

# KIC 011905011

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011905011-01 | OBS      | 0297.01 | 5.651759      | 132.720777   | 136.7       | 3.124            | 35.9 | 39.4 | 1.46                        | 6085            | 2.03                   | 575.25                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 011905011-01 | 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.

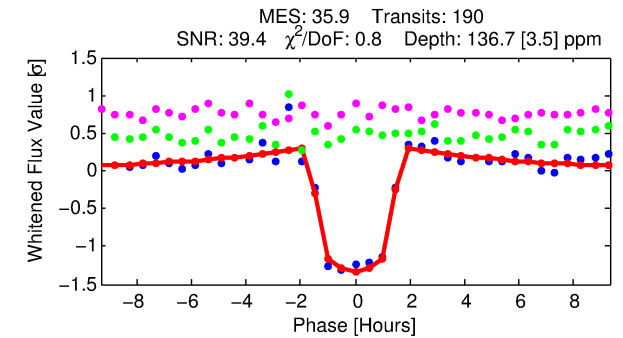
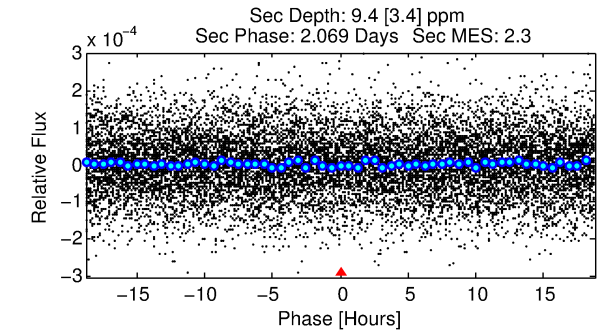
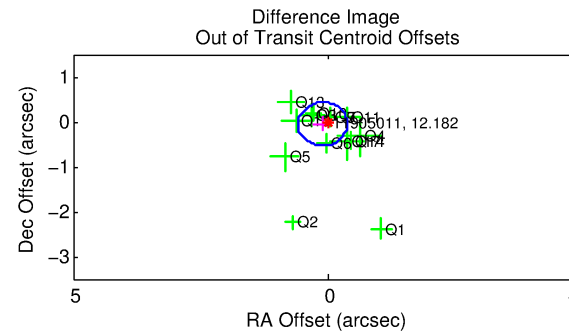
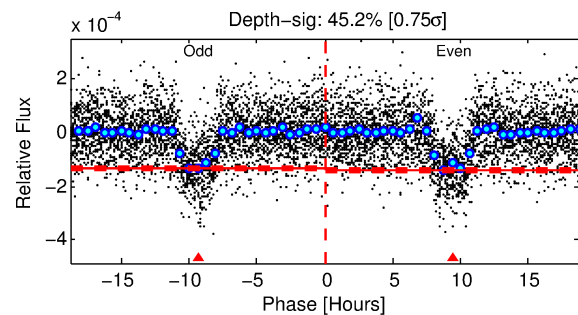
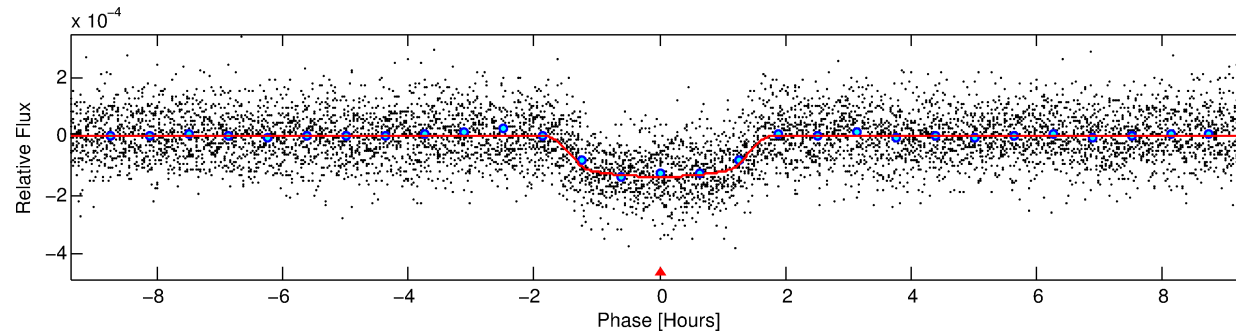
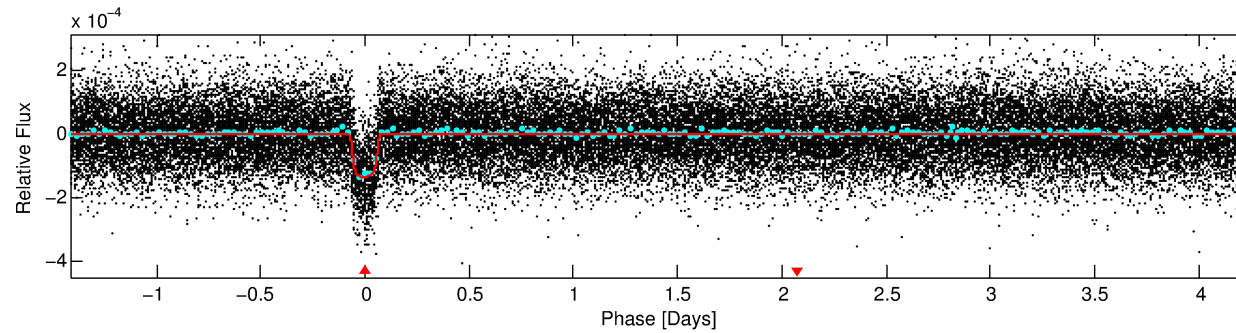
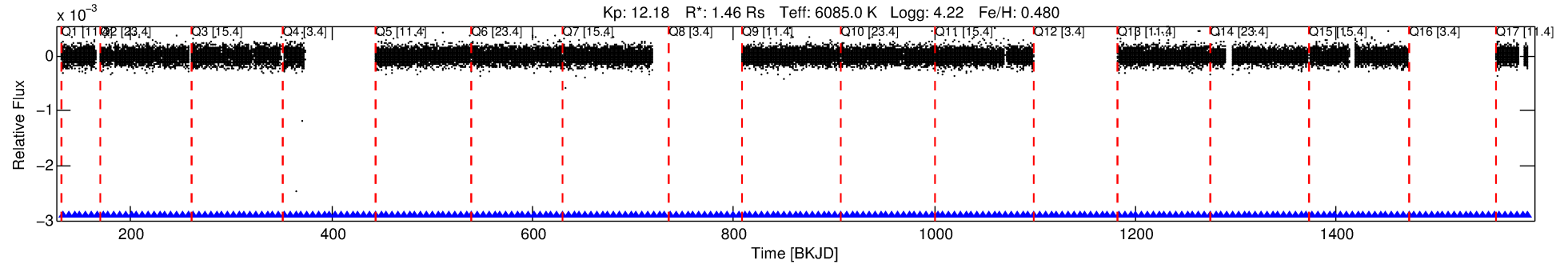
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011905011-01

No Significant Match Found

# DV One-Page Summary

KIC: 11905011 Candidate: 1 of 1 Period: 5.652 d  
KOI: K00297.01 Corr: 0.968



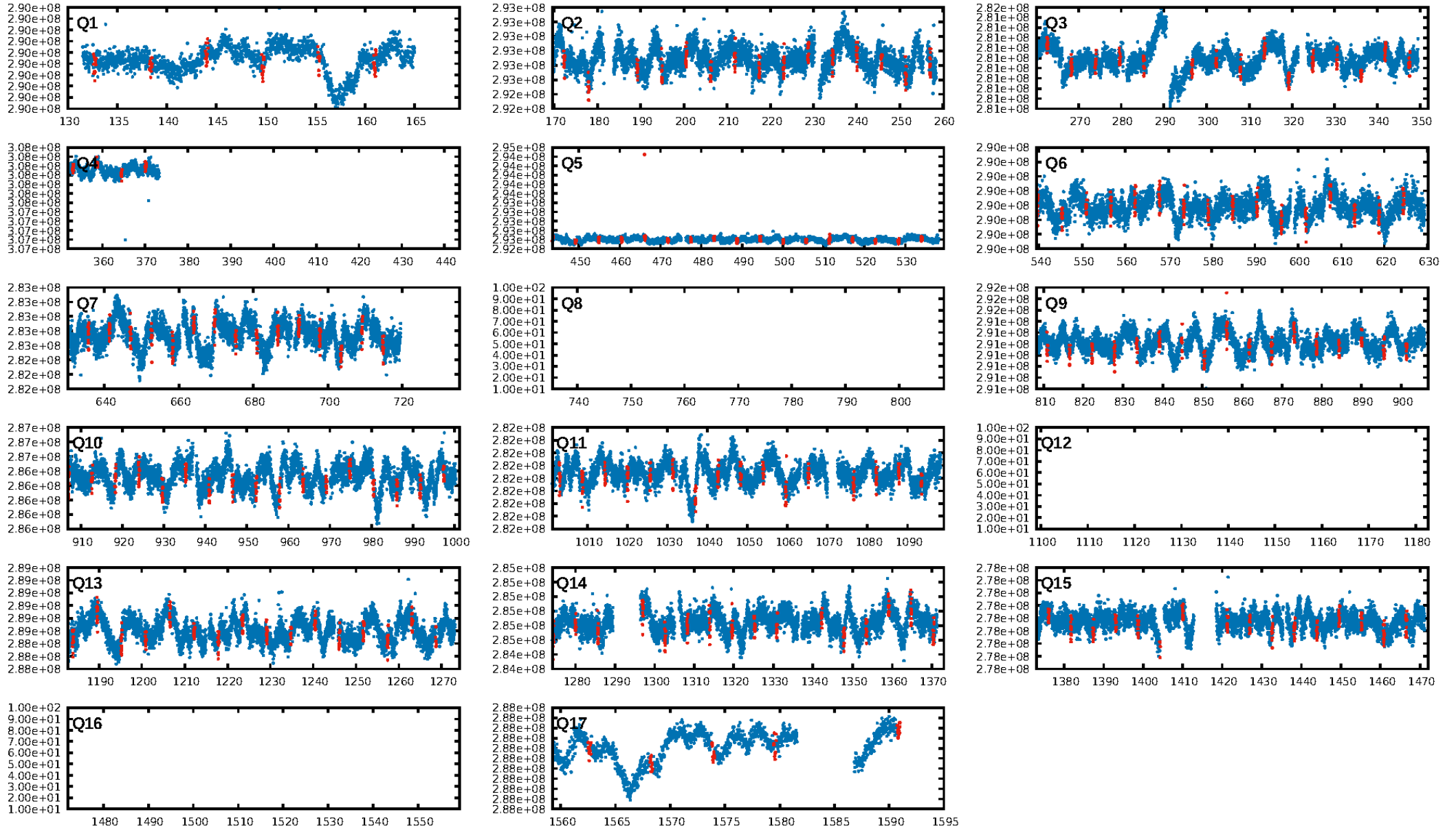
## DV Fit Results:

