

# KIC 003533483

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003533483-01 | OBS      | 8088.01 | 308.185151    | 306.212437   | 811.1       | 3.619            | 8.0 | 8.5 | 0.81                        | 5380            | 2.49                   | 0.66                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 003533483-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |

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

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

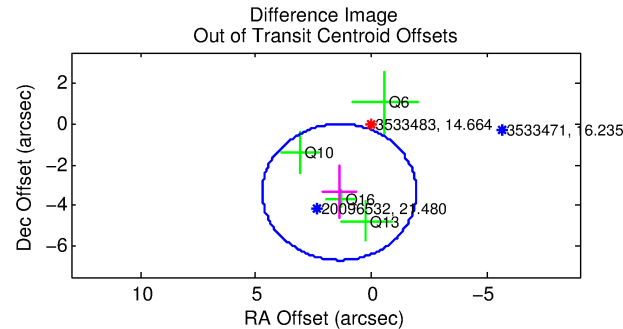
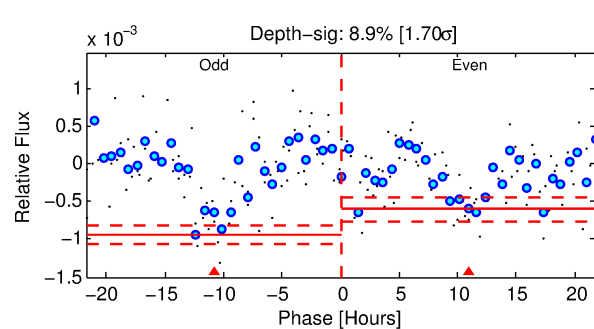
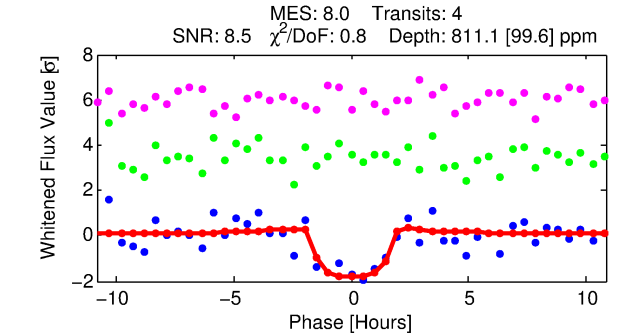
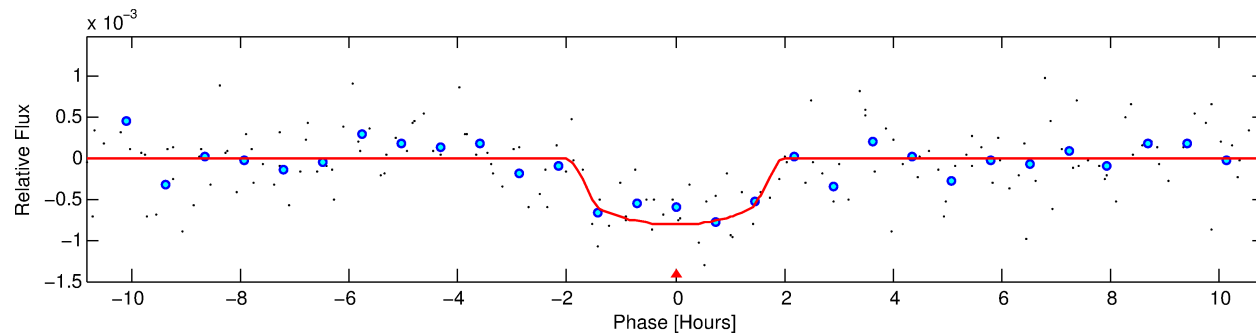
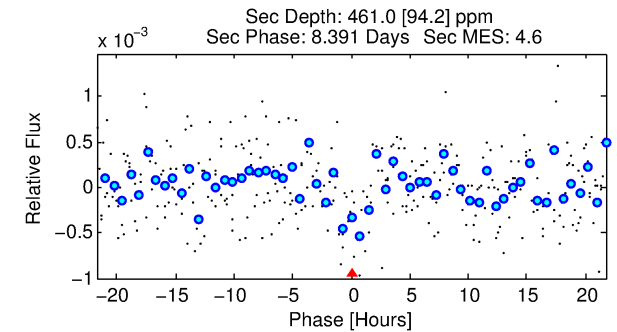
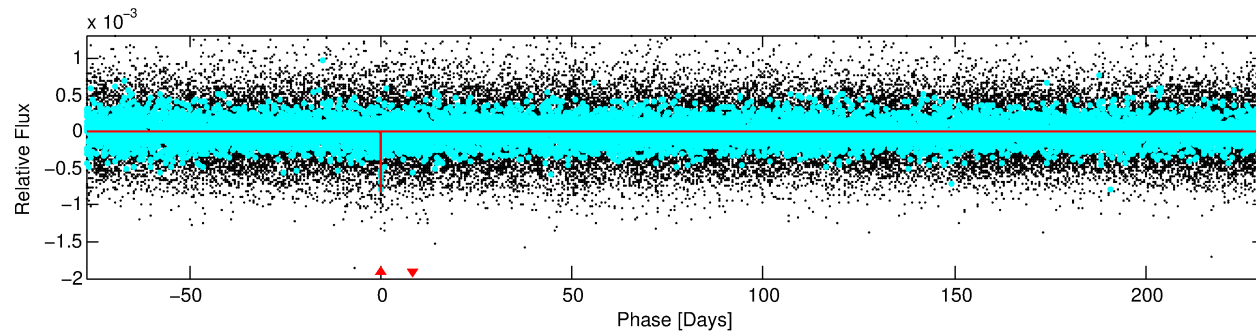
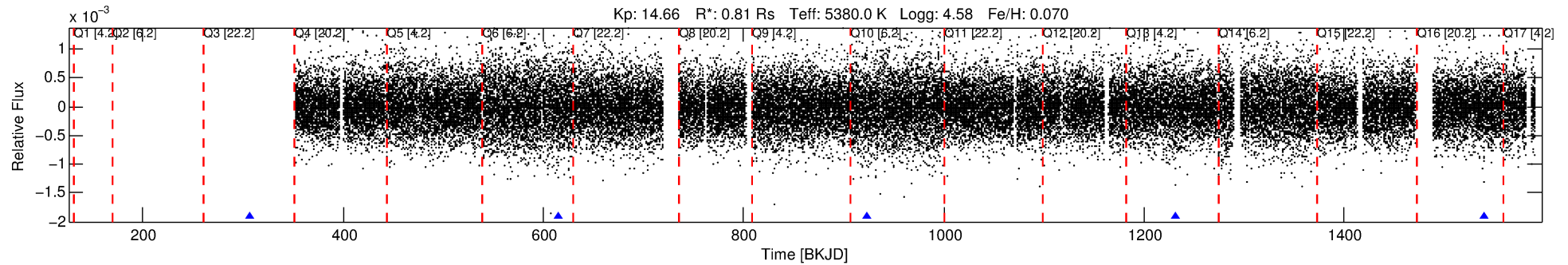
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003533483-01

No Significant Match Found

# DV One-Page Summary

KIC: 3533483 Candidate: 1 of 1 Period: 308.185 d



## DV Fit Results:

Period = 308.18515 [0.00441] d  
Epoch = 306.2124 [0.0136] BKJD  
Rp/R\* = 0.0281 [0.0459]  
a/R\* = 474.91 [2972.85]  
b = 0.72 [4.20]  
Seff = 0.66 [0.19]  
Teq = 230 [17] K  
Rp = 2.49 [4.11] Re  
a = 0.8682 [0.1539] AU  
Ag = 30738.81 [100990.37] [0.30 $\sigma$ ]  
Teff = 4702 [3853] K [1.16 $\sigma$ ]

