

# KIC 008248415

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008248415-01 | OBS      | No   | 0.989068      | 131.793856   | 79.2        | 11.869           | 7.5 | 11.5 | 0.34                        | 3543            | 0.55                   | 87.18                  |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                    |
|--------------|----------|------|-------|---|---|---|---|-----------------------------|
| 008248415-01 | OBS      | FP   | 0.00  | 1 | 0 | 1 | 0 | LPP_DV—CENT_RESOLVED_OFFSET |

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

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

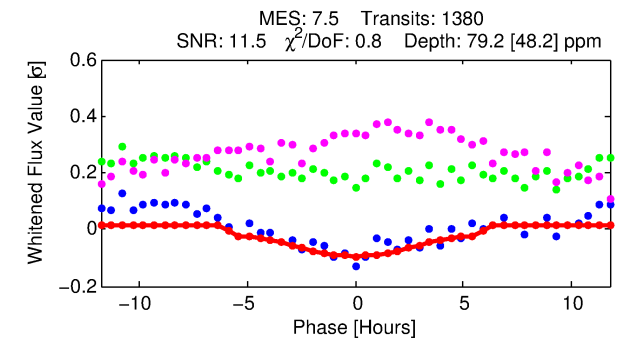
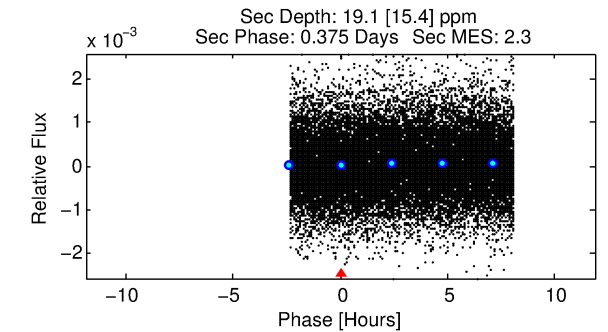
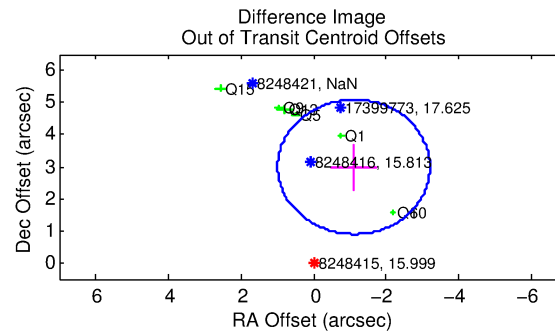
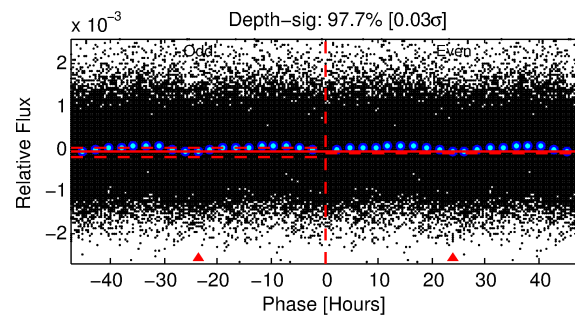
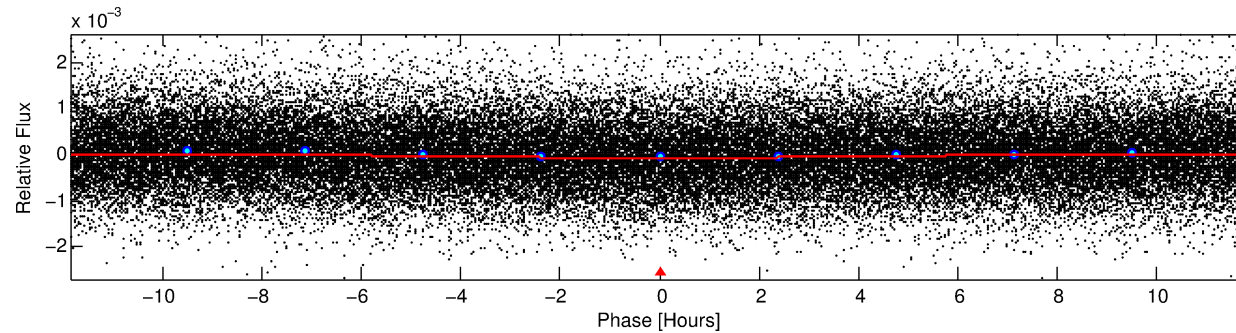
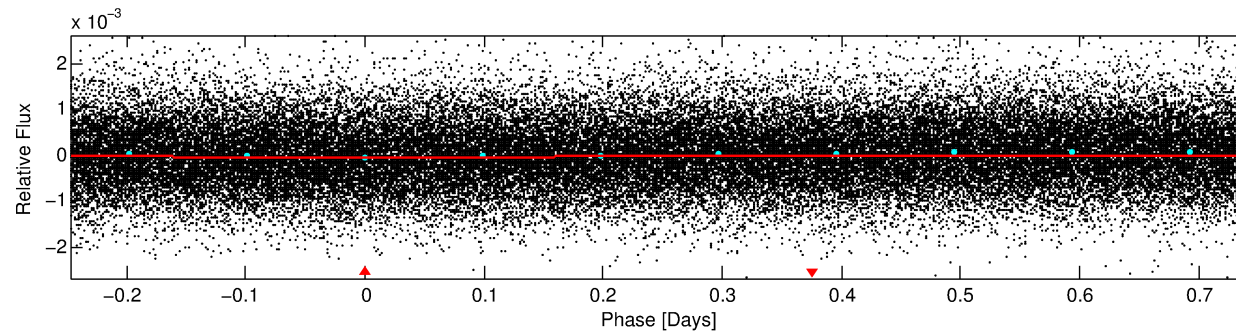
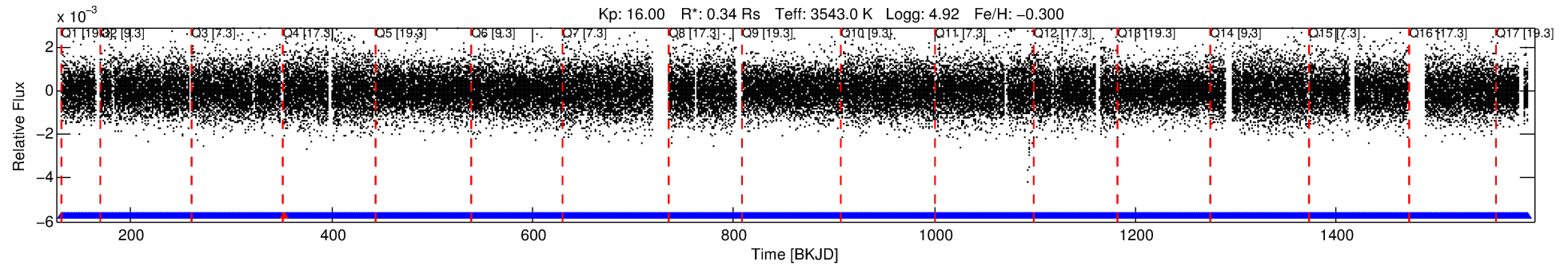
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008248415-01

No Significant Match Found

# DV One-Page Summary

KIC: 8248415 Candidate: 1 of 1 Period: 0.989 d



## DV Fit Results:

Period = 0.98907 [0.00002] d  
Epoch = 131.7939 [0.0101] BKJD  
Rp/R\* = 0.0148 [0.0334]  
a/R\* = 1.01 [0.04]  
b = 1.00 [0.06]  
Seff = 87.18 [11.32]  
Teff = 779 [25] K  
Rp = 0.55 [1.24] Re  
a = 0.0137 [0.0012] AU  
Ag = 6.54 [30.04] [0.18σ]  
Teffp = 1926 [2213] K [0.52σ]

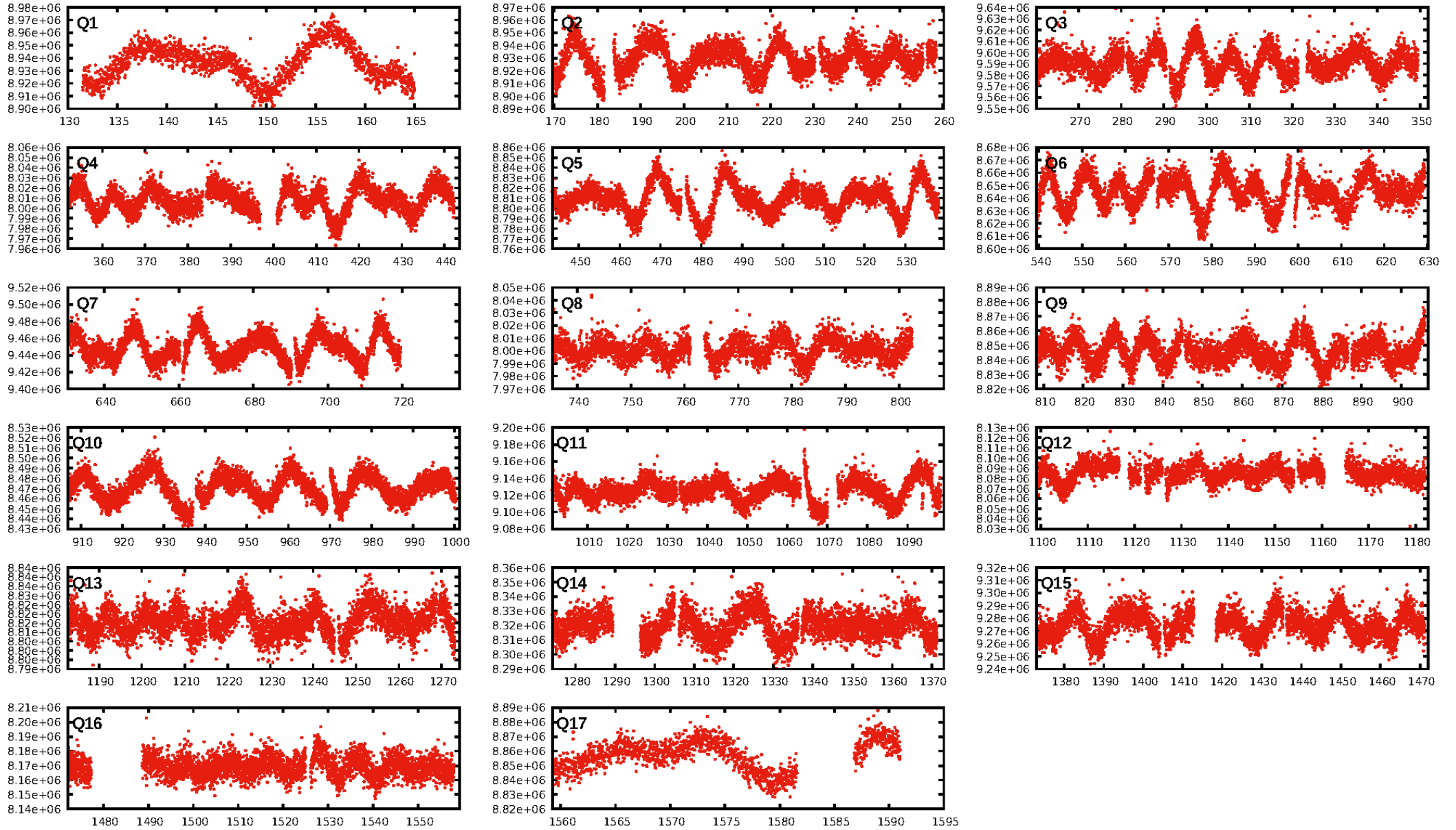
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1316/1317]  
GhostDiagnostic-chr: -1.769  
Centroid-sig: 0.0%  
Centroid-so: 3.153 arcsec [3.62σ]  
OotOffset-rm: 3.191 arcsec [4.57σ]  
KicOffset-rm: 3.501 arcsec [4.90σ]  
OotOffset-st: 2/1/0/4 [7]  
KicOffset-st: 2/1/0/4 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [17/17]