Period = 5.65176 [0.00001] d  
Epoch = 132.7208 [0.0012] BKJD  
Rp/R\* = 0.0127 [0.0018]  
a/R\* = 6.52 [4.35]  
b = 0.90 [0.15]  
Seff = 575.25 [137.40]  
Teq = 1249 [75] K  
Rp = 2.03 [0.46] Re  
a = 0.0676 [0.0101] AU  
Ag = 5.78 [2.93] [1.63 $\sigma$ ]  
Teffp = 2993 [349] K [4.88 $\sigma$ ]

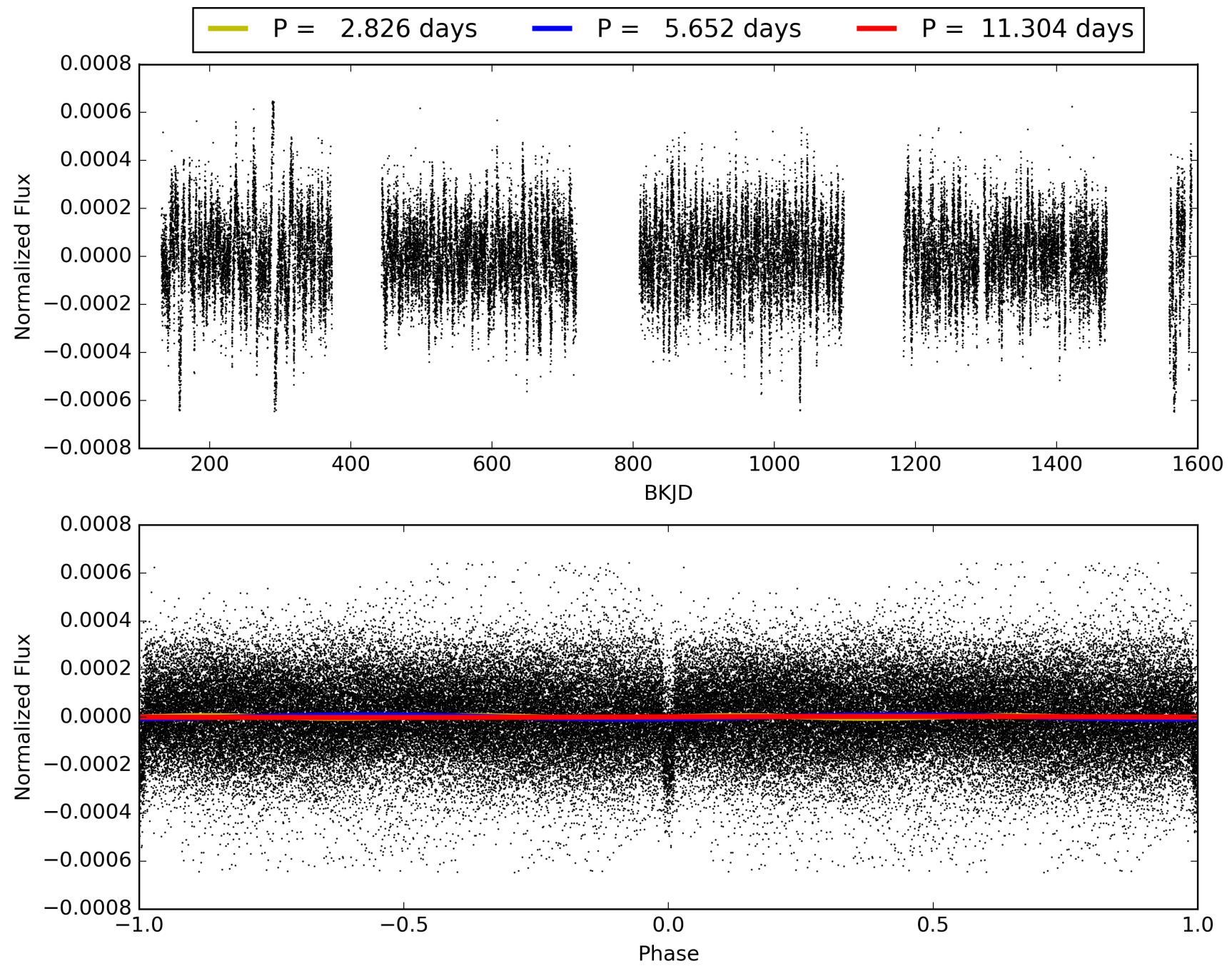
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.25e-278  
RollingBand-fgt: 1.00 [175/175]  
GhostDiagnostic-chr: 5.741  
Centroid-sig: 56.4%  
Centroid-so: 0.244 arcsec [0.82 $\sigma$ ]  
OotOffset-rm: 0.109 arcsec [0.68 $\sigma$ ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-rm: 0.172 arcsec [0.80 $\sigma$ ]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011905011-01, PDC Light Curves

