

# KIC 003866008

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 003866008-01 | OBS      | No   | 366.585143    | 140.560223   | 991.0       | 6.486            | 7.2 | 5.7 | 15.43                       | 5031            | 48.84                  | 74.29                  |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                              |
|--------------|----------|------|-------|---|---|---|---|---------------------------------------|
| 003866008-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES—INCONSISTENT_TRANS |

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

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

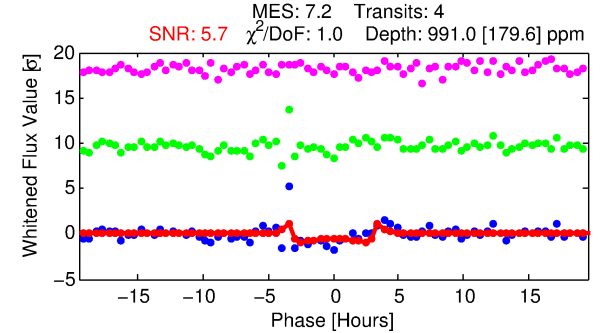
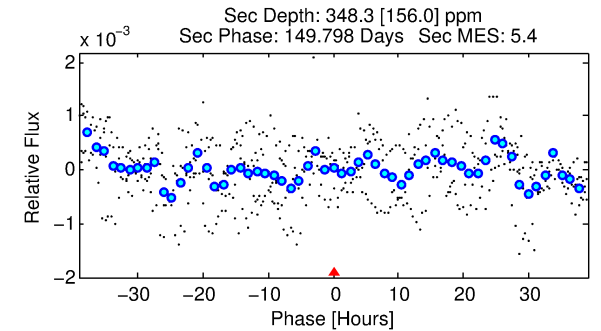
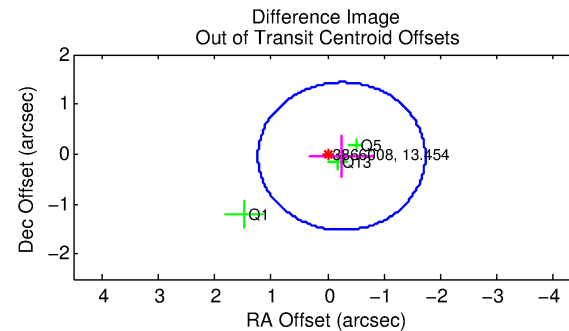
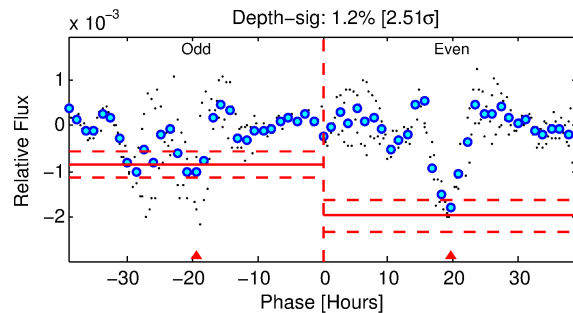
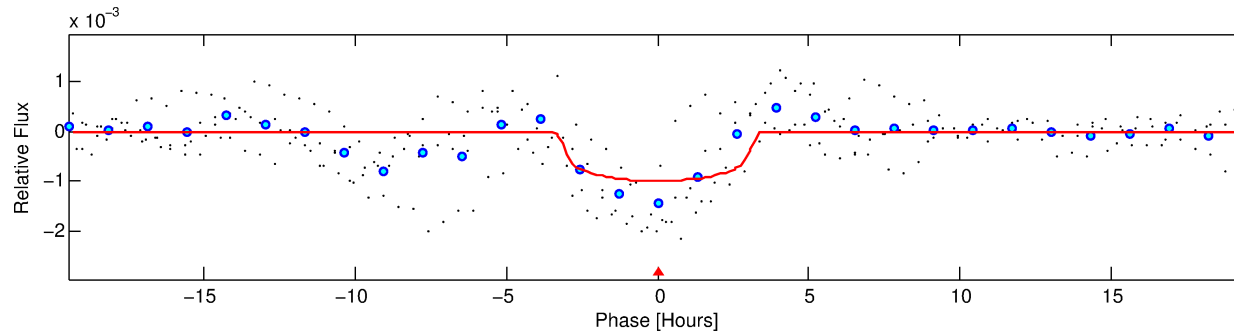
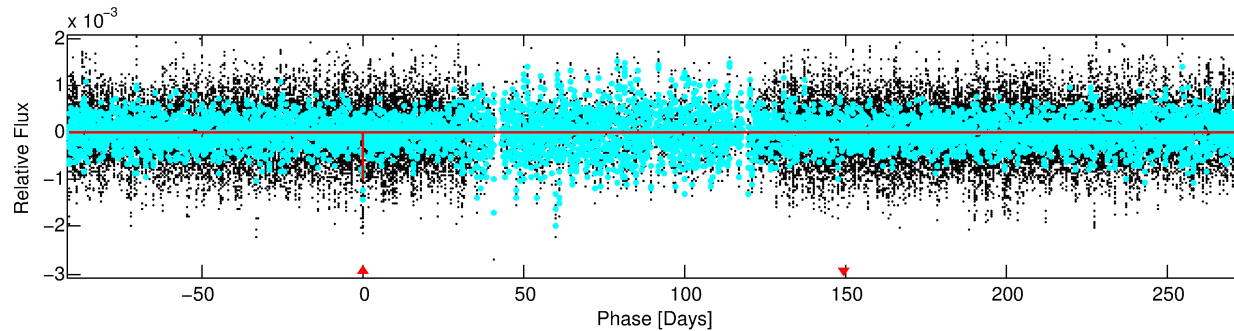
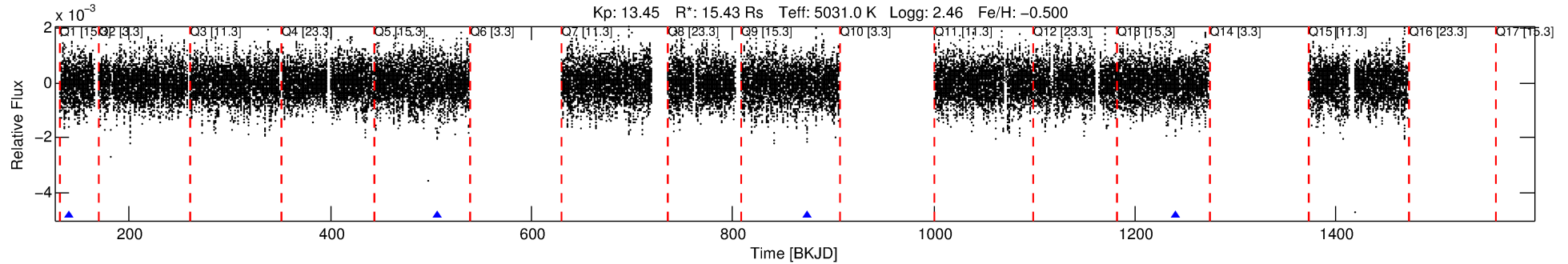
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003866008-01

No Significant Match Found

# DV One-Page Summary

KIC: 3866008 Candidate: 1 of 1 Period: 366.585 d



## DV Fit Results:

Period = 366.58514 [0.00343] d  
Epoch = 140.5602 [0.0057] BKJD  
Rp/R\* = 0.0290 [0.0185]  
a/R\* = 401.11 [947.50]  
b = 0.44 [4.34]  
Seff = 74.29 [21.59]  
Teq = 749 [54] K  
Rp = 48.84 [35.14] Re  
a = 1.3566 [0.3006] AU  
Ag = 147.87 [203.10] [0.72 $\sigma$ ]  
Teff = 4036 [1379] K [2.38 $\sigma$ ]