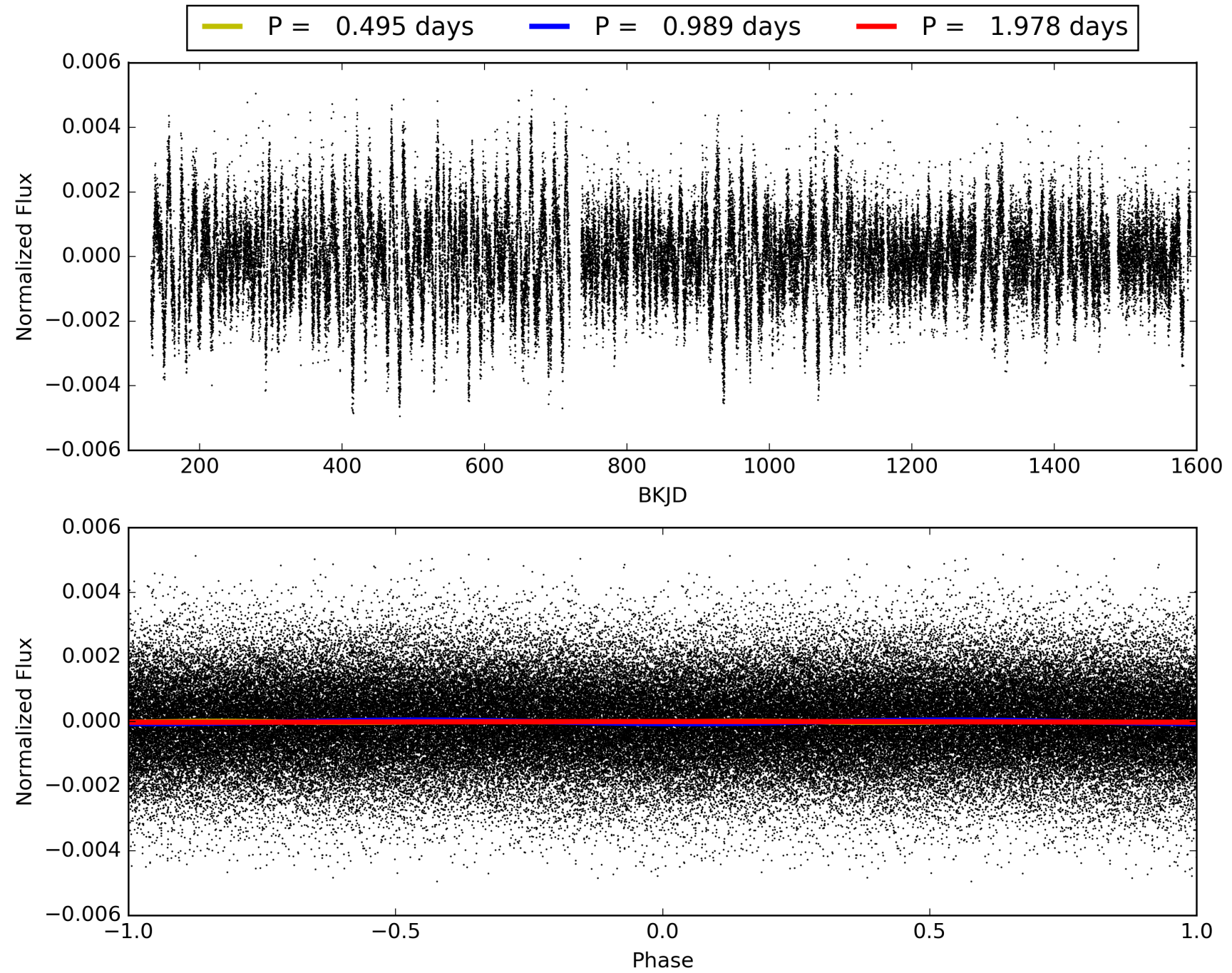
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:41:40 Z

