

# KIC 005195172

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005195172-01 | OBS      | 1671.01 | 1.480284      | 132.890036   | 58.3        | 2.655            | 18.6 | 19.7 | 1.26                        | 5897            | 1.13                   | 2608.01                |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005195172-01 | OBS      | PC   | 0.98  | 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.

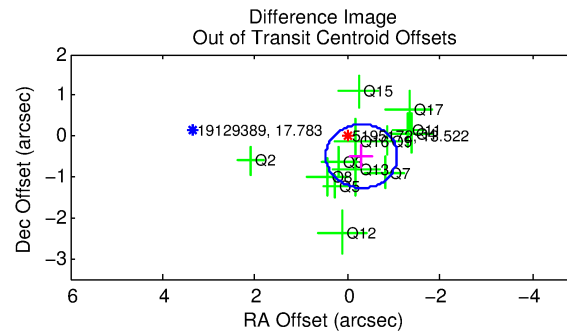
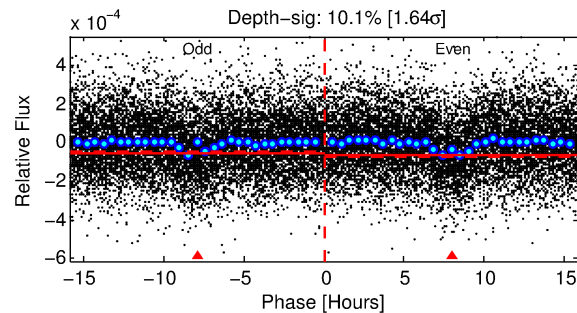
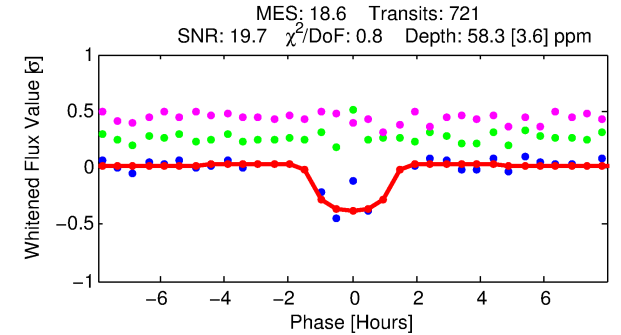
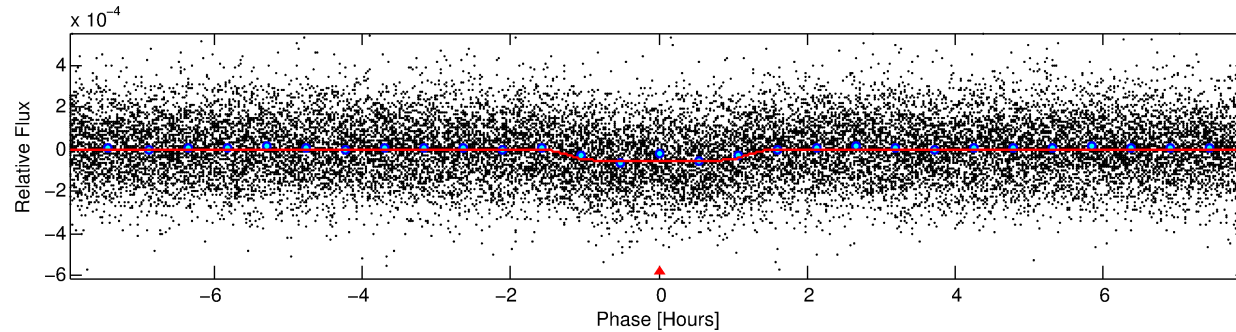
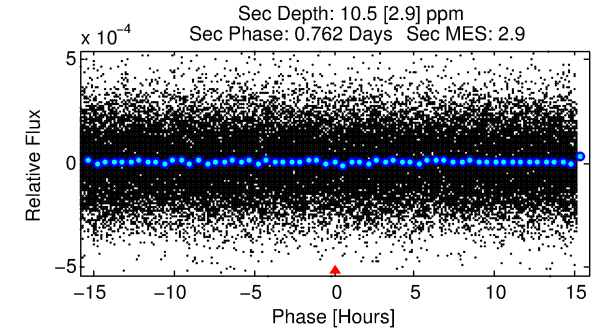
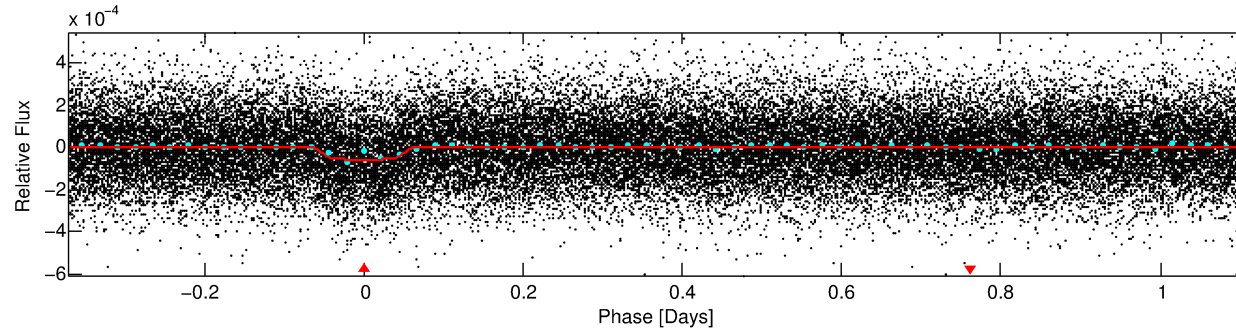
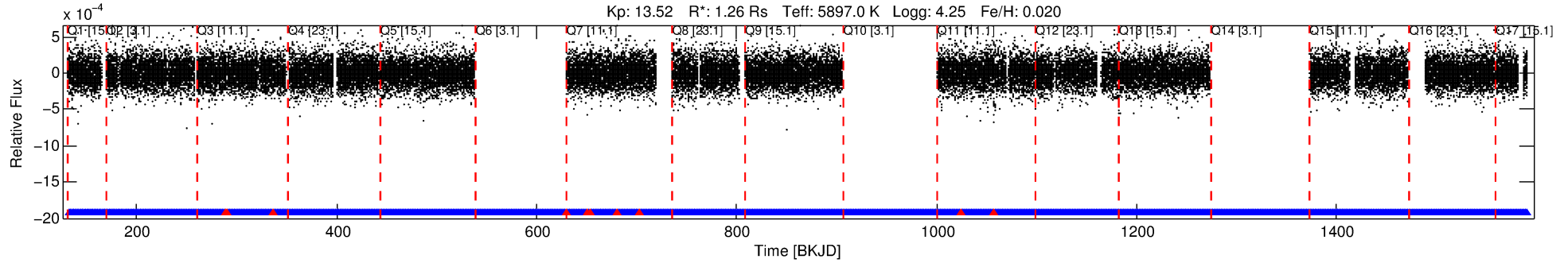
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005195172-01

No Significant Match Found

# DV One-Page Summary

KIC: 5195172 Candidate: 1 of 1 Period: 1.480 d  
KOI: K01671.01 Corr: 0.957



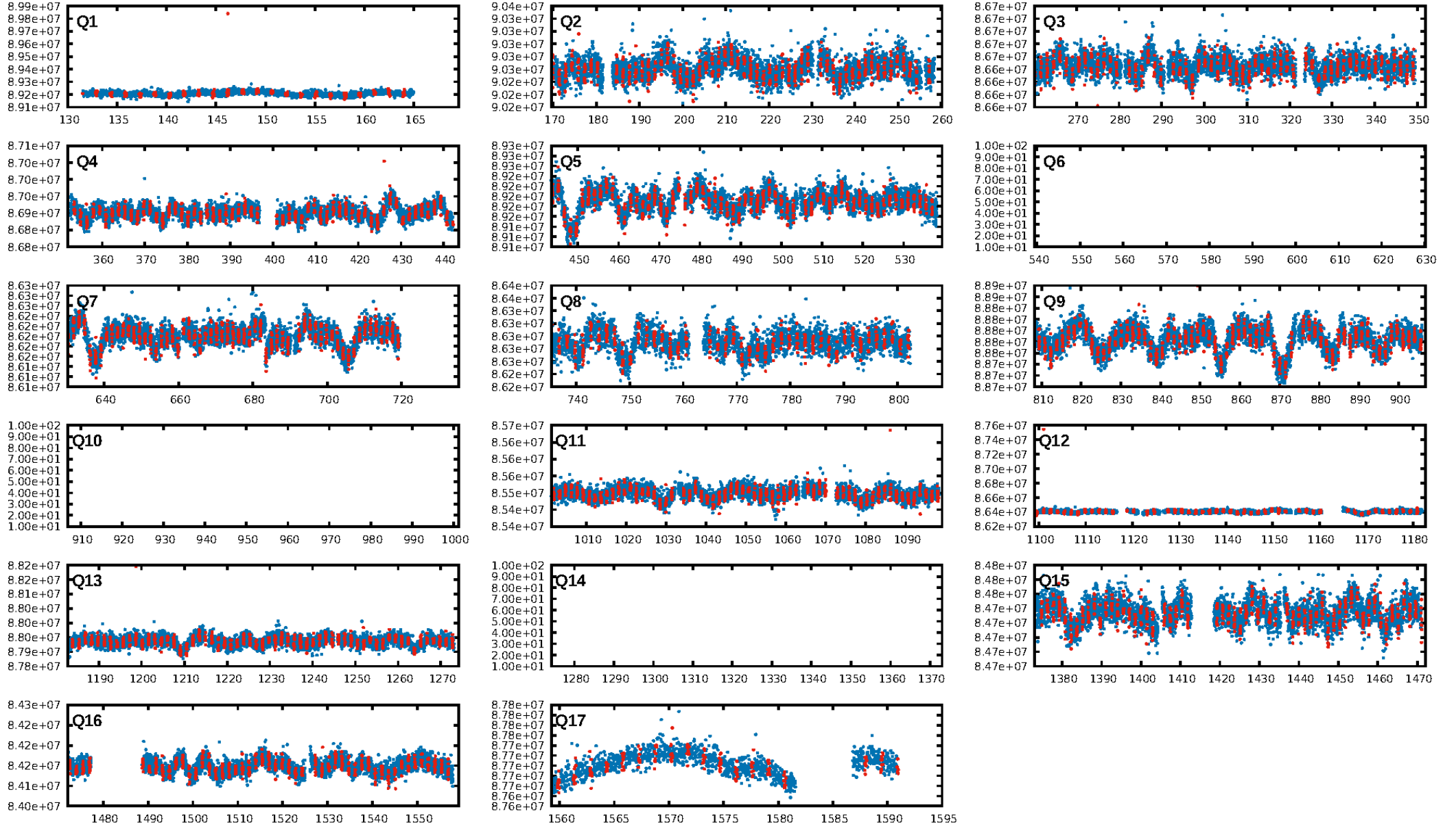
## DV Fit Results:

