

# KIC 007502065

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007502065-01 | OBS      | No   | 320.790800    | 385.919522   | 1070.5      | 5.093            | 10.6 | 8.2 | 0.66                        | 4308            | 2.15                   | 0.21                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 007502065-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

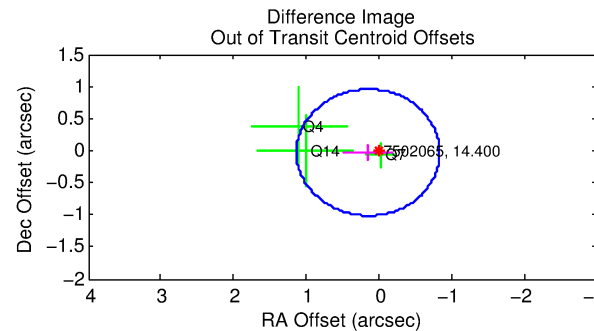
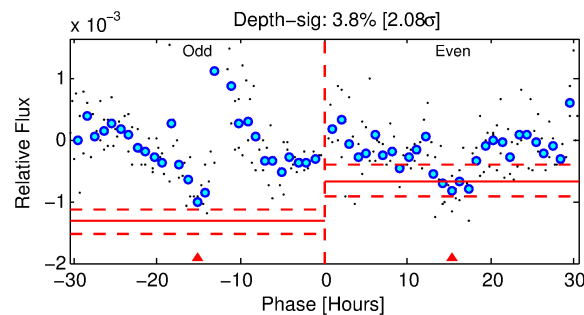
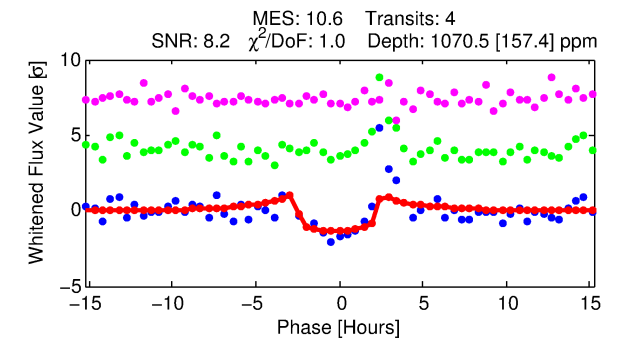
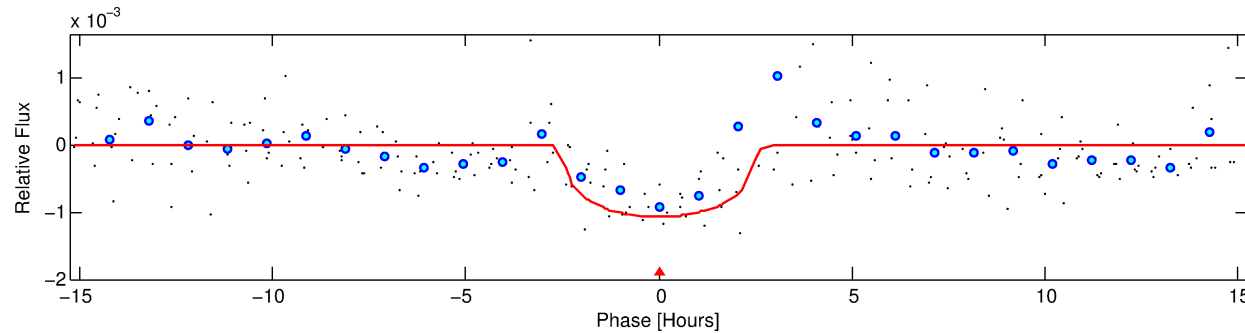
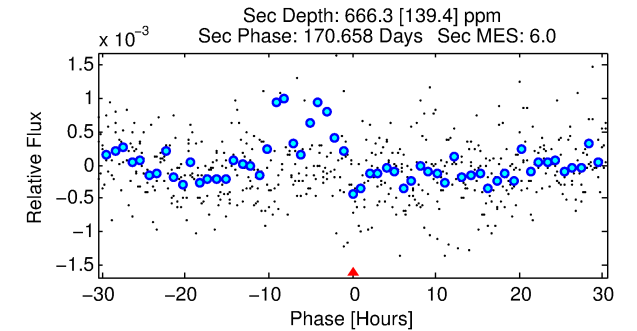
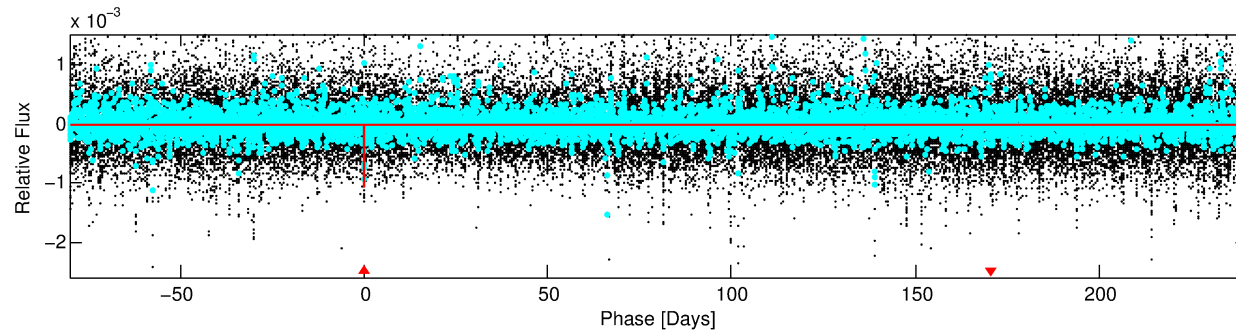
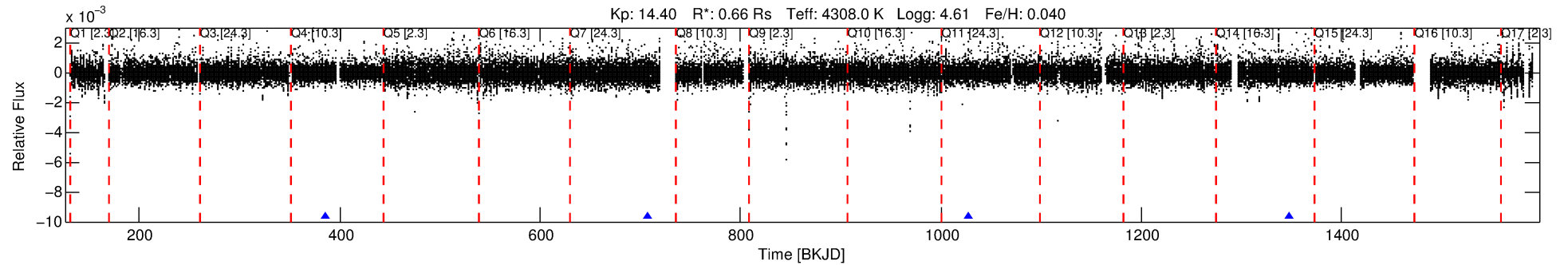
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007502065-01

No Significant Match Found

# DV One-Page Summary

KIC: 7502065 Candidate: 1 of 1 Period: 320.791 d



## DV Fit Results:

Period = 320.79080 [0.00379] d  
Epoch = 385.9195 [0.0068] BKJD  
Rp/R\* = 0.0296 [0.0294]  
a/R\* = 449.01 [1316.51]  
b = 0.44 [5.60]  
Seff = 0.21 [0.03]  
Teq = 173 [6] K  
Rp = 2.15 [2.14] Re  
a = 0.7985 [0.0520] AU  
Ag = 50644.49 [101205.13] [0.50σ]  
Teffp = 4020 [2010] K [1.91σ]

