

# KIC 006023835

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 006023835-01 | OBS      | No   | 2.415228      | 132.030109   | 12.2        | 19.945           | 9.3 | 5.3 | 1.70                        | 6508            | 0.64                   | 3104.79                |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                 |
|--------------|----------|------|-------|---|---|---|---|--------------------------|
| 006023835-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT |

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

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

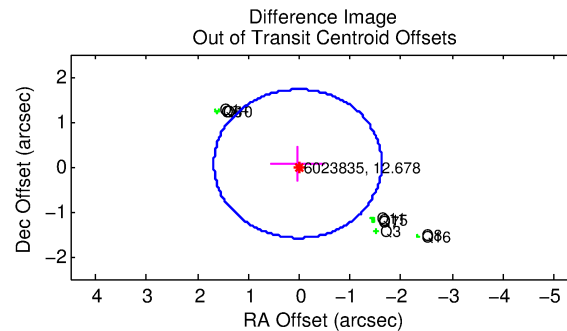
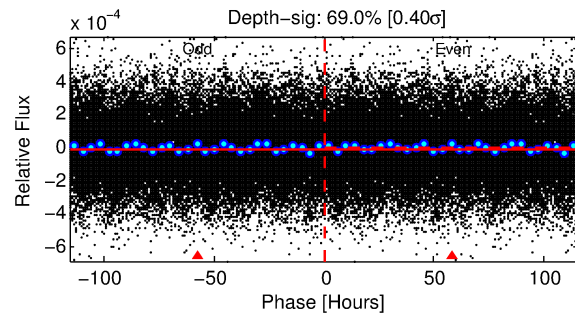
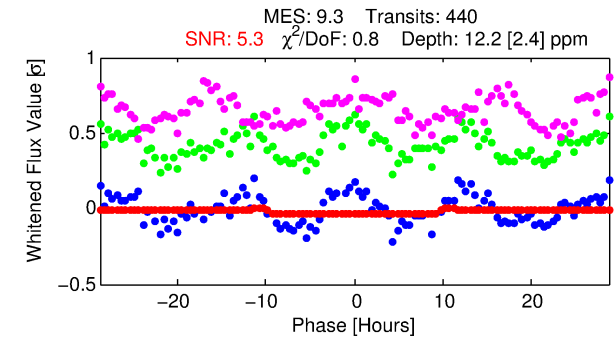
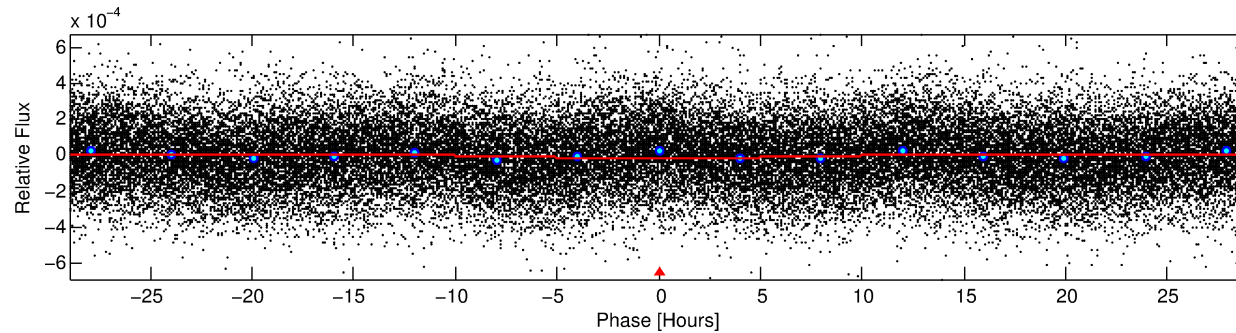
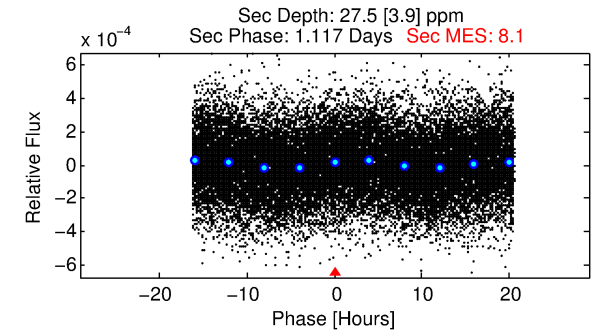
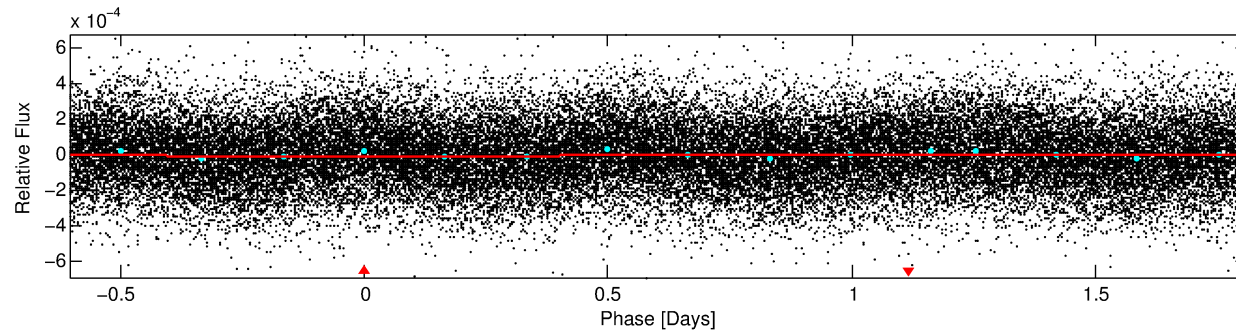
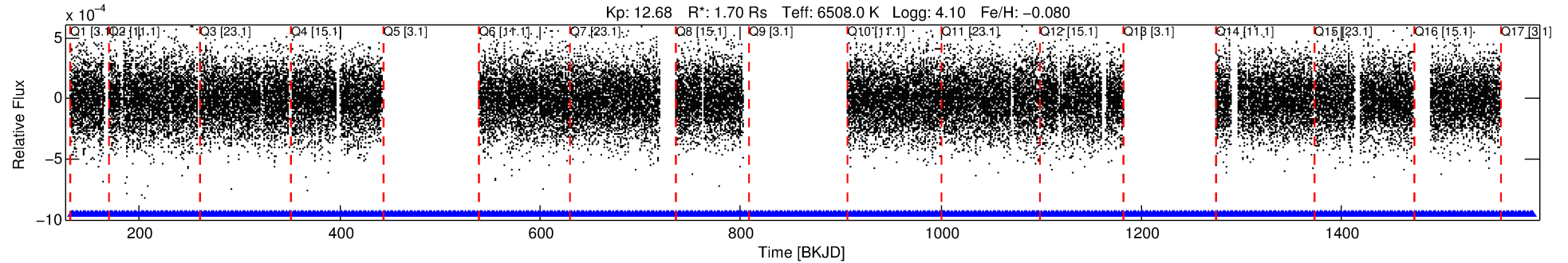
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006023835-01

No Significant Match Found

# DV One-Page Summary

KIC: 6023835 Candidate: 1 of 1 Period: 2.415 d



## DV Fit Results:

Period = 2.41523 [0.00009] d  
Epoch = 132.0301 [0.0185] BKJD  
Rp/R\* = 0.0035 [0.0034]  
a/R\* = 1.07 [0.73]  
b = 0.73 [3.54]  
Seff = 3104.79 [1319.16]  
Teq = 1903 [202] K  
Rp = 0.64 [0.66] Re  
a = 0.0386 [0.0100] AU  
Ag = 55.05 [110.48] [0.49σ]  
Teffp = 8016 [3955] K [1.54σ]

