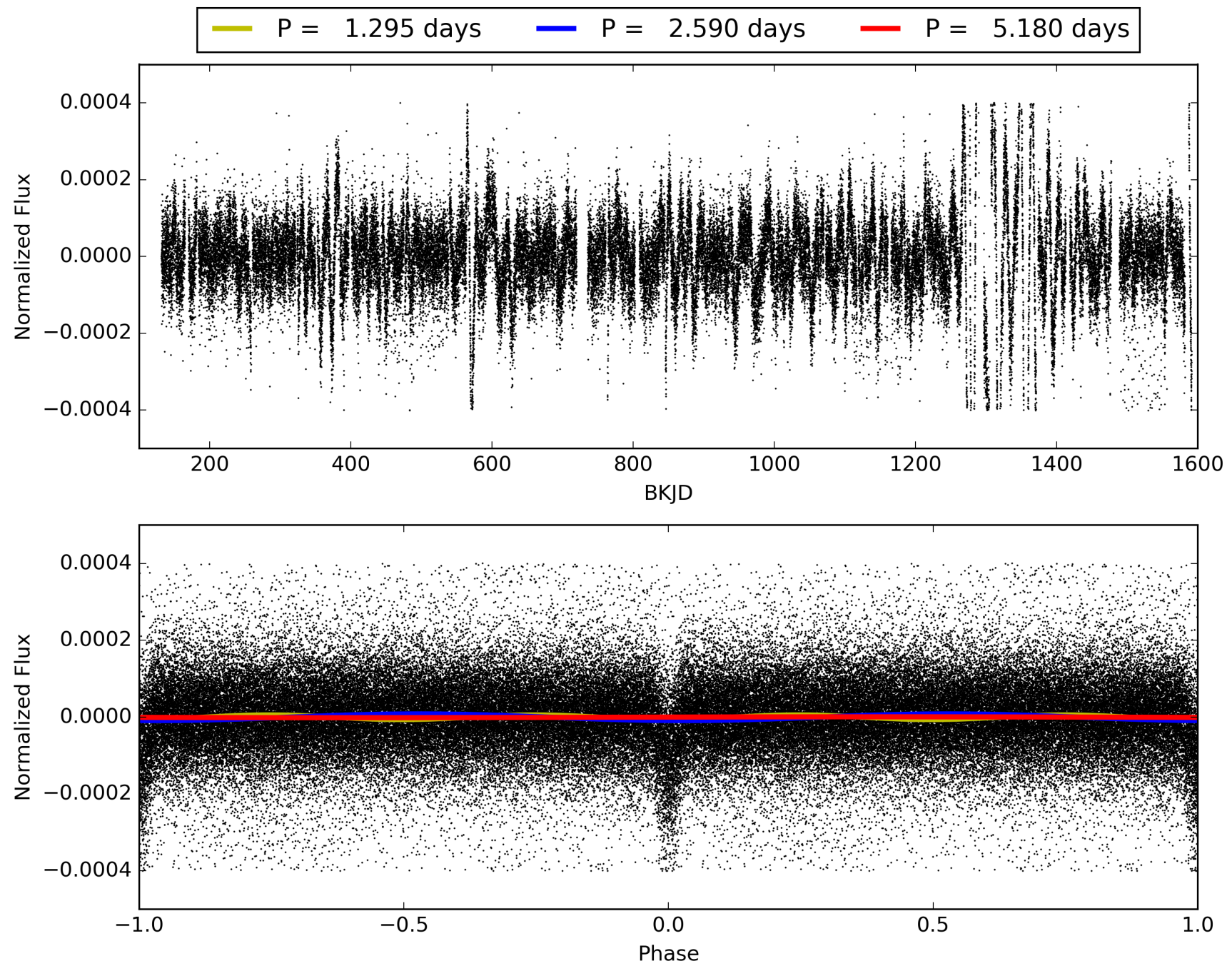
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:54:07 Z