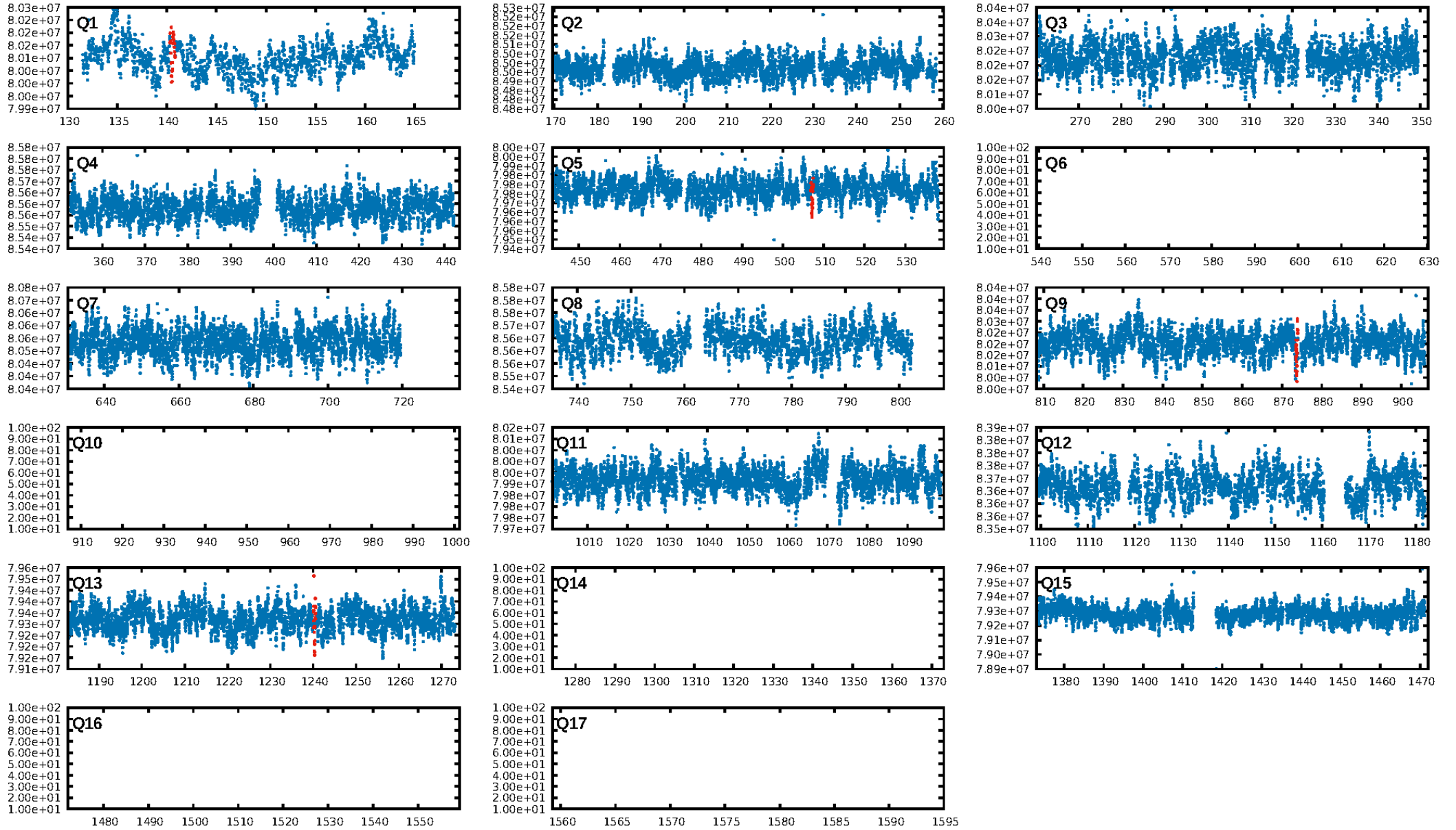
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.2%  
ModelChiSquareGof-sig: 82.9%  
Bootstrap-pfa: 1.37e-08  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.131  
Centroid-sig: 18.8%  
Centroid-so: 0.226 arcsec [0.51 $\sigma$ ]  
OotOffset-rm: 0.253 arcsec [0.51 $\sigma$ ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-rm: 0.244 arcsec [0.65 $\sigma$ ]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

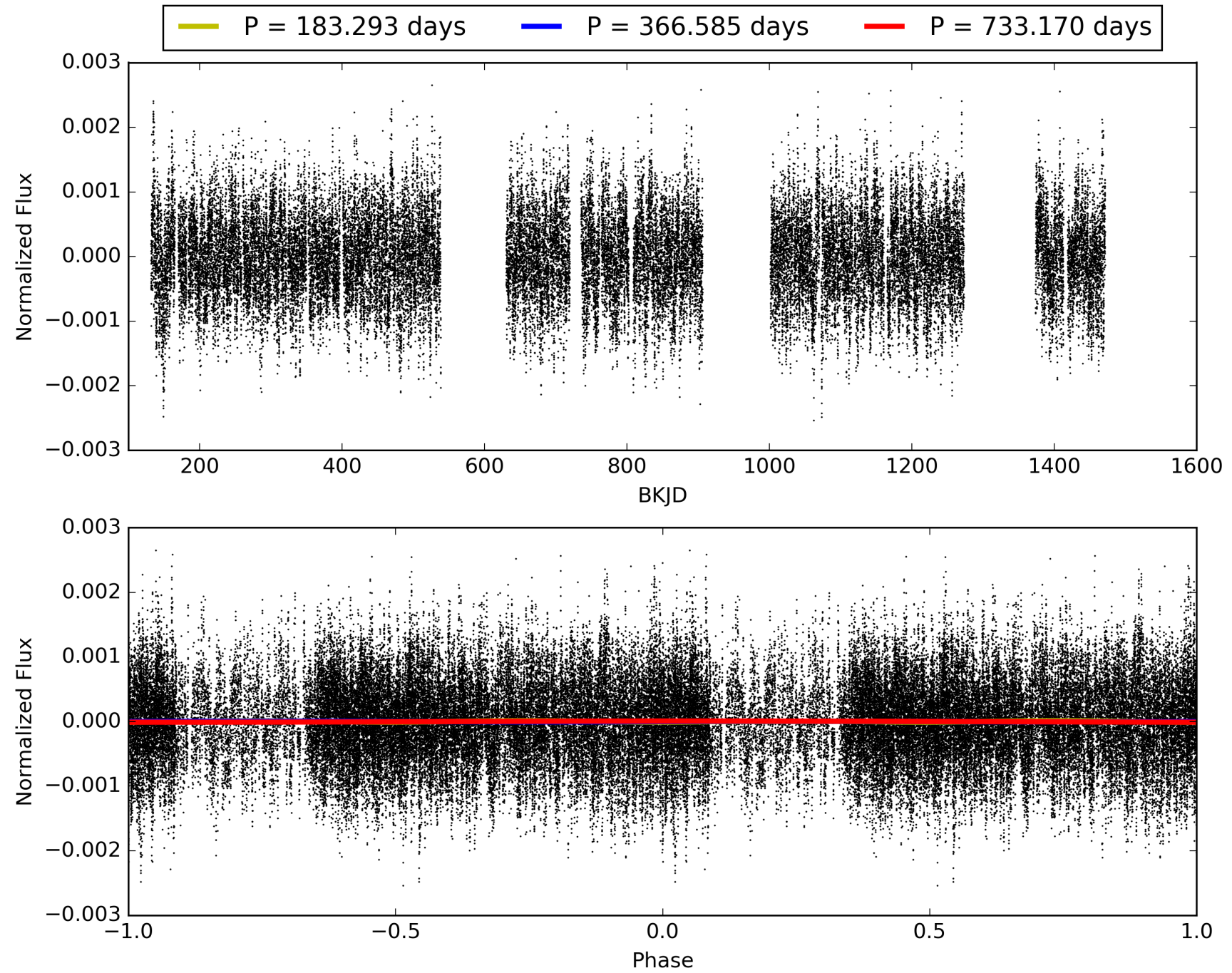
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:57:45 Z