Period = 1.48028 [0.00001] d  
Epoch = 132.8900 [0.0018] BKJD  
Rp/R\* = 0.0082 [0.0029]  
a/R\* = 2.22 [3.03]  
b = 0.89 [0.41]  
Seff = 2608.01 [727.03]  
Teq = 1822 [127] K  
Rp = 1.13 [0.44] Re  
a = 0.0257 [0.0043] AU  
Ag = 2.98 [2.37] [0.84σ]  
Teffp = 3702 [696] K [2.66σ]

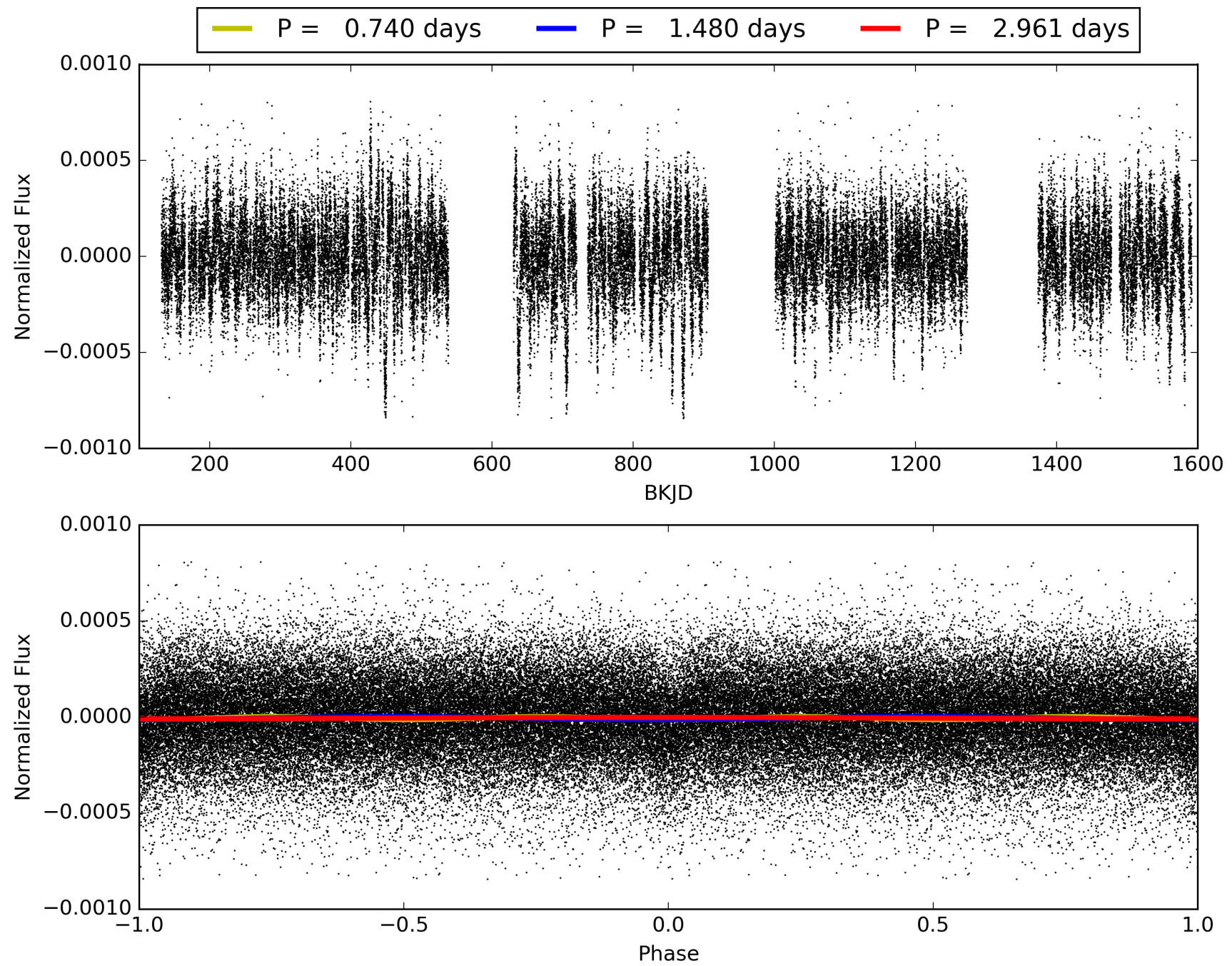
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.72e-74  
RollingBand-fgt: 0.99 [671/681]  
GhostDiagnostic-chr: 5.93  
Centroid-sig: 0.1%  
Centroid-so: 1.247 arcsec [2.48σ]  
OotOffset-rm: 0.576 arcsec [2.22σ]  
KicOffset-rm: 0.765 arcsec [3.01σ]  
OotOffset-st: 1/4/4/4 [13]  
KicOffset-st: 1/4/4/4 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 005195172-01, PDC Light Curves