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

# TCE 007700871-01, PDC Light Curves

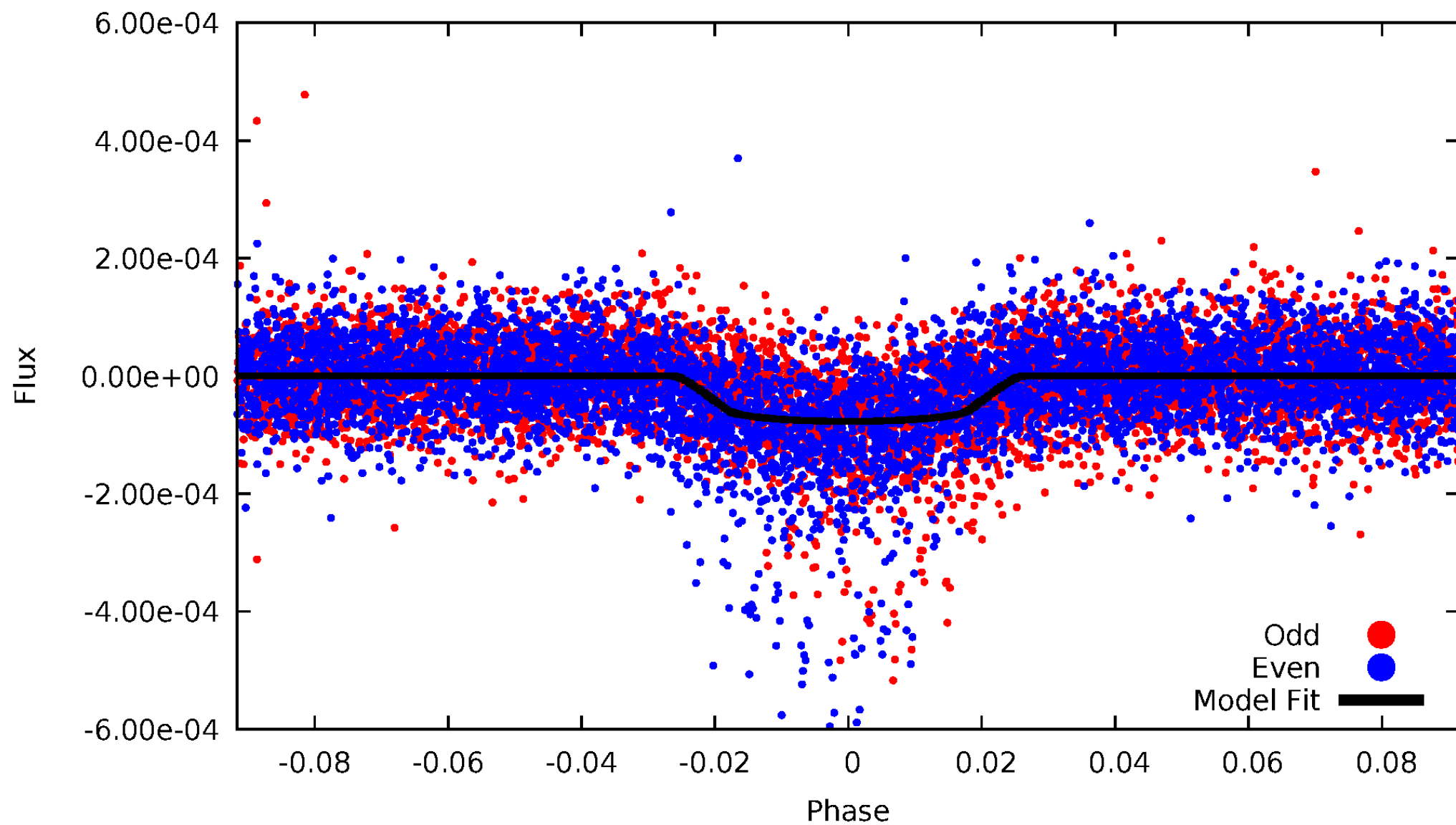


TCE 007700871-01



# DV Odd/Even

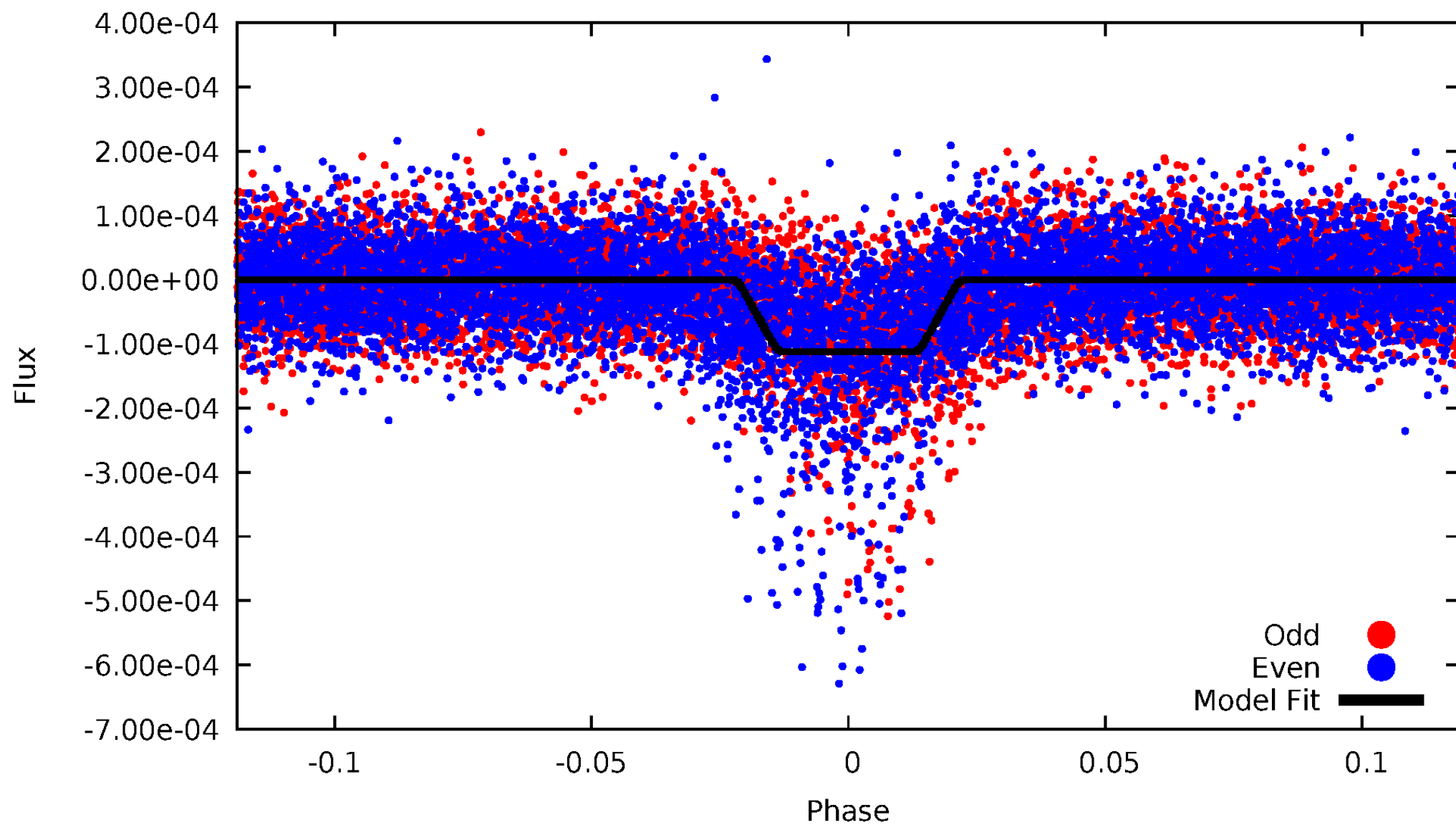
TCE 007700871-01





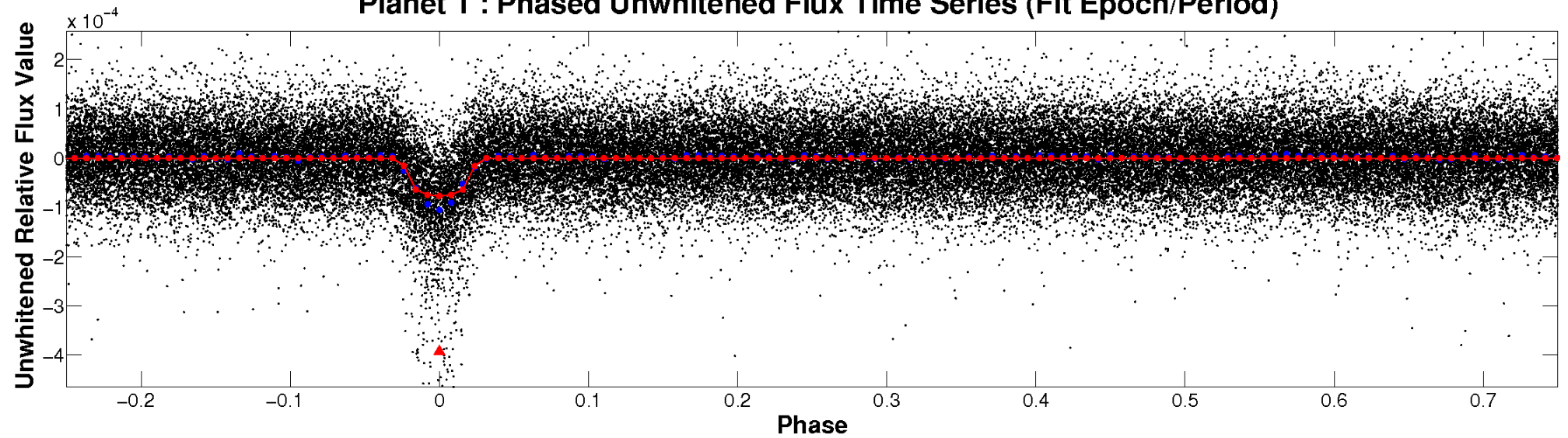
# ALT Odd/Even

TCE 007700871-01