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

# TCE 003866008-01, PDC Light Curves

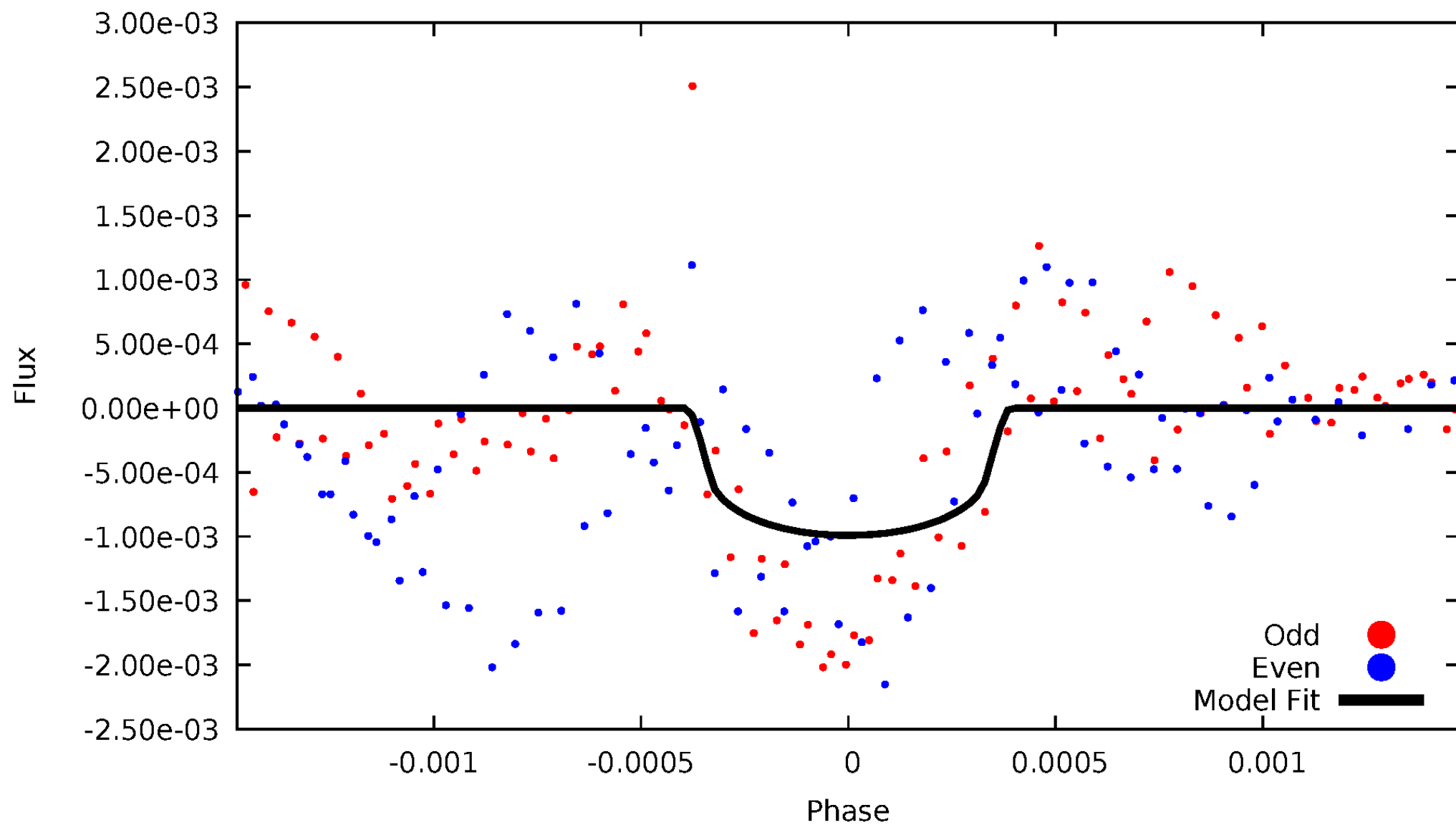


TCE 003866008-01



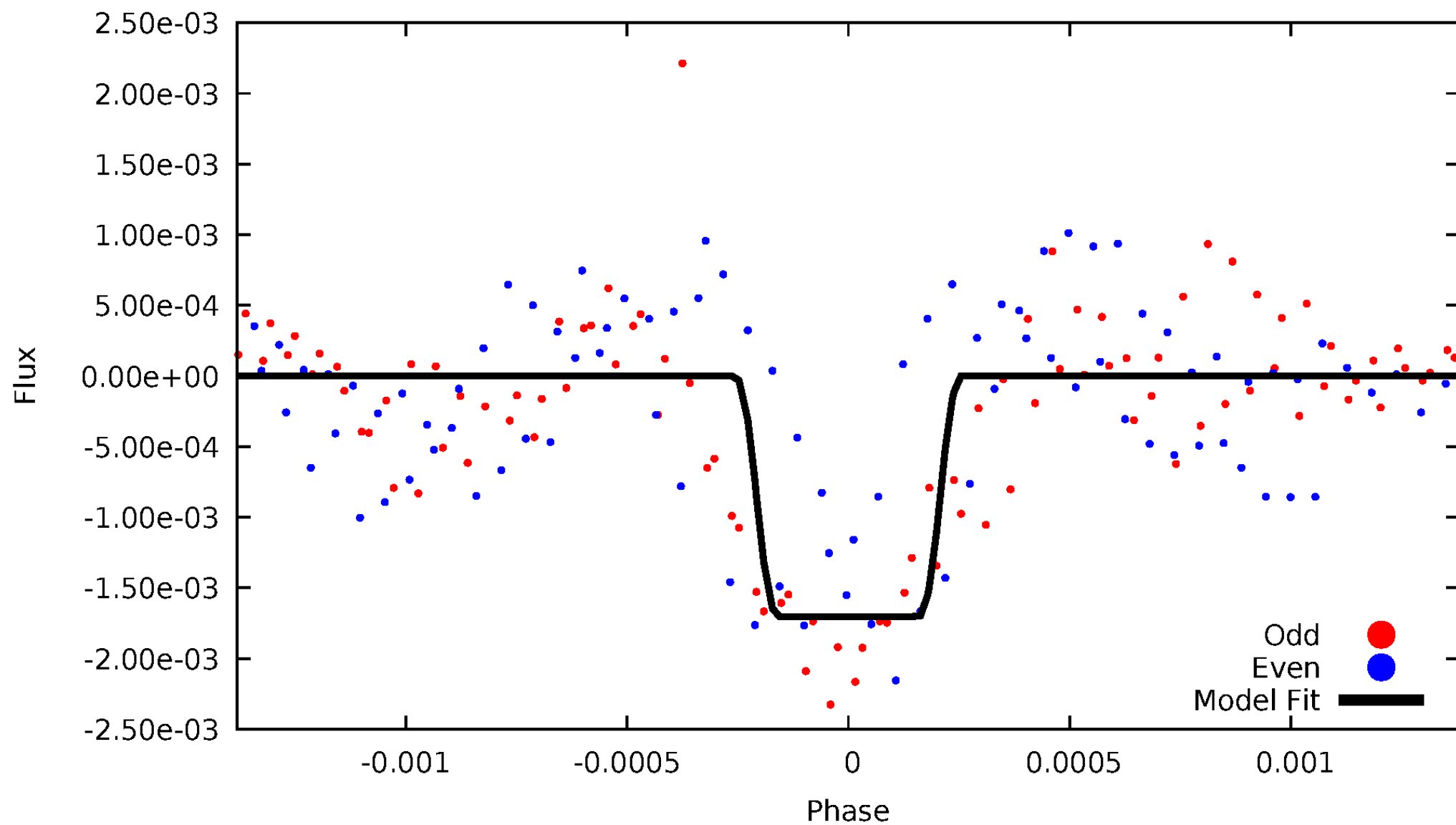
# DV Odd/Even

TCE 003866008-01



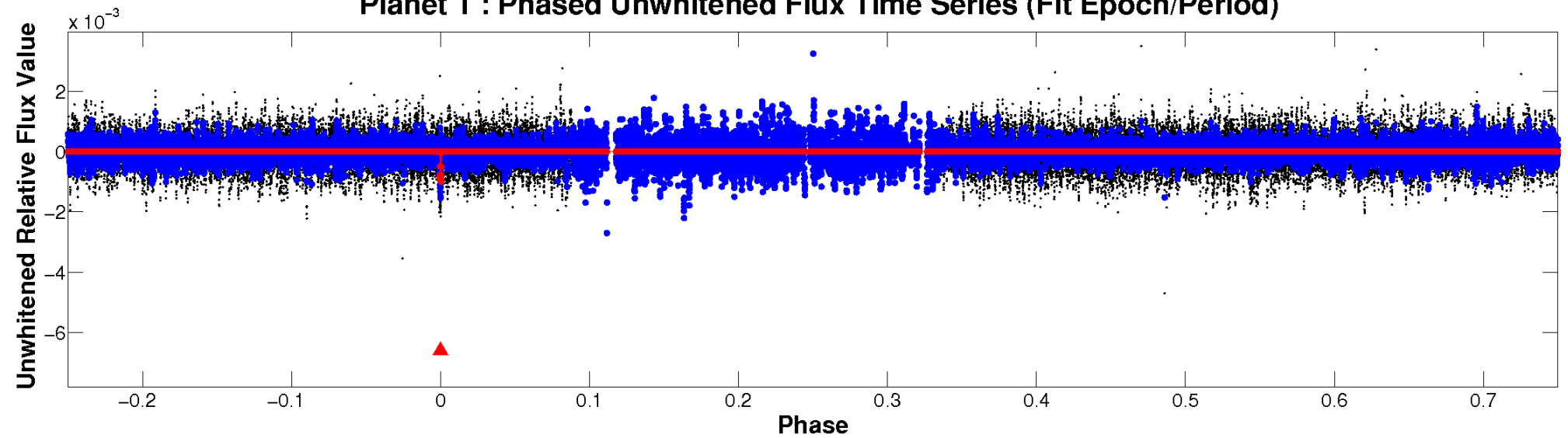
# ALT Odd/Even

TCE 003866008-01