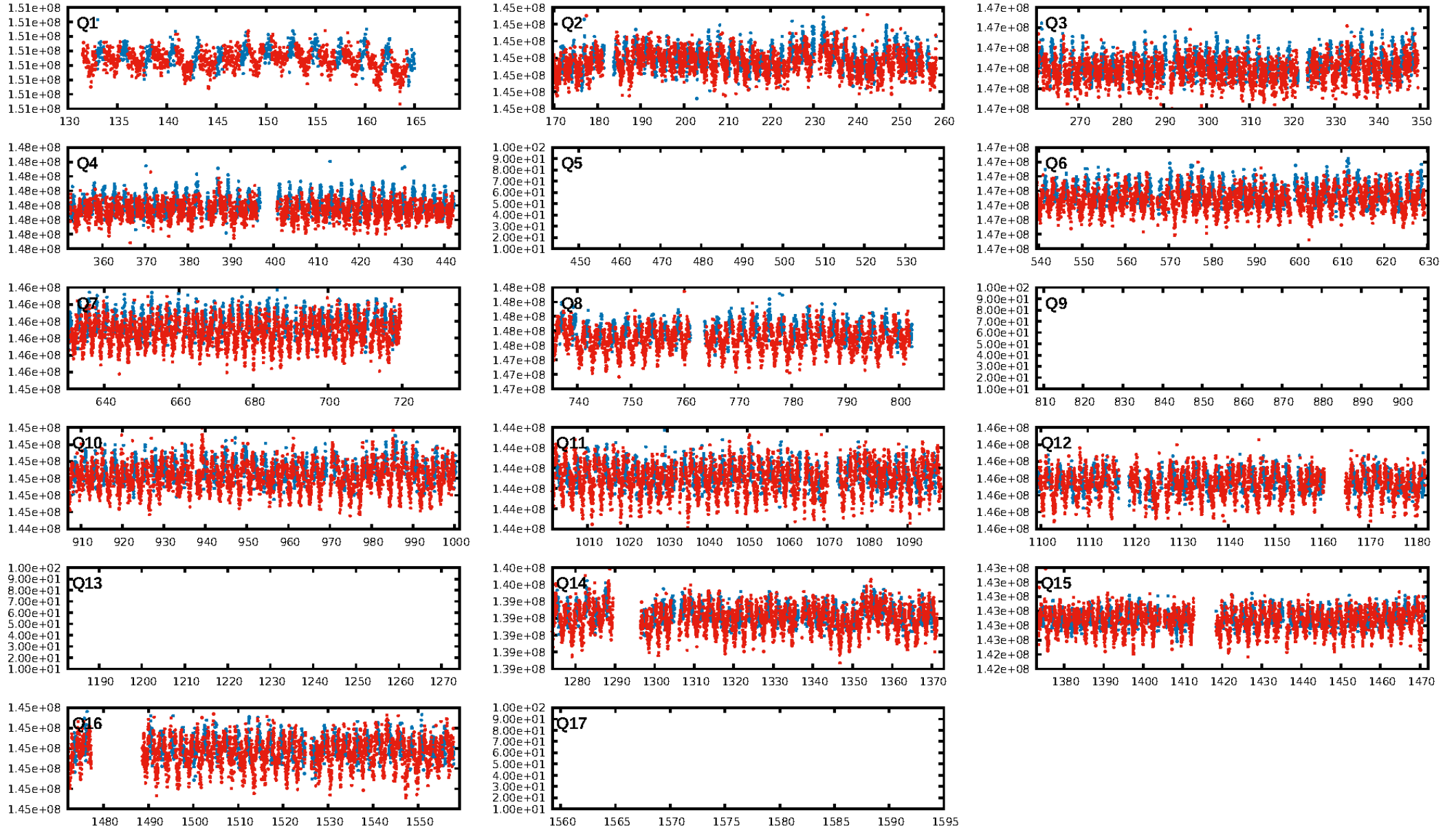
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [426/426]  
**GhostDiagnostic-chr: 0.3521**  
**Centroid-sig: 0.0%**  
**Centroid-so: 11.664 arcsec [7.28σ]**  
OotOffset-rm: 0.070 arcsec [0.13σ]  
KicOffset-rm: 0.080 arcsec [0.13σ]  
OotOffset-st: 3/4/2/0 [9]  
KicOffset-st: 3/4/2/0 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [13/13]

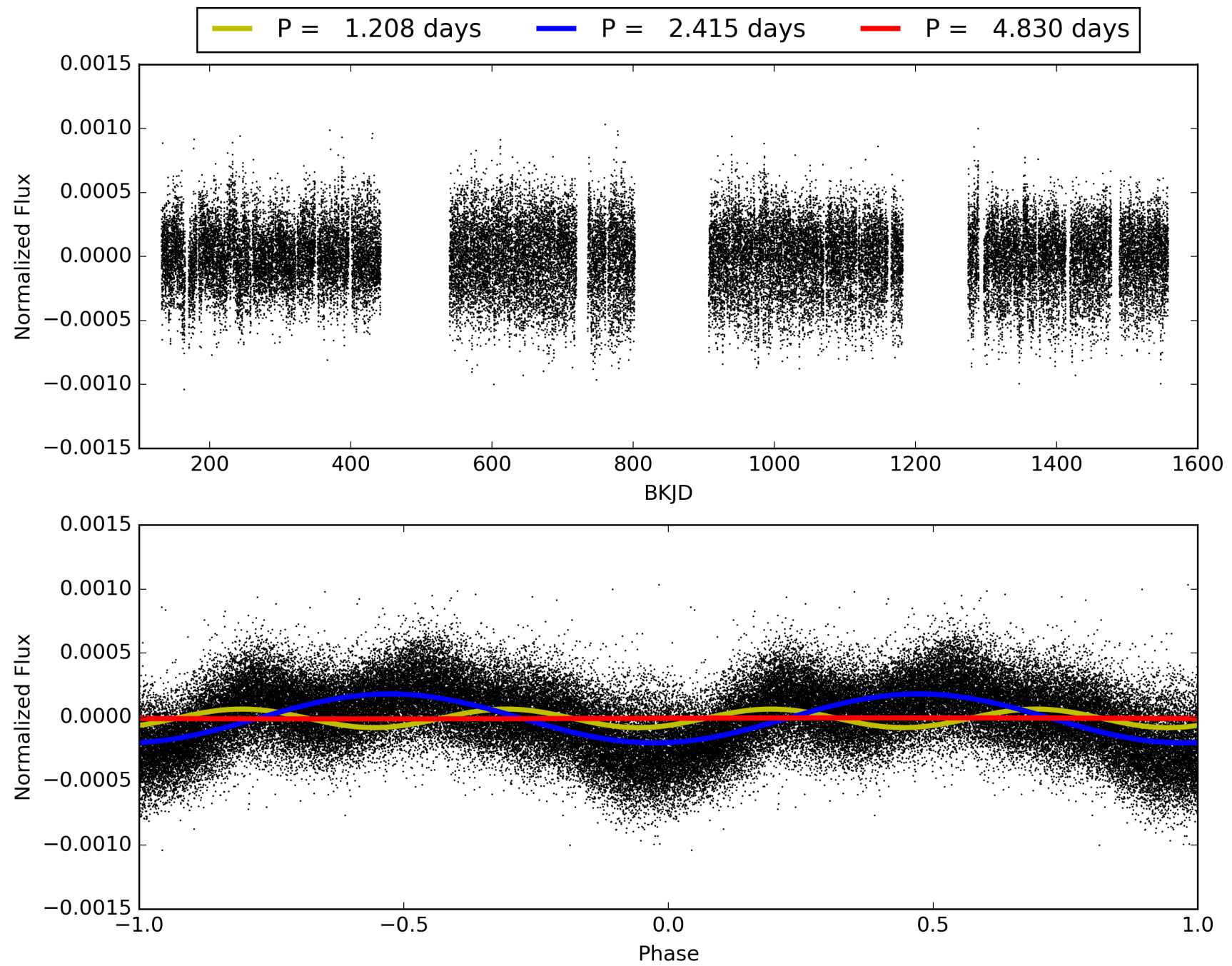
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:28:35 Z