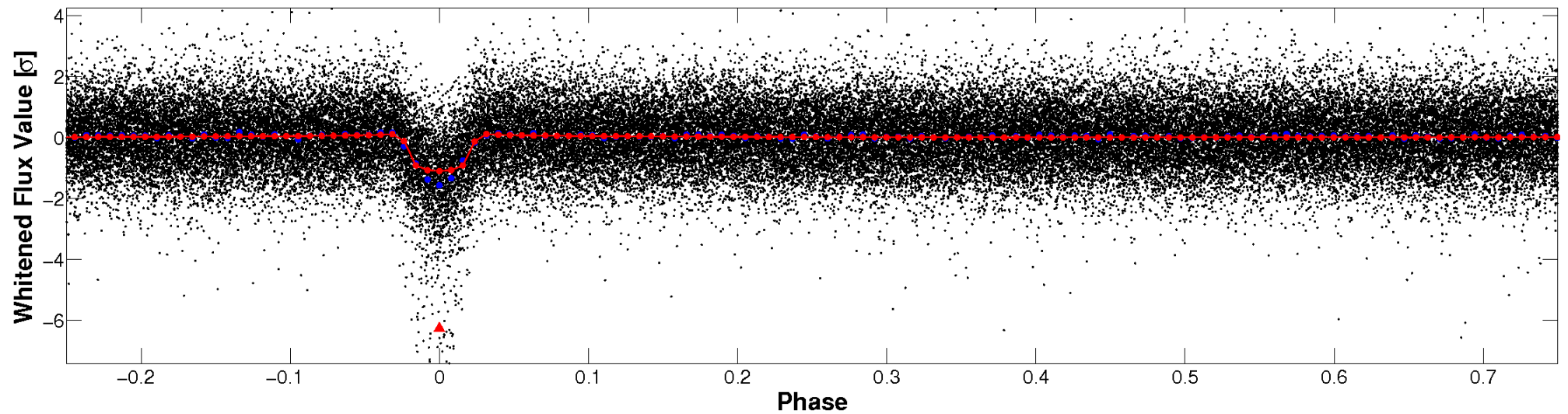


# Non-Whitened Vs. Whitened Light Curve

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

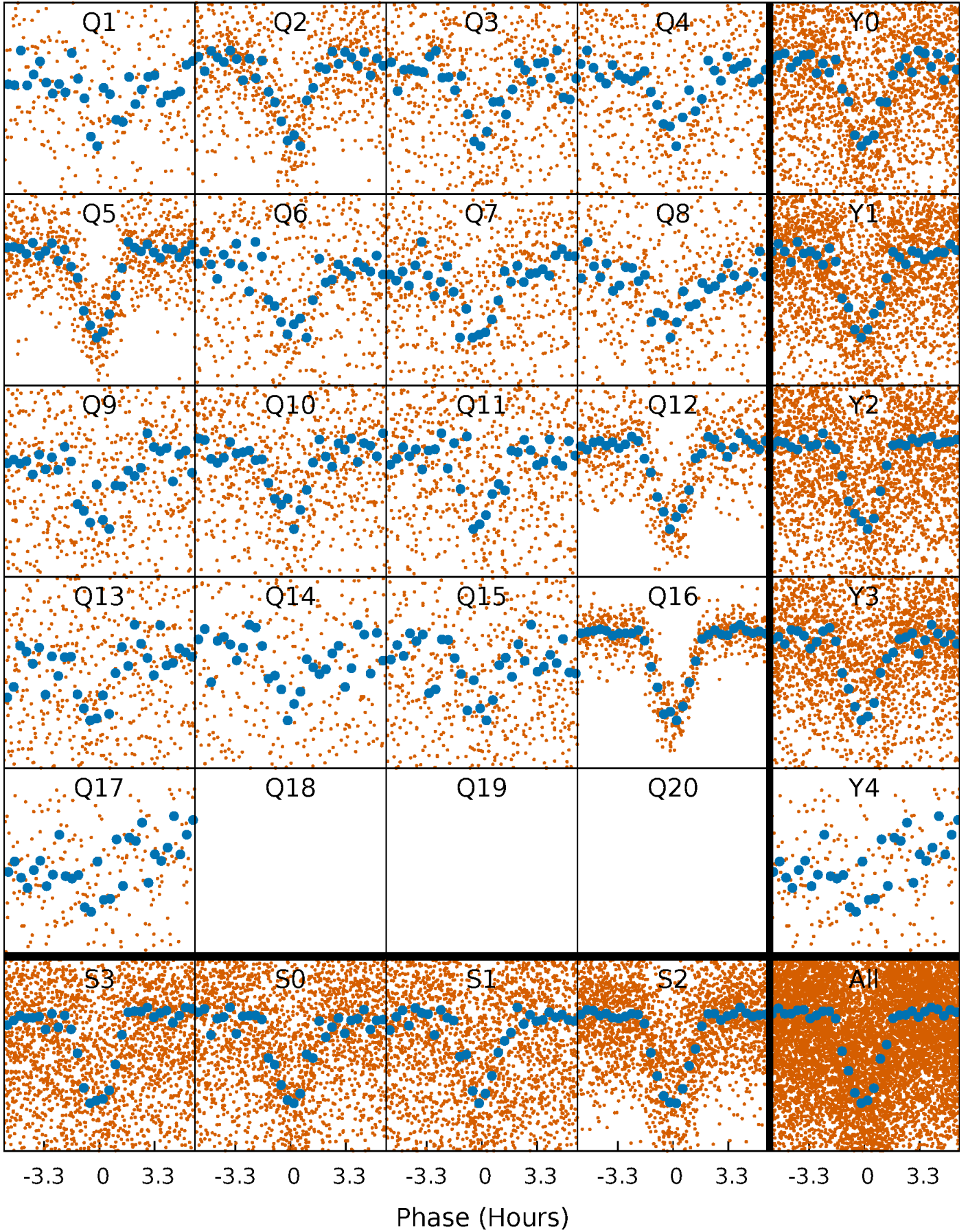


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

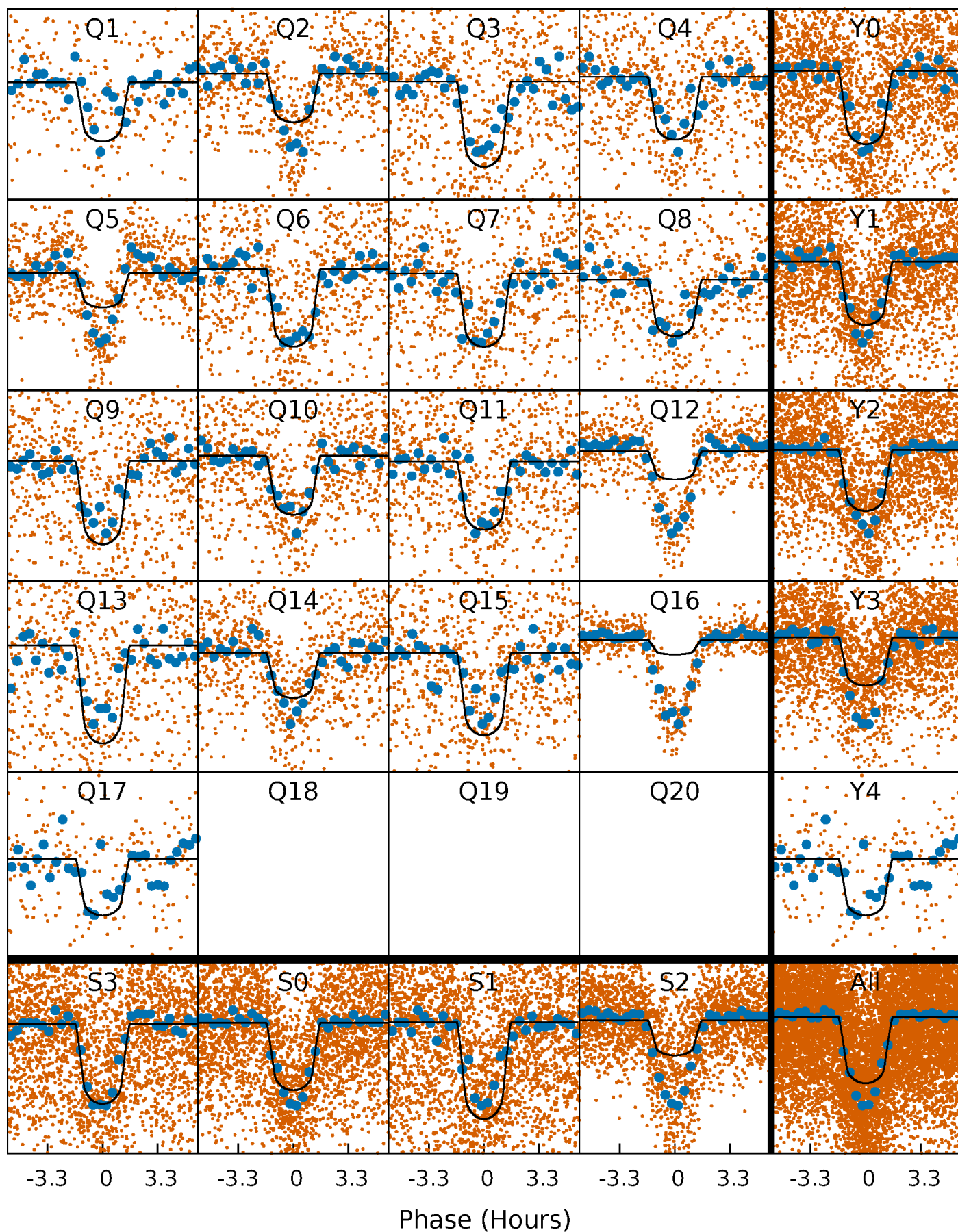
TCE 007700871-01   P= 2.589842 Days    $T_0=133.882512$  (BKJD)