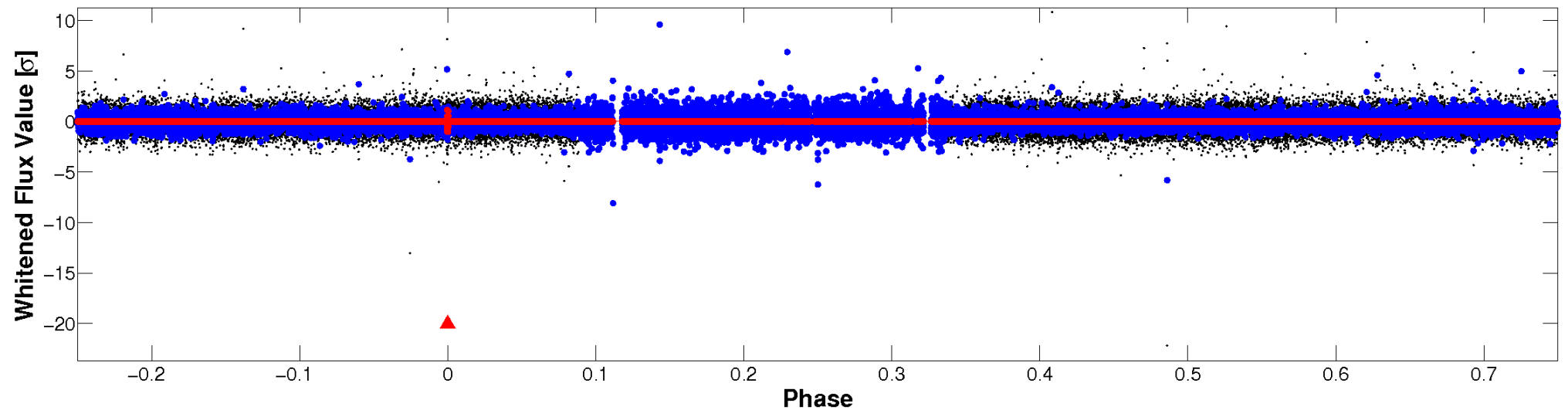


# Non-Whitened Vs. Whitened Light Curve

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

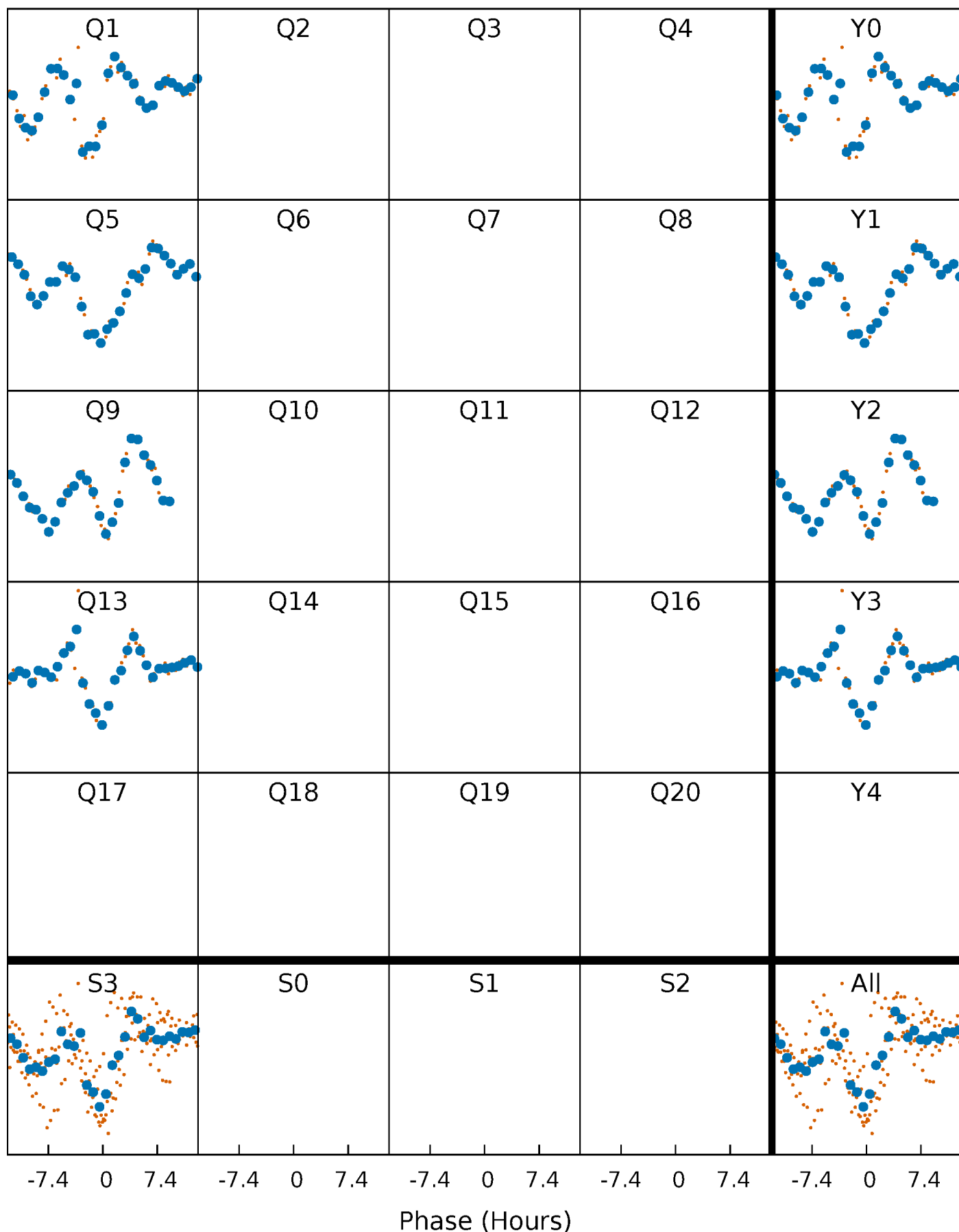


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

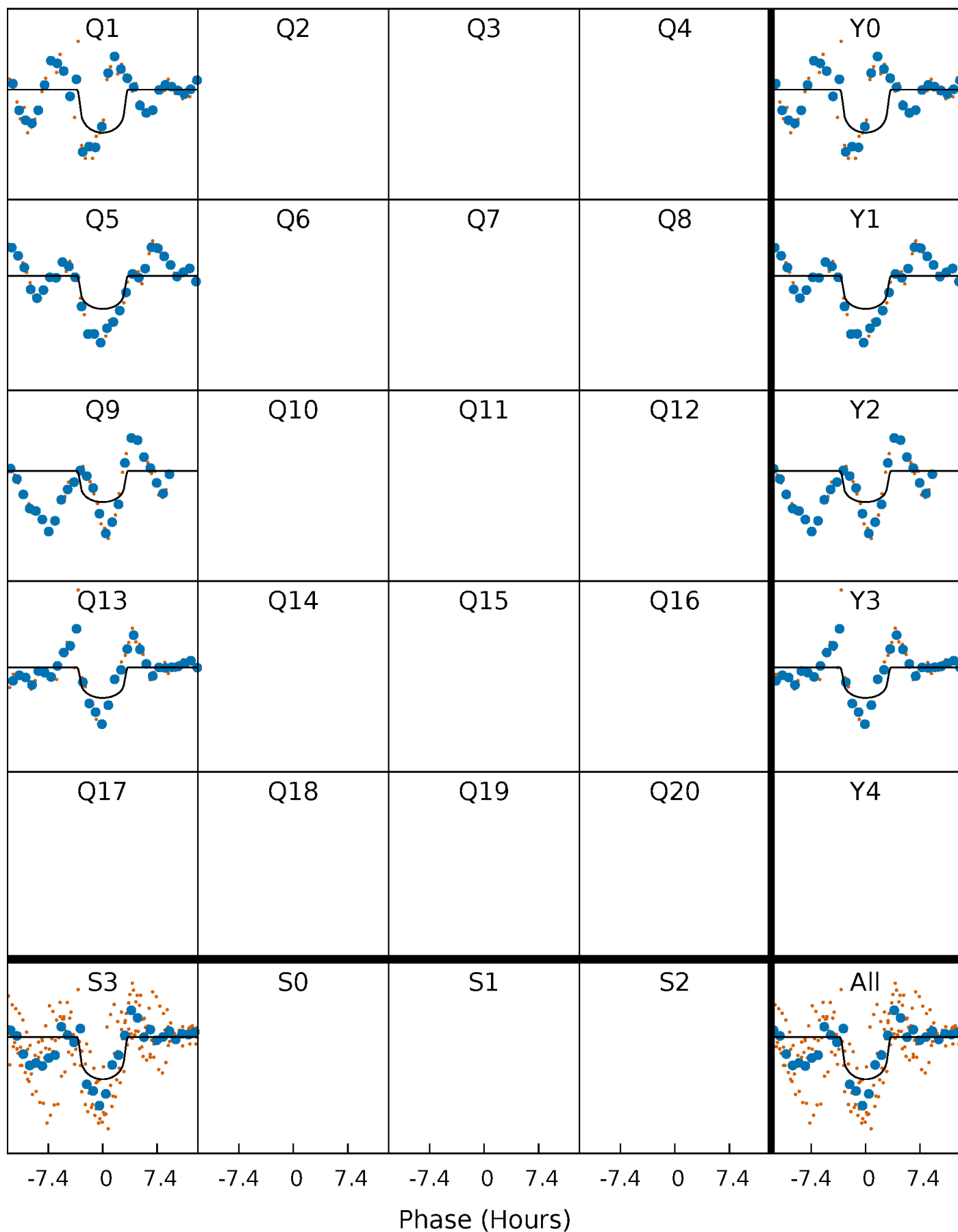
TCE 003866008-01 P=366.585143 Days  $T_0=140.560223$  (BKJD)