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

# TCE 006023835-01, PDC Light Curves

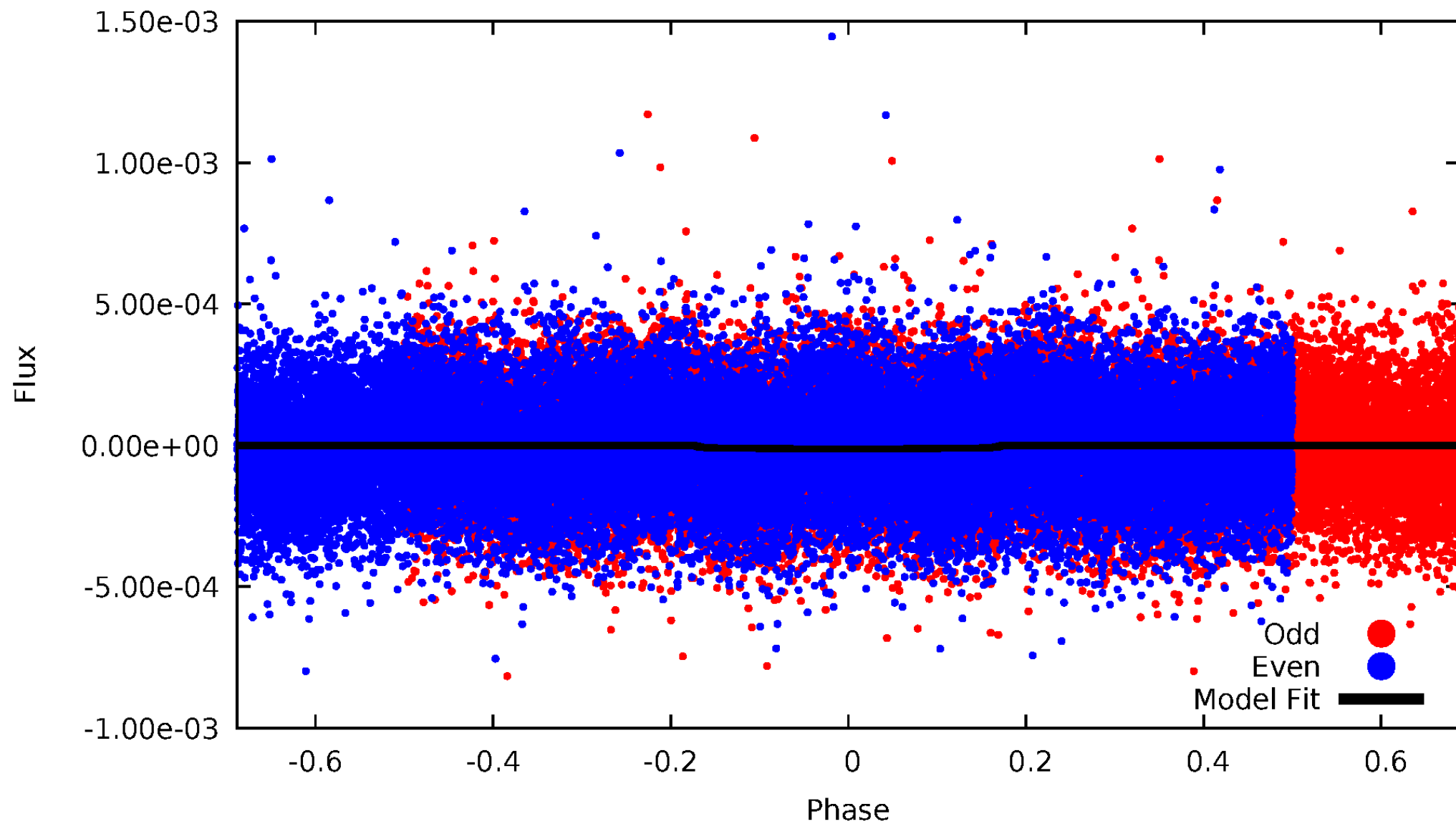


TCE 006023835-01



# DV Odd/Even

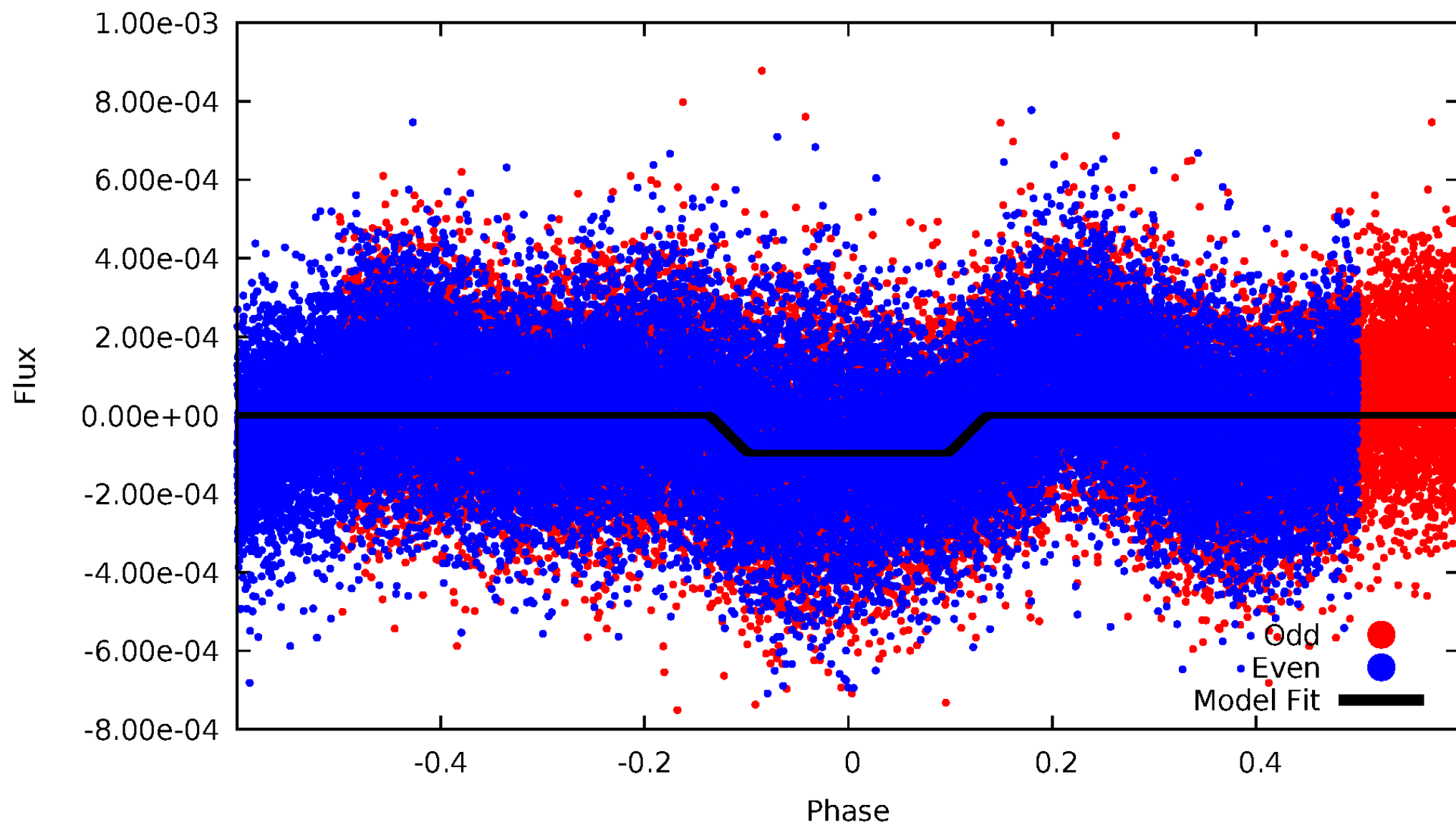
TCE 006023835-01



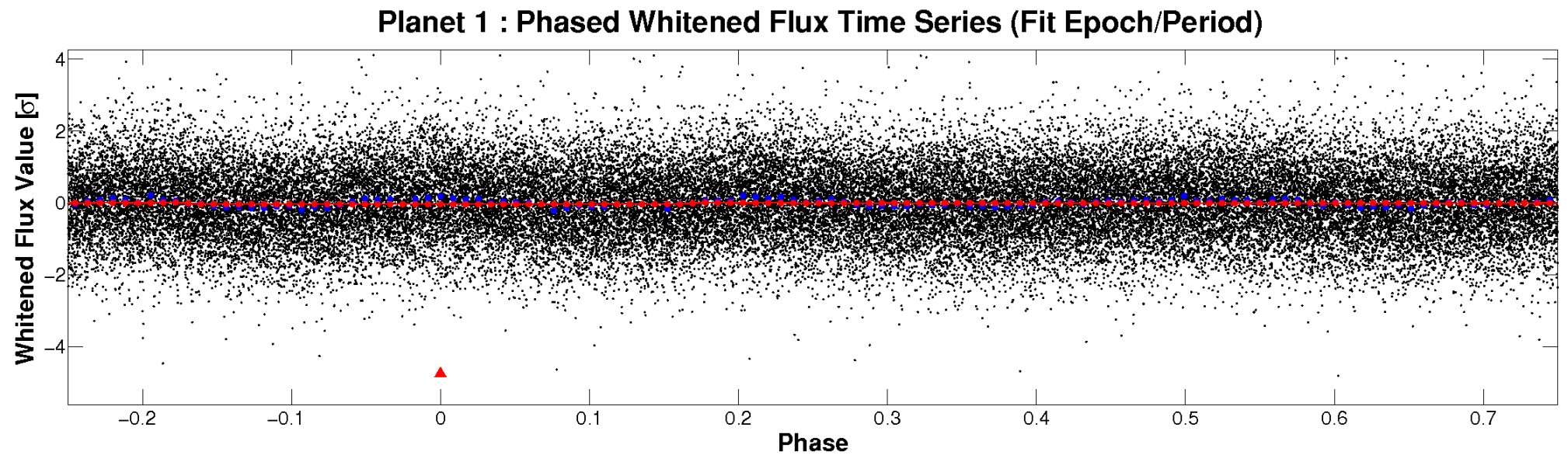
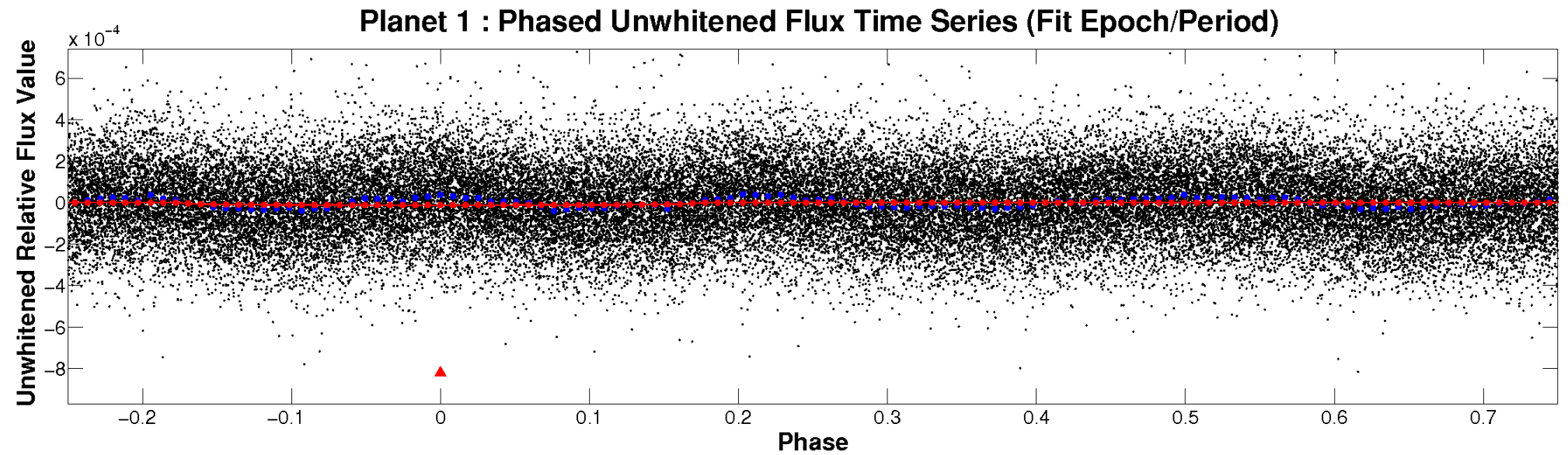