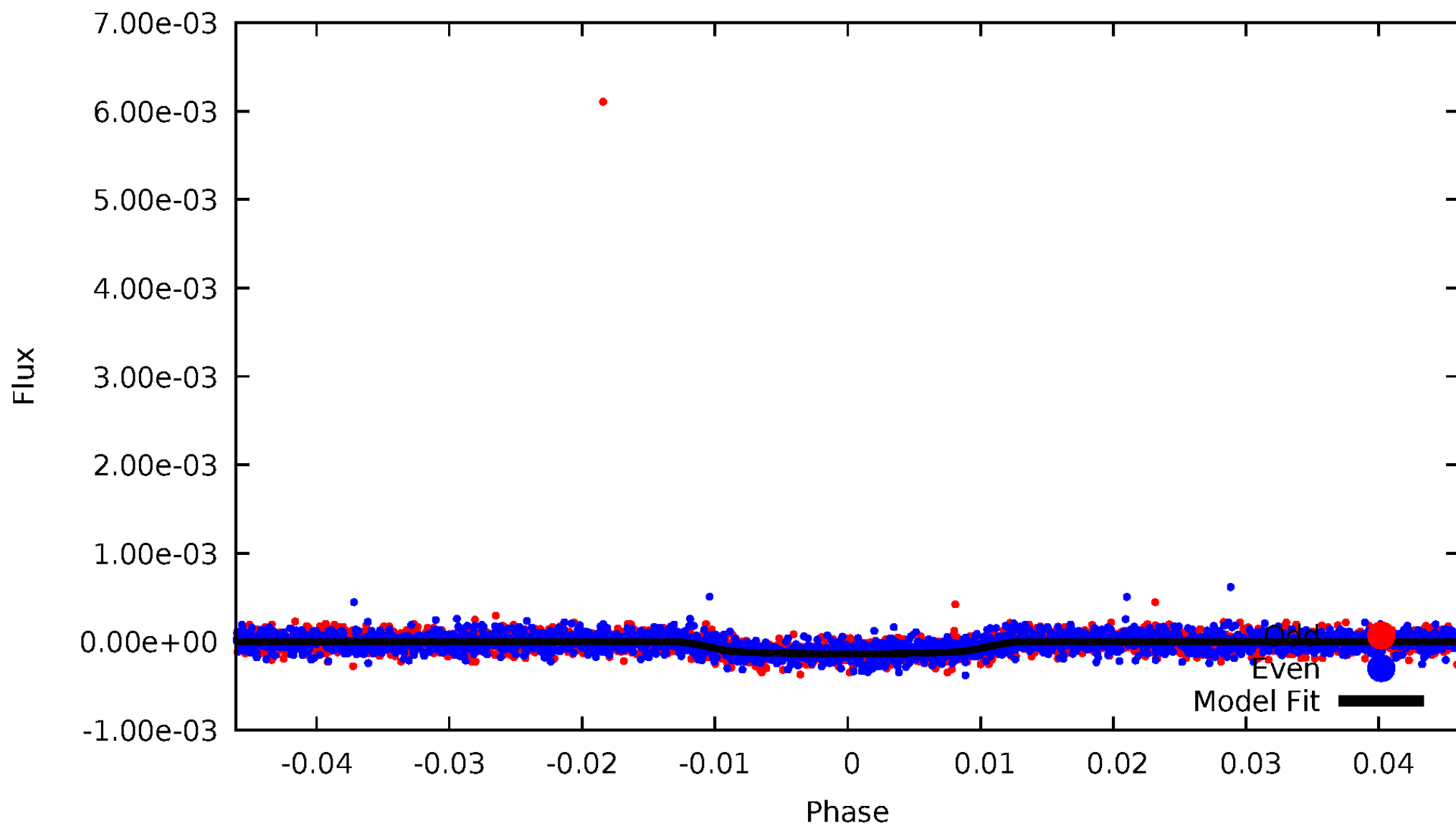


TCE 011905011-01



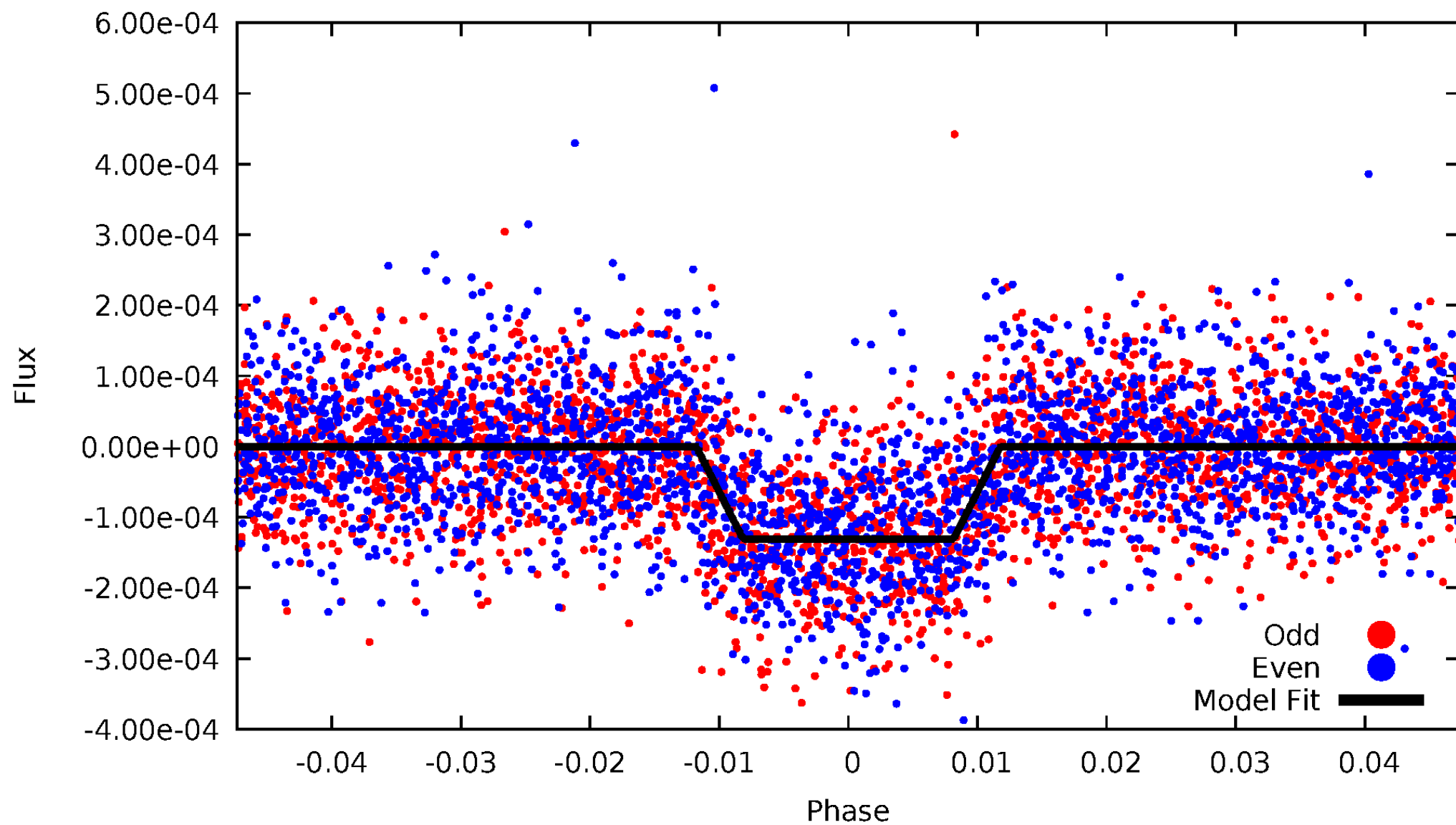
# DV Odd/Even

TCE 011905011-01



# ALT Odd/Even

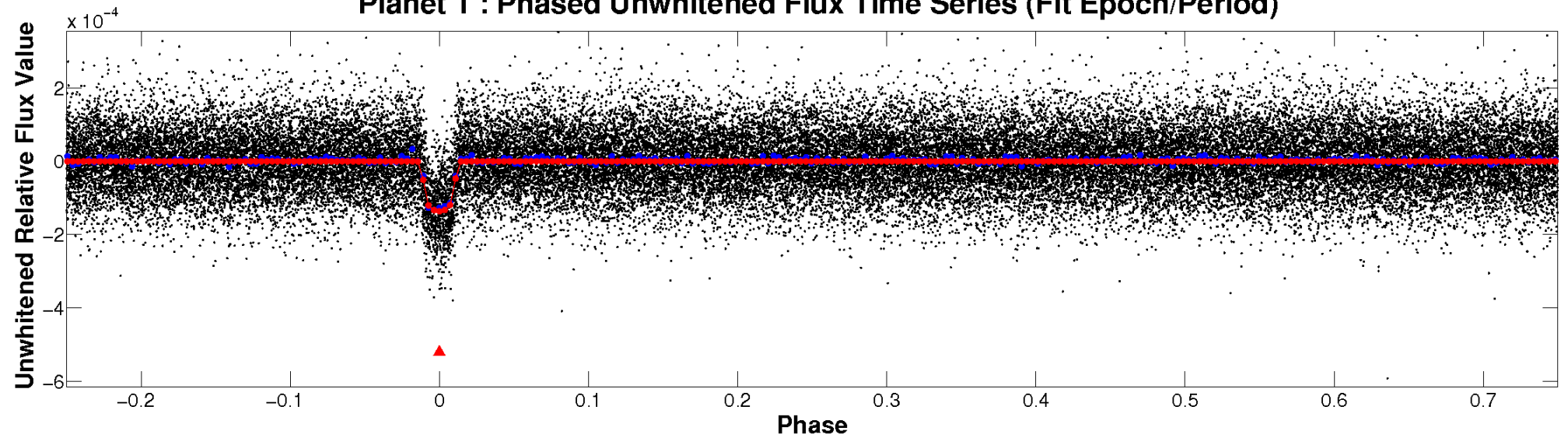
TCE 011905011-01



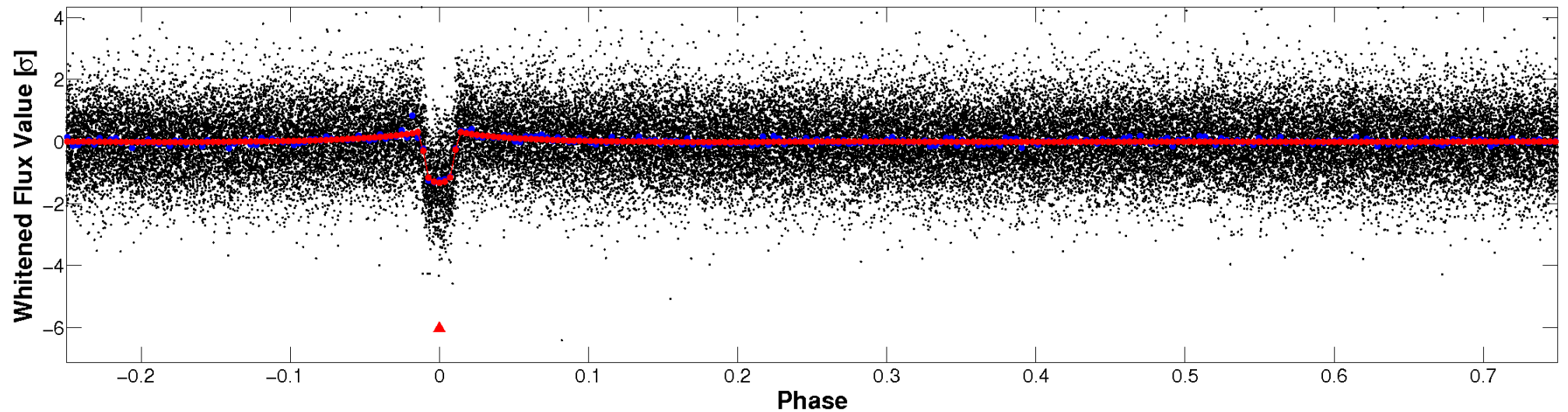


# Non-Whitened Vs. Whitened Light Curve

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

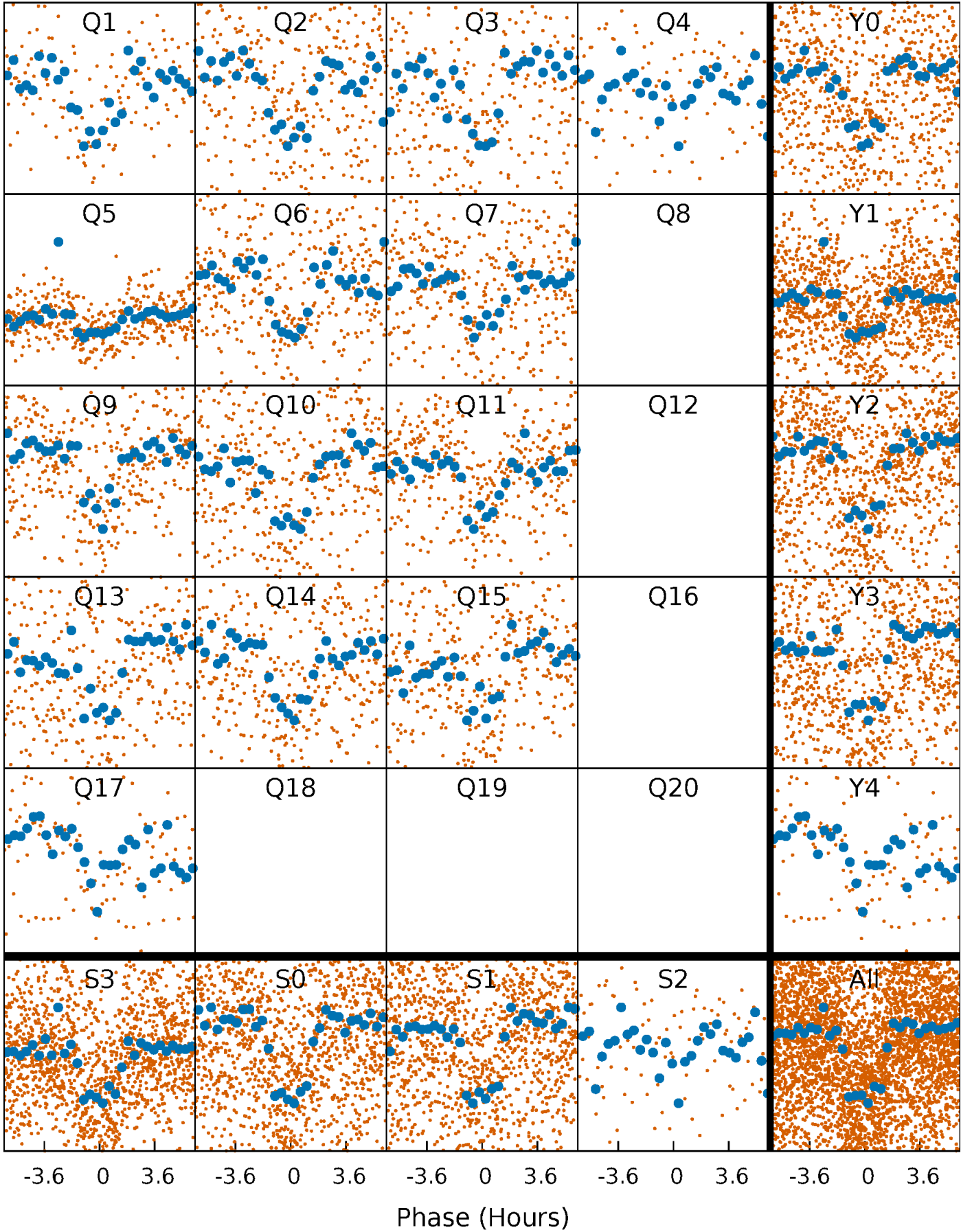