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

# TCE 008248415-01, PDC Light Curves

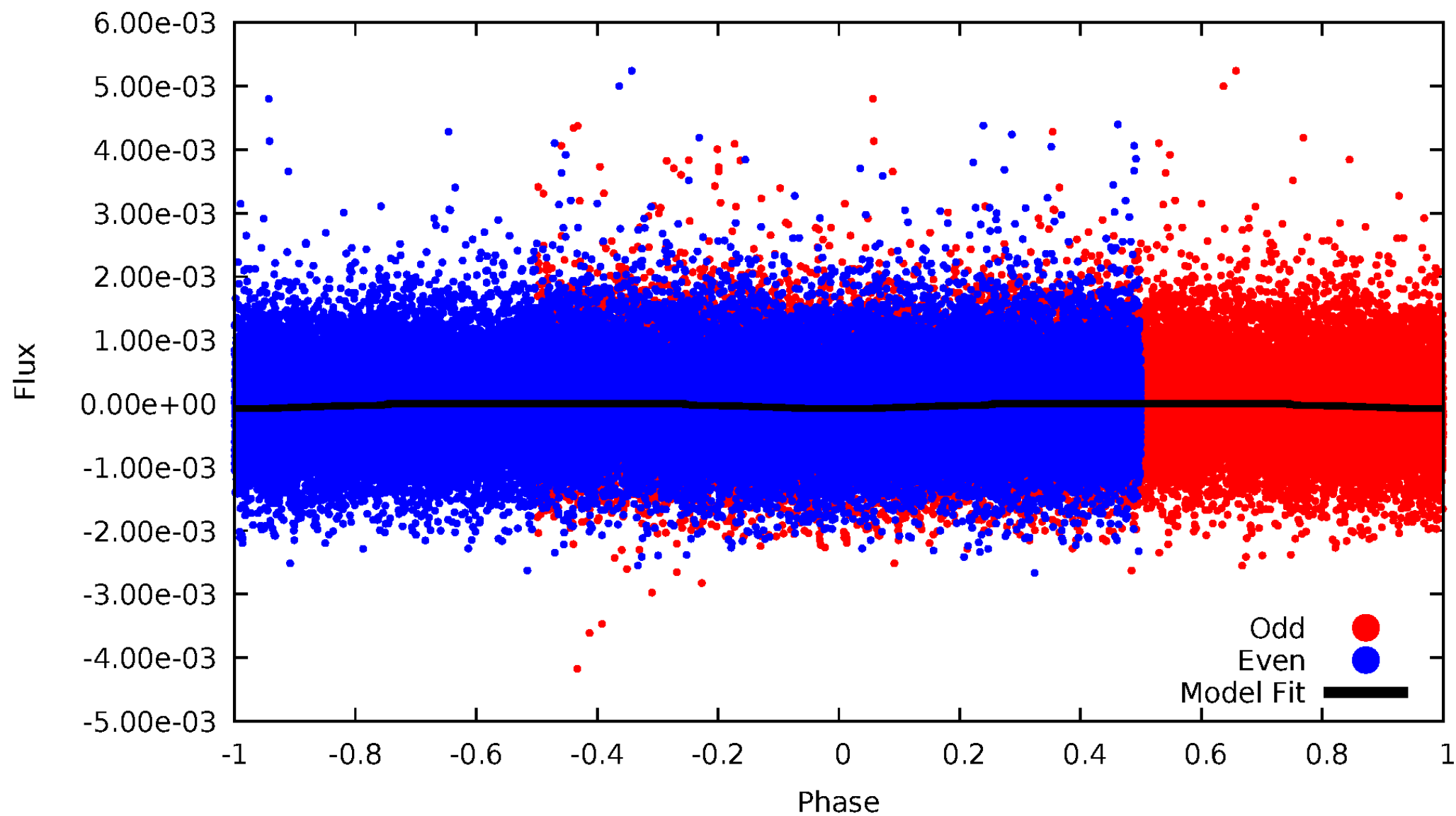


TCE 008248415-01



# DV Odd/Even

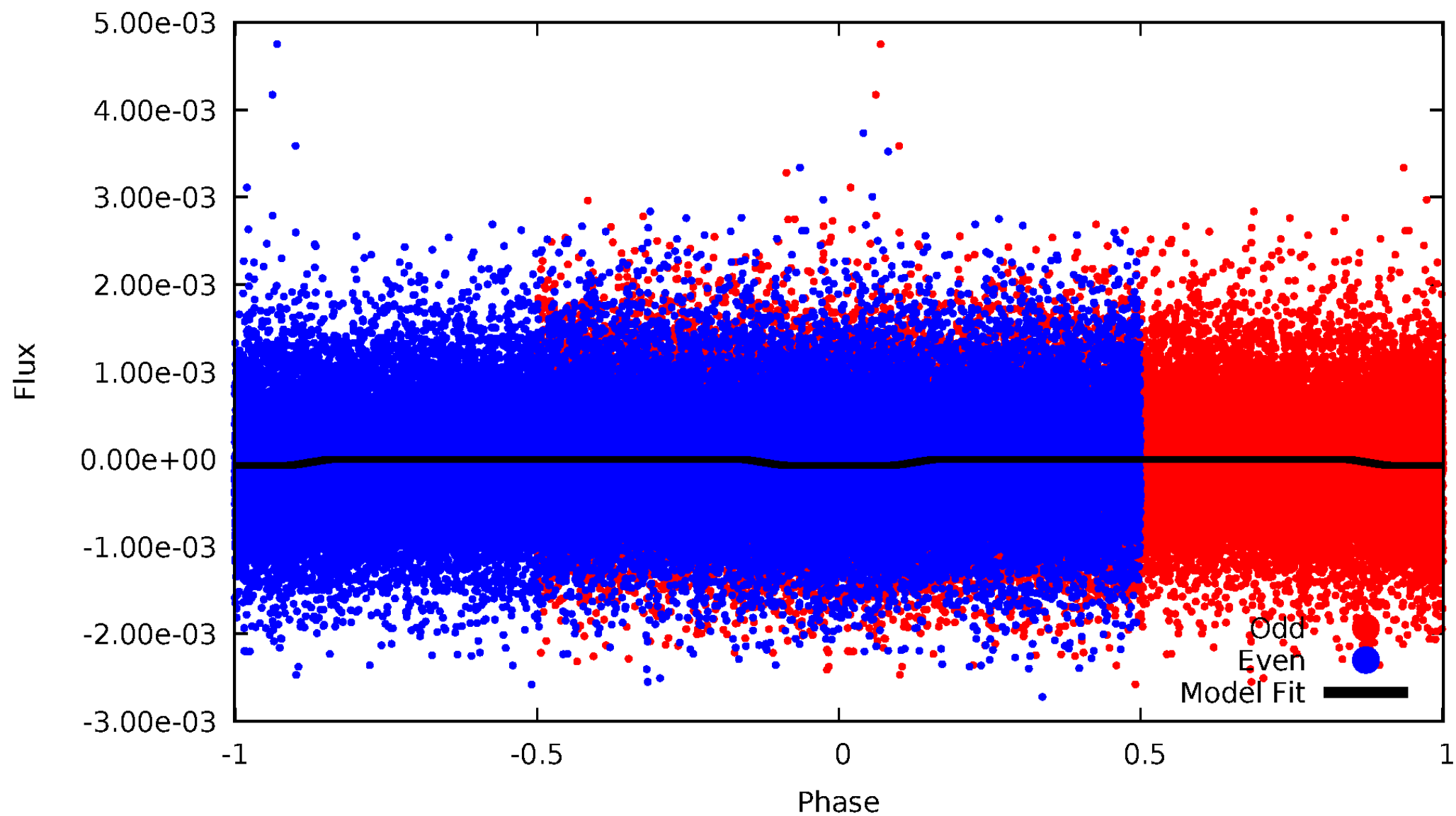
TCE 008248415-01





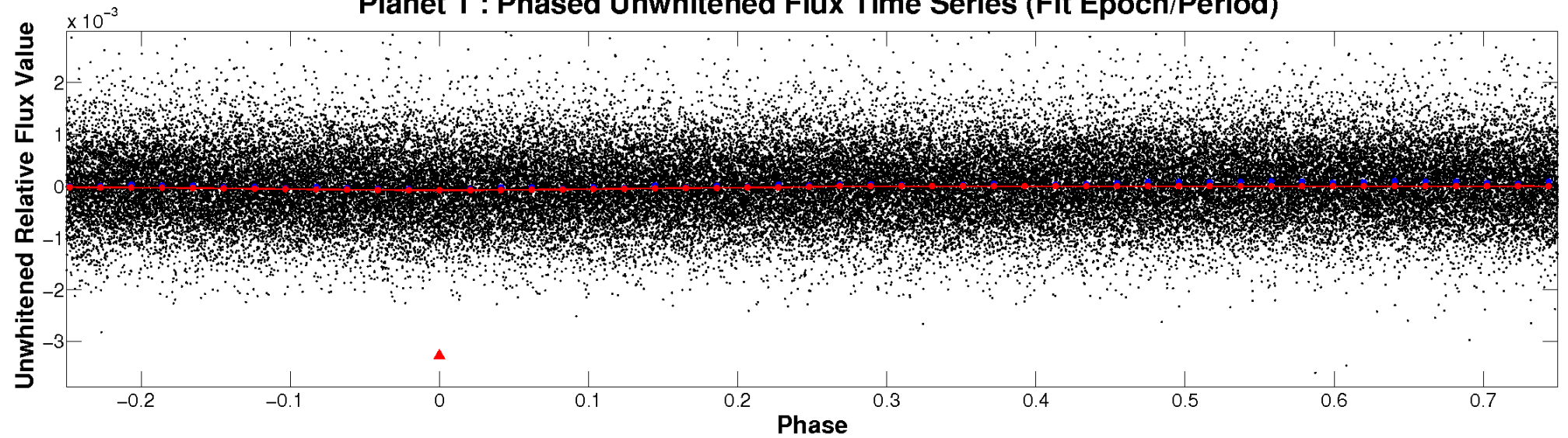
# ALT Odd/Even

TCE 008248415-01

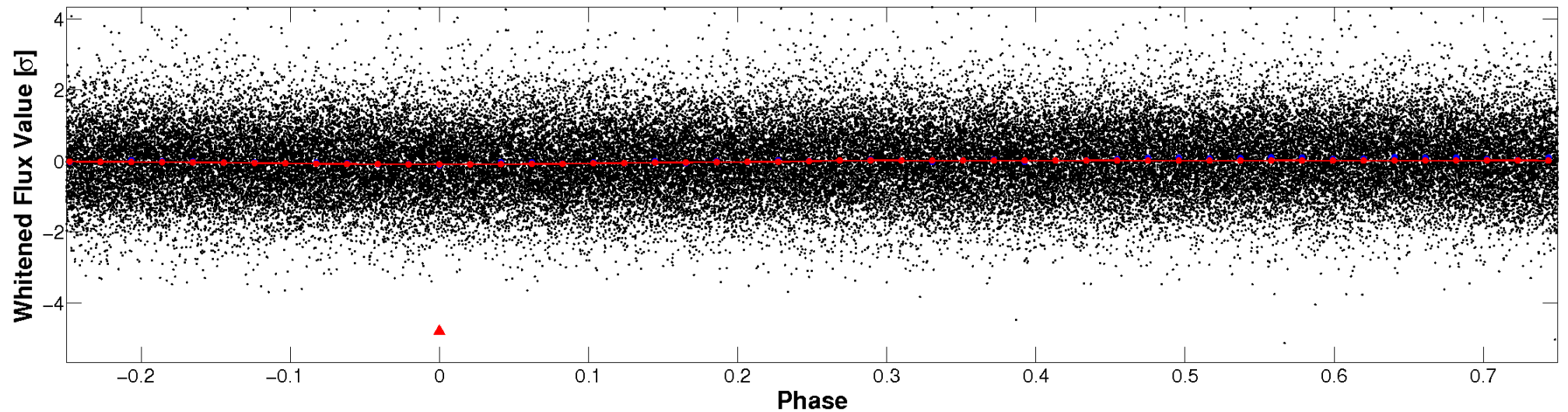


# Non-Whitened Vs. Whitened Light Curve

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

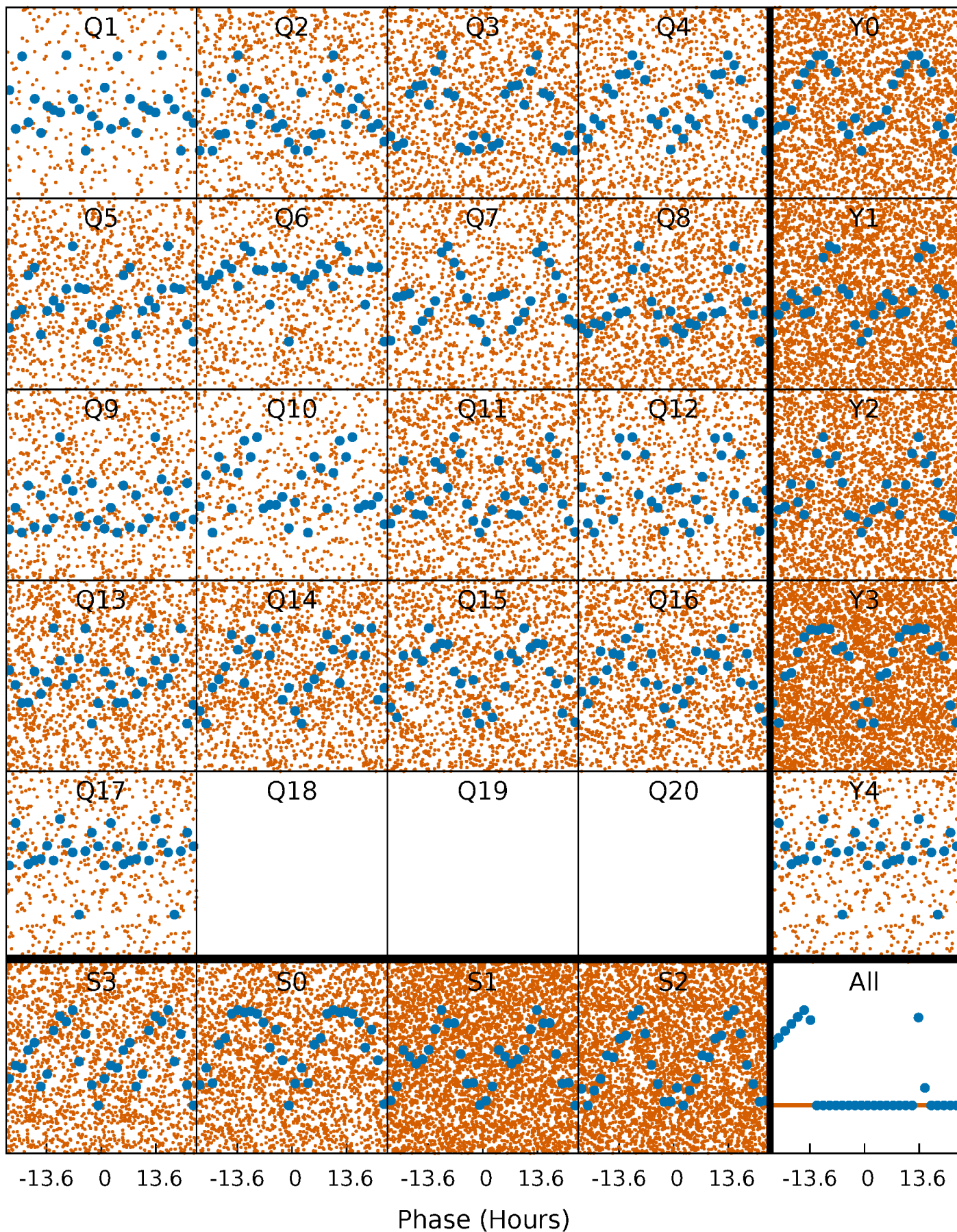


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

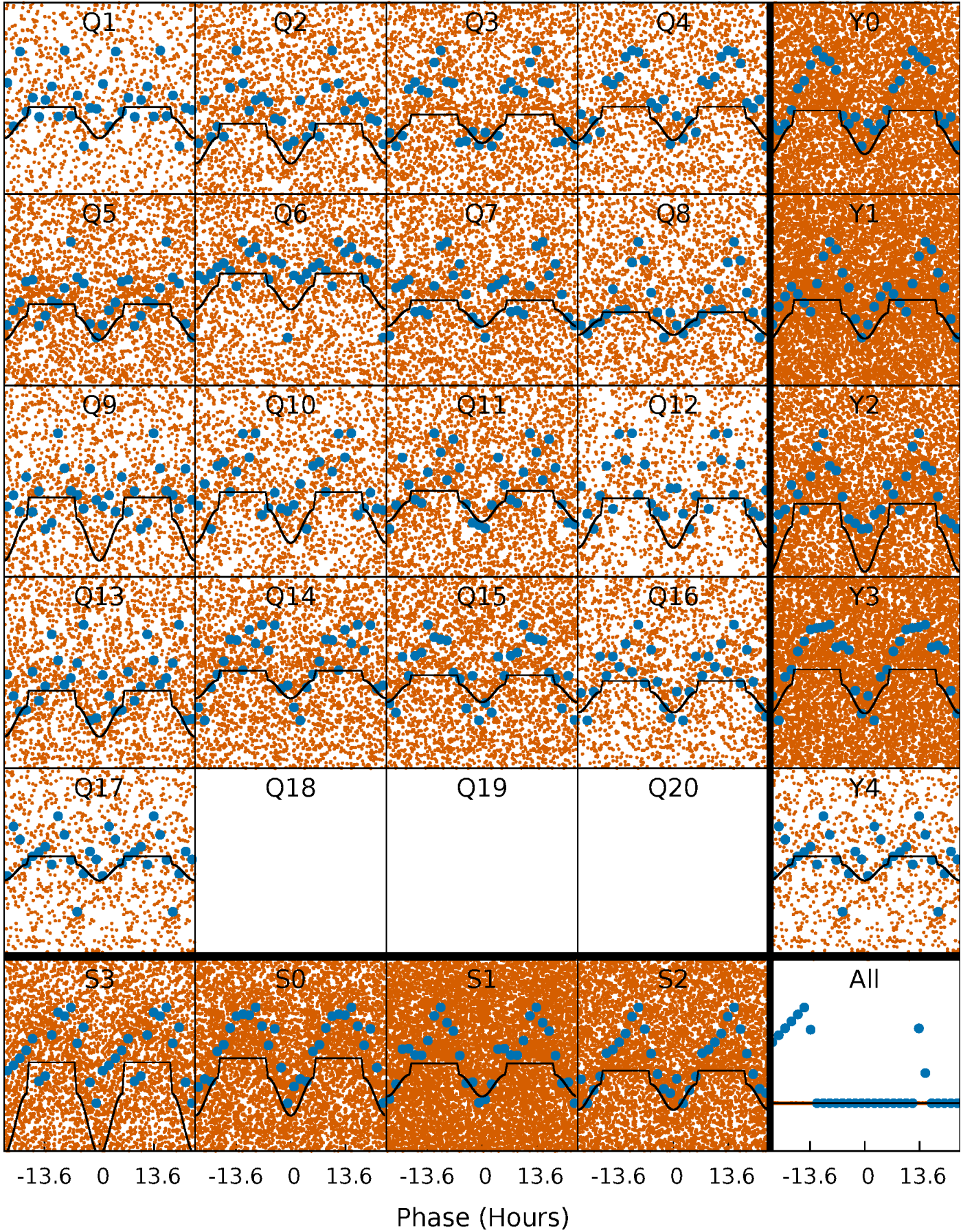
TCE 008248415-01 P= 0.989068 Days  $T_0=131.793856$  (BKJD)