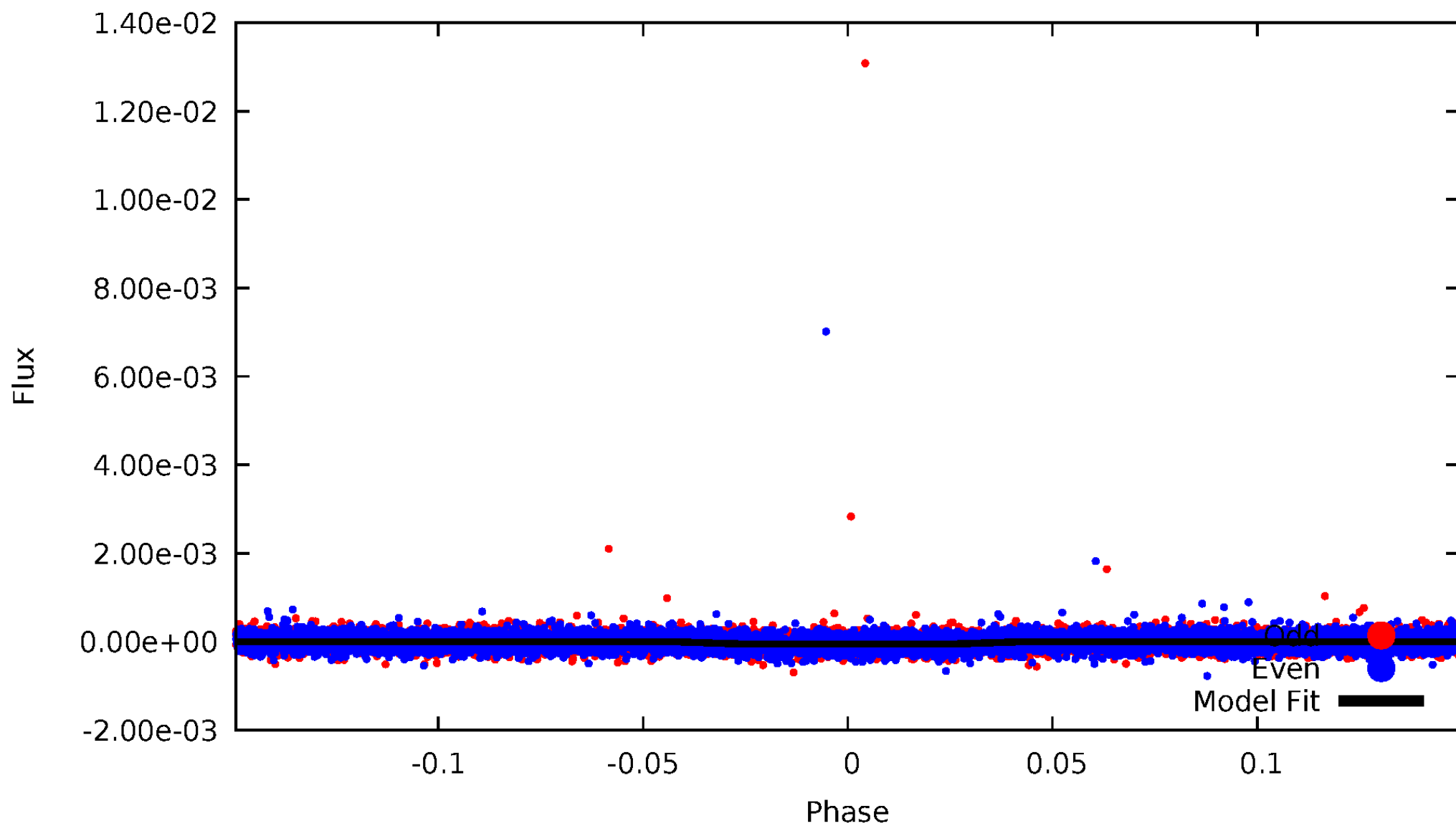


TCE 005195172-01



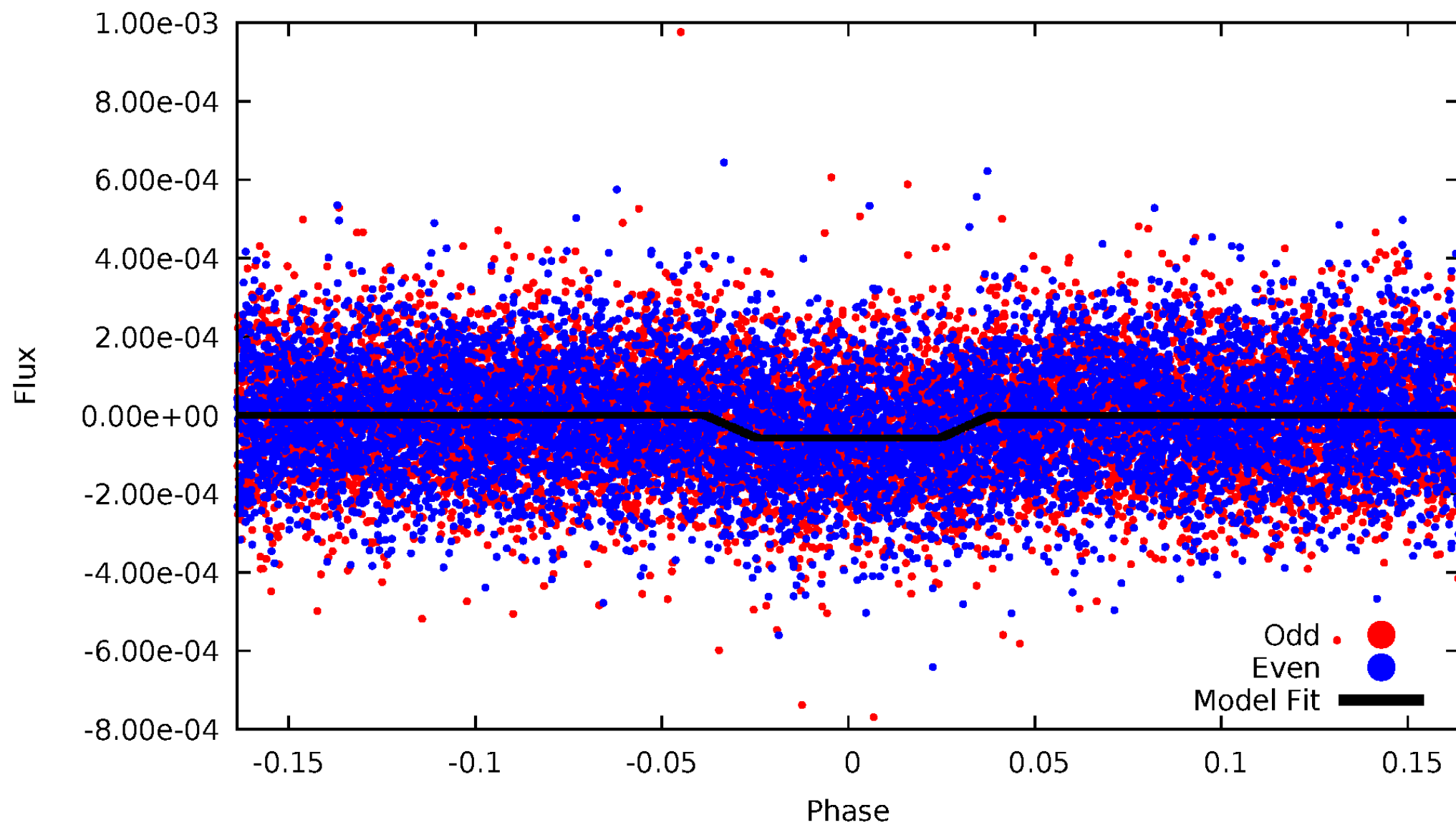
# DV Odd/Even

TCE 005195172-01



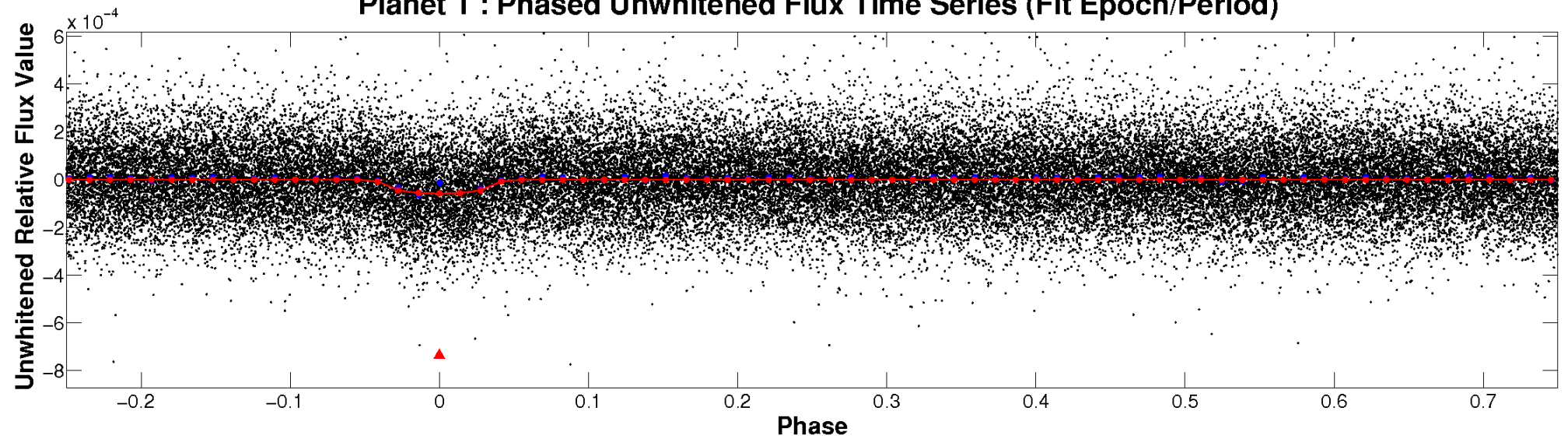
# ALT Odd/Even

TCE 005195172-01

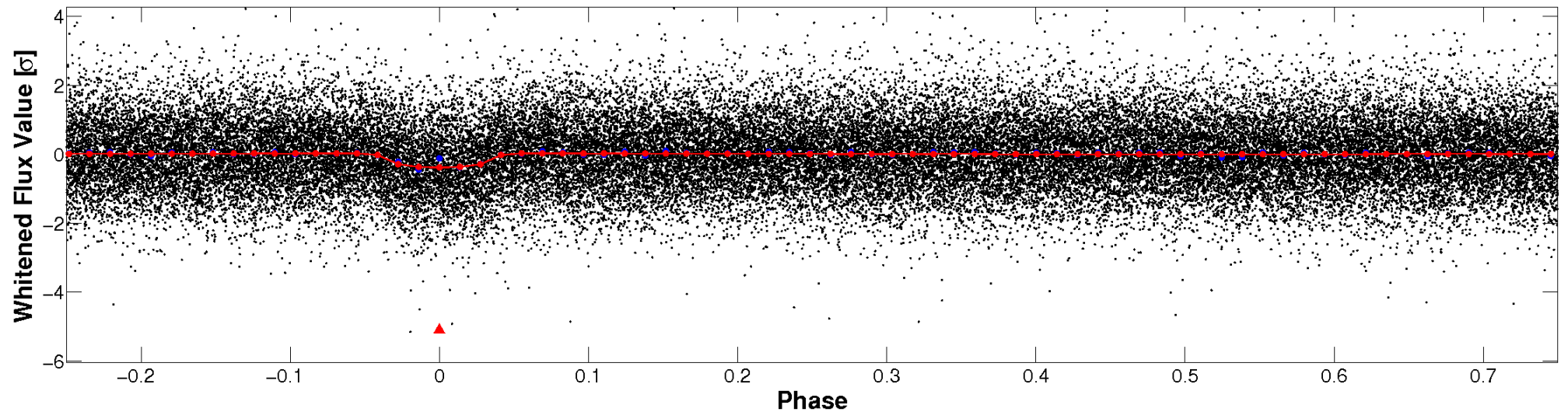


# Non-Whitened Vs. Whitened Light Curve

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

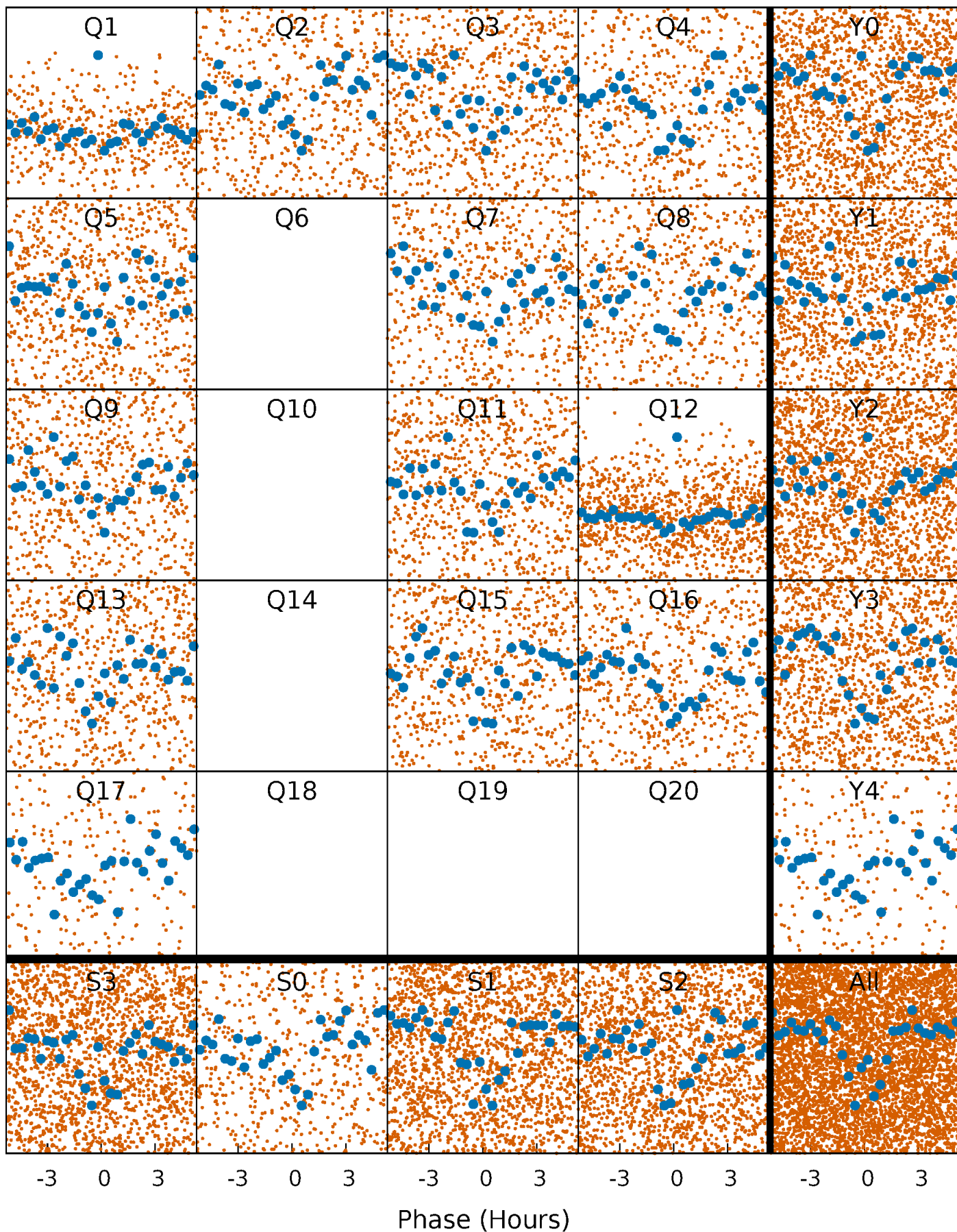


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



