

# KIC 005980783

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005980783-01 | OBS      | 2967.01 | 37.303714     | 133.296179   | 544.8       | 6.973            | 17.6 | 17.3 | 0.82                        | 5646            | 2.12                   | 14.03                  |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005980783-01 | OBS      | PC   | 0.98  | 0 | 0 | 0 | 0 | NO_COMMENT |

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

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

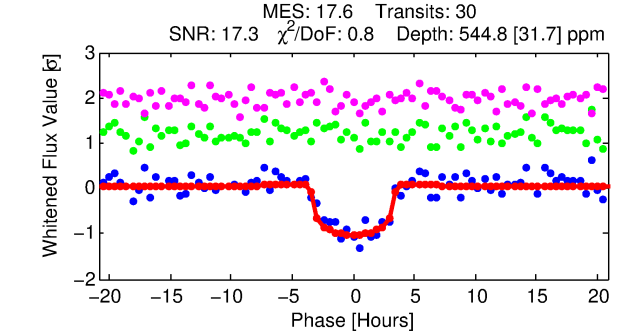
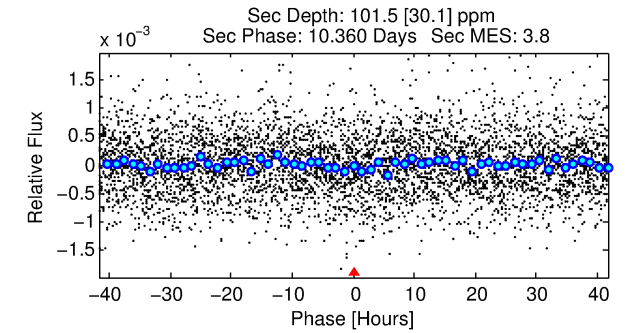
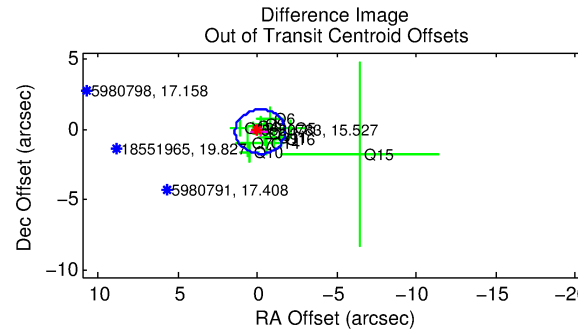
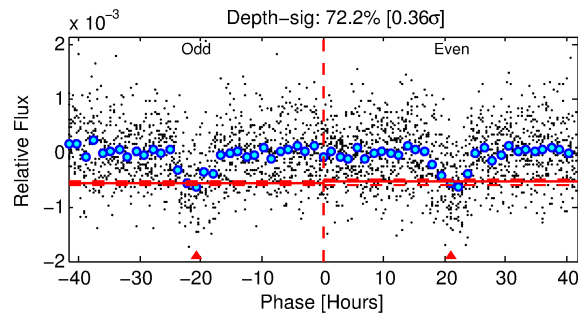
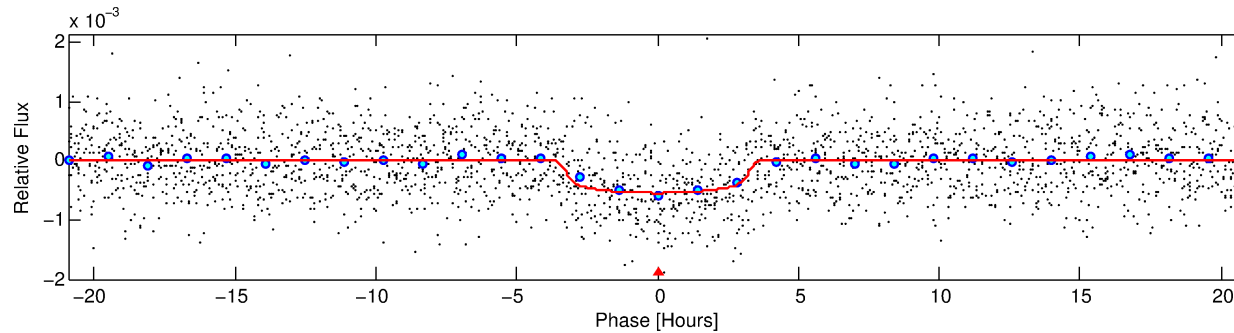
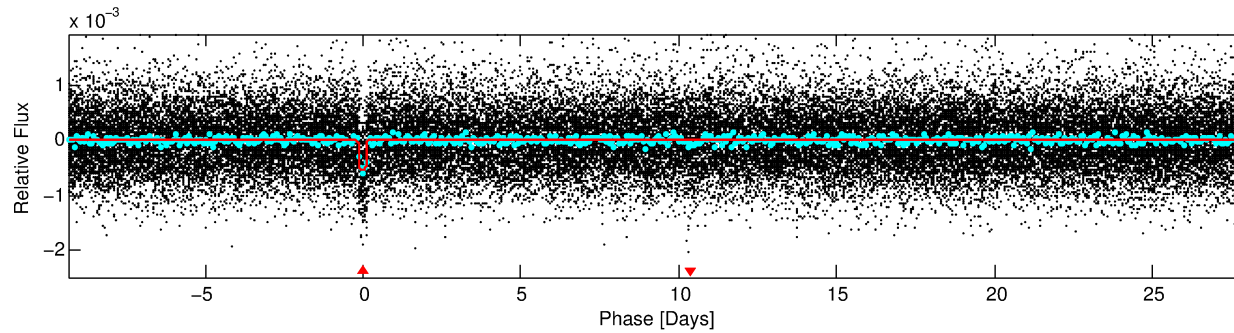
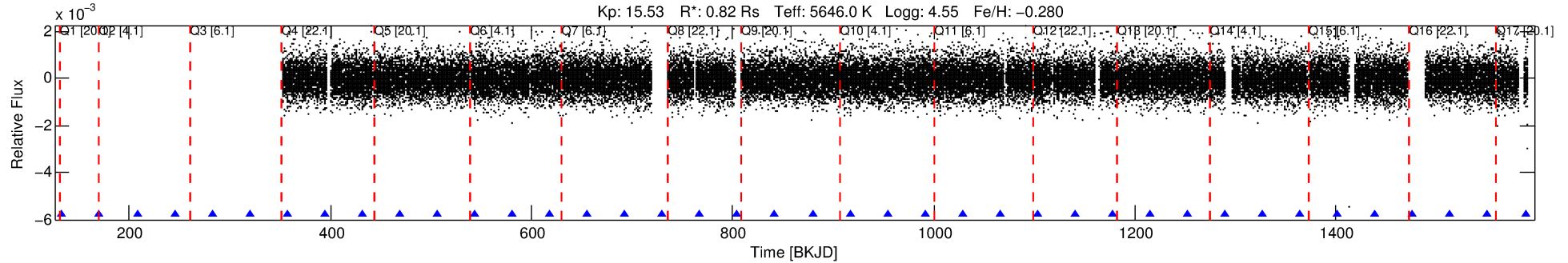
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005980783-01