# DV Quarter-Phased Transit Curves

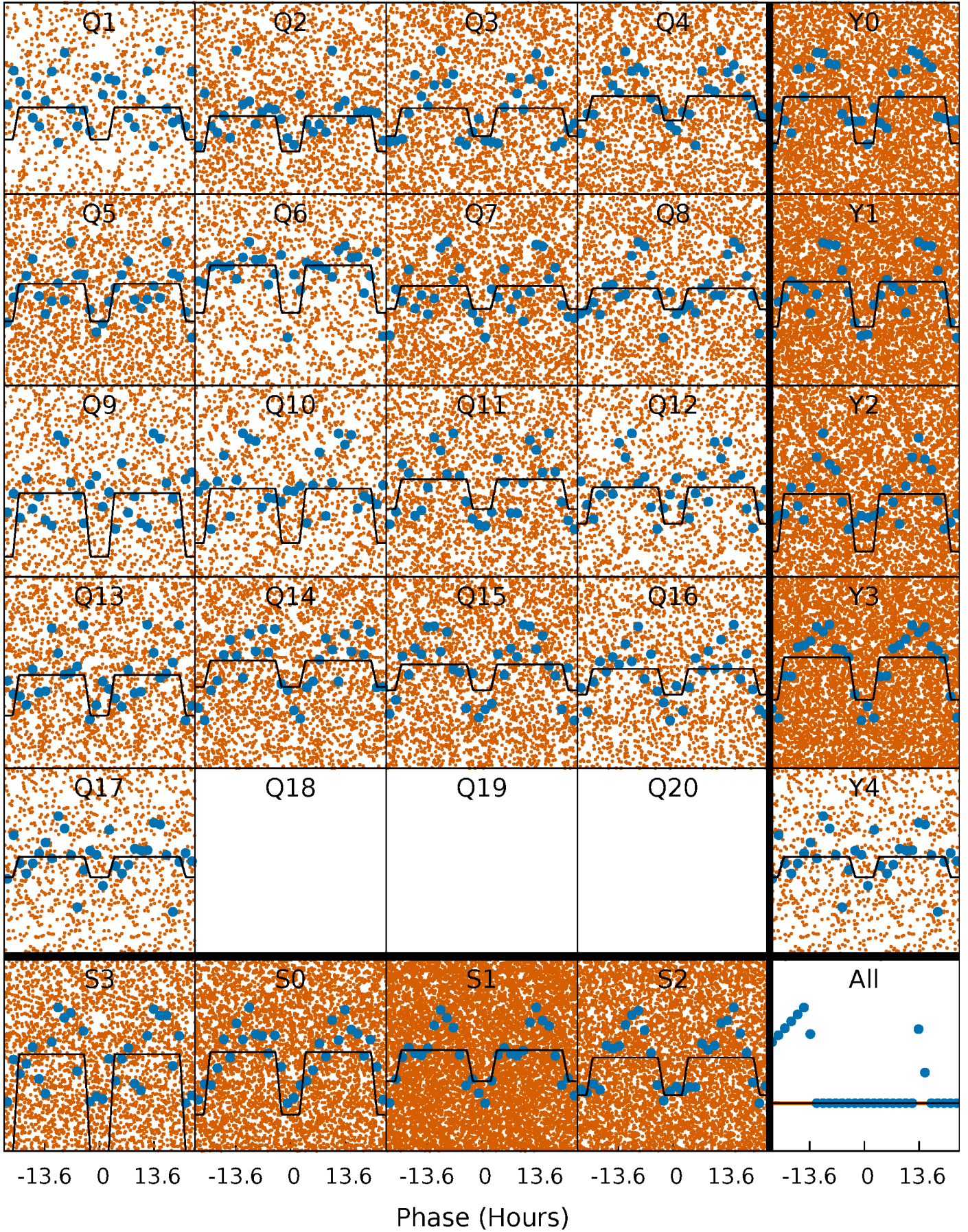
TCE 008248415-01   P= 0.989068 Days    $T_0=131.793856$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

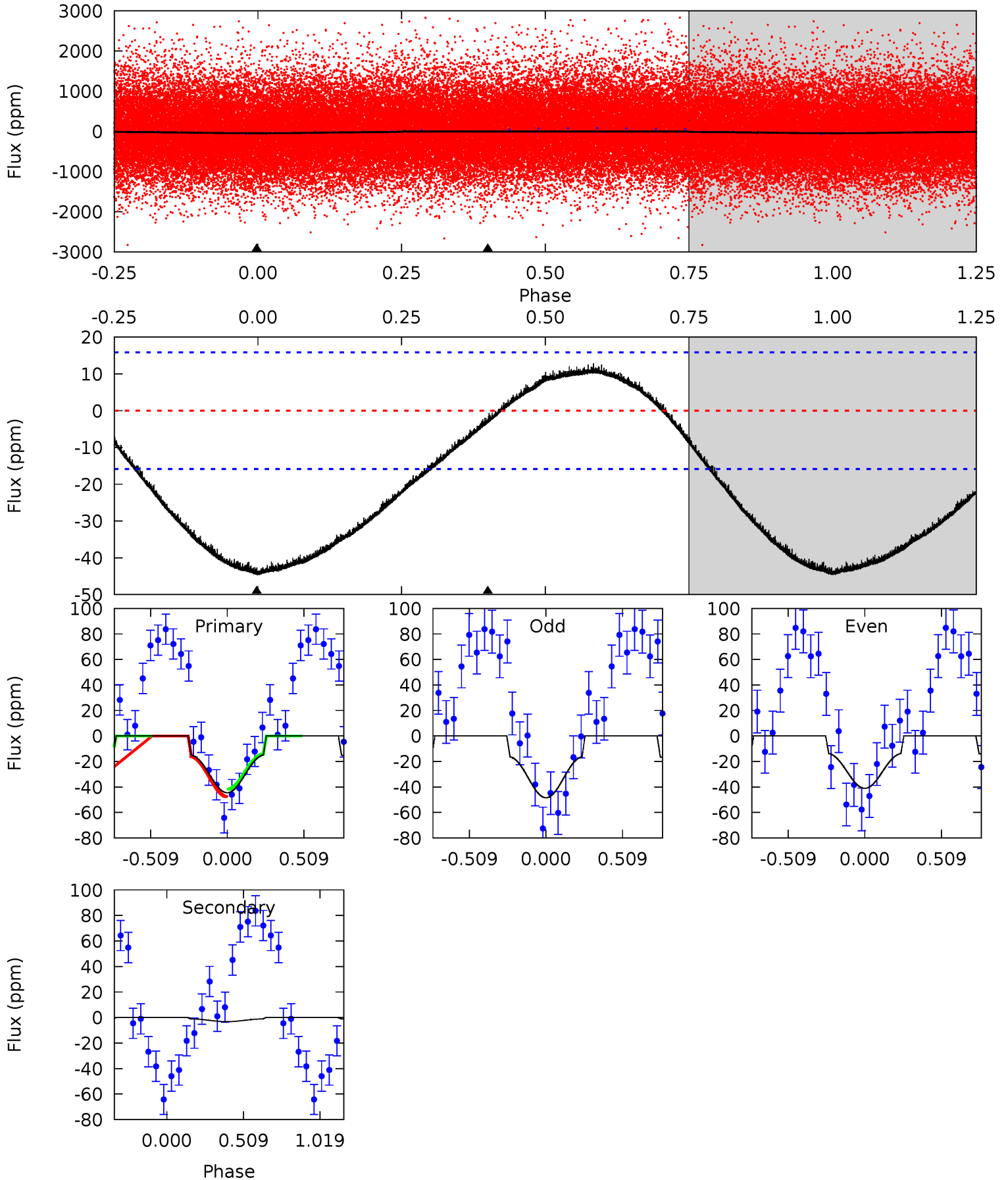
TCE 008248415-01   P= 0.989078 Days    $T_0=131.778642$  (BKJD)



# DV Model-Shift Uniqueness Test

008248415-01, P = 0.989068 Days, E = 130.804788 Days

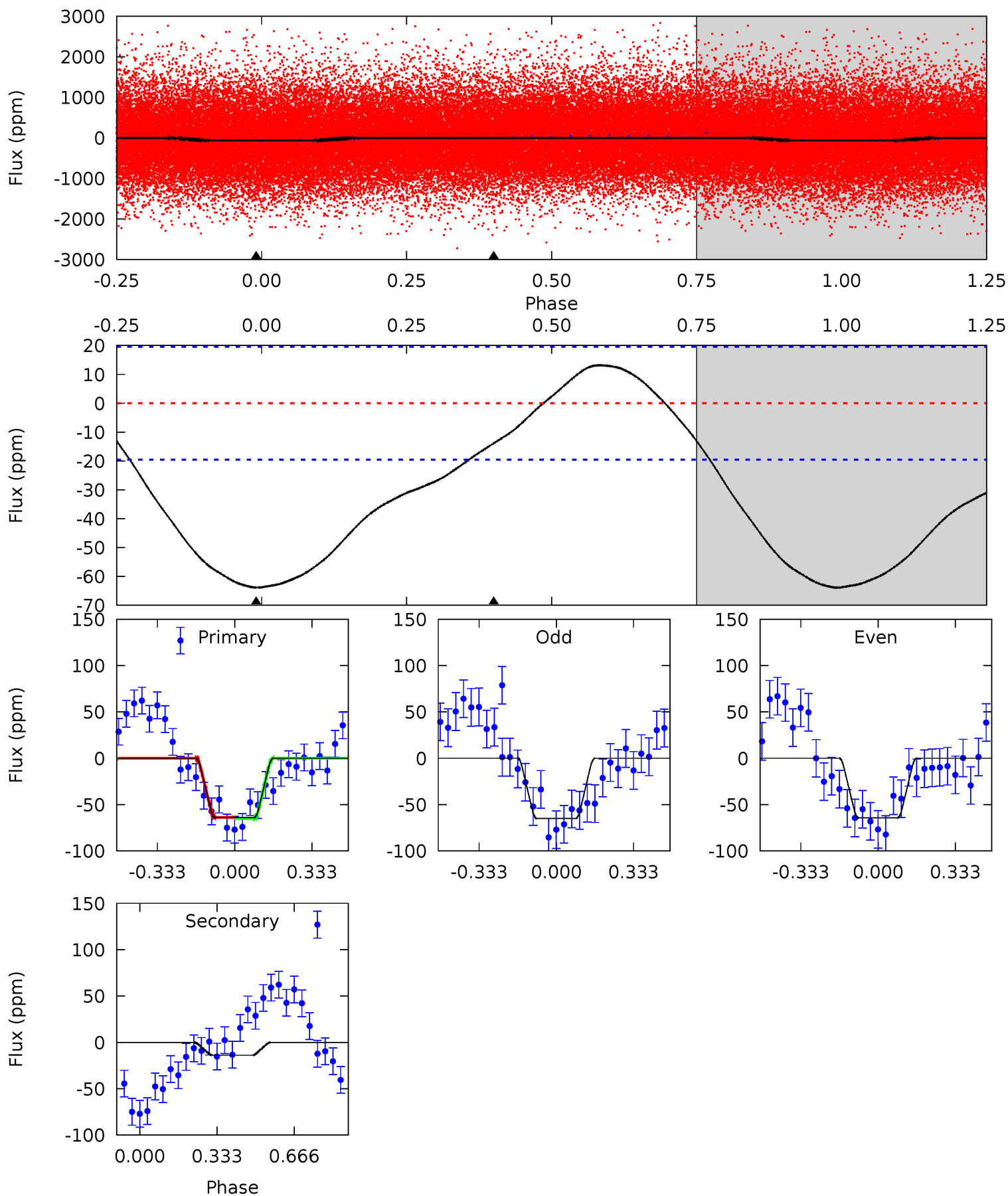
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.8 | 0.85 | 0   | 0   | 4.21            | 0.66            | 1.29             | 11.8    | 11.8    | 0.85    | 0.85    | 0.97    | 0.71 | 0.22  | 0.76 |