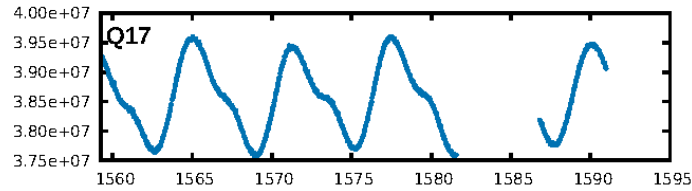
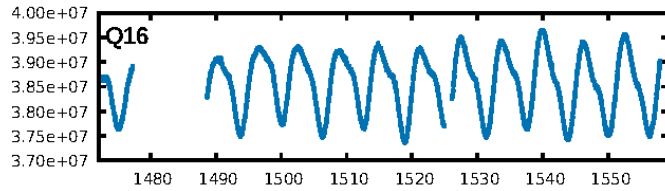
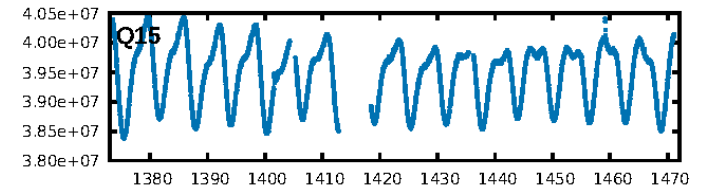
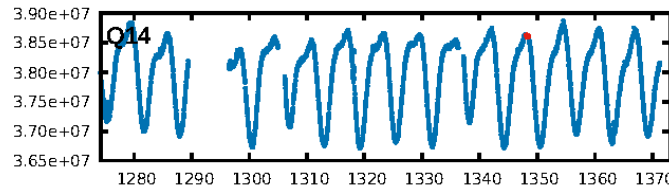
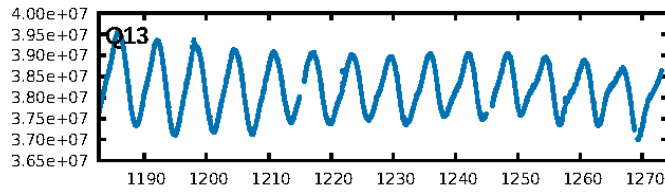
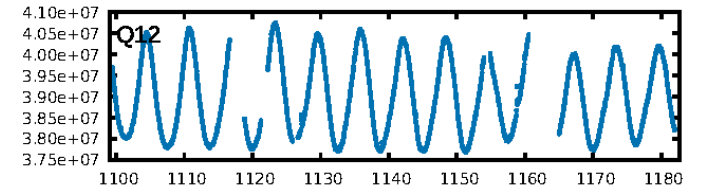
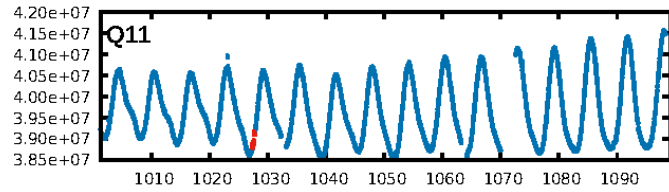
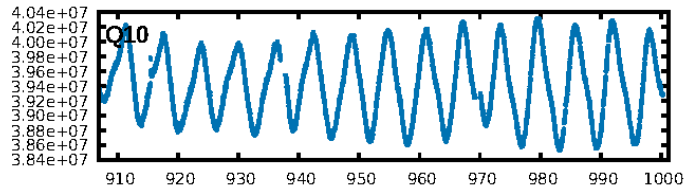
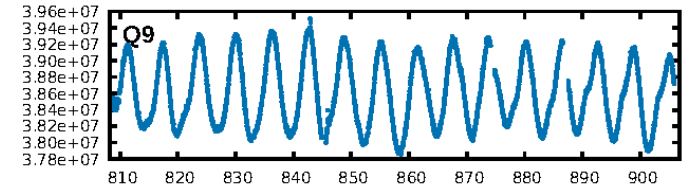
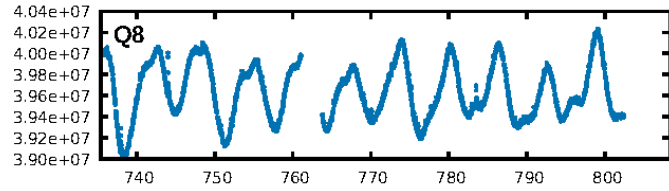
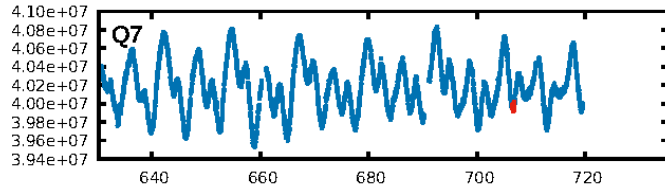
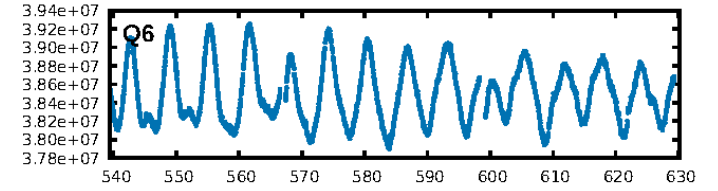
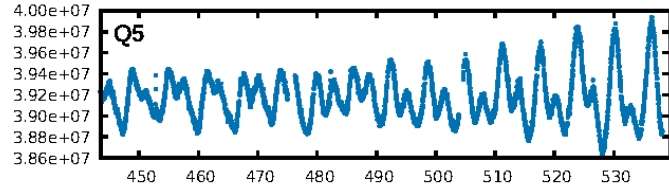
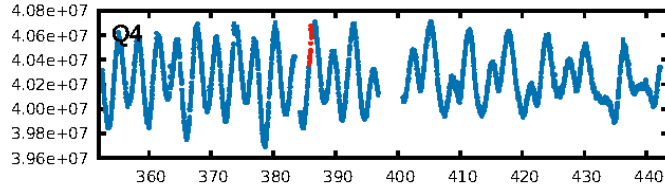
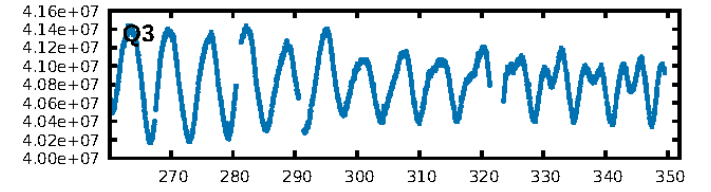
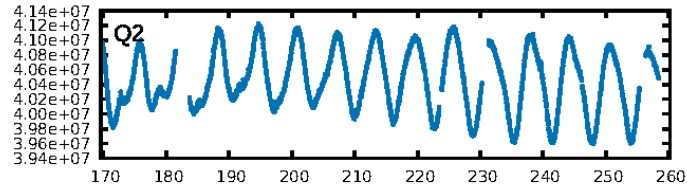
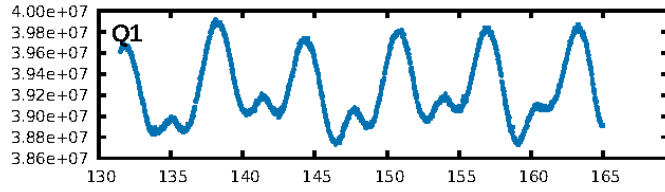
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 20.2%  
ModelChiSquareGof-sig: 97.4%  
**Bootstrap-pfa: 1.57e-09**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.026  
Centroid-sig: 88.2%  
Centroid-so: 0.160 arcsec [0.22σ]  
OotOffset-rm: 0.154 arcsec [0.47σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.143 arcsec [0.45σ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

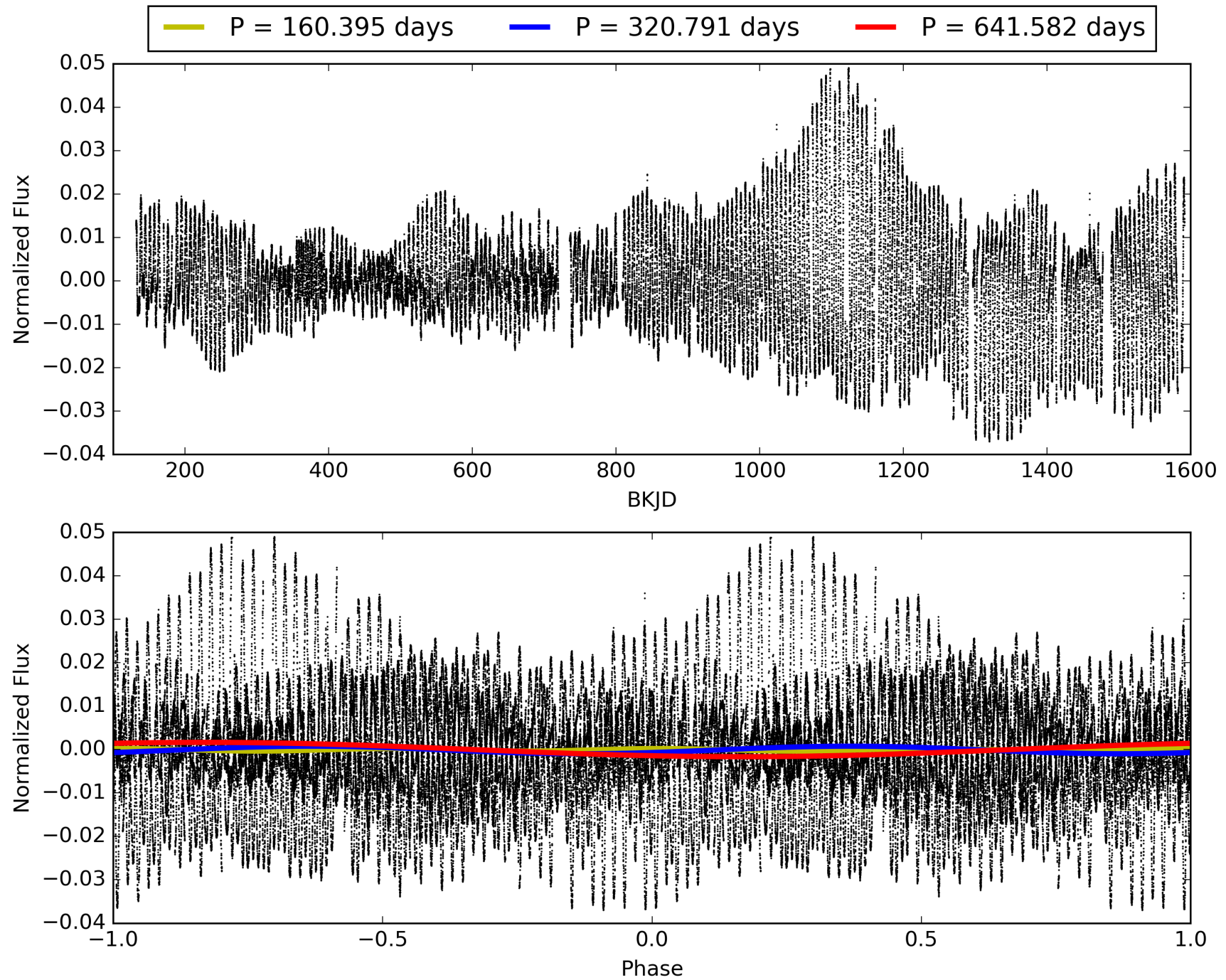
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:57:08 Z