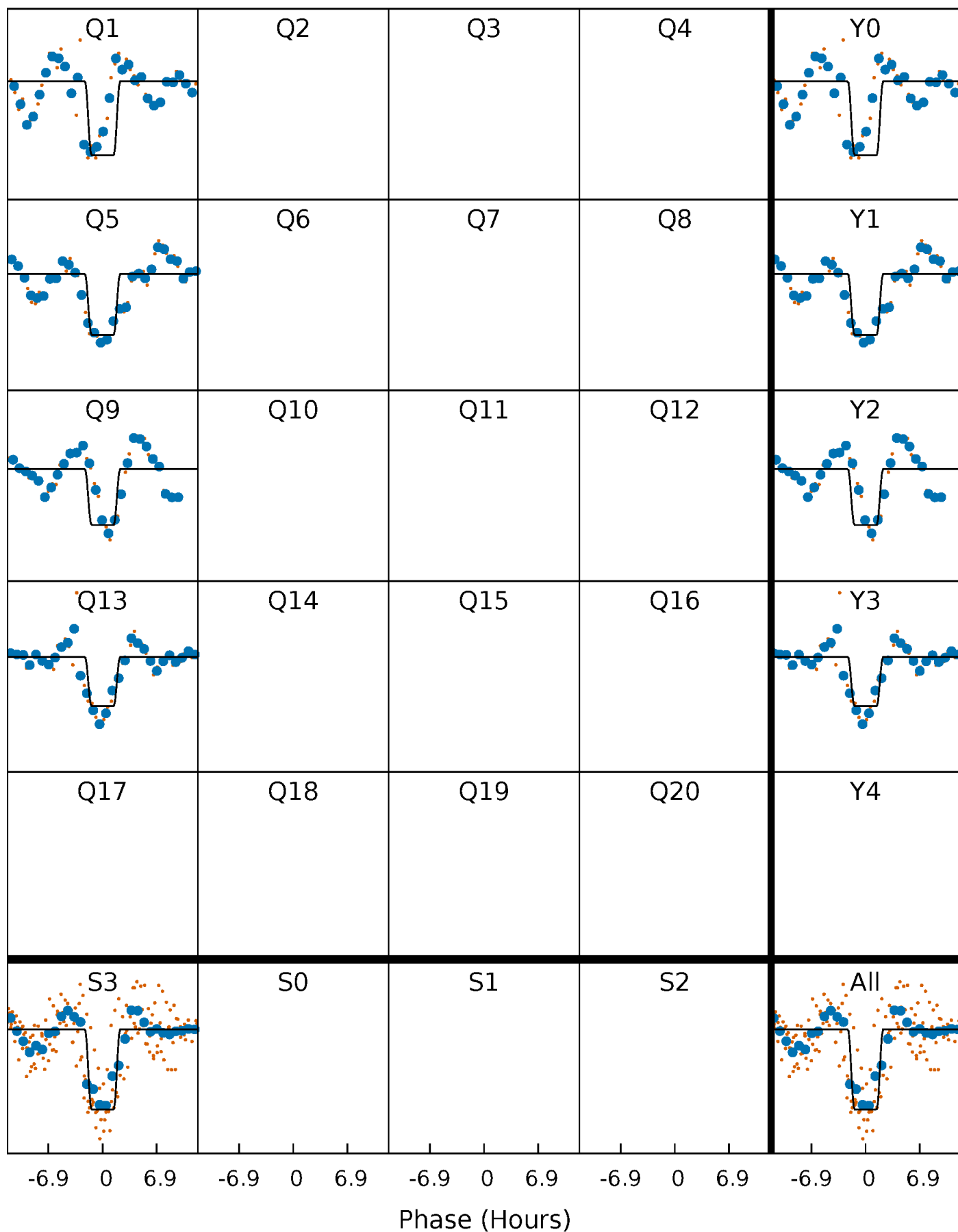
# DV Quarter-Phased Transit Curves

TCE 003866008-01     $P=366.585143$  Days     $T_0=140.560223$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

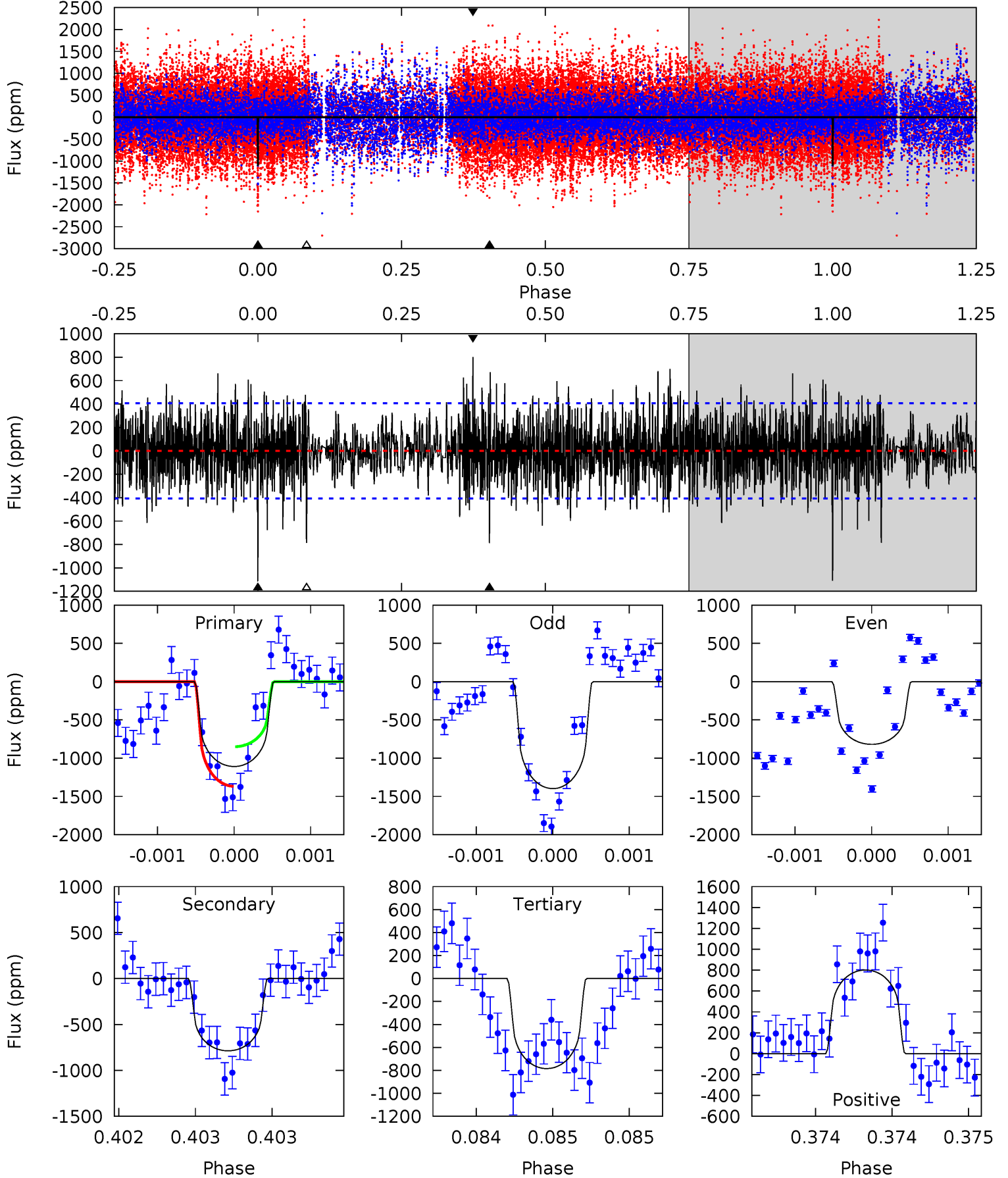
TCE 003866008-01 P=366.591689 Days  $T_0=140.540044$  (BKJD)



# DV Model-Shift Uniqueness Test

003866008-01, P = 366.585143 Days, E = 140.560223 Days

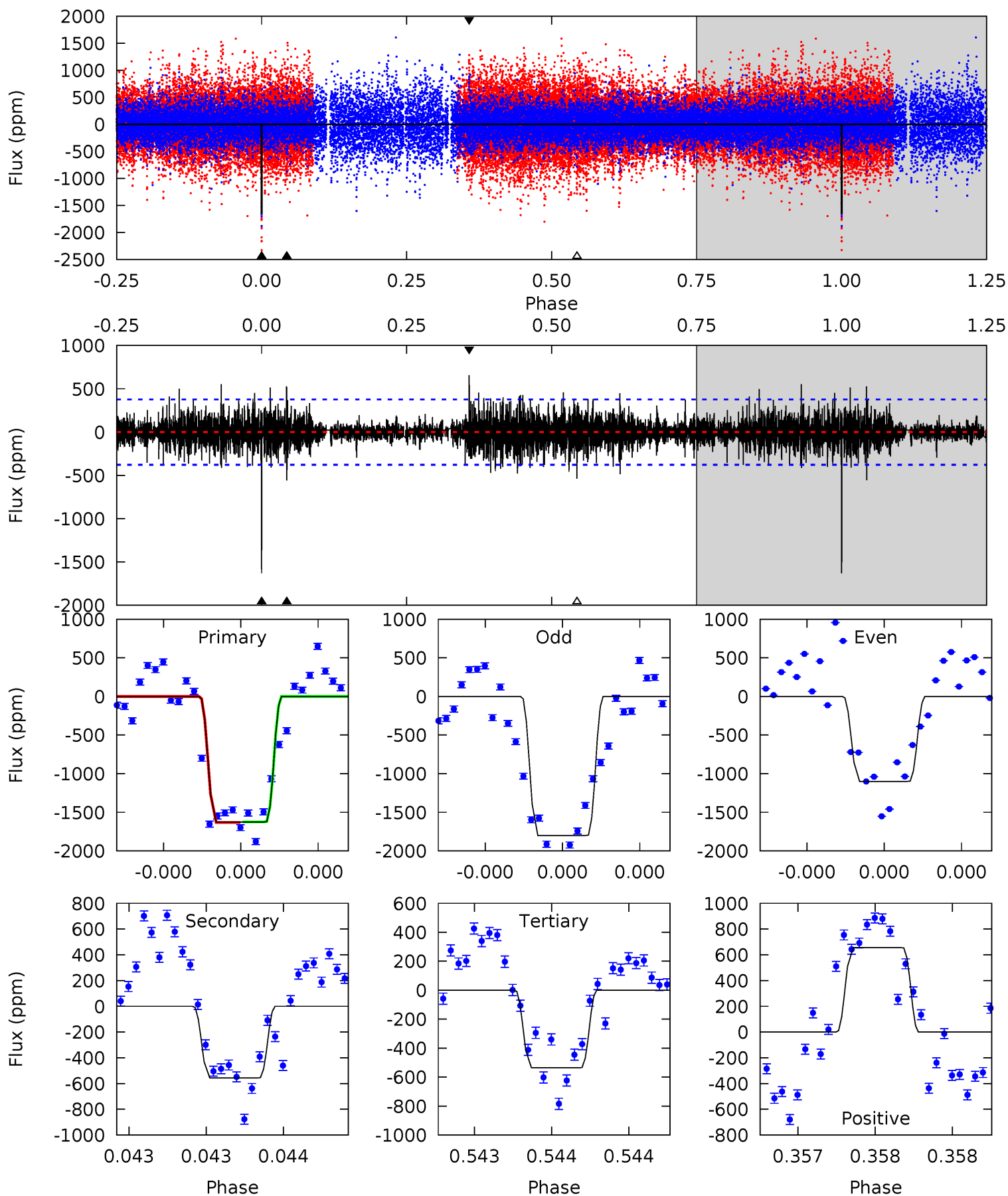
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.0 | 10.6 | 10.6 | 10.8 | 5.50            | 3.37            | 2.76             | 4.39    | 4.16    | 0.04    | -0.19   | 3.91    | 0.99 | 0.42  | 3.50 |