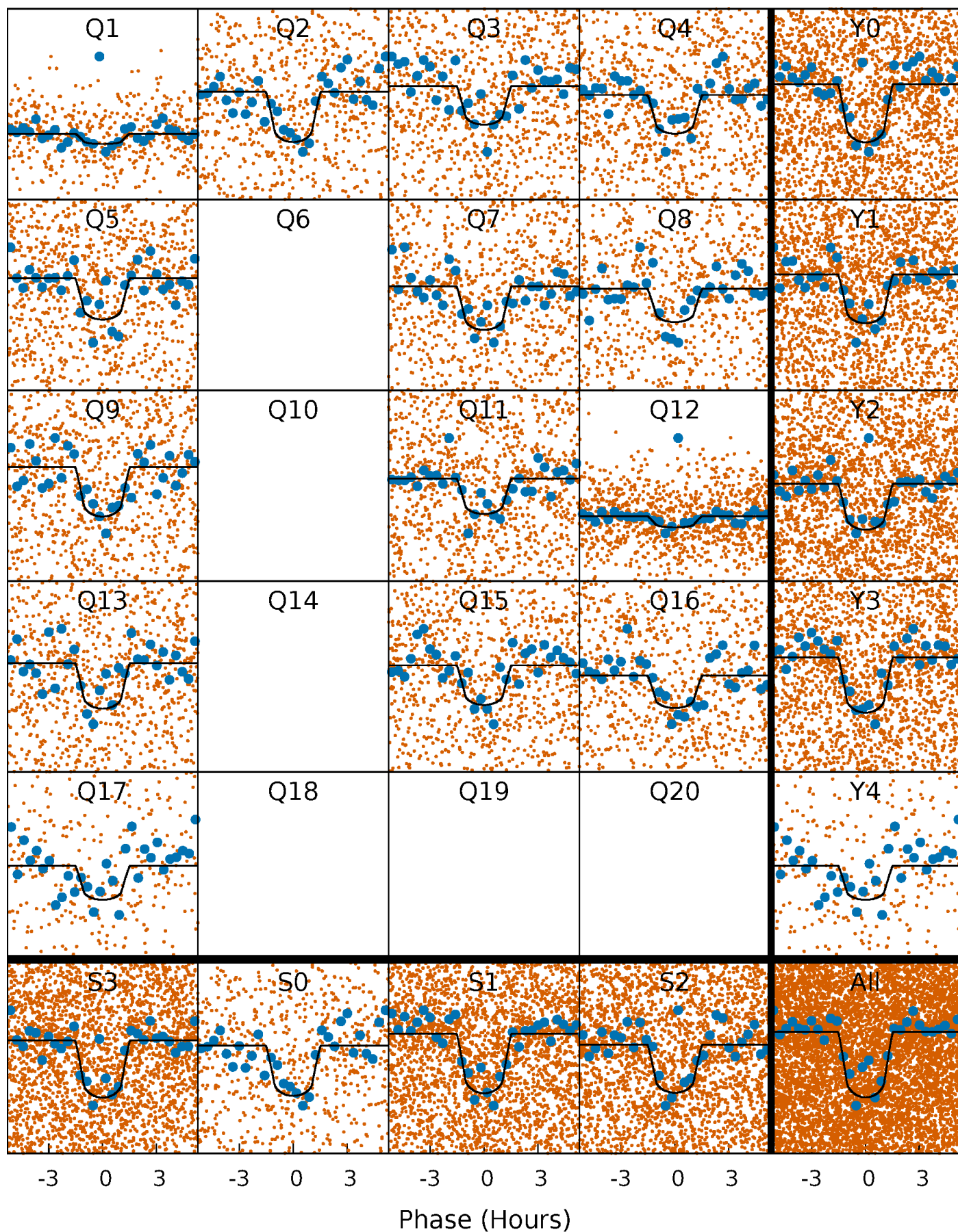
# PDC Quarter-Phased Transit Curves

TCE 005195172-01 P= 1.480284 Days  $T_0=132.890036$  (BKJD)



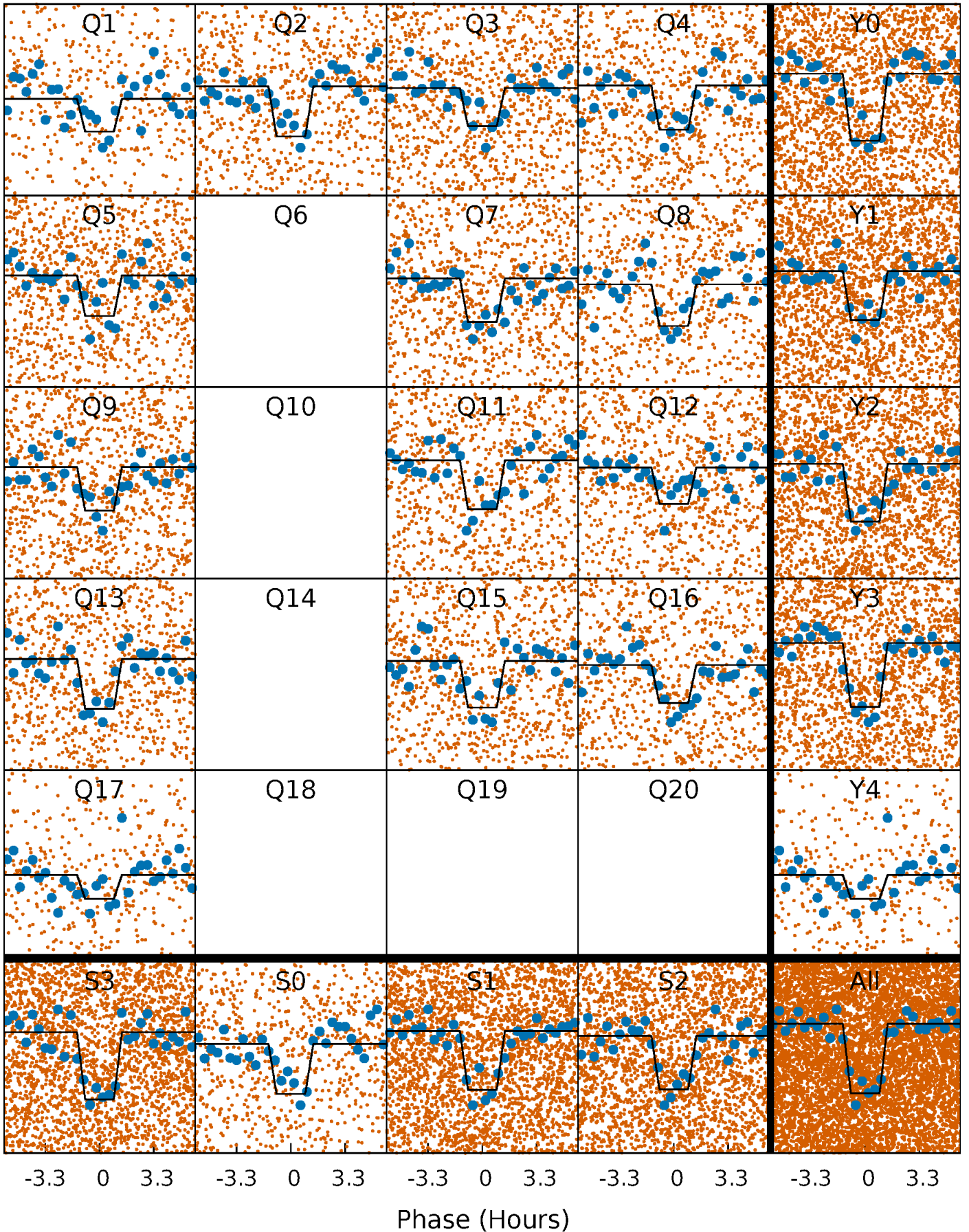
# DV Quarter-Phased Transit Curves

TCE 005195172-01   P= 1.480284 Days    $T_0=132.890036$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

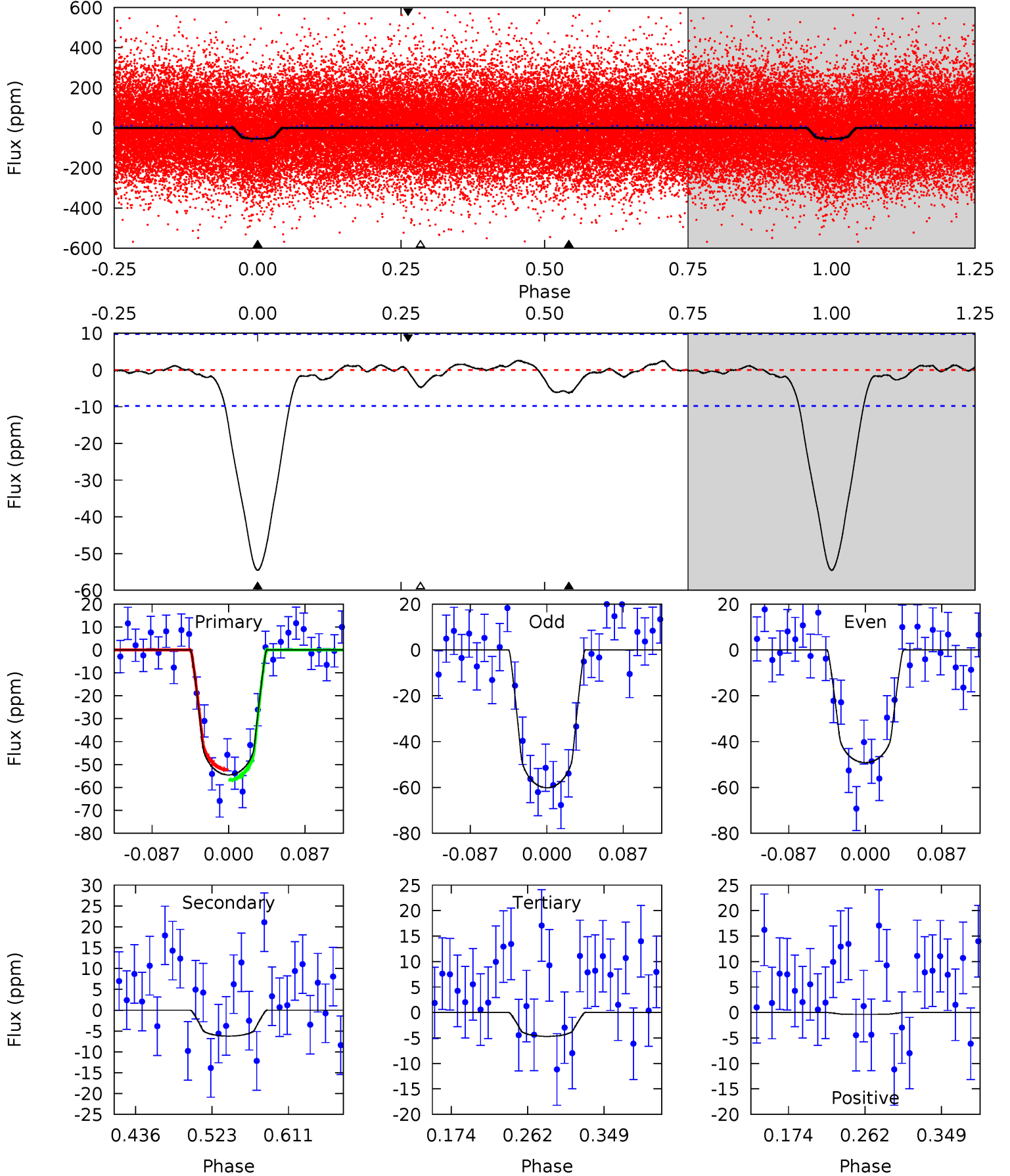
TCE 005195172-01   P= 1.480290 Days    $T_0=132.888129$  (BKJD)



