

# KIC 006432345

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006432345-01 | OBS      | 2757.01 | 234.636095    | 172.644213   | 917.9       | 7.173            | 21.3 | 22.0 | 0.89                        | 5422            | 2.84                   | 1.21                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 006432345-01 | 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.

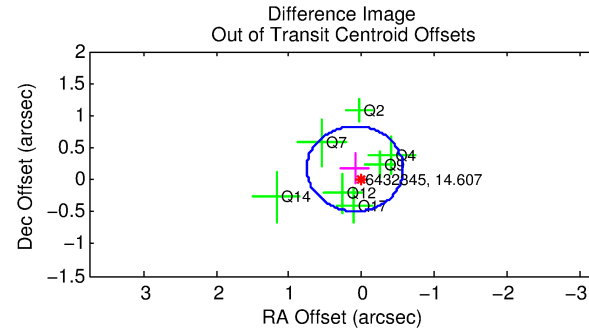
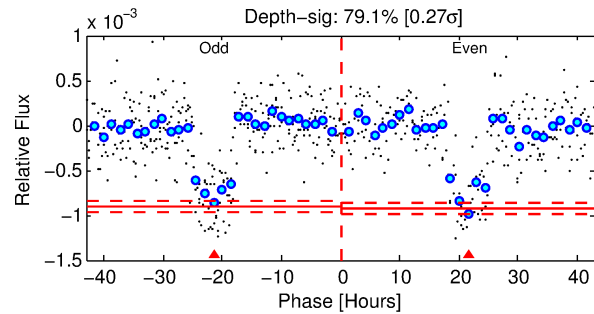
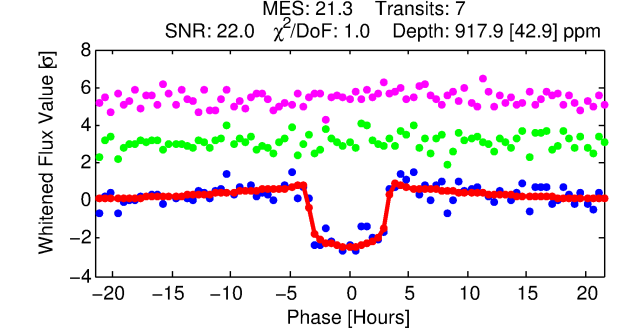
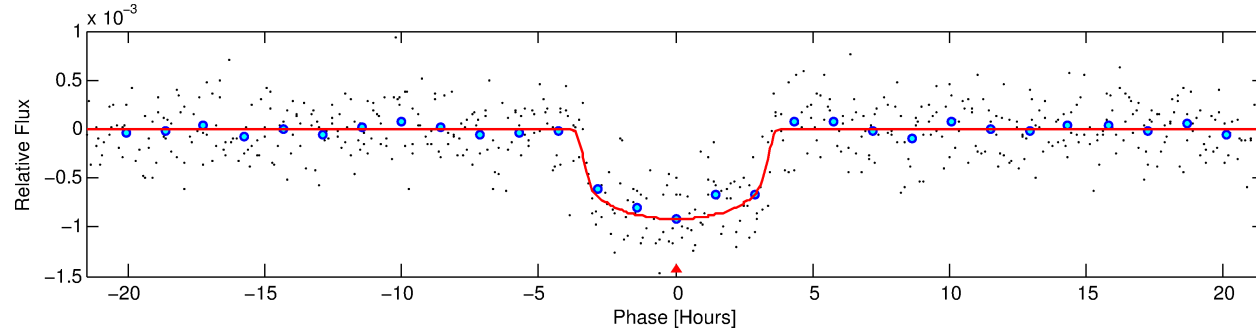
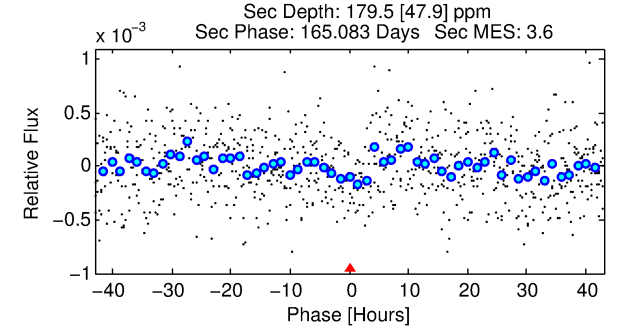
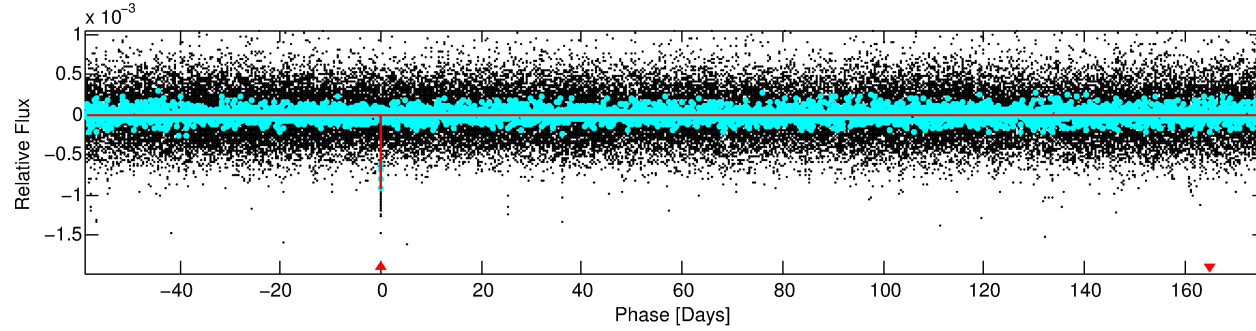
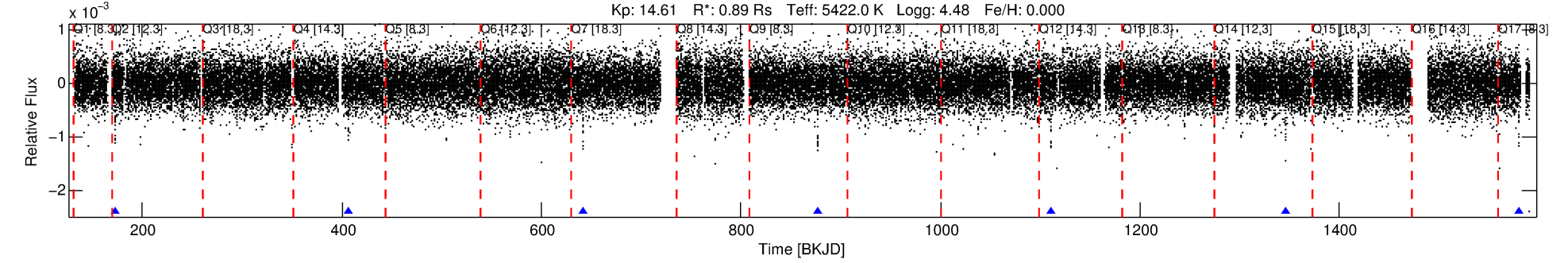
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006432345-01

No Significant Match Found

# DV One-Page Summary

KIC: 6432345 Candidate: 1 of 1 Period: 234.636 d  
KOI: K02757.01 Corr: 0.980



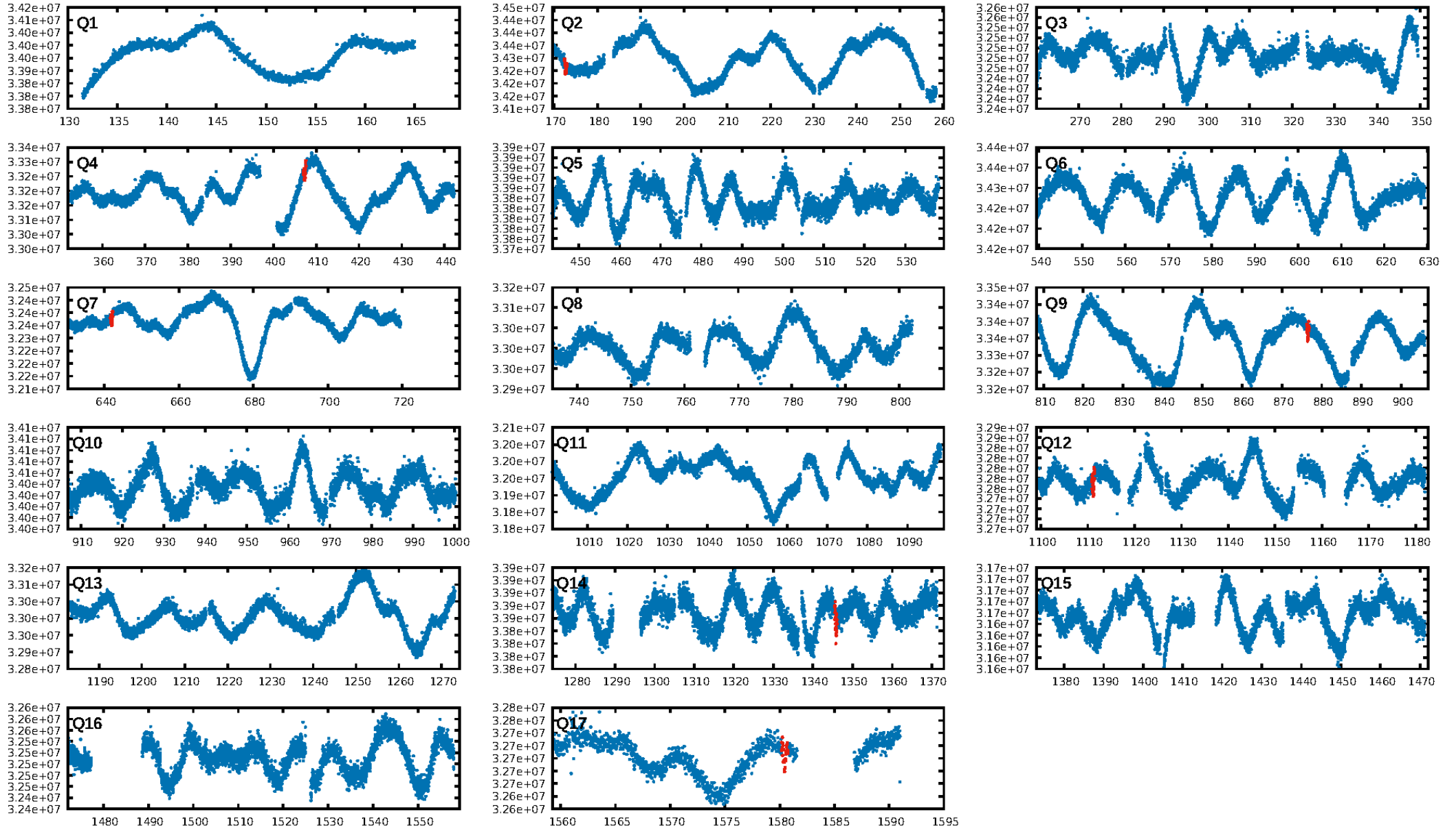
## DV Fit Results:

Period = 234.63609 [0.00123] d  
Epoch = 172.6442 [0.0048] BKJD  
Rp/R\* = 0.0294 [0.0079]  
a/R\* = 193.00 [202.78]  
b = 0.68 [0.84]  
Seff = 1.20 [0.19]  
Teq = 267 [10] K  
Rp = 2.84 [0.82] Re  
a = 0.7095 [0.0623] AU  
Ag = 6153.82 [3796.11] [1.62σ]  
Teffp = 3658 [556] K [6.10σ]

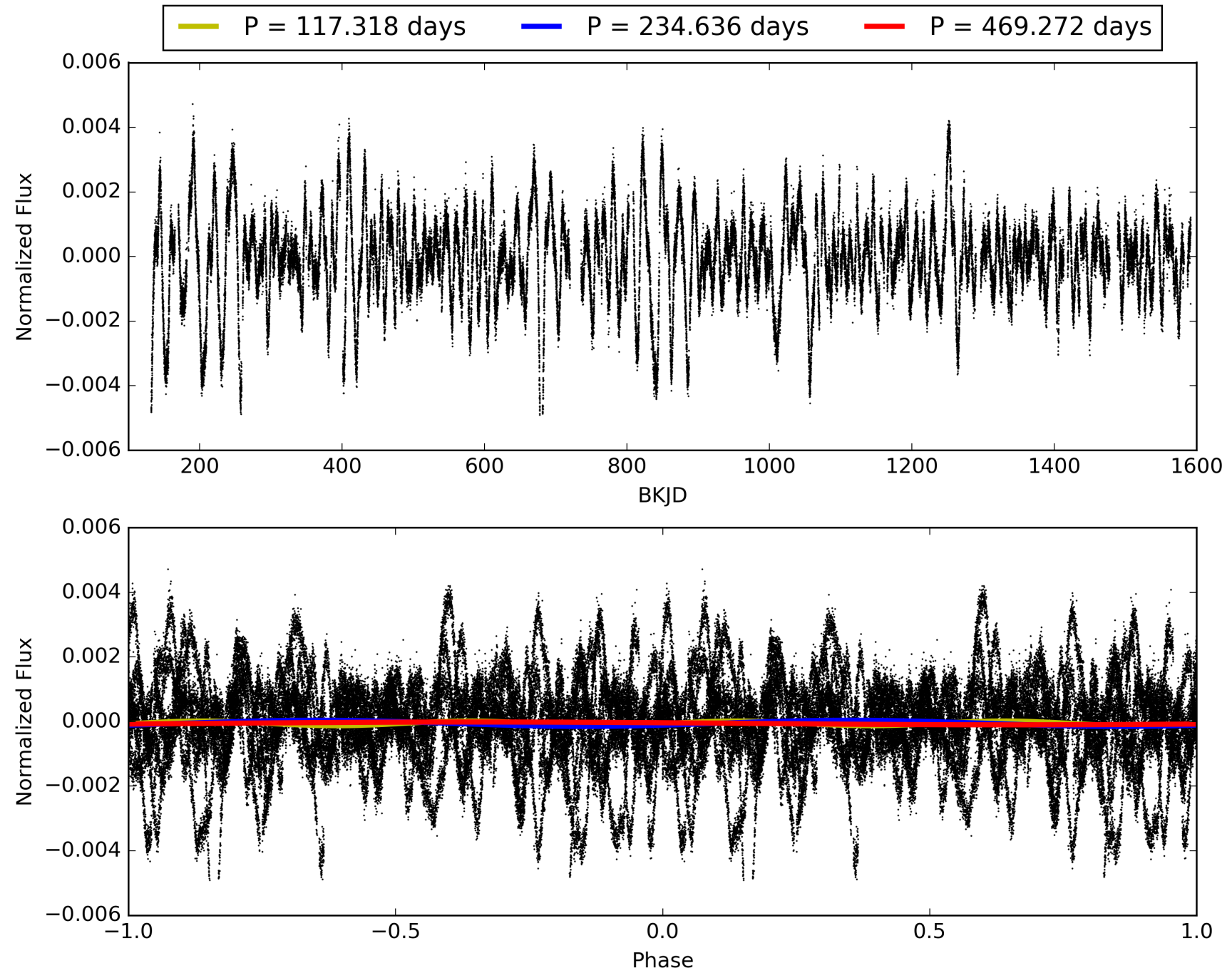
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 68.7%  
ModelChiSquareGof-sig: 94.4%  
Bootstrap-pfa: 1.36e-44  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 19.13  
Centroid-sig: 15.1%  
Centroid-so: 0.402 arcsec [0.79σ]  
OotOffset-rm: 0.193 arcsec [0.87σ]  
OotOffset-st: 2/1/2/2 [7]  
KicOffset-rm: 0.296 arcsec [1.43σ]  
KicOffset-st: 2/1/2/2 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [7/7]

