

# KIC 010753394

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010753394-01 | OBS      | 8215.01 | 288.669485    | 143.860786   | 288.5       | 12.549           | 7.4 | 7.8 | 0.57                        | 4326            | 1.32                   | 0.21                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 010753394-01 | OBS      | FP   | 0.01  | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL—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.

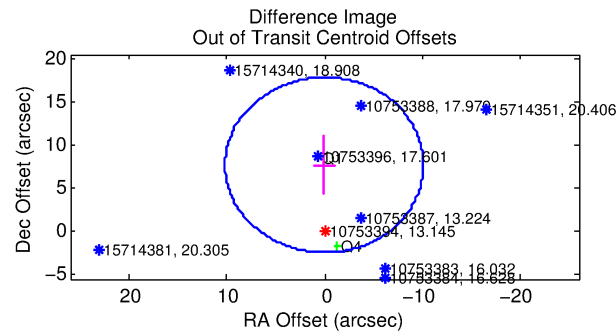
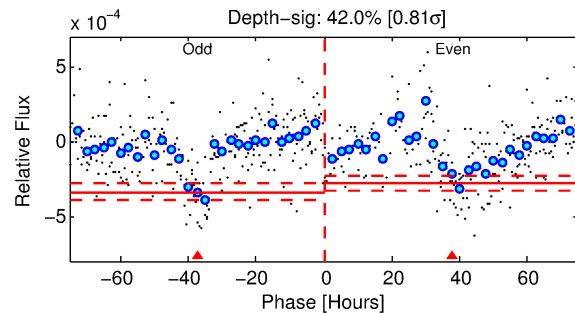
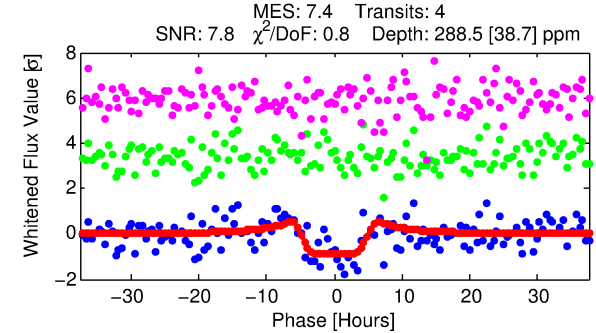
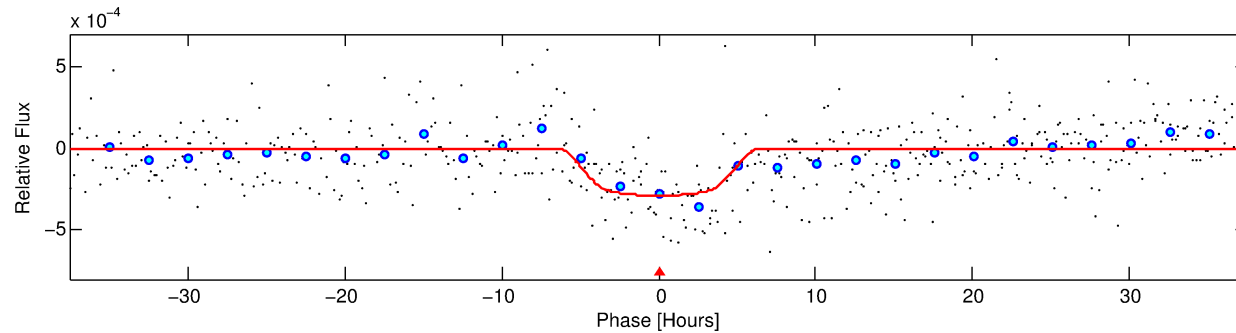
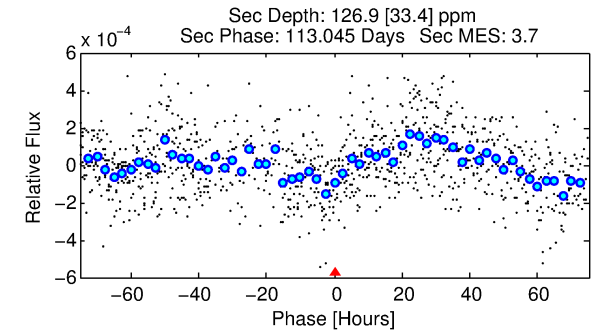
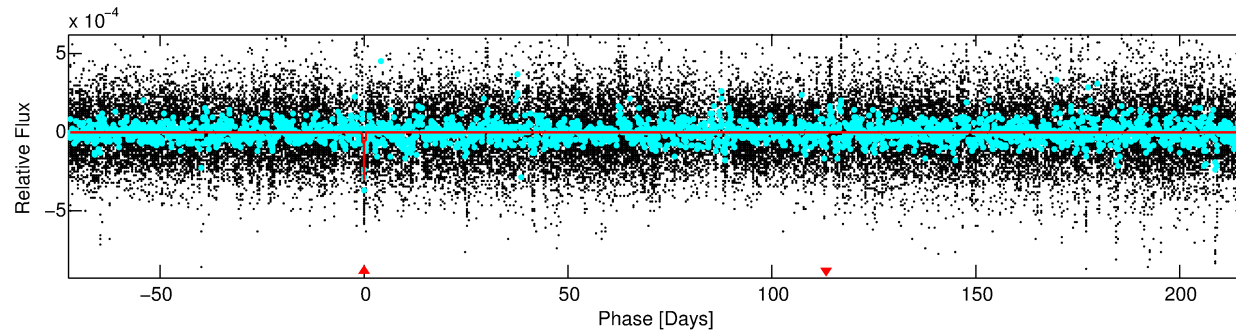
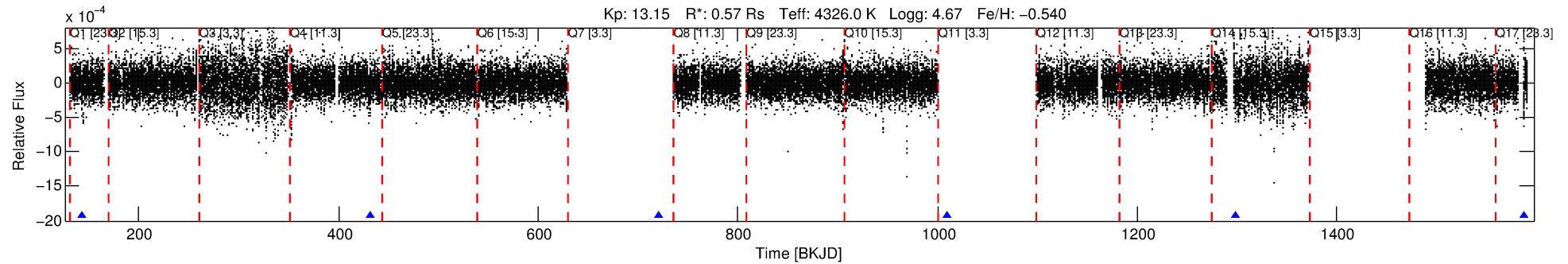
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010753394-01

No Significant Match Found

# DV One-Page Summary

KIC: 10753394 Candidate: 1 of 1 Period: 288.669 d



## DV Fit Results:

Period = 288.66949 [0.00566] d  
Epoch = 143.8608 [0.0172] BKJD  
Rp/R\* = 0.0210 [0.0019]  
a/R\* = 59.86 [12.49]  
b = 0.96 [0.02]  
Seff = 0.21 [0.03]  
Teq = 172 [7] K  
Rp = 1.32 [0.17] Re  
a = 0.7048 [0.0543] AU  
Ag = 20041.11 [6711.20] [2.99σ]  
Teffp = 3171 [270] K [11.12σ]