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

# TCE 007502065-01, PDC Light Curves

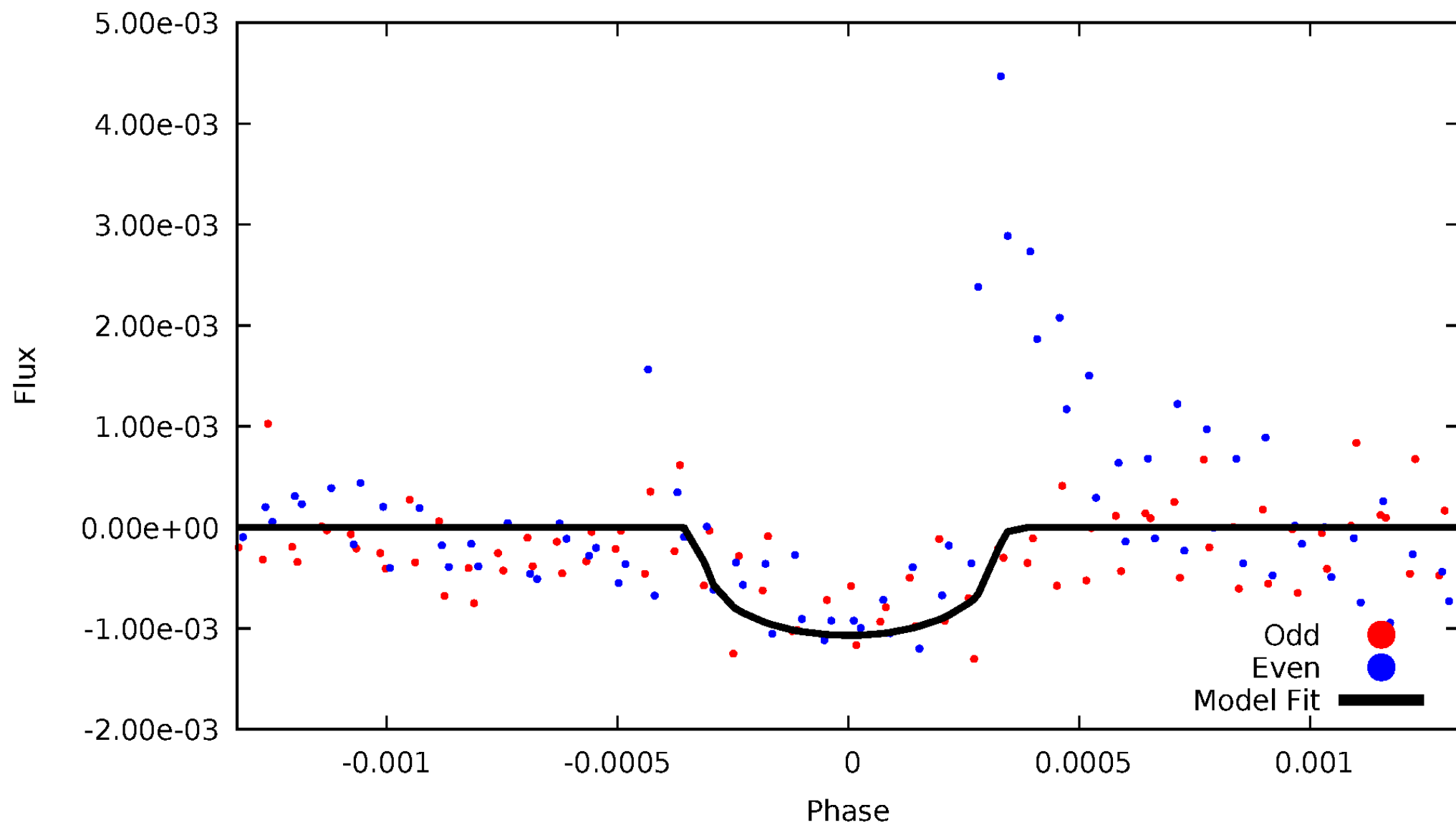


TCE 007502065-01



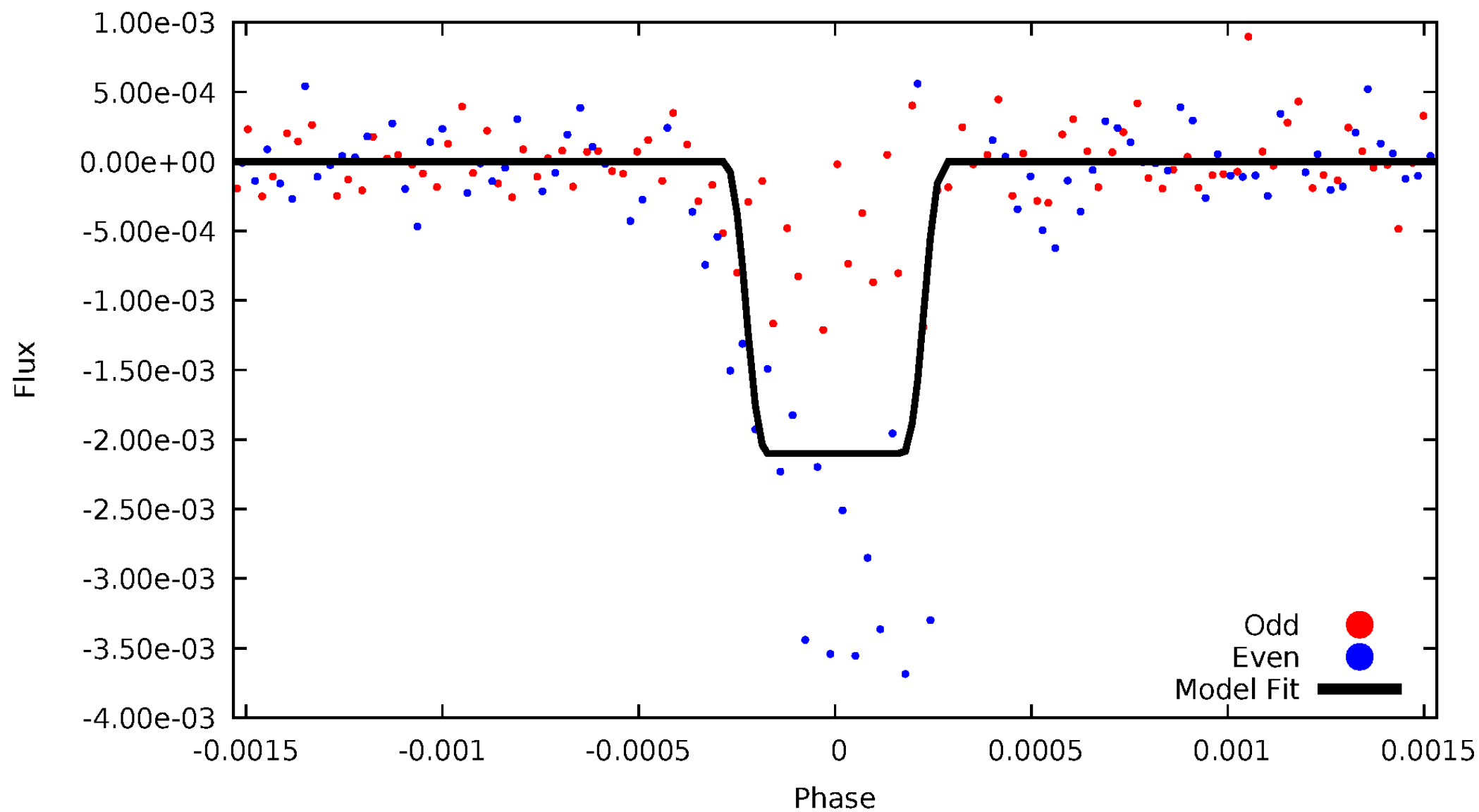
# DV Odd/Even

TCE 007502065-01



# ALT Odd/Even

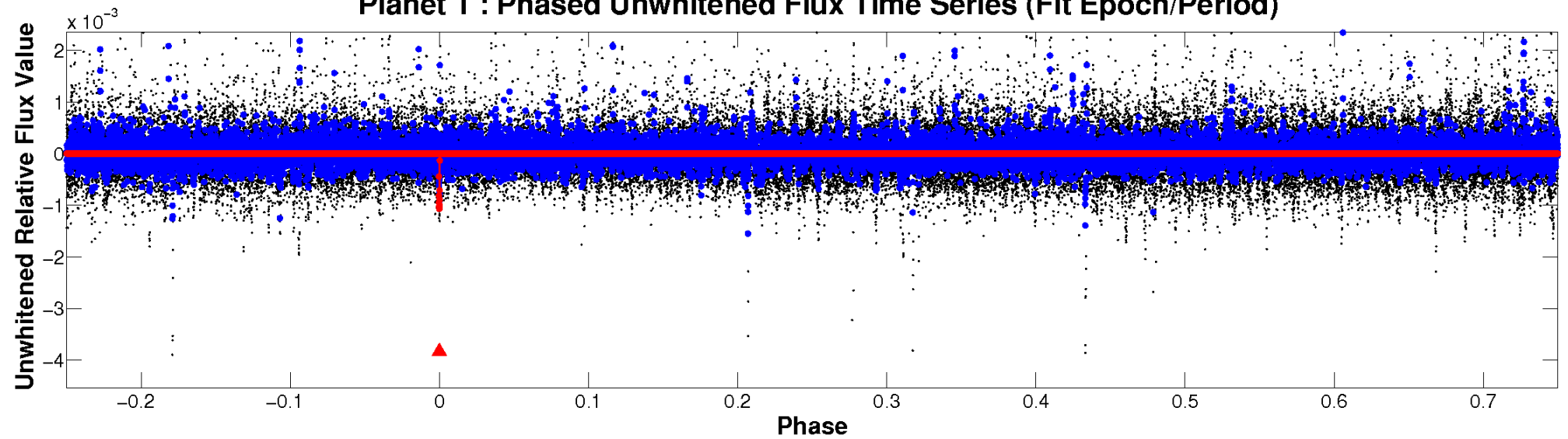