# Alt Model-Shift Uniqueness Test

003866008-01, P = 366.591689 Days, E = 140.540044 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 24.0 | 8.22 | 7.92 | 9.69 | 5.58            | 3.49            | 1.91             | 16.1    | 14.4    | 0.30    | -1.47   | 5.41    | 0.97 | 0.29  | 0.06 |



### Stellar Parameters For KIC 003866008

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$            | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|----------------------------|---------------------------|---|
|        | $5031^{+88}_{-230}$  | $2.455^{+0.033}_{-0.030}$ | $-0.500^{+0.200}_{-0.300}$ | $15.433^{+1.699}_{-5.096}$ | $2.478^{+0.343}_{-1.373}$ | $0.001^{+0.001}_{-0.000}$                 |
|        | +2%/-5%              | +1%/-1%                   | +40%/-60%                  | +11%/-33%                  | +14%/-55%                 | +53%/-12%                                 |
| Source | PHO1                 | AST9                      | 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 003866008-01 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$        | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$    |
|---------|---------------|---------------------------|----------------------|-----------------------|---------------------|
| DV      | $-787 \pm 74$ | $53.81^{+31.51}_{-26.83}$ | $1045^{+29}_{-52}$   | $4704^{+1825}_{-715}$ | $273^{+806}_{-160}$ |
| Alt.    | $-556 \pm 68$ | $71.00^{+32.16}_{-32.03}$ | $1042^{+32}_{-51}$   | $4001^{+977}_{-487}$  | $115^{+251}_{-61}$  |

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

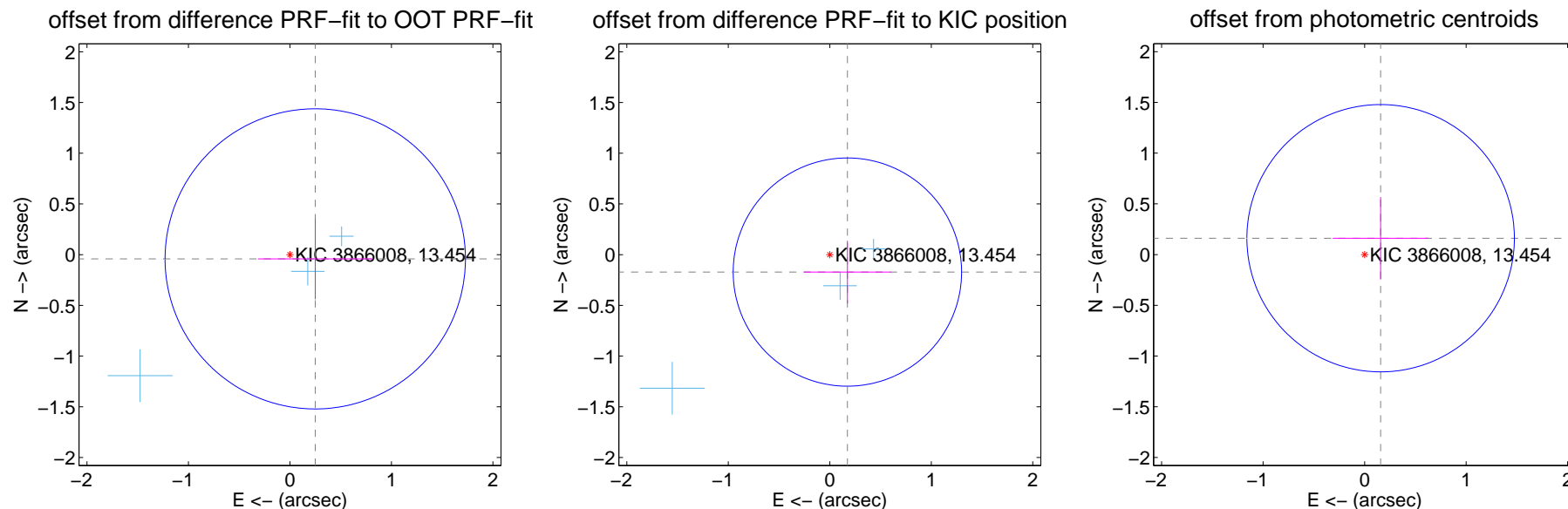
## DV Centroid Data

Supplemental centroid analysis for 003866008-01. Kepler magnitude: 13.45. Transit SNR 5.73