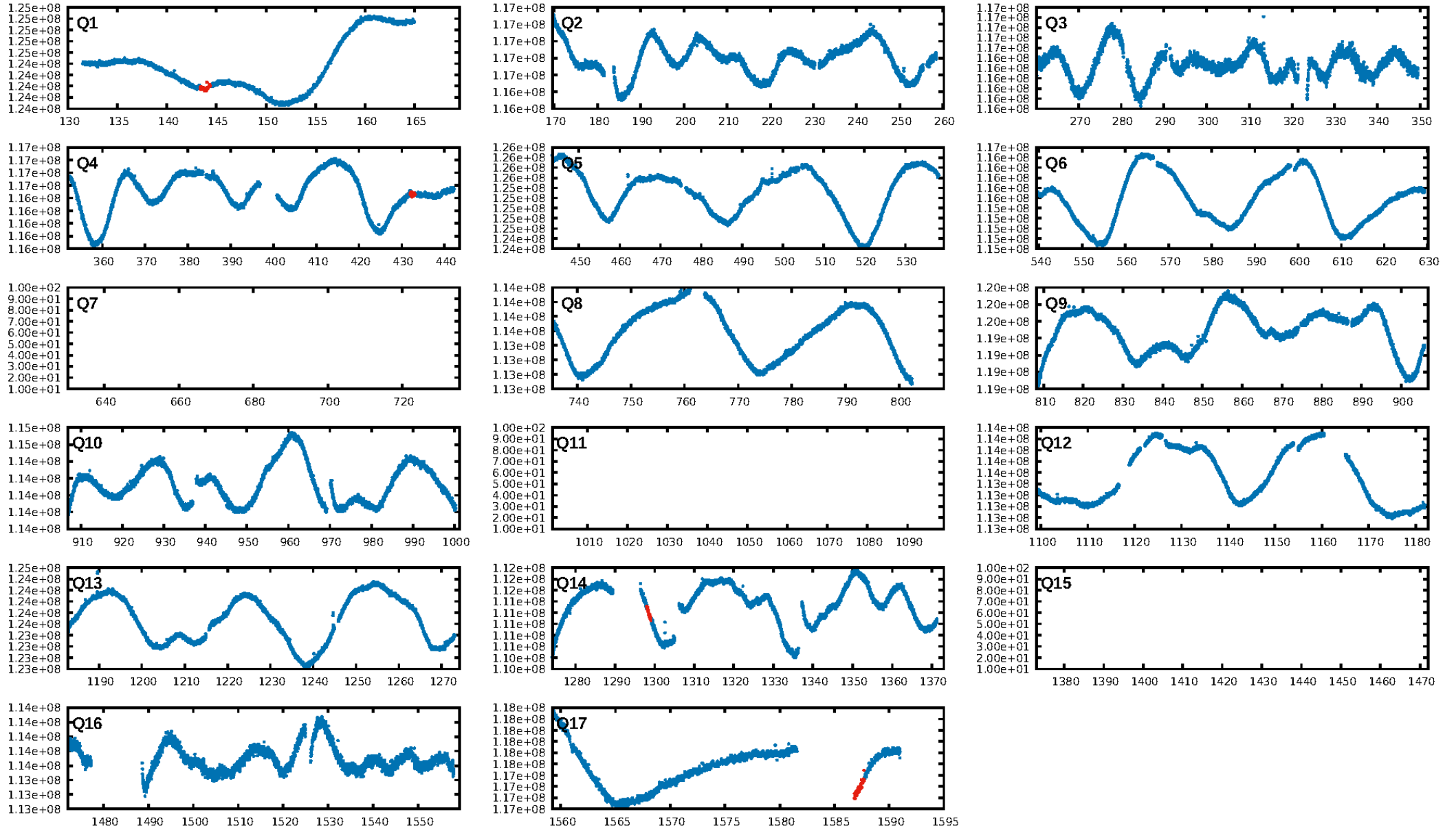
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 37.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 9.32e-10**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 5.928  
Centroid-sig: 87.9%  
Centroid-so: 0.624 arcsec [0.56σ]  
OotOffset-rm: 7.689 arcsec [2.27σ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-rm: 8.360 arcsec [2.49σ]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

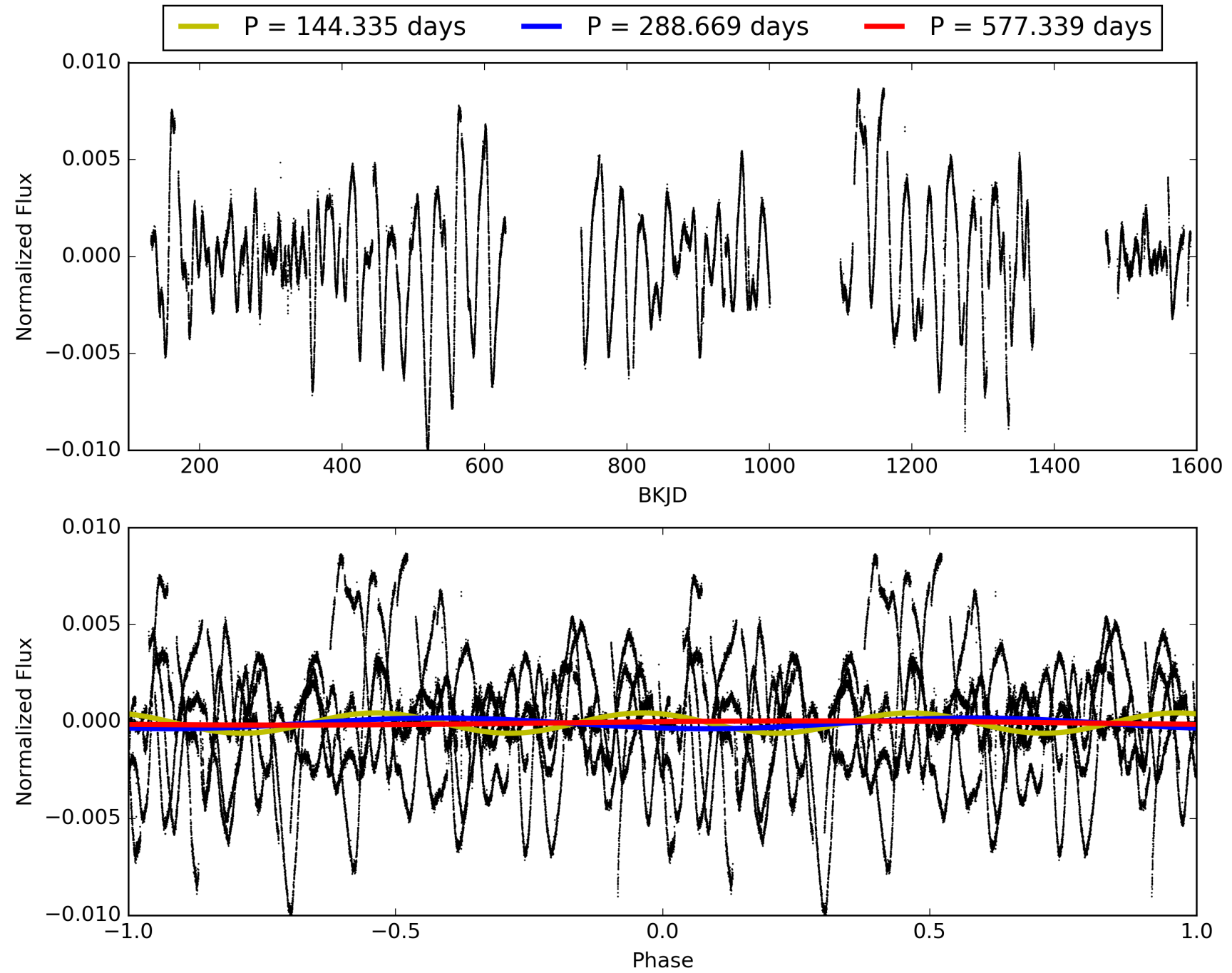
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:16:39 Z