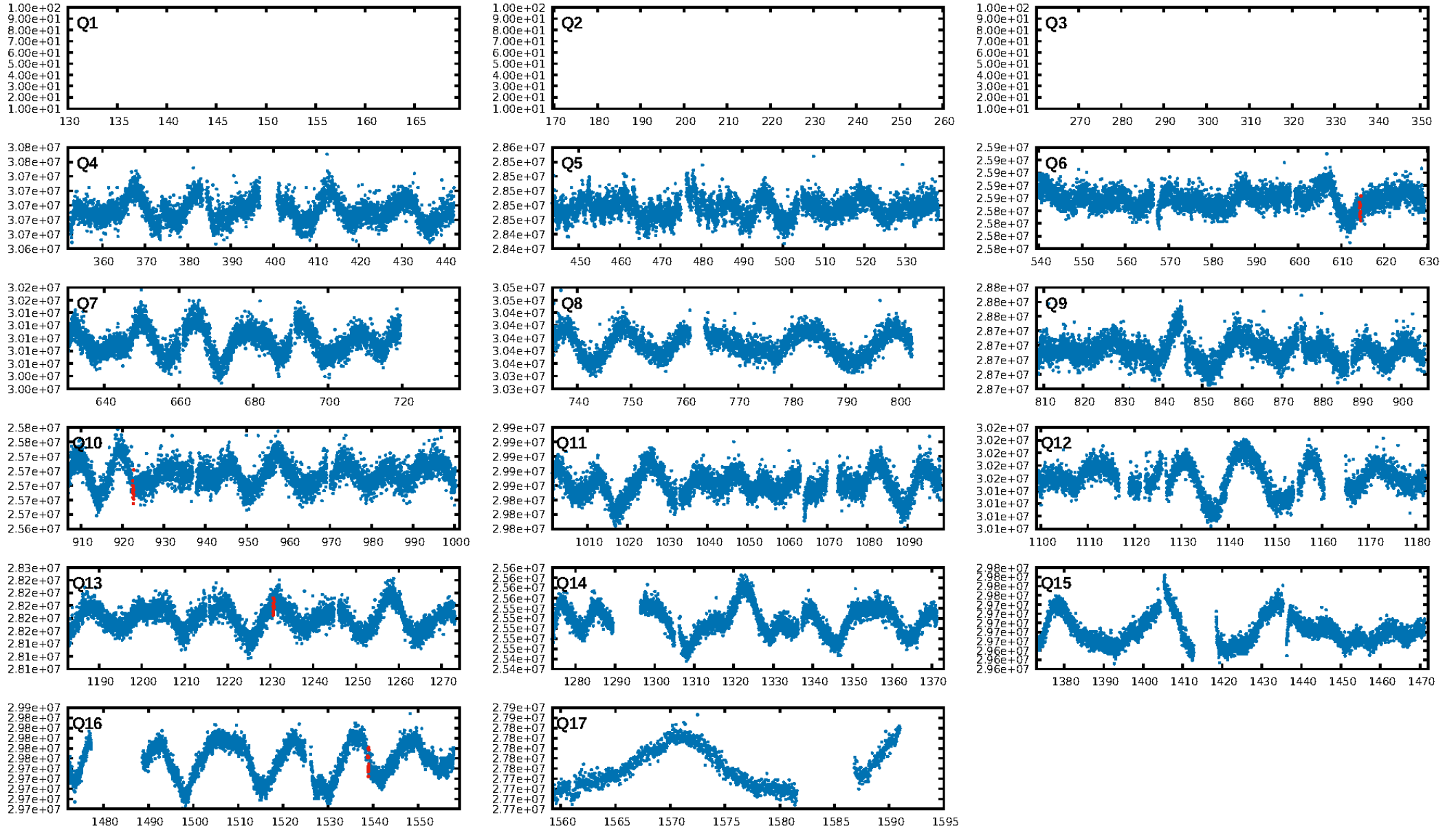
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 39.7%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 6.69e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -3.999  
Centroid-sig: 0.3%  
Centroid-so: 1.964 arcsec [1.53 $\sigma$ ]  
OotOffset-rm: 3.625 arcsec [3.26 $\sigma$ ]  
KicOffset-rm: 3.331 arcsec [3.01 $\sigma$ ]  
OotOffset-st: 2/0/1/1 [4]  
KicOffset-st: 2/0/1/1 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 1.00 [4/4]

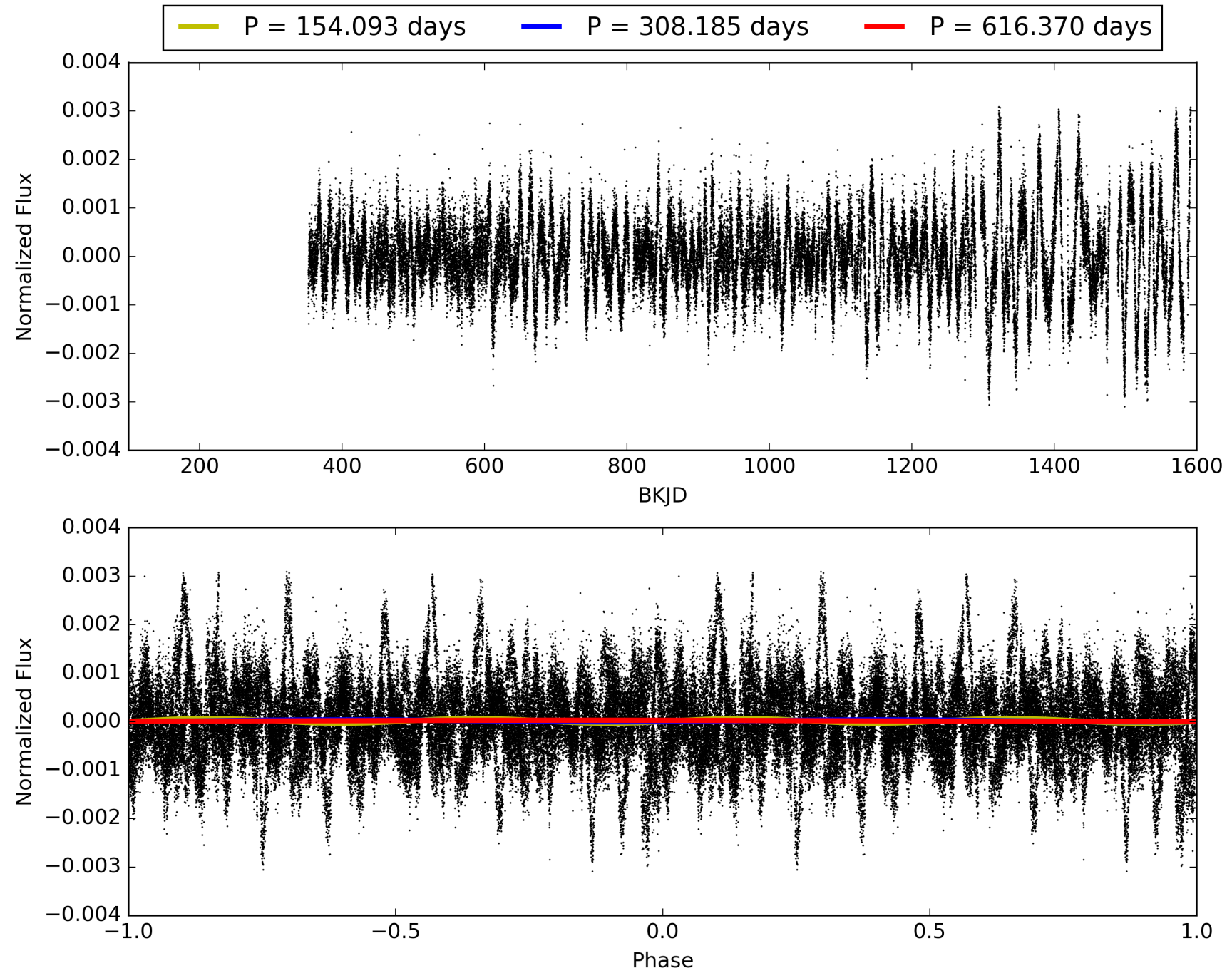
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:43:46 Z

