

# KIC 007891264

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007891264-01 | OBS      | 7855.01 | 25.167932     | 150.266816   | 1332.2      | 2.104            | 7.4 | 7.5 | 0.70                        | 5013            | 2.77                   | 12.86                  |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                       |
|--------------|----------|------|-------|---|---|---|---|--------------------------------|
| 007891264-01 | OBS      | FP   | 0.01  | 1 | 0 | 0 | 0 | MOD_NONUNIQ_ALT—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.

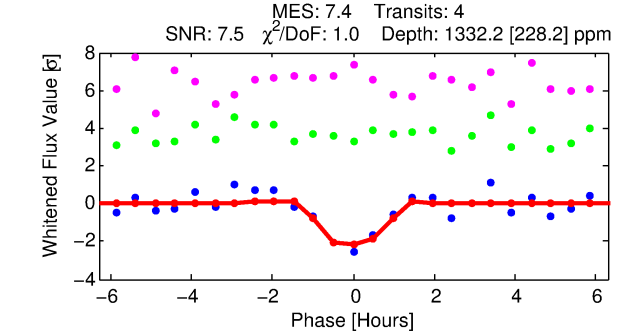
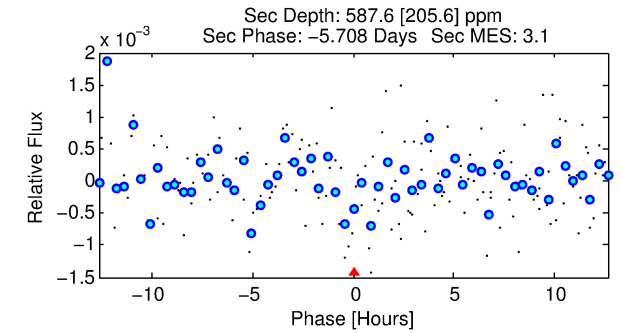
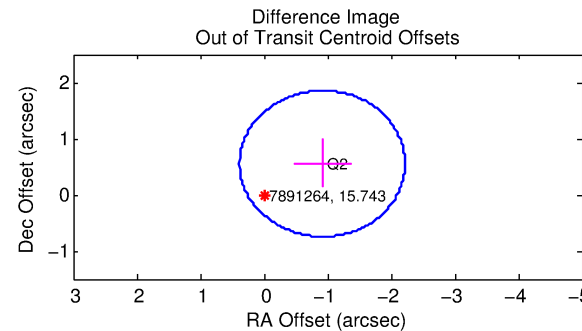
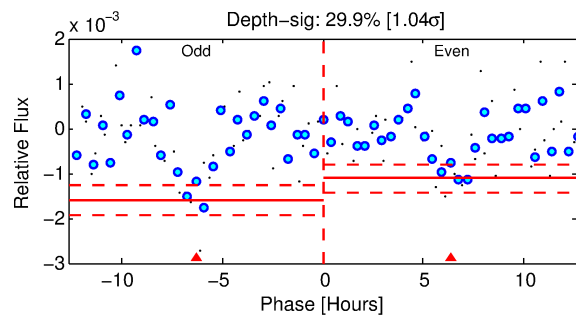
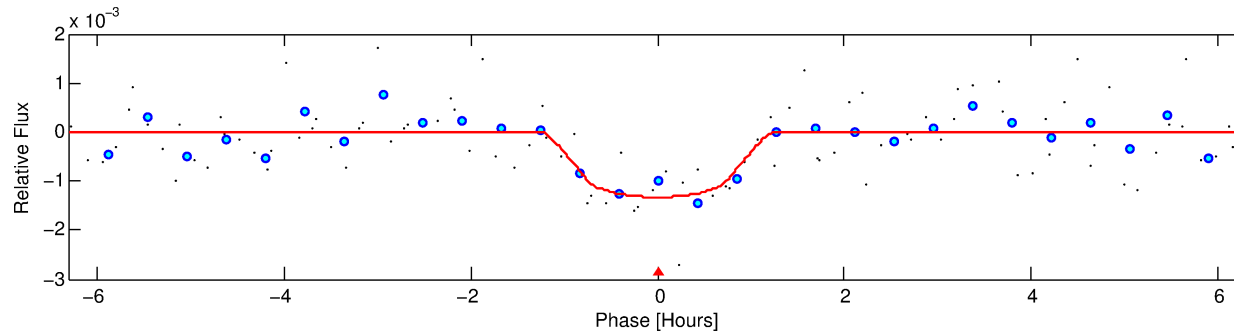
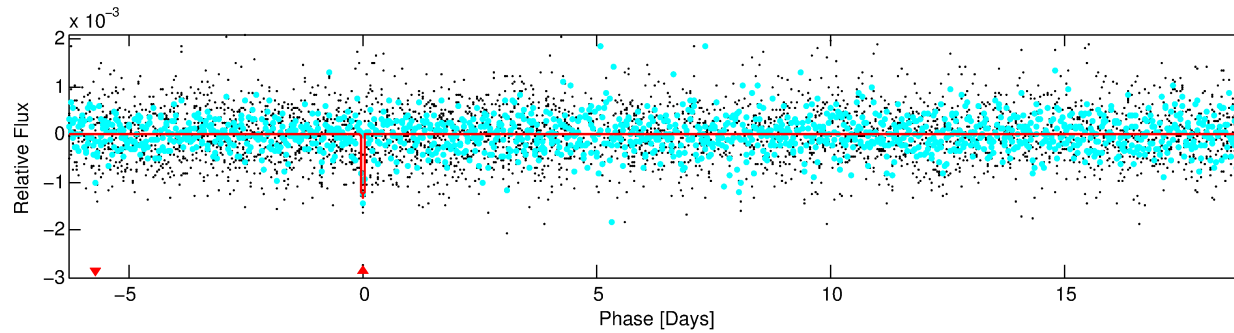
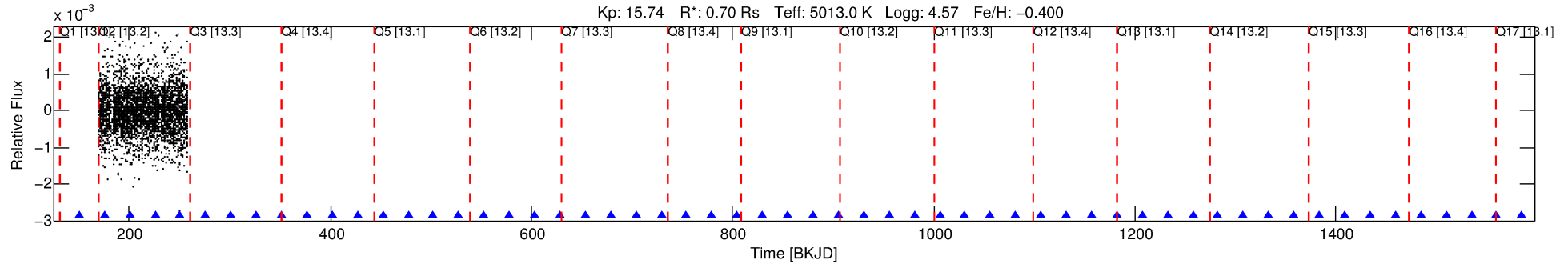
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007891264-01

No Significant Match Found

# DV One-Page Summary

KIC: 7891264 Candidate: 1 of 1 Period: 25.168 d



## DV Fit Results:

Period = 25.16793 [0.00409] d  
Epoch = 150.2668 [0.0111] BKJD  
Rp/R\* = 0.0360 [0.0641]  
a/R\* = 68.19 [433.84]  
b = 0.72 [4.40]  
Seff = 12.86 [2.53]  
Teq = 483 [24] K  
Rp = 2.77 [4.93] Re  
a = 0.1477 [0.0134] AU  
Ag = 921.01 [3298.00] [0.28 $\sigma$ ]  
Teffp = 4113 [3682] K [0.99 $\sigma$ ]

