

# KIC 005903301

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 005903301-01 | OBS      | 3692.01 | 1.160150      | 132.146921   | 11059.8     | 1.970            | 708.0 | 607.0 | 1.38                        | 6200            | 17.79                  | 5379.99                |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments     |
|--------------|----------|------|-------|---|---|---|---|--------------|
| 005903301-01 | OBS      | PC   | 0.81  | 0 | 0 | 0 | 0 | CENT_KIC_POS |

**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.

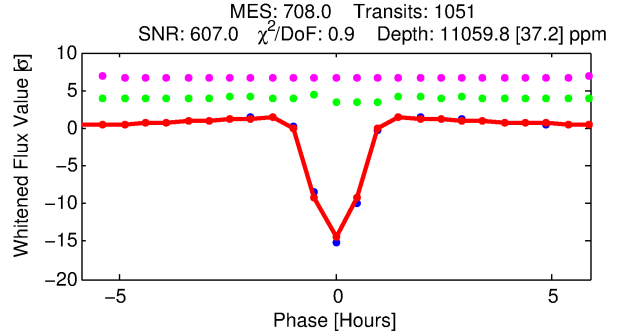
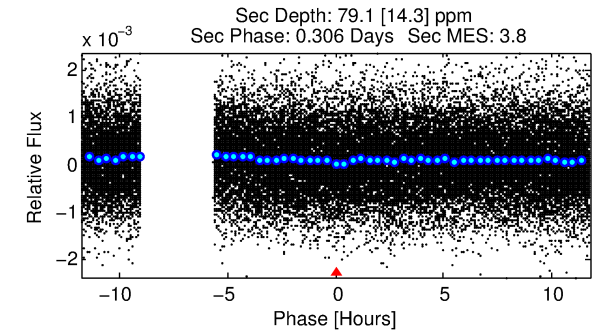
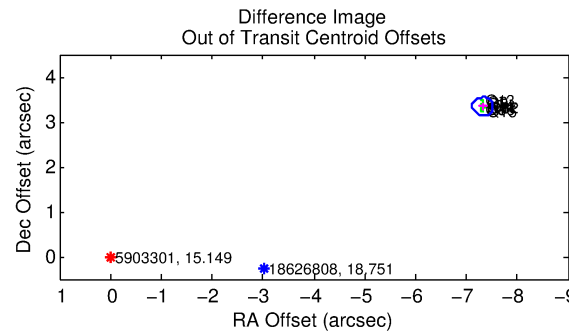
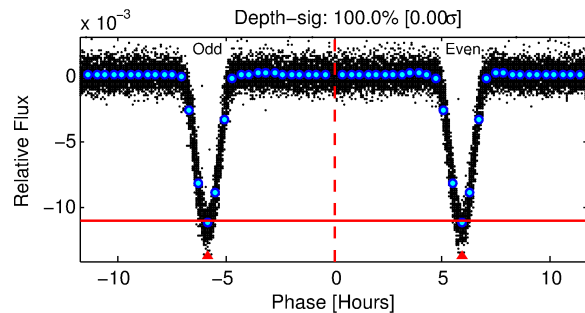
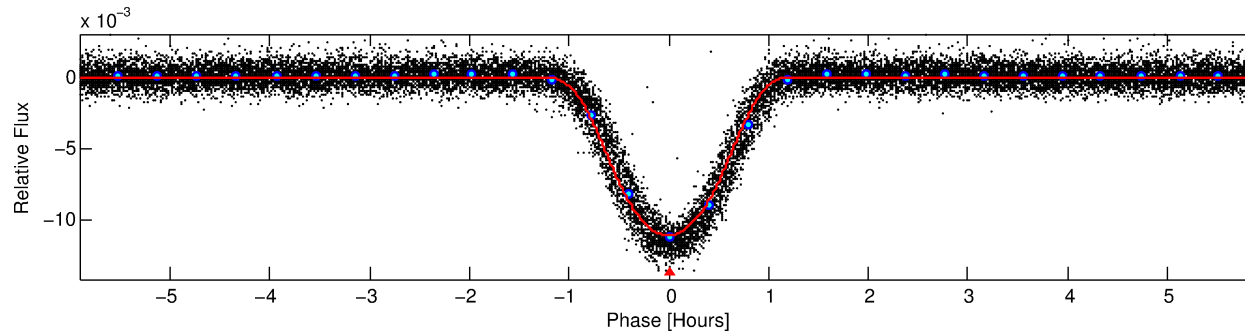
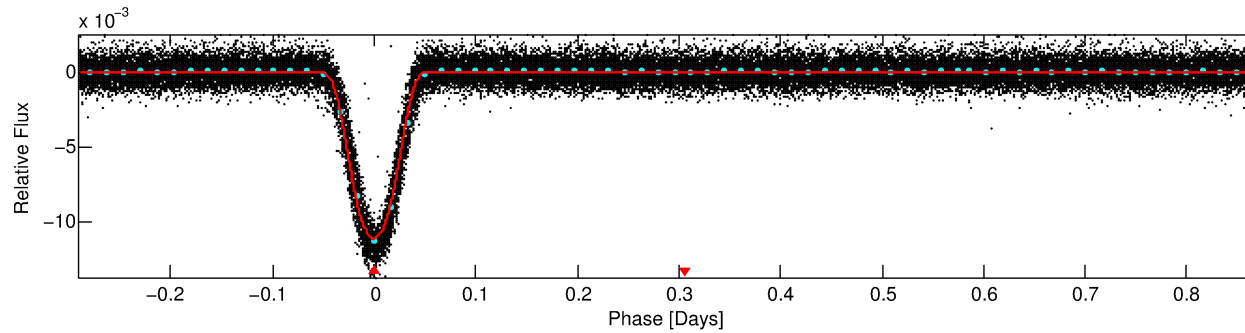
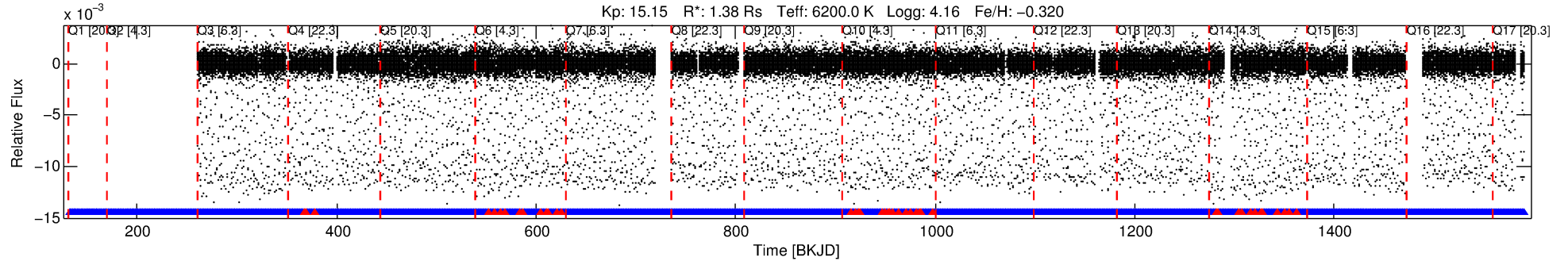
## Ephemeris Match Information For 005903301-01

No Significant Match Found

# DV One-Page Summary

KIC: 5903301 Candidate: 1 of 1 Period: 1.160 d  
KOI: K03692.01 Corr: 0.962

Kp: 15.15 R\*: 1.38 Rs Teff: 6200.0 K Logg: 4.16 Fe/H: -0.320



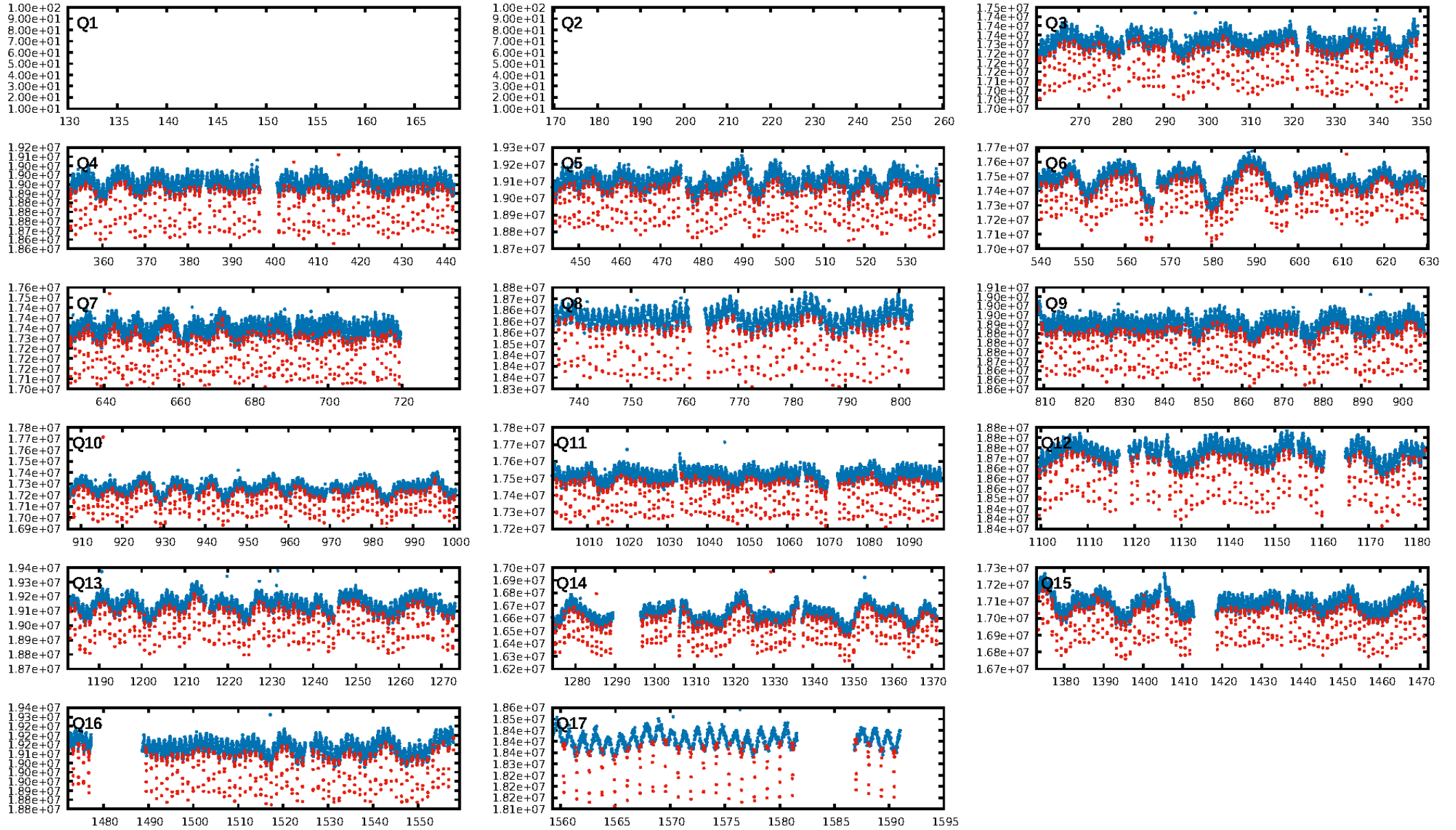
## DV Fit Results:

Period = 1.16015 [0.00000] d  
Epoch = 132.1469 [0.0000] BKJD  
Rp/R\* = 0.1179 [0.0013]  
a/R\* = 3.14 [0.02]  
b = 0.90 [0.00]  
Seff = 5379.99 [2543.08]  
Teq = 2184 [258] K  
Rp = 17.78 [5.00] Re  
a = 0.0217 [0.0060] AU  
Ag = 0.06 [0.03] [-29.98σ]  
Teffp = 1703 [102] K [-1.73σ]

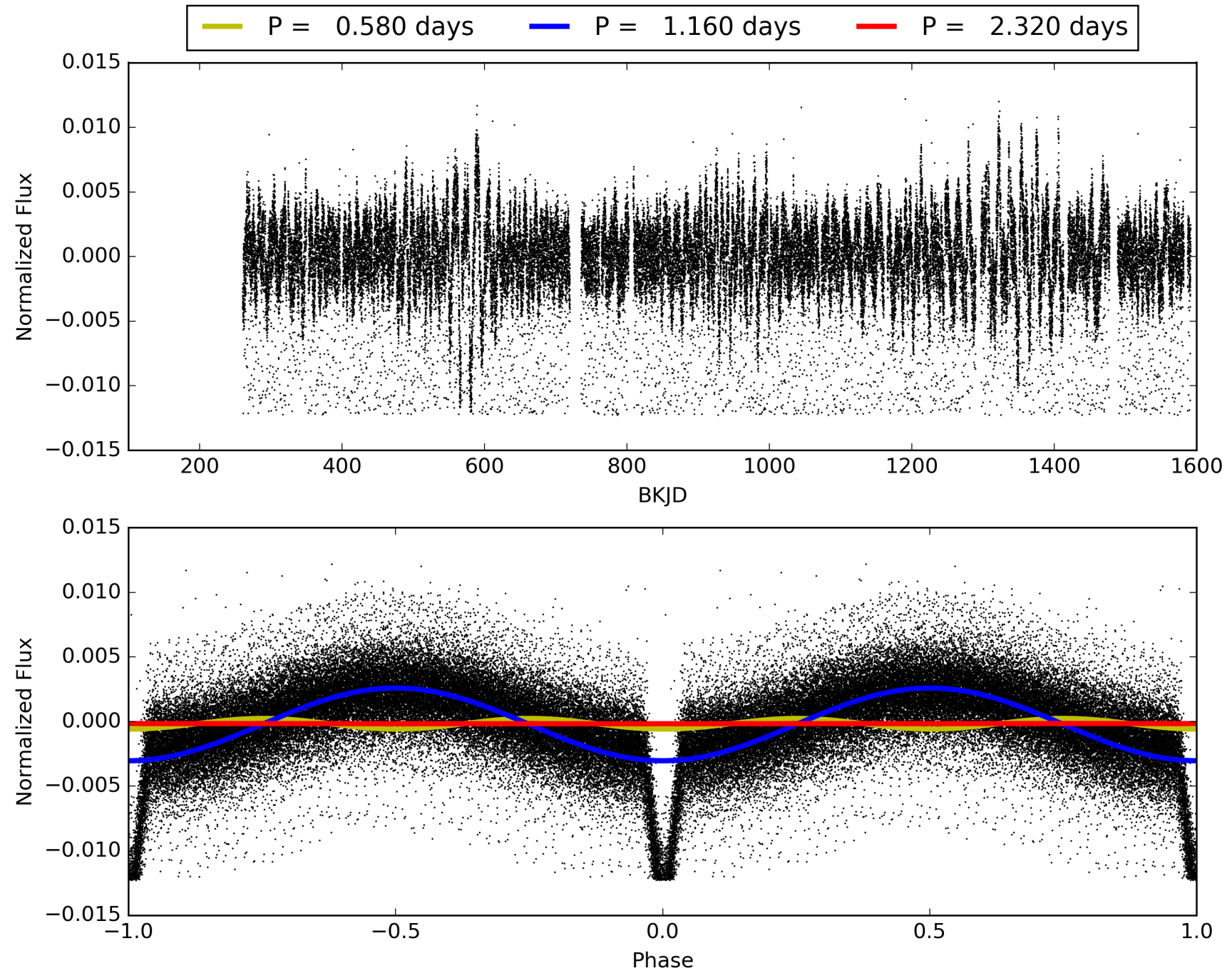
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.96 [982/1028]  
GhostDiagnostic-chr: 4.069  
Centroid-sig: 0.0%  
Centroid-so: 4.694 arcsec [1206.71σ]  
OotOffset-rm: 8.049 arcsec [118.70σ]  
KicOffset-rm: 0.111 arcsec [1.63σ]  
OotOffset-st: 0/4/4/4 [12]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [15/15]