There are 3 quarters with good PRF difference image offsets

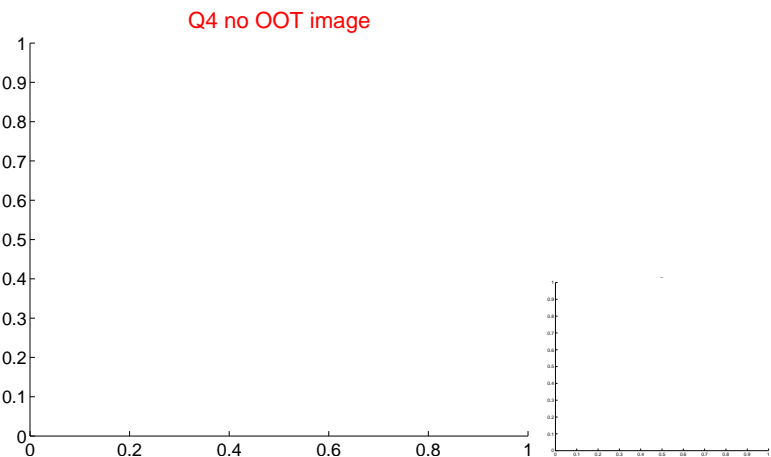
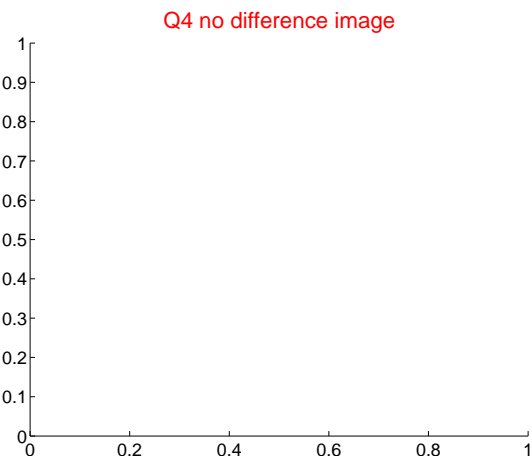
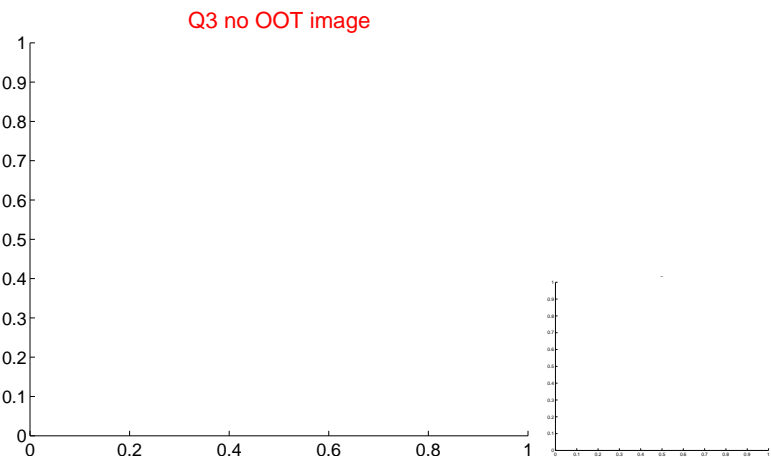
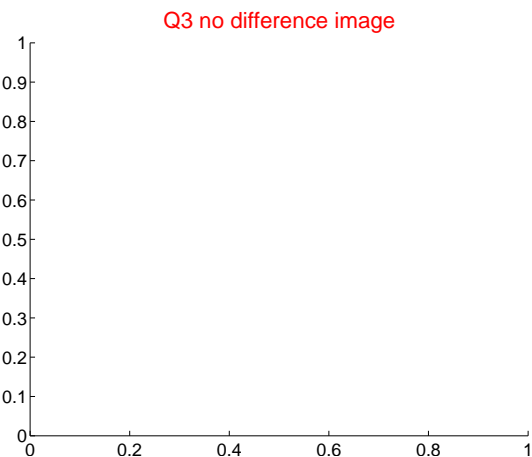
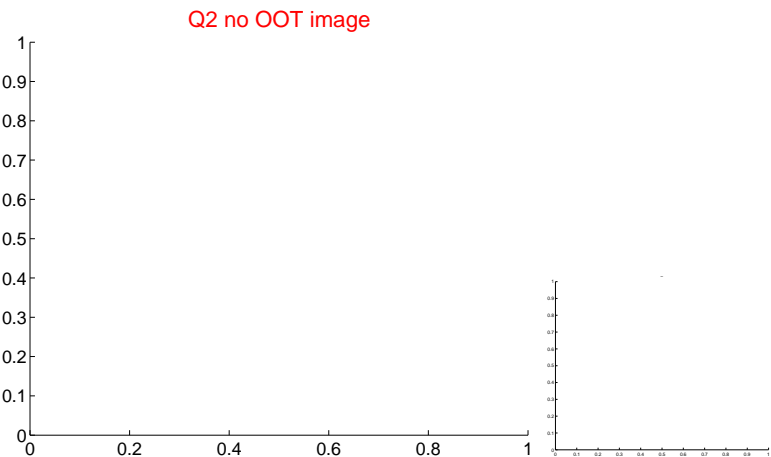
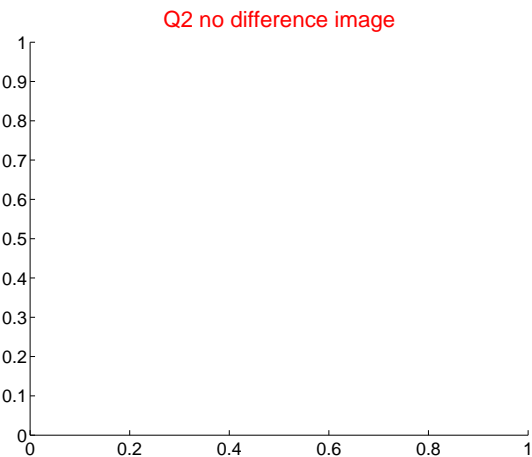
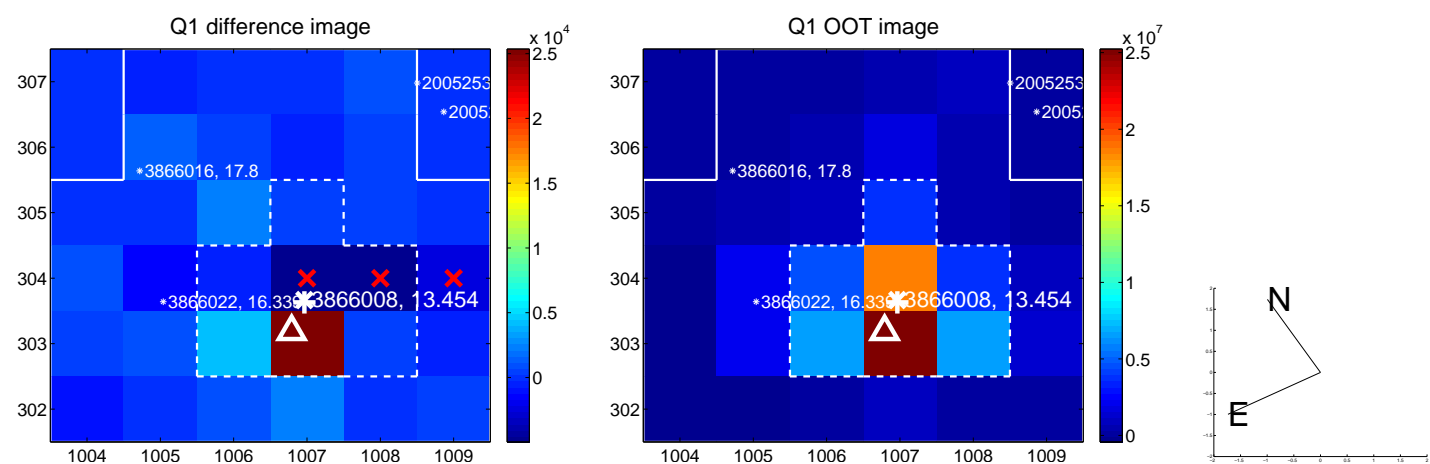
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.253 \pm 0.493$  | 0.51                | $-0.249 \pm 0.565$ | $-0.042 \pm 0.399$ |
| PRF-fit source offset from KIC position | $0.244 \pm 0.375$  | 0.65                | $-0.173 \pm 0.430$ | $-0.172 \pm 0.309$ |
| photometric centroid source offset      | $0.23 \pm 0.44$    | 0.51                | $-0.16 \pm 0.47$   | $0.16 \pm 0.41$    |

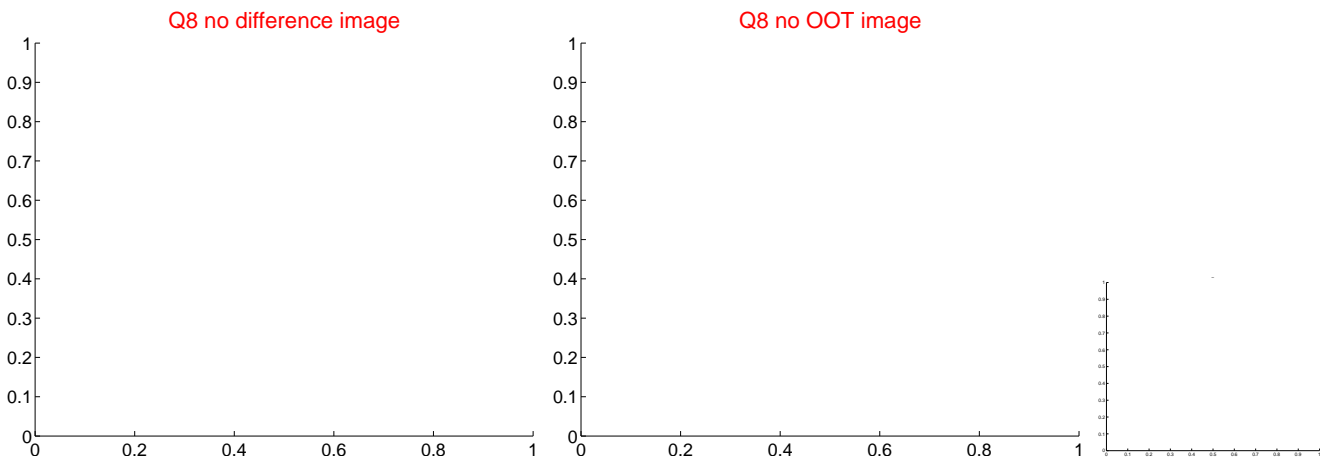
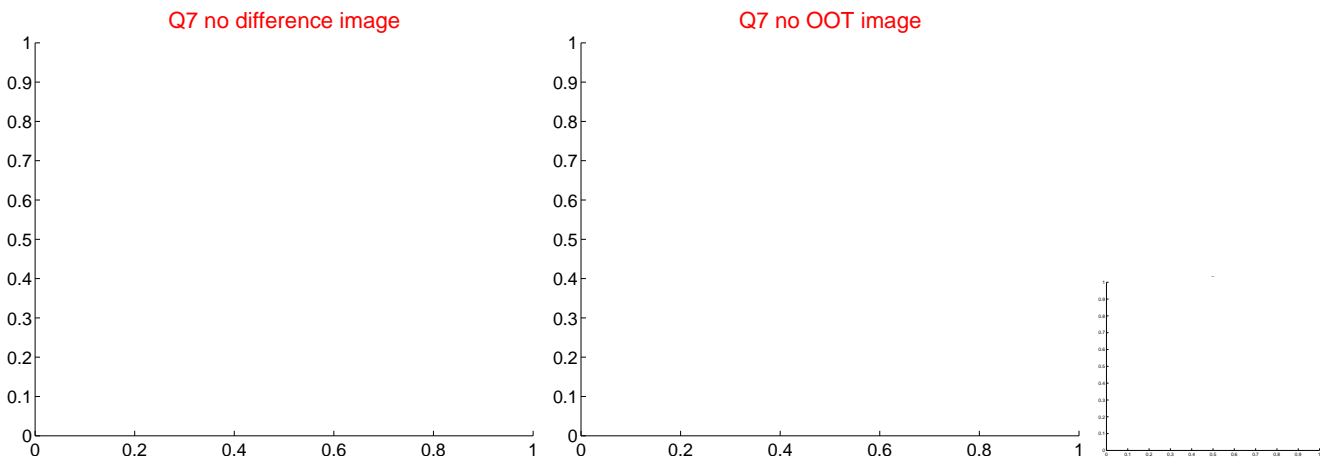
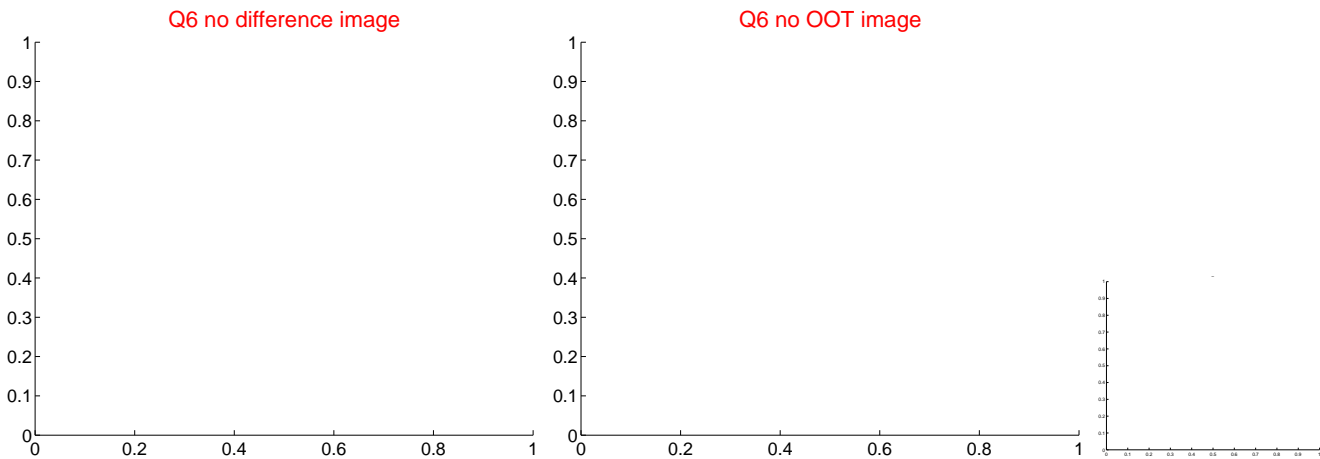
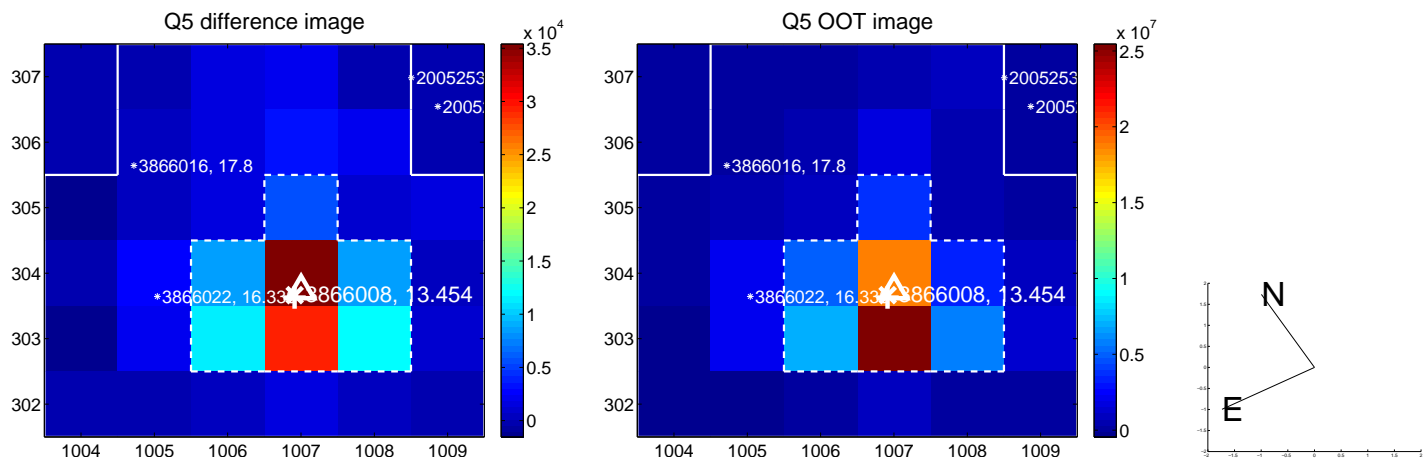