# Alt Model-Shift Uniqueness Test

008248415-01, P = 0.989078 Days, E = 130.789564 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  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.1 | 3.06 | 0   | 0   | 4.31            | 0.97            | 1.37             | 14.1    | 14.1    | 3.06    | 3.06    | 0.08    | 1.00 | 0.17  | 0.12 |





### Stellar Parameters For KIC 008248415

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $3543^{+63}_{-56}$   | $4.918^{+0.049}_{-0.040}$ | $-0.300^{+0.100}_{-0.100}$ | $0.340^{+0.036}_{-0.040}$ | $0.348^{+0.044}_{-0.048}$ | $12.530^{+3.441}_{-2.260}$                |
|        | +2%/-2%              | +1%/-1%                   | +33%/-33%                  | +11%/-12%                 | +13%/-14%                 | +27%/-18%                                 |
| Source | PHO2                 | PHO2                      | PHO2                       | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 008248415-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$   | $A_{\text{obs}}$           |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV      | $-3 \pm 4$  | $1.05^{+0.99}_{-0.74}$ | $1087^{+28}_{-26}$   | $-1608^{+3846}_{-227}$ | $0.220^{+2.476}_{-0.251}$  |
| Alt.    | $-14 \pm 5$ | $0.94^{+0.99}_{-0.66}$ | $1086^{+31}_{-25}$   | $2090^{+763}_{-515}$   | $1.559^{+16.457}_{-1.198}$ |

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

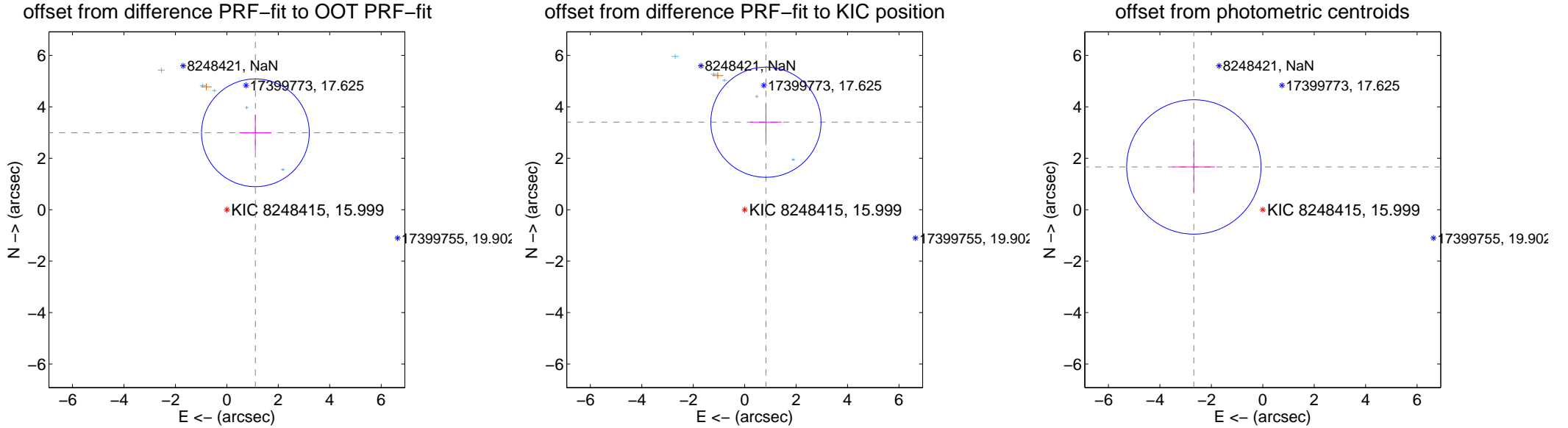
## DV Centroid Data

Supplemental centroid analysis for 008248415-01. Kepler magnitude: 16.00. Transit SNR 11.54

There are 6 quarters with good PRF difference image offsets

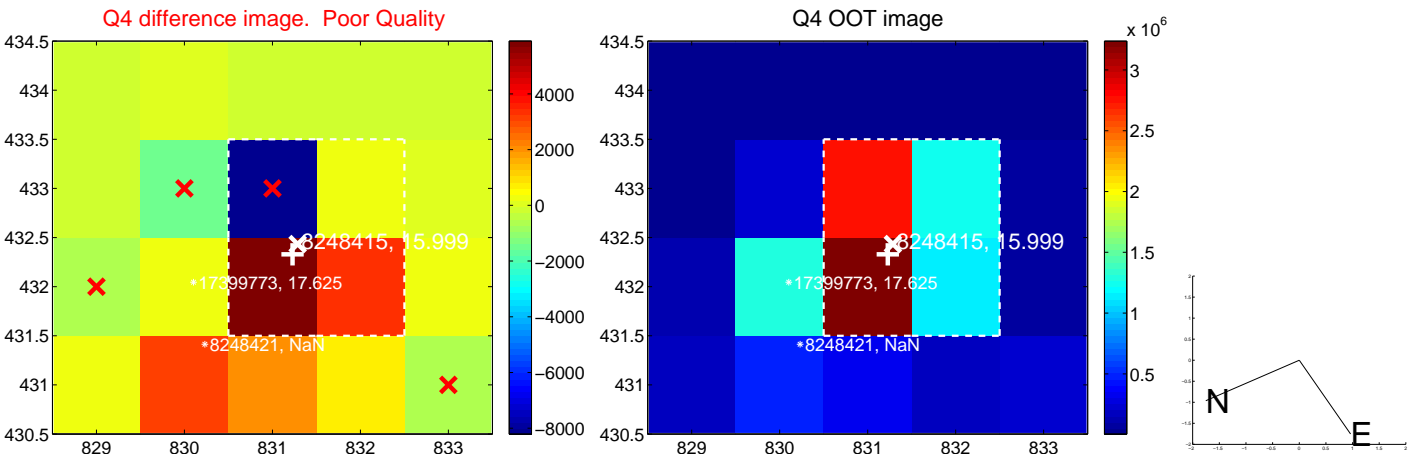
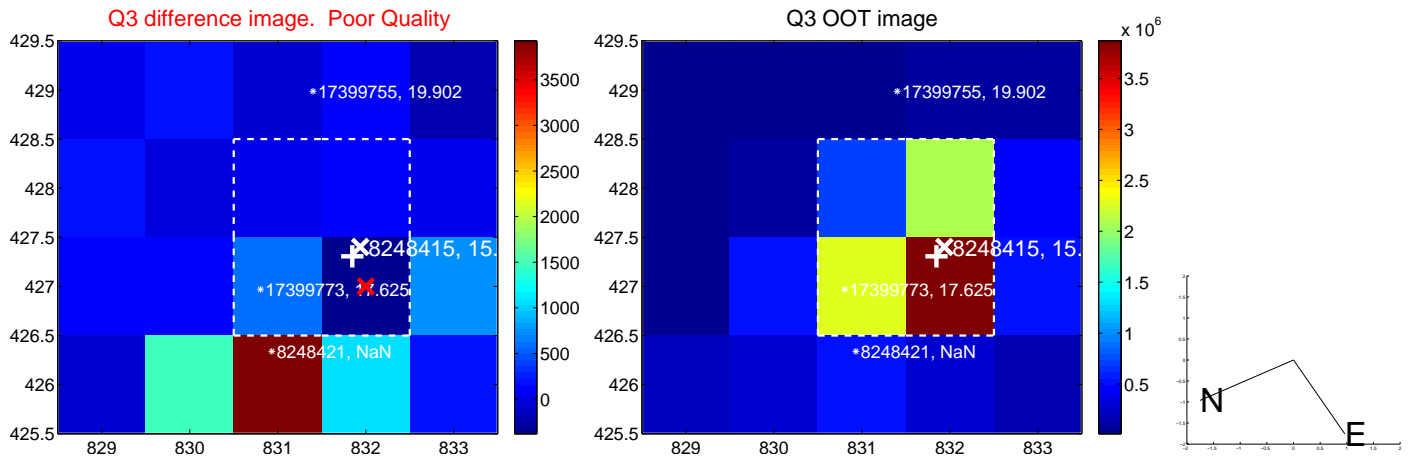
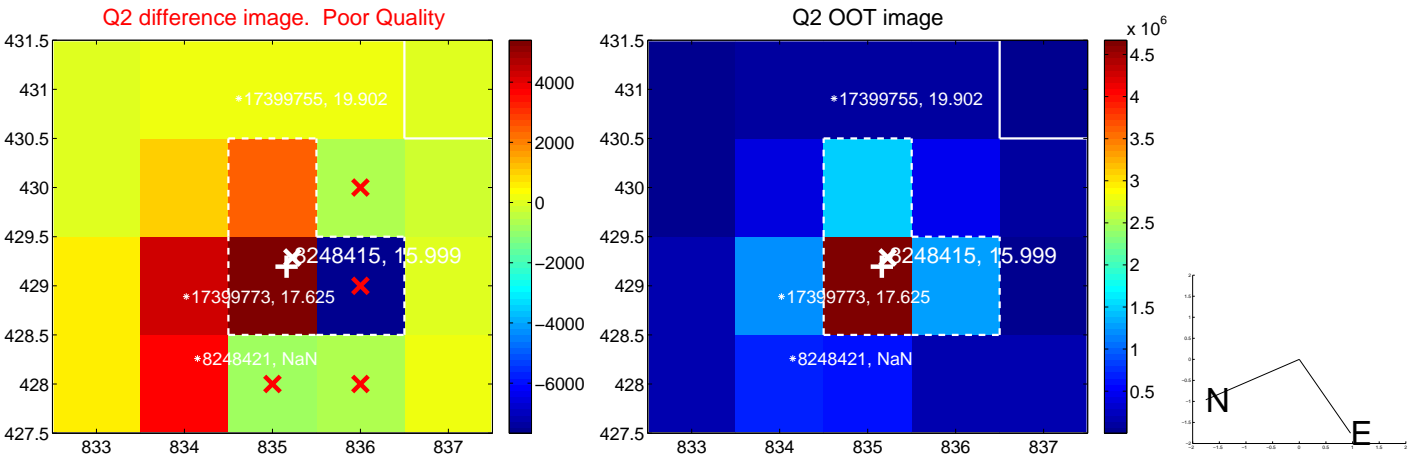
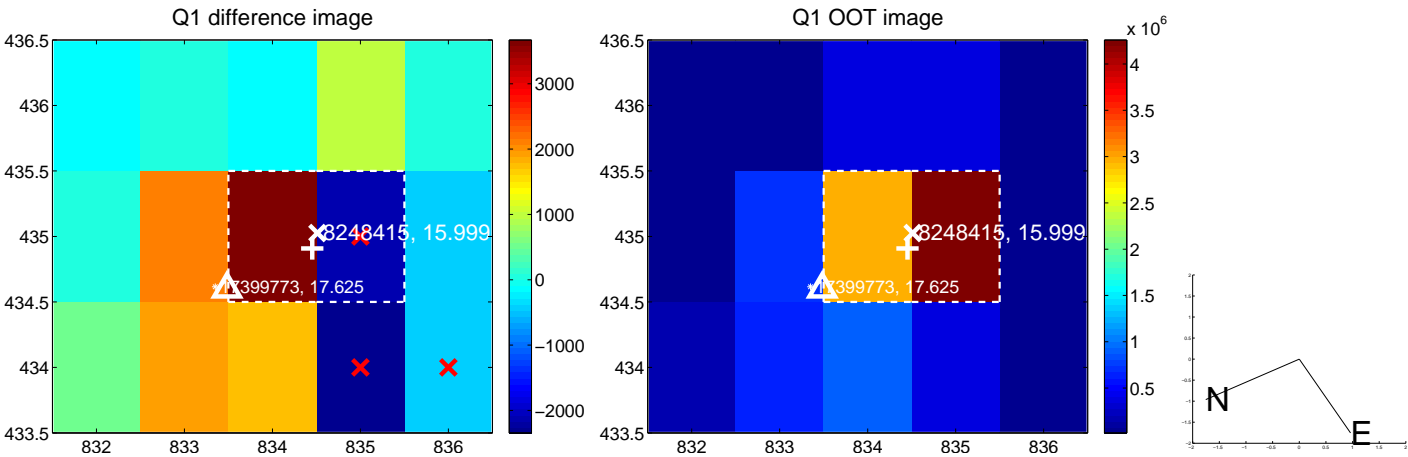
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $3.191 \pm 0.698$  | $4.57$              | $-1.110 \pm 0.625$ | $2.991 \pm 0.708$ |
| PRF-fit source offset from KIC position | $3.501 \pm 0.714$  | $4.90$              | $-0.826 \pm 0.614$ | $3.402 \pm 0.719$ |
| photometric centroid source offset      | $3.15 \pm 0.87$    | $3.62$              | $2.68 \pm 0.82$    | $1.66 \pm 0.99$   |