# TCE 005903301-01, PDC Light Curves

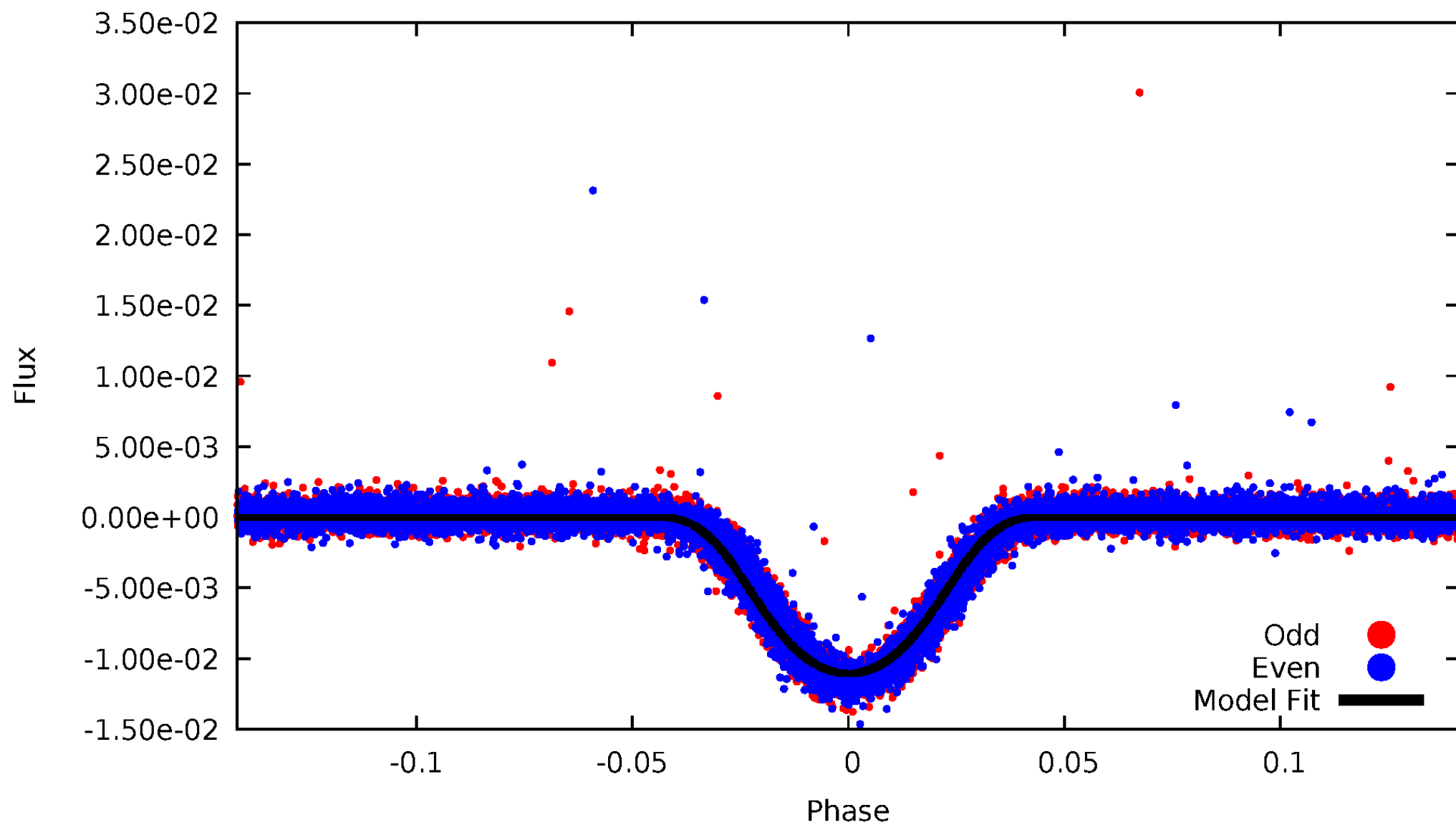


TCE 005903301-01



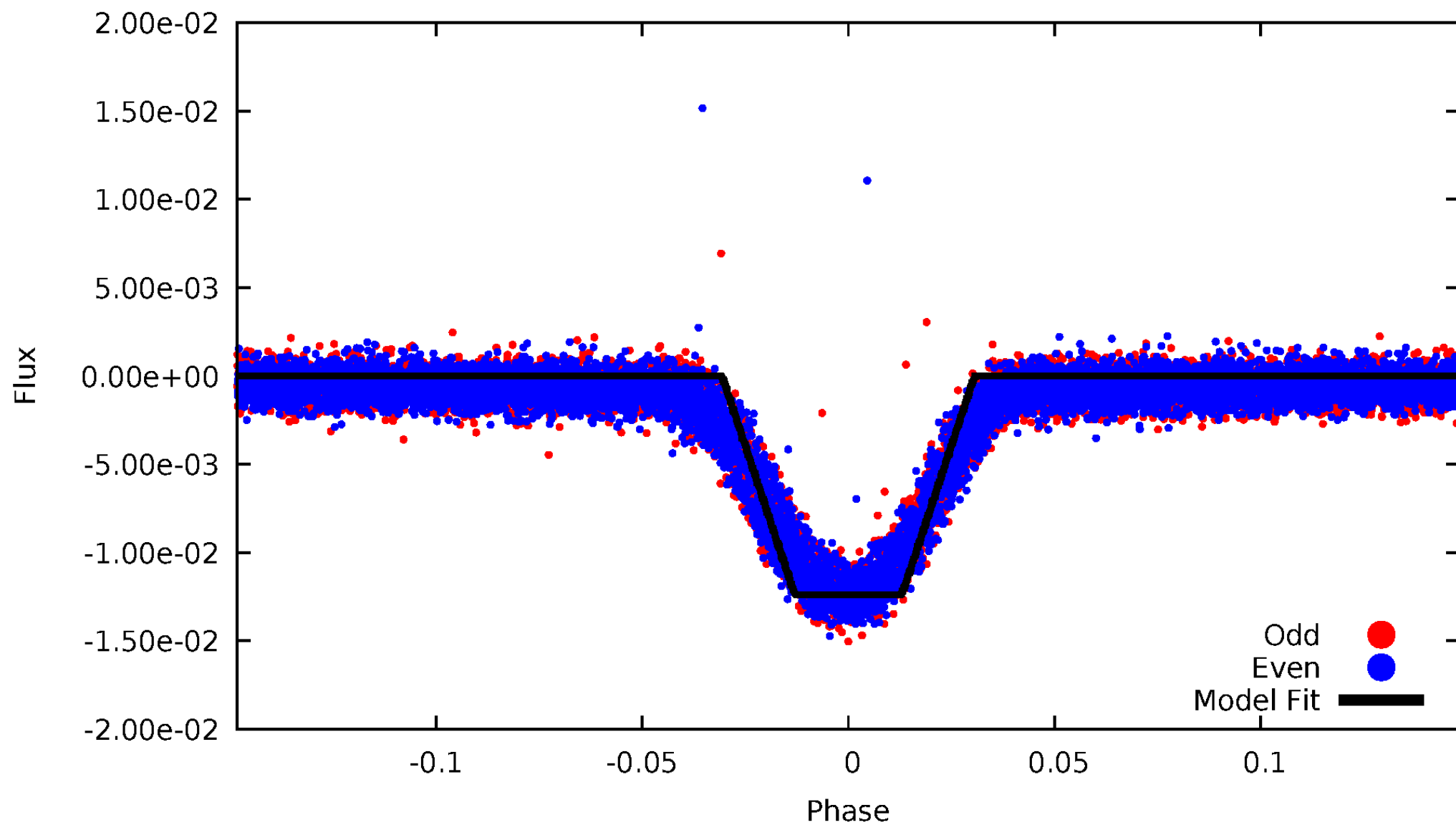
# DV Odd/Even

TCE 005903301-01



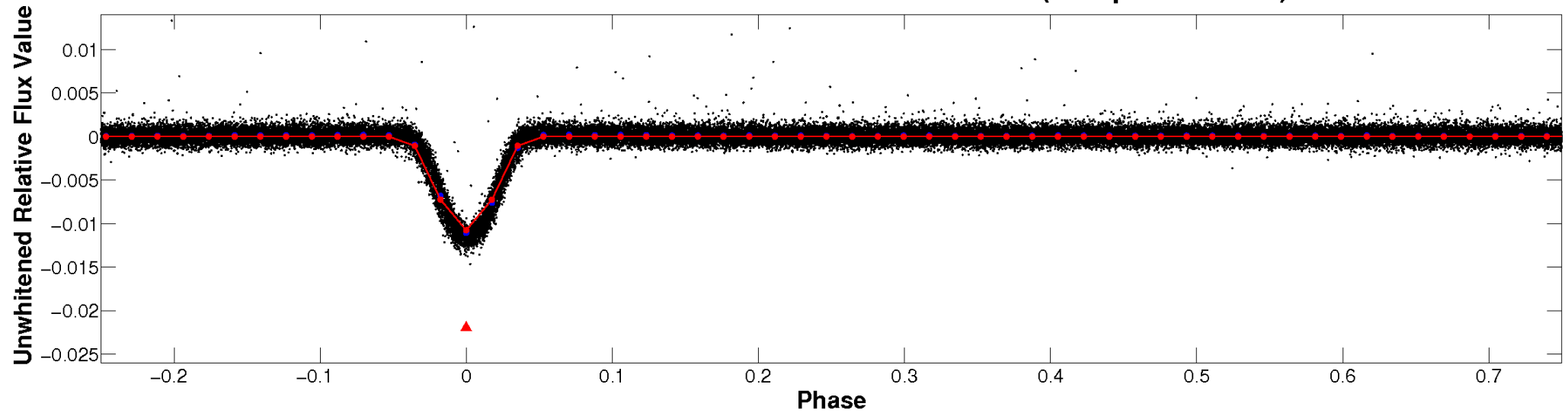
# ALT Odd/Even

TCE 005903301-01

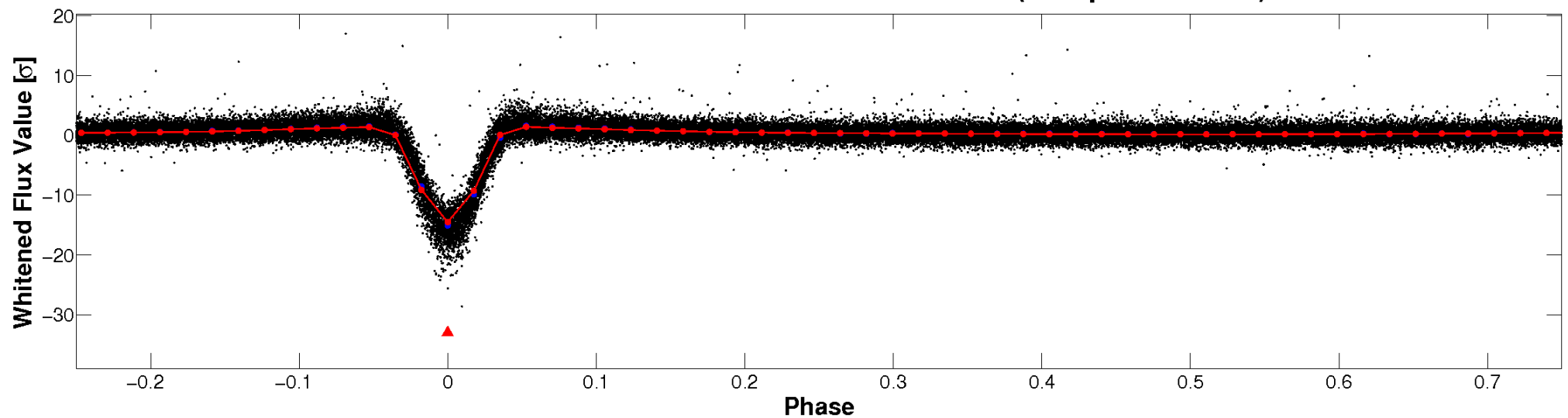