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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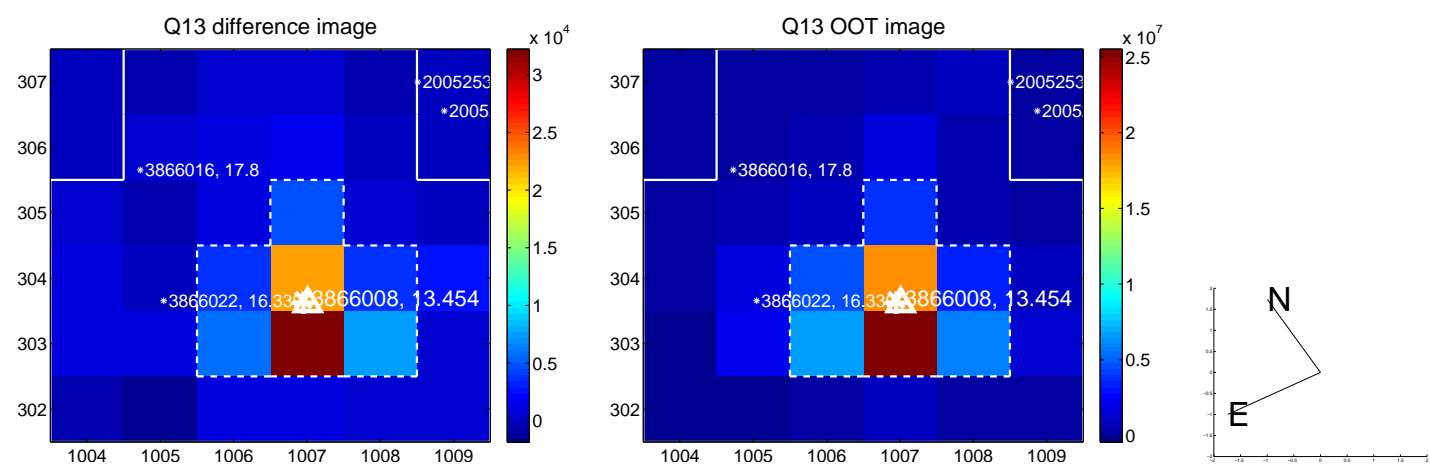




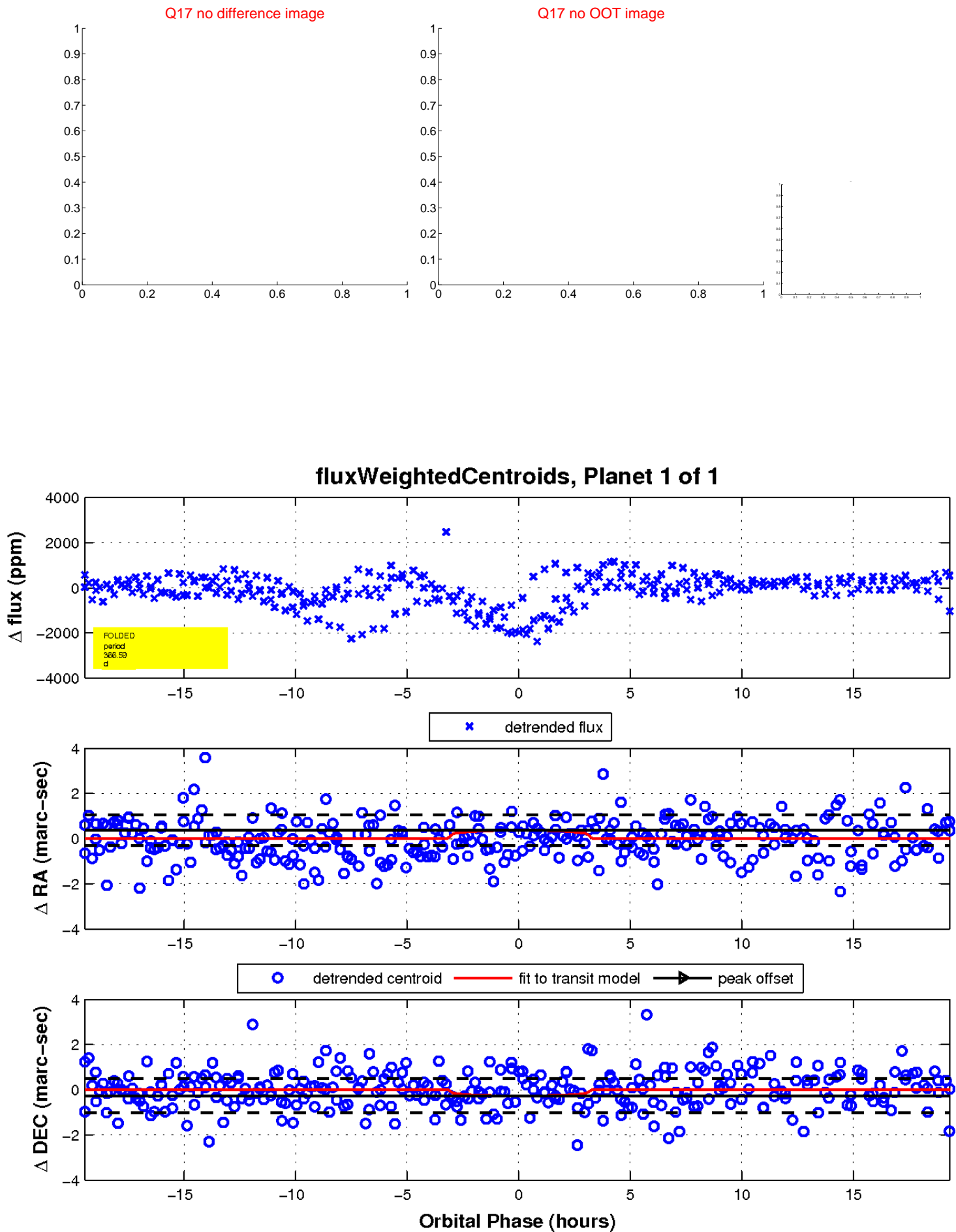
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