No Significant Match Found

# DV One-Page Summary

KIC: 5980783 Candidate: 1 of 1 Period: 37.304 d  
KOI: K02967.01 Corr: 0.930



## DV Fit Results:

Period = 37.30371 [0.00040] d  
Epoch = 133.2962 [0.0097] BKJD  
Rp/R\* = 0.0238 [0.0055]  
a/R\* = 25.94 [26.78]  
b = 0.80 [0.46]  
Seff = 14.03 [4.52]  
Teq = 493 [40] K  
Rp = 2.12 [0.72] Re  
a = 0.2081 [0.0427] AU  
Ag = 538.36 [336.40] [1.60 $\sigma$ ]  
Teffp = 3675 [521] K [6.09 $\sigma$ ]

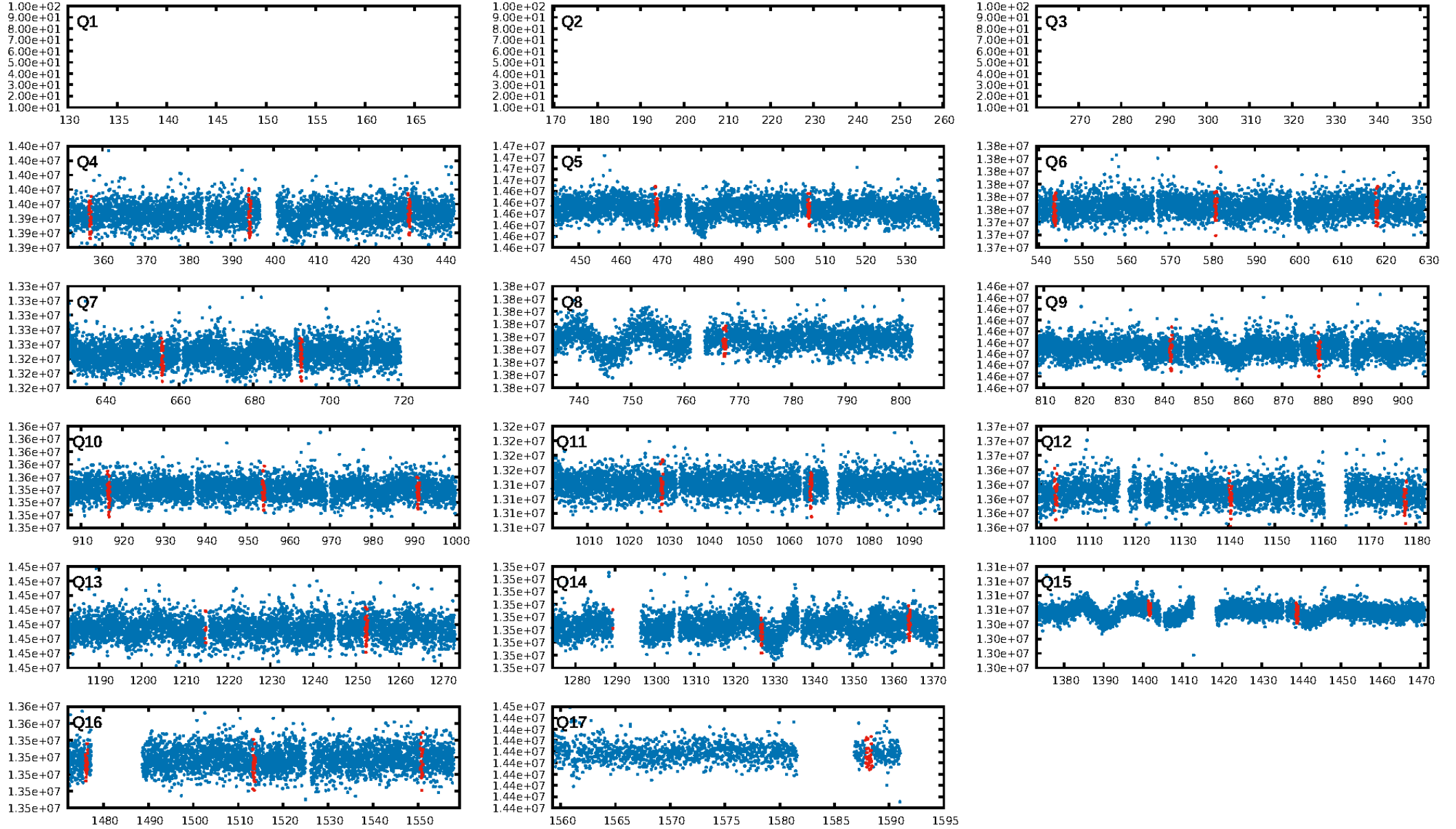
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 93.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.24e-69  
RollingBand-fgt: 1.00 [29/29]  
GhostDiagnostic-chr: 2.34  
Centroid-sig: 0.1%  
Centroid-so: 1.474 arcsec [1.94 $\sigma$ ]  
OotOffset-rm: 0.247 arcsec [0.47 $\sigma$ ]  
KicOffset-rm: 0.149 arcsec [0.26 $\sigma$ ]  
OotOffset-st: 3/3/3/3 [12]  
KicOffset-st: 3/3/3/3 [12]  
DiffImageQuality-fgm: 0.92 [11/12]  
DiffImageOverlap-fno: 1.00 [13/13]