# Non-Whitened Vs. Whitened Light Curve

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



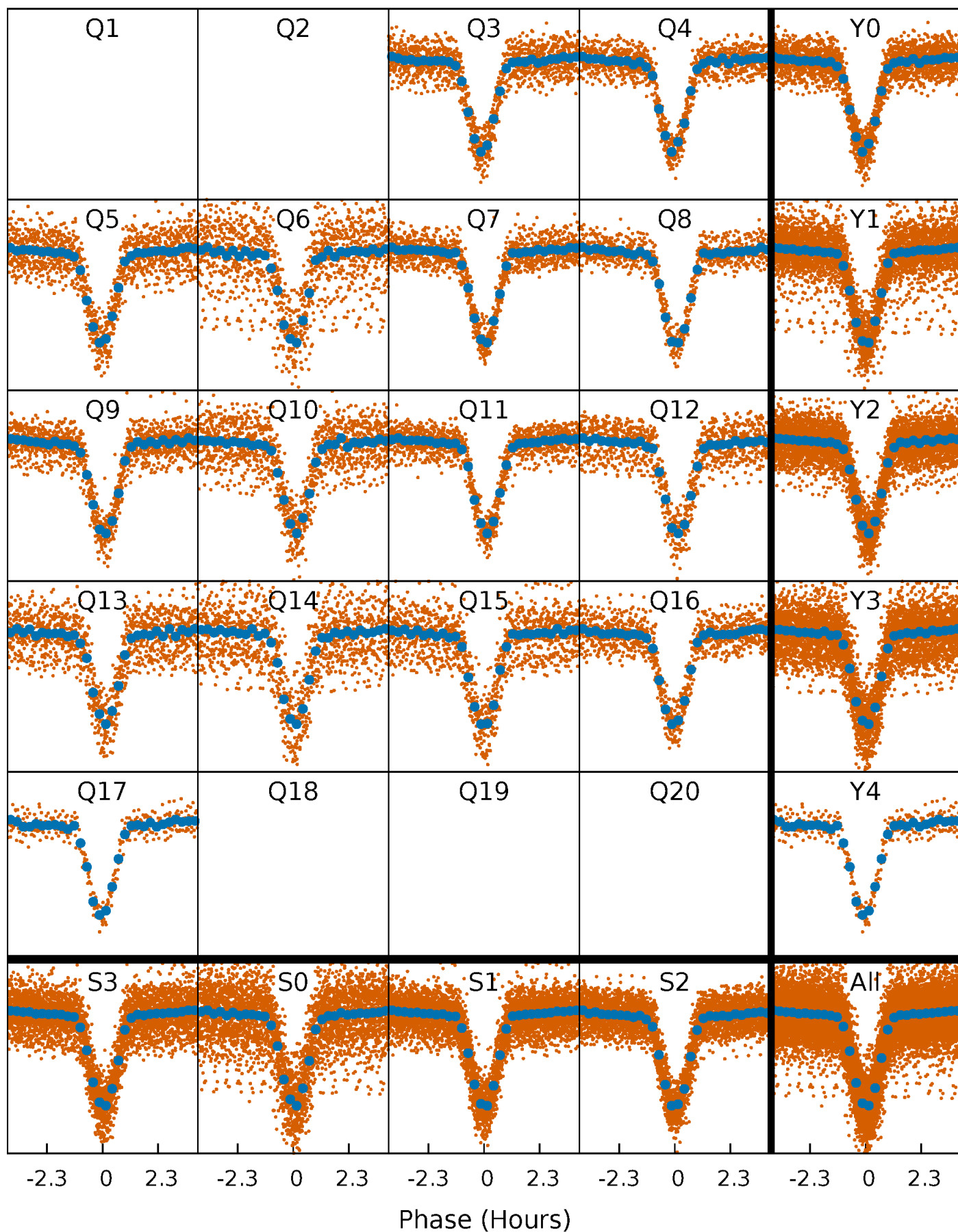
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

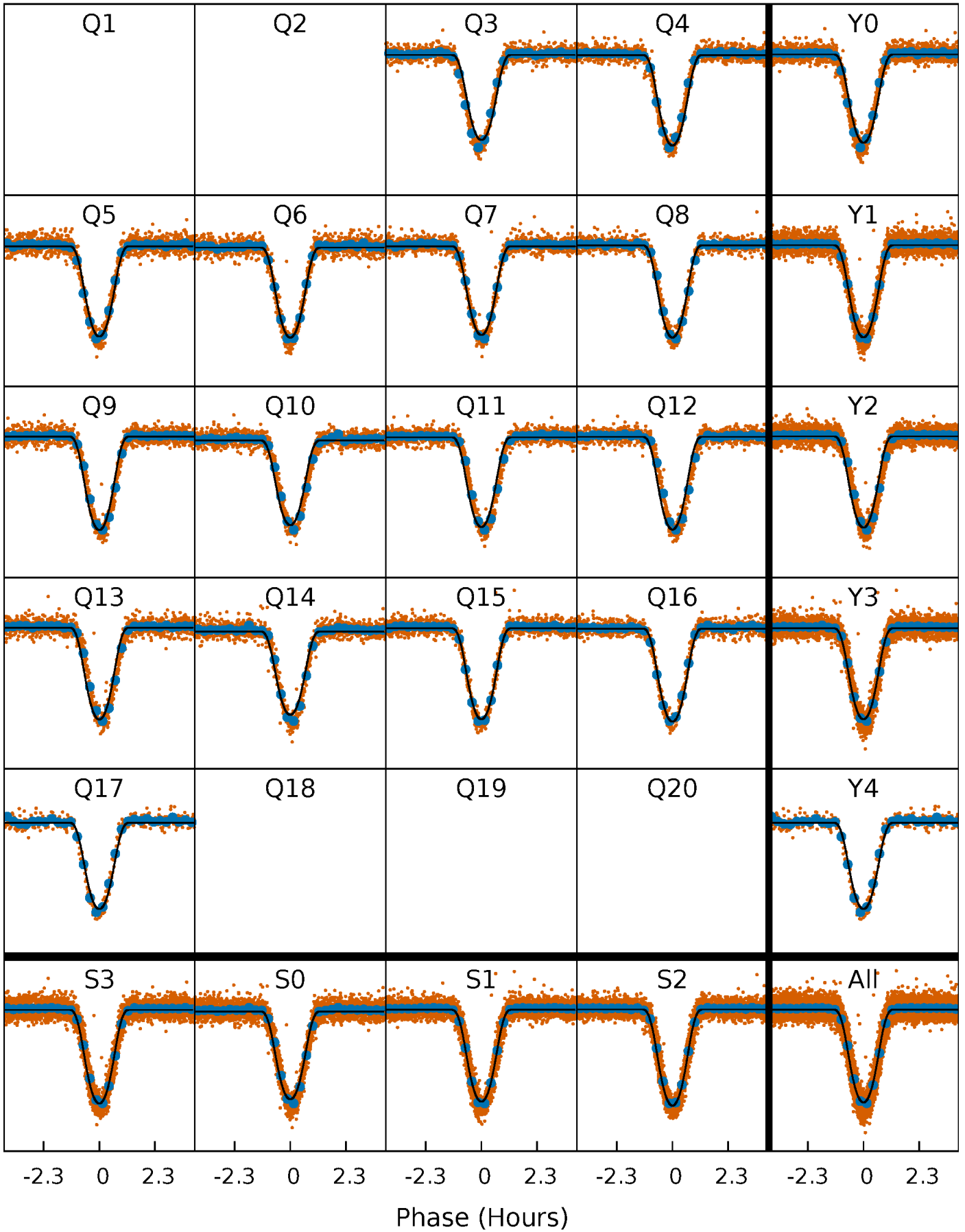
TCE 005903301-01 P= 1.160150 Days  $T_0=132.146921$  (BKJD)