# TCE 006432345-01, PDC Light Curves

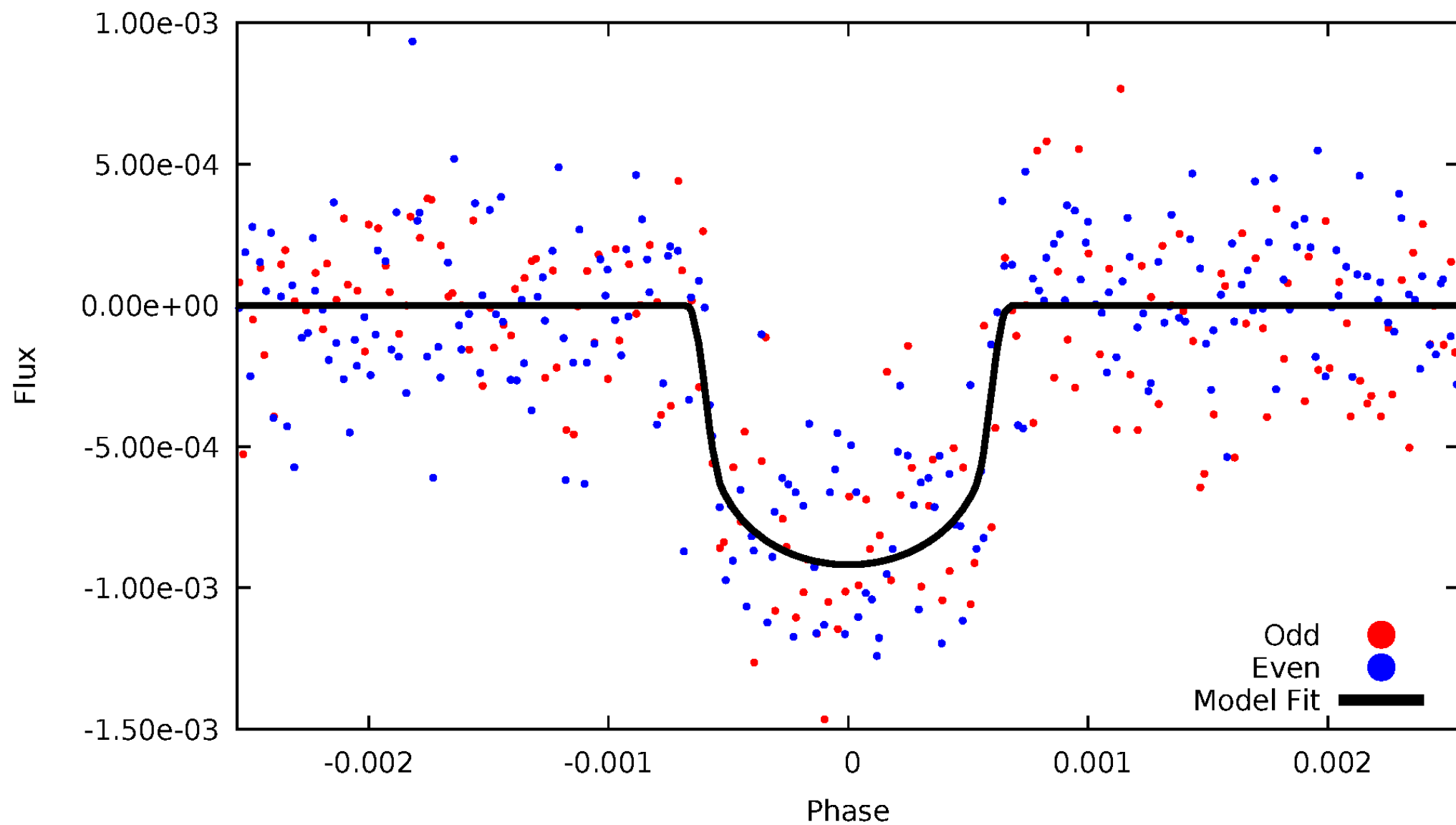


TCE 006432345-01



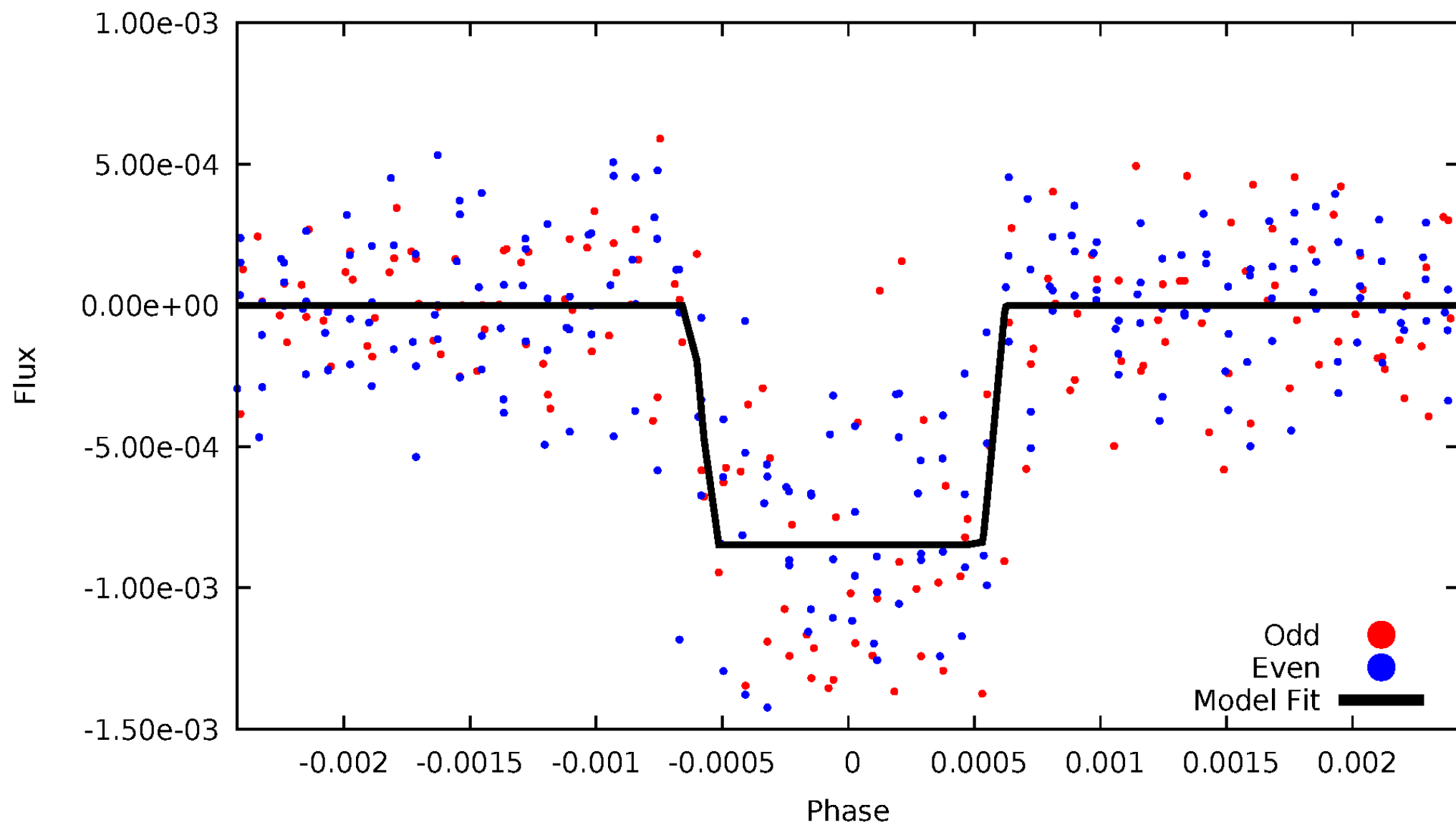
# DV Odd/Even

TCE 006432345-01

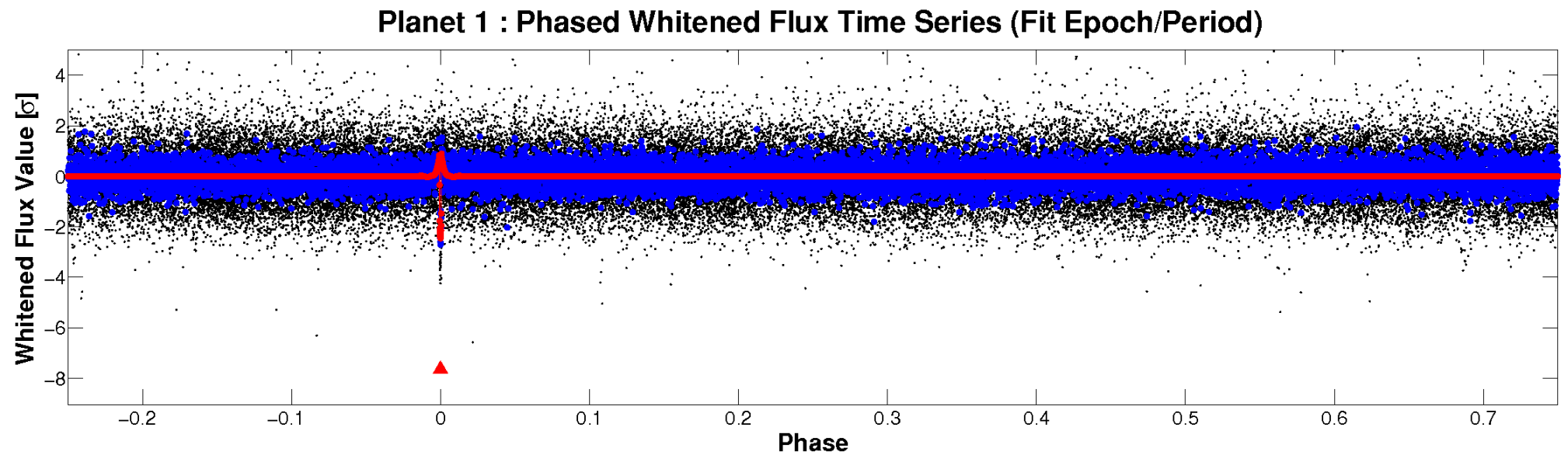
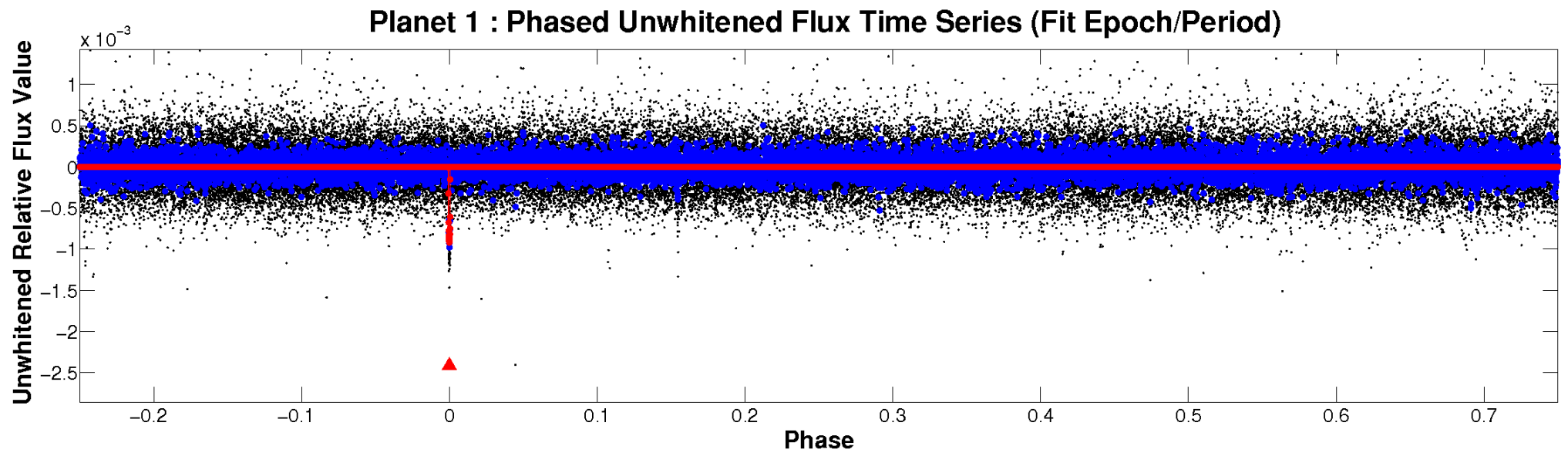