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

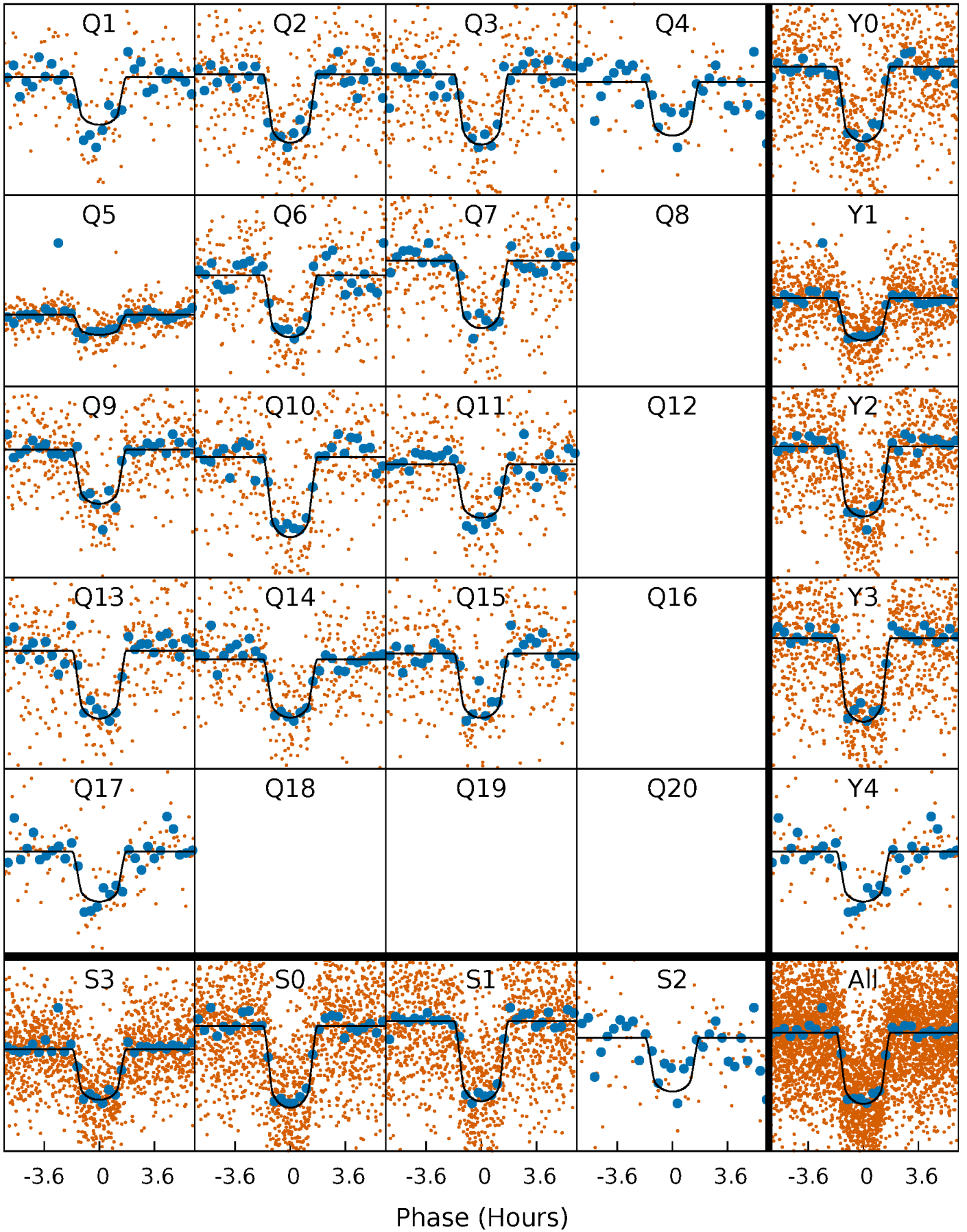
TCE 011905011-01 P= 5.651759 Days  $T_0=132.720777$  (BKJD)





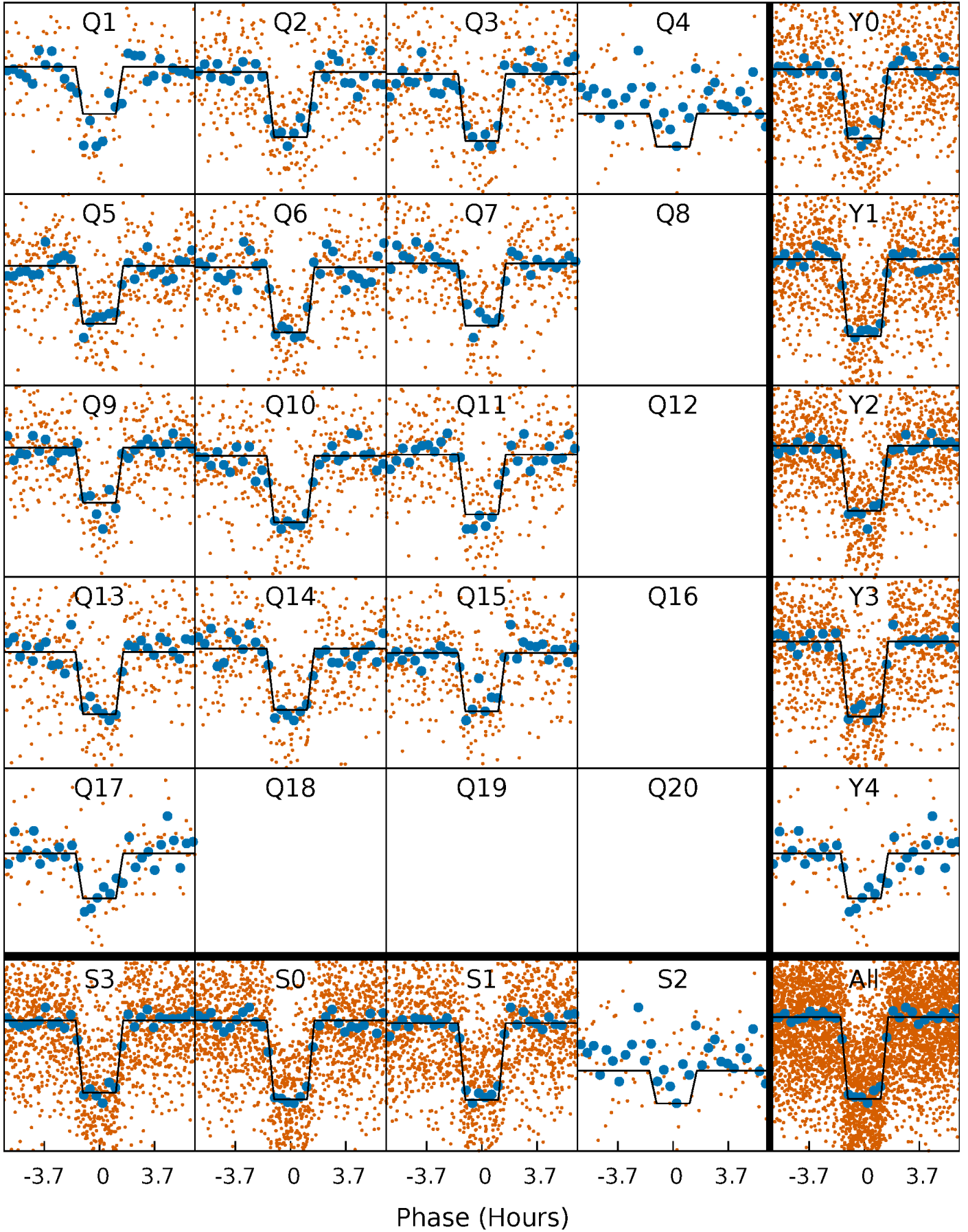
# DV Quarter-Phased Transit Curves

TCE 011905011-01 P= 5.651759 Days  $T_0=132.720777$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

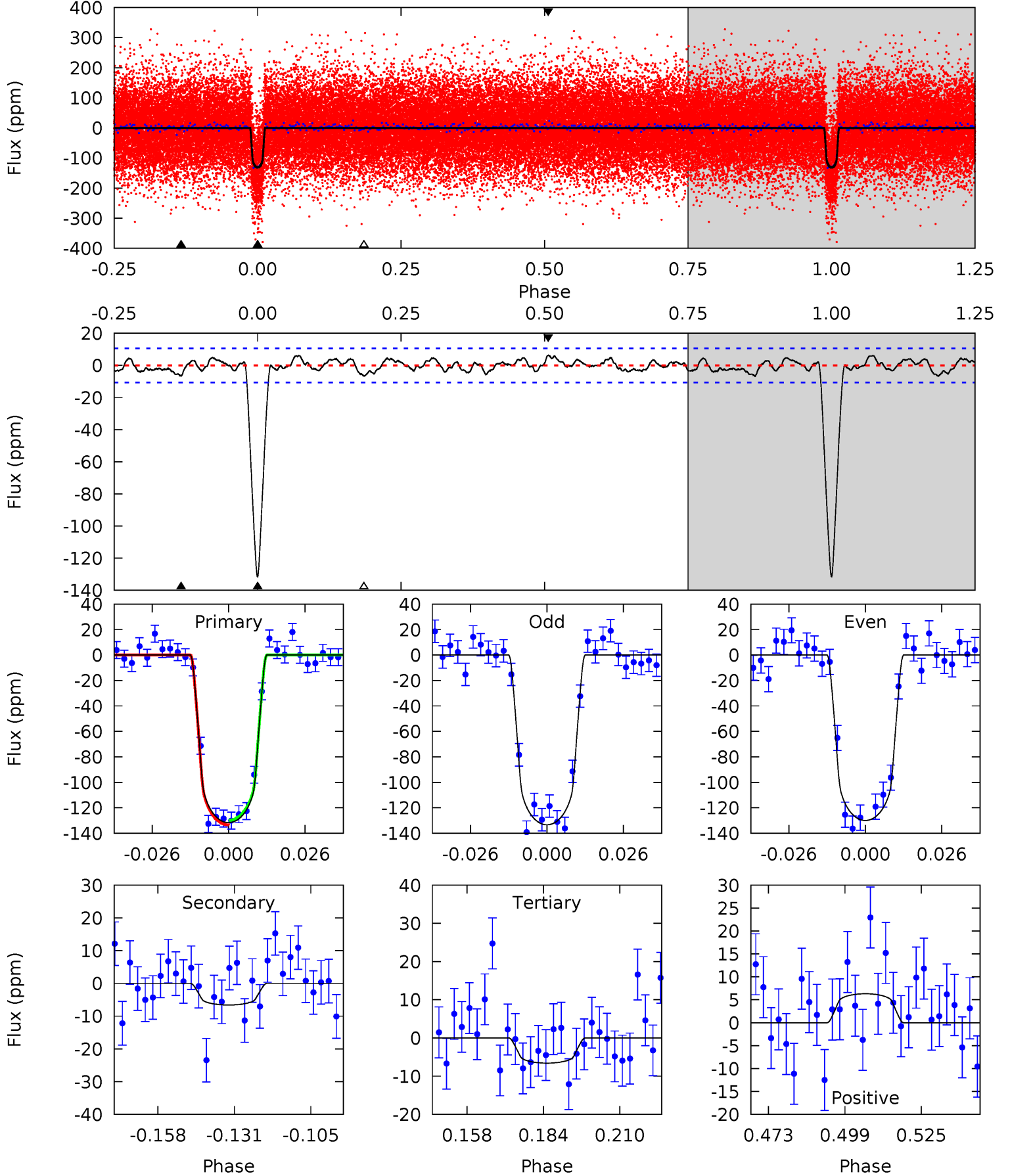
TCE 011905011-01 P= 5.651770 Days  $T_0=132.719389$  (BKJD)