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

# TCE 003533483-01, PDC Light Curves

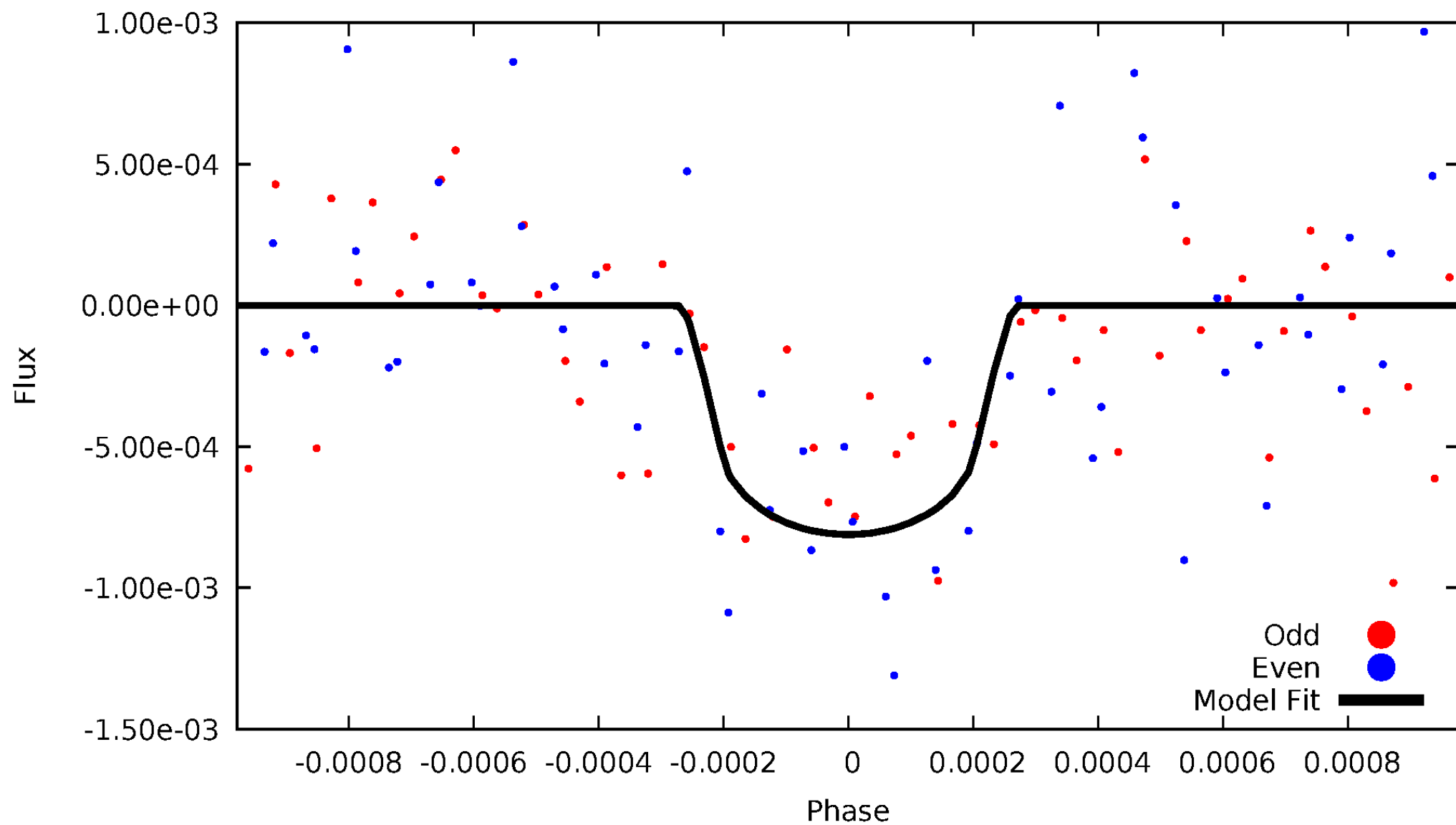


TCE 003533483-01



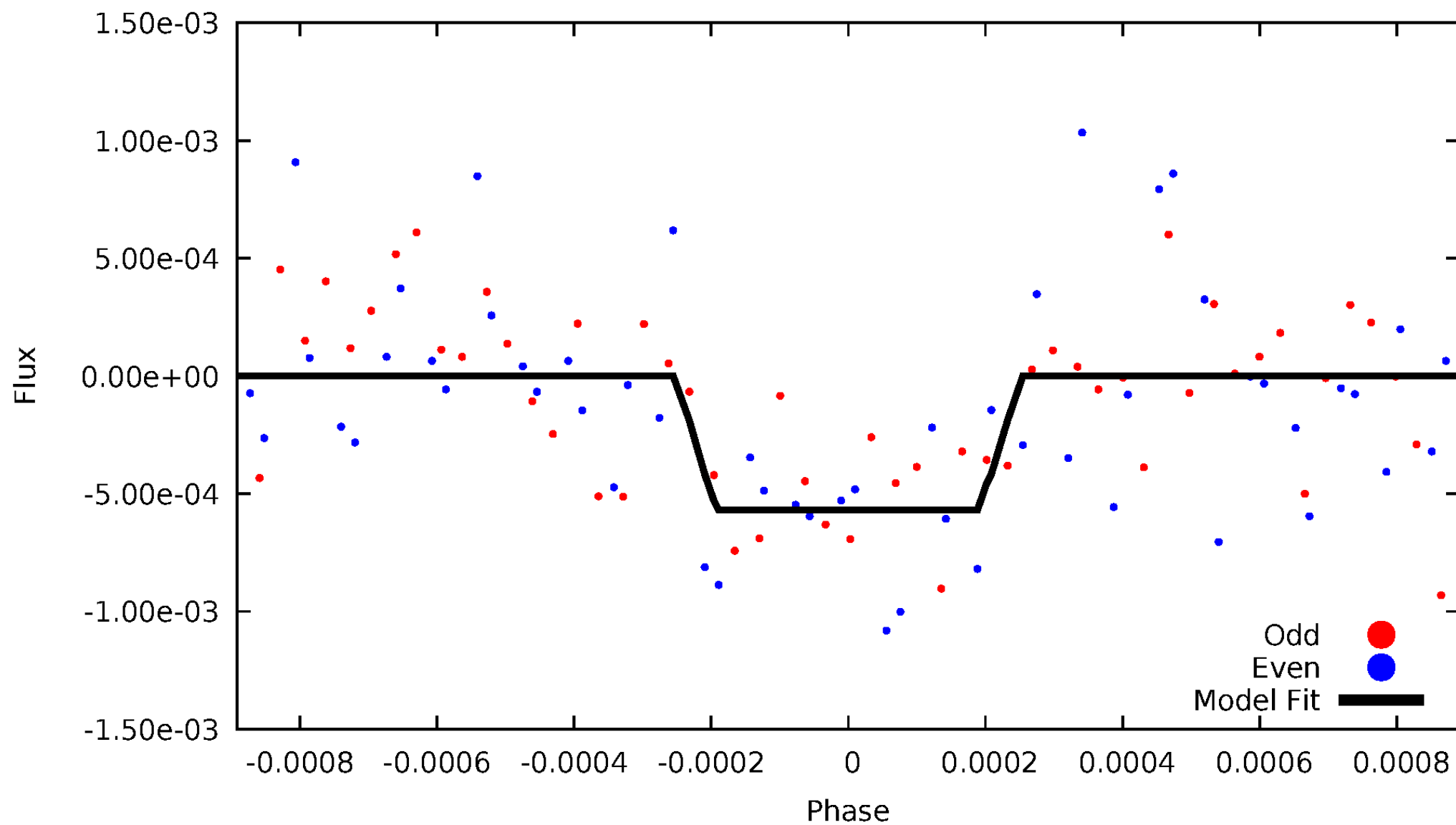
# DV Odd/Even

TCE 003533483-01



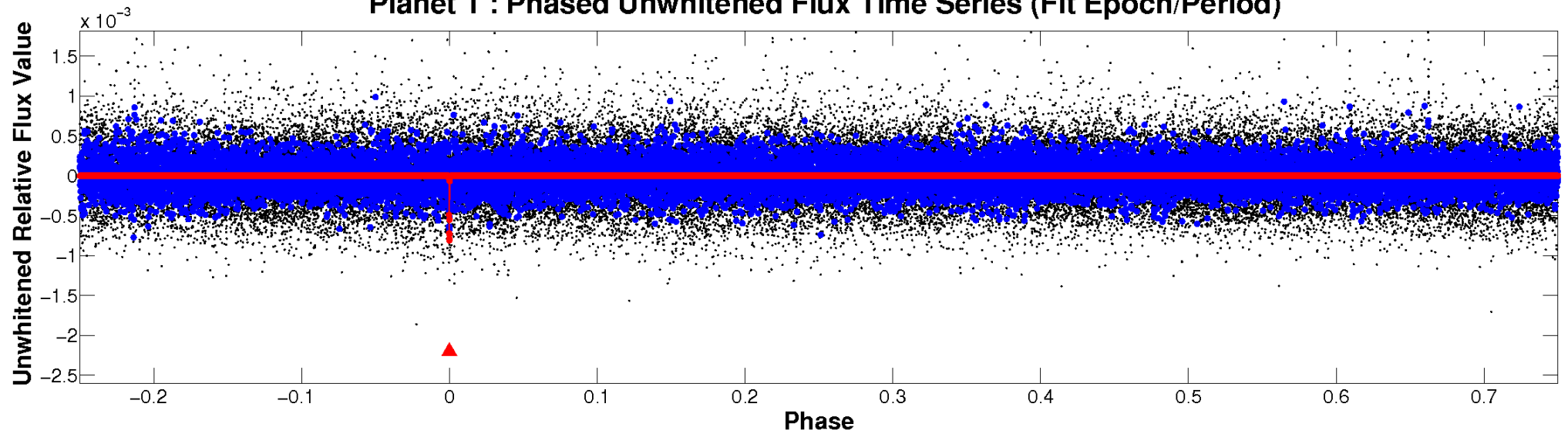
# ALT Odd/Even

TCE 003533483-01