TCE 007502065-01



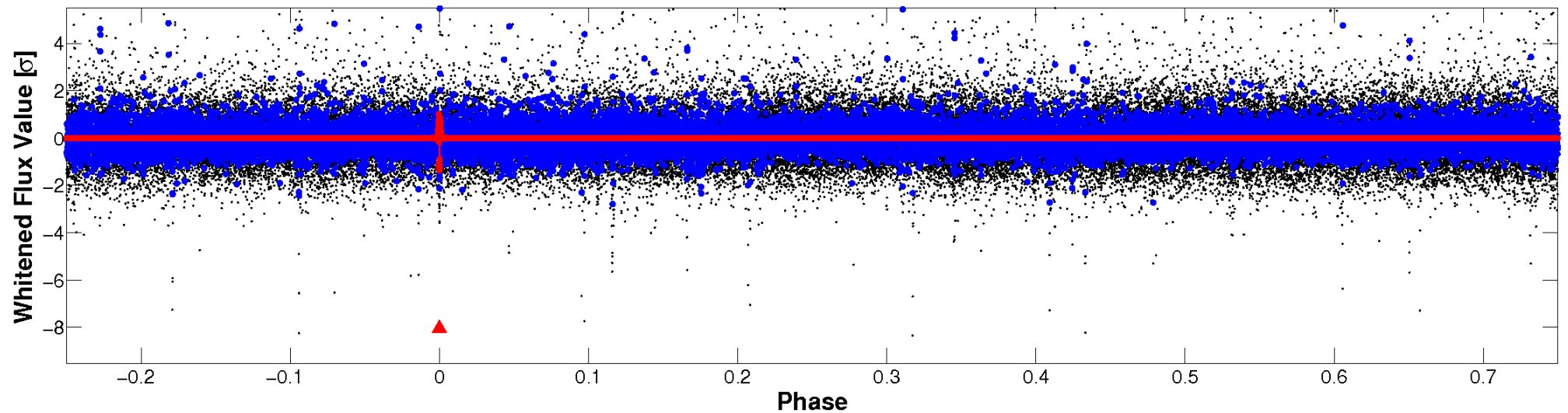


# Non-Whitened Vs. Whitened Light Curve

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

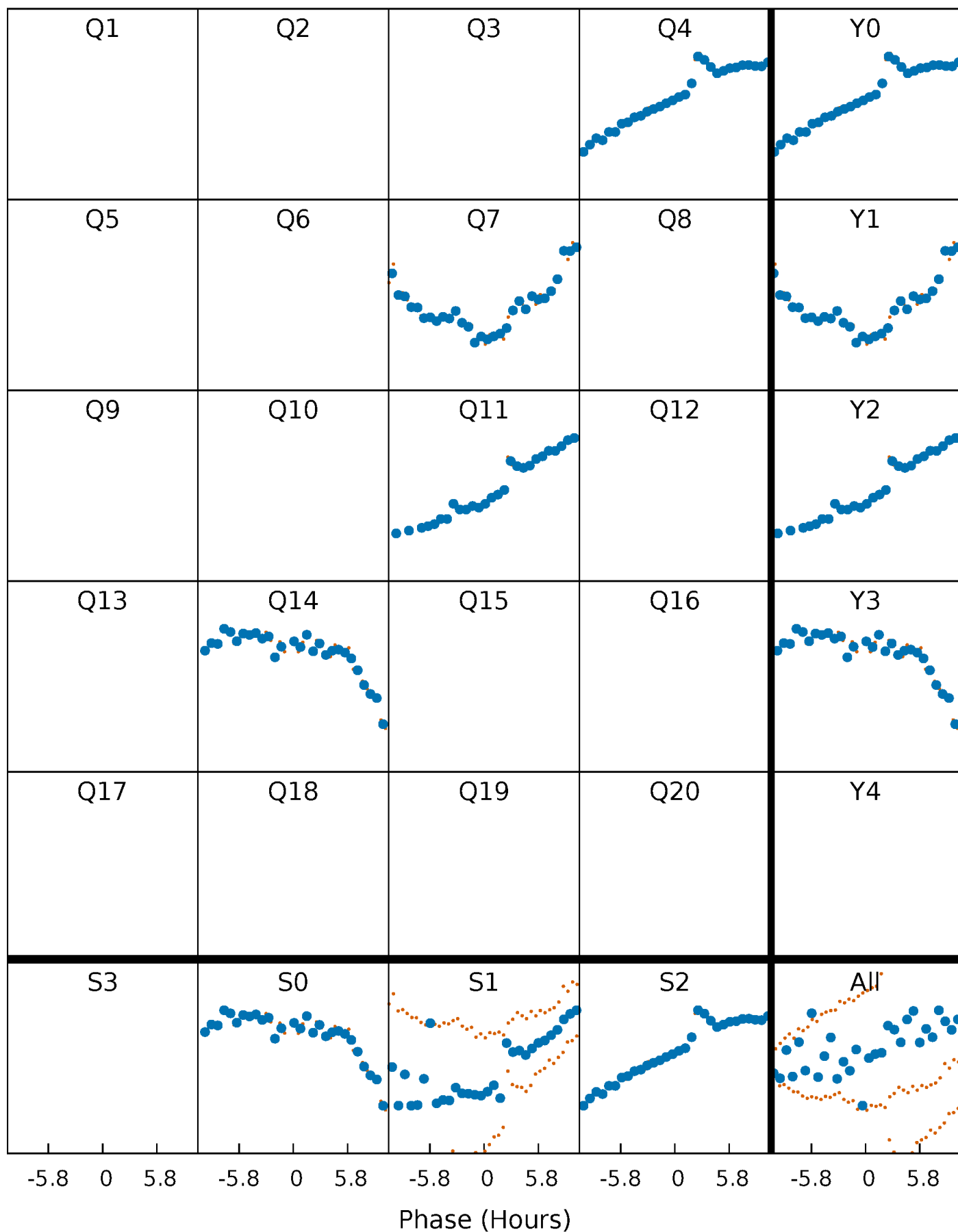


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