# DV Model-Shift Uniqueness Test

011905011-01, P = 5.651759 Days, E = 127.069018 Days

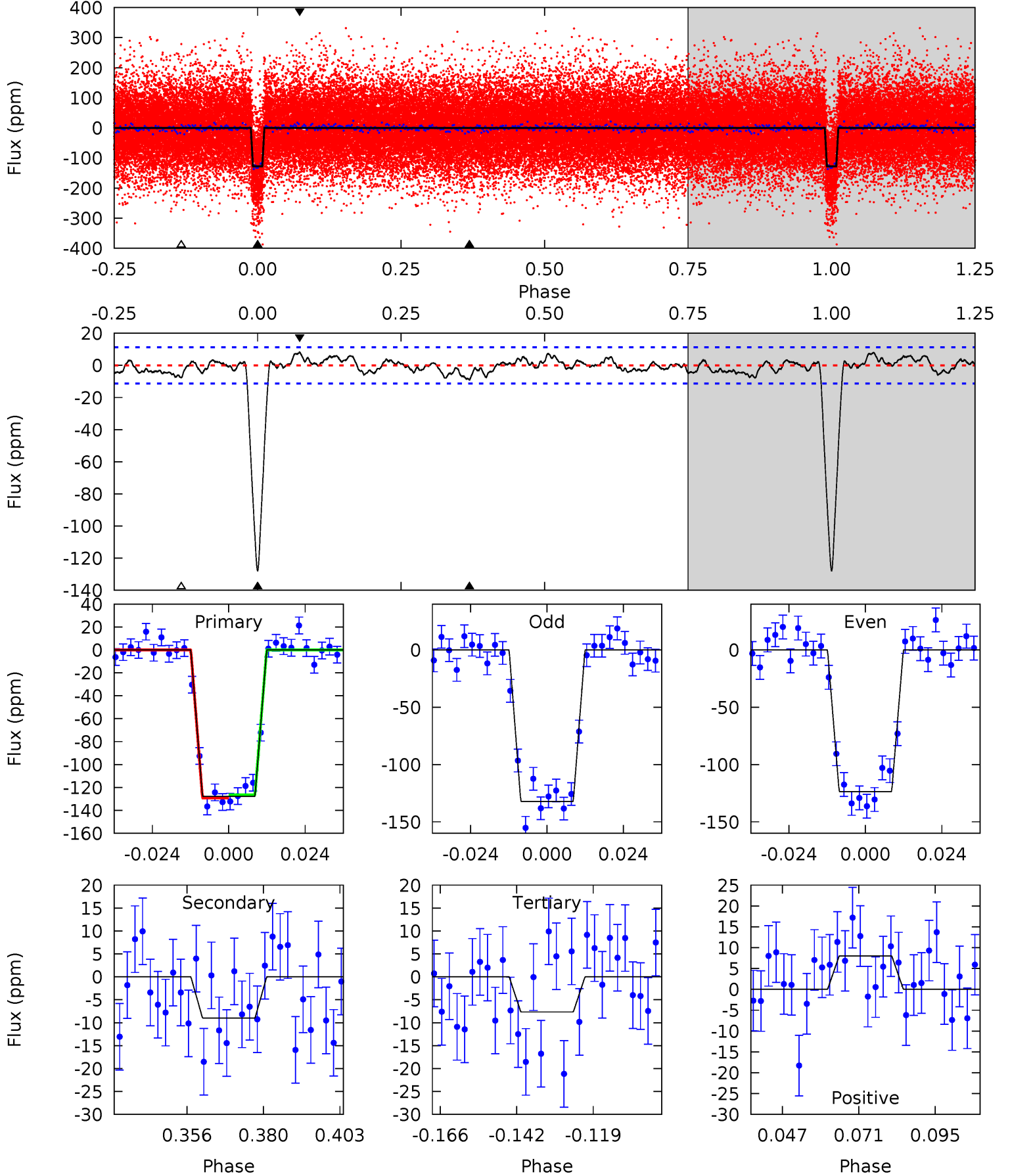
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 60.1 | 3.01 | 3.00 | 2.88 | 4.84            | 2.22            | 1.25             | 57.1    | 57.2    | 0.01    | 0.13    | 0.77    | 1.00 | 0.05  | 0.81 |



# Alt Model-Shift Uniqueness Test

011905011-01, P = 5.651770 Days, E = 127.067619 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 55.0 | 3.87 | 3.30 | 3.46 | 4.86            | 2.26            | 1.40             | 51.7    | 51.5    | 0.57    | 0.41    | 1.82    | 1.01 | 0.06  | 0.62 |



### Stellar Parameters For KIC 011905011

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $6085^{+108}_{-145}$ | $4.218^{+0.120}_{-0.120}$ | $0.480^{+0.050}_{-0.150}$ | $1.463^{+0.260}_{-0.213}$ | $1.290^{+0.088}_{-0.088}$ | $0.581^{+0.316}_{-0.204}$                     |
|        | +2%/-2%              | +3%/-3%                   | +10%/-31%                 | +18%/-15%                 | +7%/-7%                   | +54%/-35%                                     |
| Source | SPE59                | SPE59                     | SPE59                     | DSEP                      |                           |   |

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

### Secondary Eclipse Parameters for KIC 011905011-01 / KOI 0297.01

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K) | $A_{\text{obs}}$          |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV      | $-7 \pm 2$  | $2.03^{+0.36}_{-0.35}$ | $1738^{+87}_{-78}$   | $3237^{+242}_{-232}$ | $3.921^{+2.338}_{-1.508}$ |
| Alt.    | $-9 \pm 2$  | $1.84^{+0.37}_{-0.34}$ | $1746^{+85}_{-81}$   | $3547^{+279}_{-231}$ | $6.754^{+3.885}_{-2.436}$ |

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



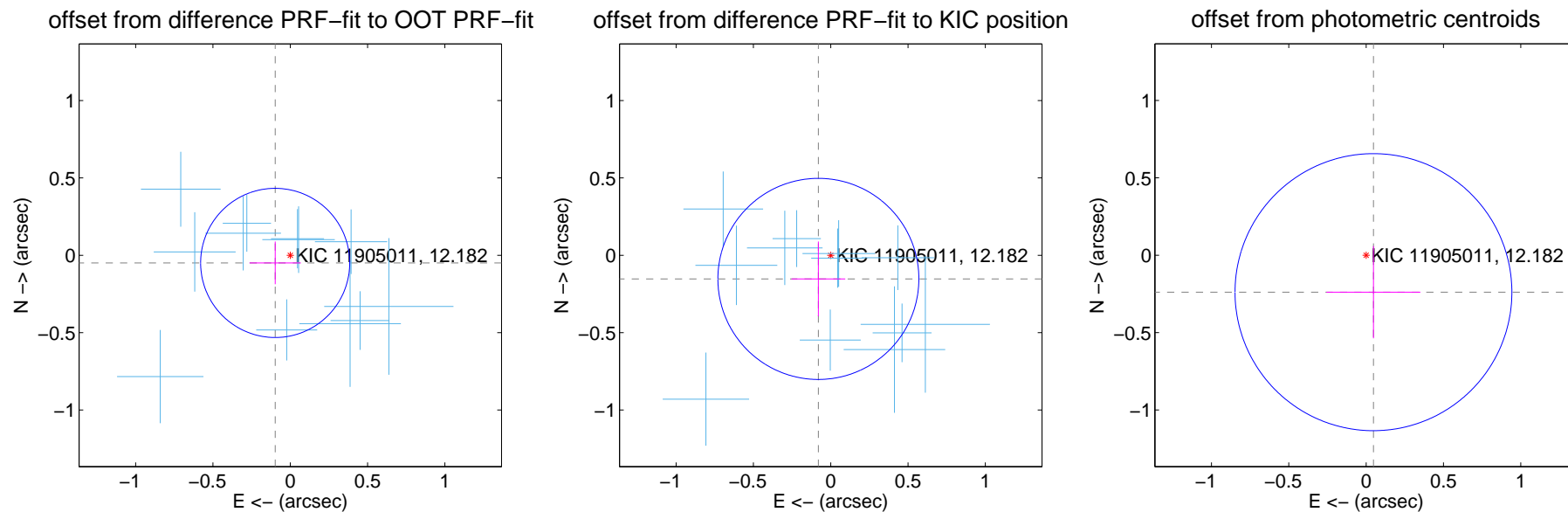
## DV Centroid Data

Supplemental centroid analysis for 011905011-01. Kepler magnitude: 12.18. Transit SNR 39.38