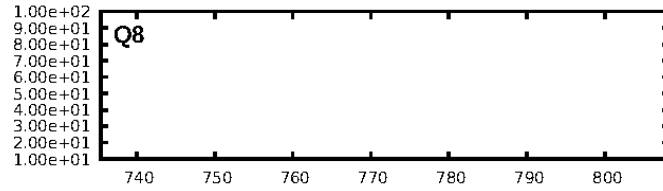
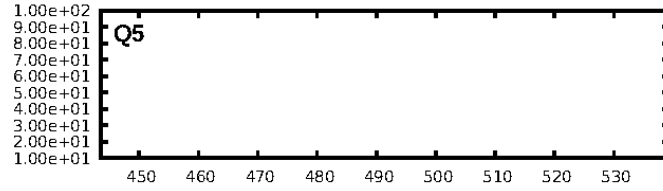
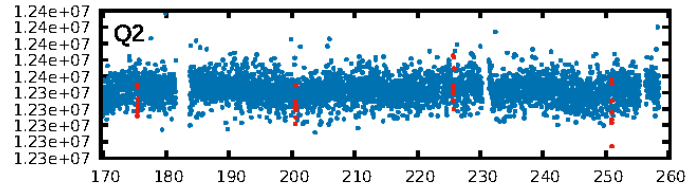
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 24.6%  
ModelChiSquareGof-sig: 98.1%  
Bootstrap-pfa: 1.61e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.297  
Centroid-sig: 45.5%  
Centroid-so: 1.201 arcsec [0.69 $\sigma$ ]  
OotOffset-rm: 1.072 arcsec [2.47 $\sigma$ ]  
KicOffset-rm: 1.221 arcsec [2.86 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

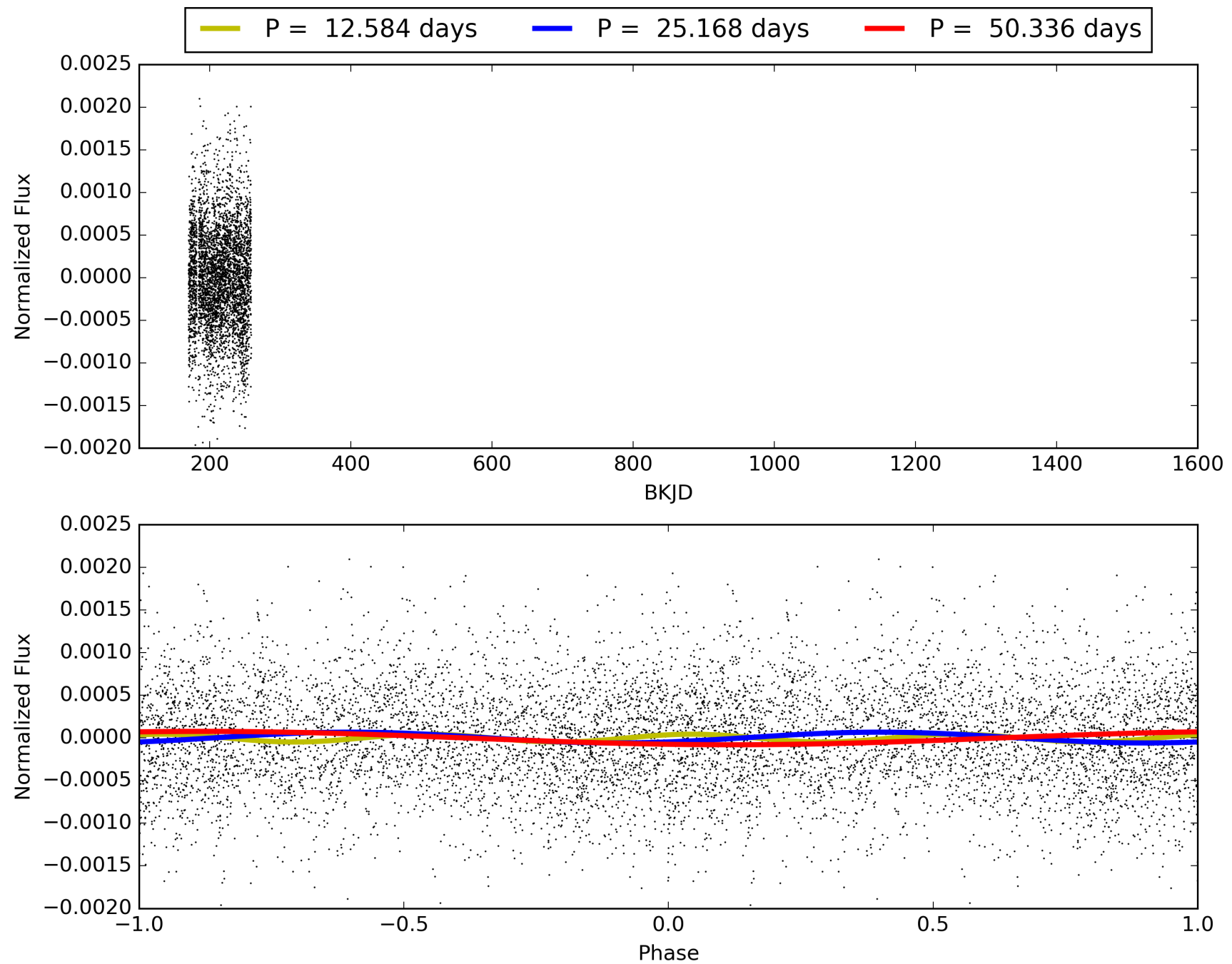
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:10:52 Z