# ALT Odd/Even

TCE 006432345-01

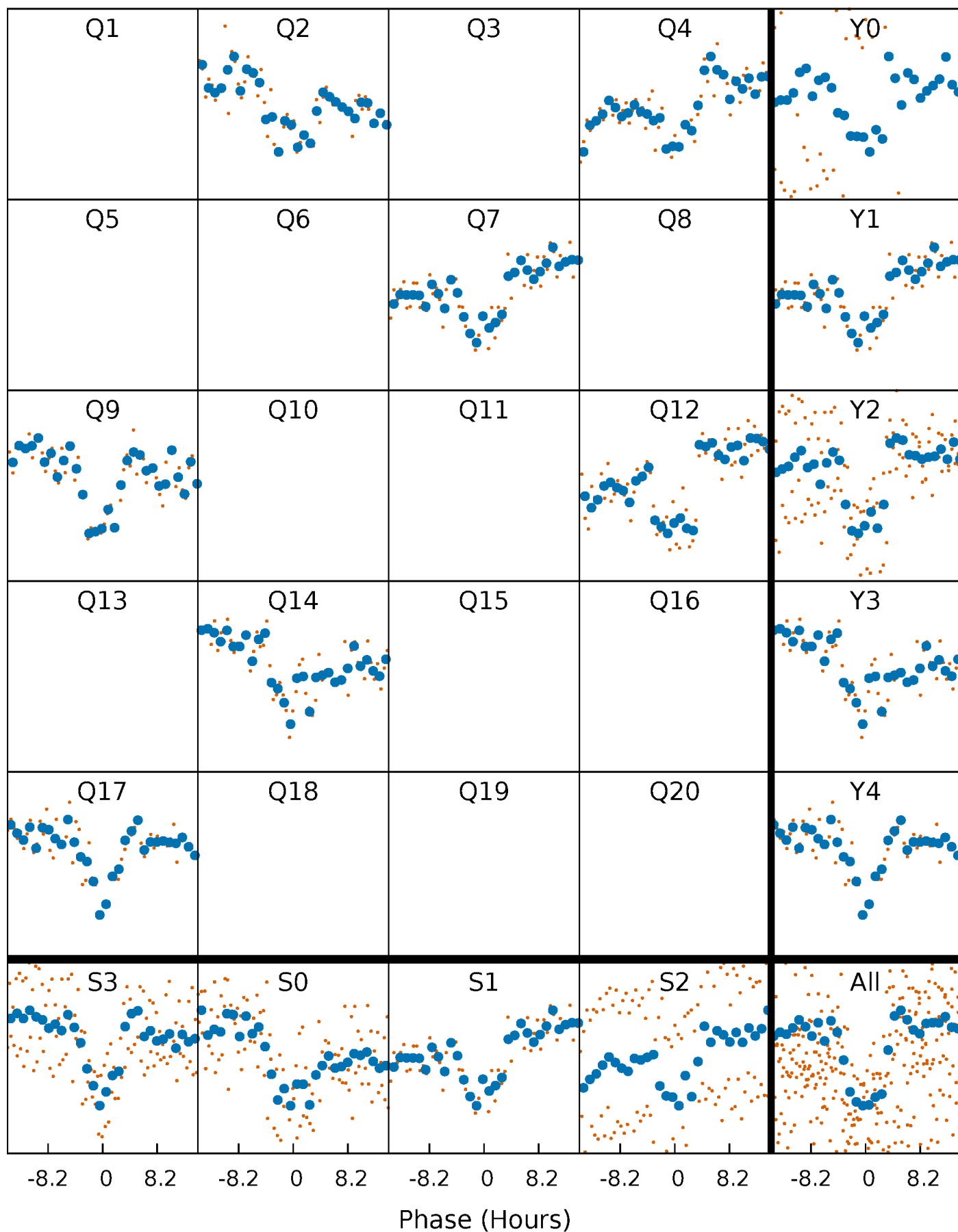


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

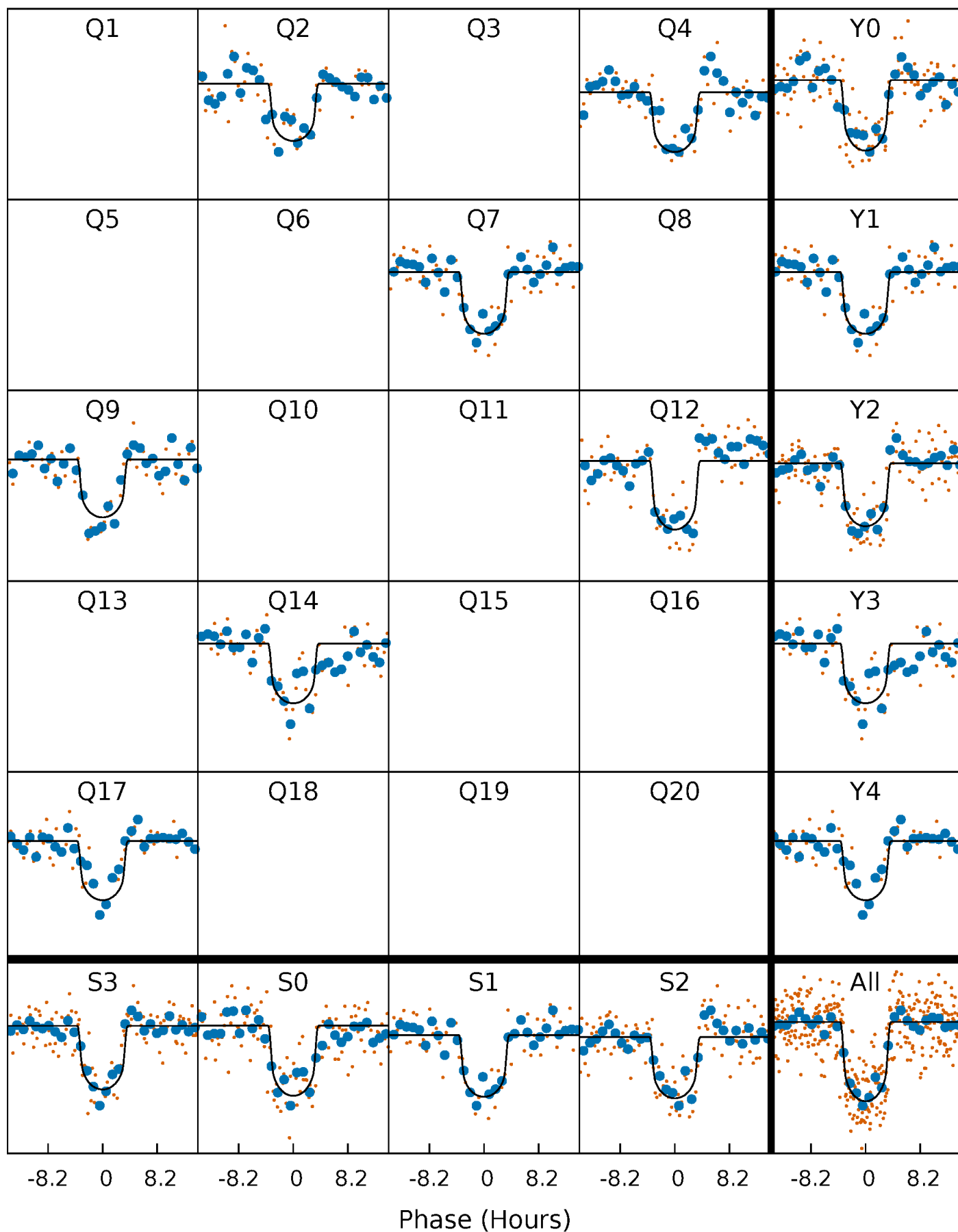
TCE 006432345-01 P=234.636095 Days  $T_0=172.644213$  (BKJD)





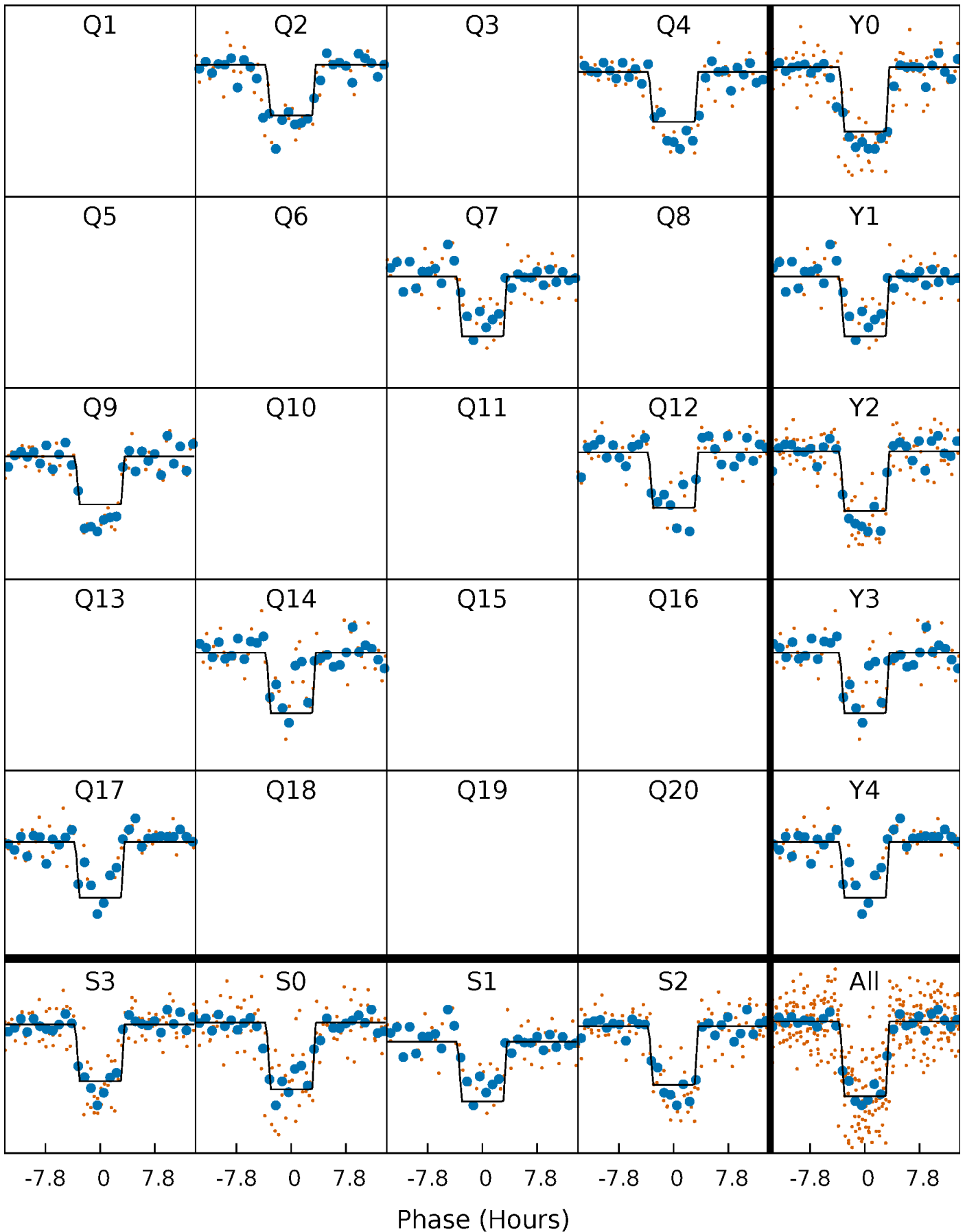
# DV Quarter-Phased Transit Curves

TCE 006432345-01 P=234.636095 Days  $T_0=172.644213$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