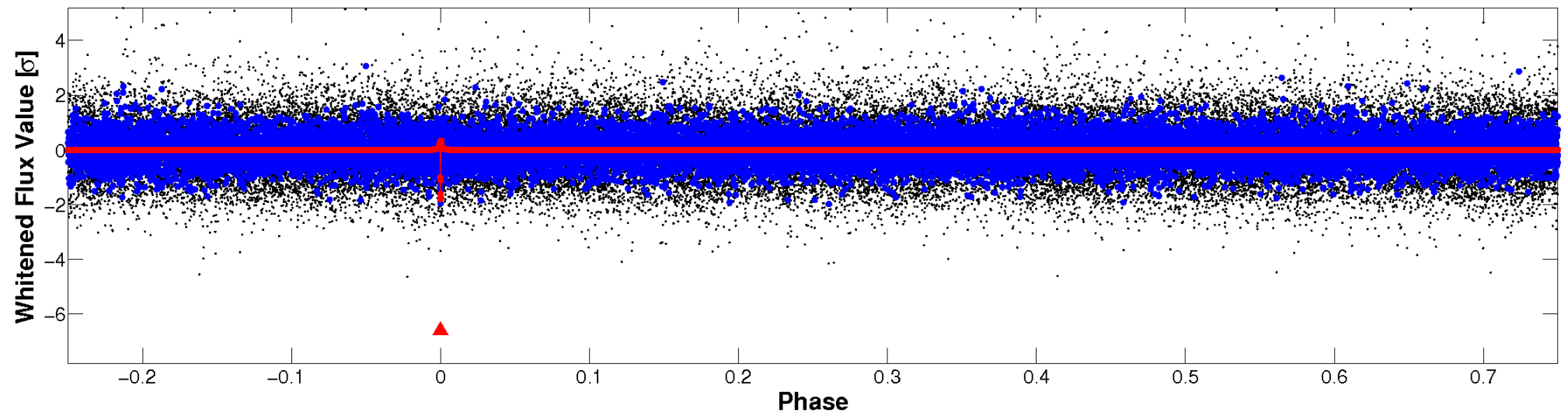


# Non-Whitened Vs. Whitened Light Curve

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

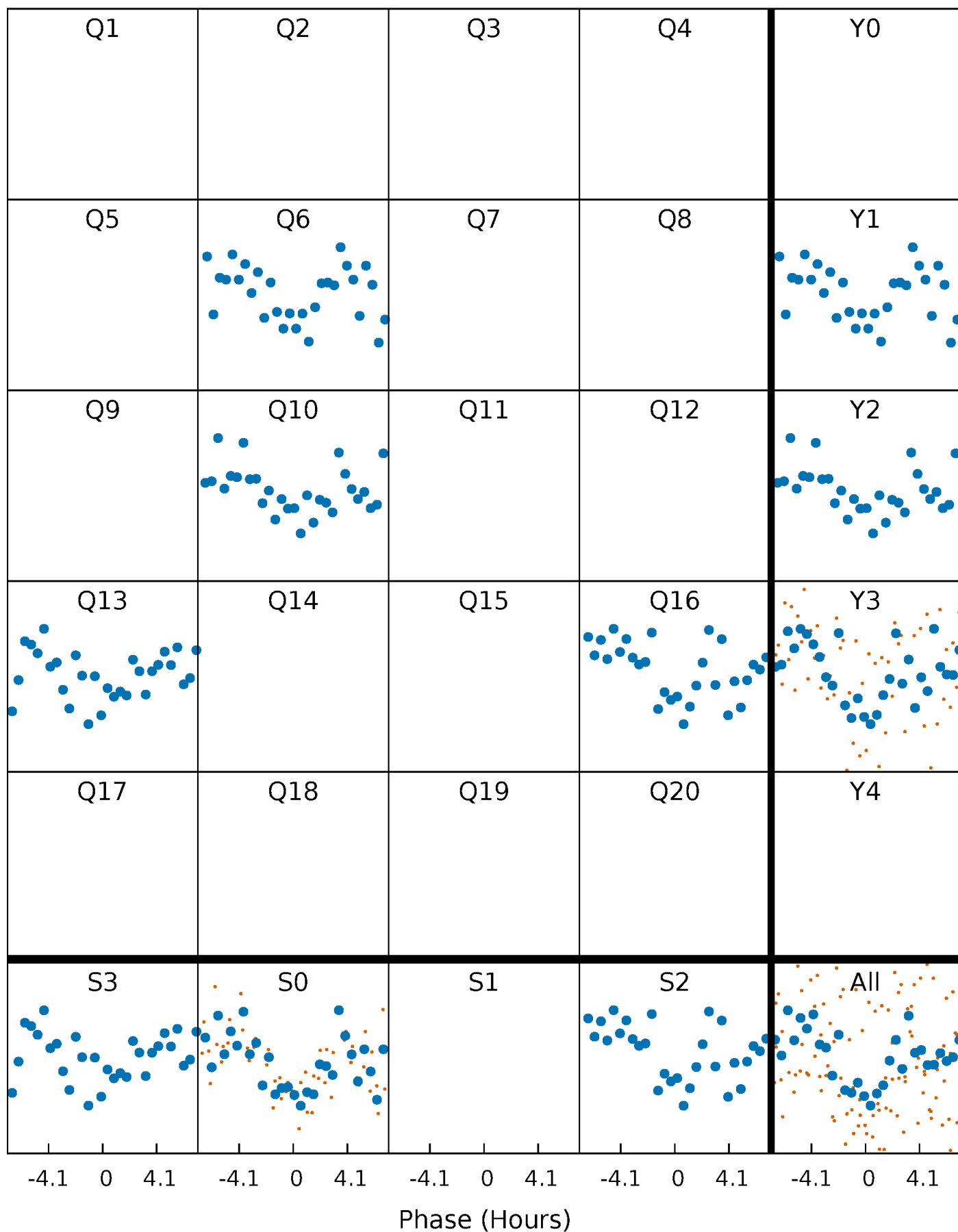


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

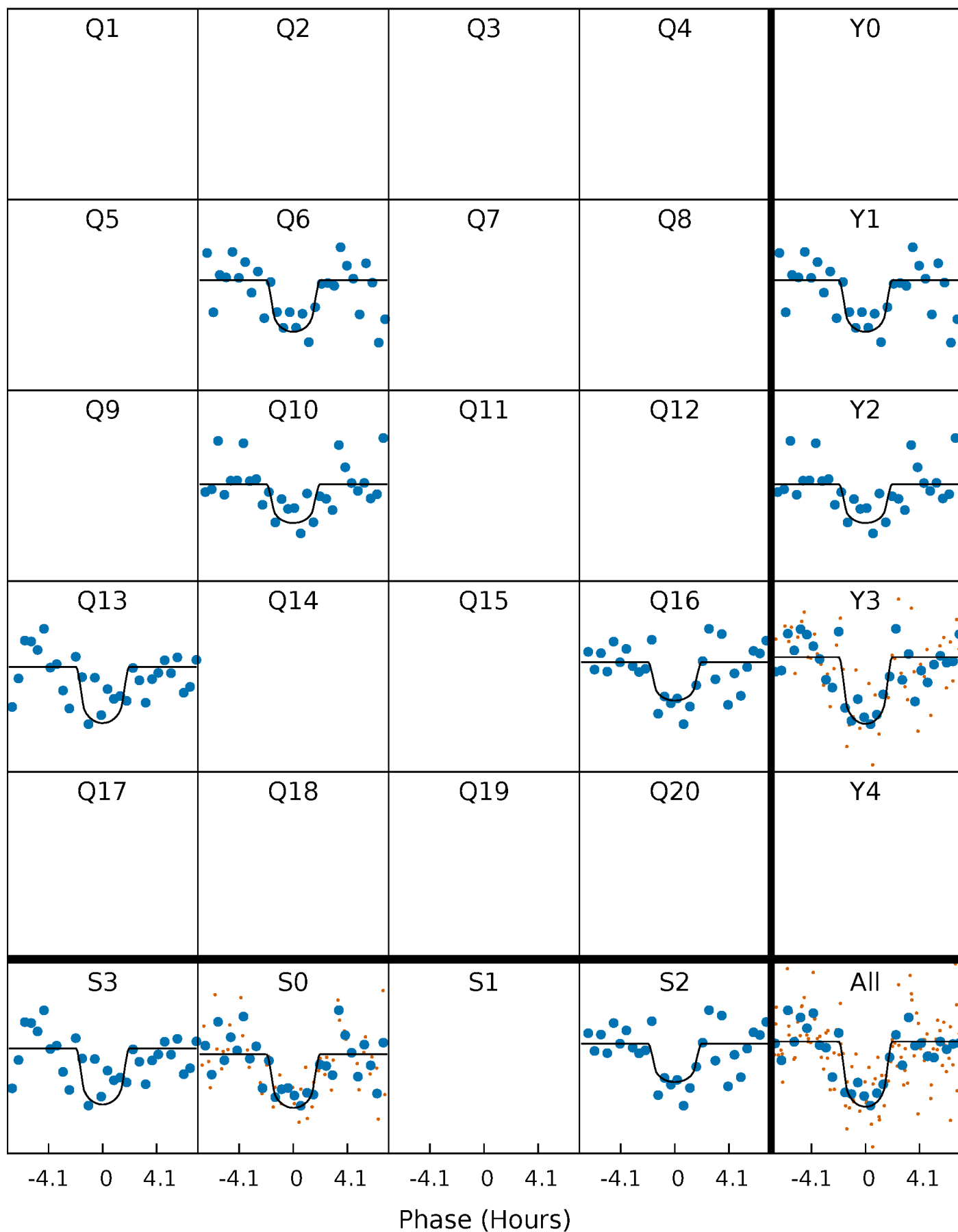
TCE 003533483-01 P=308.185151 Days  $T_0=306.212437$  (BKJD)