# DV Model-Shift Uniqueness Test

005195172-01, P = 1.480284 Days, E = 131.409752 Days

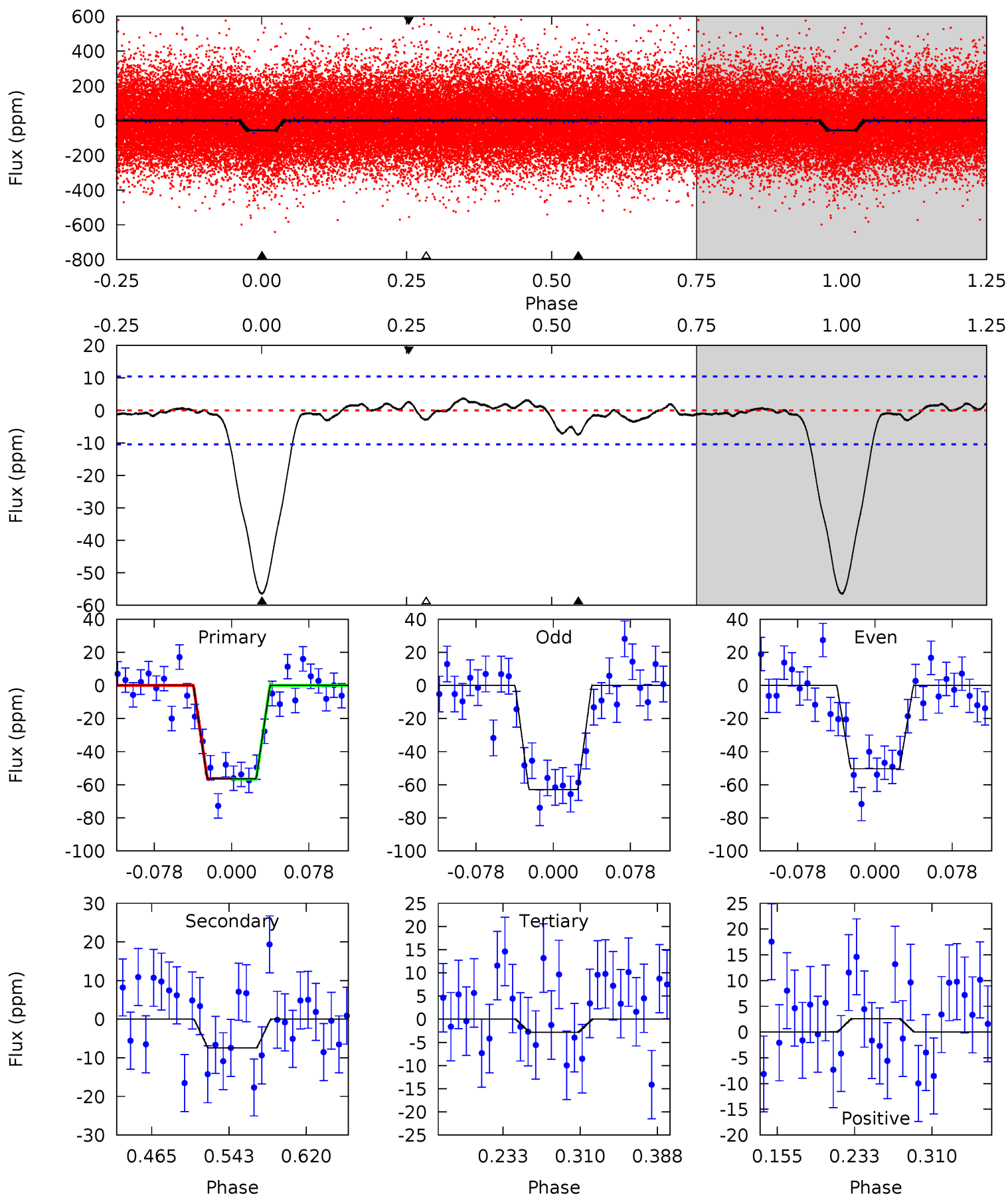
| Pri  | Sec  | Ter  | Pos   | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 25.5 | 2.91 | 2.20 | -0.17 | 4.59            | 1.71            | 0.64             | 23.3    | 25.7    | 0.72    | 3.09    | 2.56    | 0.86 | 0.05  | 1.05 |



# Alt Model-Shift Uniqueness Test

005195172-01, P = 1.480290 Days, E = 131.407839 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 24.9 | 3.29 | 1.25 | 1.14 | 4.62            | 1.77            | 0.72             | 23.7    | 23.8    | 2.04    | 2.15    | 2.79    | 1.07 | 0.06  | 0.11 |



### Stellar Parameters For KIC 005195172

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5897^{+105}_{-117}$ | $4.250^{+0.156}_{-0.104}$ | $0.020^{+0.150}_{-0.150}$ | $1.259^{+0.204}_{-0.224}$ | $1.026^{+0.093}_{-0.069}$ | $0.725^{+0.488}_{-0.251}$                 |
|        | +2%/-2%              | +4%/-2%                   | +750%/-750%               | +16%/-18%                 | +9%/-7%                   | +67%/-35%                                 |
| Source | SPE18                | SPE18                     | SPE18                     | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 005195172-01 / KOI 1671.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | $A_{\text{obs}}$          |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV      | $-6 \pm 2$  | $1.14^{+0.43}_{-0.42}$ | $2531^{+121}_{-134}$ | $3522^{+680}_{-492}$ | $1.679^{+2.813}_{-0.851}$ |
| Alt.    | $-7 \pm 2$  | $1.04^{+0.41}_{-0.39}$ | $2532^{+129}_{-133}$ | $3774^{+783}_{-508}$ | $2.398^{+4.252}_{-1.229}$ |

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

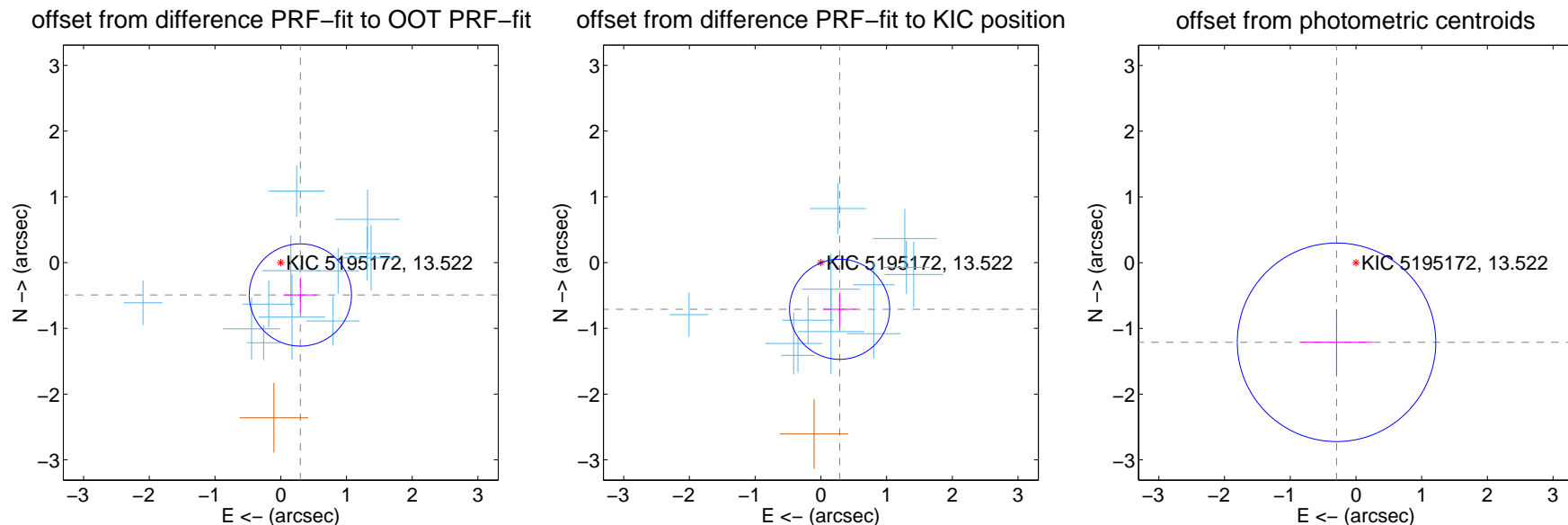
## DV Centroid Data

Supplemental centroid analysis for 005195172-01. Kepler magnitude: 13.52. Transit SNR 19.73