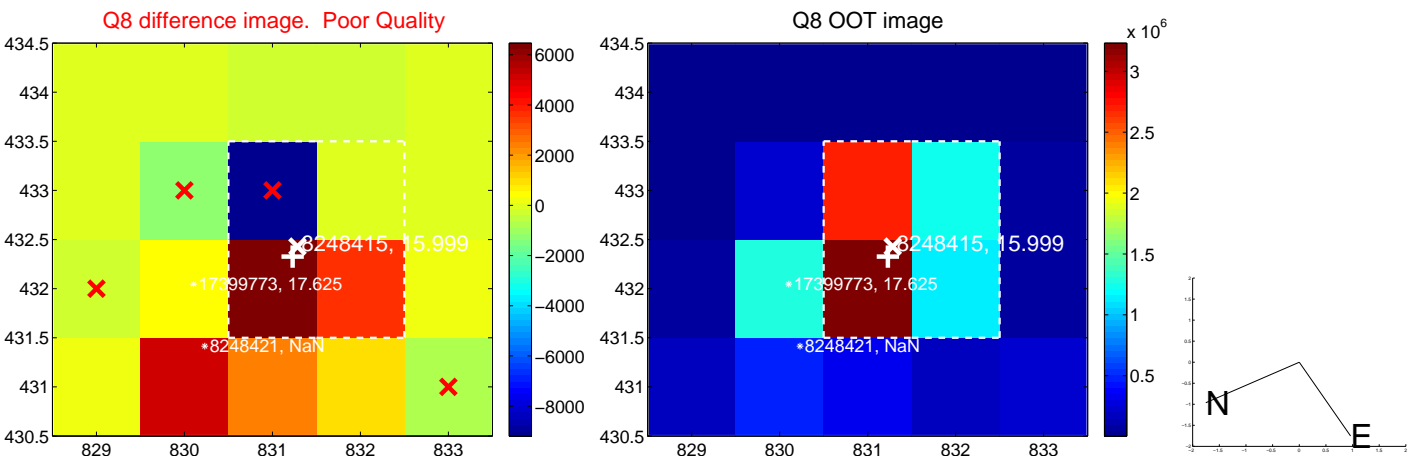
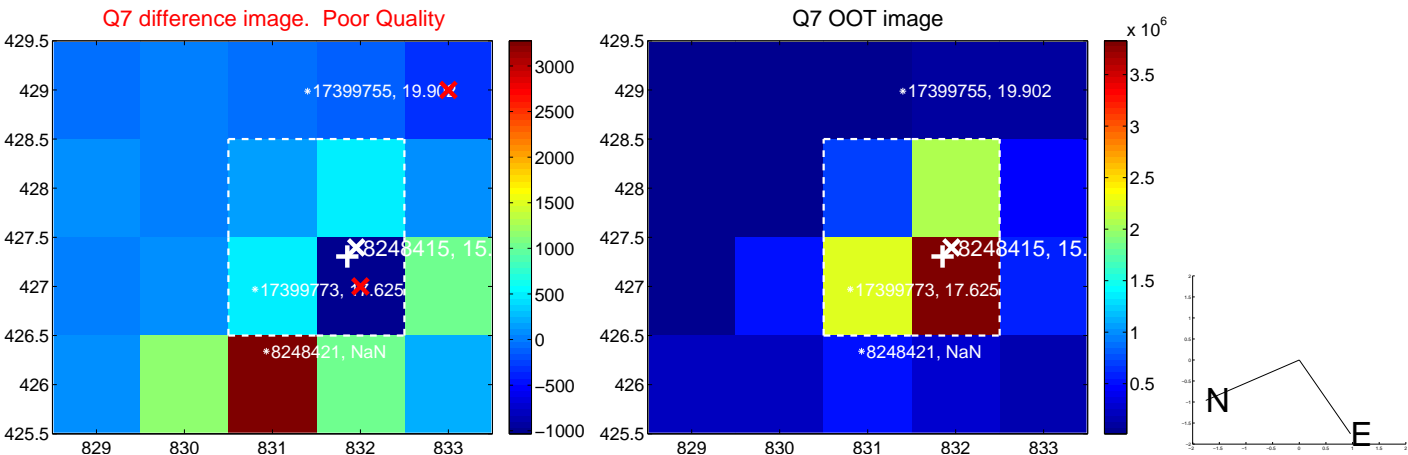
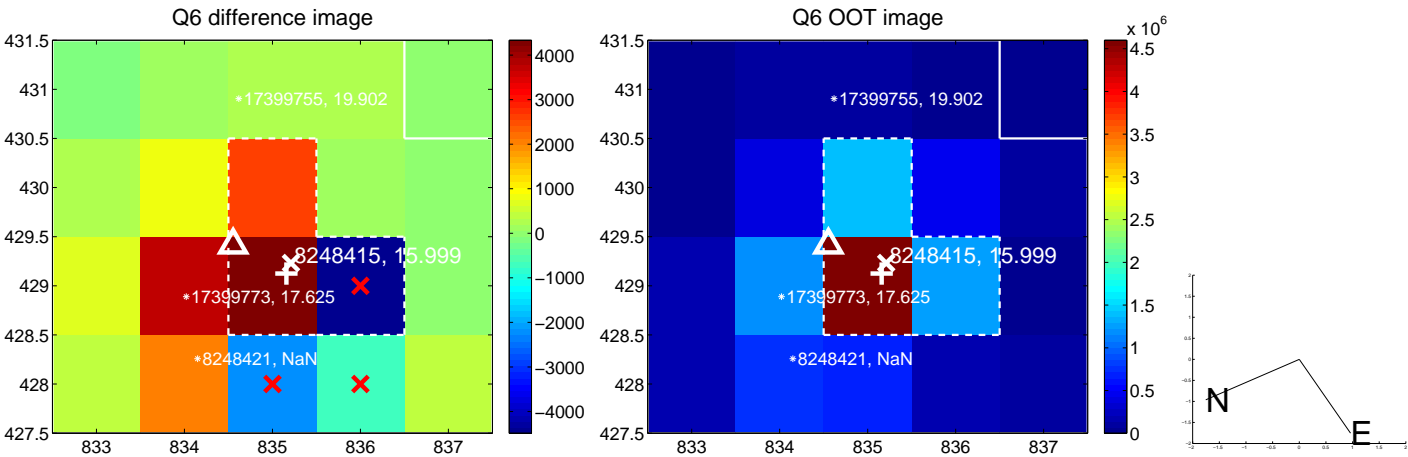
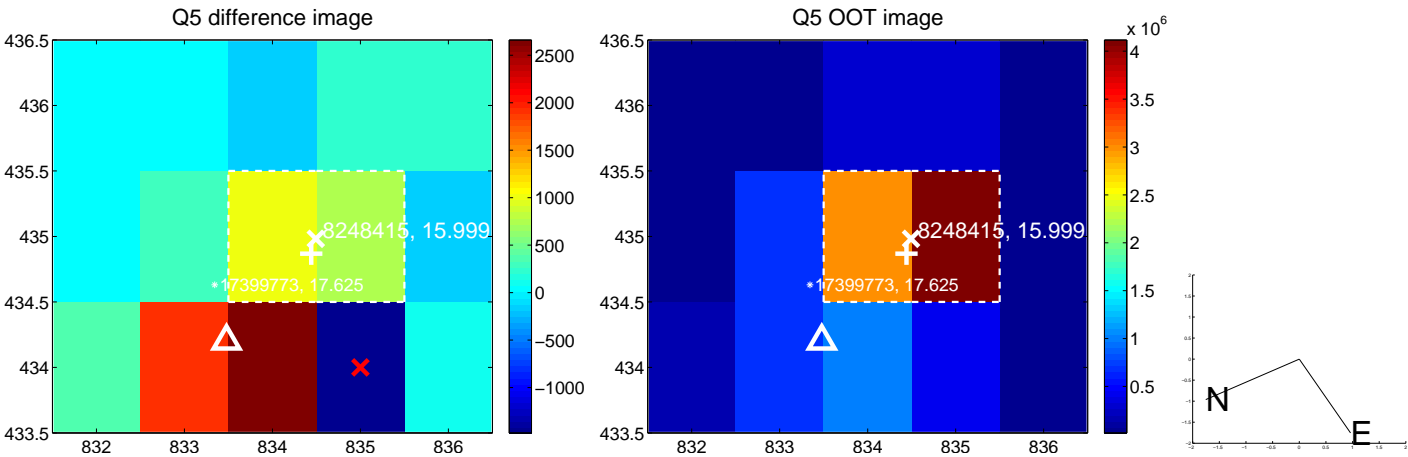