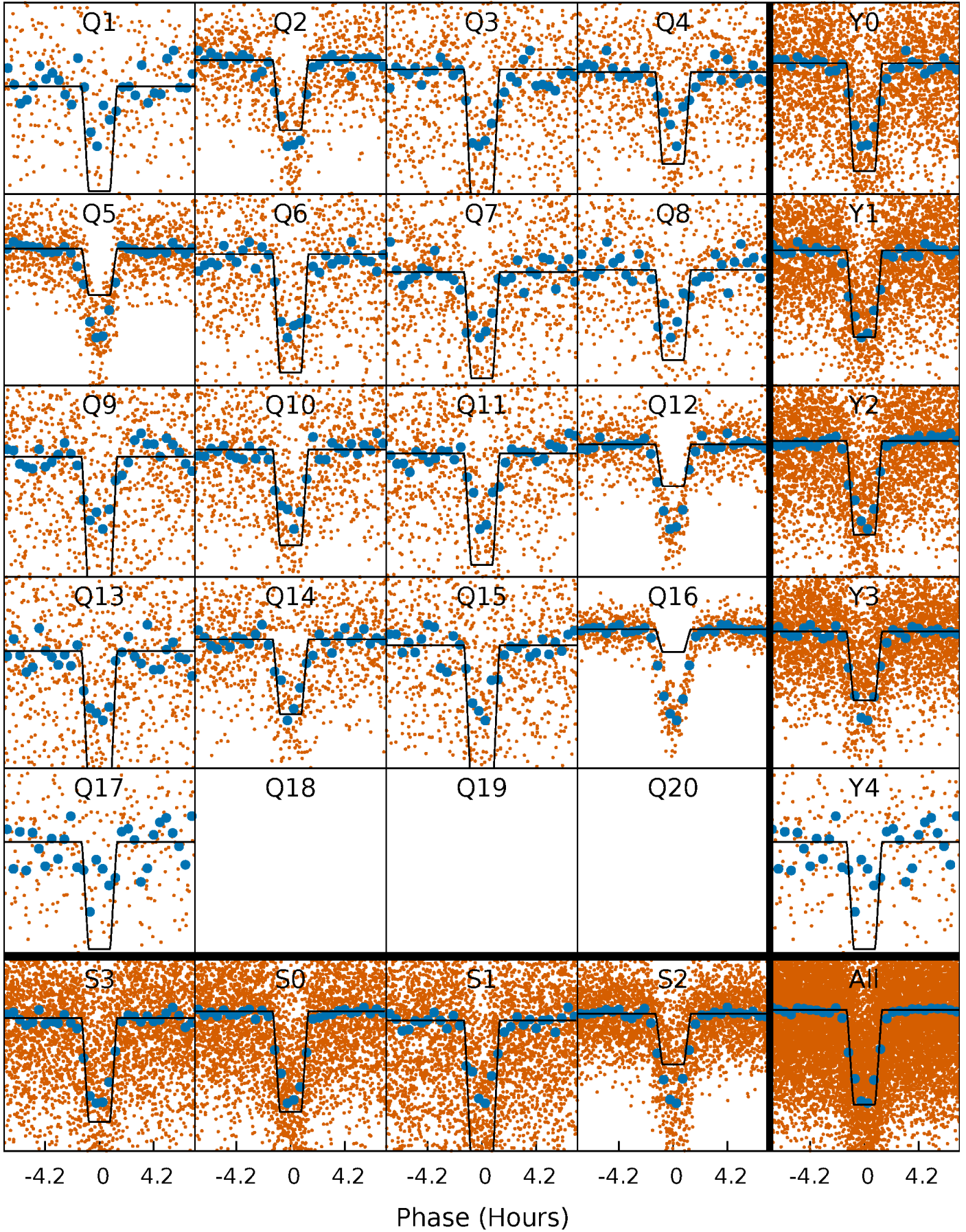
# DV Quarter-Phased Transit Curves

TCE 007700871-01 P= 2.589842 Days  $T_0=133.882512$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

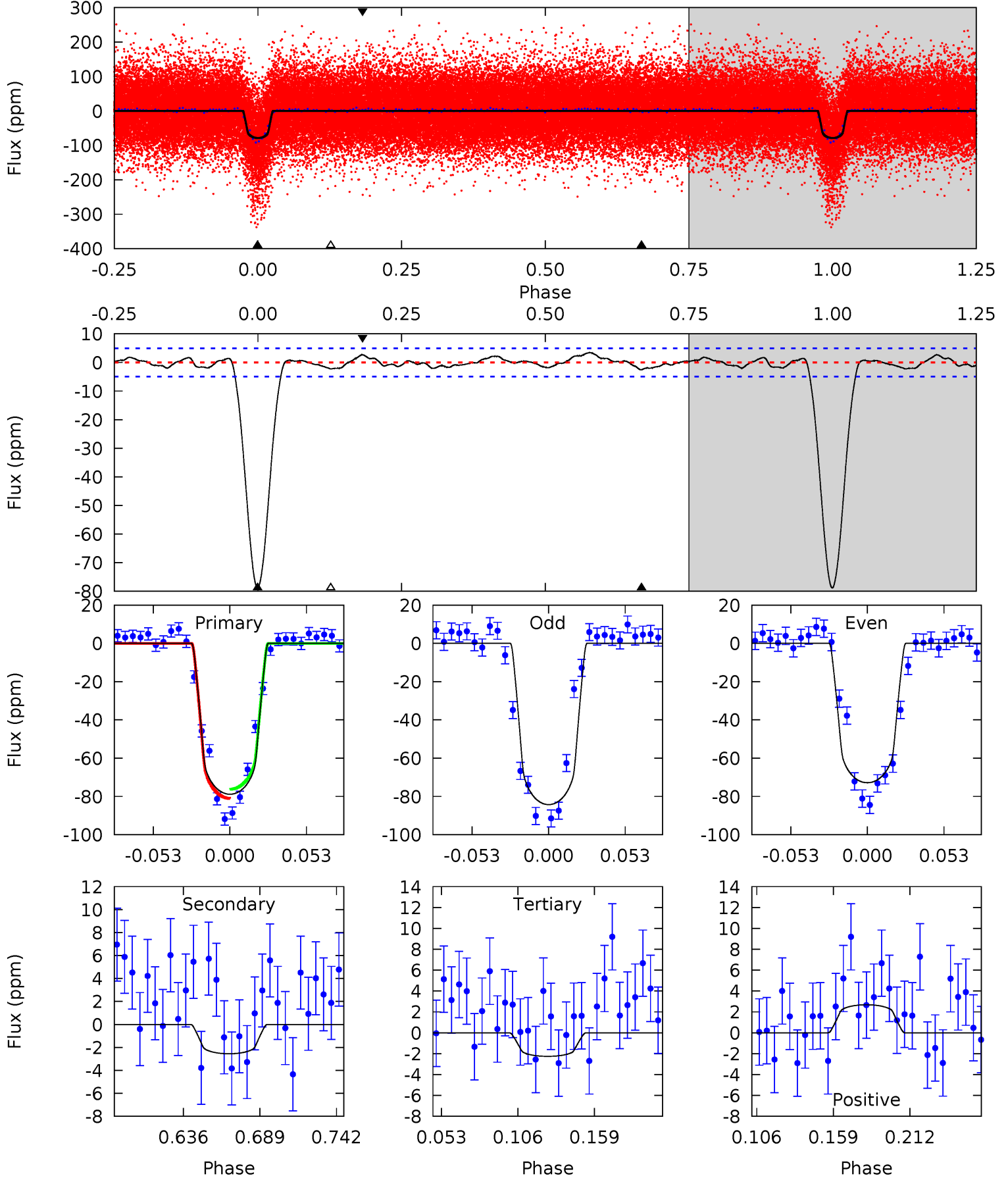
TCE 007700871-01 P= 2.589840 Days  $T_0=133.881131$  (BKJD)