There are 14 quarters with good PRF difference image offsets

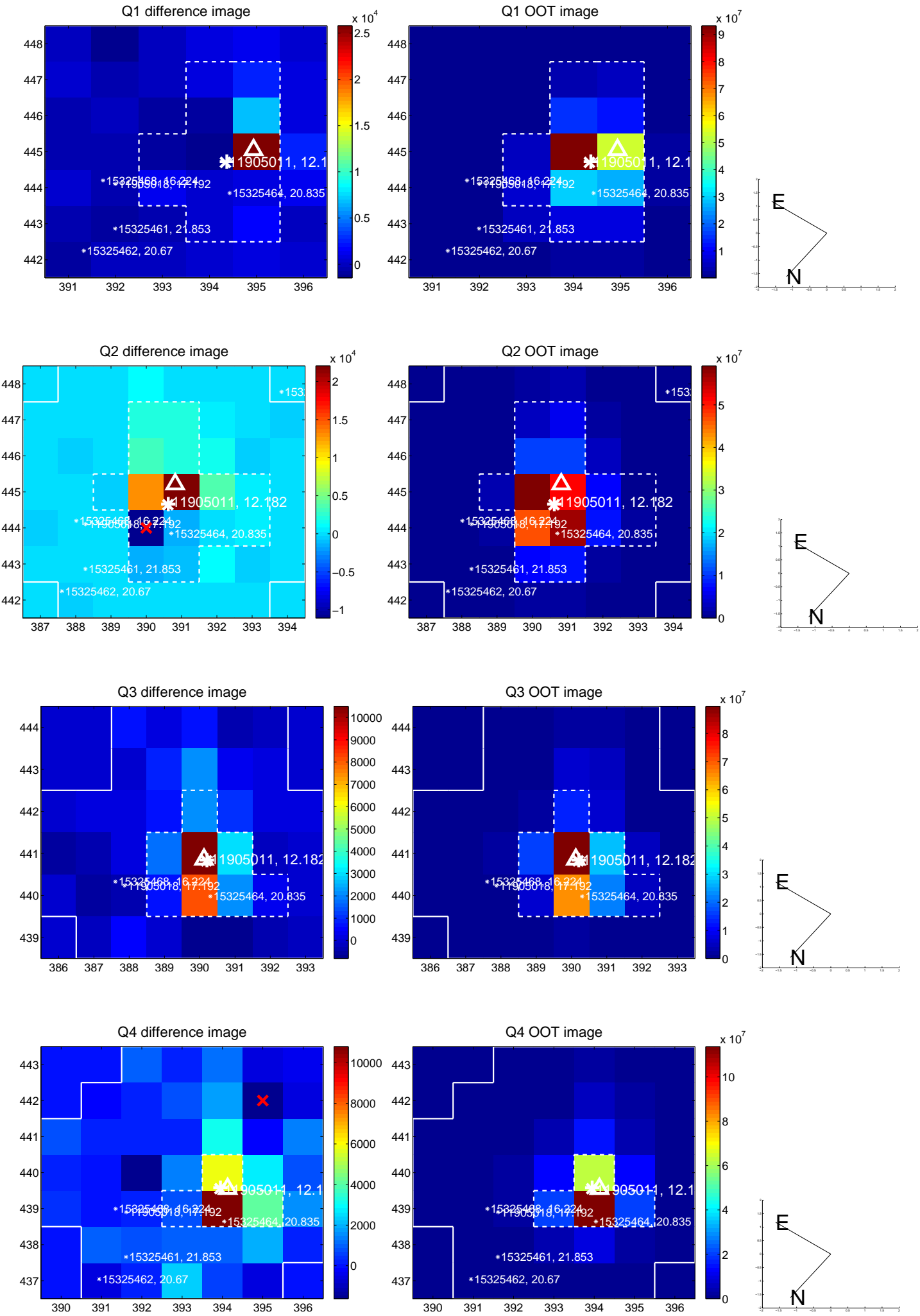
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $0.109 \pm 0.161$  | 0.68                | $0.098 \pm 0.166$ | $-0.049 \pm 0.138$ |
| PRF-fit source offset from KIC position | $0.172 \pm 0.217$  | 0.80                | $0.080 \pm 0.174$ | $-0.153 \pm 0.242$ |
| photometric centroid source offset      | $0.24 \pm 0.30$    | 0.82                | $-0.05 \pm 0.30$  | $-0.24 \pm 0.30$   |

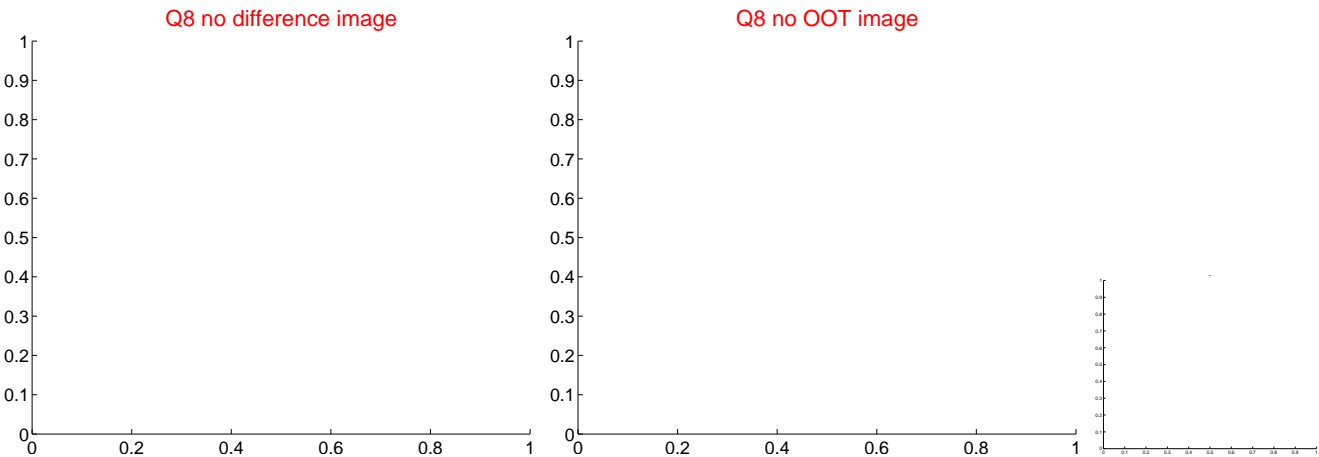
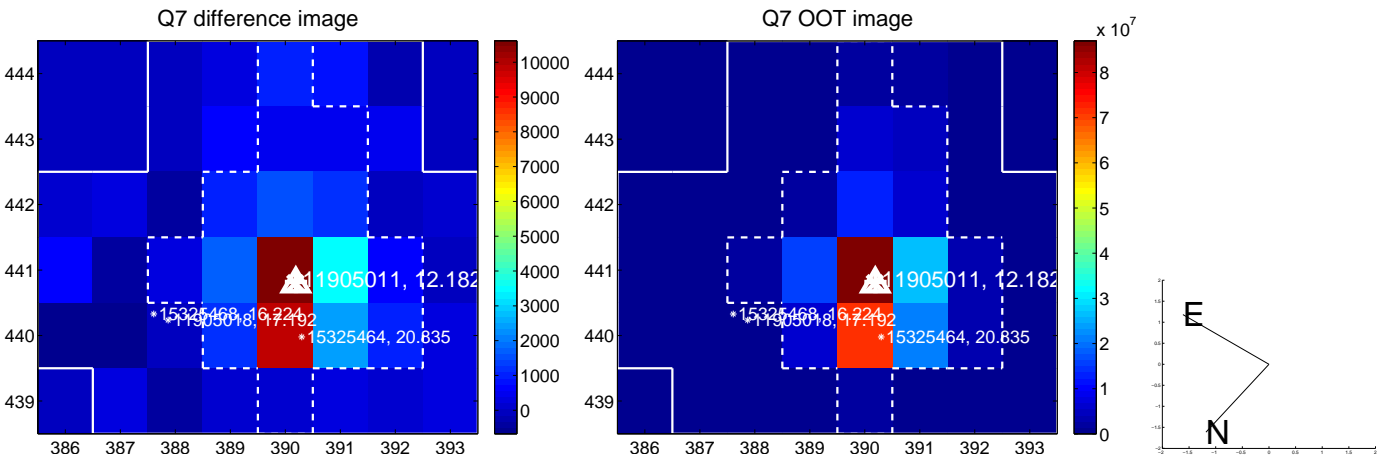
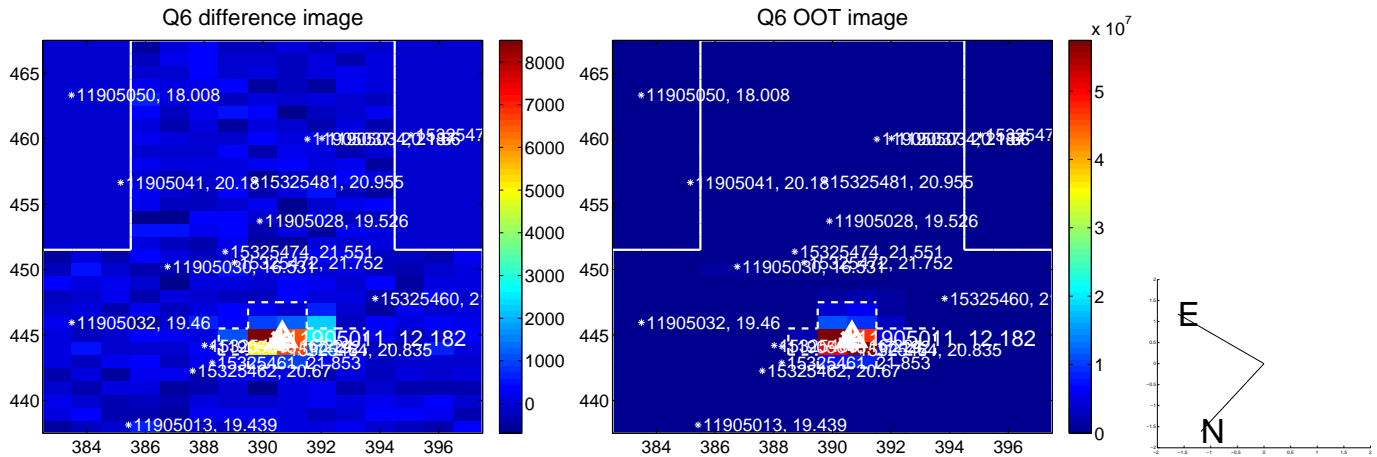
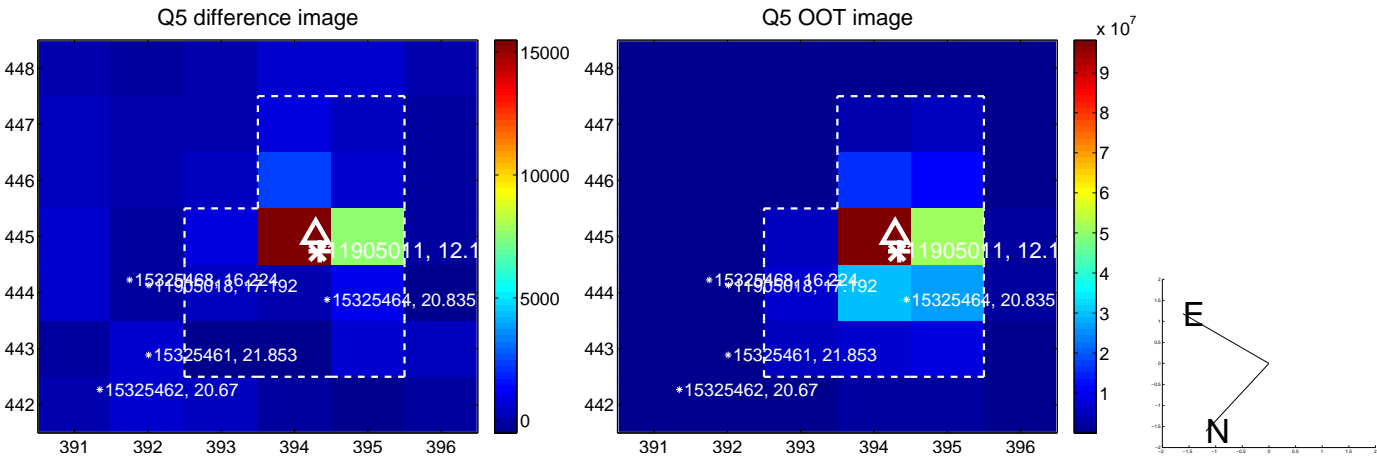