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

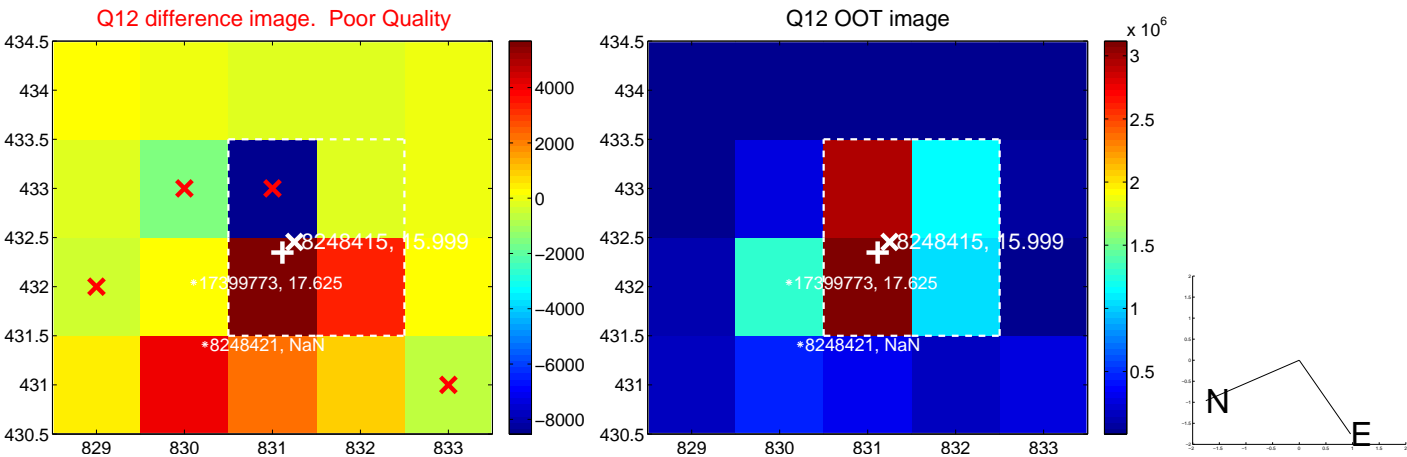
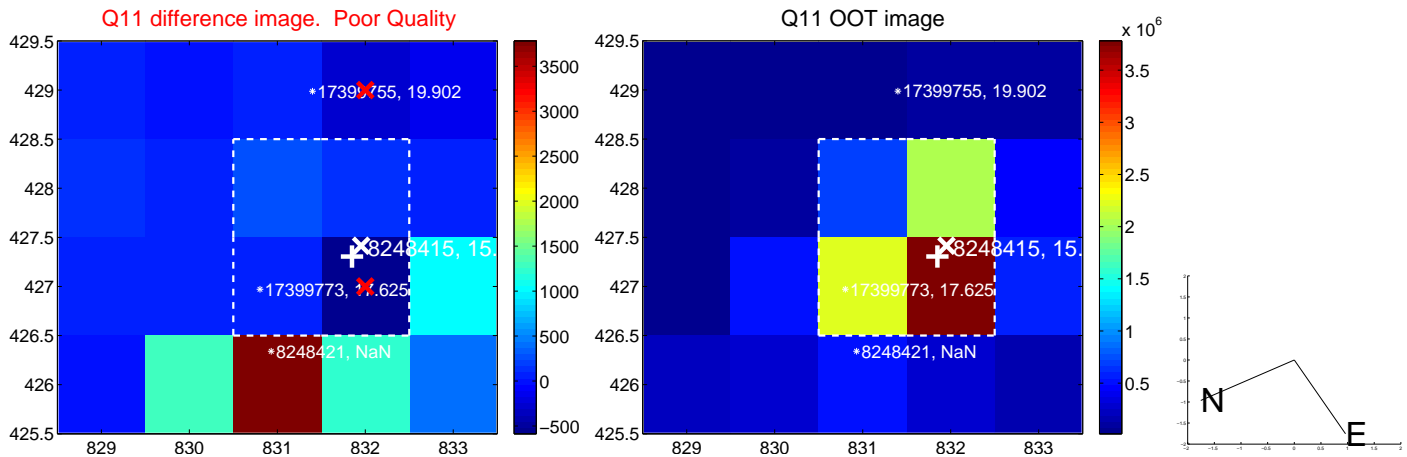
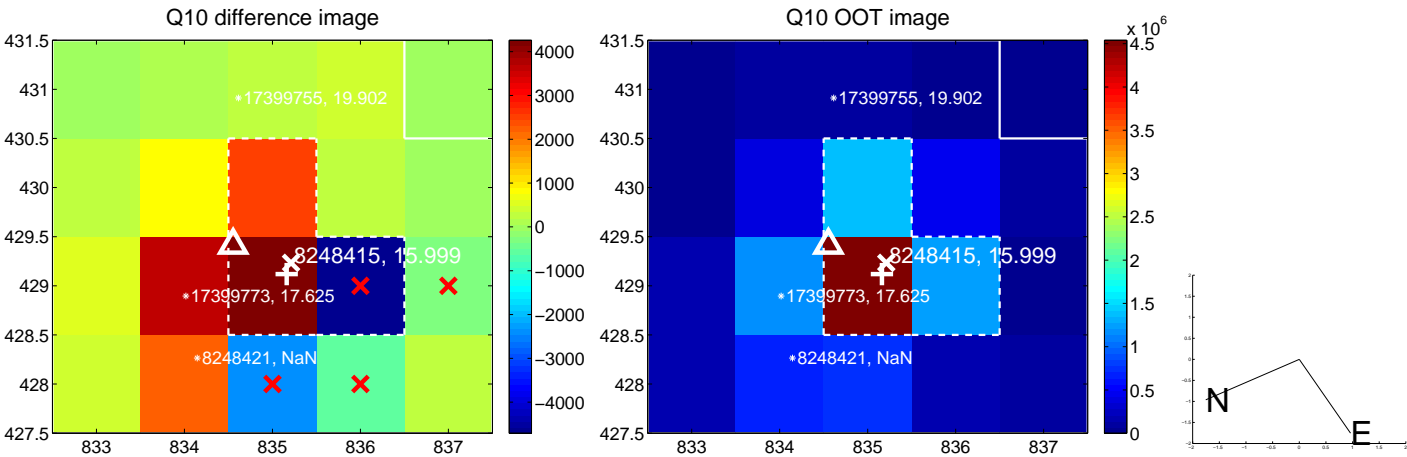
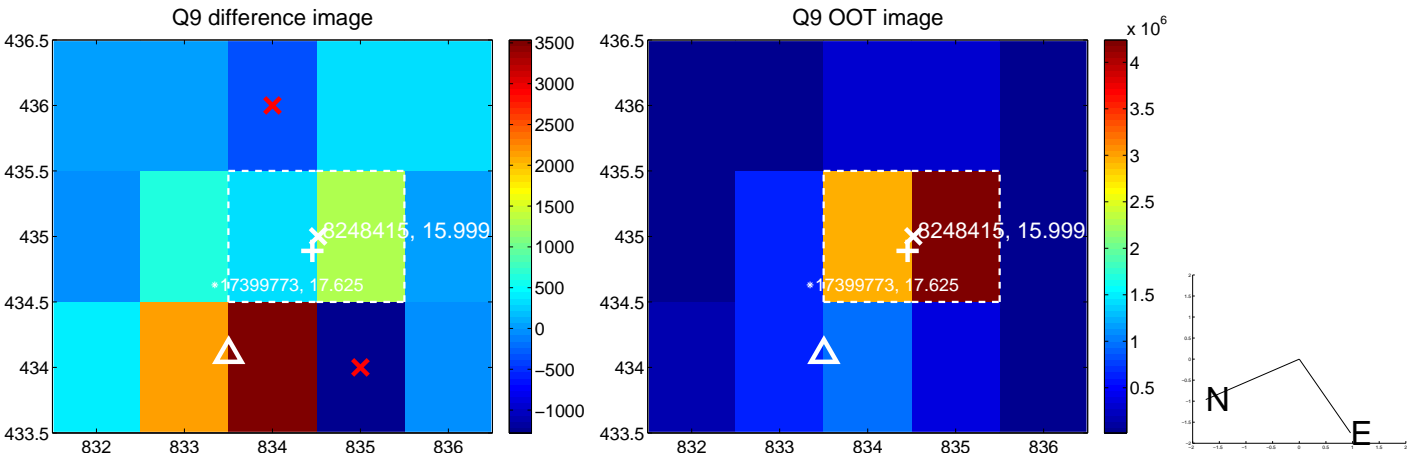