# DV Model-Shift Uniqueness Test

007700871-01, P = 2.589842 Days, E = 131.292670 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 74.8 | 2.43 | 2.14 | 2.55 | 4.70            | 1.94            | 1.23             | 72.7    | 72.3    | 0.28    | -0.12   | 5.43    | 1.26 | 0.04  | 2.25 |

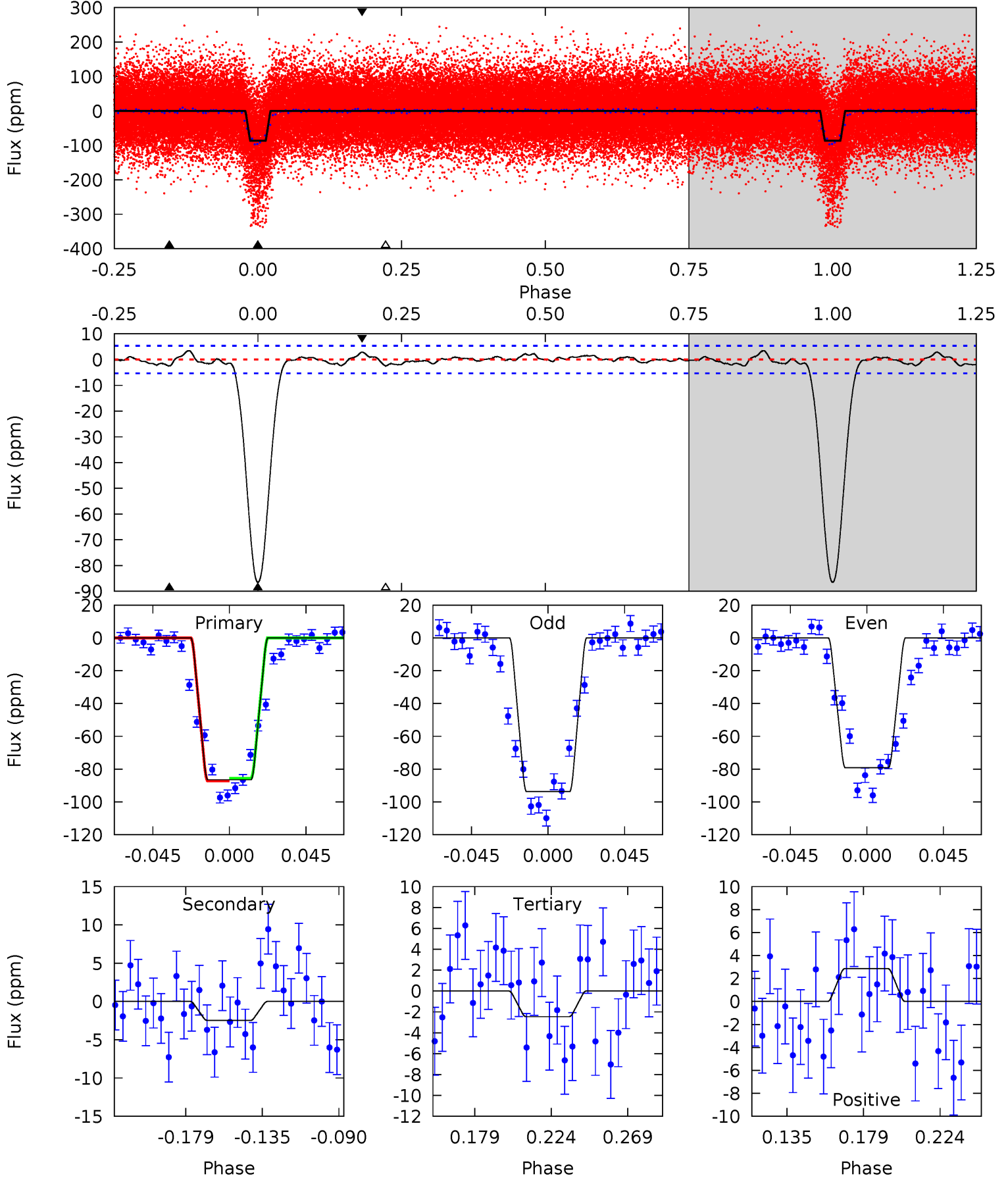




# Alt Model-Shift Uniqueness Test

007700871-01, P = 2.589840 Days, E = 131.291291 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 76.5 | 2.19 | 2.17 | 2.53 | 4.73            | 2.01            | 0.90             | 74.3    | 74.0    | 0.02    | -0.33   | 6.42    | 1.35 | 0.04  | 0.71 |





### Stellar Parameters For KIC 007700871

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5761^{+155}_{-155}$ | $4.548^{+0.051}_{-0.128}$ | $-0.400^{+0.300}_{-0.300}$ | $0.815^{+0.146}_{-0.073}$ | $0.857^{+0.088}_{-0.088}$ | $2.227^{+0.560}_{-0.803}$                 |
|        | +3%/-3%              | +1%/-3%                   | +75%/-75%                  | +18%/-9%                  | +10%/-10%                 | +25%/-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 007700871-01 / KOI 0088.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{max} (K)$      | $T_{obs} (K)$        | $A_{obs}$                 |
|---------|-------------|------------------------|--------------------|----------------------|---------------------------|
| DV      | $-3 \pm 1$  | $0.87^{+0.15}_{-0.12}$ | $1737^{+81}_{-65}$ | $2947^{+218}_{-239}$ | $2.175^{+1.303}_{-0.903}$ |
| Alt.    | $-2 \pm 1$  | $0.96^{+0.14}_{-0.12}$ | $1737^{+80}_{-67}$ | $2847^{+213}_{-323}$ | $1.785^{+0.992}_{-0.919}$ |