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

# TCE 010753394-01, PDC Light Curves

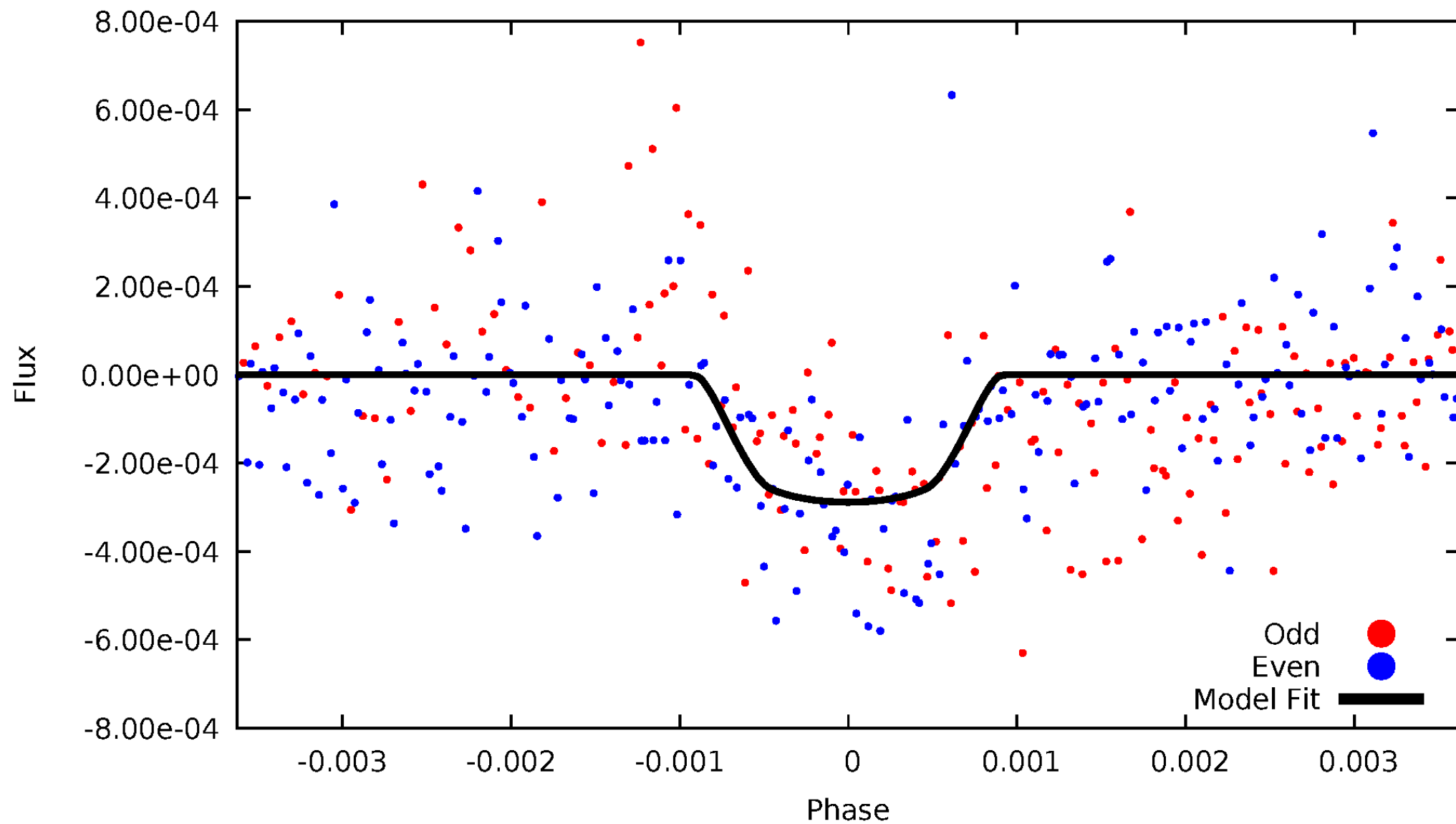


TCE 010753394-01



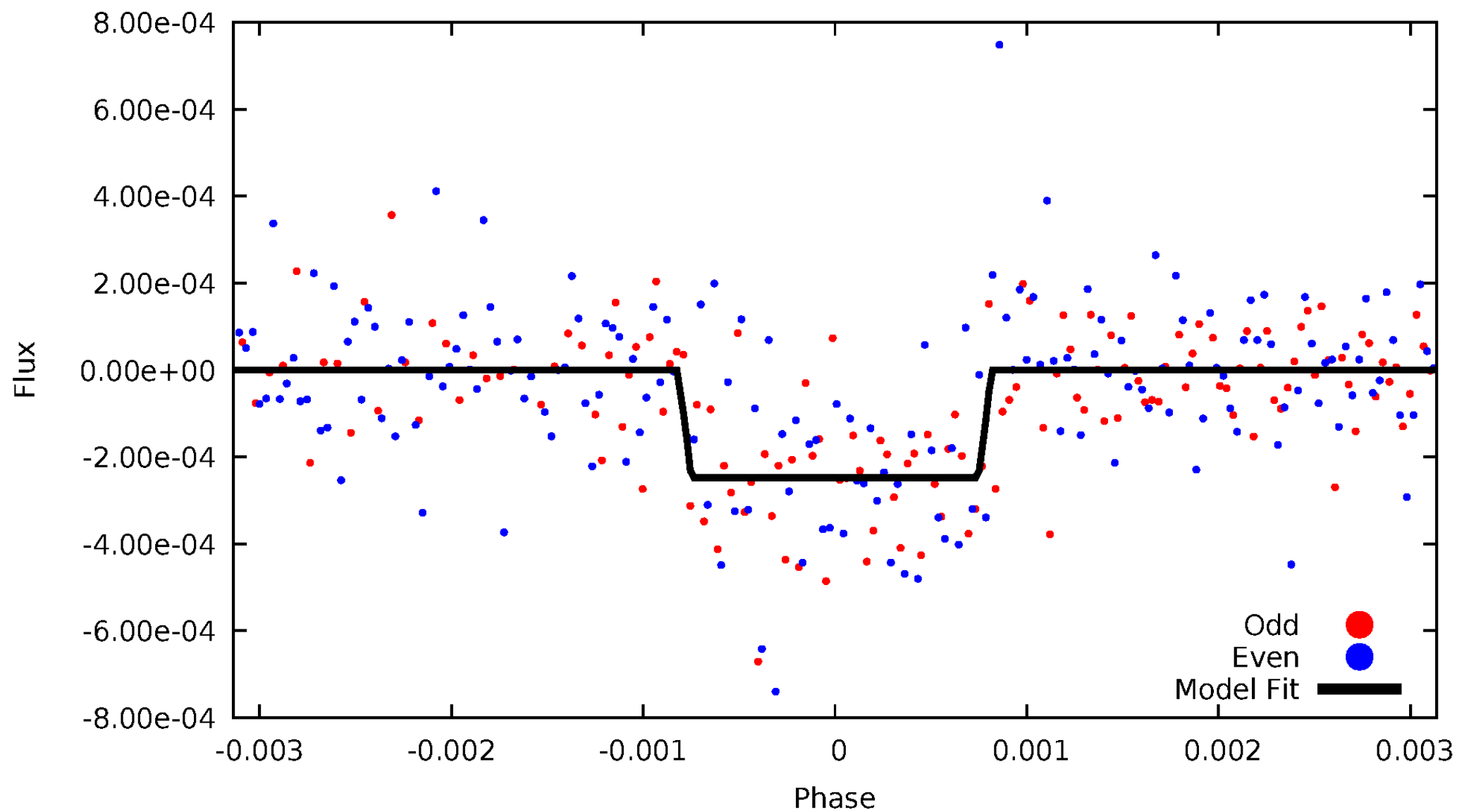
# DV Odd/Even

TCE 010753394-01



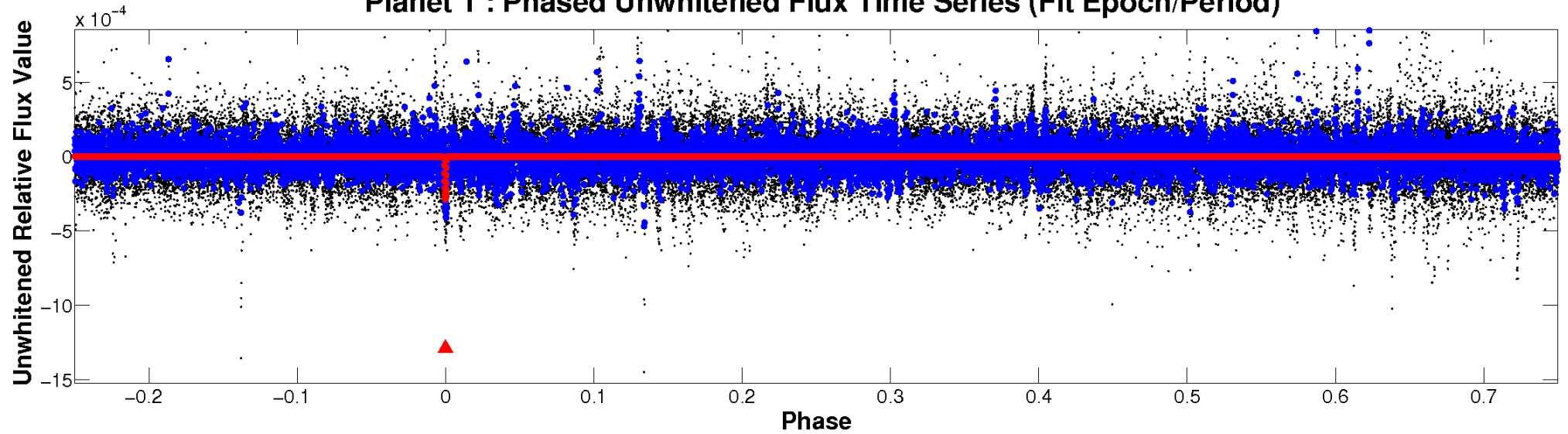
# ALT Odd/Even

TCE 010753394-01