There are 12 quarters with good PRF difference image offsets

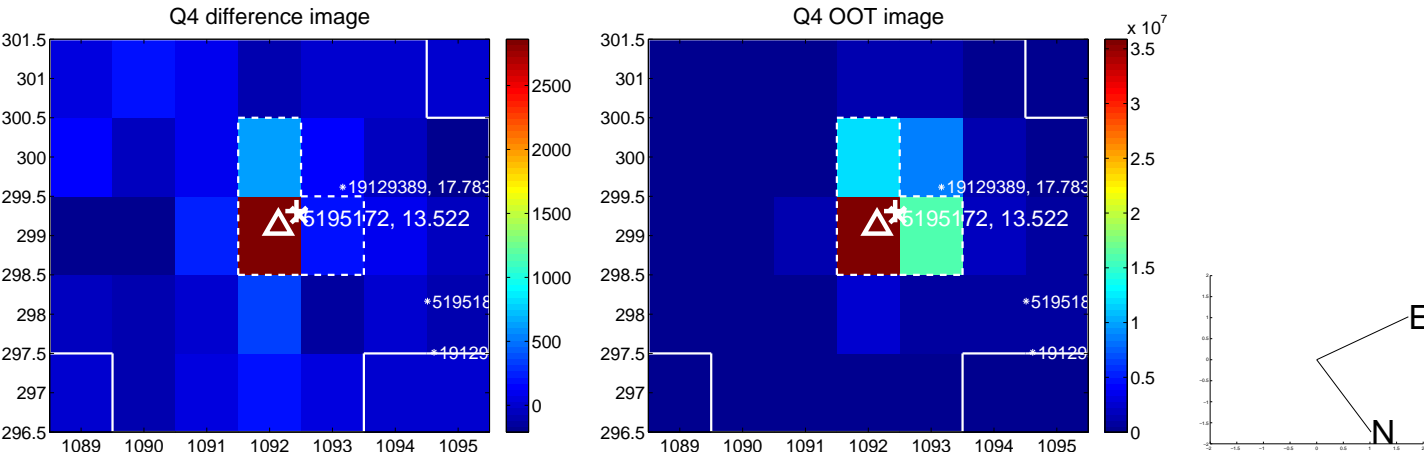
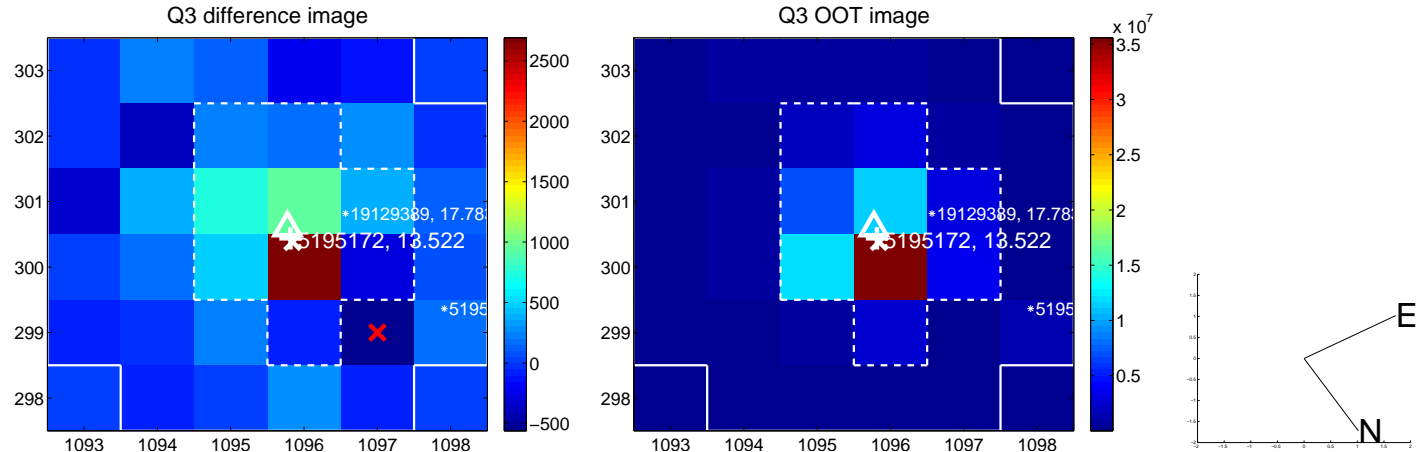
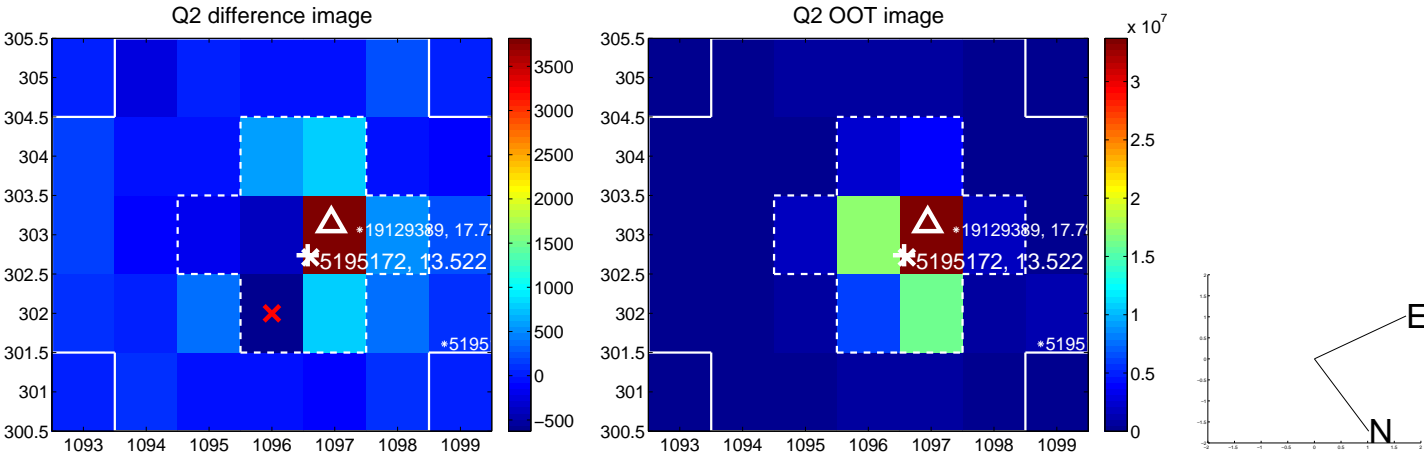
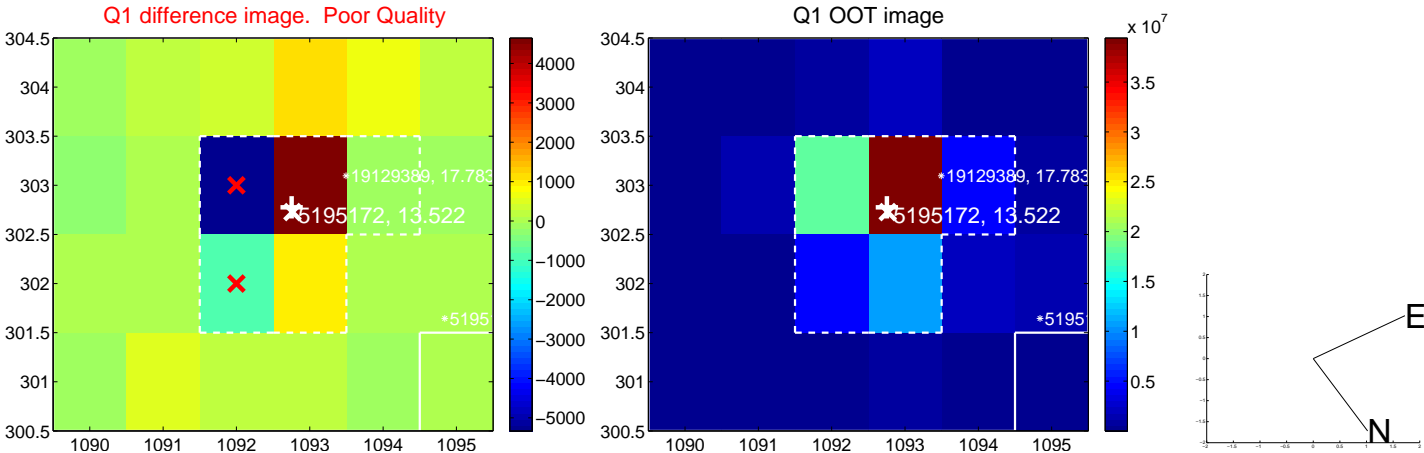
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.576 \pm 0.259$  | 2.22                | $-0.299 \pm 0.249$ | $-0.493 \pm 0.263$ |
| PRF-fit source offset from KIC position | $0.765 \pm 0.254$  | 3.01                | $-0.285 \pm 0.251$ | $-0.710 \pm 0.254$ |
| photometric centroid source offset      | $1.25 \pm 0.50$    | 2.48                | $0.30 \pm 0.55$    | $-1.21 \pm 0.50$   |