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

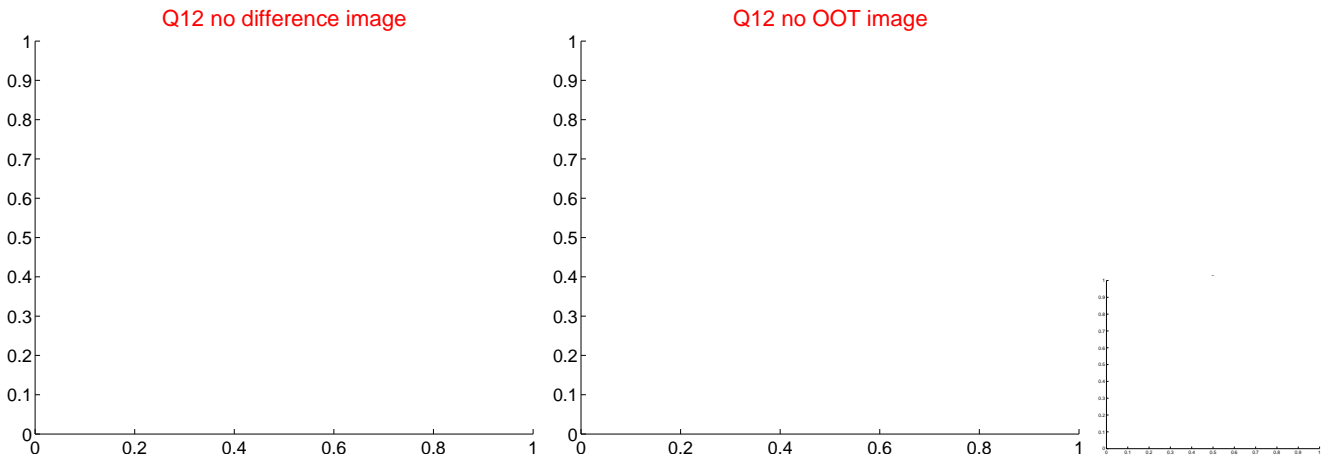
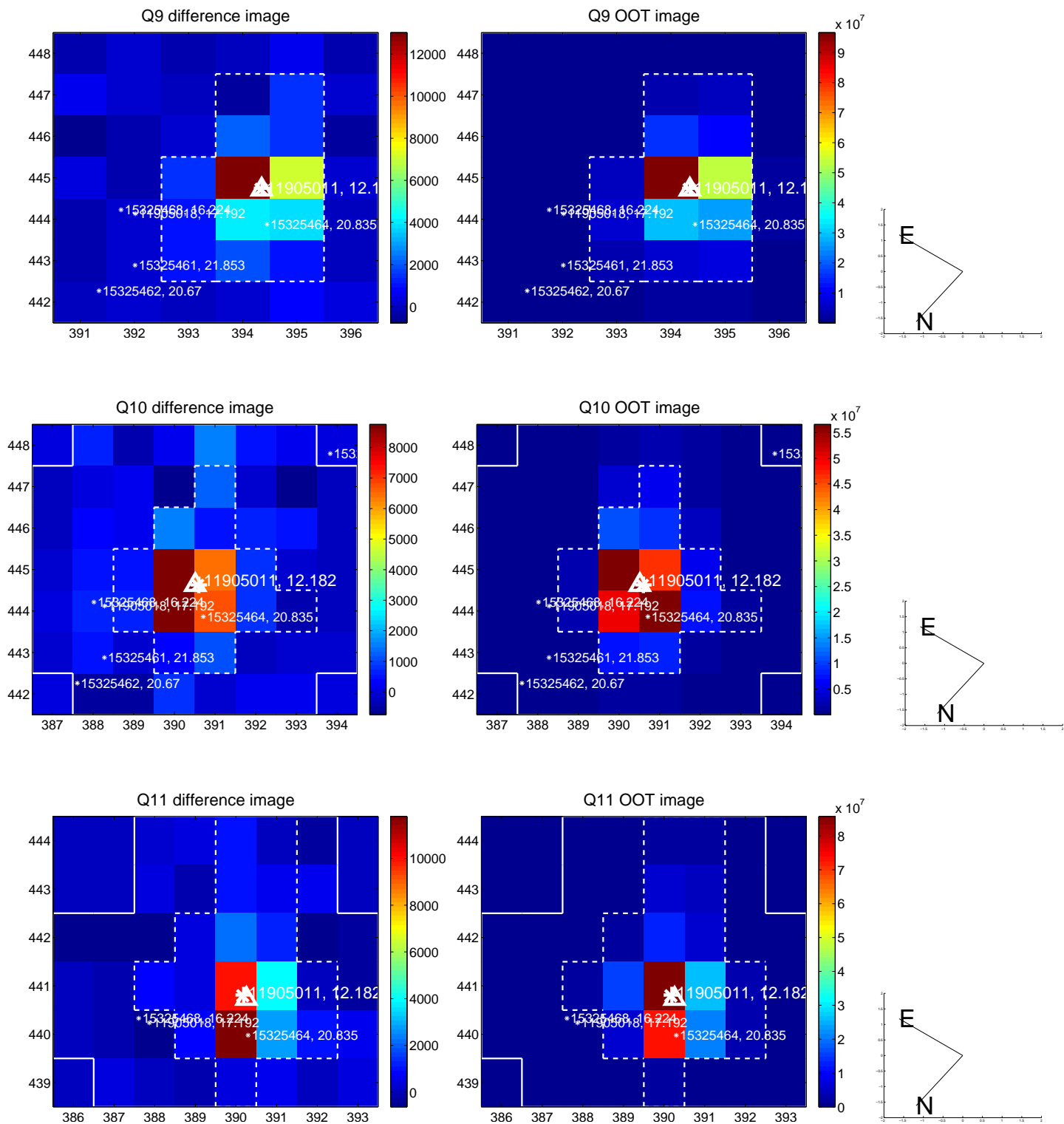
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