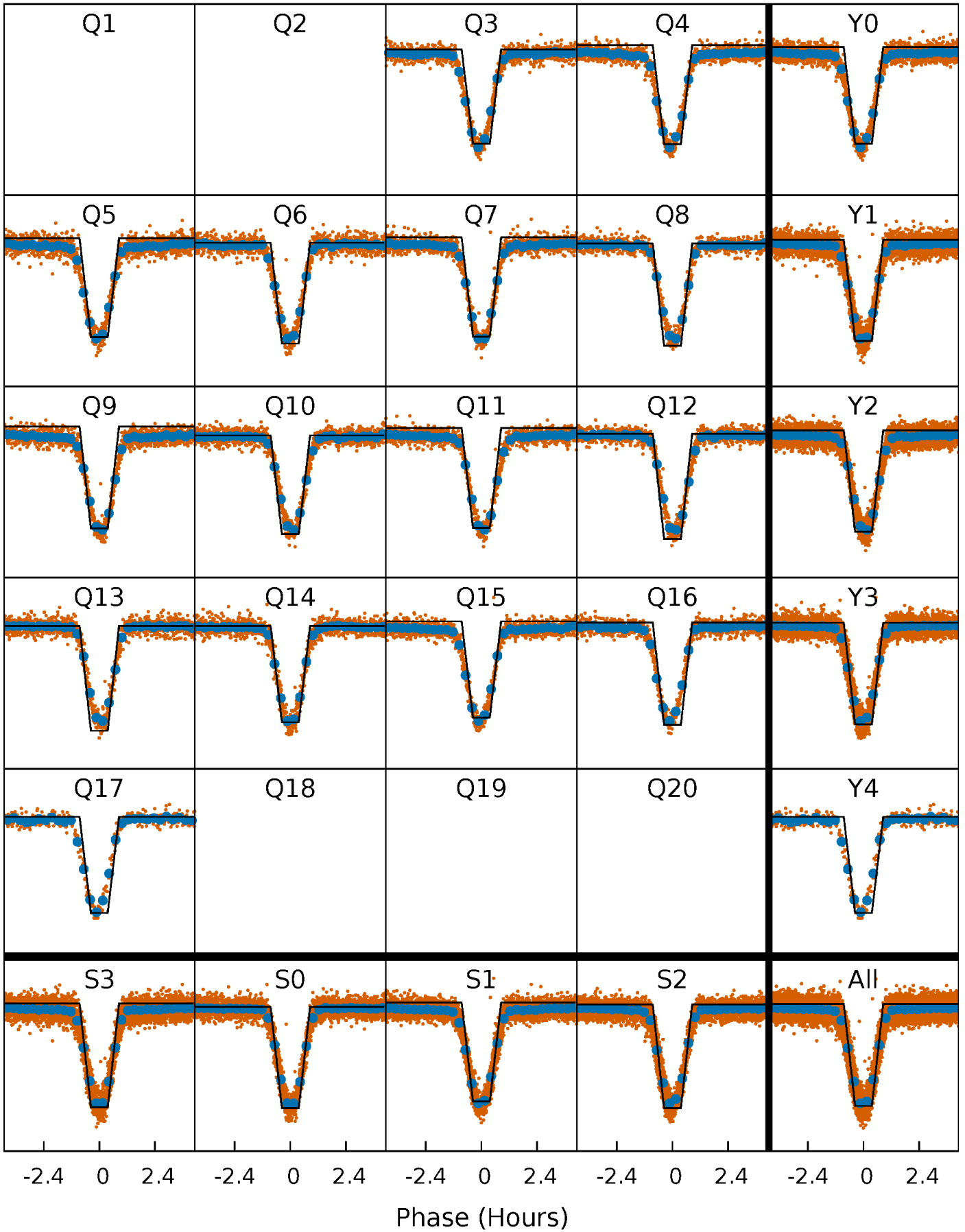
# DV Quarter-Phased Transit Curves

TCE 005903301-01 P= 1.160150 Days  $T_0=132.146921$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

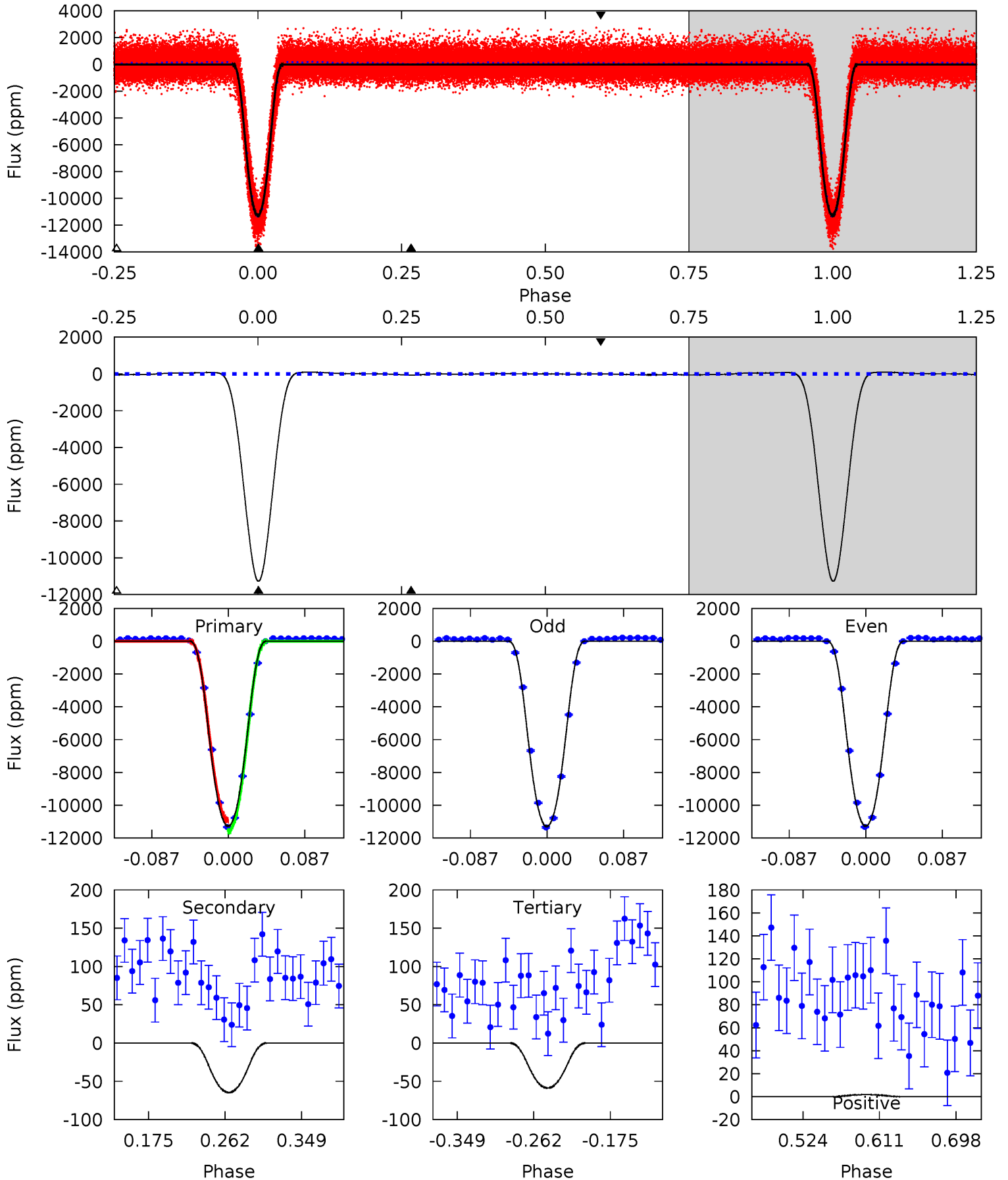
TCE 005903301-01     $P = 1.160152$  Days     $T_0 = 132.147084$  (BKJD)



# DV Model-Shift Uniqueness Test

005903301-01, P = 1.160150 Days, E = 132.146921 Days

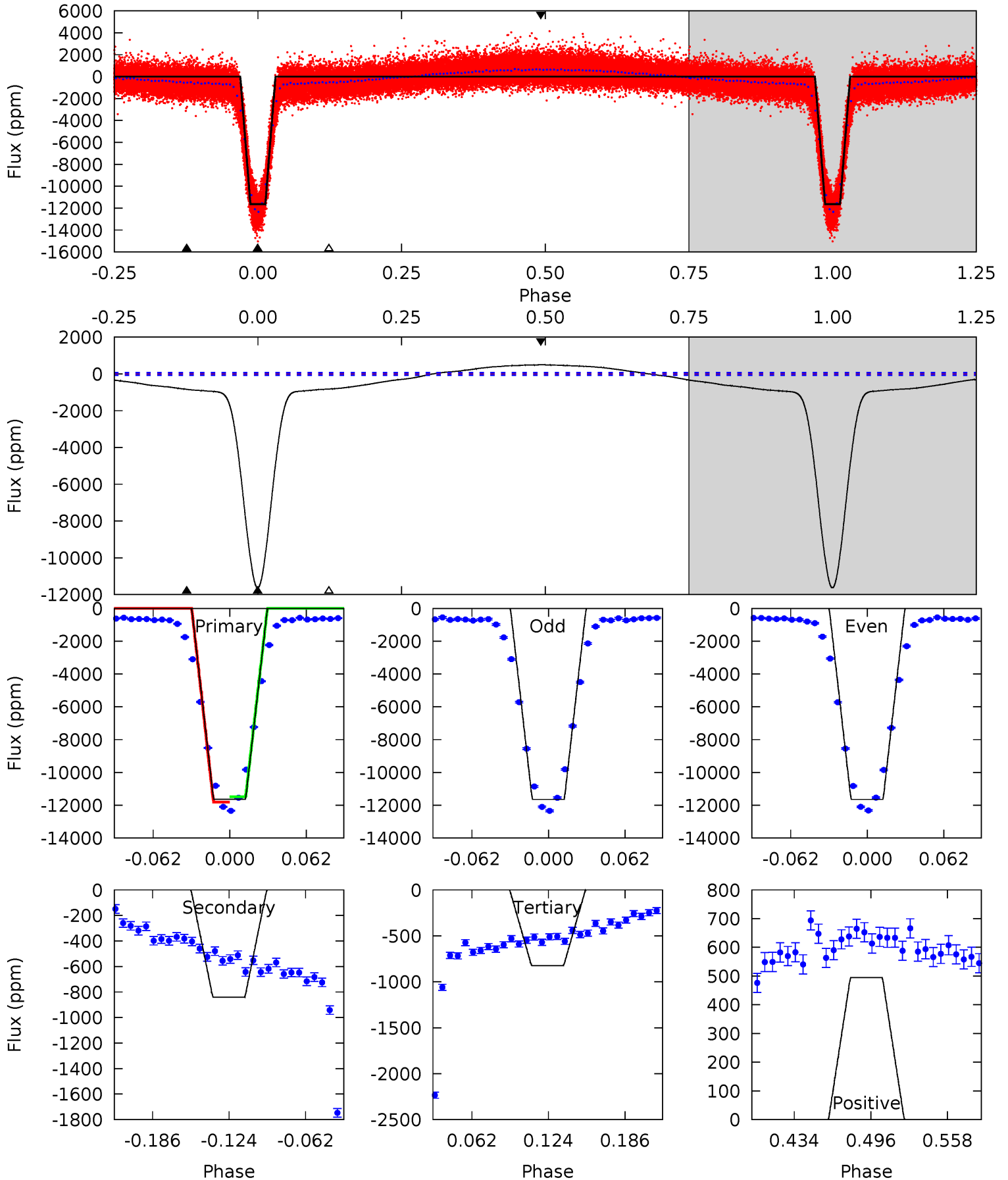
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1254 | 7.18 | 6.54 | 0.20 | 4.59            | 1.71            | 4.07             | 1248    | 1254    | 0.65    | 6.98    | 1.45    | 1.00 | 0.01  | 37.3 |