# ALT Odd/Even

TCE 006023835-01

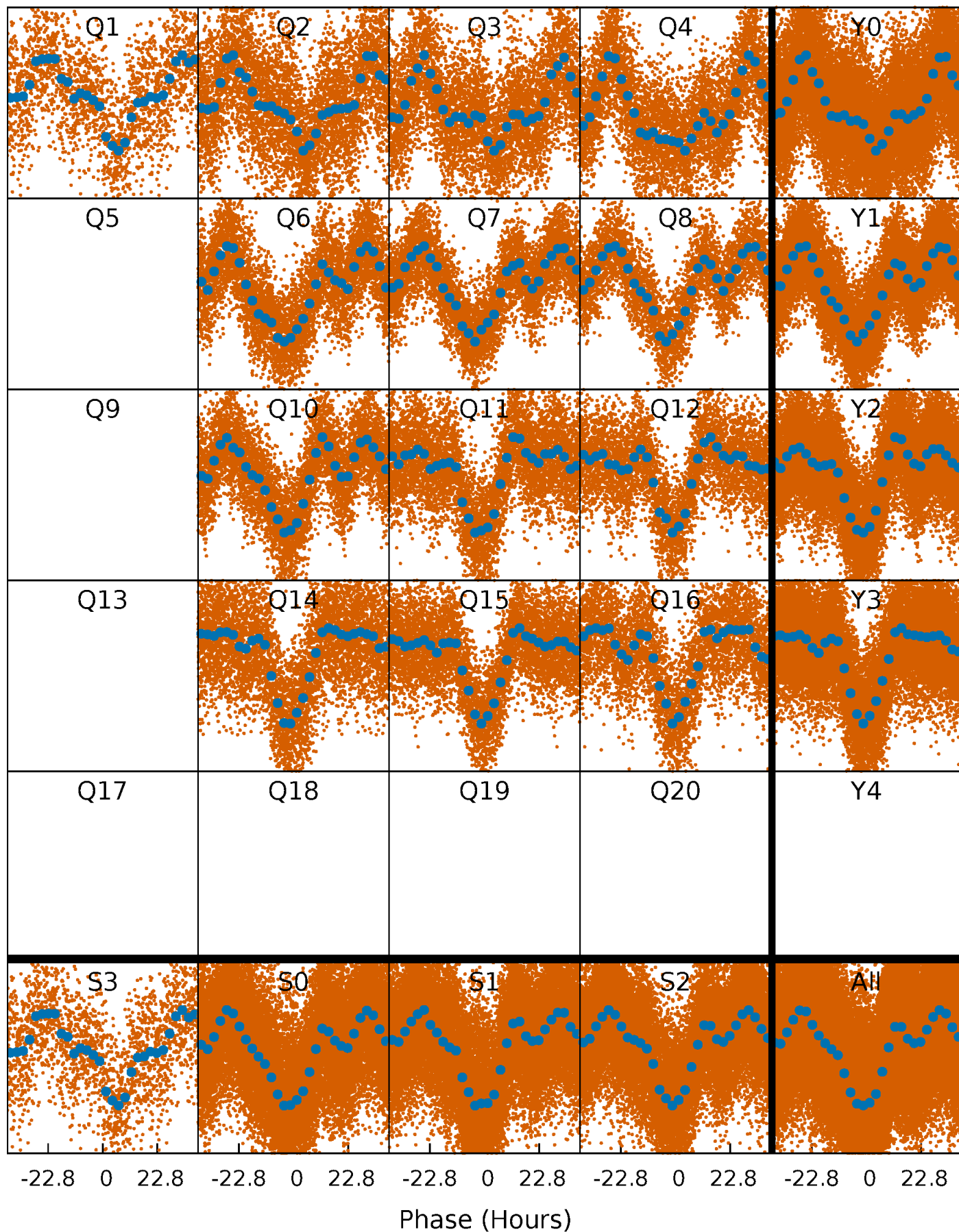


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

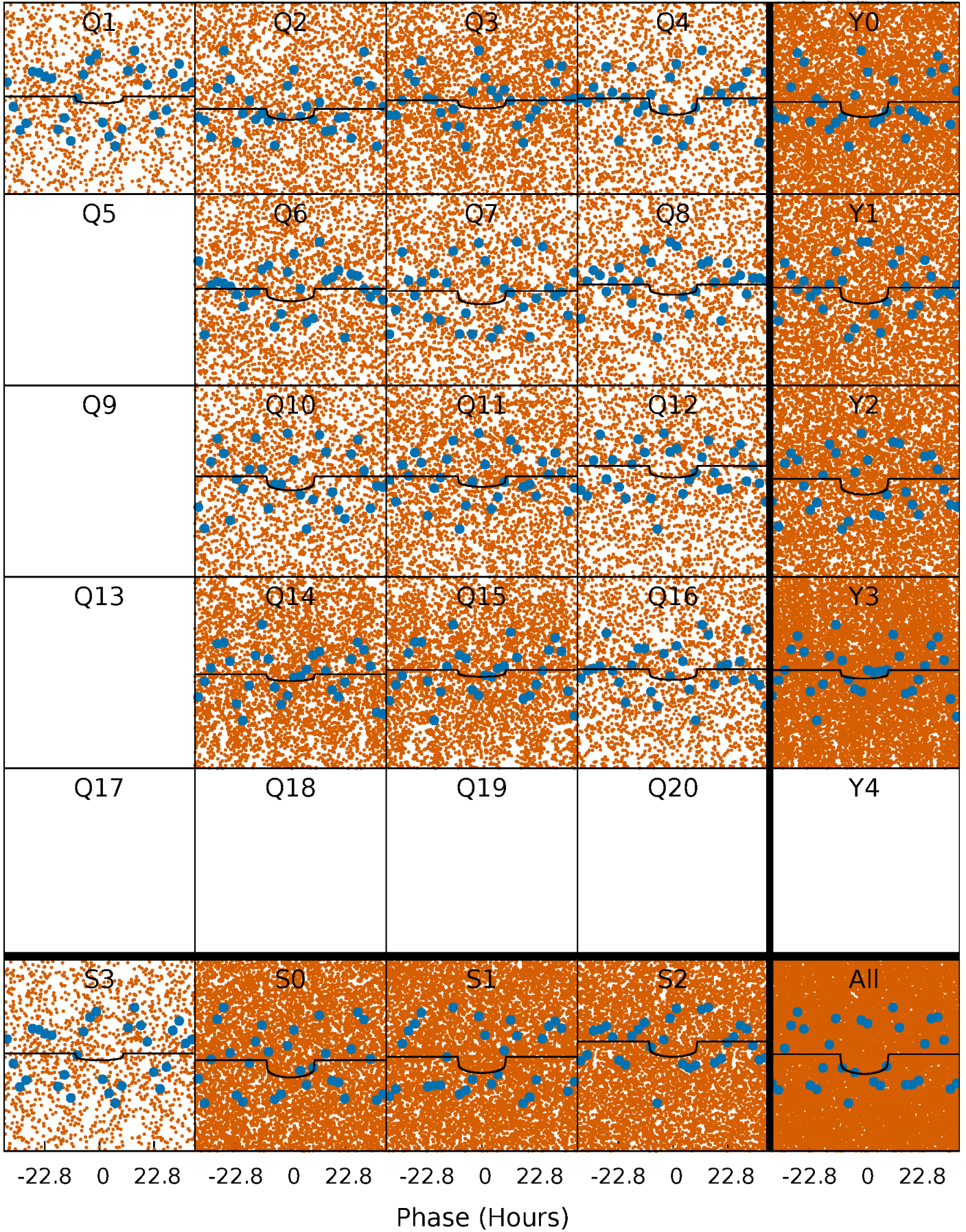
TCE 006023835-01 P= 2.415228 Days  $T_0=132.030109$  (BKJD)