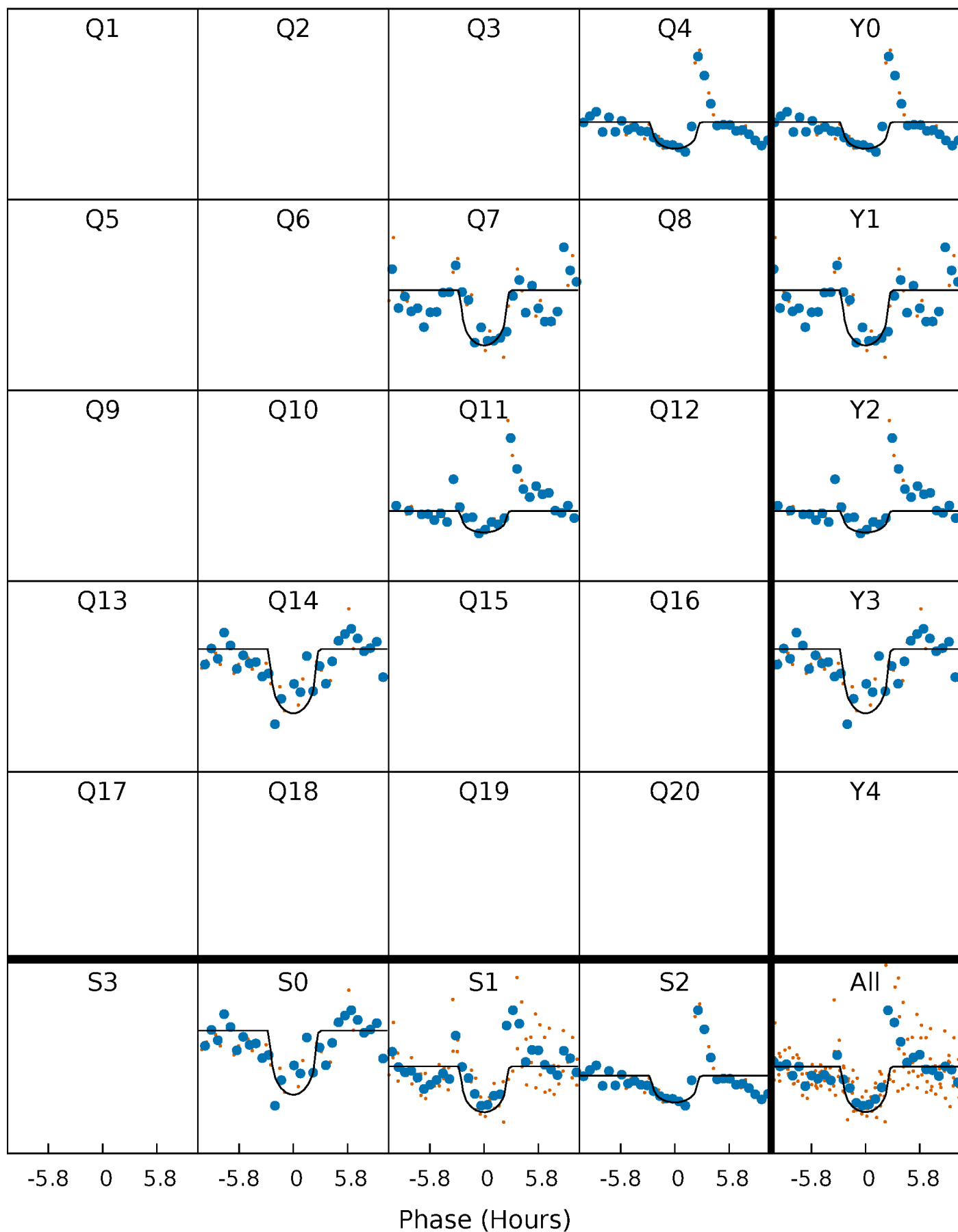
TCE 007502065-01 P=320.790799 Days  $T_0=385.919522$  (BKJD)





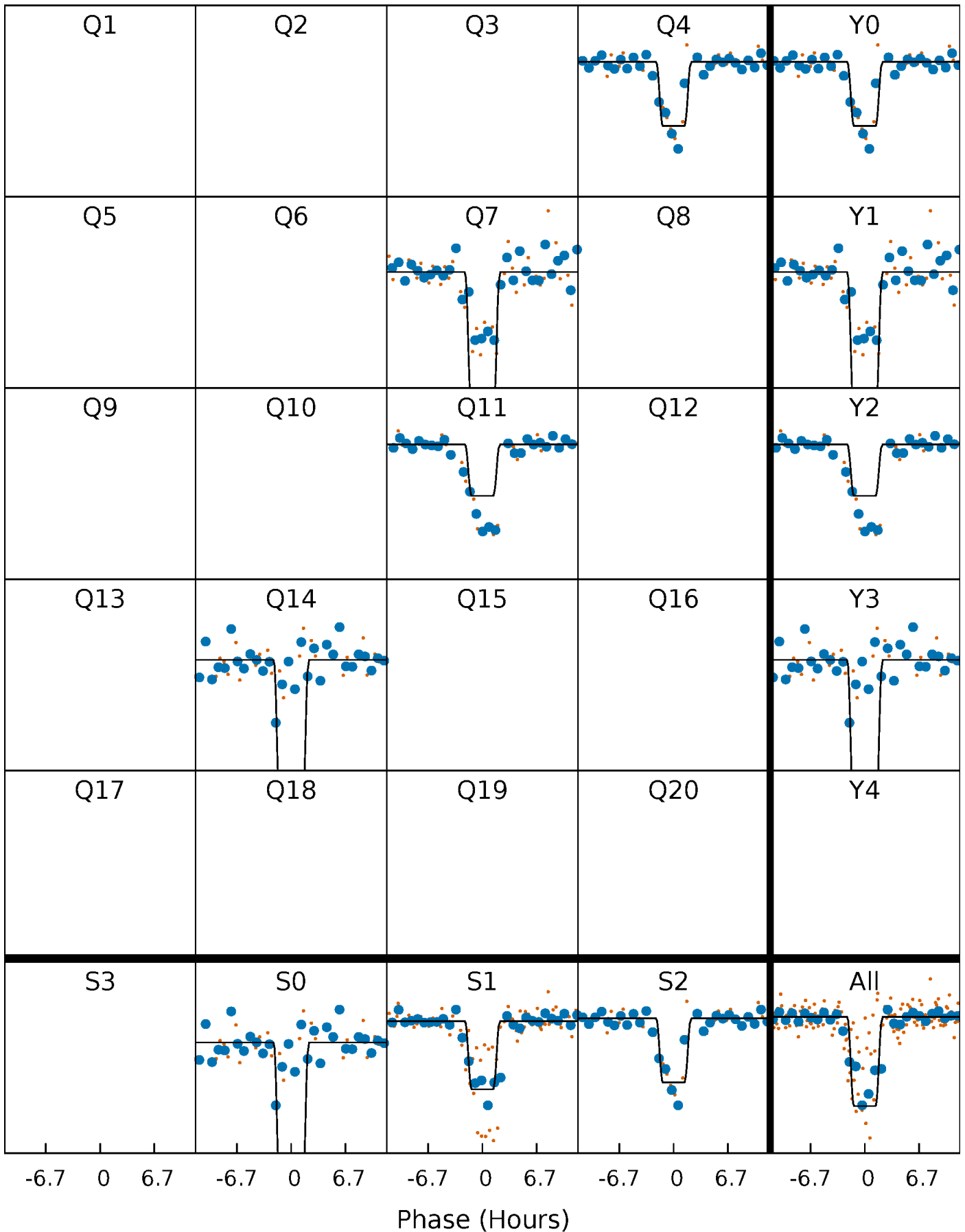
# DV Quarter-Phased Transit Curves

TCE 007502065-01 P=320.790799 Days  $T_0=385.919522$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