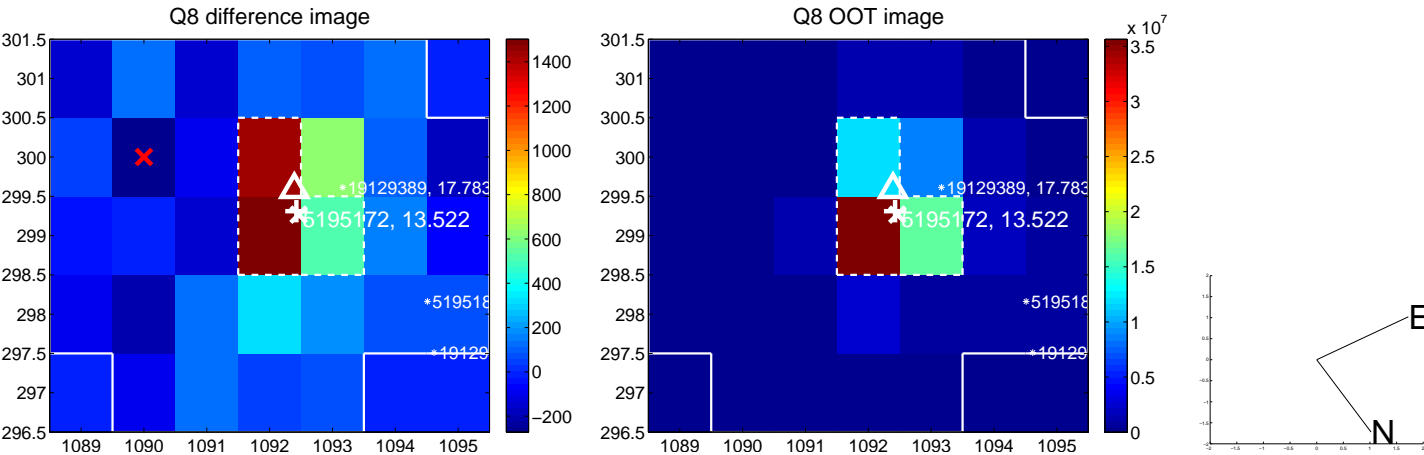
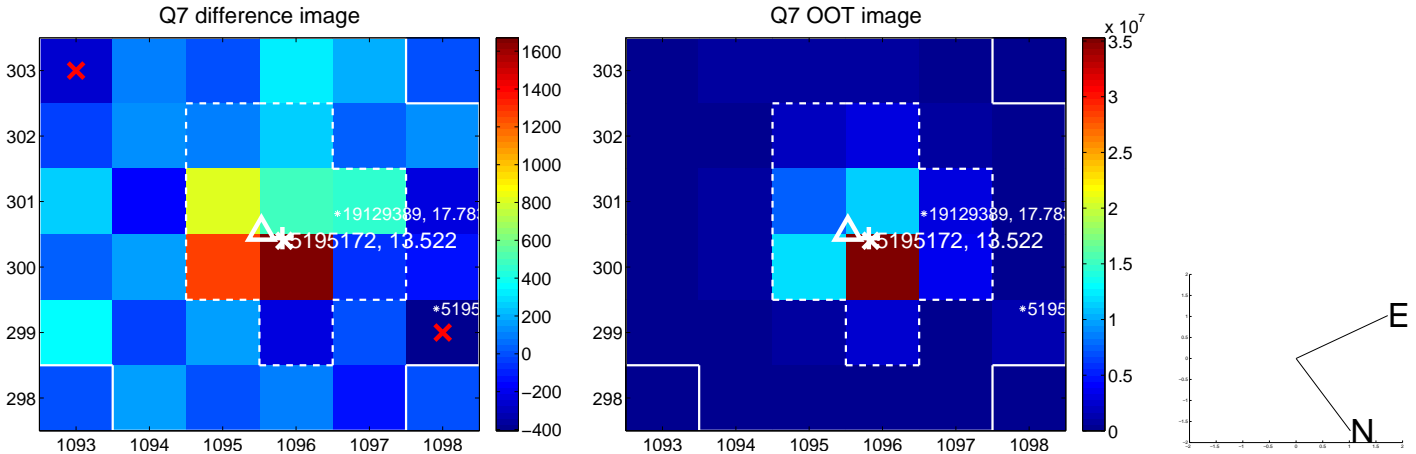
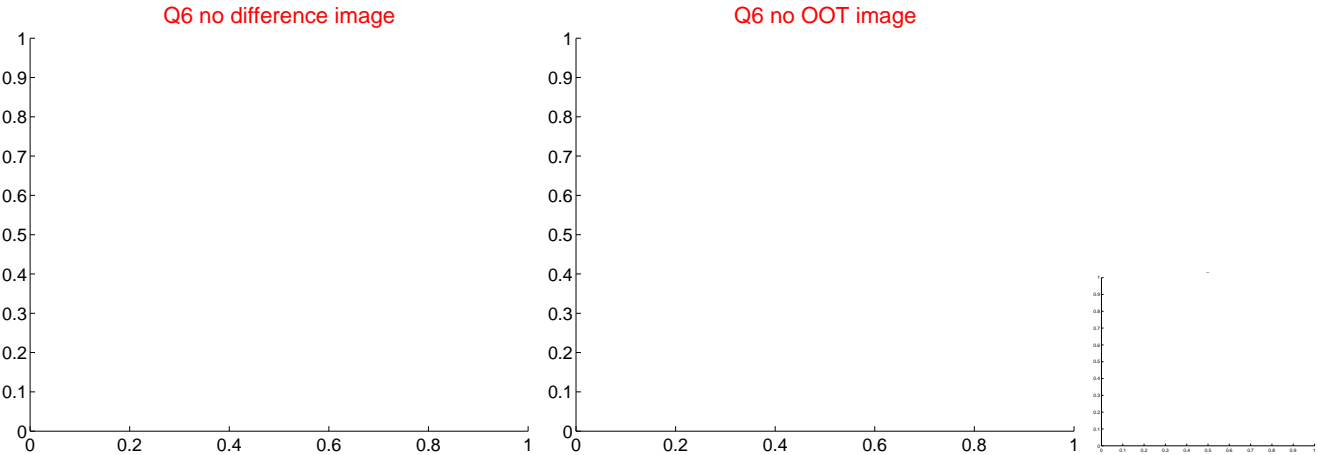
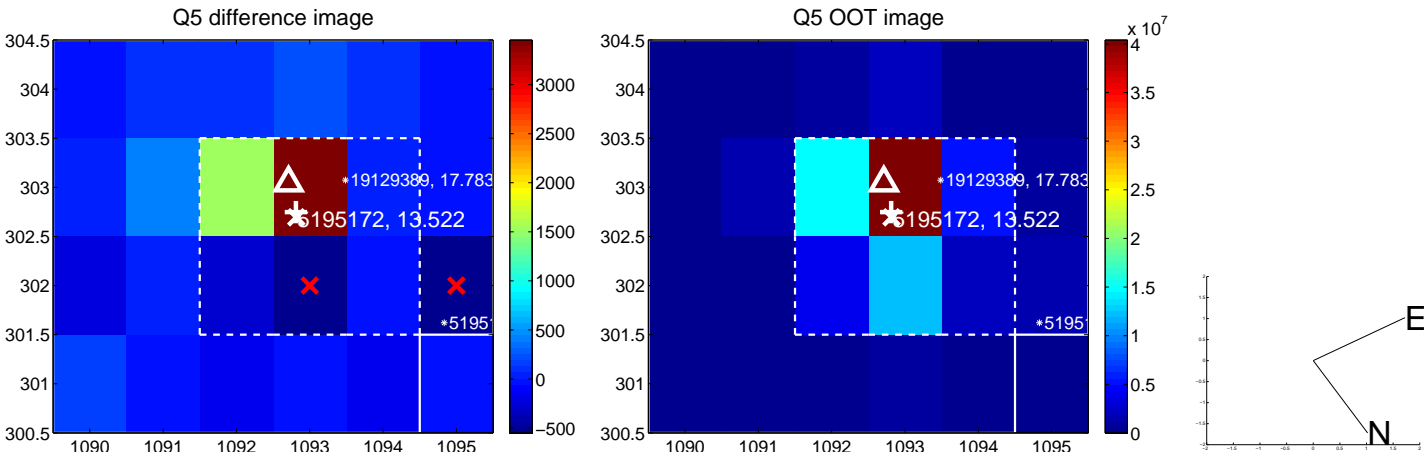