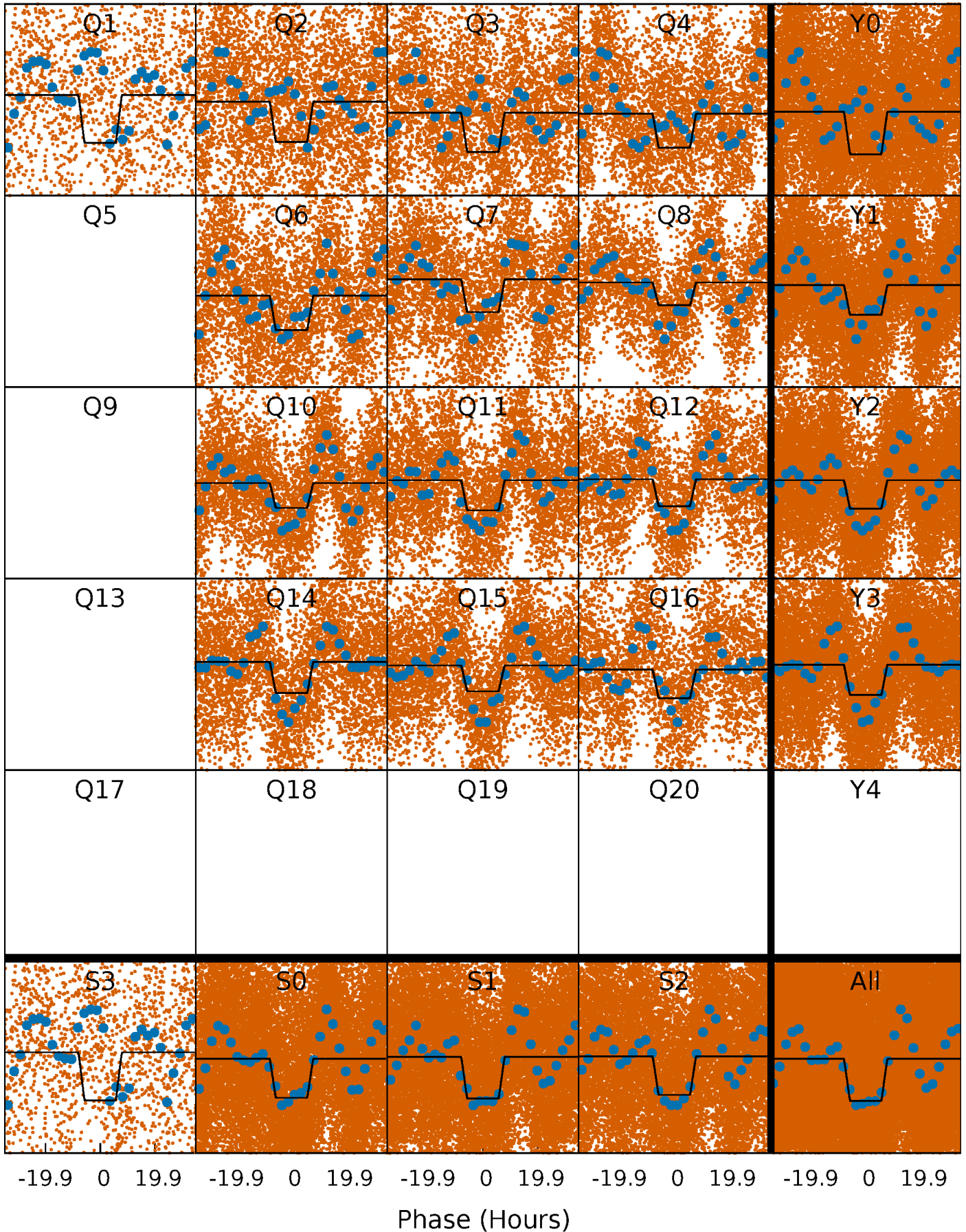
# DV Quarter-Phased Transit Curves

TCE 006023835-01 P= 2.415228 Days  $T_0=132.030109$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

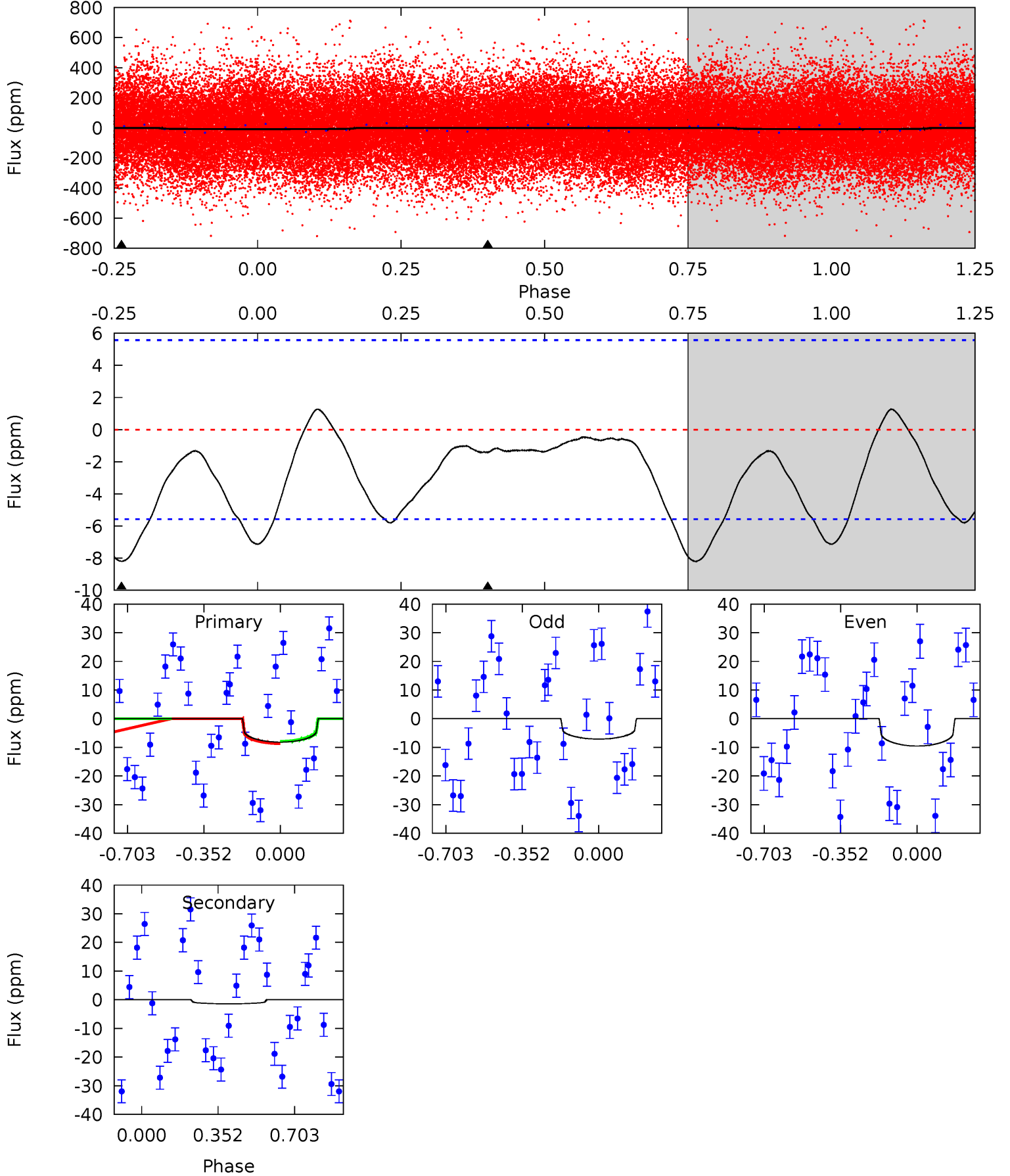
TCE 006023835-01 P= 2.415208 Days  $T_0=131.989193$  (BKJD)



# DV Model-Shift Uniqueness Test

006023835-01, P = 2.415228 Days, E = 129.614881 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  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.32 | 1.09 | 0   | 0   | 4.29            | 0.93            | 1.53             | 6.32    | 6.32    | 1.09    | 1.09    | 0.93    | 0.75 | 0.13  | 0.29 |