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

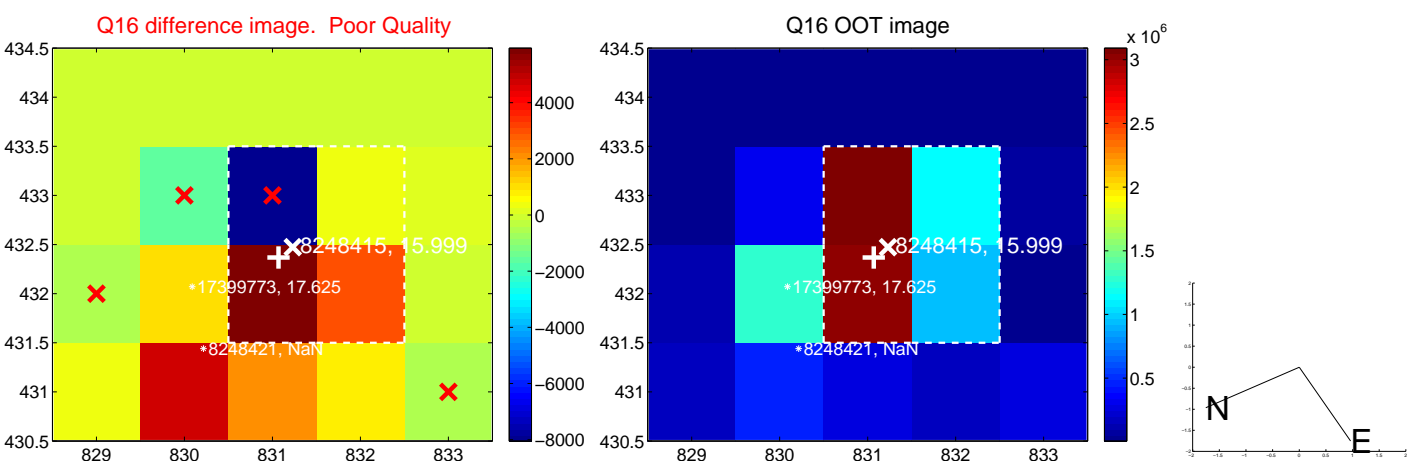
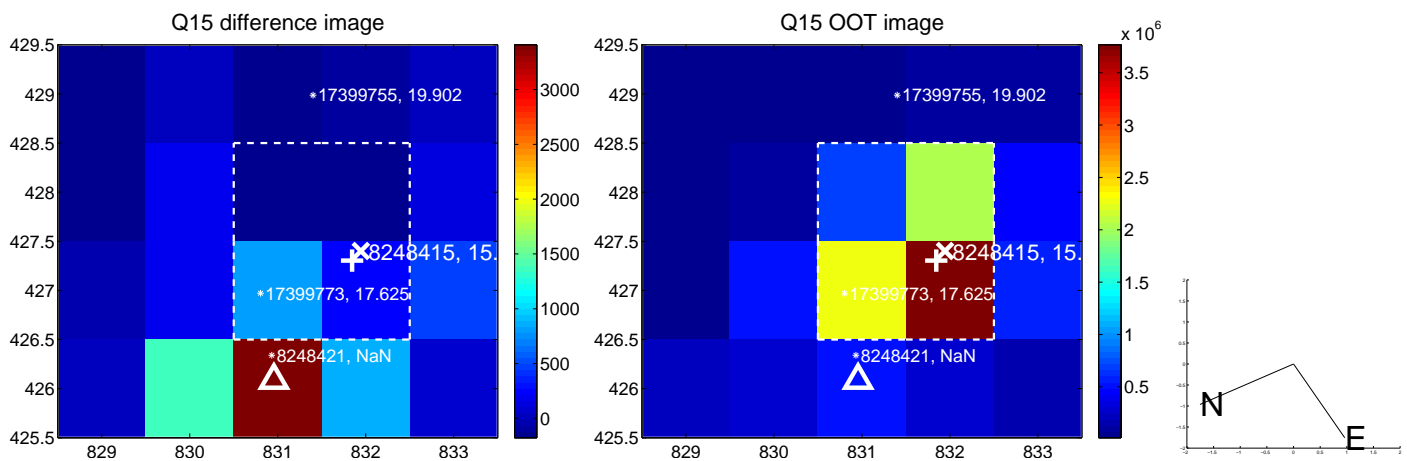
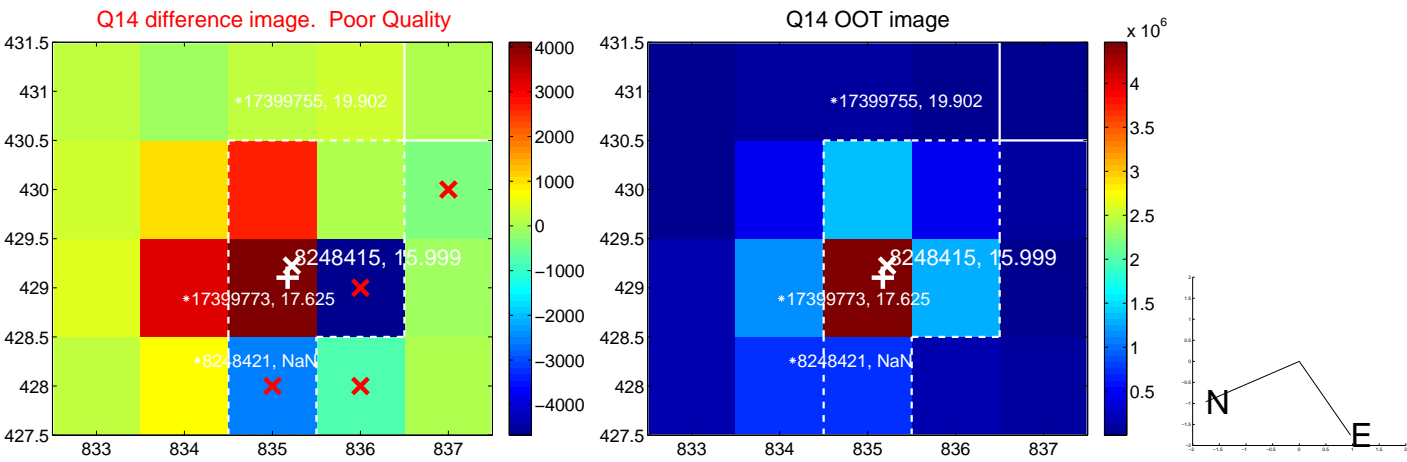
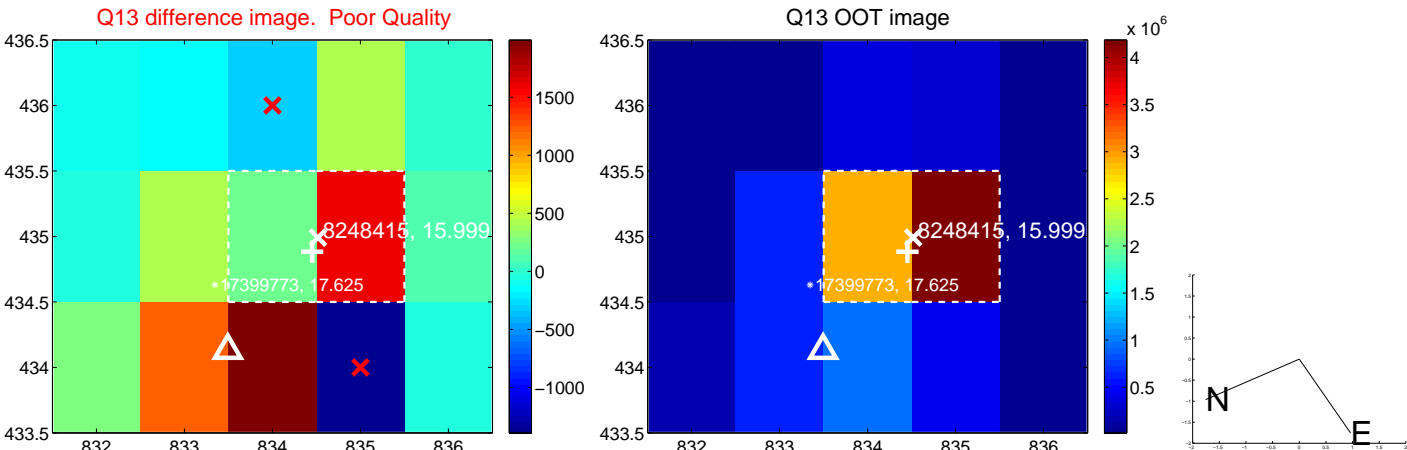




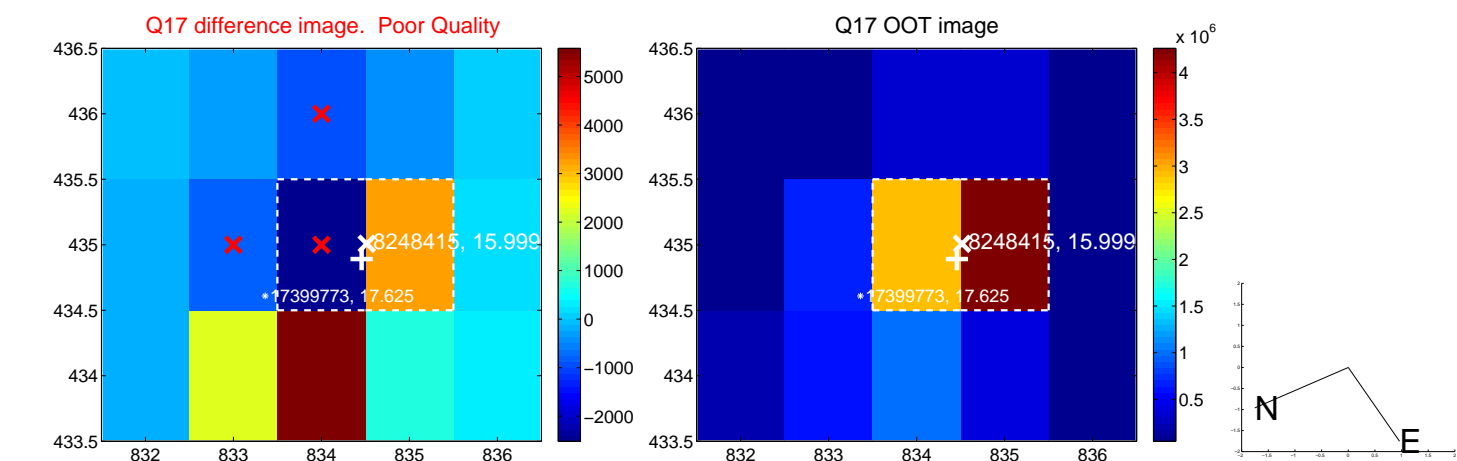
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



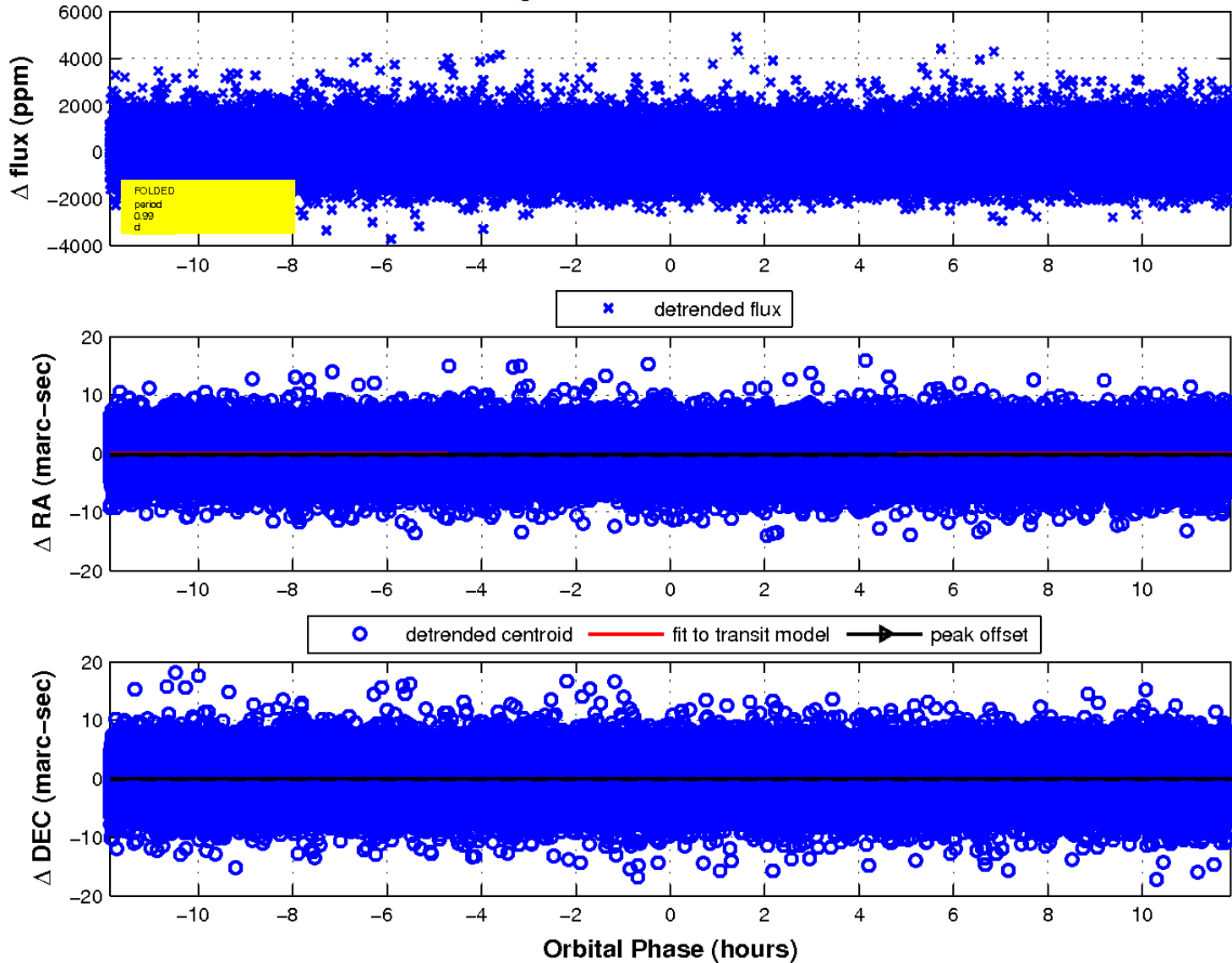
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