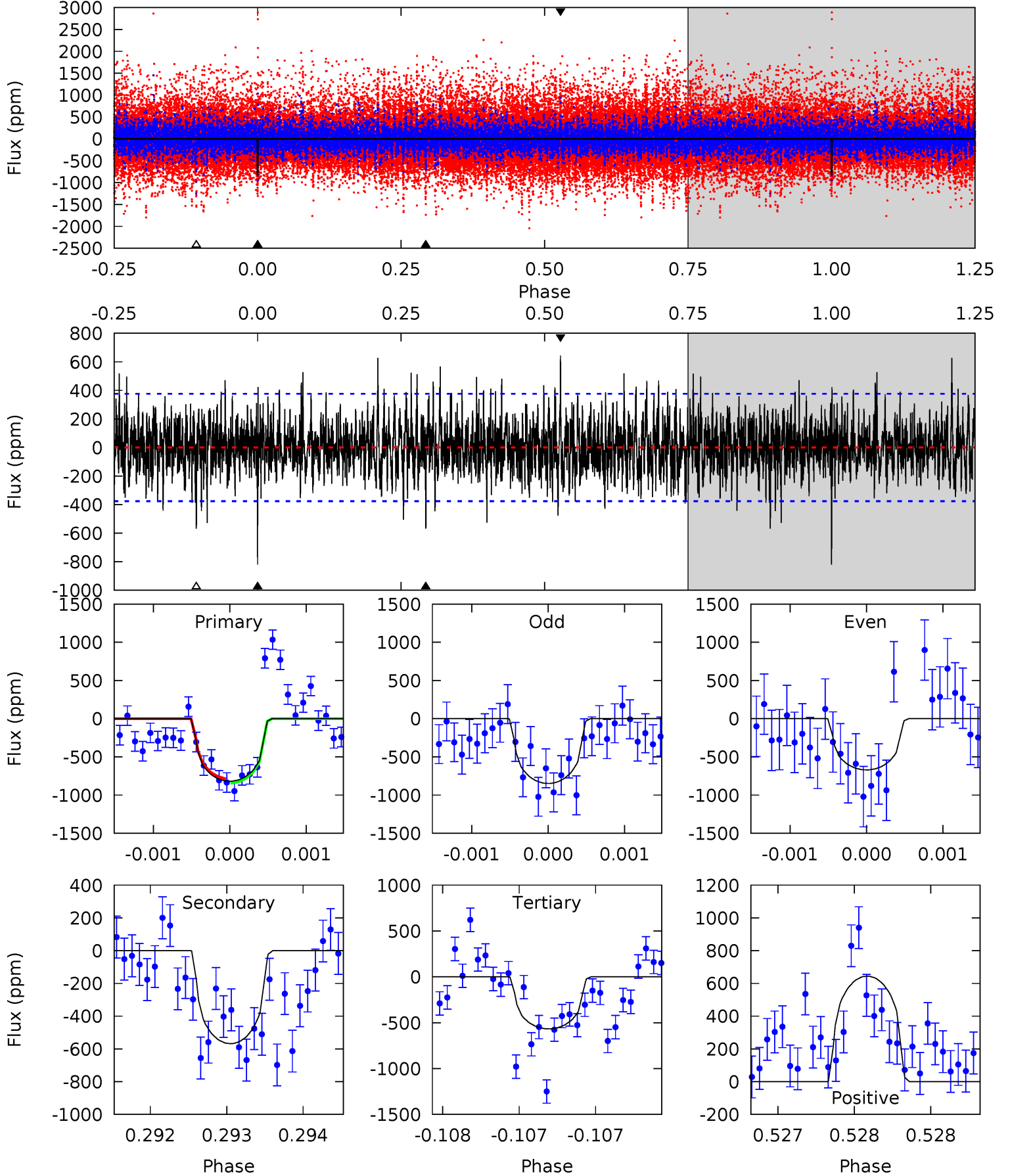
TCE 007502065-01 P=320.783176 Days  $T_0=385.942408$  (BKJD)



# DV Model-Shift Uniqueness Test

007502065-01, P = 320.790799 Days, E = 65.128723 Days

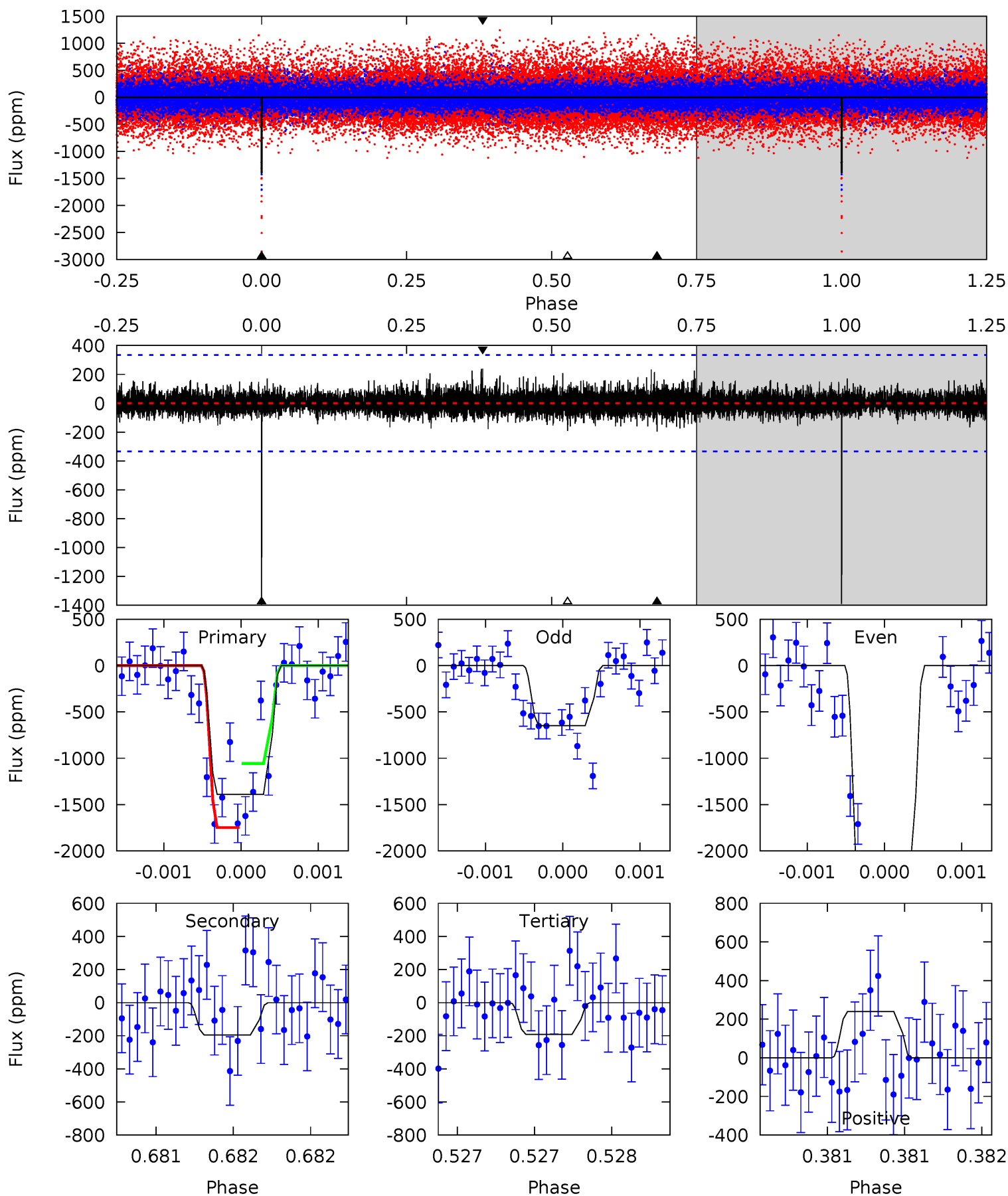
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.0 | 8.33 | 8.32 | 9.45 | 5.51            | 3.39            | 2.15             | 3.68    | 2.56    | 0.01    | -1.12   | 1.24    | 0.97 | 0.44  | 0.42 |



# Alt Model-Shift Uniqueness Test

007502065-01, P = 320.783176 Days, E = 65.159232 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.1 | 3.24 | 3.18 | 3.98 | 5.56            | 3.45            | 0.78             | 19.9    | 19.1    | 0.06    | -0.74   | 19.7    | 1.09 | 0.15  | 6.05 |



### Stellar Parameters For KIC 007502065

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | $[\text{Fe}/\text{H}]$    | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $4308^{+129}_{-129}$ | $4.613^{+0.045}_{-0.021}$ | $0.040^{+0.250}_{-0.300}$ | $0.664^{+0.036}_{-0.055}$ | $0.660^{+0.057}_{-0.057}$ | $3.173^{+0.681}_{-0.272}$                 |
|        | +3%/-3%              | +1%/-0%                   | +625%/-750%               | +5%/-8%                   | +9%/-9%                   | +21%/-9%                                  |
| Source | PHO1                 | 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 007502065-01 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$   | $T_{obs} (K)$         | $A_{obs}$                  |
|---------|---------------|------------------------|-----------------|-----------------------|----------------------------|
| DV      | $-568 \pm 68$ | $2.50^{+1.98}_{-1.49}$ | $241^{+8}_{-8}$ | $3784^{+1650}_{-663}$ | $32090^{+162398}_{-22360}$ |
| Alt.    | $-195 \pm 60$ | $3.40^{+2.17}_{-1.77}$ | $241^{+8}_{-8}$ | $2911^{+737}_{-373}$  | $5906^{+20156}_{-3856}$    |