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

# TCE 007891264-01, PDC Light Curves

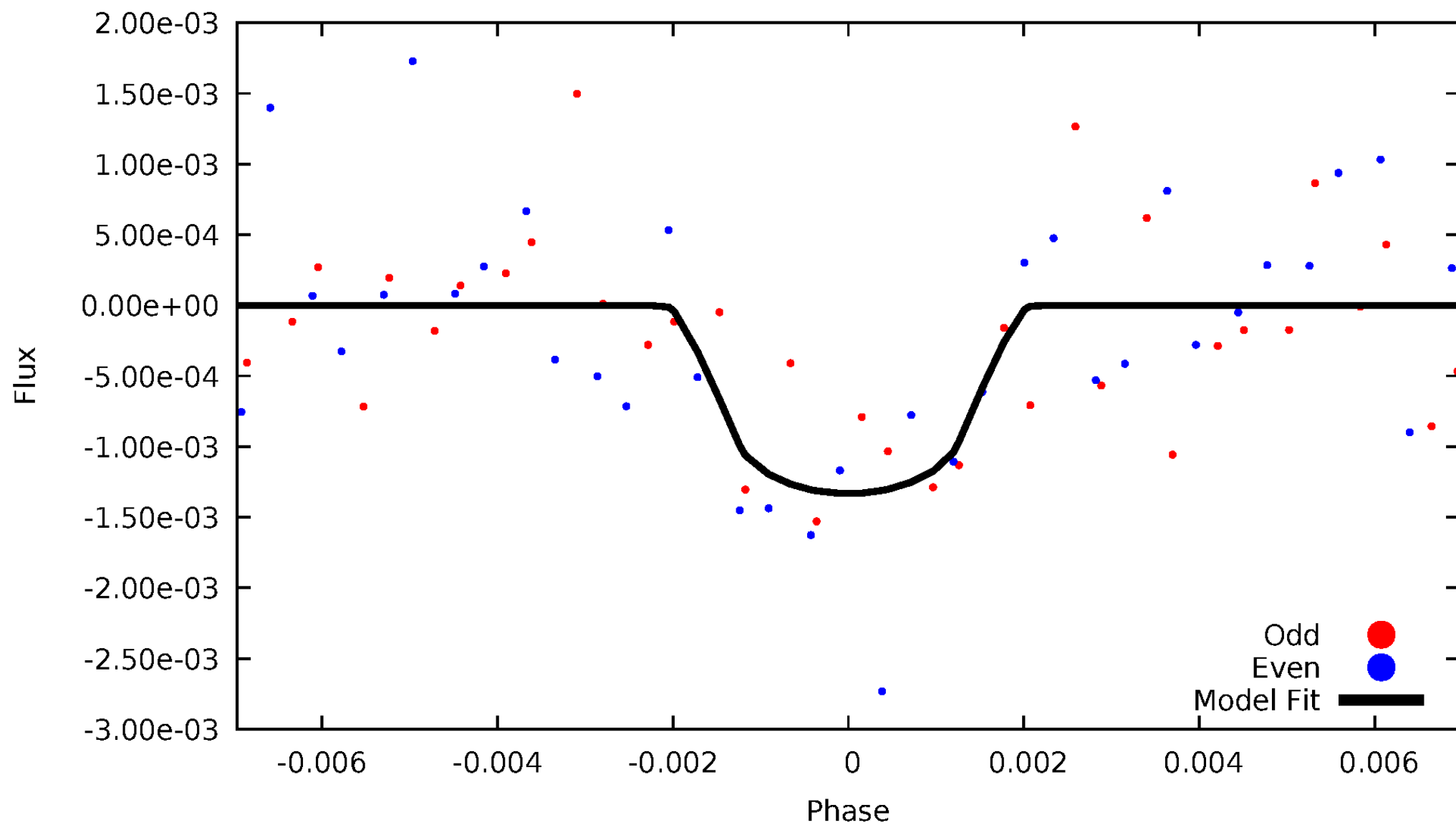