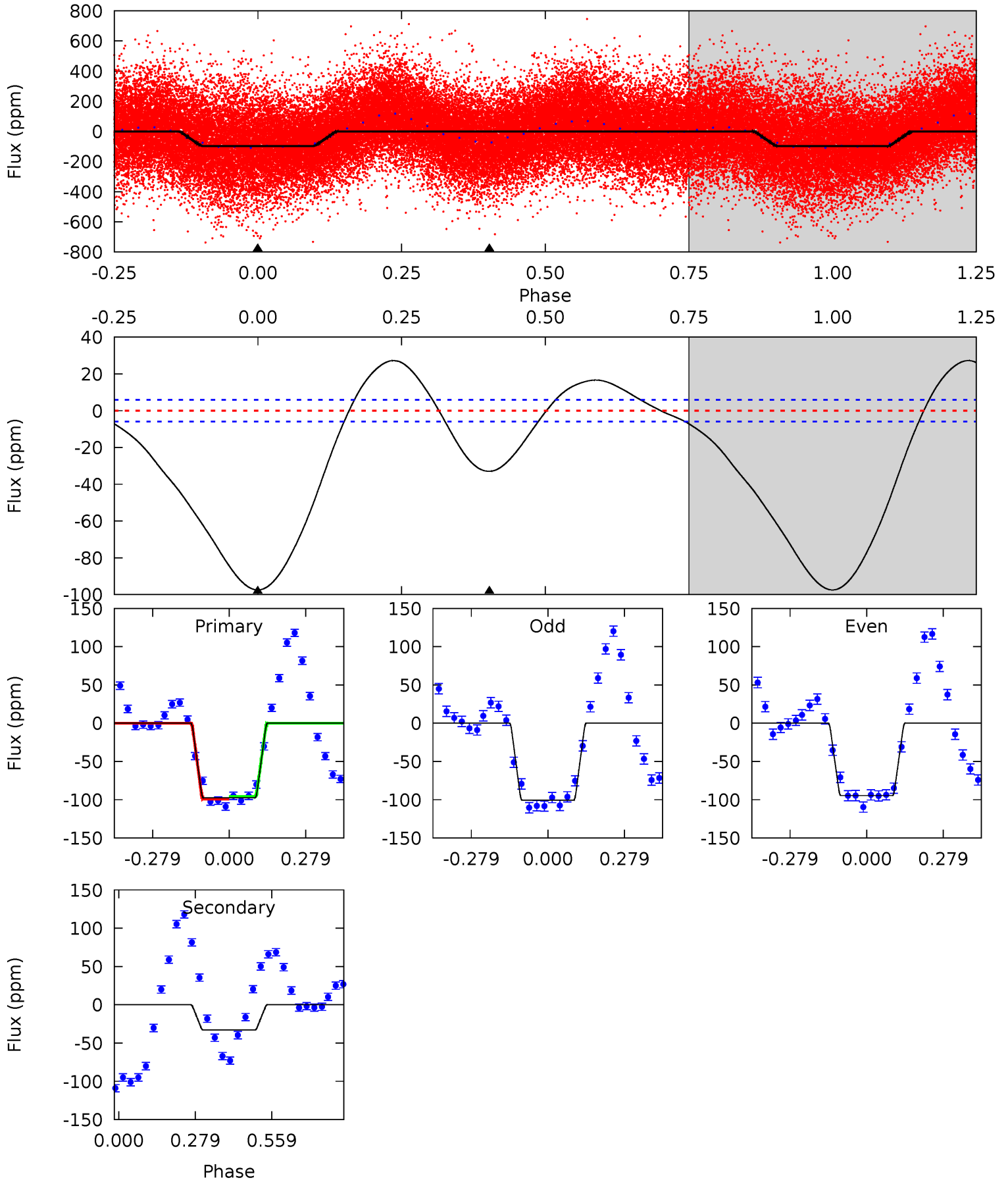




# Alt Model-Shift Uniqueness Test

006023835-01, P = 2.415208 Days, E = 129.573985 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  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 71.6 | 24.2 | 0   | 0   | 4.34            | 1.08            | 3.37             | 71.6    | 71.6    | 24.2    | 24.2    | 2.20    | 0.91 | 0.22  | 1.05 |



### Stellar Parameters For KIC 006023835

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6508^{+181}_{-250}$ | $4.098^{+0.225}_{-0.164}$ | $-0.080^{+0.250}_{-0.300}$ | $1.698^{+0.494}_{-0.494}$ | $1.322^{+0.193}_{-0.236}$ | $0.380^{+0.527}_{-0.182}$                 |
|        | +3%/-4%              | +5%/-4%                   | +312%/-375%                | +29%/-29%                 | +15%/-18%                 | +139%/-48%                                |
| Source | PHO54                | PHO54                     | PHO54                      | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 006023835-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$   | $A_{\text{obs}}$           |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV      | $-1 \pm 1$  | $0.74^{+0.63}_{-0.47}$ | $2635^{+208}_{-212}$ | $3601^{+1912}_{-6299}$ | $1.709^{+10.589}_{-1.593}$ |
| Alt.    | $-33 \pm 1$ | $1.72^{+0.78}_{-0.60}$ | $2631^{+195}_{-215}$ | $5030^{+1136}_{-627}$  | $8.817^{+12.745}_{-4.409}$ |

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



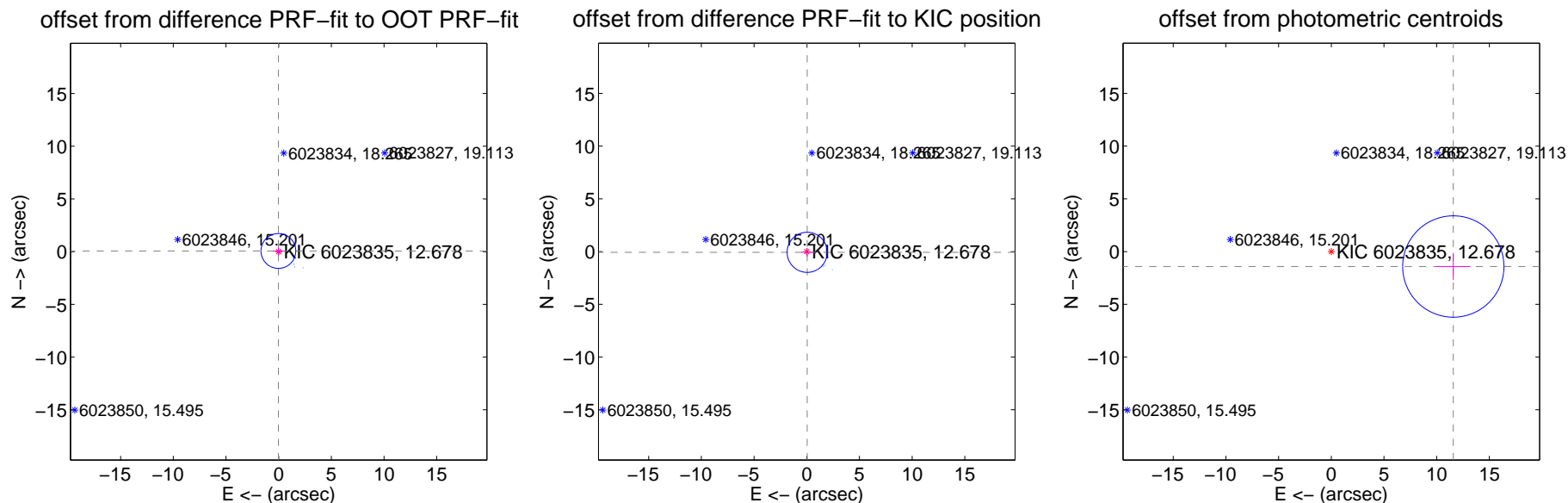
## DV Centroid Data

Supplemental centroid analysis for 006023835-01. Kepler magnitude: 12.68. Transit SNR 5.30