# Alt Model-Shift Uniqueness Test

005903301-01, P = 1.160152 Days, E = 132.147084 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  |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 867.7 | 62.7 | 61.5 | 36.9 | 4.66            | 1.87            | 34.0             | 806.2   | 830.9   | 1.20    | 25.8    | 0.05    | 1.00 | 0.04  | 12.0 |



### Stellar Parameters For KIC 005903301

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6200^{+197}_{-241}$ | $4.161^{+0.264}_{-0.176}$ | $-0.320^{+0.300}_{-0.300}$ | $1.382^{+0.388}_{-0.388}$ | $1.009^{+0.169}_{-0.123}$ | $0.538^{+0.840}_{-0.251}$                 |
|        | +3%/-4%              | +6%/-4%                   | +94%/-94%                  | +28%/-28%                 | +17%/-12%                 | +156%/-47%                                |
| Source | KIC0                 | KIC0                      | 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 005903301-01 / KOI 3692.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$      | $T_{max} (K)$        | $T_{obs} (K)$         | $A_{obs}$                 |
|---------|---------------|-------------------------|----------------------|-----------------------|---------------------------|
| DV      | $-65 \pm 9$   | $17.84^{+2.78}_{-3.04}$ | $3038^{+237}_{-283}$ | $-3025^{+196}_{-161}$ | $0.053^{+0.024}_{-0.014}$ |
| Alt.    | $-841 \pm 13$ | $16.70^{+2.66}_{-2.50}$ | $3027^{+240}_{-255}$ | $3342^{+116}_{-137}$  | $0.791^{+0.287}_{-0.193}$ |

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

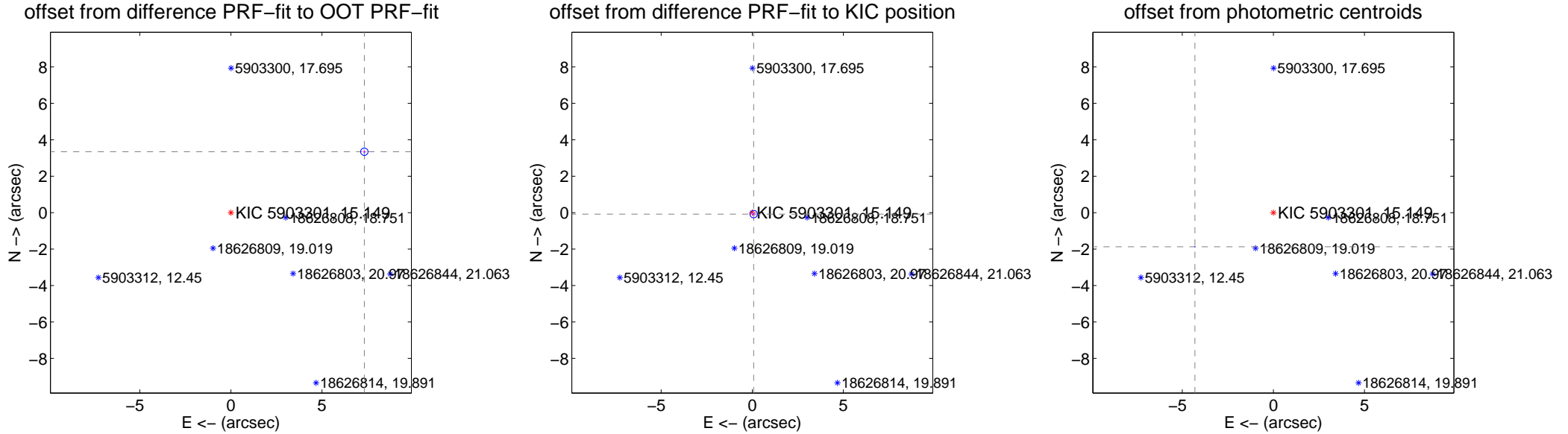
## DV Centroid Data

Supplemental centroid analysis for 005903301-01. Kepler magnitude: 15.15. Transit SNR 607.03

There are 15 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 8.05 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

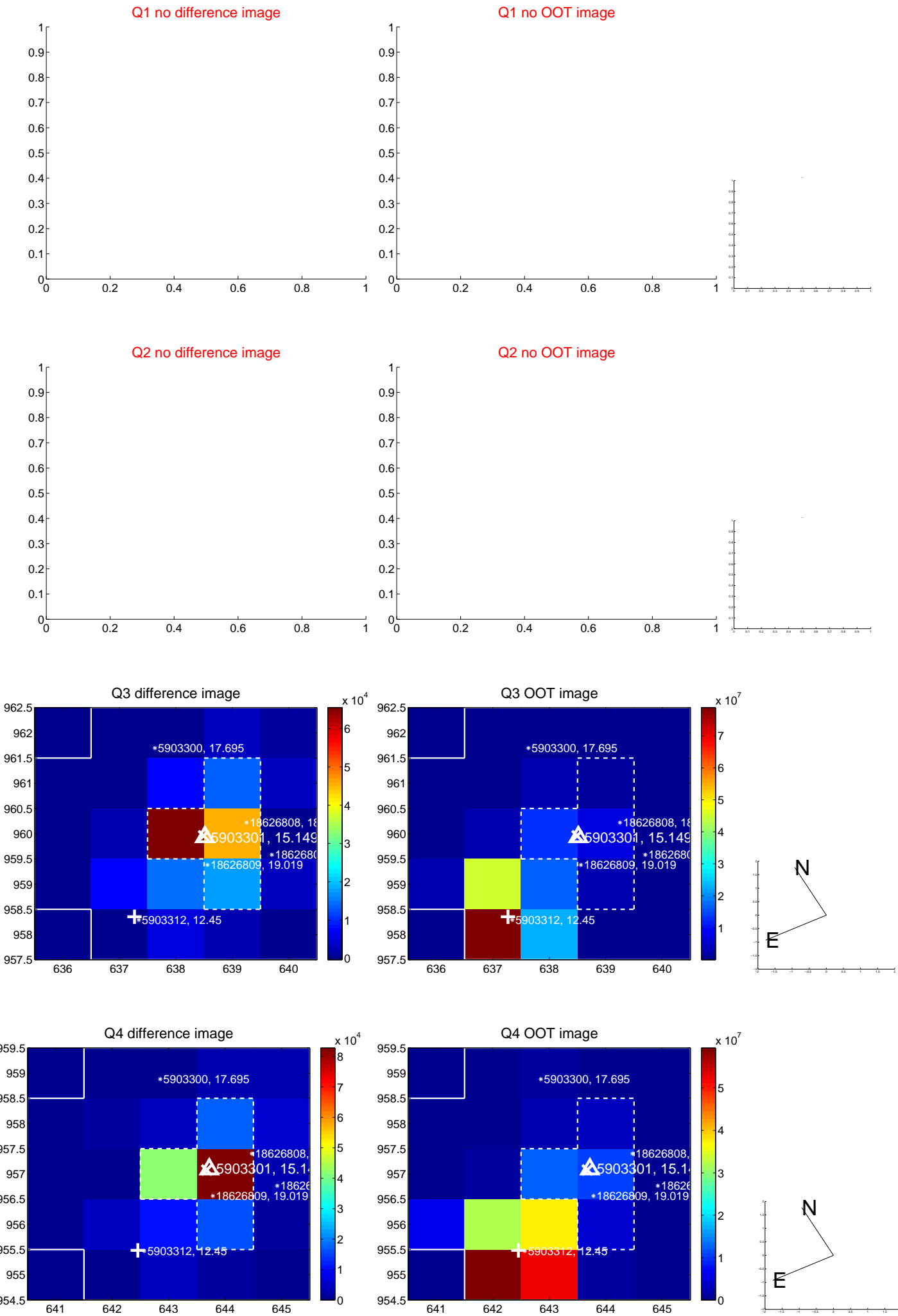
|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $8.049 \pm 0.068$  | 118.70              | $-7.322 \pm 0.067$ | $3.343 \pm 0.072$  |
| PRF-fit source offset from KIC position | $0.111 \pm 0.068$  | 1.63                | $-0.078 \pm 0.069$ | $-0.080 \pm 0.068$ |
| photometric centroid source offset      | $4.69 \pm 0.00$    | 1206.70             | $4.30 \pm 0.00$    | $-1.87 \pm 0.00$   |