# TCE 007891264-01



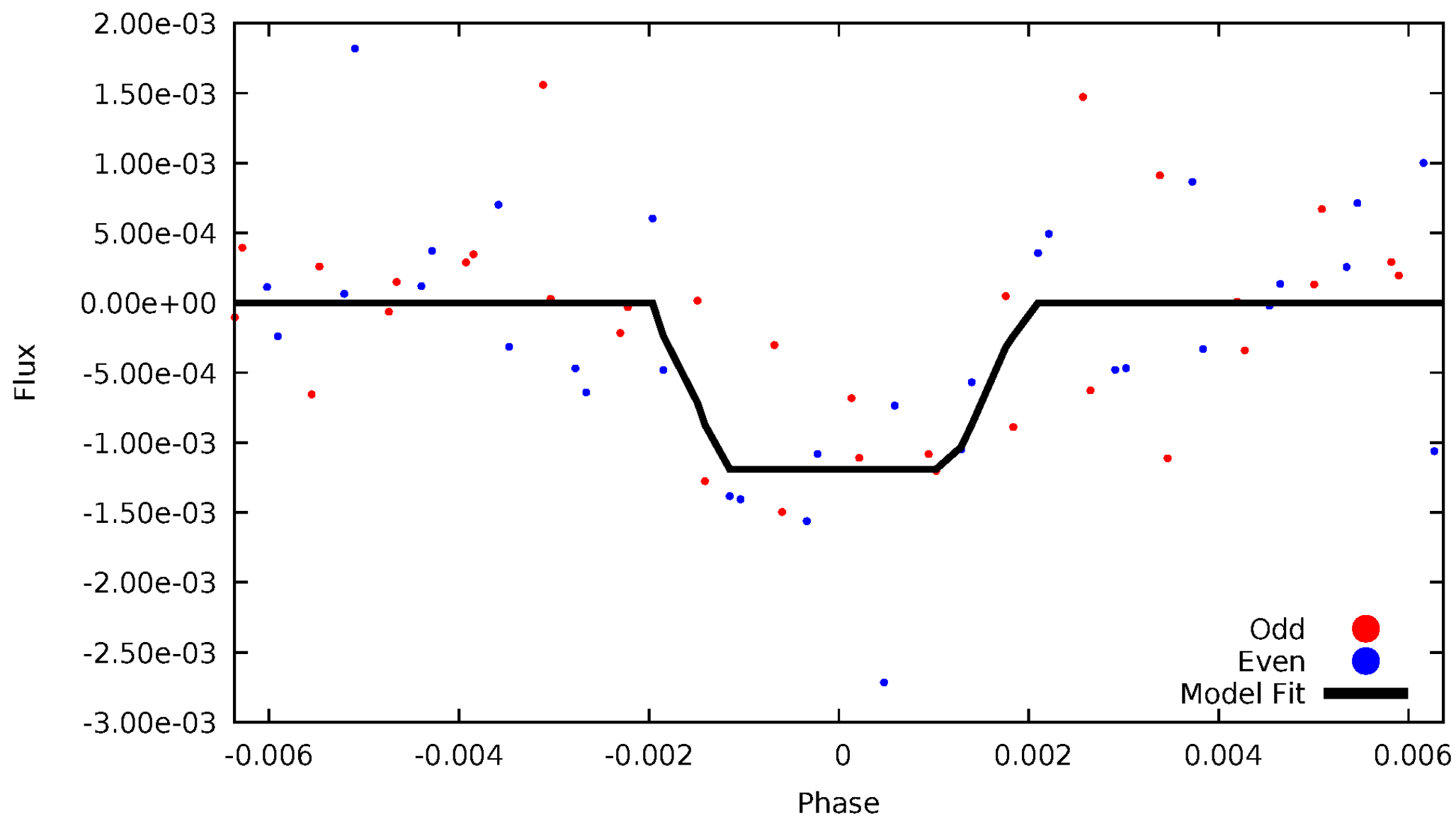
# DV Odd/Even

TCE 007891264-01

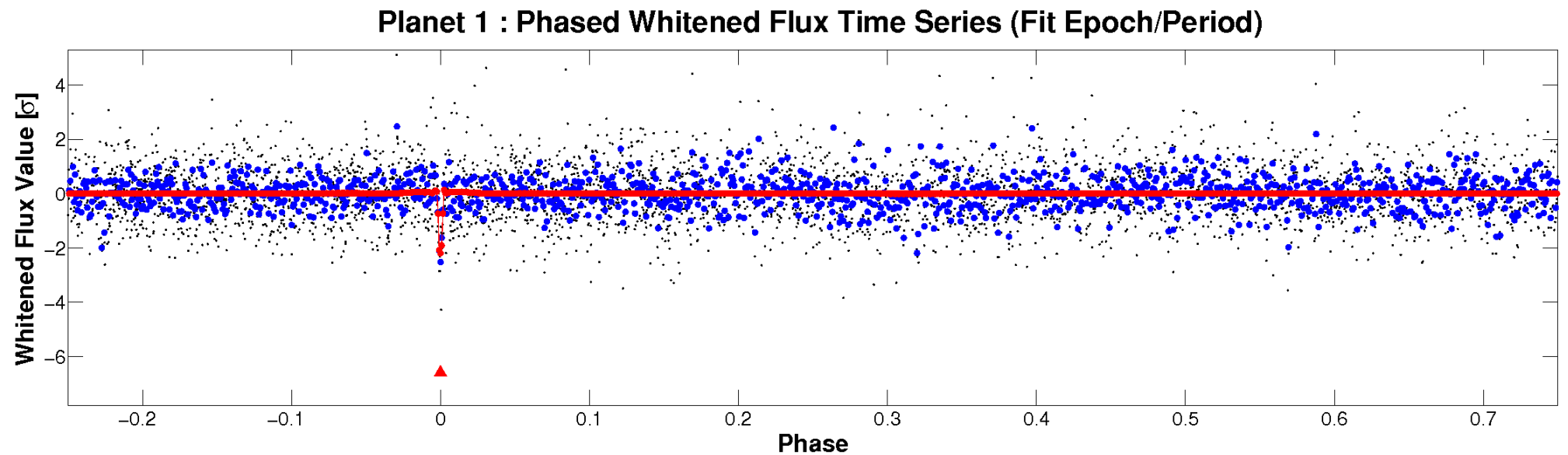
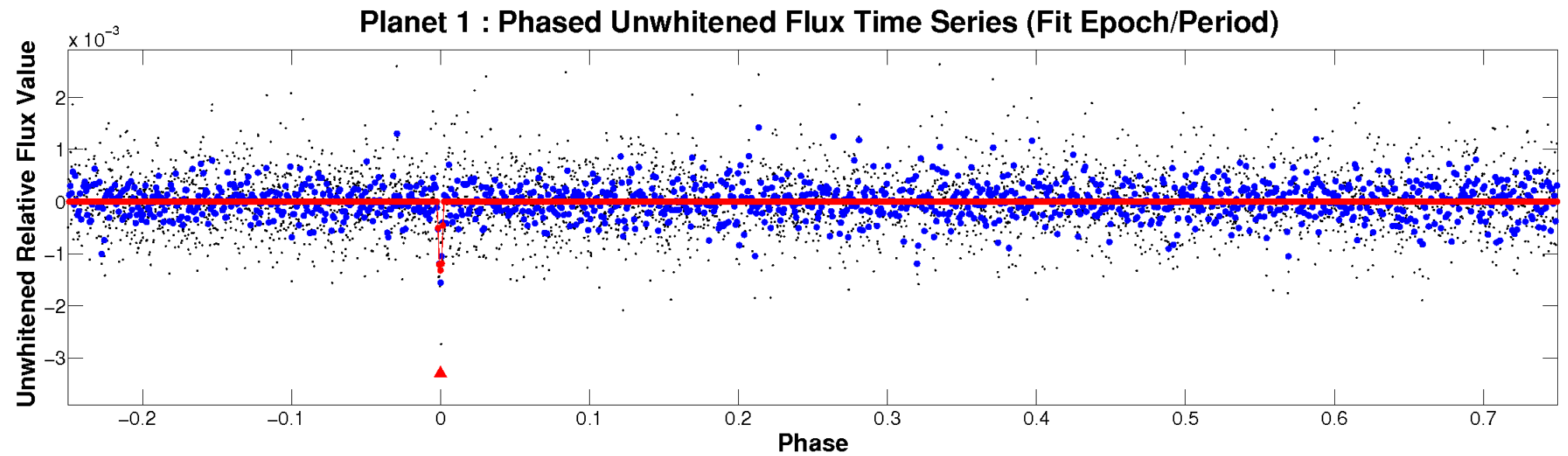