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

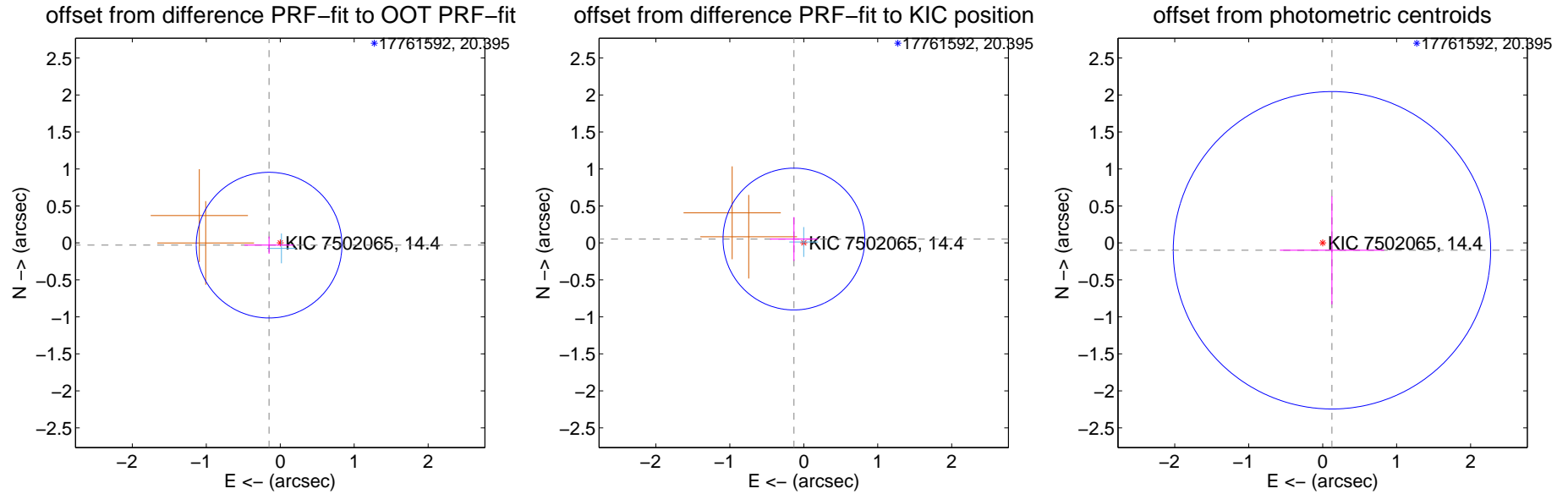
## DV Centroid Data

Supplemental centroid analysis for 007502065-01. Kepler magnitude: 14.40. Transit SNR 8.22

There are 1 quarters with good PRF difference image offsets

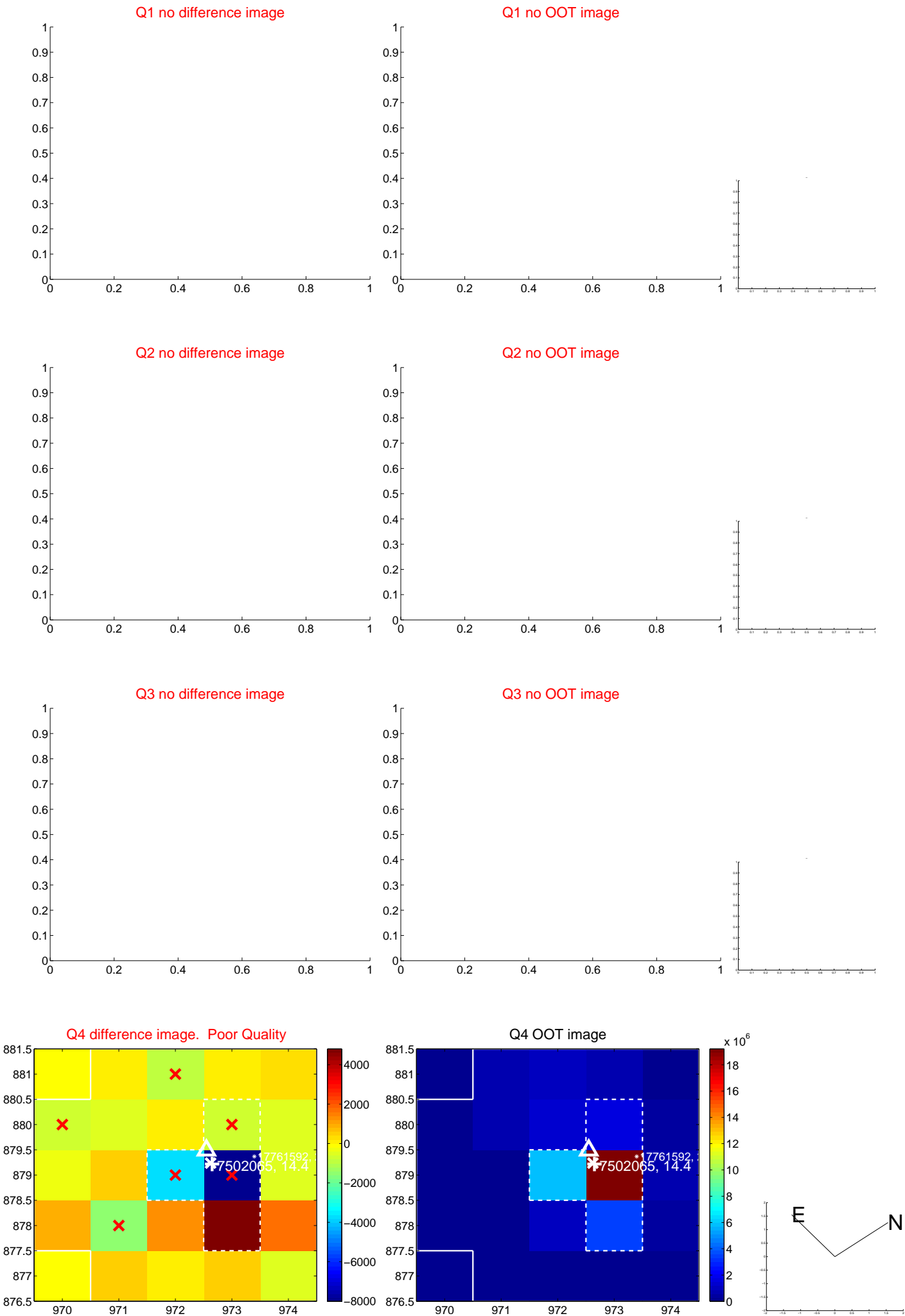
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $0.154 \pm 0.328$  | 0.47                | $0.151 \pm 0.334$ | $-0.030 \pm 0.116$ |
| PRF-fit source offset from KIC position | $0.143 \pm 0.320$  | 0.45                | $0.133 \pm 0.323$ | $0.052 \pm 0.297$  |
| photometric centroid source offset      | $0.16 \pm 0.72$    | 0.22                | $-0.13 \pm 0.70$  | $-0.10 \pm 0.73$   |



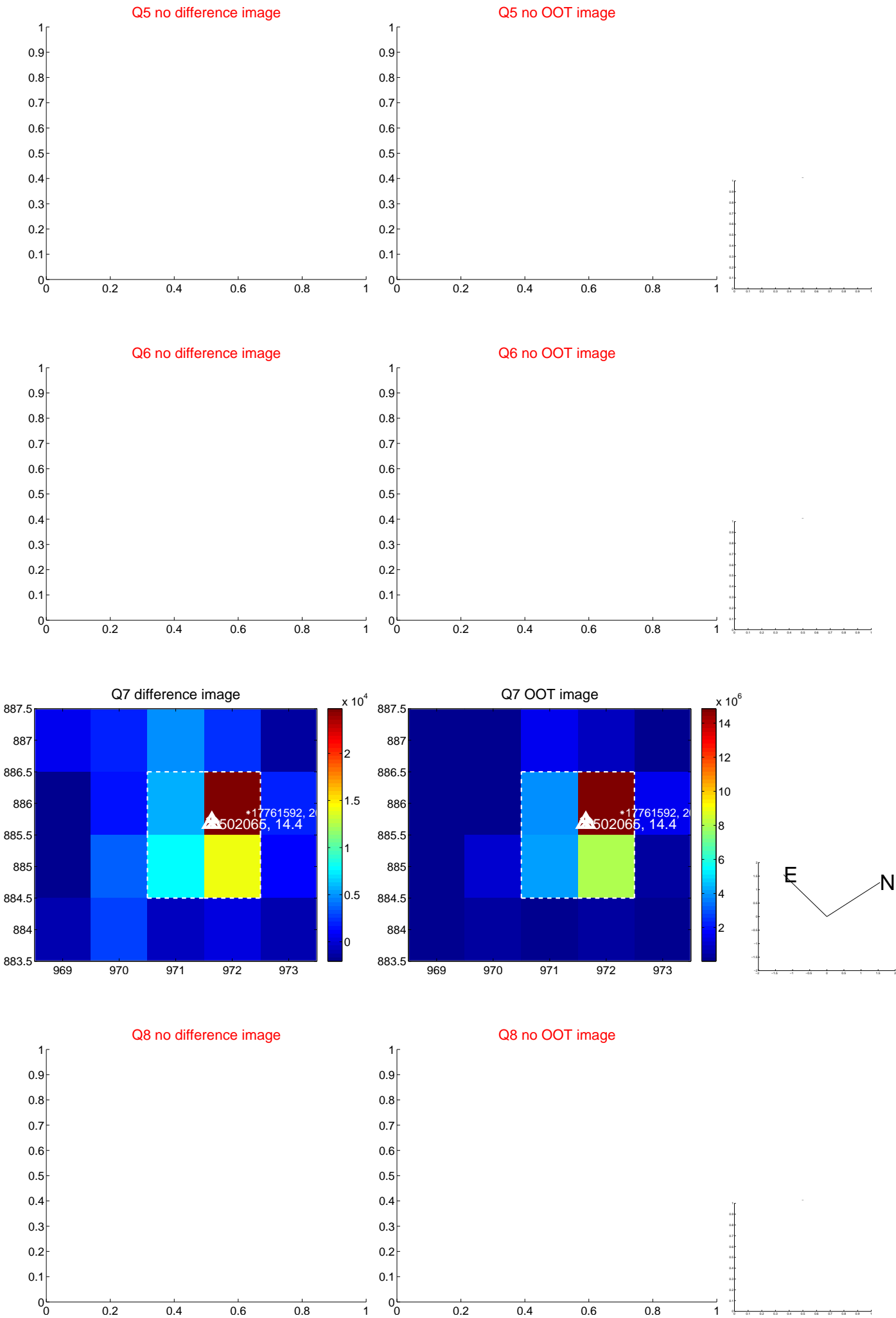
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