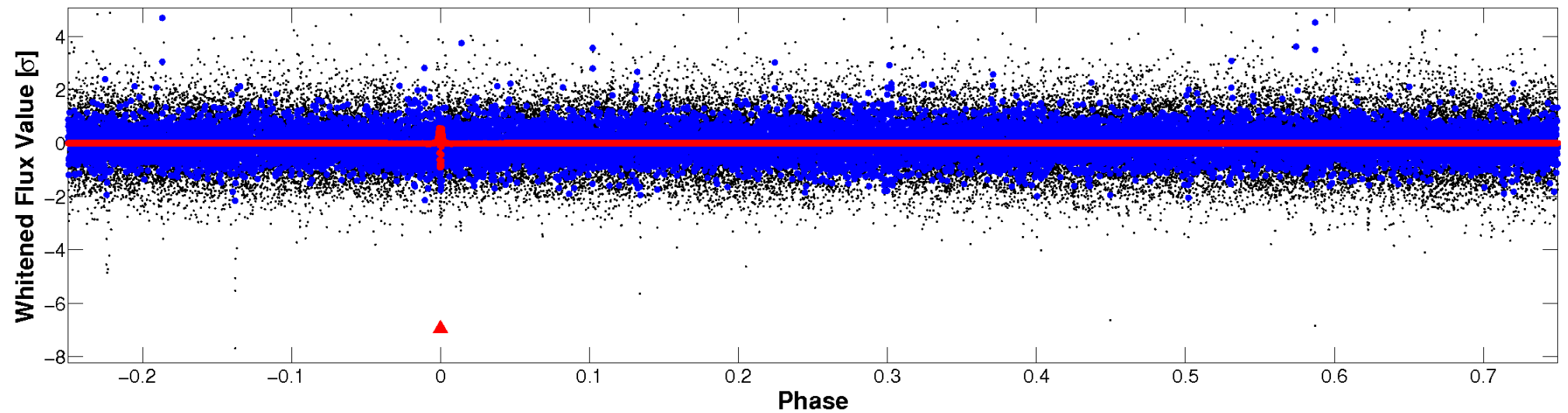


# Non-Whitened Vs. Whitened Light Curve

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

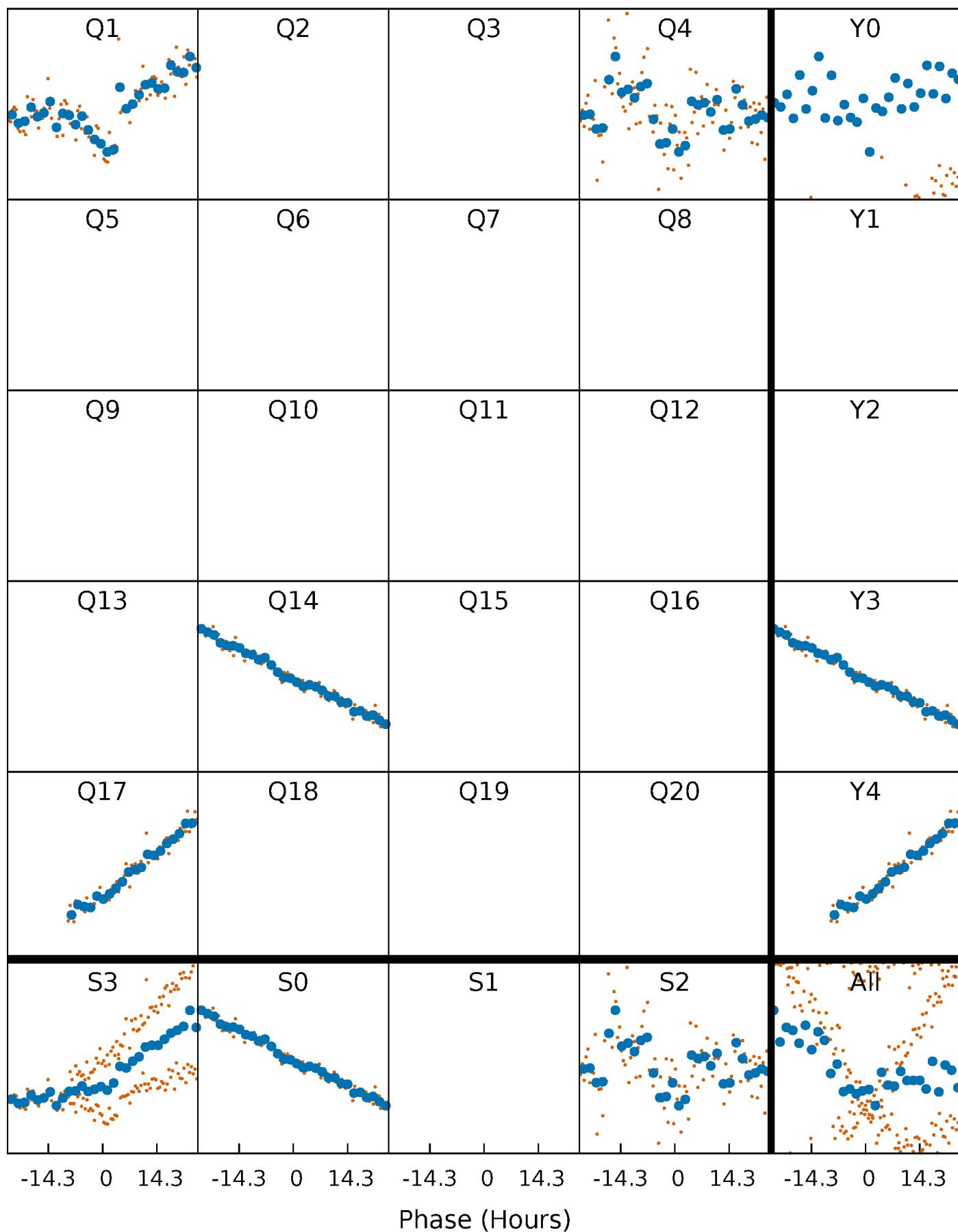


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

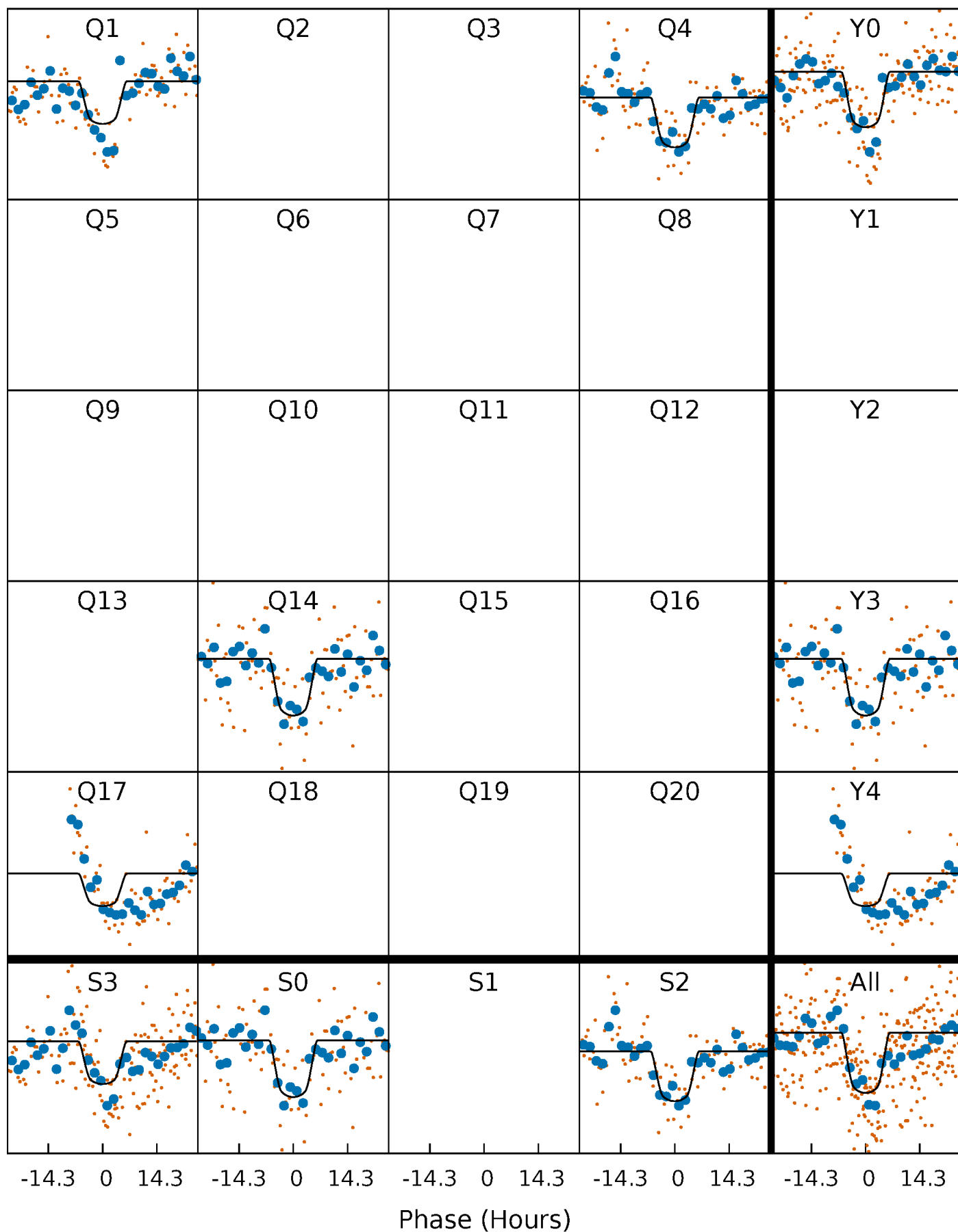
TCE 010753394-01 P=288.669485 Days  $T_0=143.860785$  (BKJD)