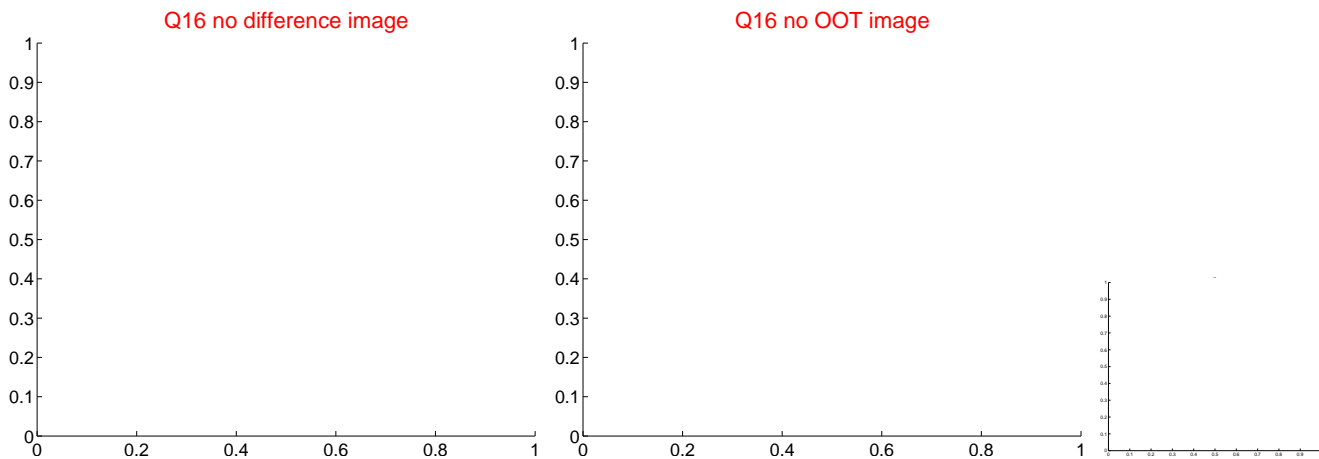
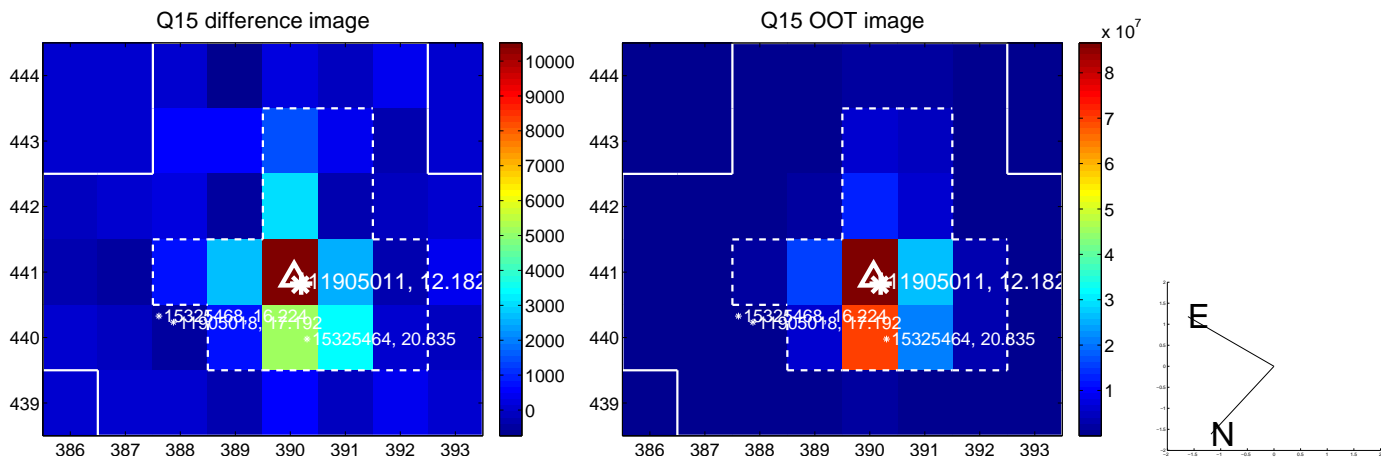
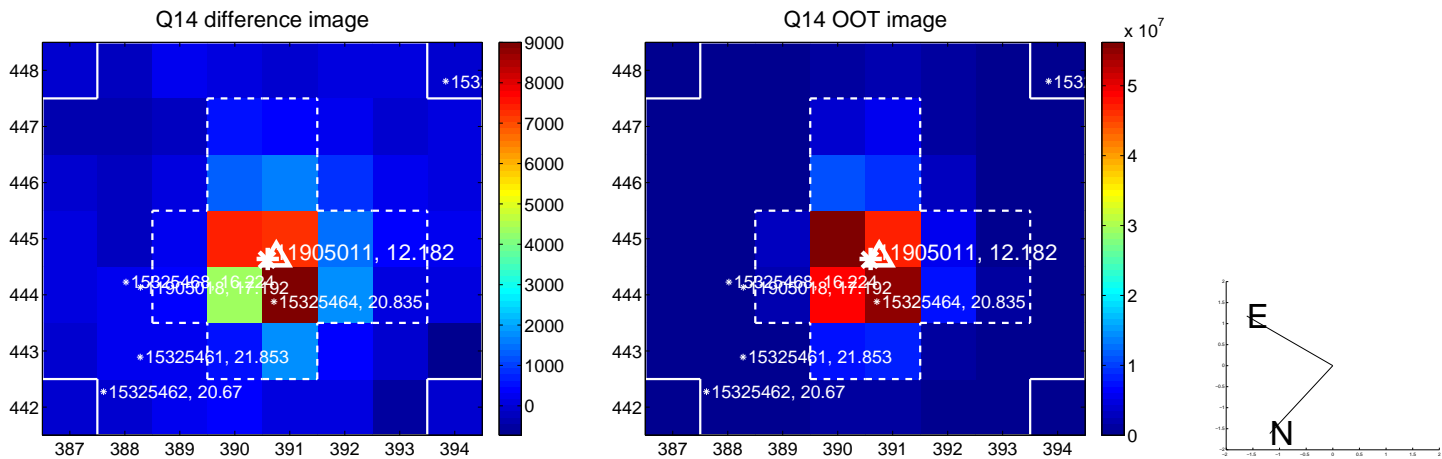
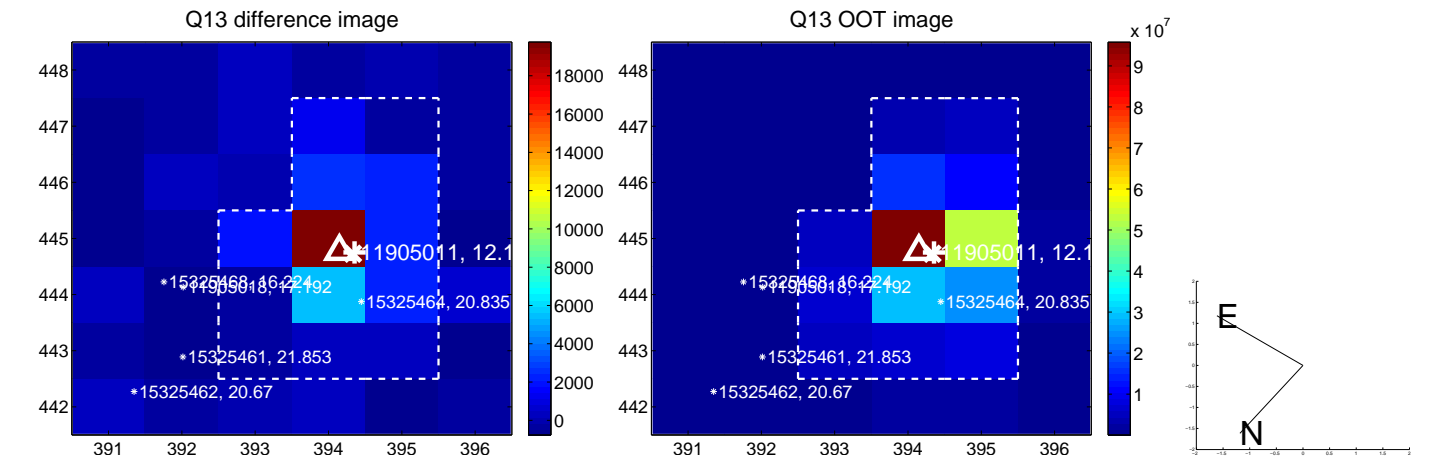
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

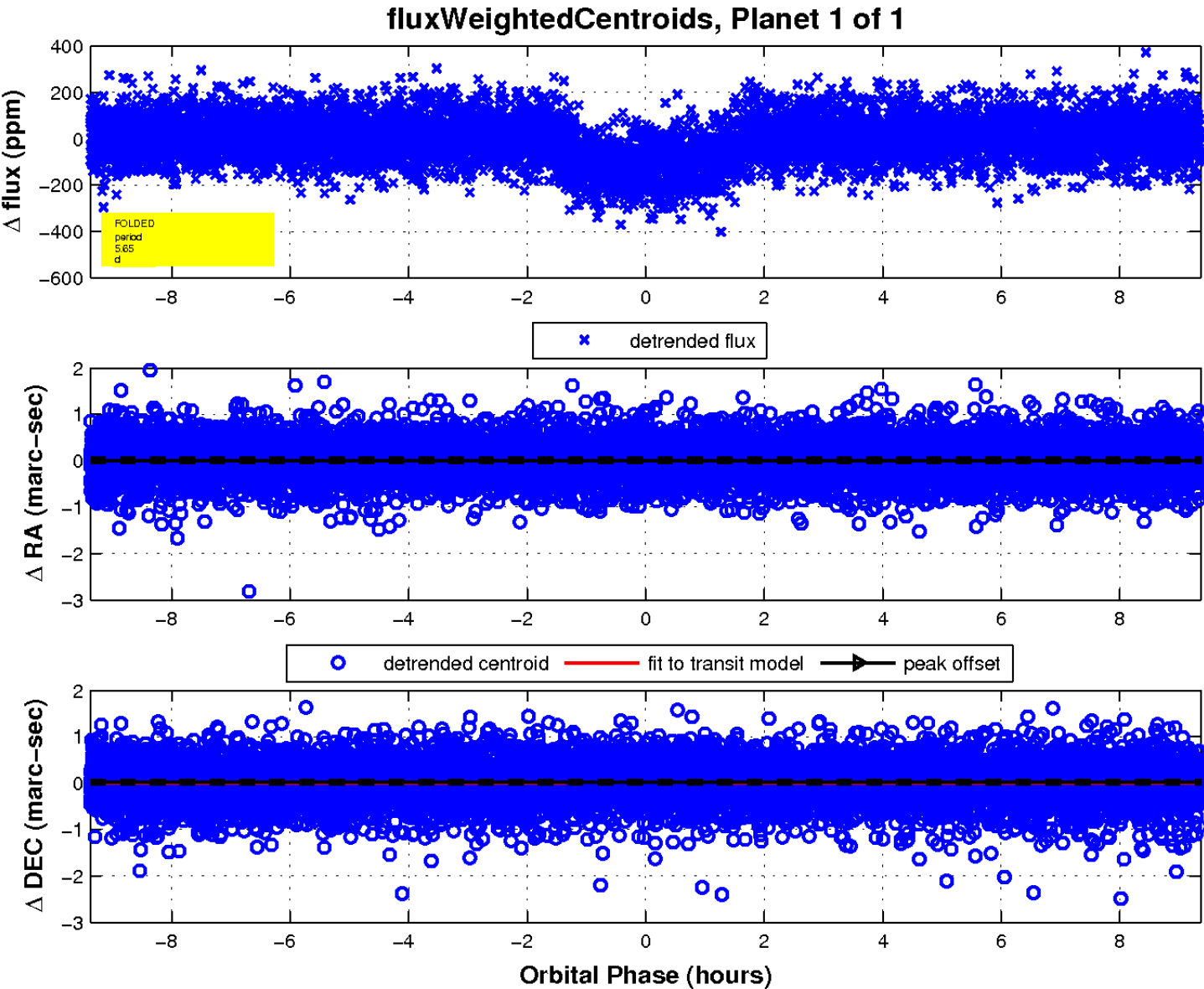
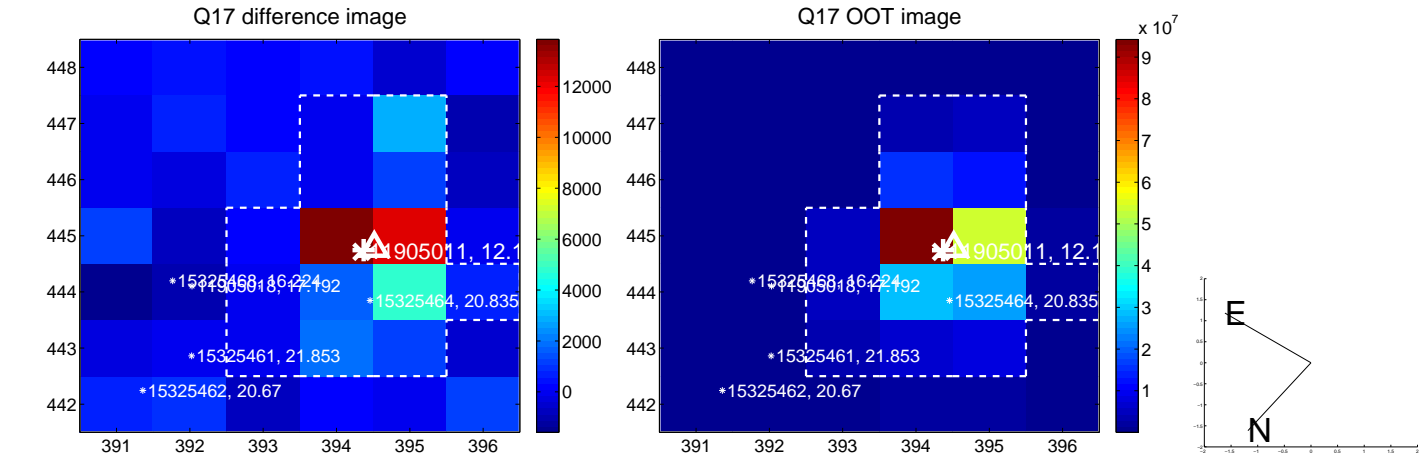


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