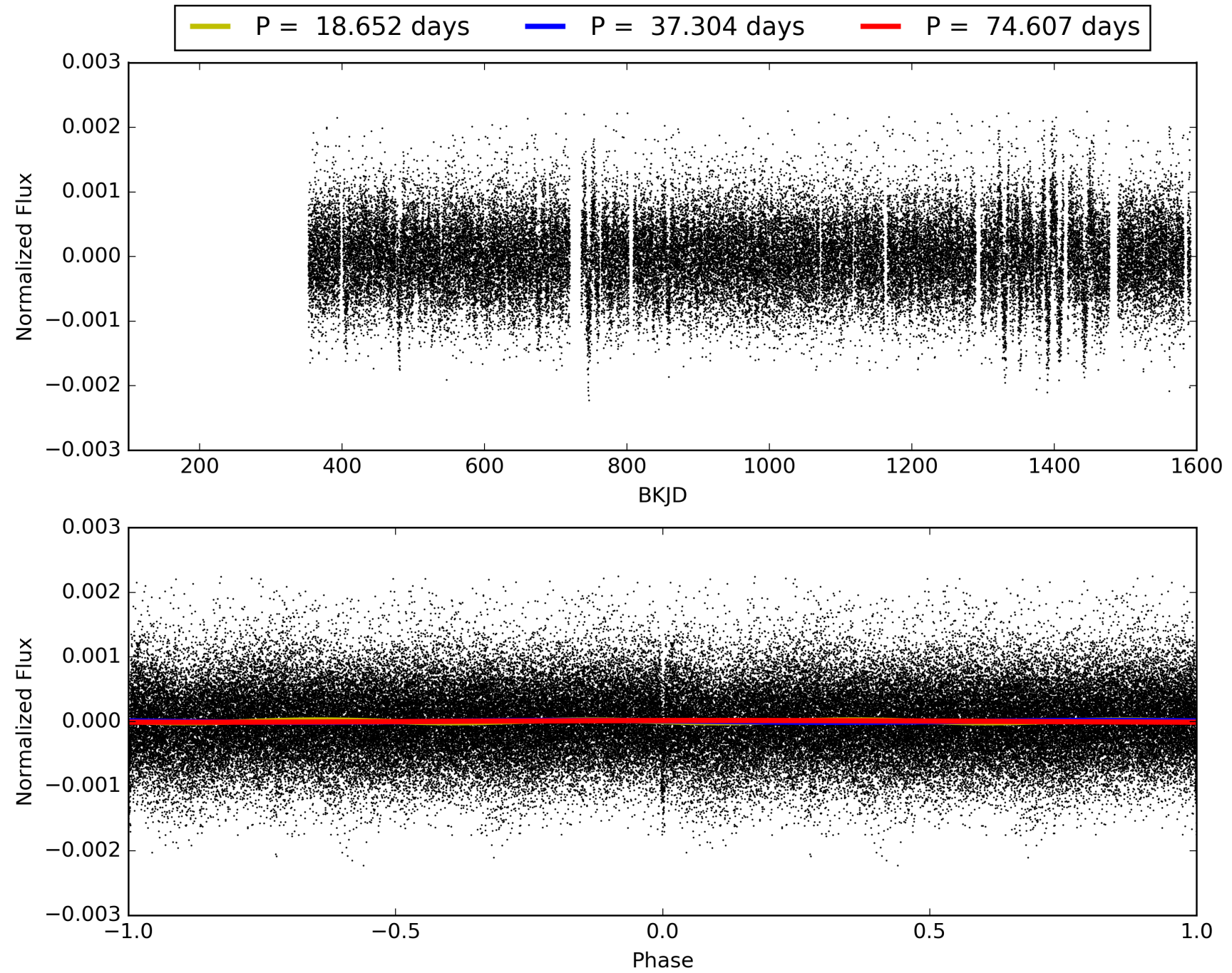
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:51:43 Z