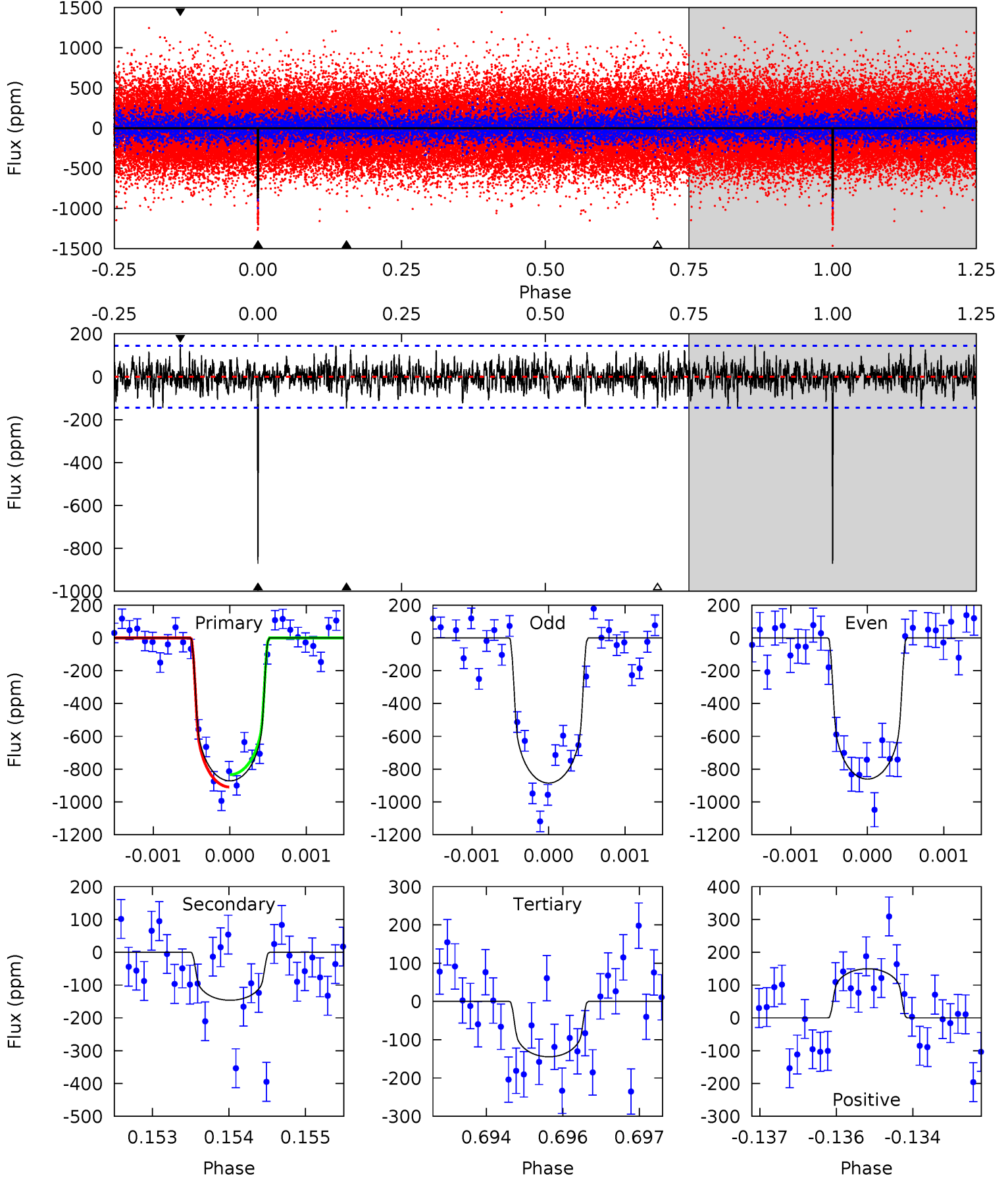
TCE 006432345-01 P=234.638569 Days  $T_0=172.640482$  (BKJD)



# DV Model-Shift Uniqueness Test

006432345-01, P = 234.636095 Days, E = 172.644213 Days

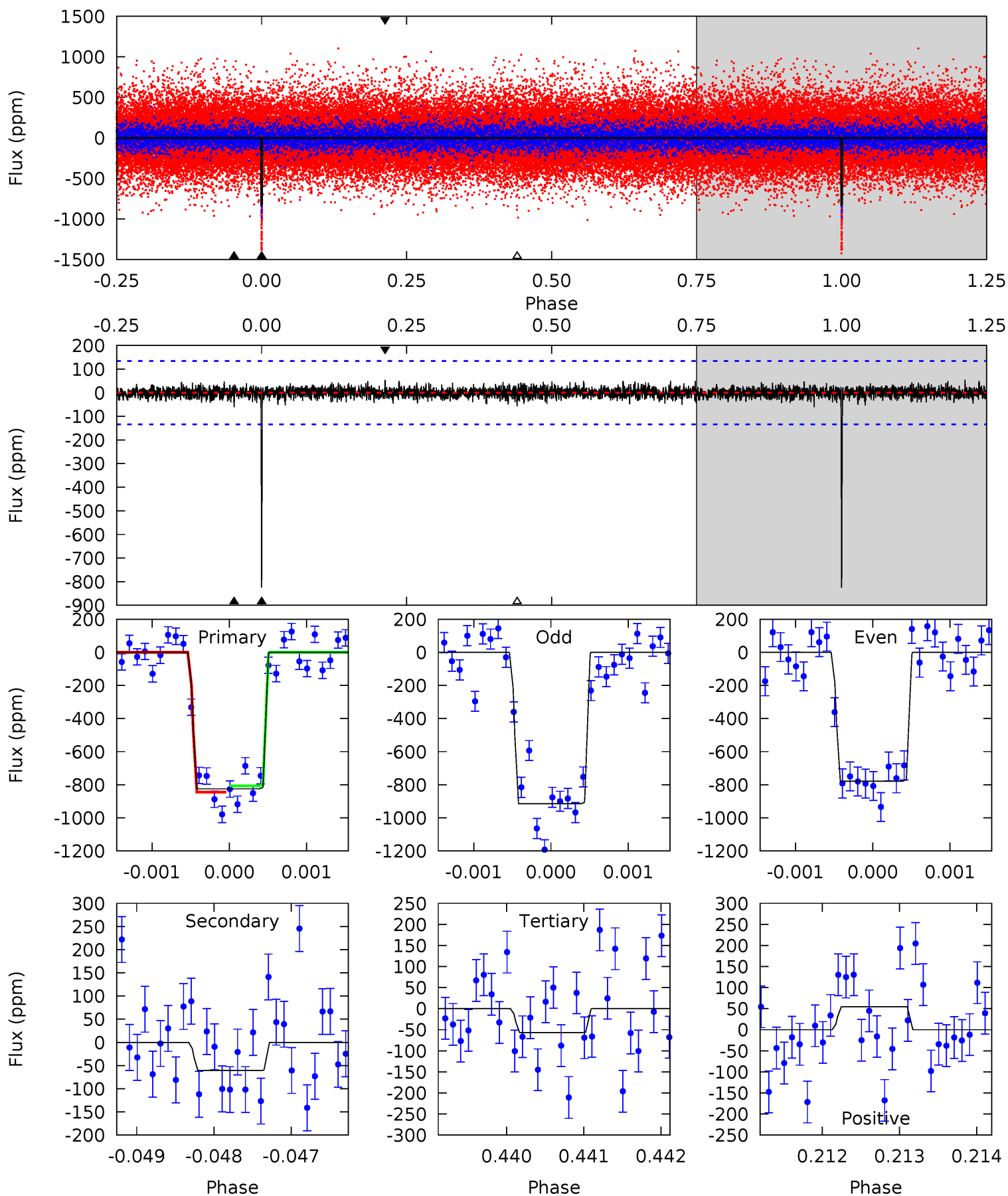
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 32.6 | 5.47 | 5.40 | 5.59 | 5.40            | 3.21            | 1.56             | 27.2    | 27.0    | 0.07    | -0.12   | 0.45    | 1.00 | 0.15  | 1.41 |



# Alt Model-Shift Uniqueness Test

006432345-01, P = 234.638569 Days, E = 172.640482 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 33.3 | 2.45 | 2.29 | 2.21 | 5.42            | 3.23            | 0.58             | 31.0    | 31.1    | 0.16    | 0.24    | 2.71    | 0.95 | 0.06  | 0.77 |



### Stellar Parameters For KIC 006432345

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5422^{+107}_{-107}$ | $4.481^{+0.067}_{-0.075}$ | $0.000^{+0.150}_{-0.150}$ | $0.885^{+0.088}_{-0.066}$ | $0.867^{+0.059}_{-0.045}$ | $1.760^{+0.447}_{-0.391}$                 |
|        | +2%/-2%              | +1%/-2%                   | +inf%/-inf%               | +10%/-7%                  | +7%/-5%                   | +25%/-22%                                 |
| Source | SPE57                | SPE57                     | SPE57                     | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 006432345-01 / KOI 2757.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$        | $A_{obs}$              |
|---------|---------------|------------------------|-------------------|----------------------|------------------------|
| DV      | $-146 \pm 27$ | $2.74^{+0.95}_{-0.77}$ | $374^{+12}_{-12}$ | $3858^{+528}_{-359}$ | $5220^{+5305}_{-2342}$ |
| Alt.    | $-61 \pm 25$  | $2.79^{+0.78}_{-0.78}$ | $373^{+12}_{-12}$ | $3335^{+423}_{-353}$ | $2088^{+2379}_{-1085}$ |