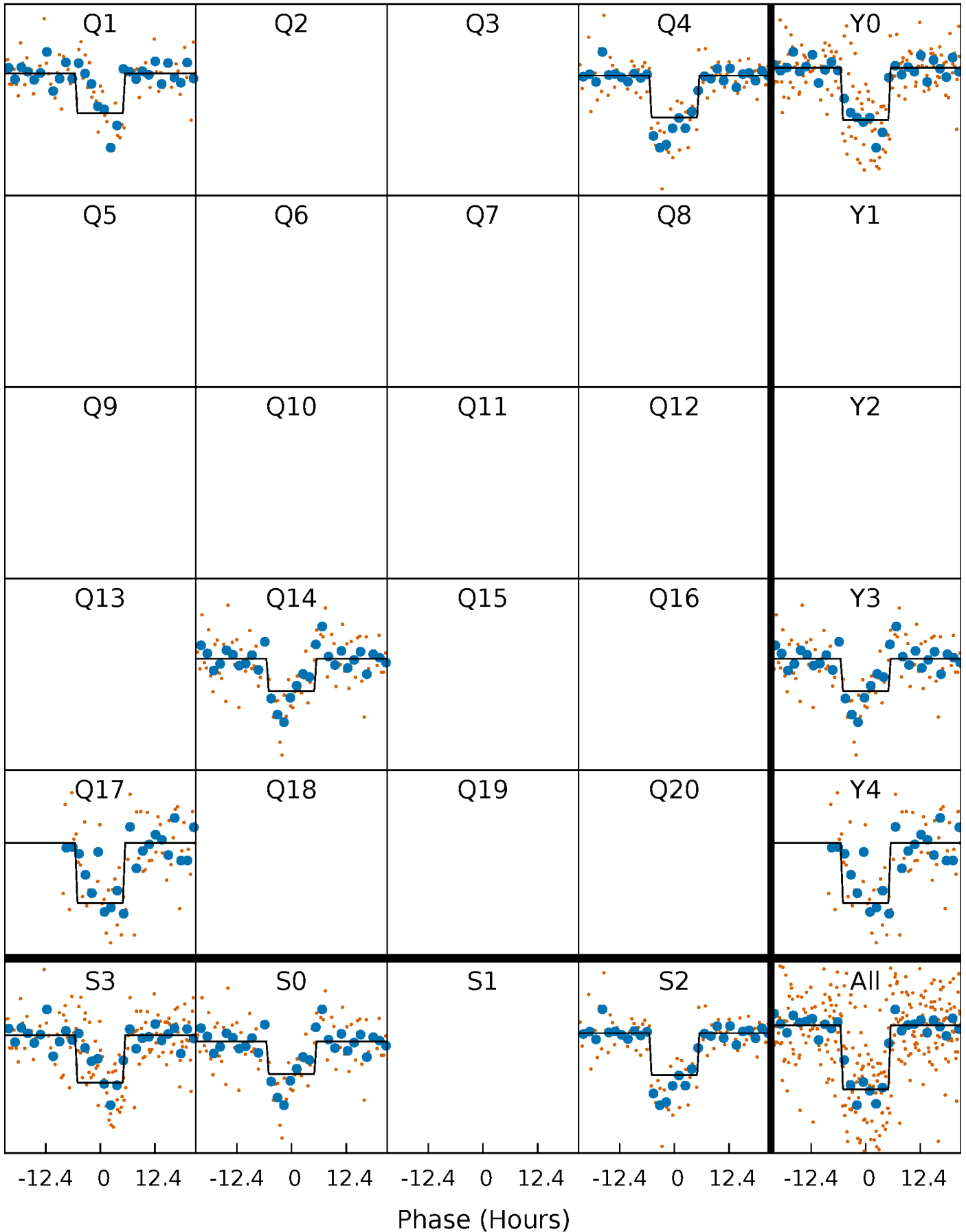
# DV Quarter-Phased Transit Curves

TCE 010753394-01 P=288.669485 Days  $T_0=143.860785$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

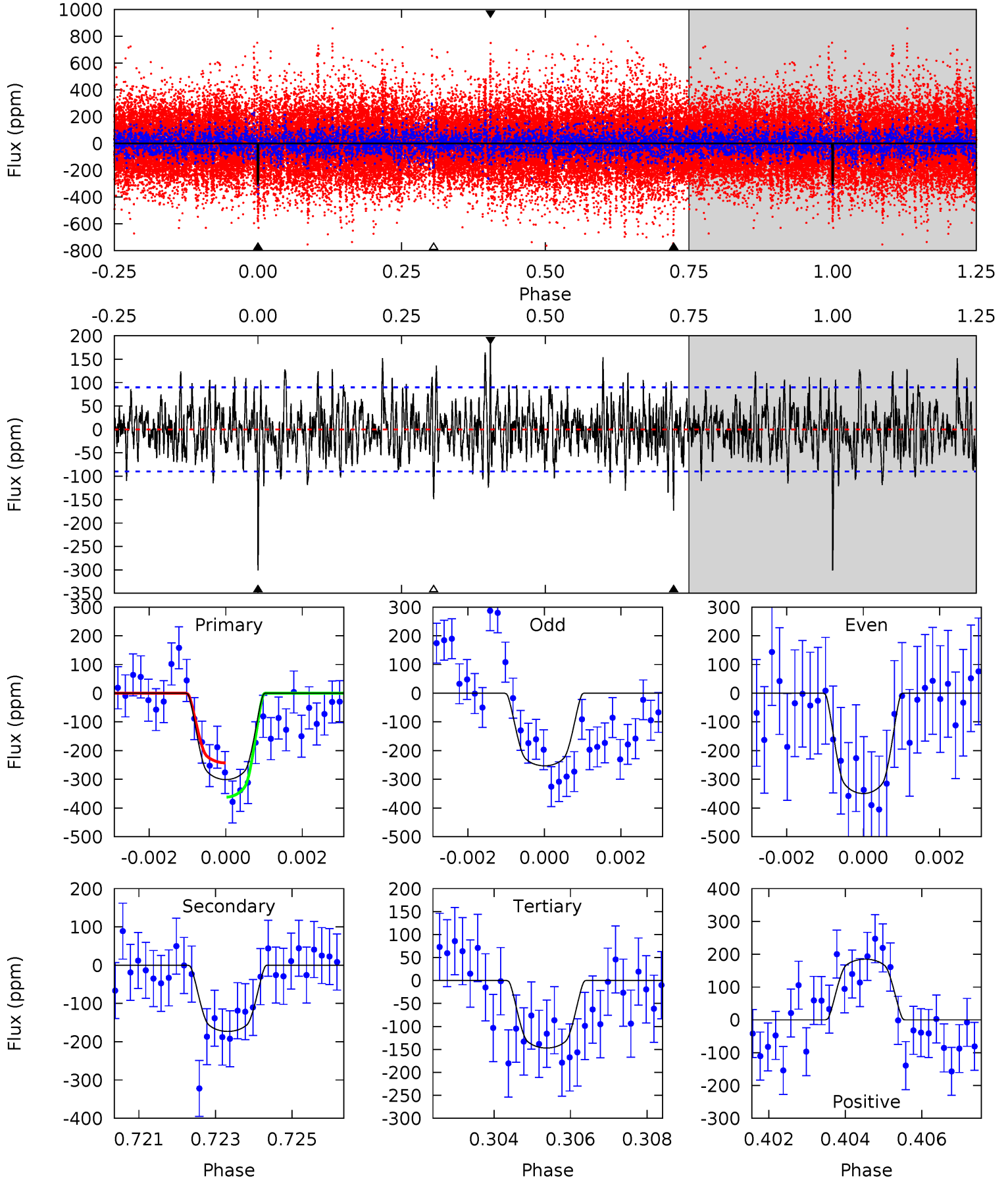
TCE 010753394-01 P=288.678524 Days  $T_0=143.790365$  (BKJD)