There are 9 quarters with good PRF difference image offsets

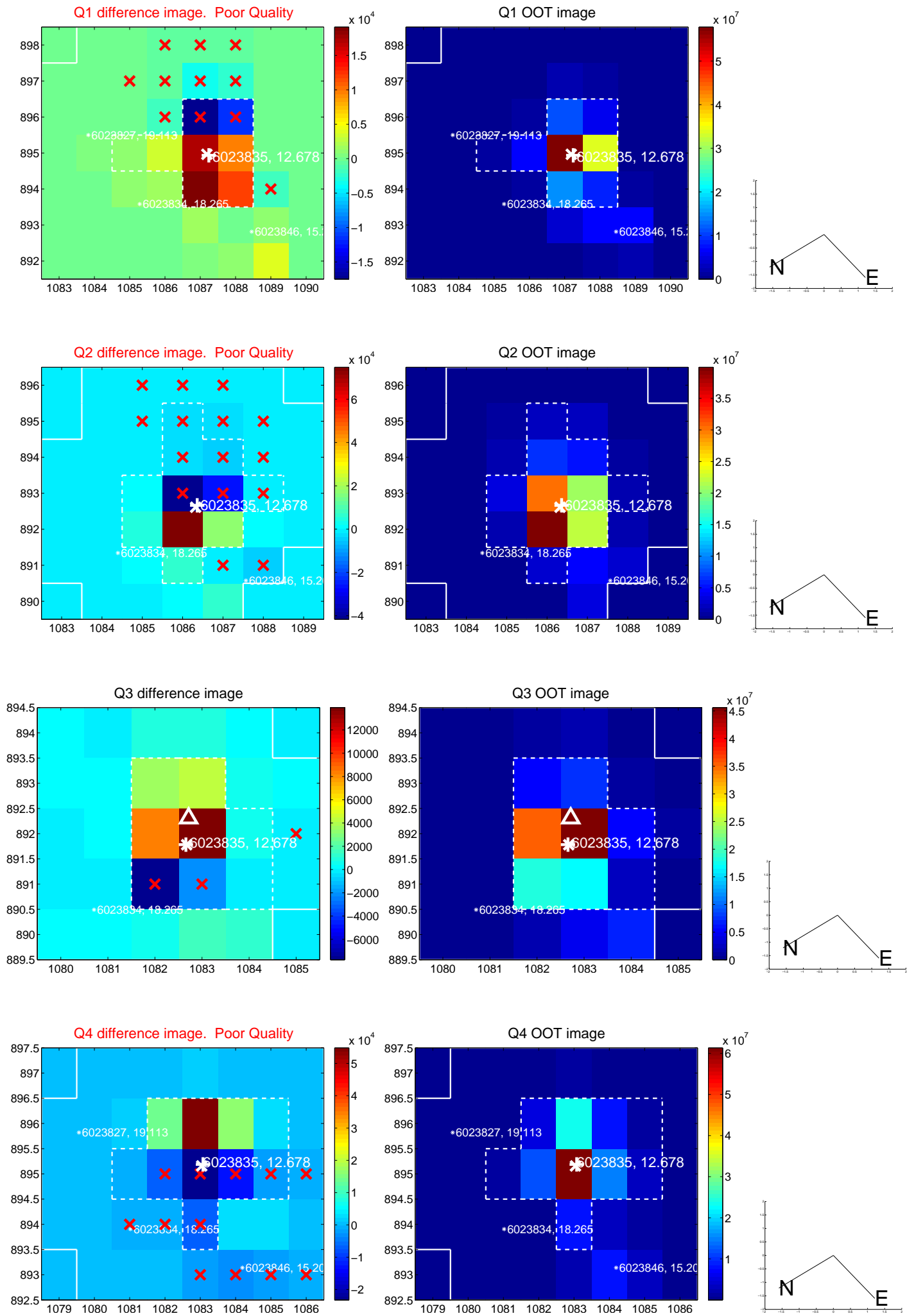
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.070 \pm 0.551$  | 0.13                | $0.026 \pm 0.526$  | $0.064 \pm 0.385$  |
| PRF-fit source offset from KIC position | $0.080 \pm 0.634$  | 0.13                | $-0.040 \pm 0.561$ | $-0.069 \pm 0.413$ |
| photometric centroid source offset      | $11.66 \pm 1.60$   | 7.28                | $-11.58 \pm 1.61$  | $-1.42 \pm 1.29$   |

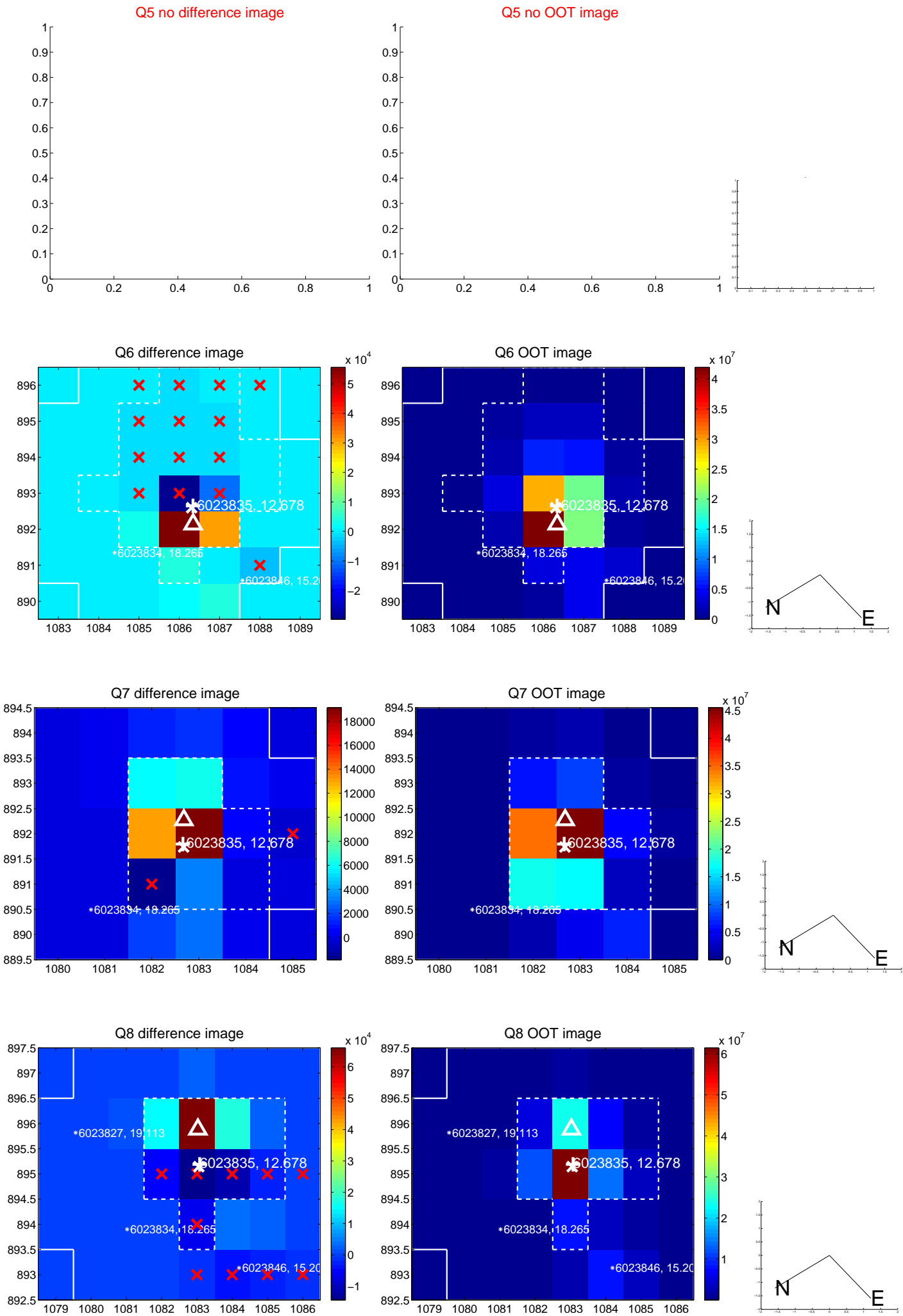


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

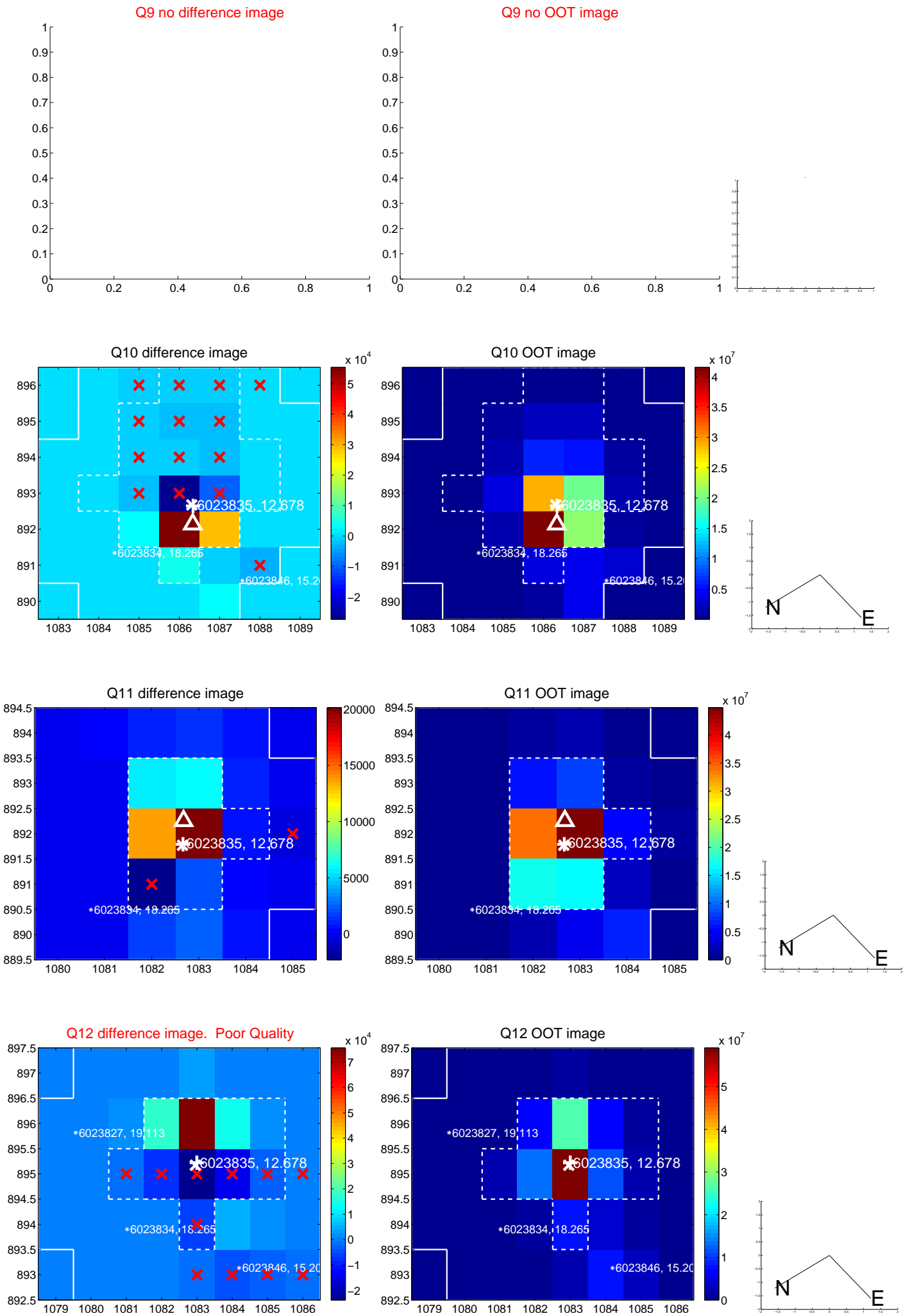
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