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

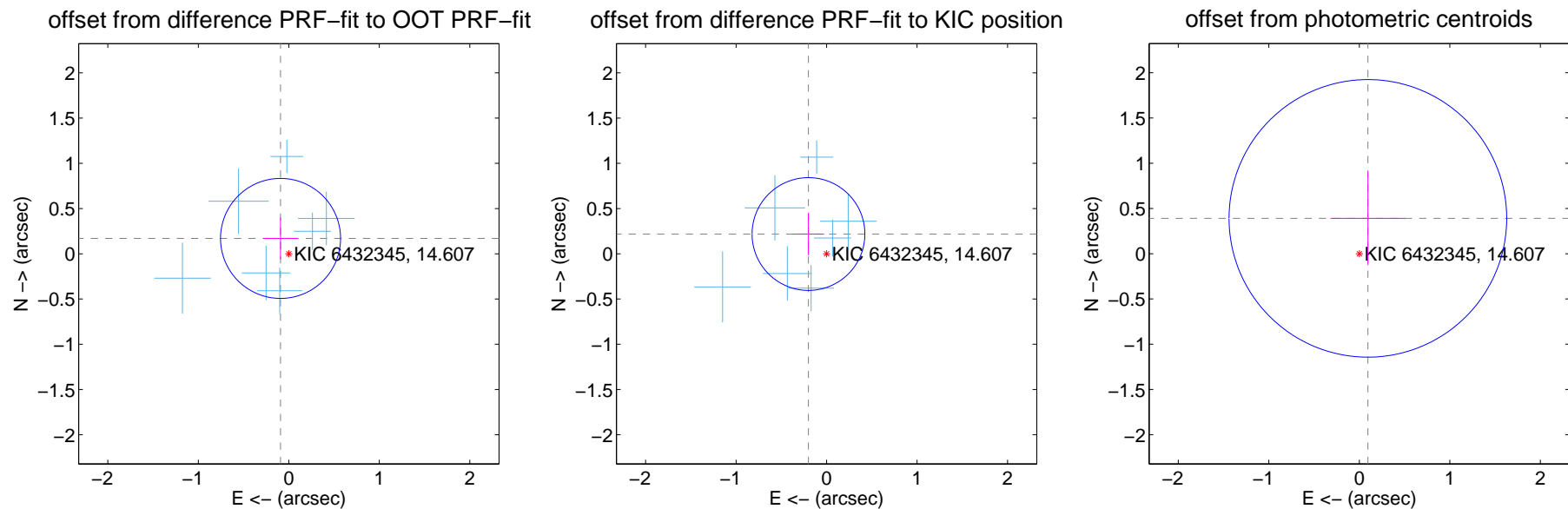
## DV Centroid Data

Supplemental centroid analysis for 006432345-01. Kepler magnitude: 14.61. Transit SNR 21.98

There are 7 quarters with good PRF difference image offsets

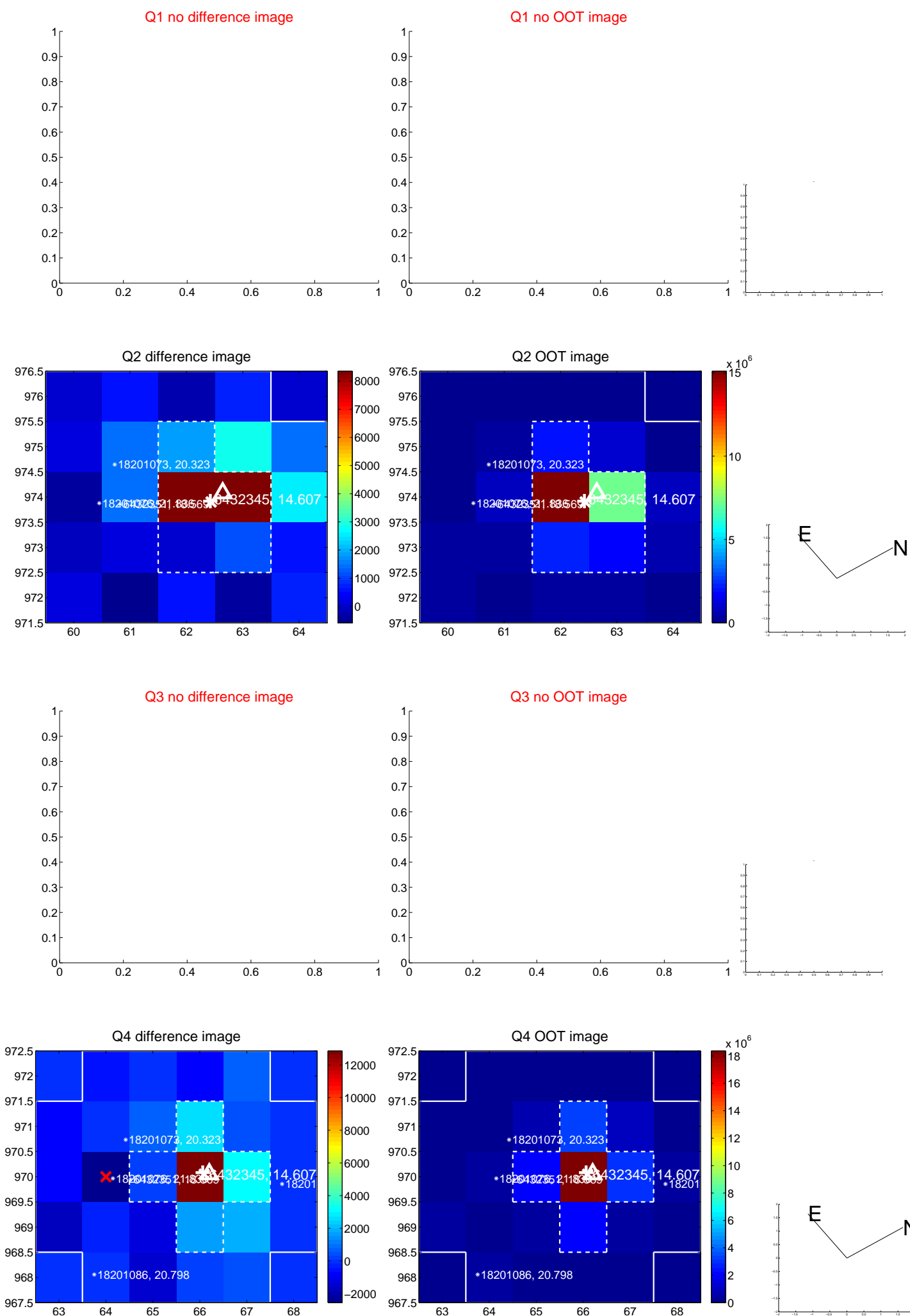
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $0.193 \pm 0.221$  | 0.87                | $0.091 \pm 0.192$ | $0.170 \pm 0.229$ |
| PRF-fit source offset from KIC position | $0.296 \pm 0.208$  | 1.43                | $0.200 \pm 0.172$ | $0.218 \pm 0.234$ |
| photometric centroid source offset      | $0.40 \pm 0.51$    | 0.79                | $-0.09 \pm 0.41$  | $0.39 \pm 0.52$   |