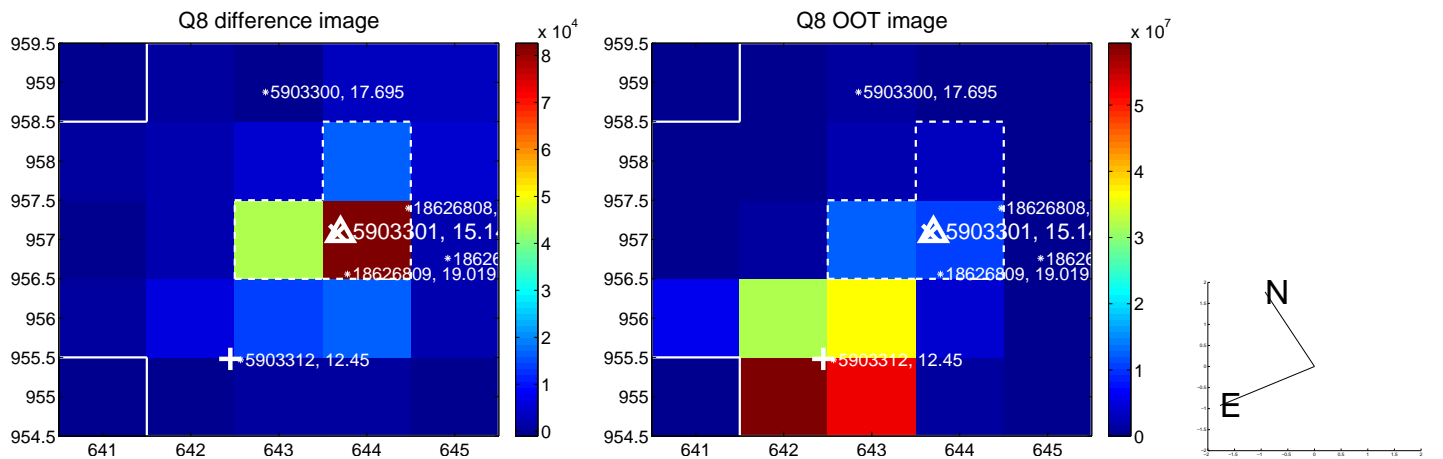
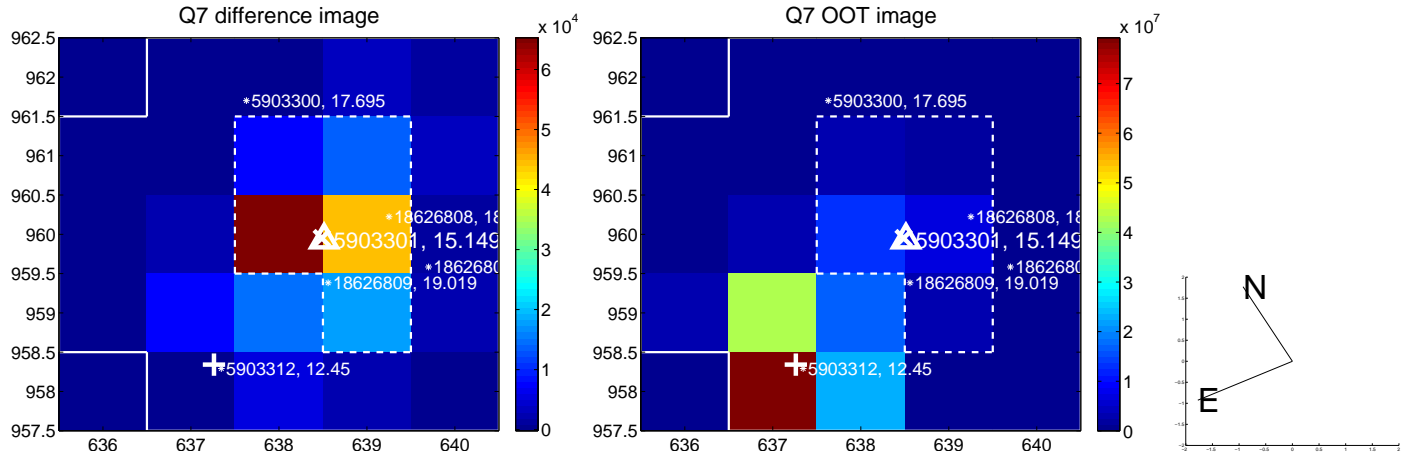
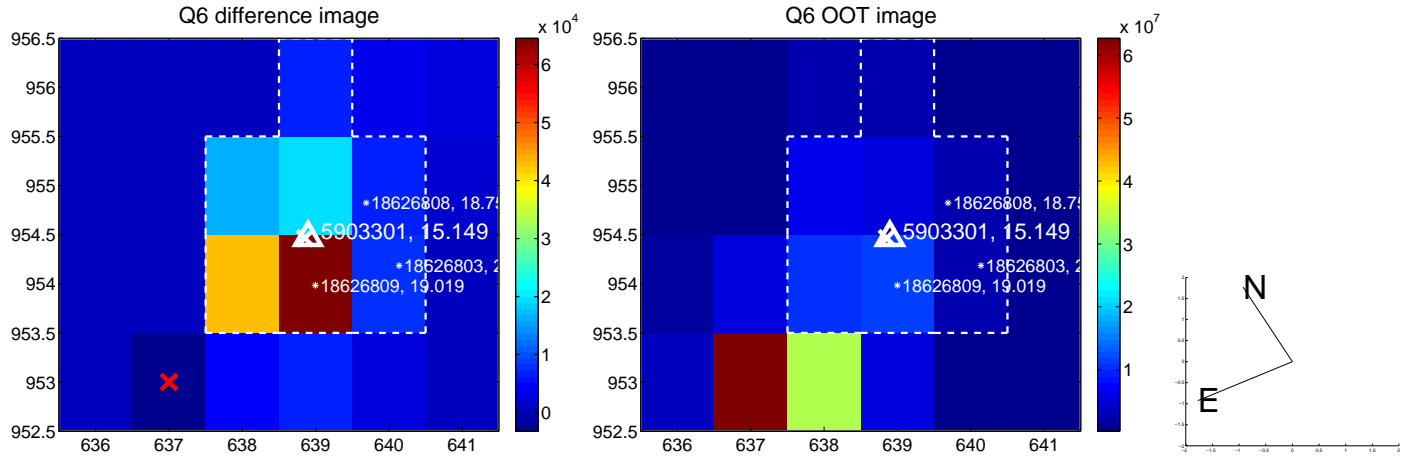
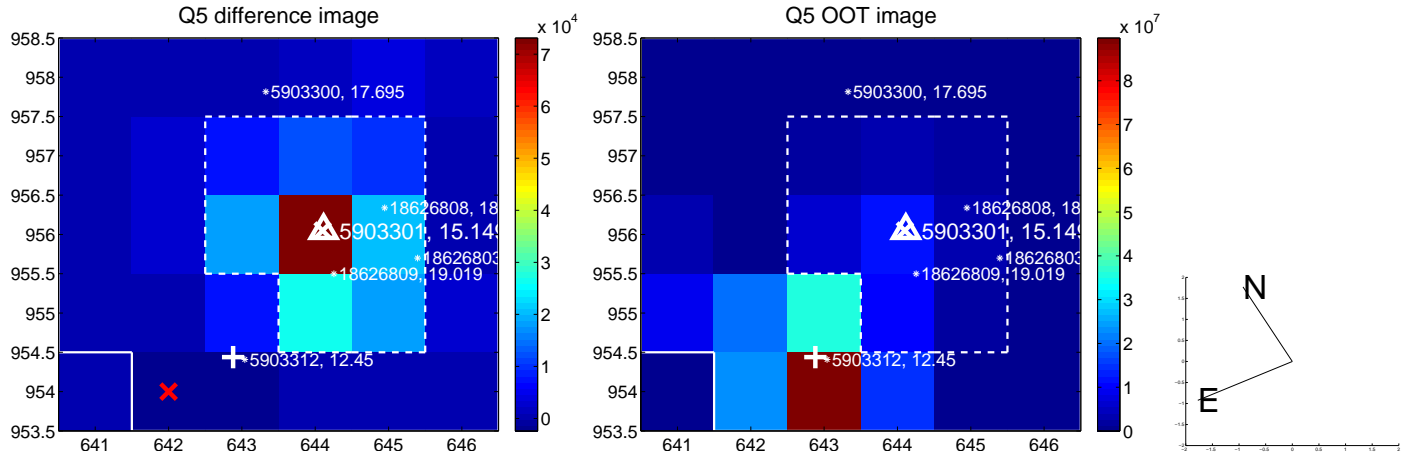
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



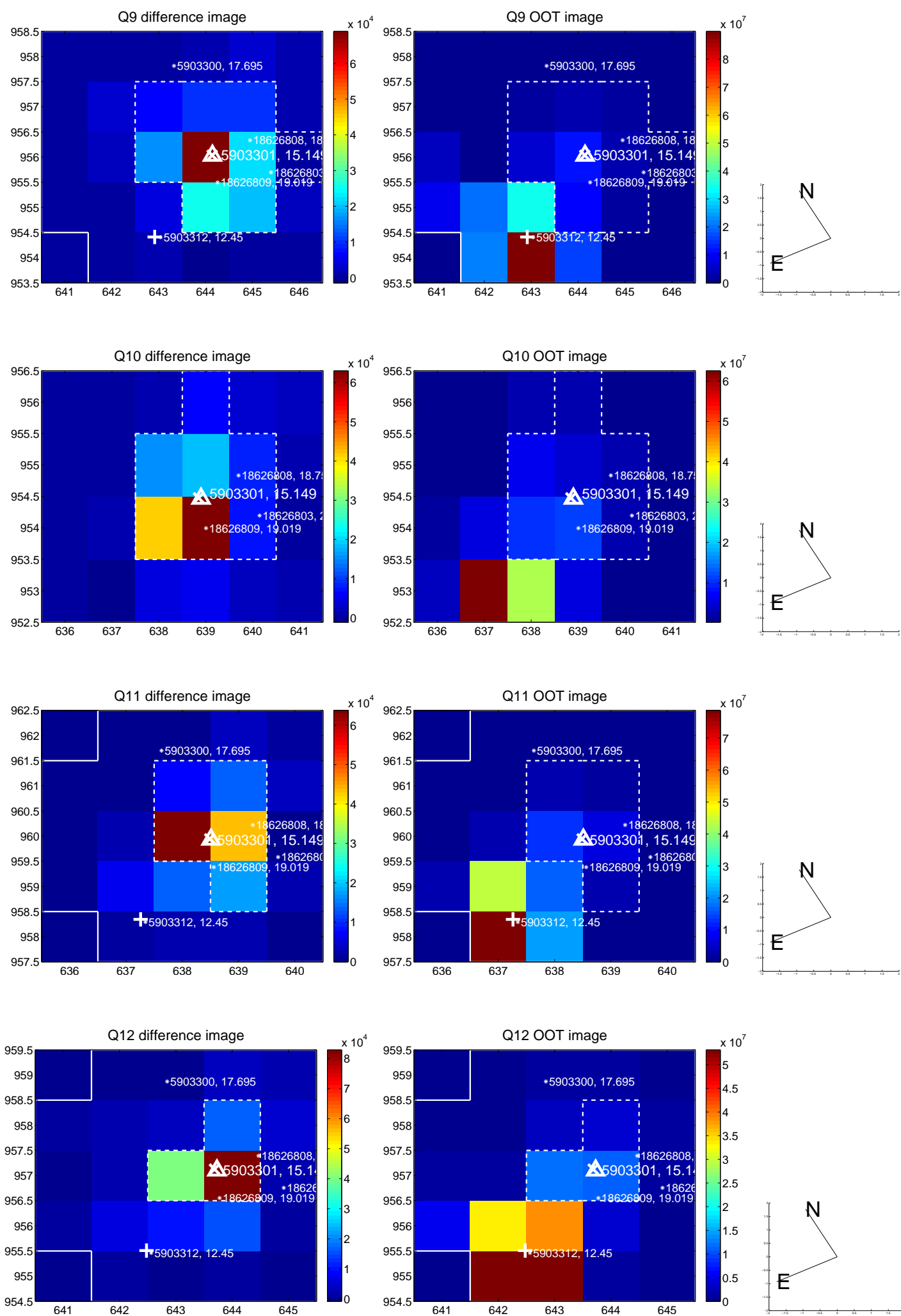
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