$T_{max}$  = 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  $A_{obs} \gg 1.0$

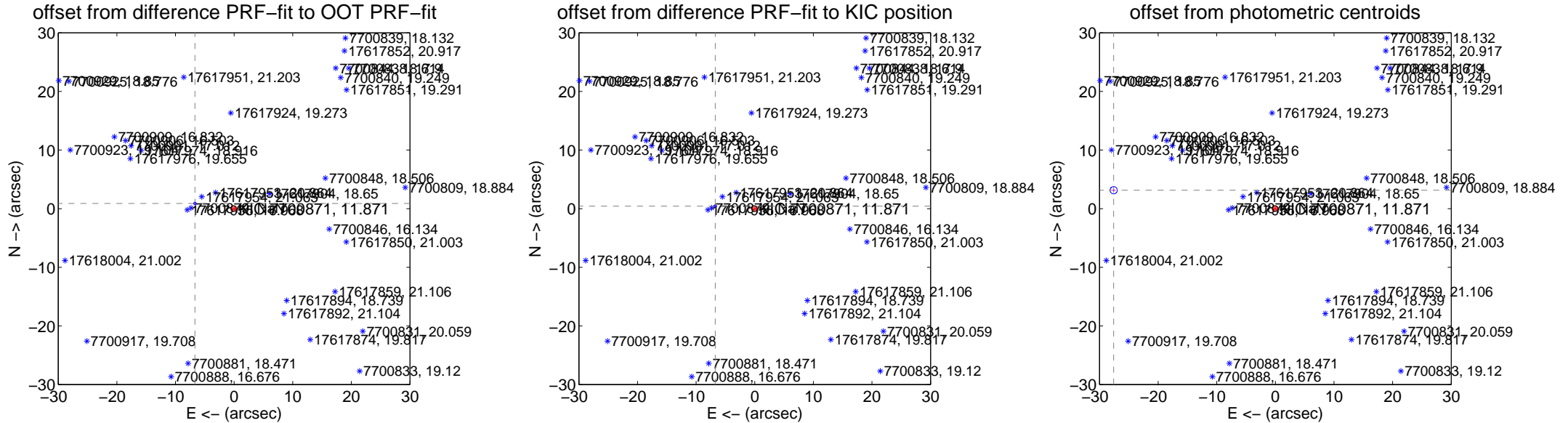
## DV Centroid Data

Supplemental centroid analysis for 007700871-01. **Kepler magnitude: 11.87**. Transit SNR 49.38

There are 17 quarters with good PRF difference image offsets

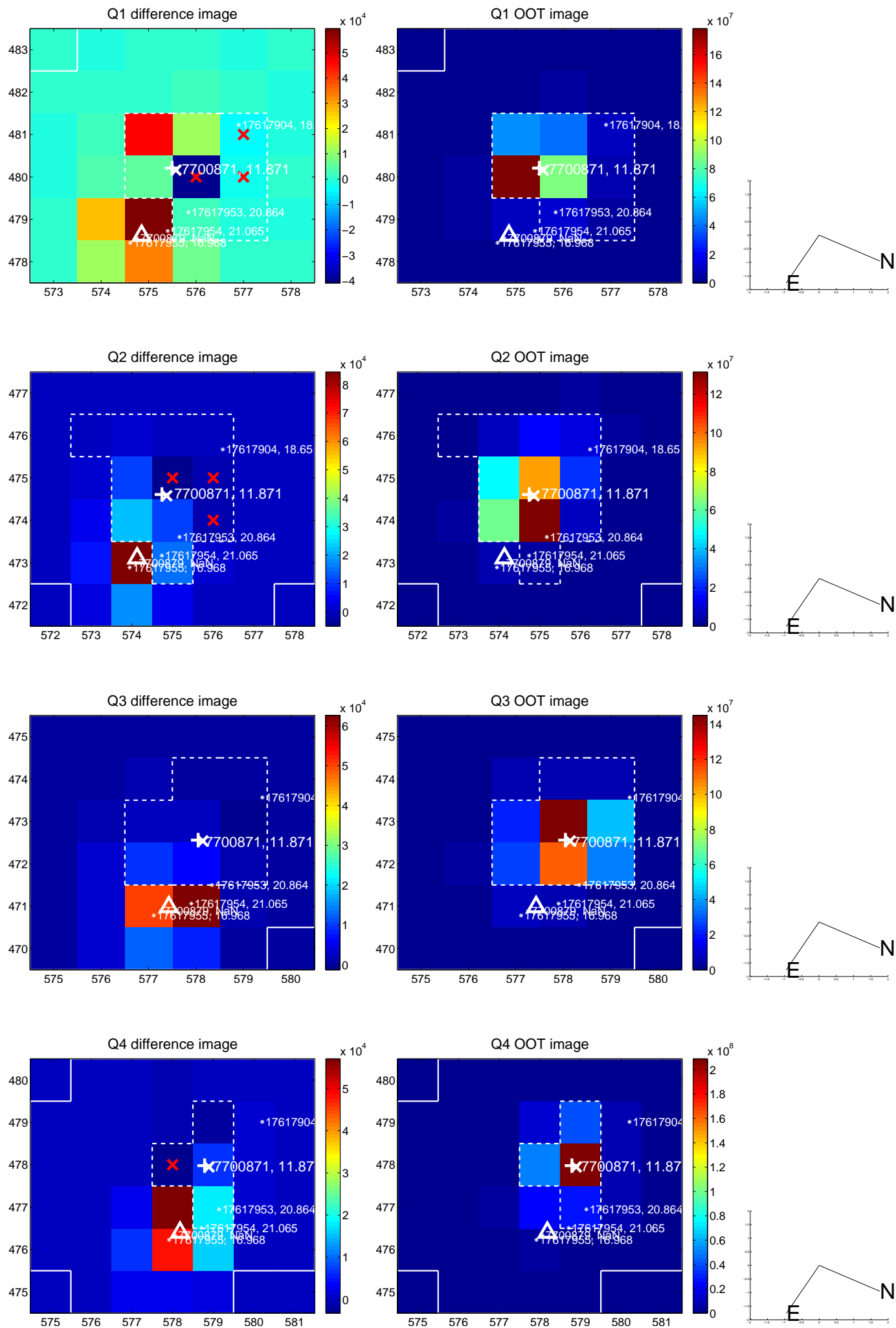
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

|   | Distance in arcsec                  | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | <b>6.737 <math>\pm</math> 0.070</b> | <b>96.29</b>        | 6.679 $\pm$ 0.070 | 0.883 $\pm$ 0.069 |
| PRF-fit source offset from KIC position | <b>6.753 <math>\pm</math> 0.070</b> | <b>96.98</b>        | 6.740 $\pm$ 0.069 | 0.434 $\pm$ 0.068 |
| photometric centroid source offset      | <b>27.77 <math>\pm</math> 0.21</b>  | <b>134.56</b>       | 27.59 $\pm$ 0.21  | 3.14 $\pm$ 0.17   |