# DV Model-Shift Uniqueness Test

010753394-01, P = 288.669485 Days, E = 143.860785 Days

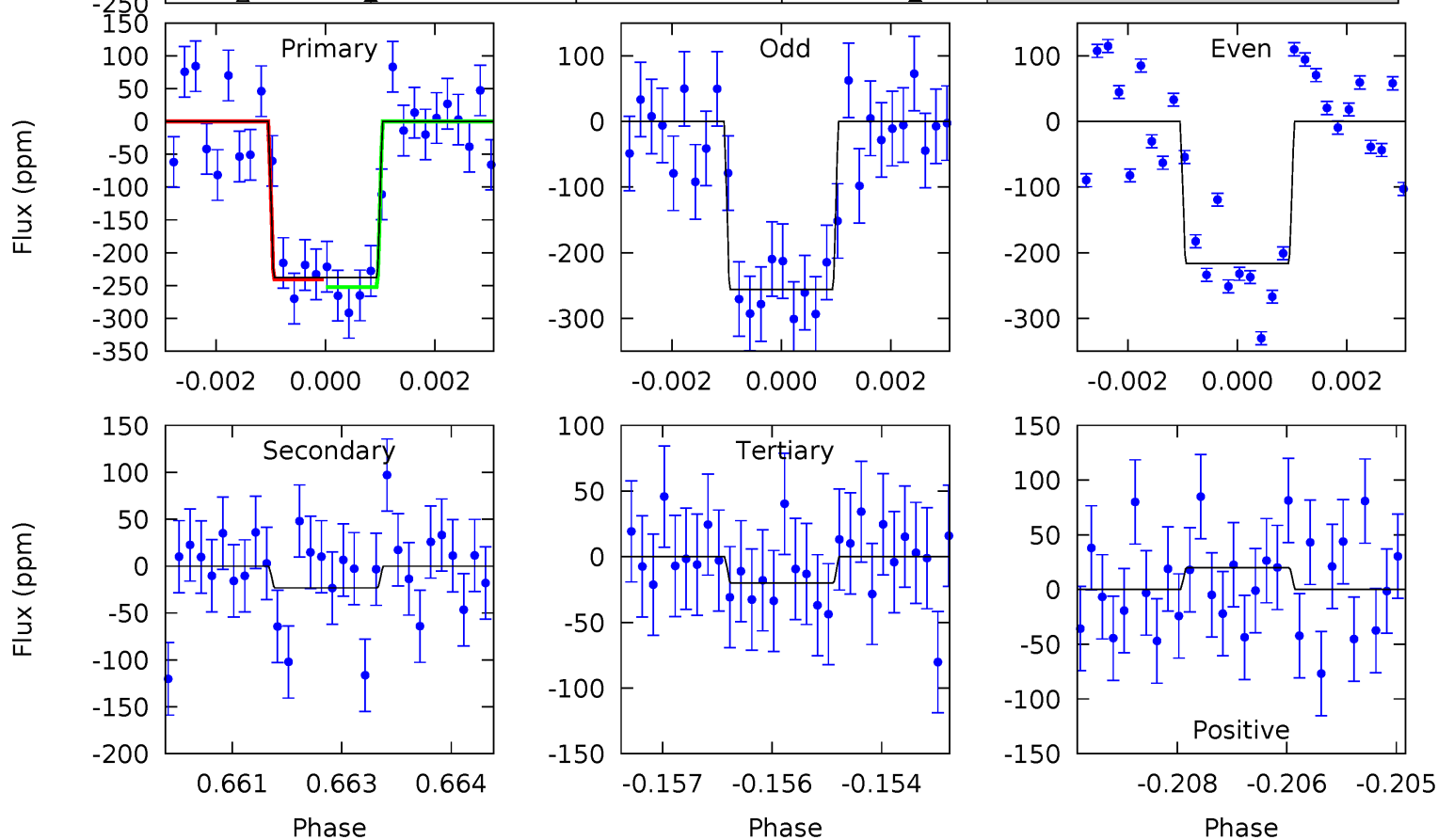
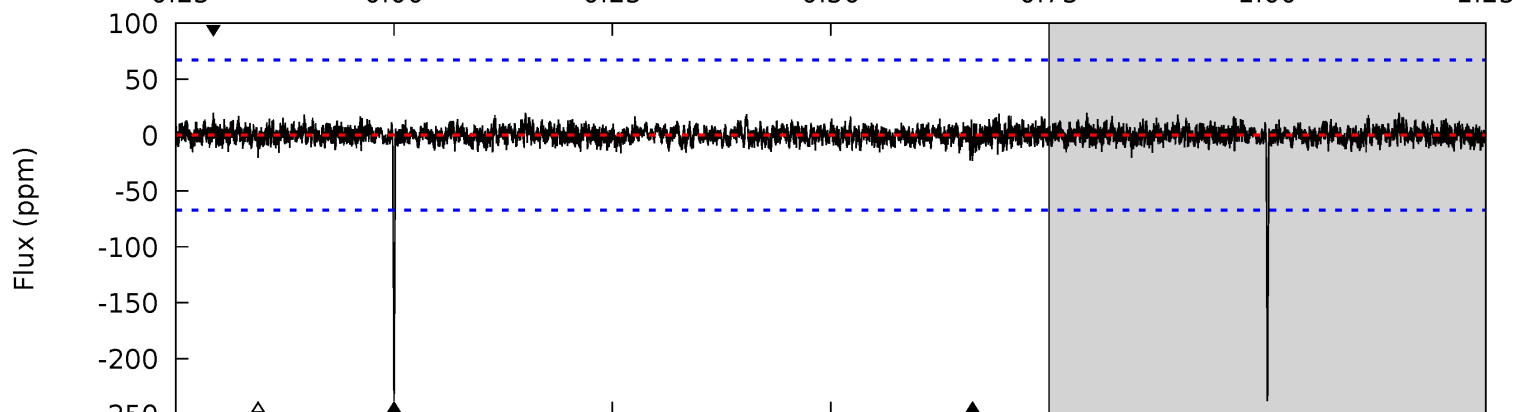
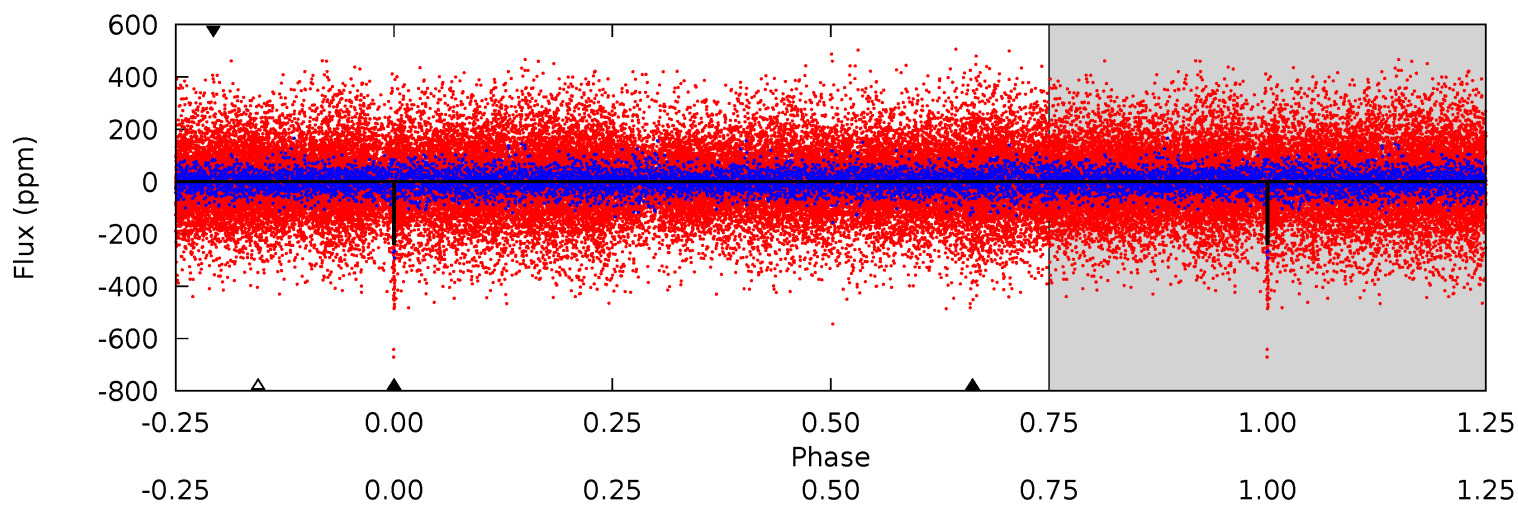
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.9 | 10.3 | 8.75 | 11.0 | 5.34            | 3.12            | 2.61             | 9.17    | 6.91    | 1.55    | -0.71   | 2.84    | 1.05 | 0.38  | 3.56 |