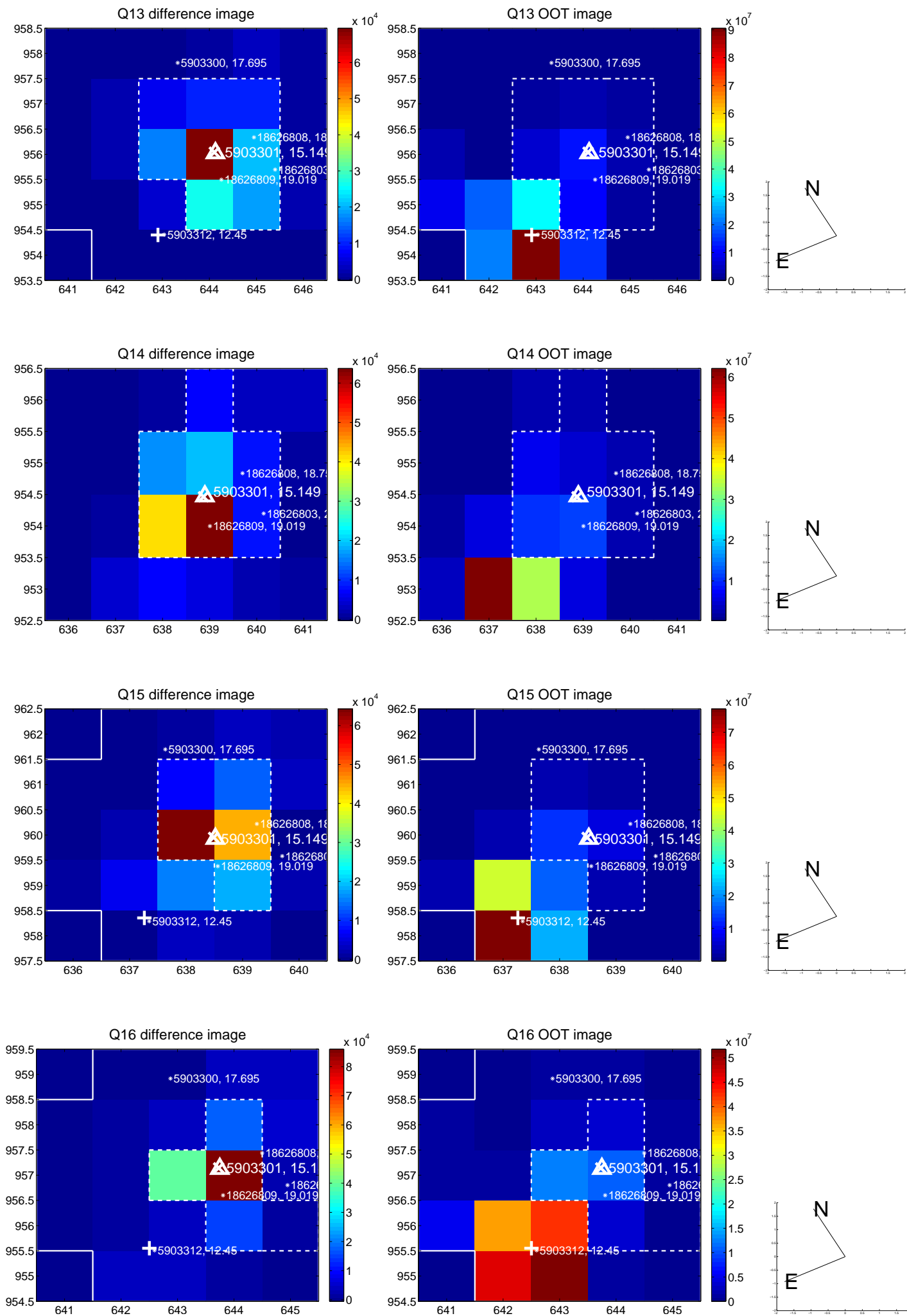
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



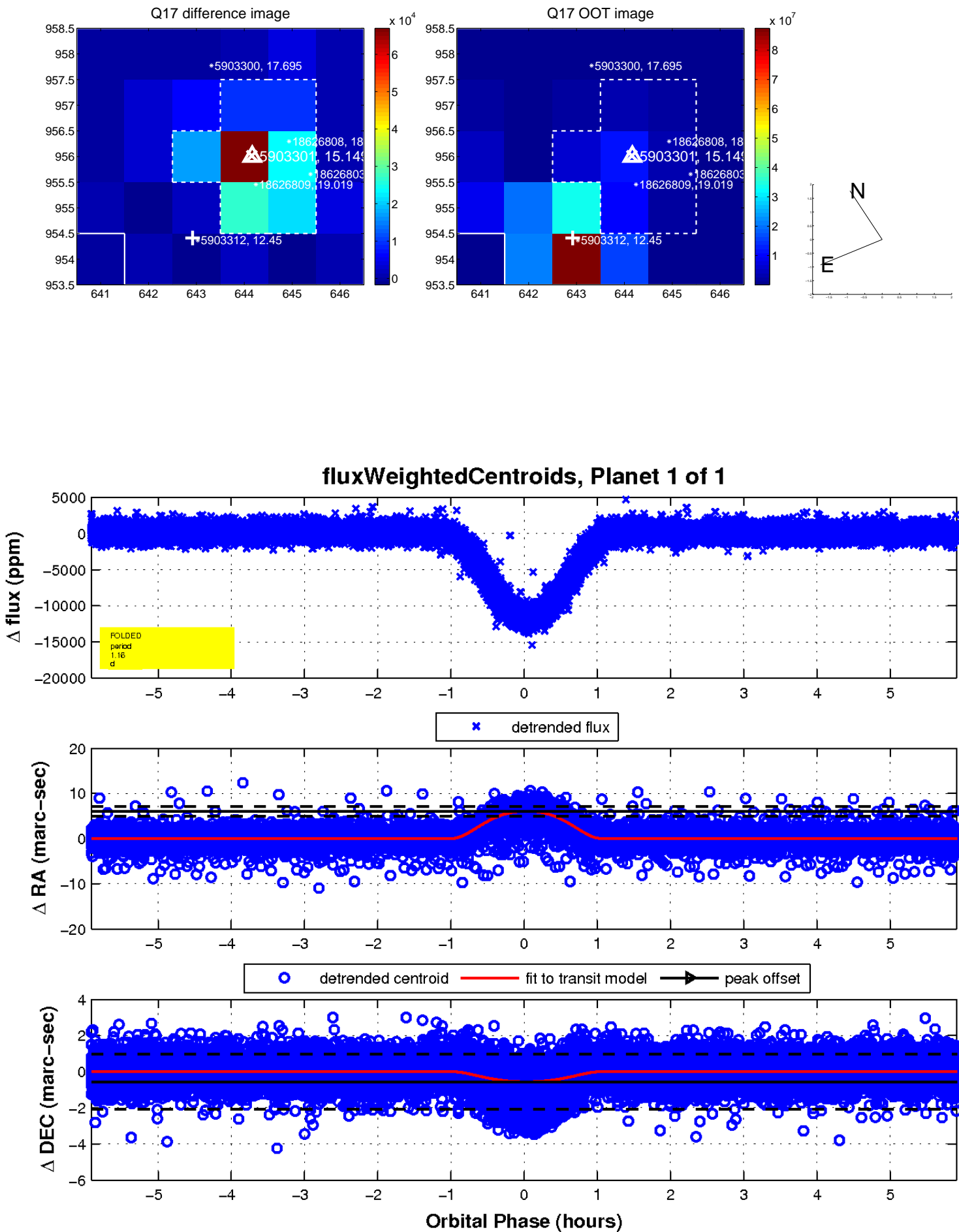
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