# ALT Odd/Even

TCE 007891264-01

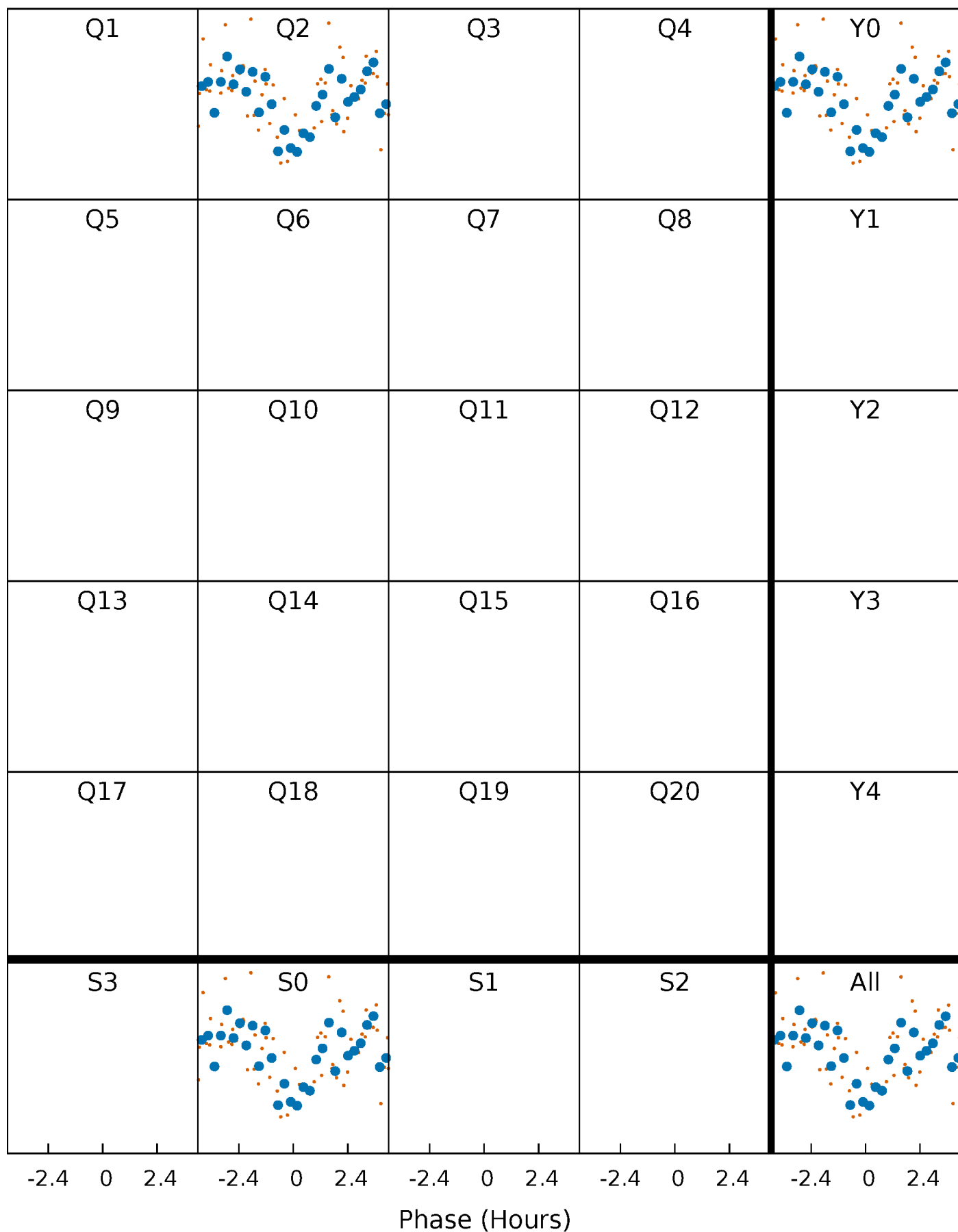


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

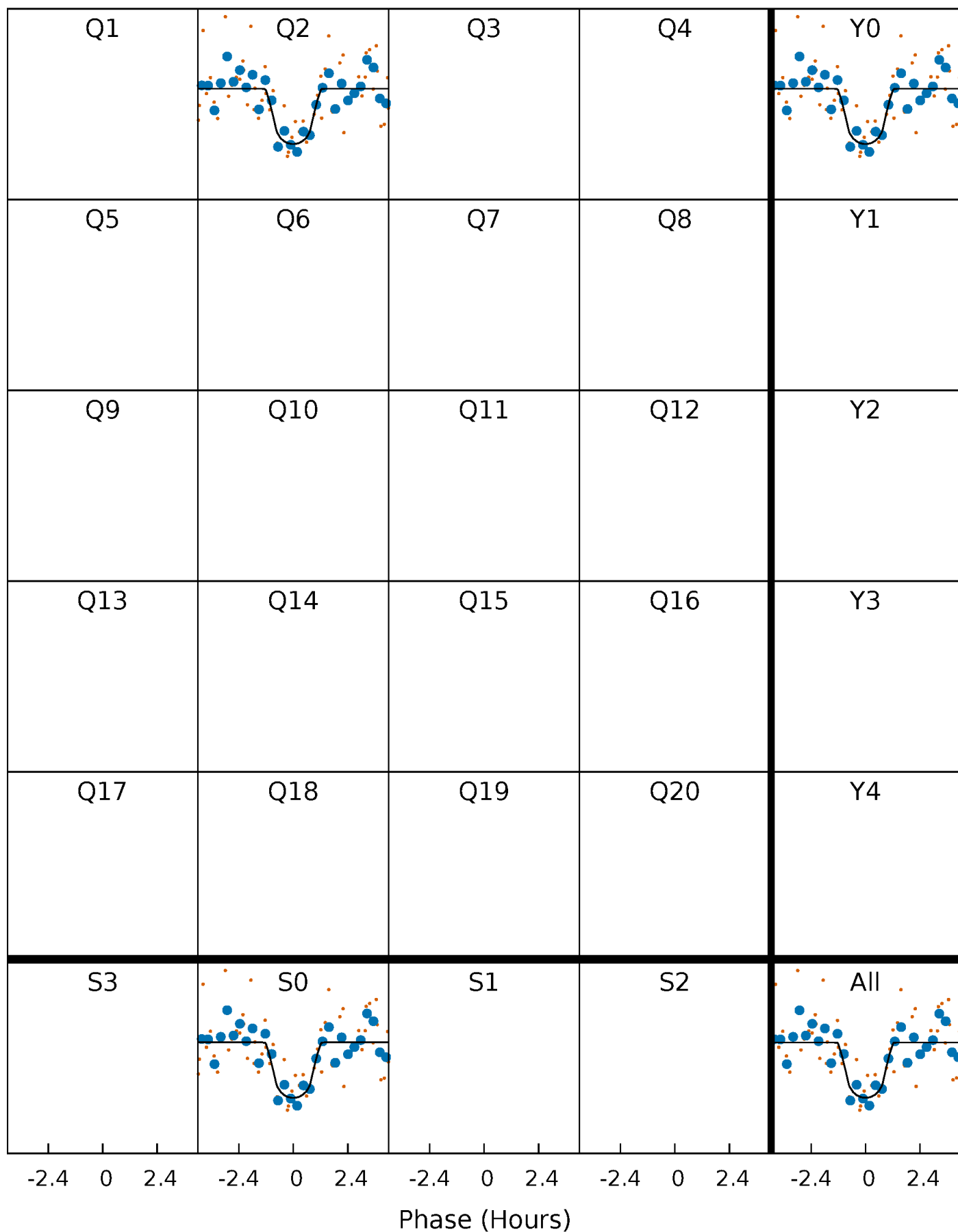
TCE 007891264-01 P= 25.167932 Days  $T_0=150.266816$  (BKJD)





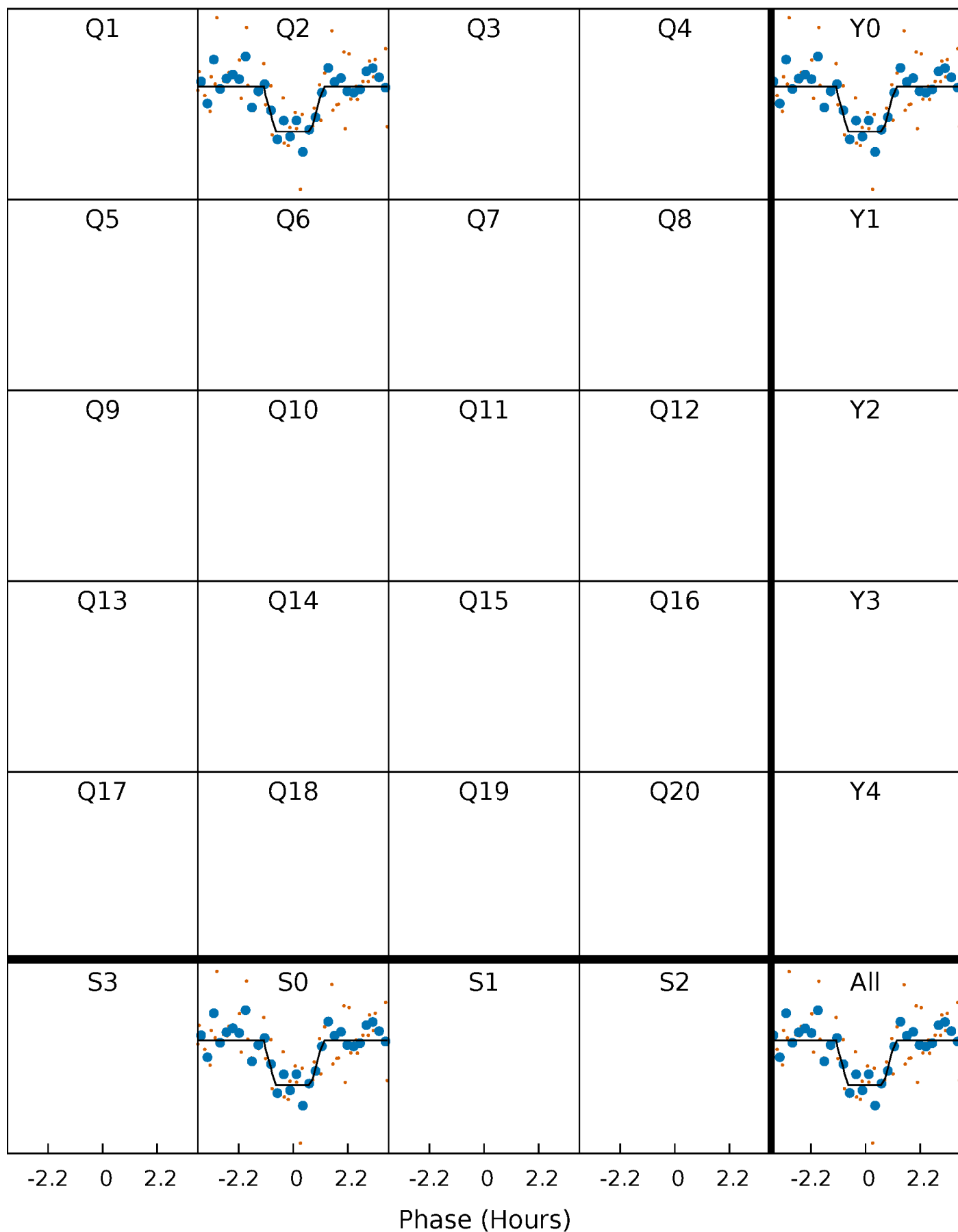
# DV Quarter-Phased Transit Curves

TCE 007891264-01 P= 25.167932 Days  $T_0=150.266816$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