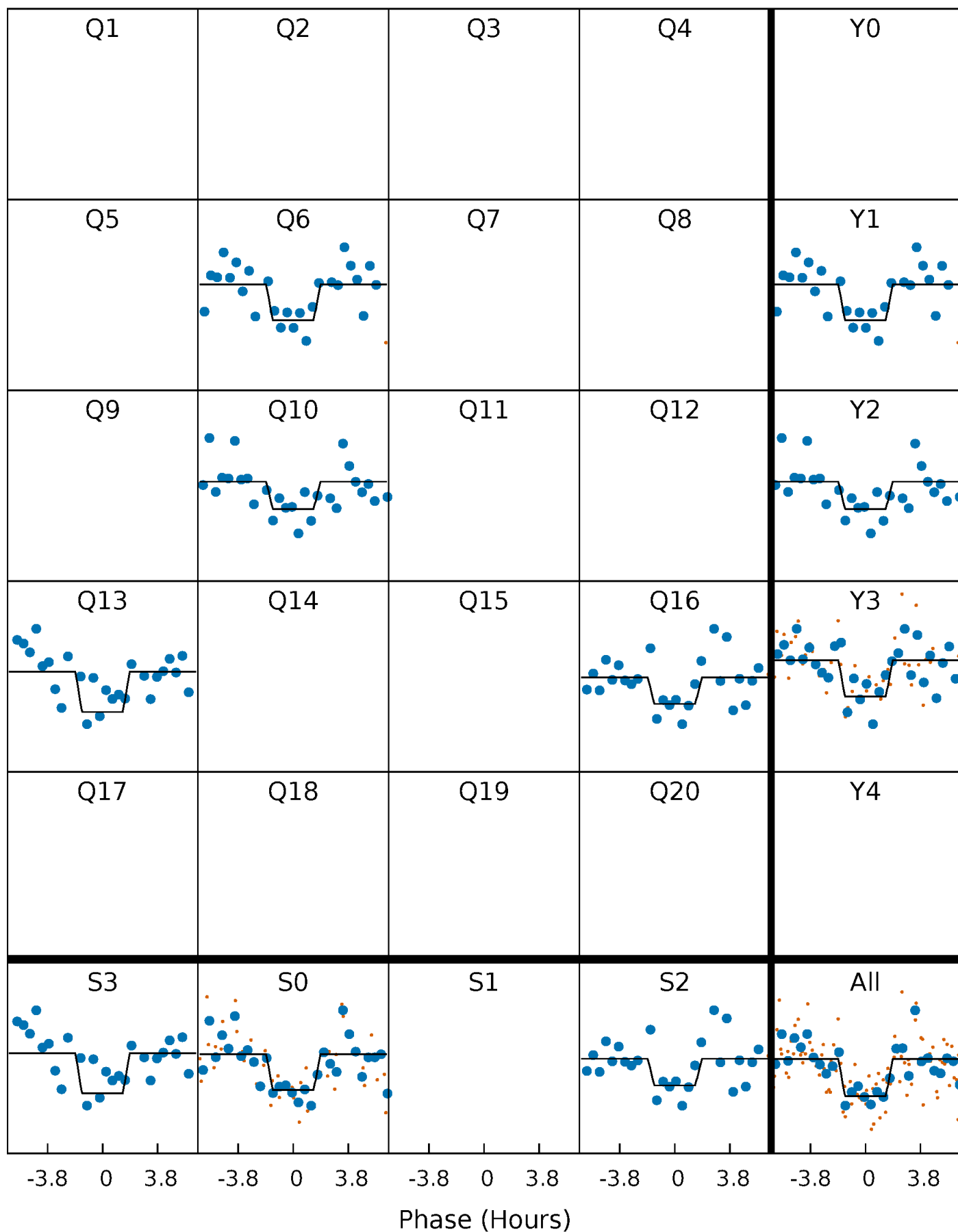
# DV Quarter-Phased Transit Curves

TCE 003533483-01 P=308.185151 Days  $T_0=306.212437$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

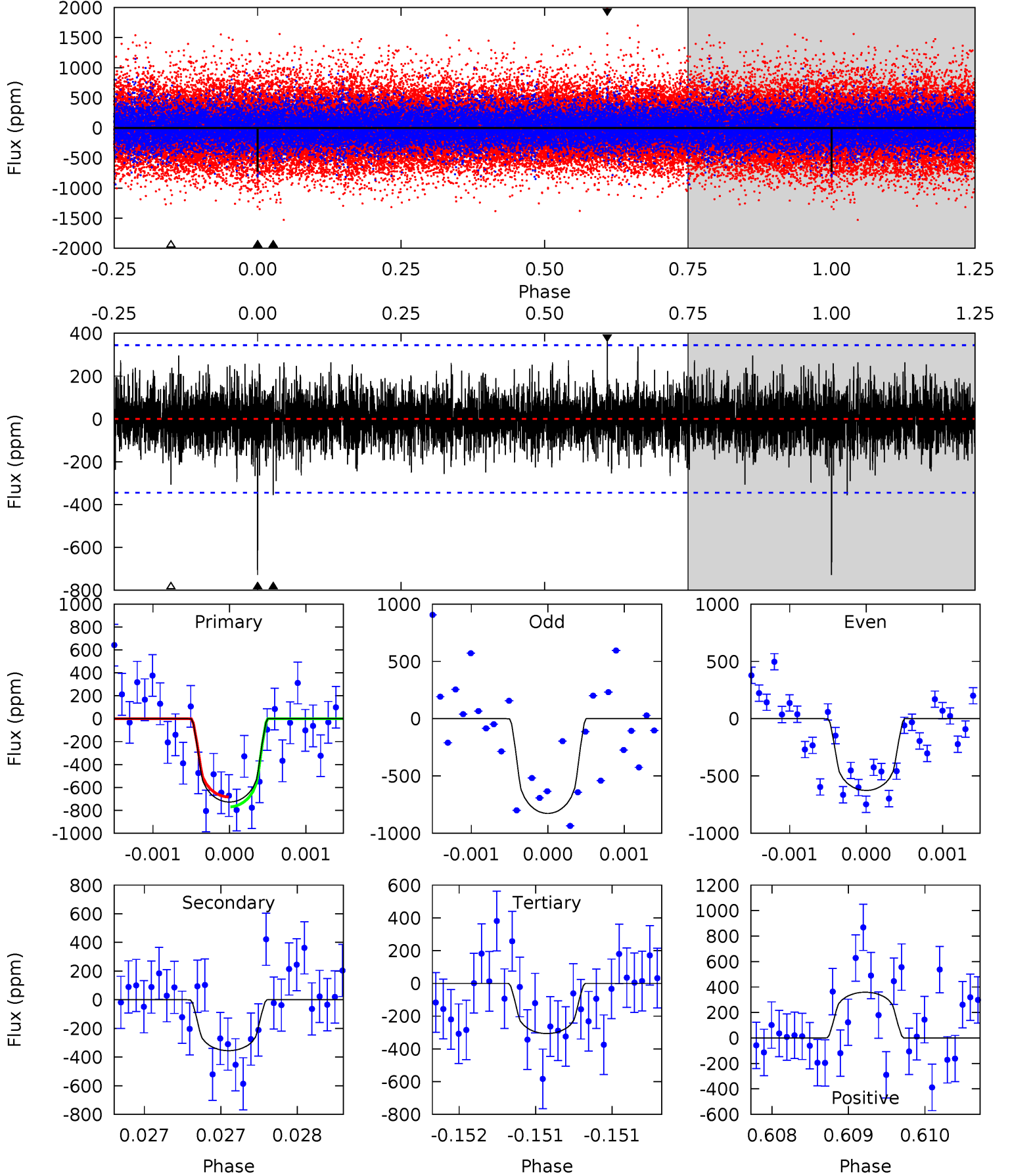
TCE 003533483-01 P=308.184067 Days  $T_0=306.215969$  (BKJD)



# DV Model-Shift Uniqueness Test

003533483-01, P = 308.185151 Days, E = 306.212437 Days

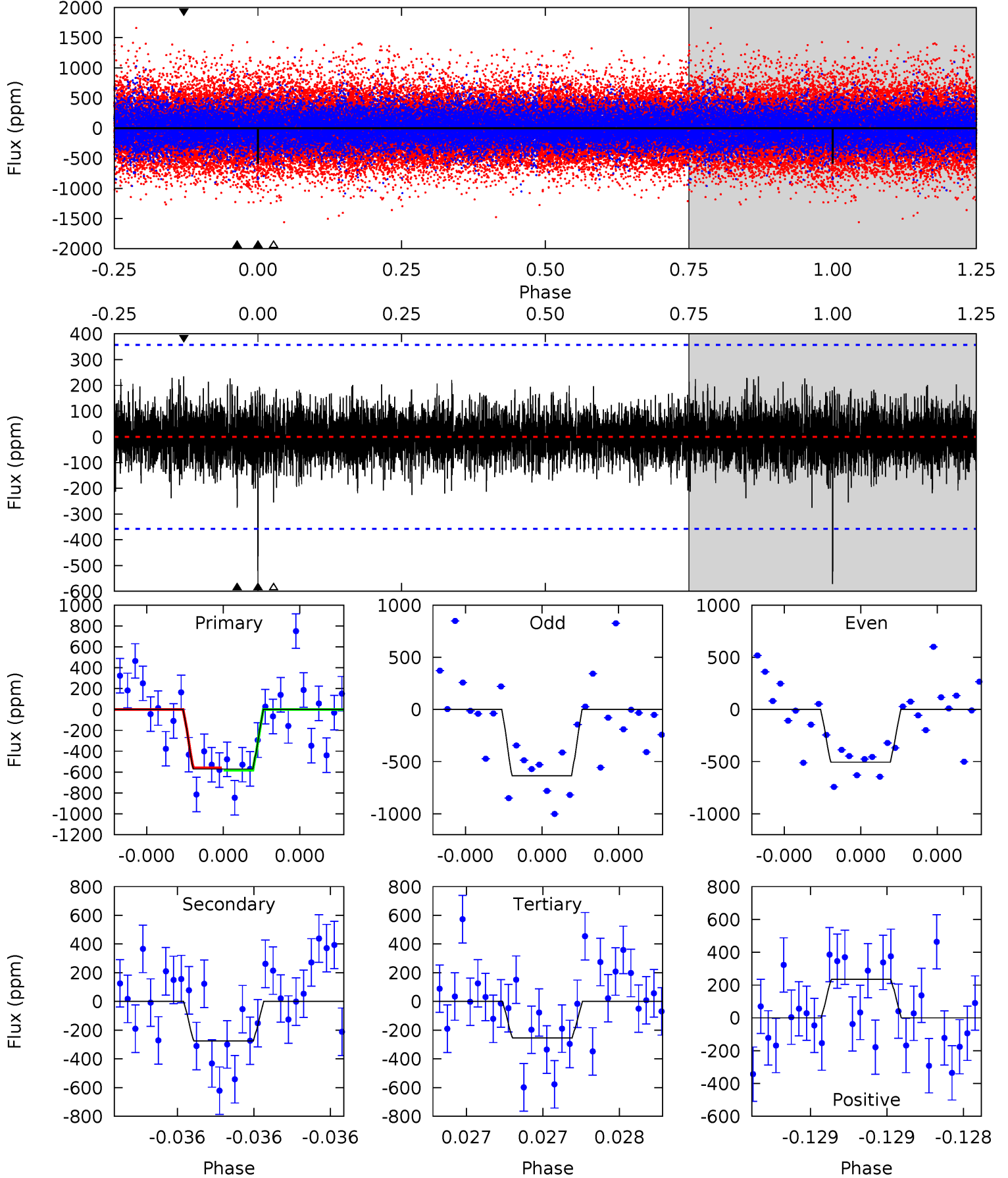
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.7 | 5.73 | 4.94 | 5.80 | 5.56            | 3.46            | 1.32             | 6.79    | 5.94    | 0.79    | -0.06   | 1.62    | 1.06 | 0.33  | 0.69 |