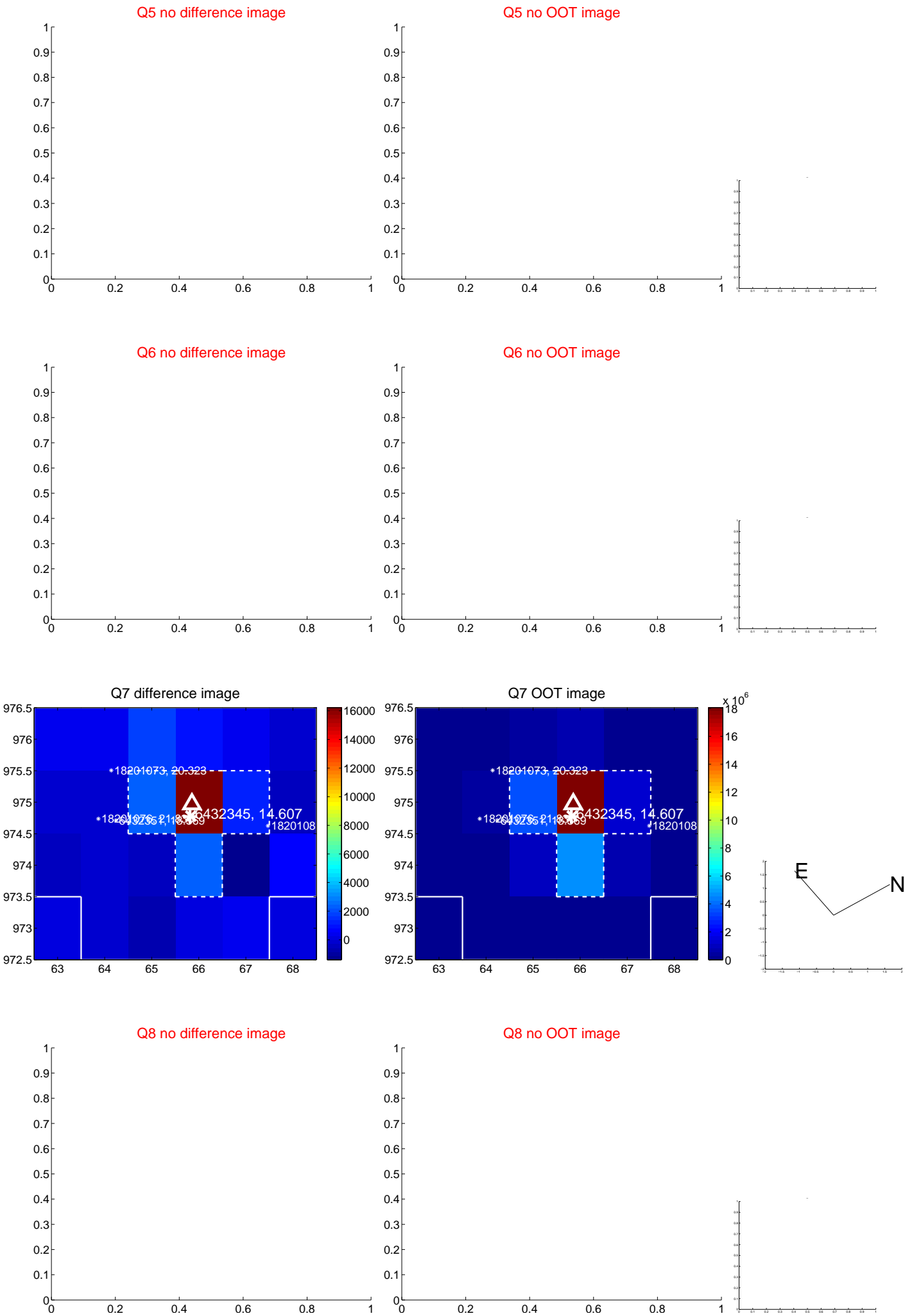


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

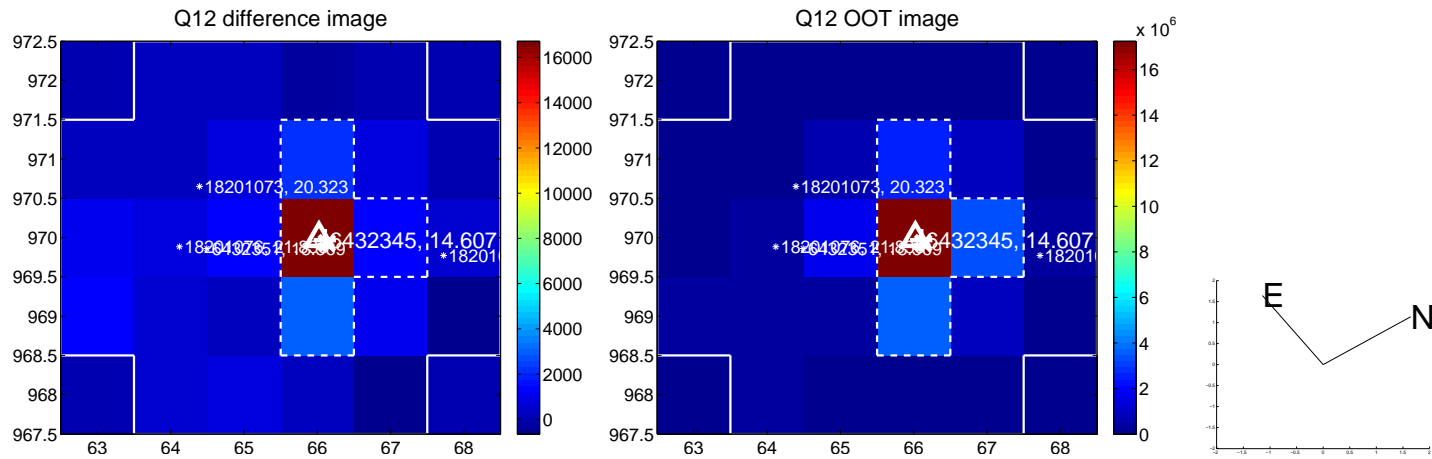
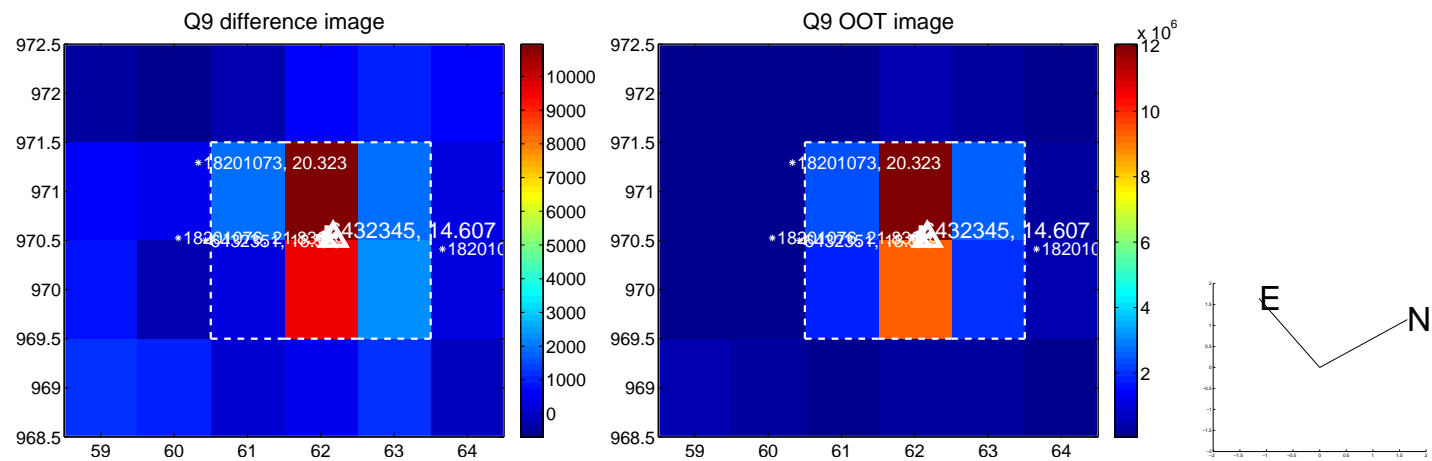


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

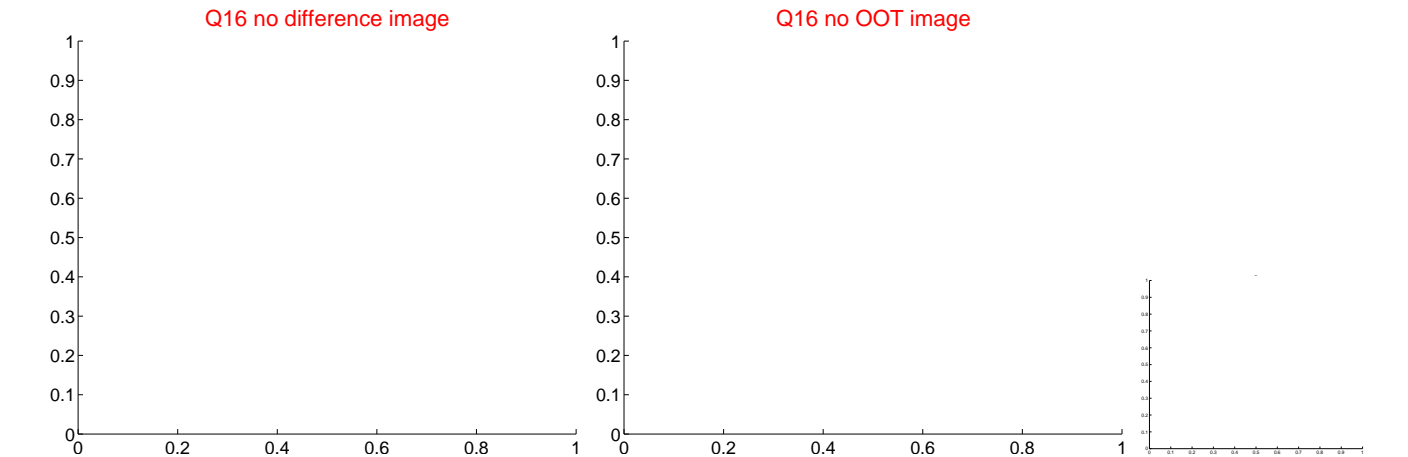
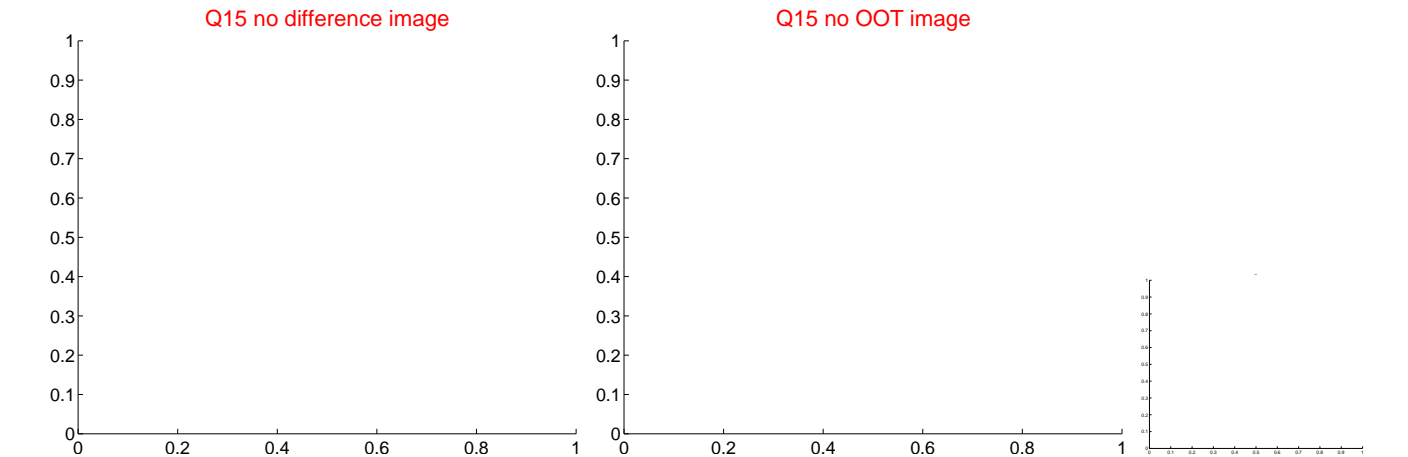
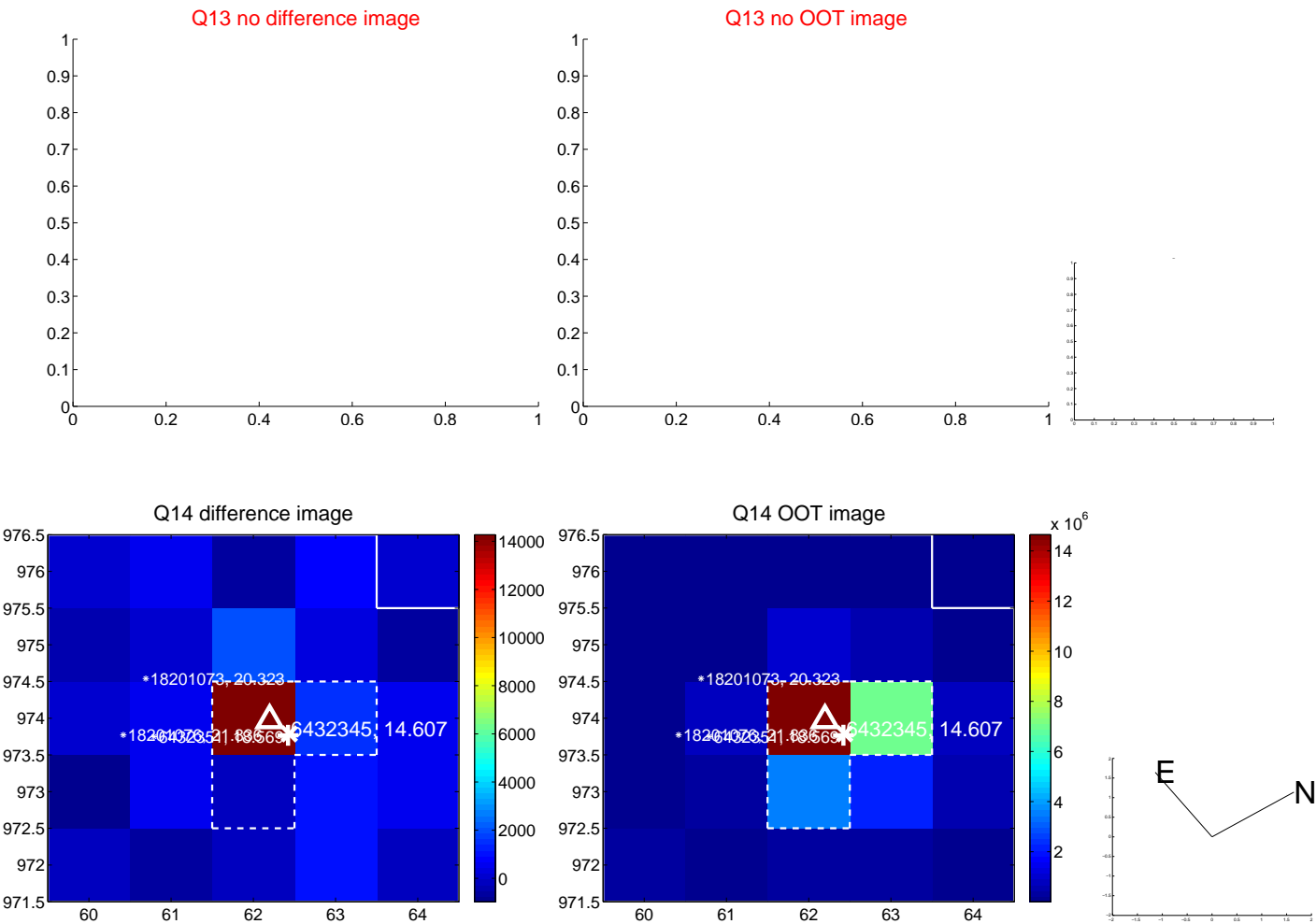