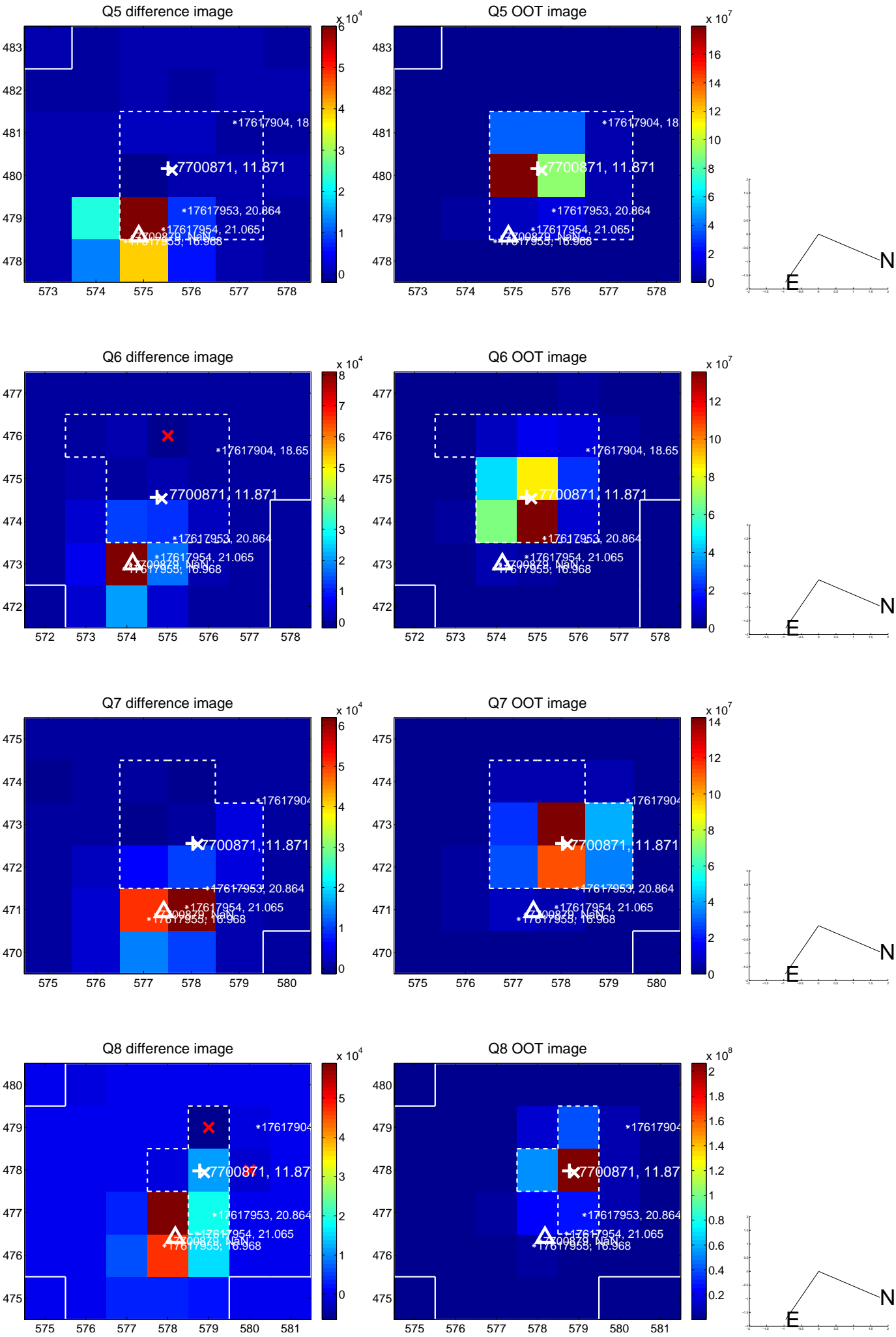


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

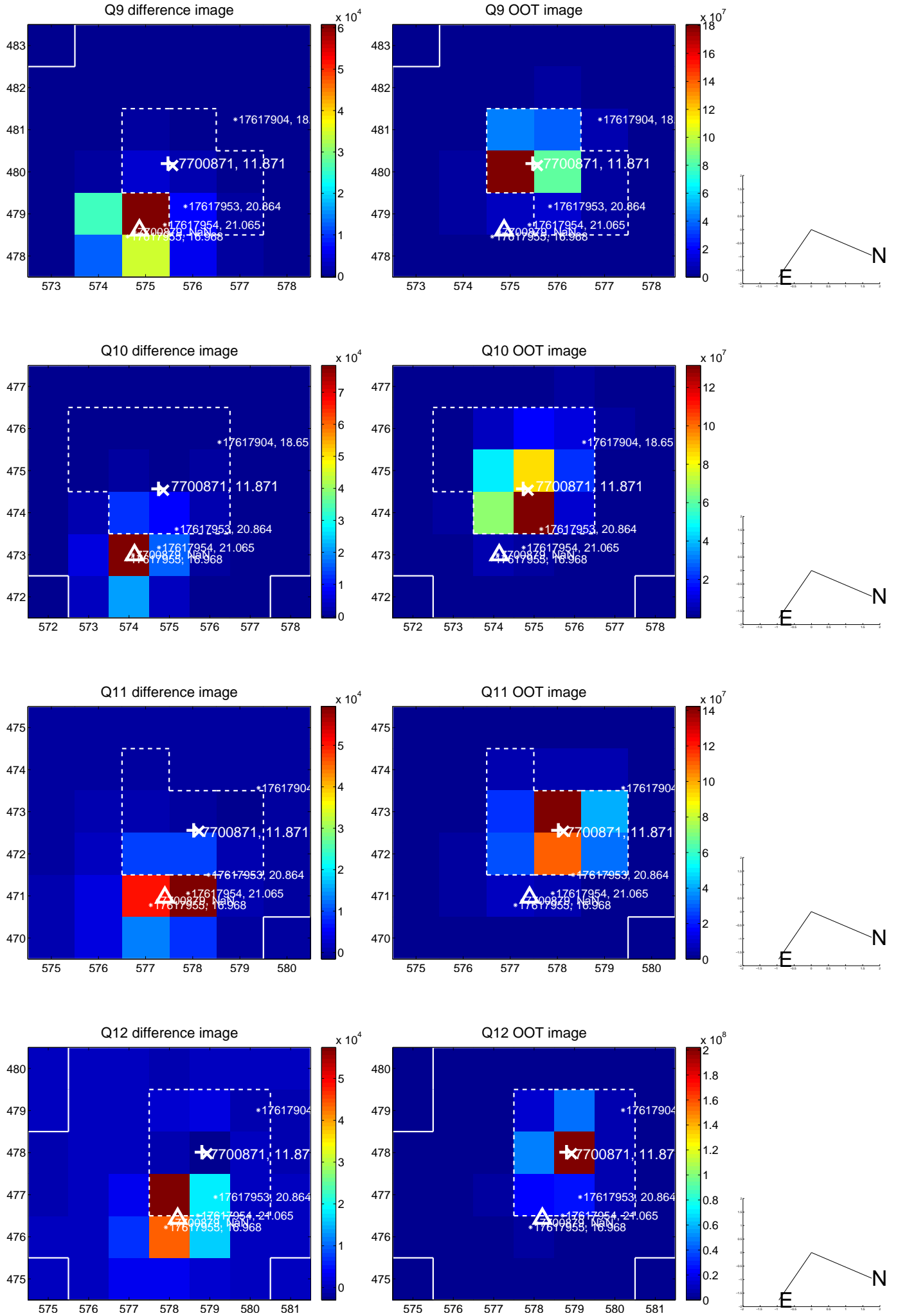


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