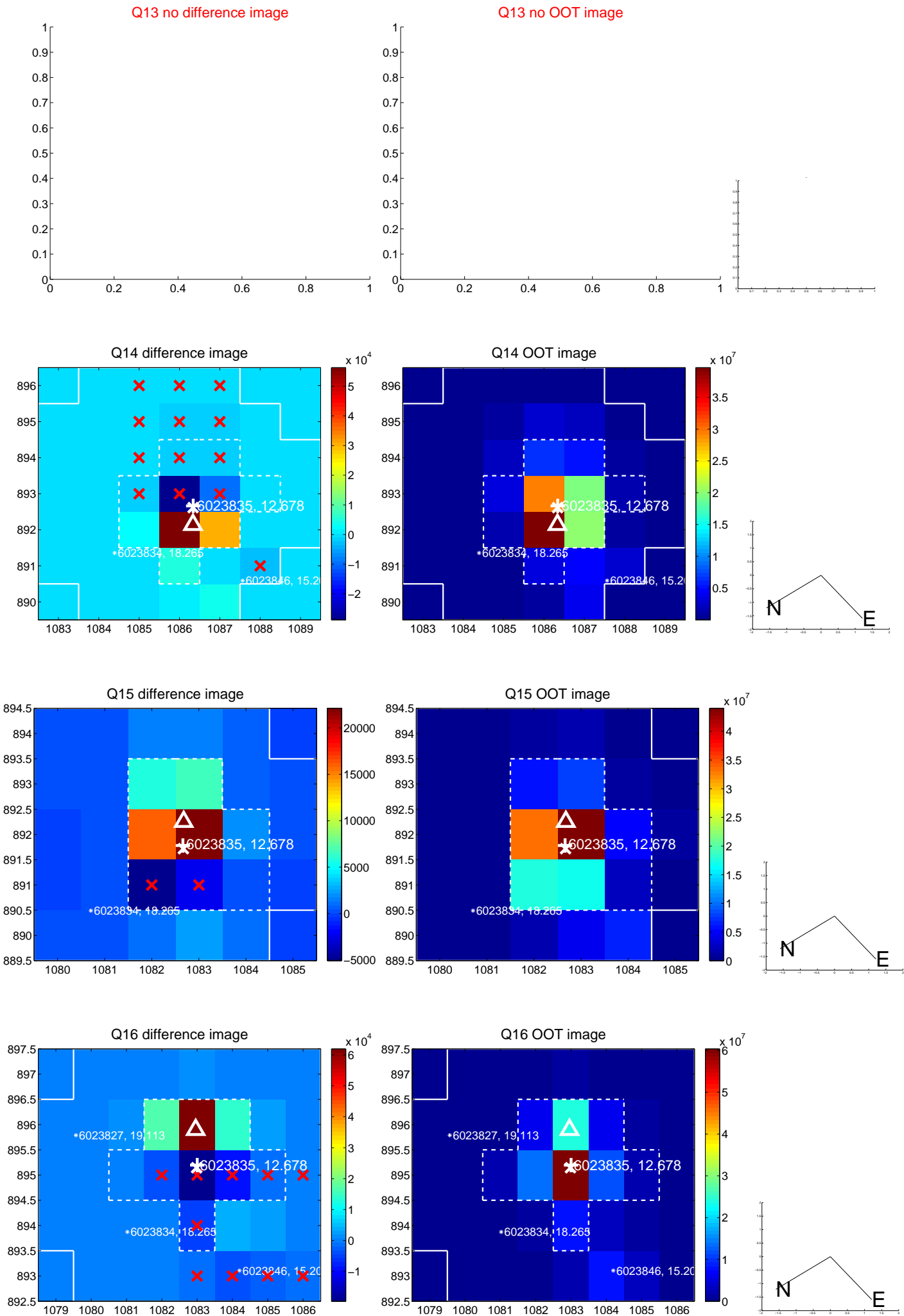
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

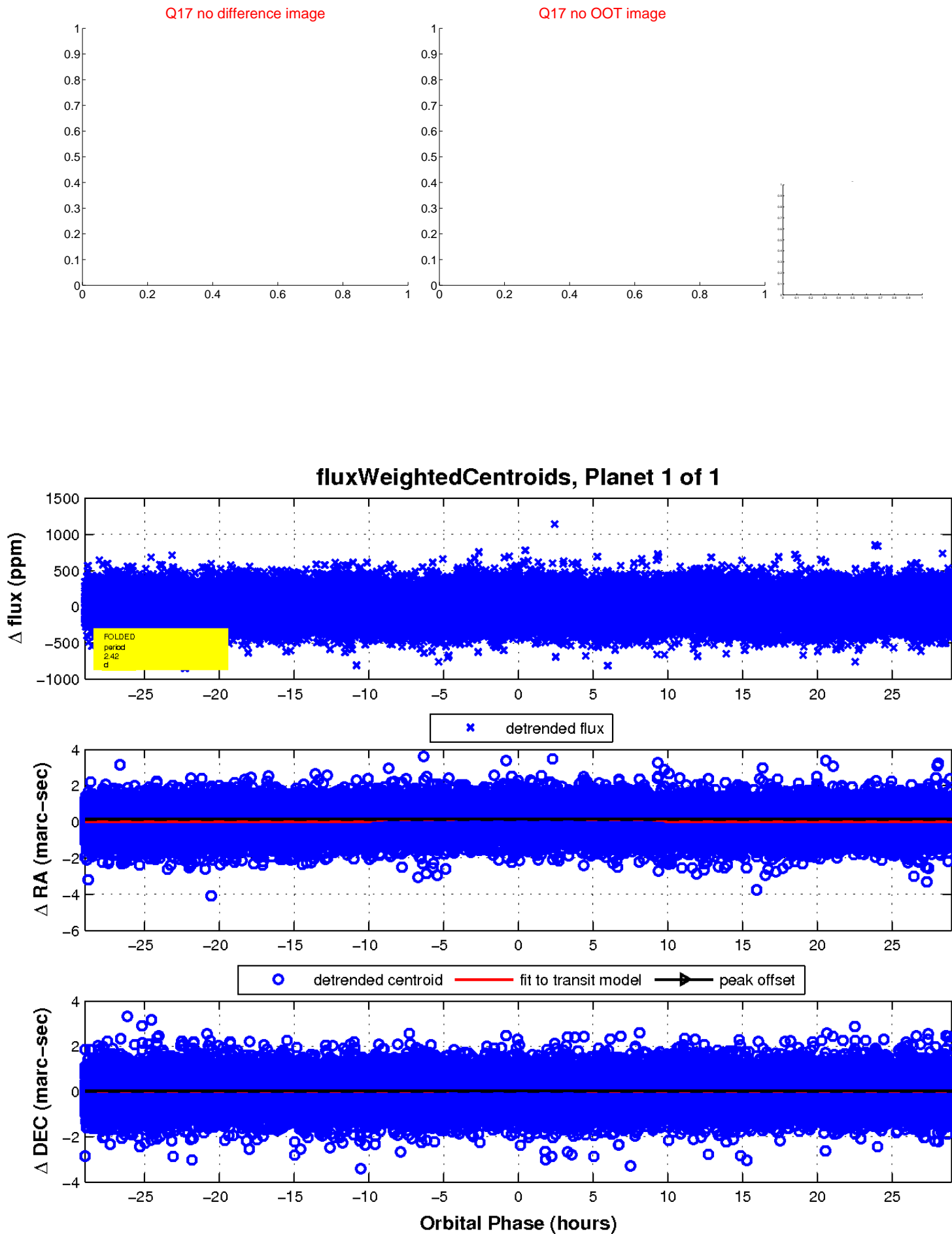


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