# Alt Model-Shift Uniqueness Test

010753394-01, P = 288.678524 Days, E = 143.790365 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 |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 19.0 | 1.85 | 1.61 | 1.60 | 5.37            | 3.16            | 0.41             | 17.4    | 17.4    | 0.25    | 0.25    | 1.58    | 1.05 | 0.08  | 0   |



### Stellar Parameters For KIC 010753394

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M$ ( $M_{\odot}$ )       | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $4326^{+131}_{-131}$ | $4.667^{+0.054}_{-0.027}$ | $-0.540^{+0.300}_{-0.300}$ | $0.575^{+0.045}_{-0.056}$ | $0.560^{+0.063}_{-0.037}$ | $4.142^{+1.027}_{-0.569}$                     |
|        | +3%/-3%              | +1%/-1%                   | +56%/-56%                  | +8%/-10%                  | +11%/-7%                  | +25%/-14%                                     |
| 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 010753394-01 / KOI 8215.01

| Detrend | Depth (ppm)   | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K) | $A_{\text{obs}}$        |
|---------|---------------|------------------------|----------------------|----------------------|-------------------------|
| DV      | $-173 \pm 17$ | $1.31^{+0.15}_{-0.13}$ | $239^{+9}_{-8}$      | $3673^{+157}_{-167}$ | $27735^{+6697}_{-5528}$ |
| Alt.    | $-23 \pm 13$  | $0.99^{+0.11}_{-0.13}$ | $239^{+8}_{-8}$      | $2955^{+238}_{-310}$ | $6727^{+4503}_{-3726}$  |

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

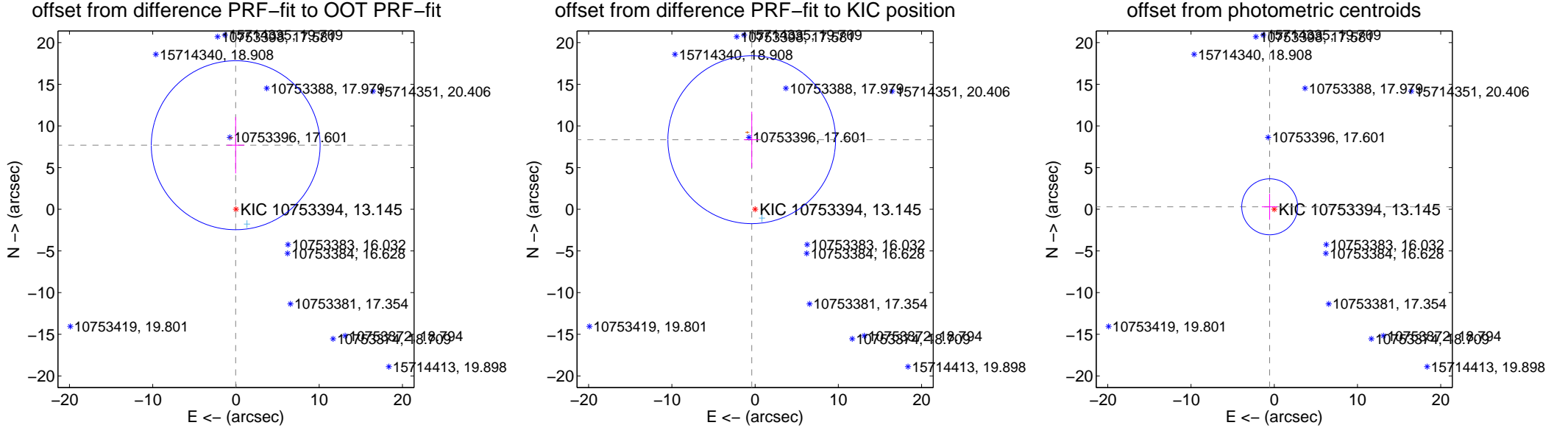
## DV Centroid Data

Supplemental centroid analysis for 010753394-01. Kepler magnitude: 13.14. Transit SNR 7.80

There are 1 quarters with good PRF difference image offsets

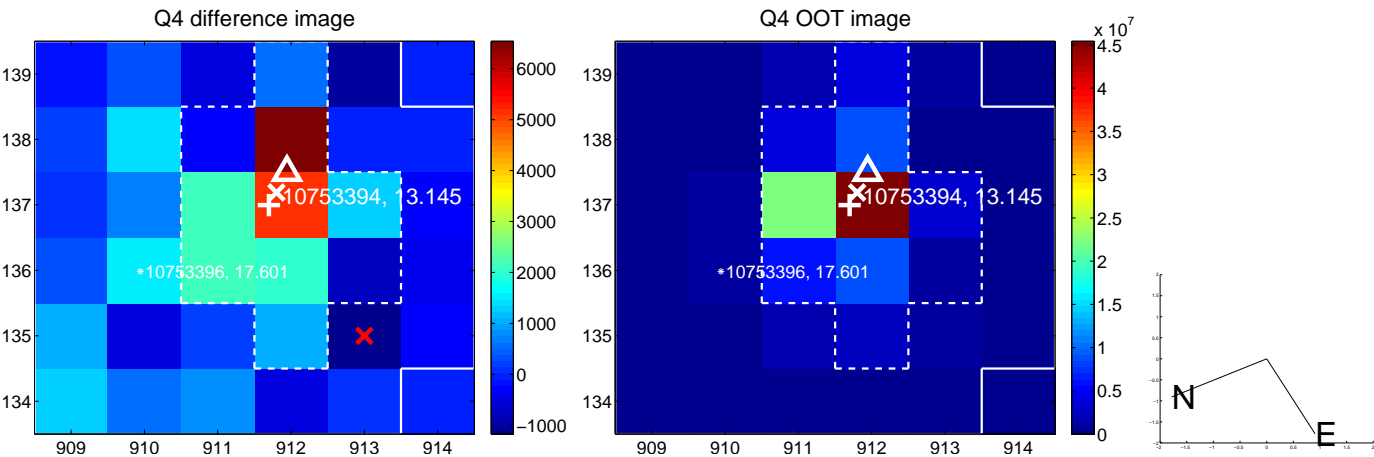
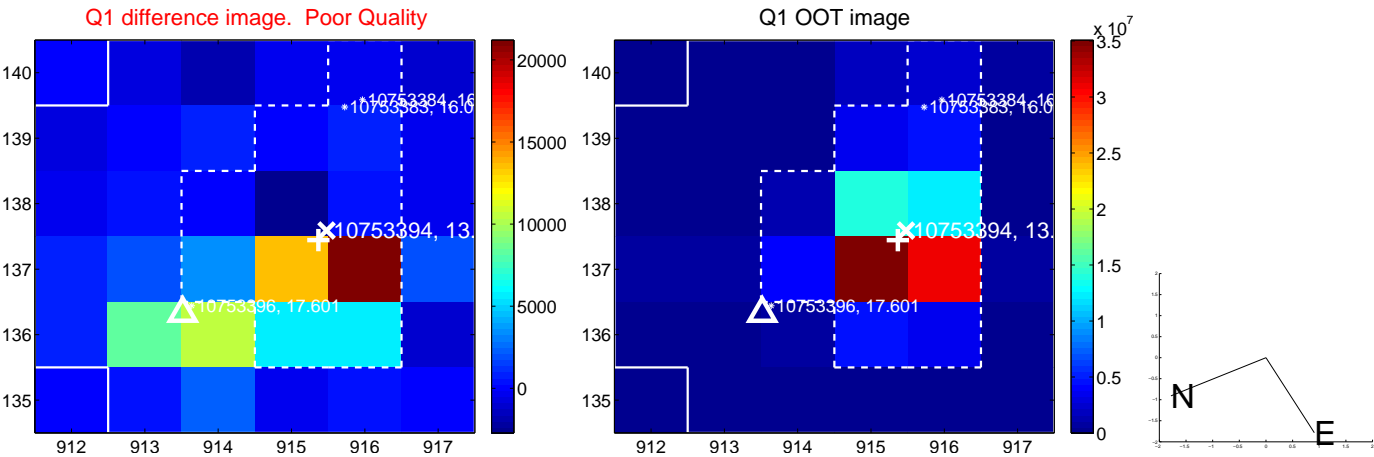
The direct PRF centroid is offset from the target star catalog position by about 0.87 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $7.689 \pm 3.380$  | 2.27                | $0.031 \pm 1.045$ | $7.689 \pm 3.380$ |
| PRF-fit source offset from KIC position | $8.360 \pm 3.358$  | 2.49                | $0.405 \pm 0.948$ | $8.350 \pm 3.361$ |
| photometric centroid source offset      | $0.62 \pm 1.12$    | 0.56                | $0.55 \pm 0.95$   | $0.30 \pm 1.56$   |



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.