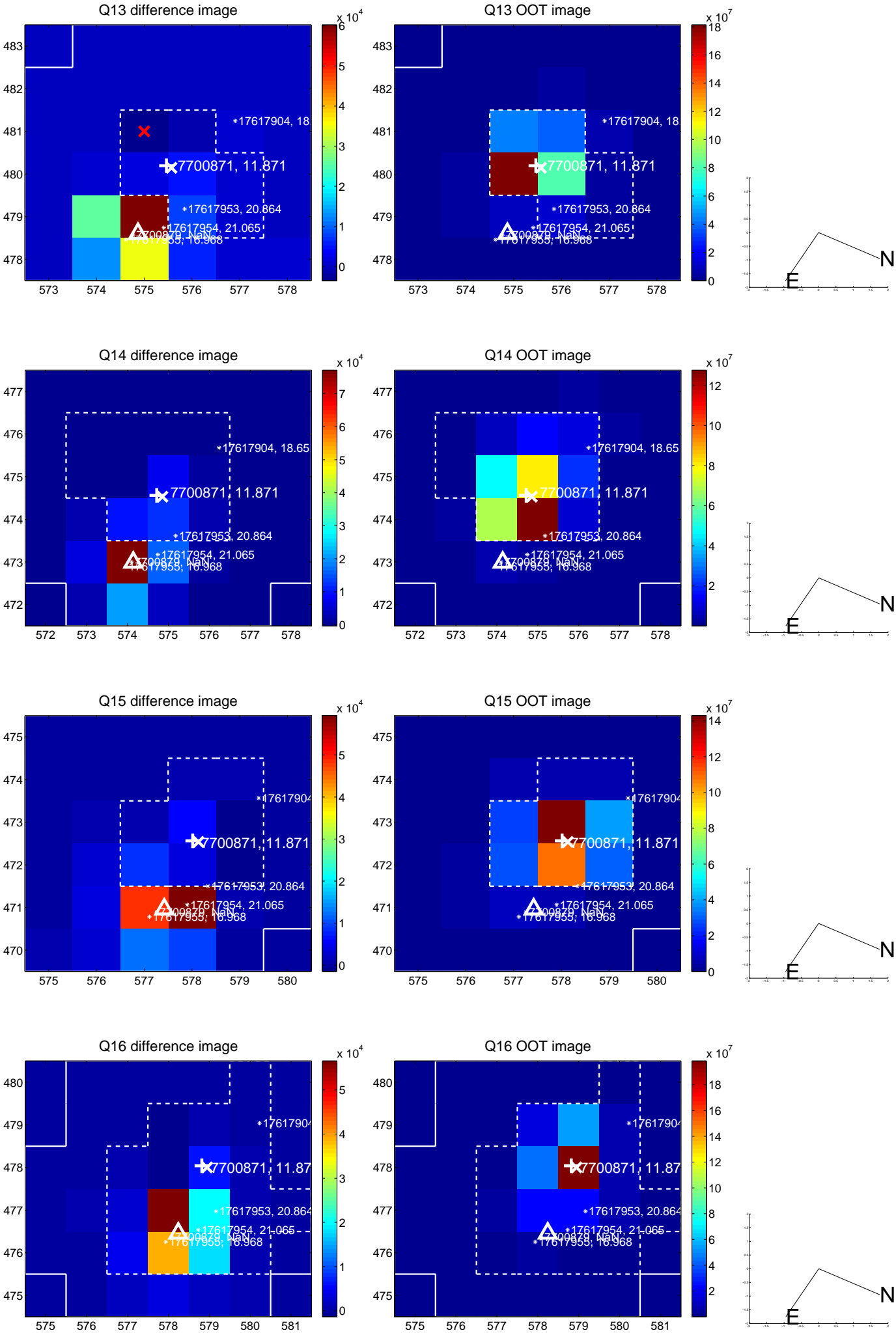




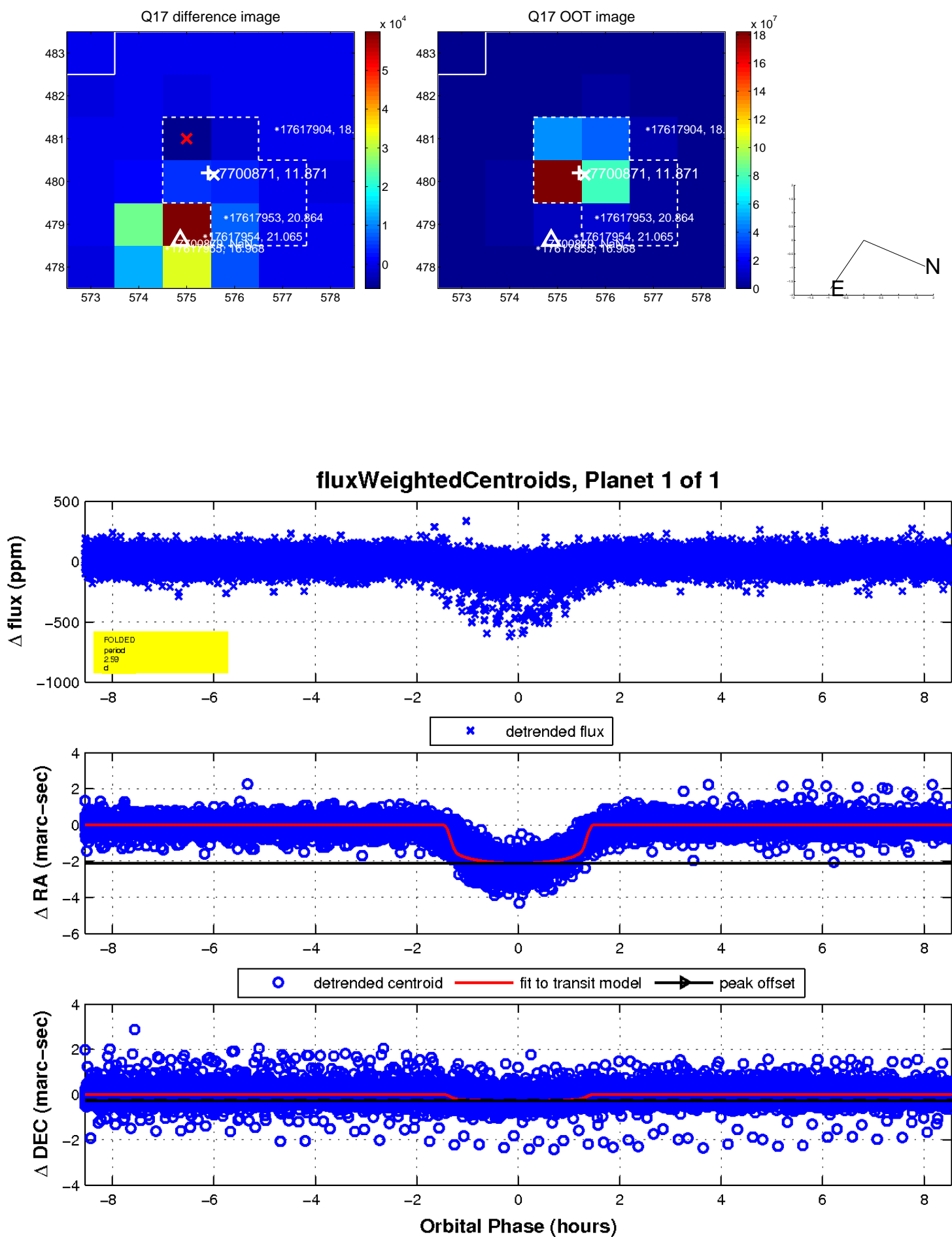
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