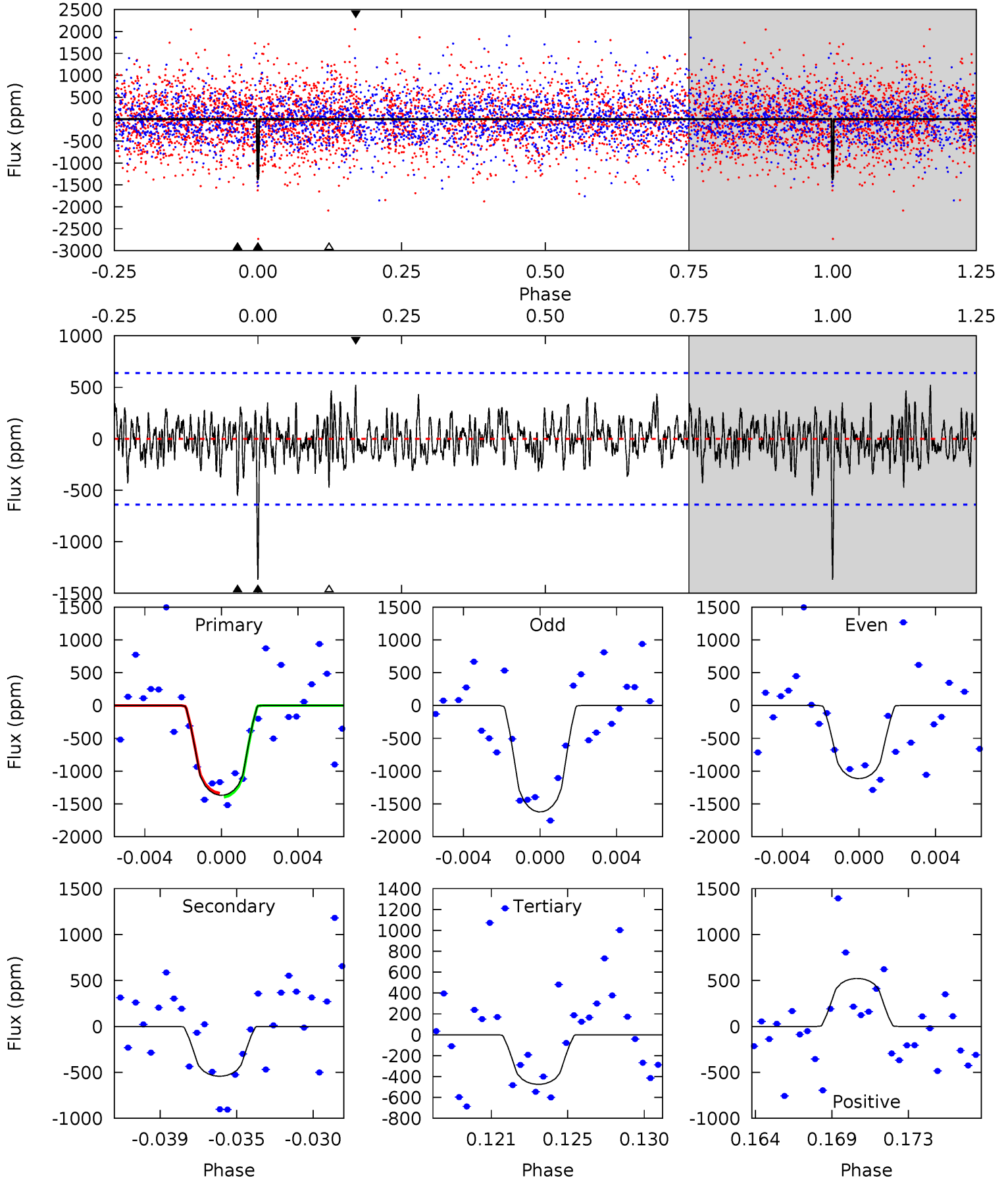
TCE 007891264-01 P= 25.165212 Days  $T_0=150.275474$  (BKJD)



# DV Model-Shift Uniqueness Test

007891264-01, P = 25.167932 Days, E = 150.266816 Days

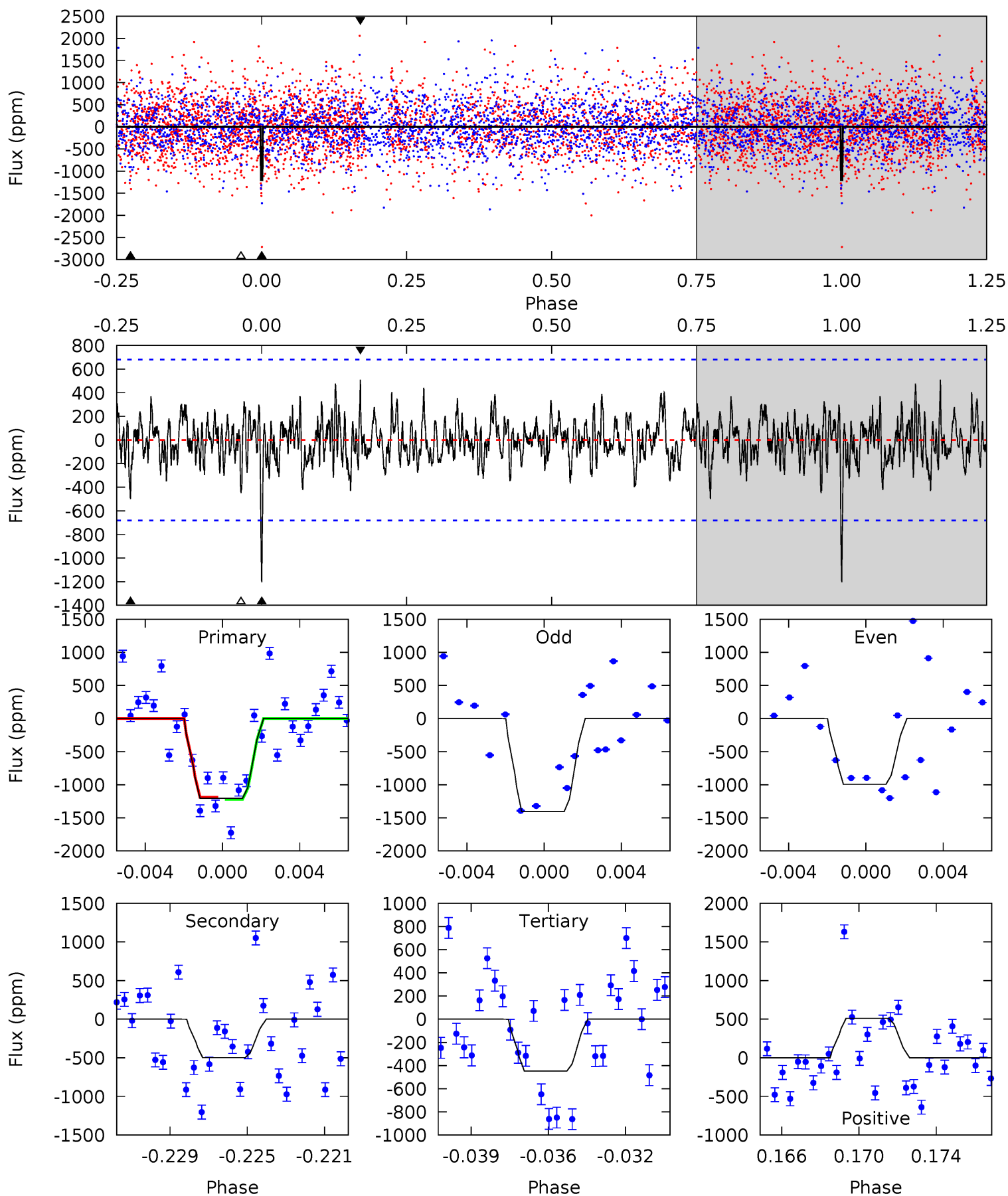
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.1 | 4.40 | 3.85 | 4.23 | 5.18            | 2.85            | 1.22             | 7.25    | 6.87    | 0.54    | 0.16    | 2.11    | 1.03 | 0.28  | 0.25 |