# Alt Model-Shift Uniqueness Test

003533483-01, P = 308.184067 Days, E = 306.215969 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.91 | 4.30 | 3.98 | 3.66 | 5.58            | 3.49            | 1.01             | 4.93    | 5.25    | 0.32    | 0.64    | 1.01    | 0.93 | 0.29  | 0.19 |



### Stellar Parameters For KIC 003533483

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$    | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $5380^{+187}_{-187}$ | $4.581^{+0.025}_{-0.144}$ | $0.070^{+0.250}_{-0.300}$ | $0.813^{+0.169}_{-0.068}$ | $0.924^{+0.063}_{-0.108}$ | $2.425^{+0.422}_{-0.972}$                 |
|        | +3%/-3%              | +1%/-3%                   | +357%/-429%               | +21%/-8%                  | +7%/-12%                  | +17%/-40%                                 |
| 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 003533483-01 / KOI 8088.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$        |
|---------|---------------|------------------------|----------------------|-----------------------|-------------------------|
| DV      | $-355 \pm 62$ | $4.12^{+3.55}_{-2.70}$ | $327^{+17}_{-14}$    | $3826^{+2172}_{-710}$ | $8646^{+66288}_{-6325}$ |
| Alt.    | $-275 \pm 64$ | $4.08^{+3.48}_{-2.91}$ | $329^{+18}_{-14}$    | $3727^{+2349}_{-703}$ | $6752^{+72237}_{-4945}$ |

$T_{\text{max}}$  = 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

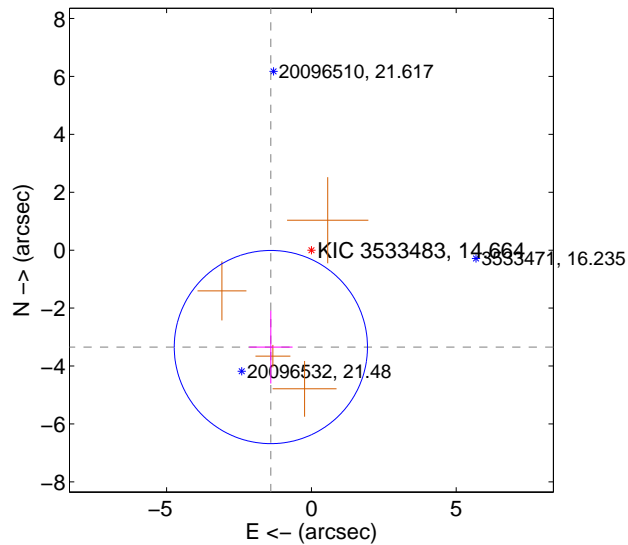
Supplemental centroid analysis for 003533483-01. Kepler magnitude: 14.66. Transit SNR 8.48

There are 0 quarters with good PRF difference image offsets

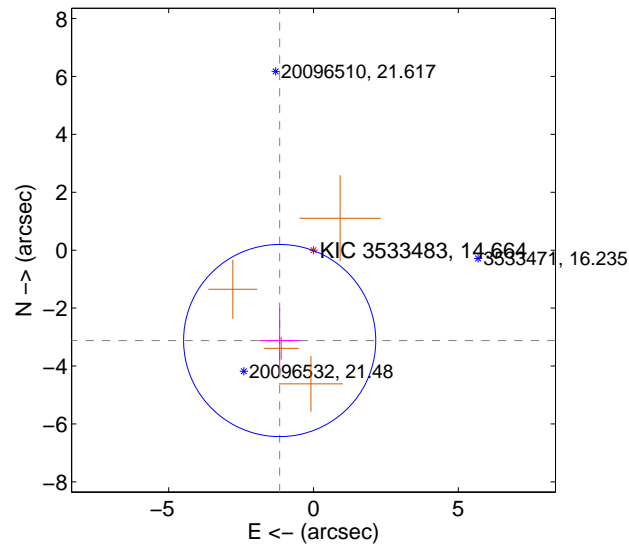
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $3.625 \pm 1.111$  | 3.26                | $1.399 \pm 0.748$ | $-3.344 \pm 1.257$ |
| PRF-fit source offset from KIC position | $3.331 \pm 1.105$  | 3.01                | $1.168 \pm 0.710$ | $-3.119 \pm 1.118$ |
| photometric centroid source offset      | $1.96 \pm 1.28$    | 1.53                | $-1.50 \pm 1.21$  | $-1.27 \pm 1.37$   |

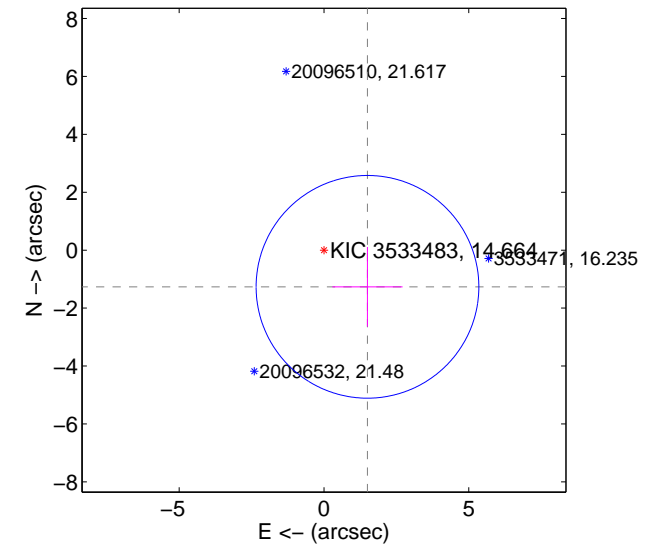
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