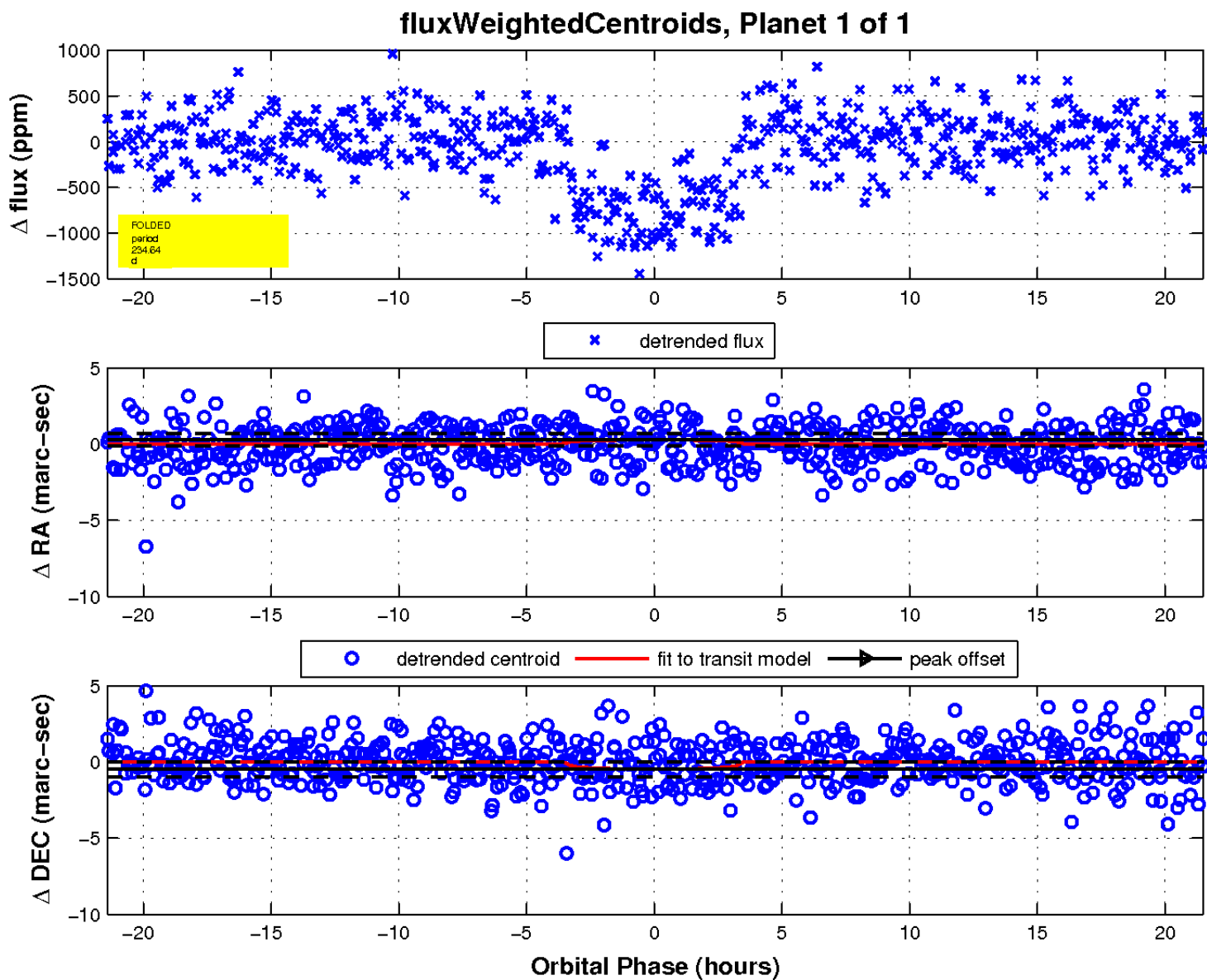
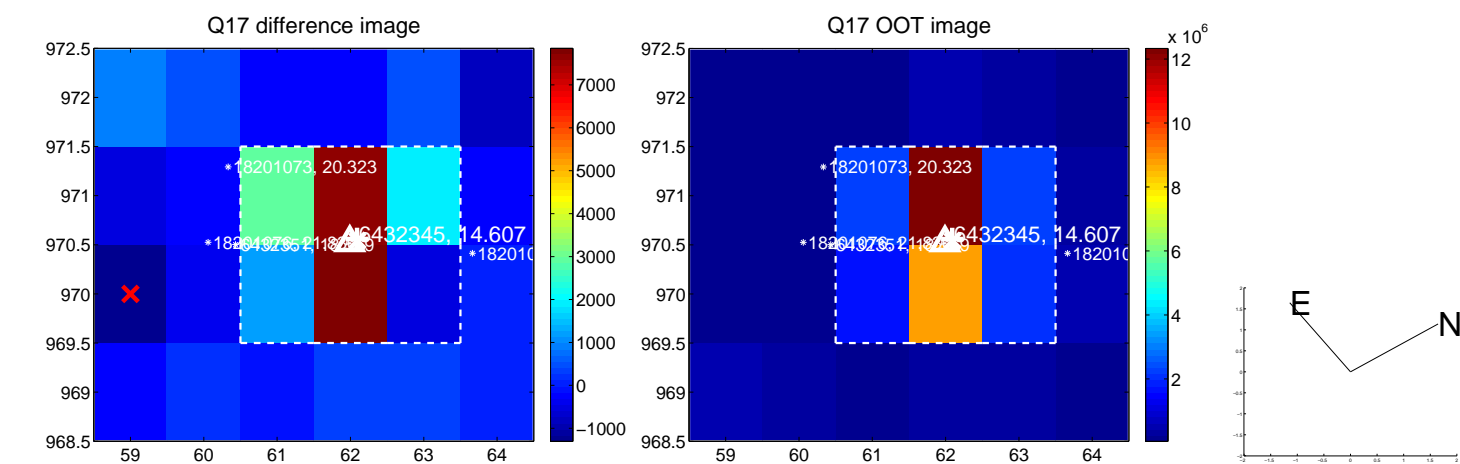
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