# Alt Model-Shift Uniqueness Test

007891264-01,  $P = 25.165212$  Days,  $E = 150.275474$  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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.19 | 3.80 | 3.42 | 3.90 | 5.20            | 2.88            | 1.17             | 5.77    | 5.30    | 0.38    | -0.09   | 1.56    | 0.99 | 0.30  | 0.11 |



### Stellar Parameters For KIC 007891264

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5013^{+176}_{-176}$ | $4.574^{+0.078}_{-0.054}$ | $-0.400^{+0.350}_{-0.300}$ | $0.704^{+0.072}_{-0.072}$ | $0.678^{+0.093}_{-0.050}$ | $2.738^{+0.843}_{-0.541}$                 |
|        | +4%/-4%              | +2%/-1%                   | +87%/-75%                  | +10%/-10%                 | +14%/-7%                  | +31%/-20%                                 |
| 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 007891264-01 / KOI 7855.01

| Detrend | Depth (ppm)    | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$         | $A_{obs}$            |
|---------|----------------|------------------------|-------------------|-----------------------|----------------------|
| DV      | $-542 \pm 123$ | $4.61^{+3.84}_{-3.25}$ | $673^{+30}_{-29}$ | $3531^{+2175}_{-596}$ | $301^{+2892}_{-213}$ |
| Alt.    | $-498 \pm 131$ | $4.47^{+4.04}_{-3.05}$ | $672^{+30}_{-29}$ | $3509^{+1995}_{-612}$ | $314^{+2744}_{-233}$ |

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

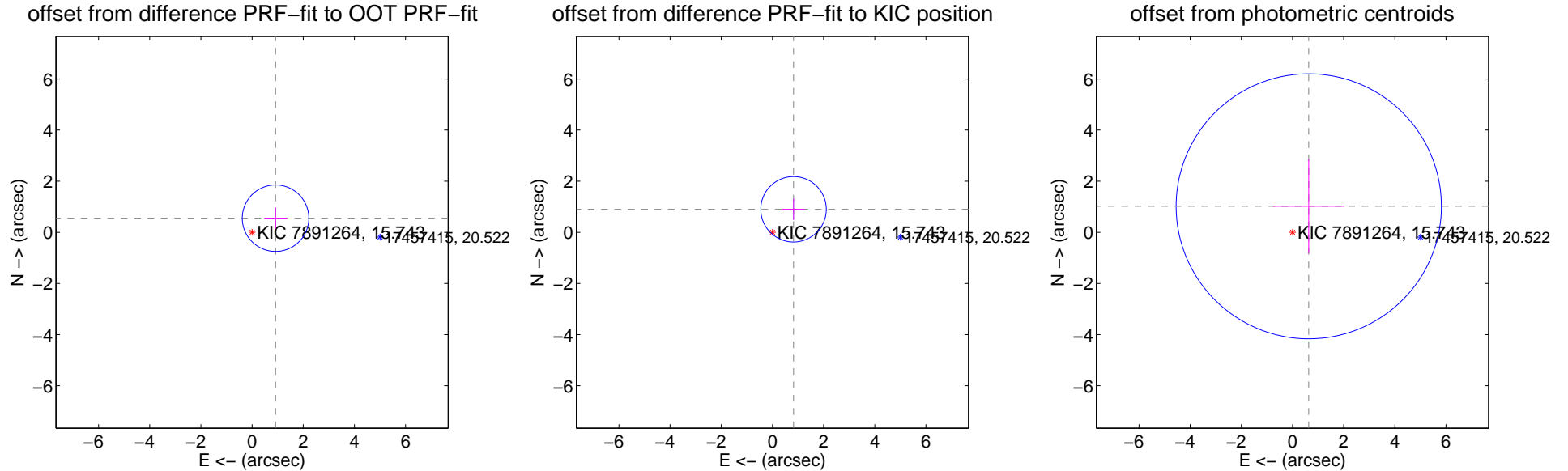
## DV Centroid Data

Supplemental centroid analysis for 007891264-01. Kepler magnitude: 15.74. Transit SNR 7.50

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $1.072 \pm 0.434$  | 2.47                | $-0.918 \pm 0.440$ | $0.553 \pm 0.415$ |
| PRF-fit source offset from KIC position | $1.221 \pm 0.427$  | 2.86                | $-0.824 \pm 0.440$ | $0.901 \pm 0.415$ |
| photometric centroid source offset      | $1.20 \pm 1.73$    | 0.69                | $-0.63 \pm 1.40$   | $1.02 \pm 1.84$   |



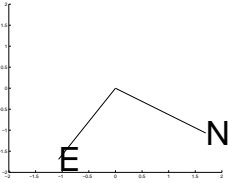
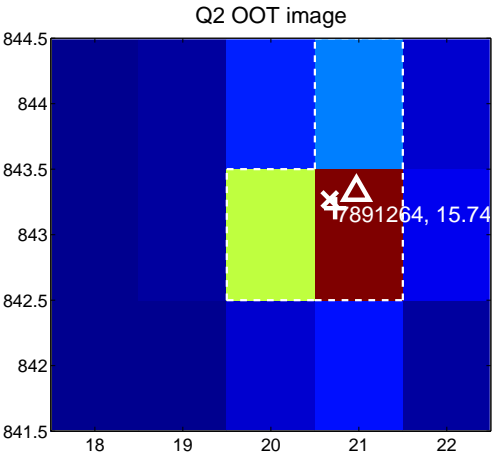
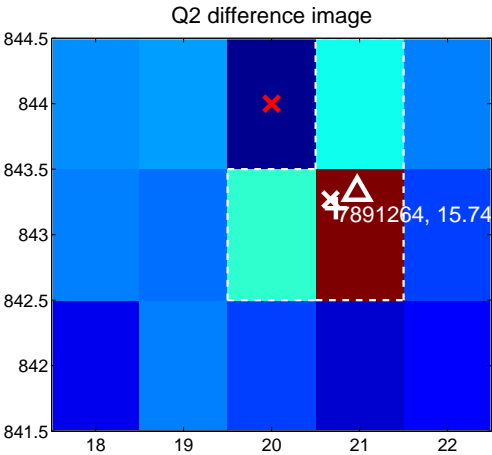
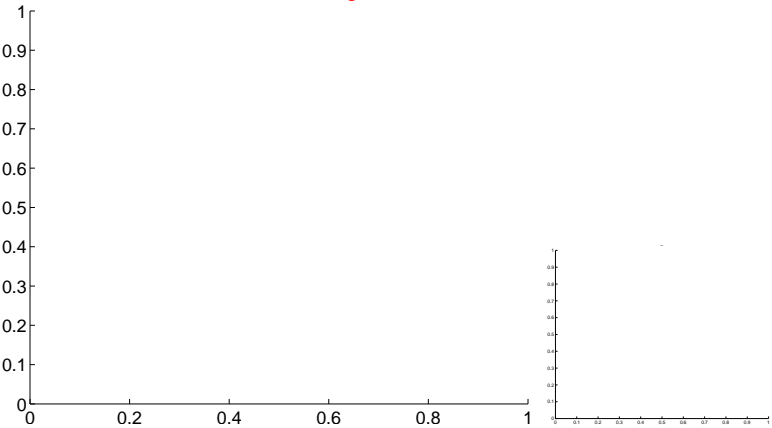
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