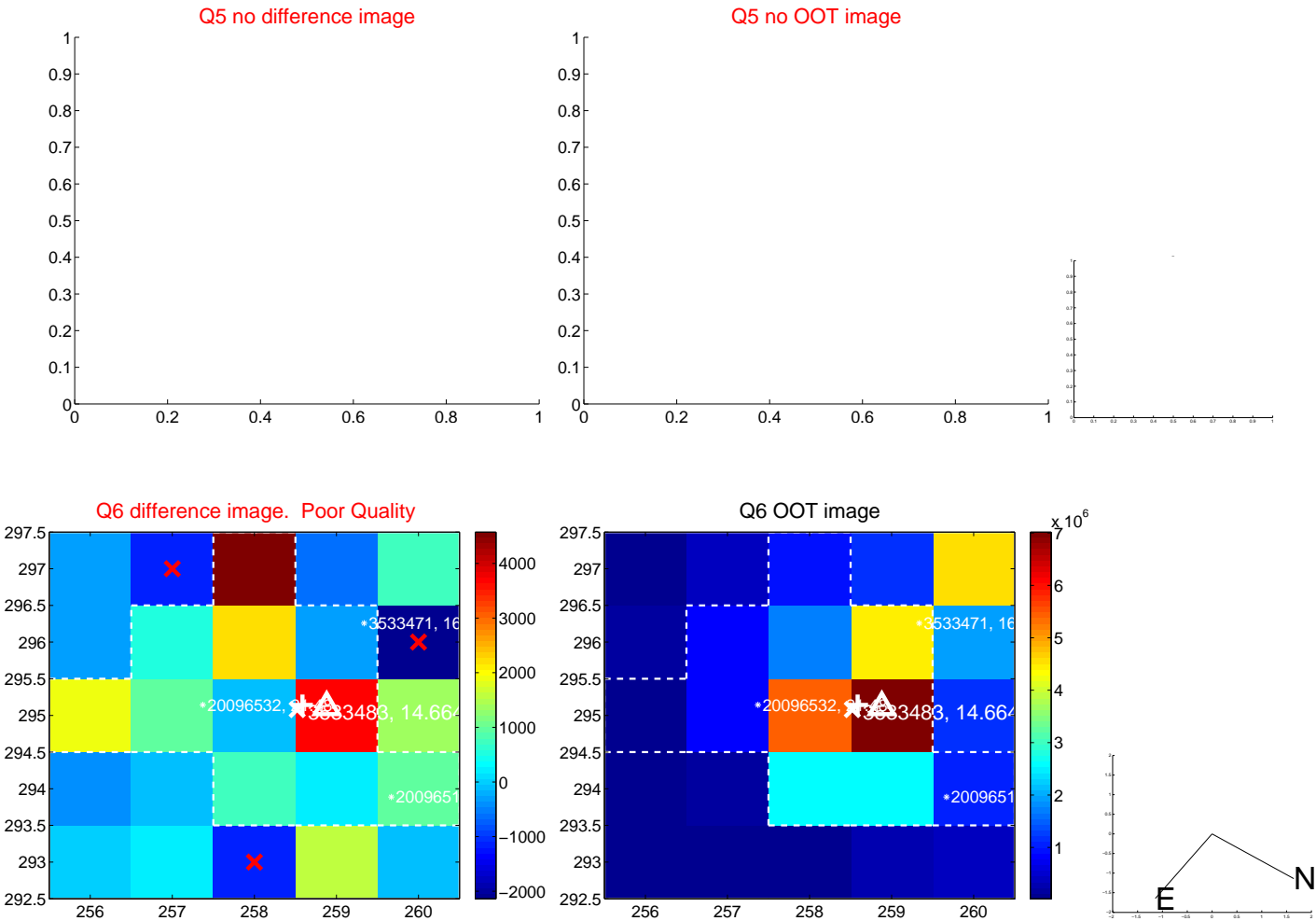


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

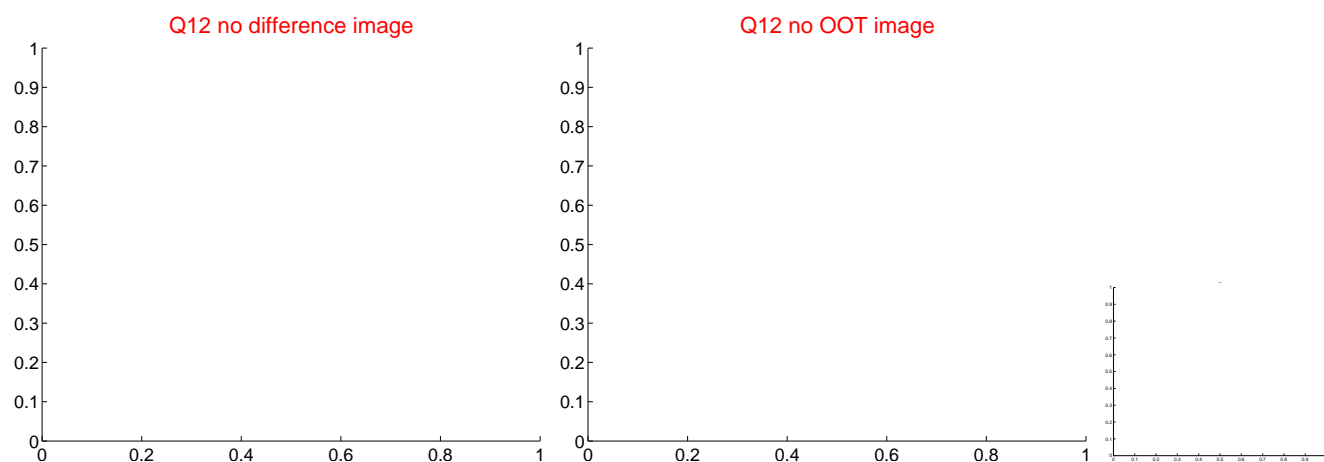
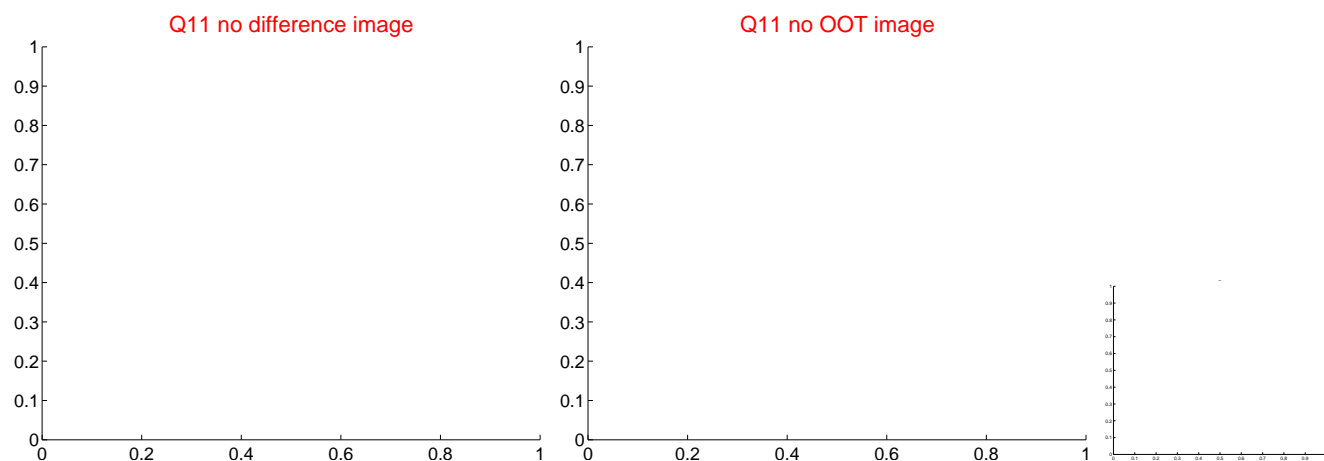
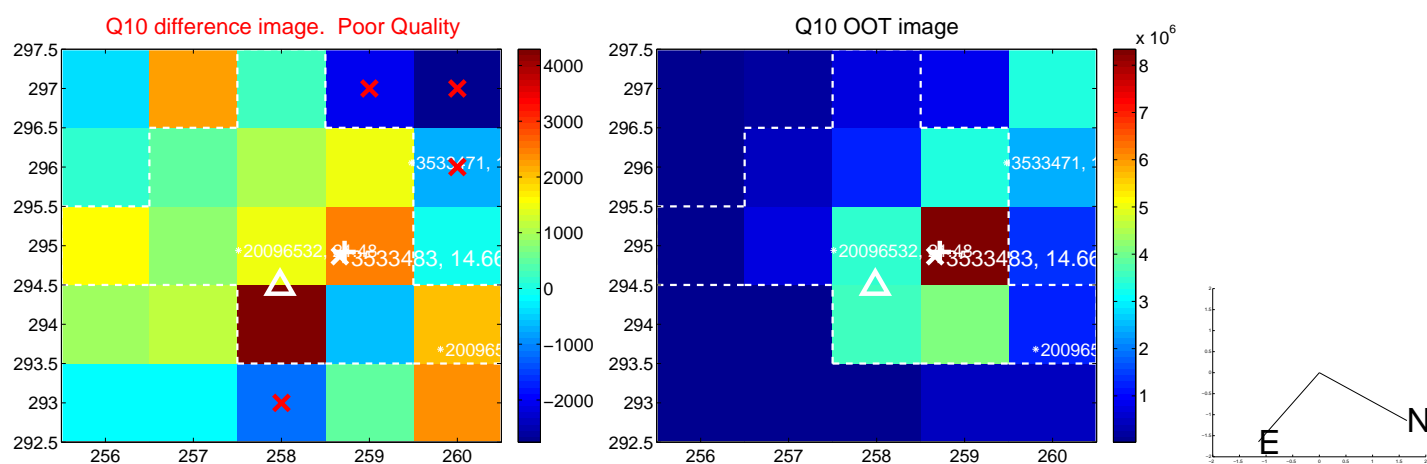
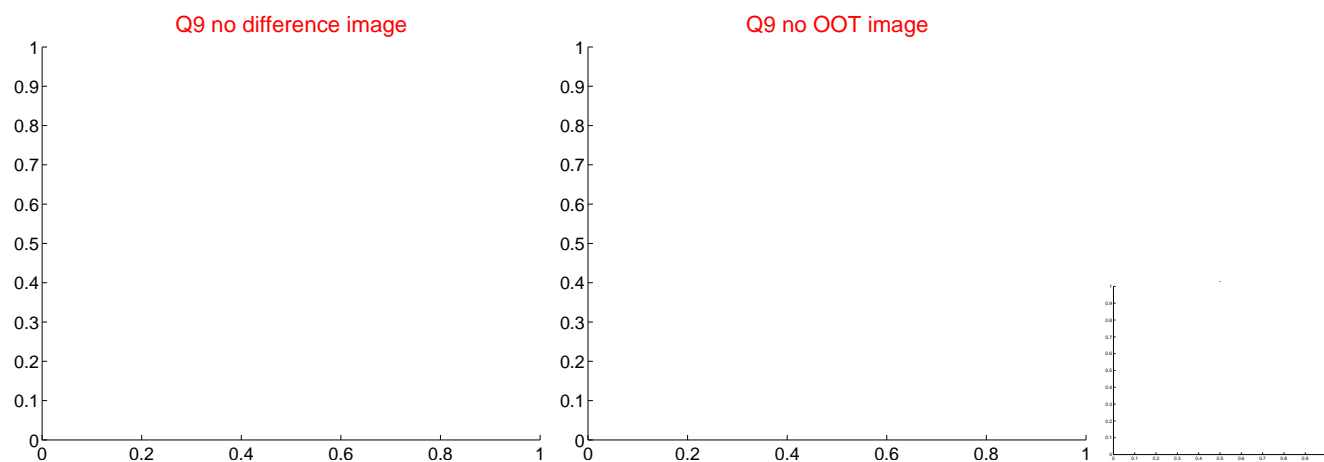