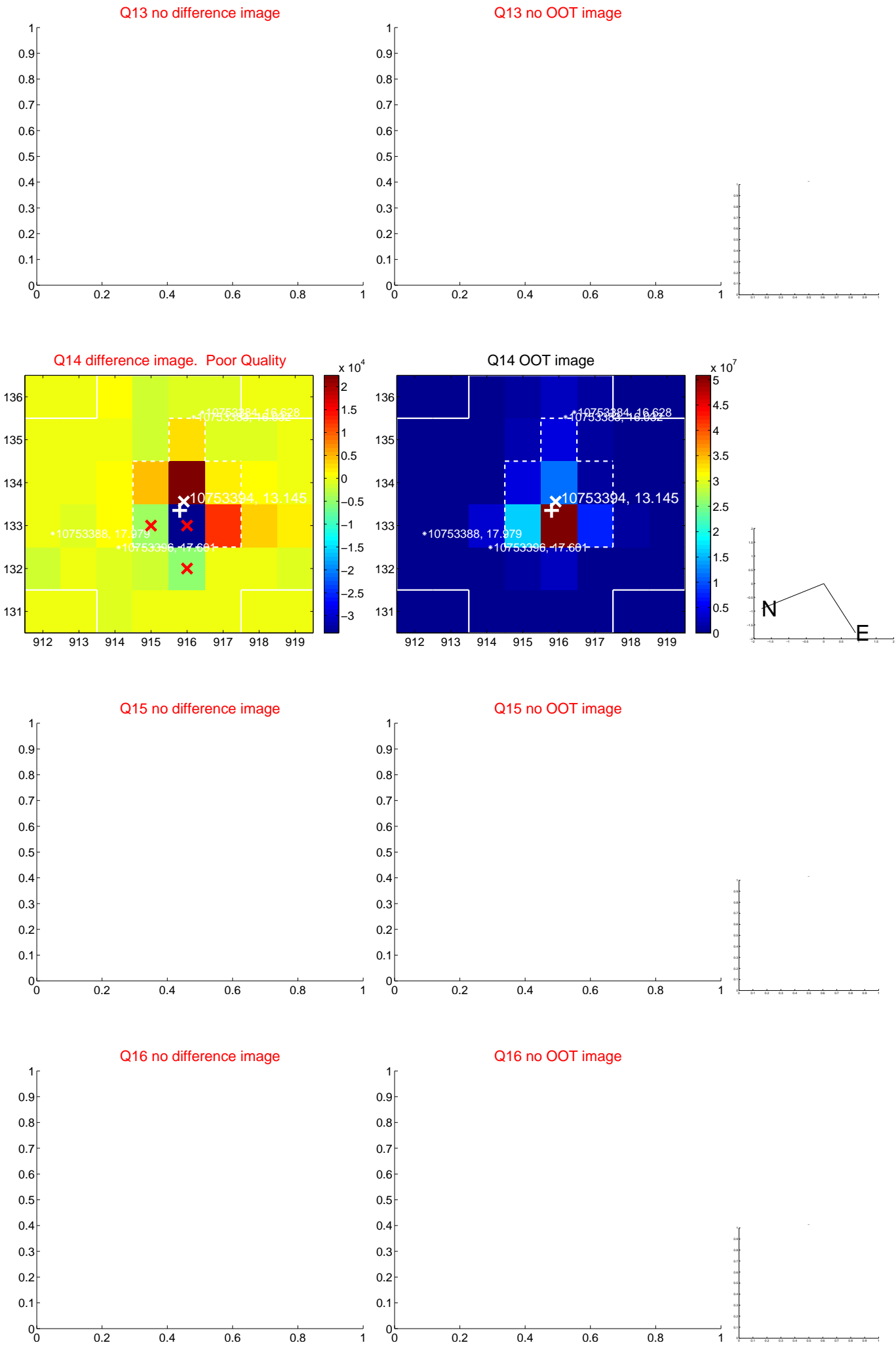




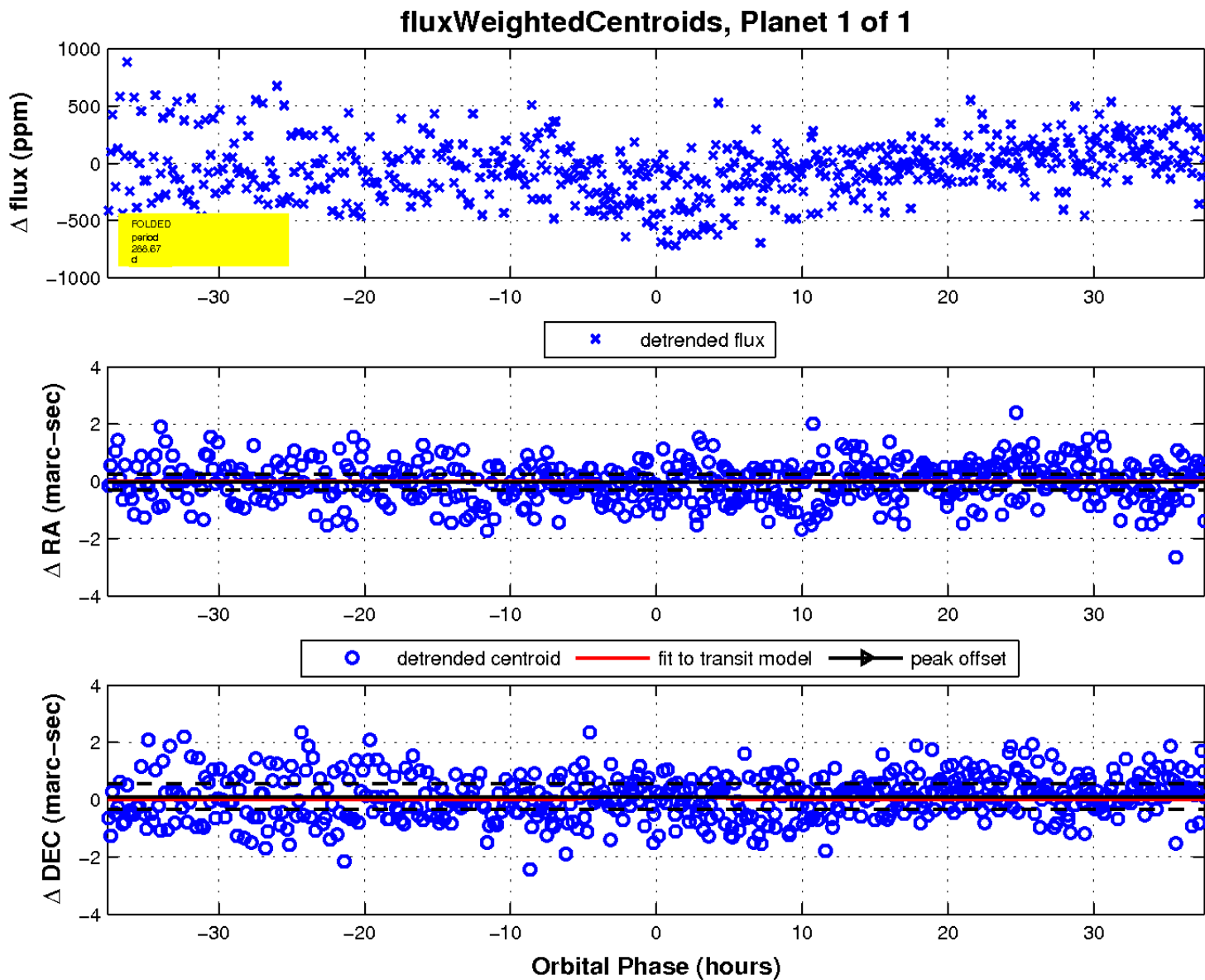
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