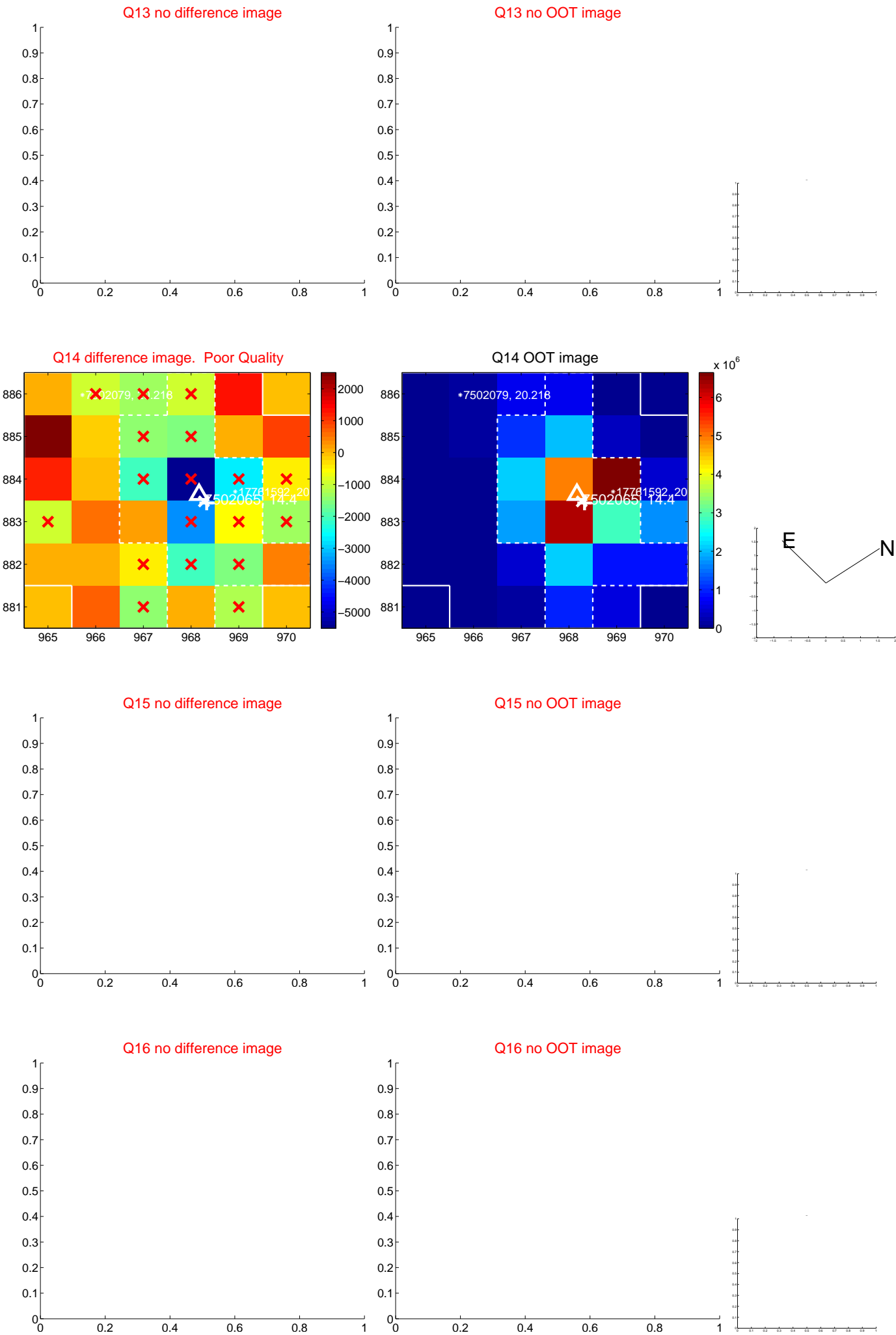
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



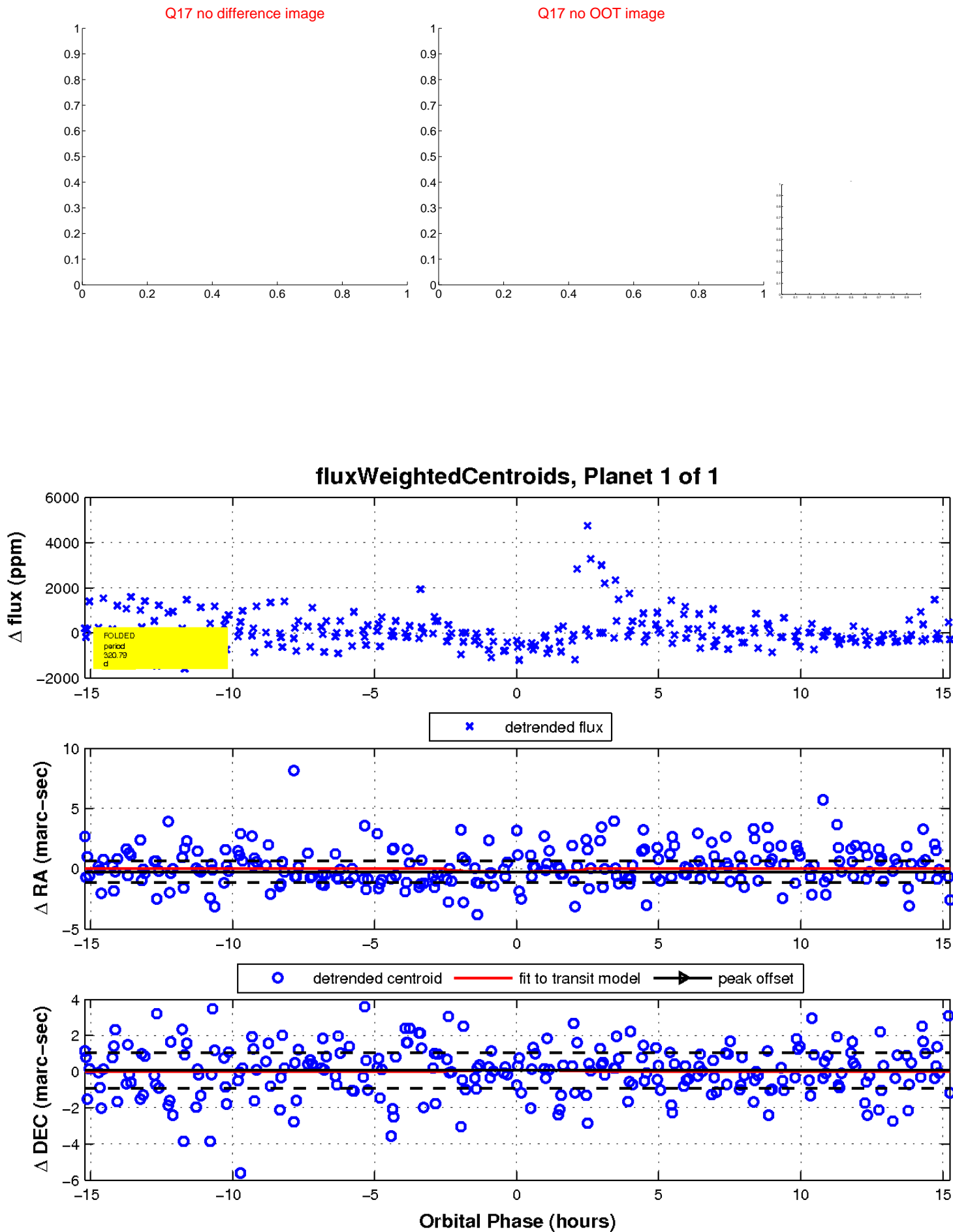
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