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

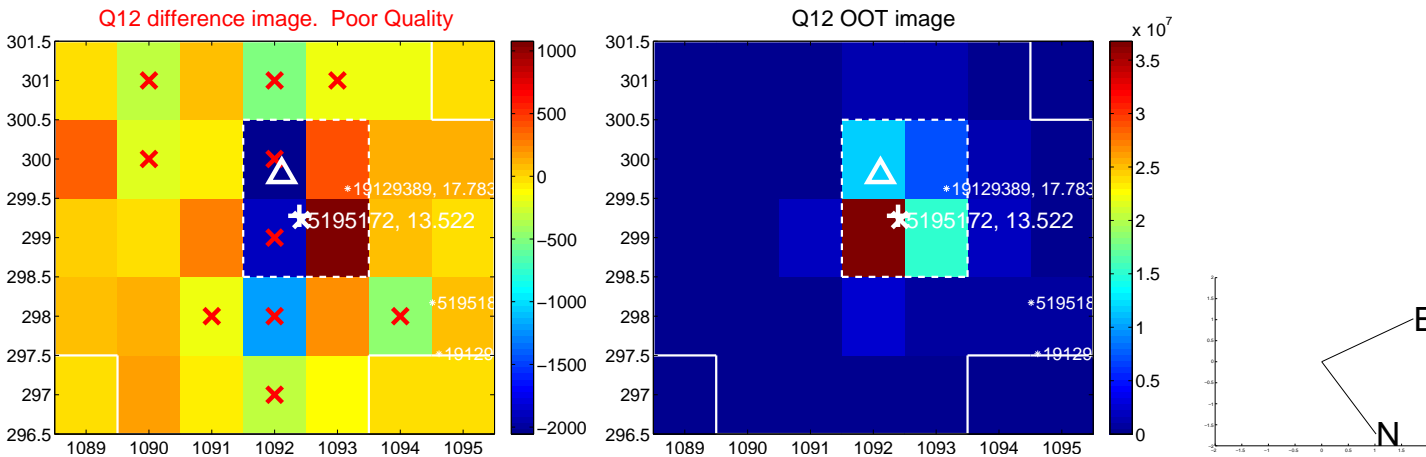
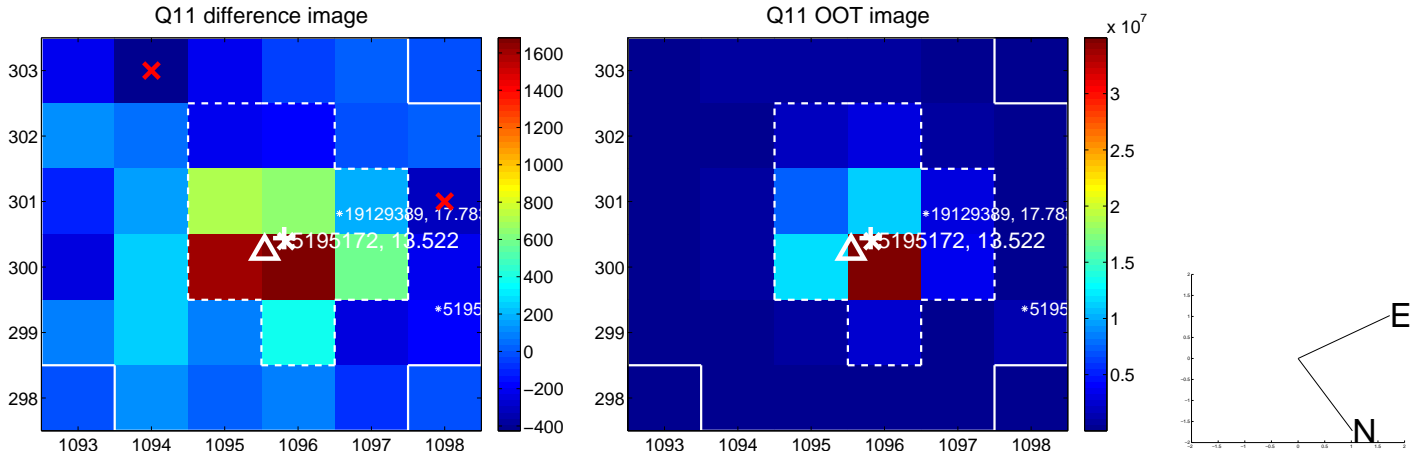
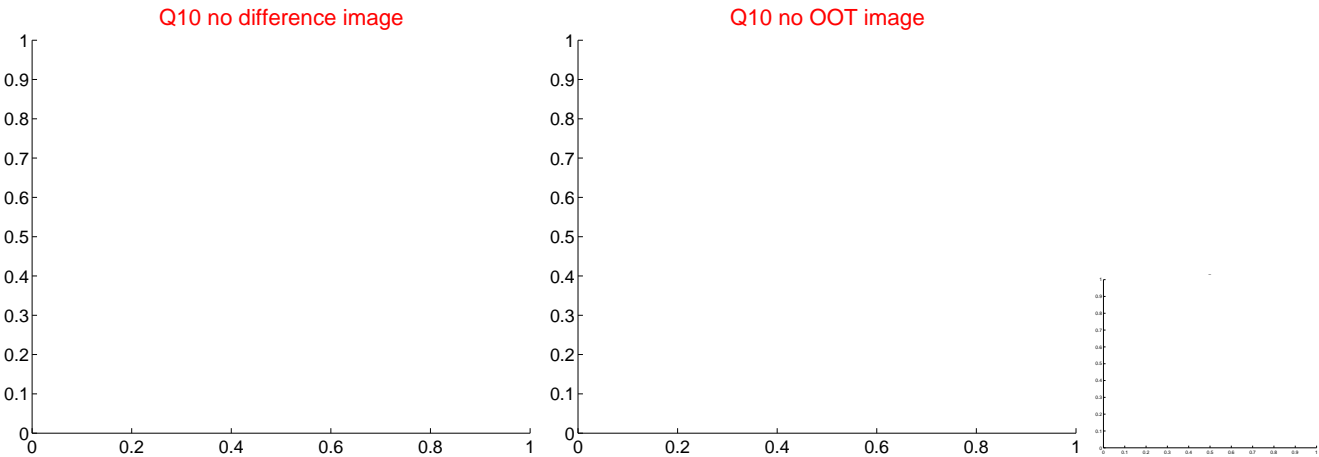
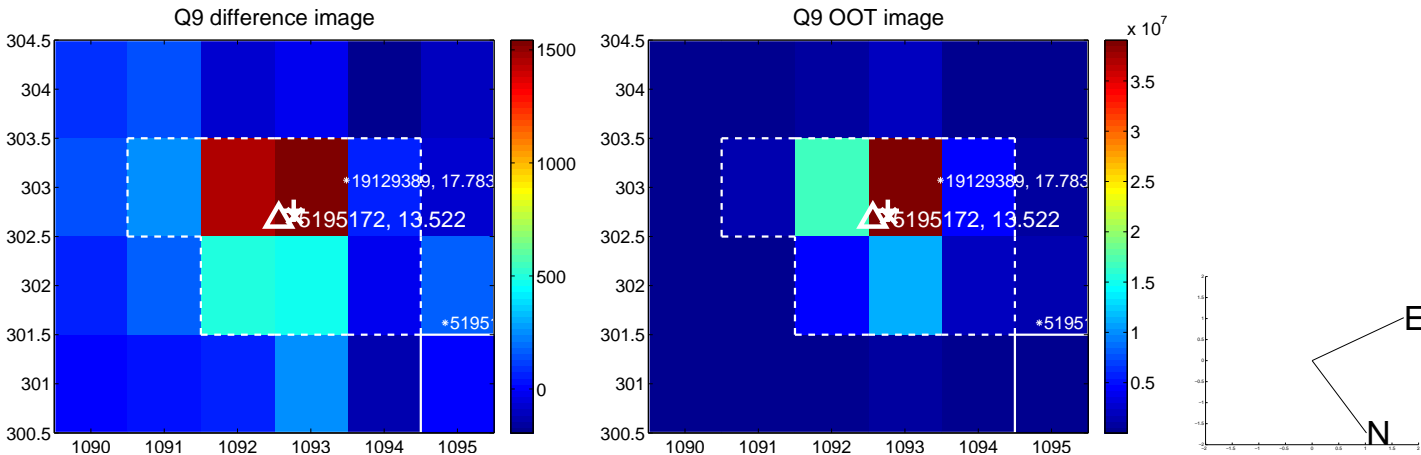
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

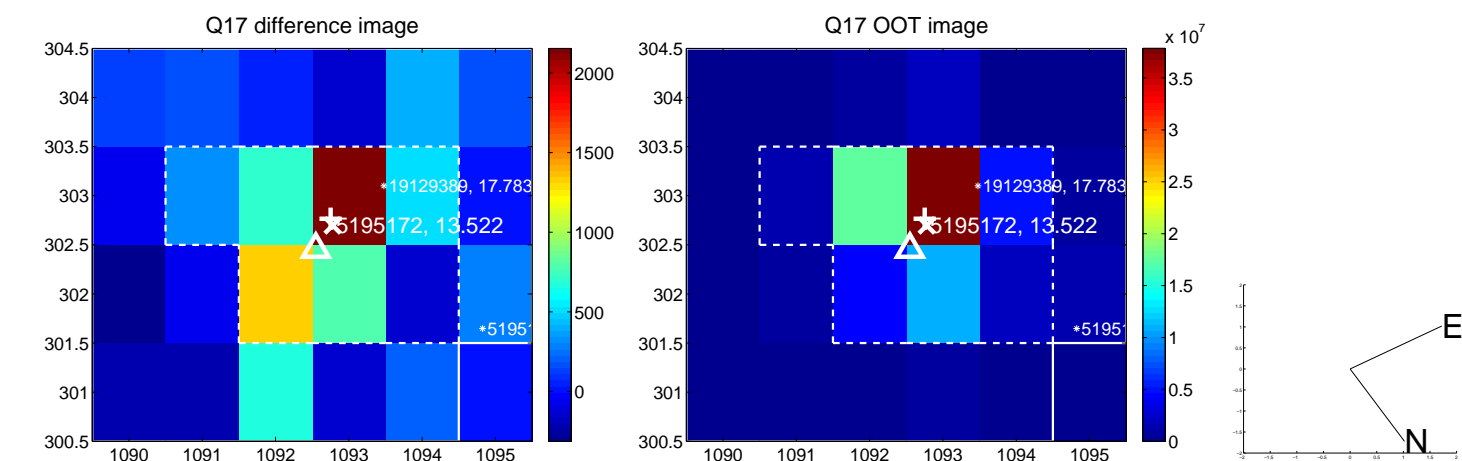


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

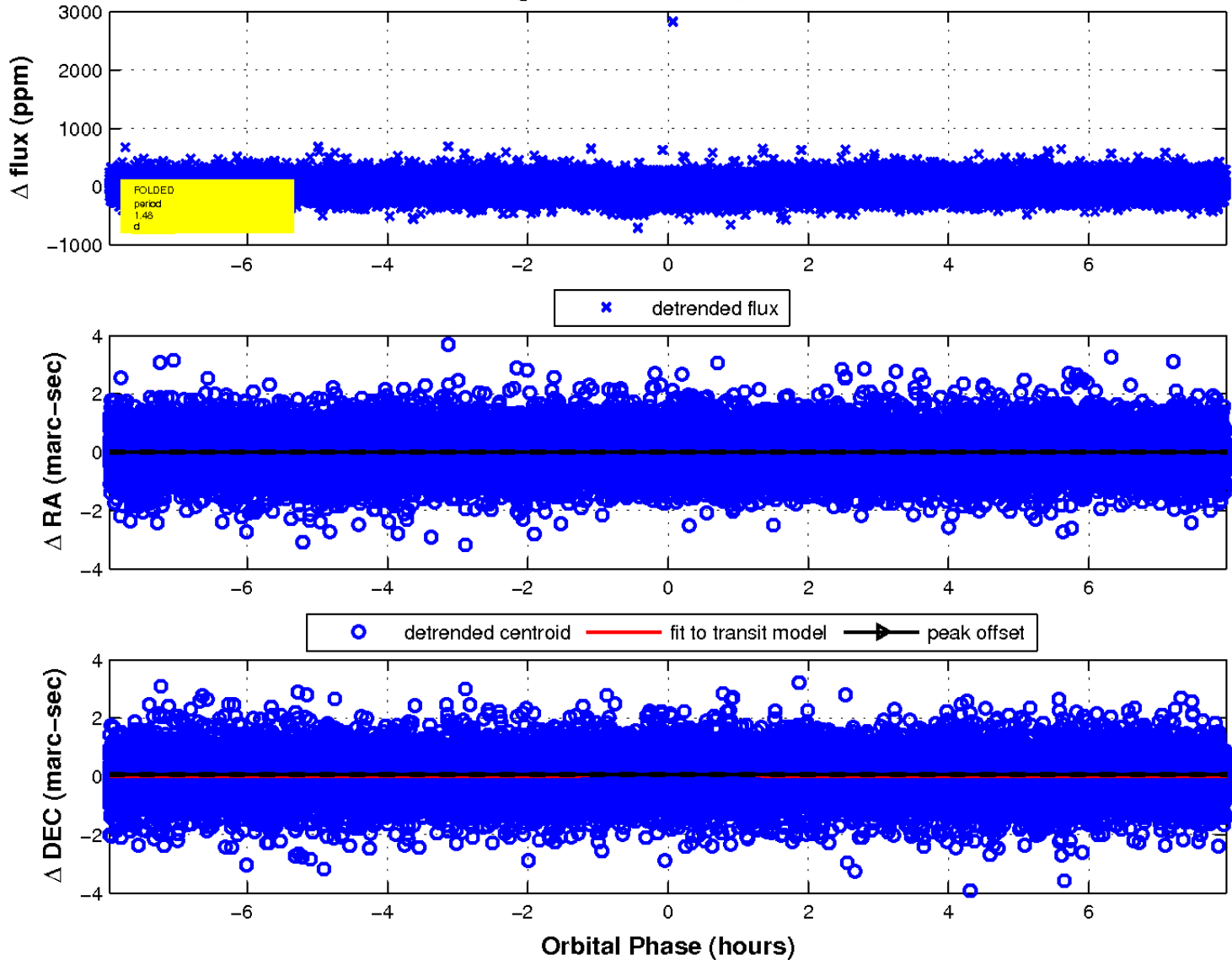




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