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

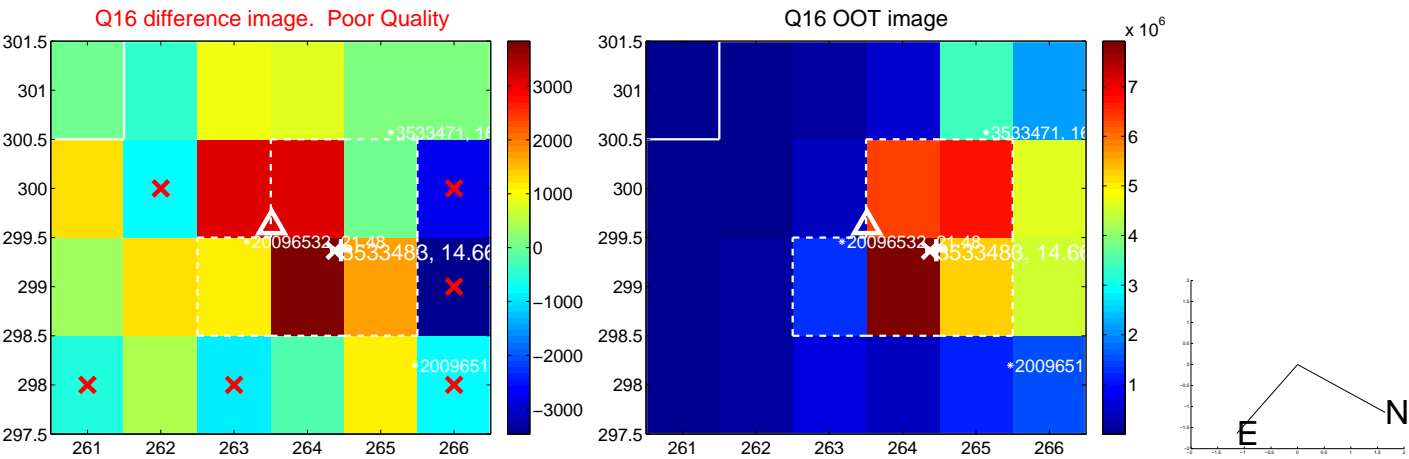
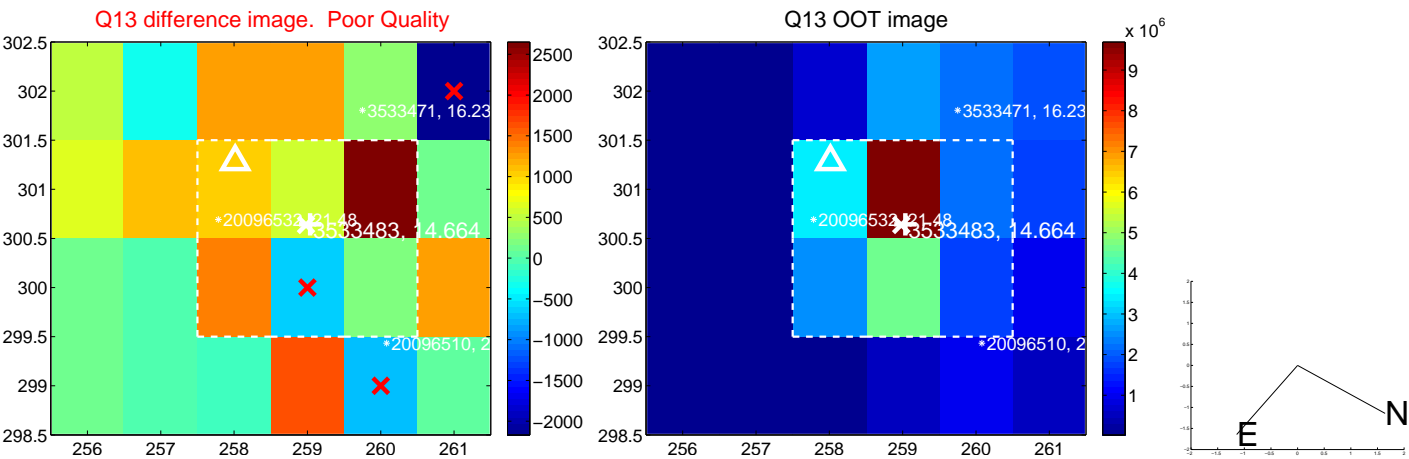




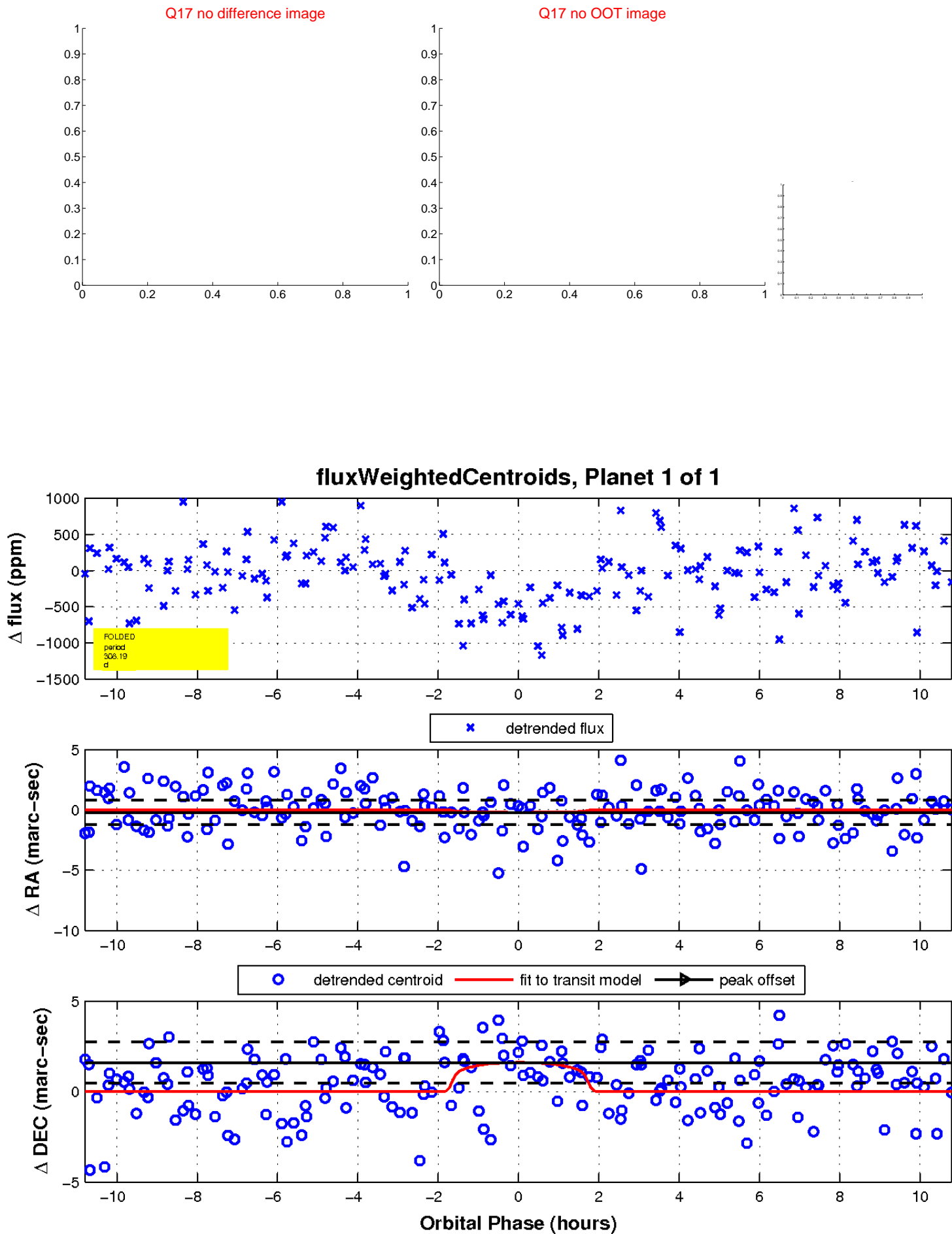
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