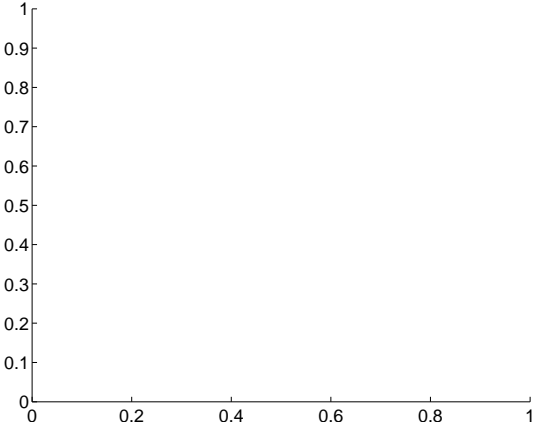
Q1 no difference image



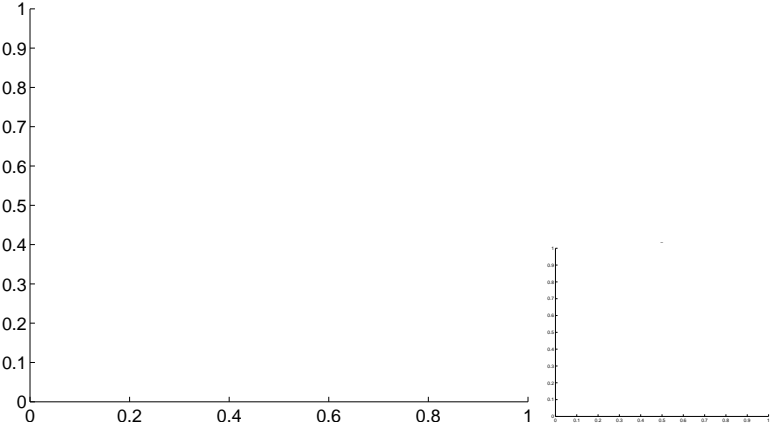
Q1 no OOT image



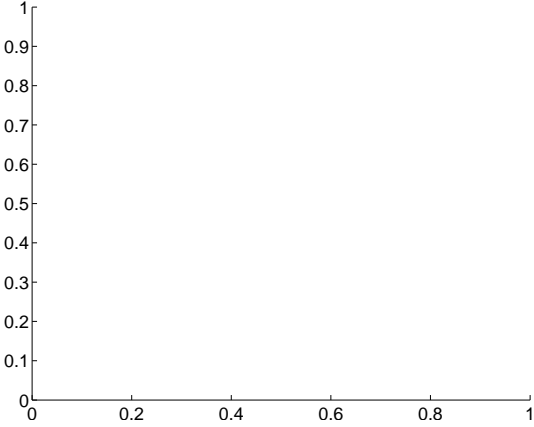
Q3 no difference image



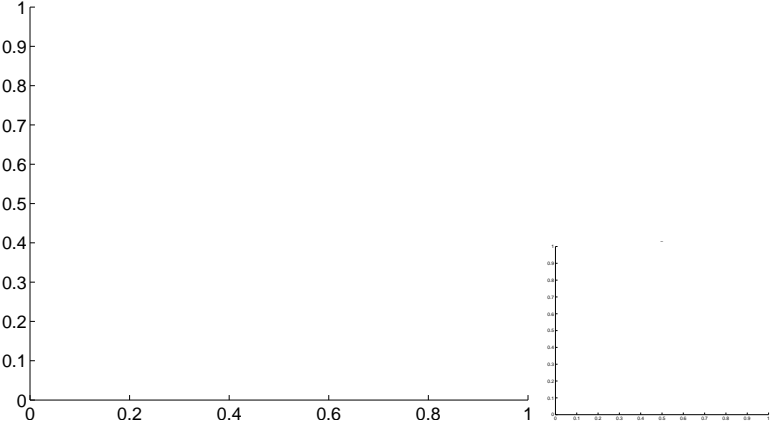
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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





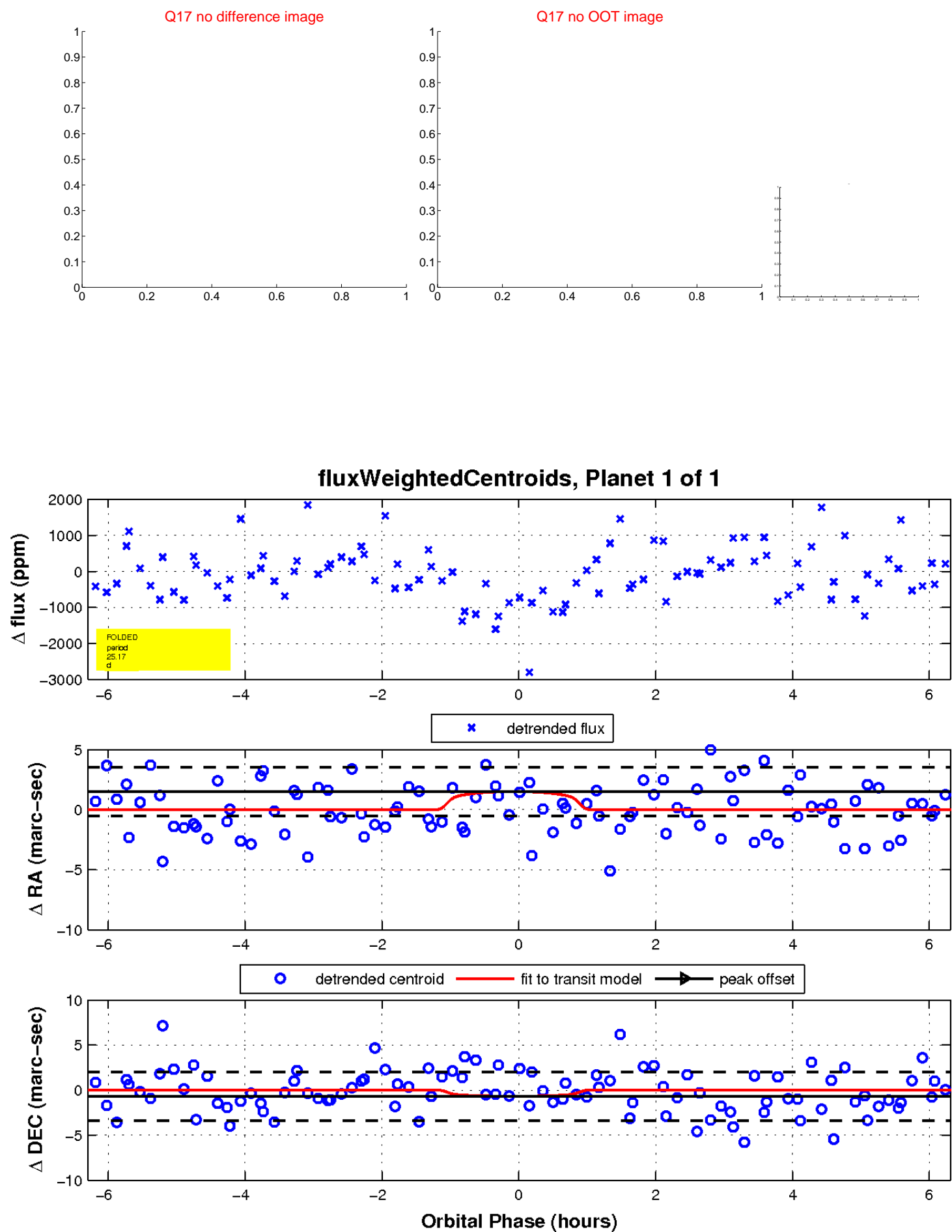
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