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

# TCE 005980783-01, PDC Light Curves

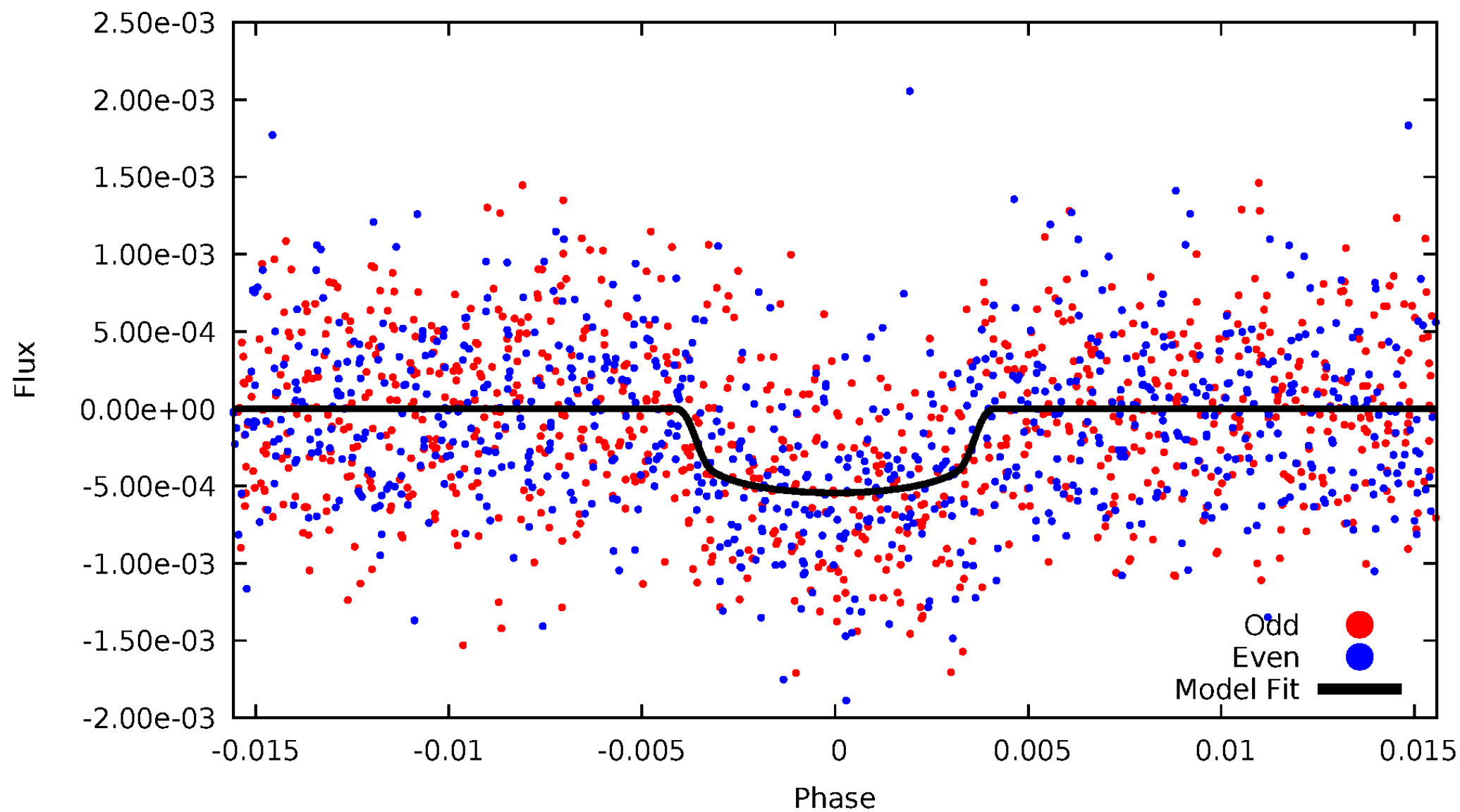


TCE 005980783-01



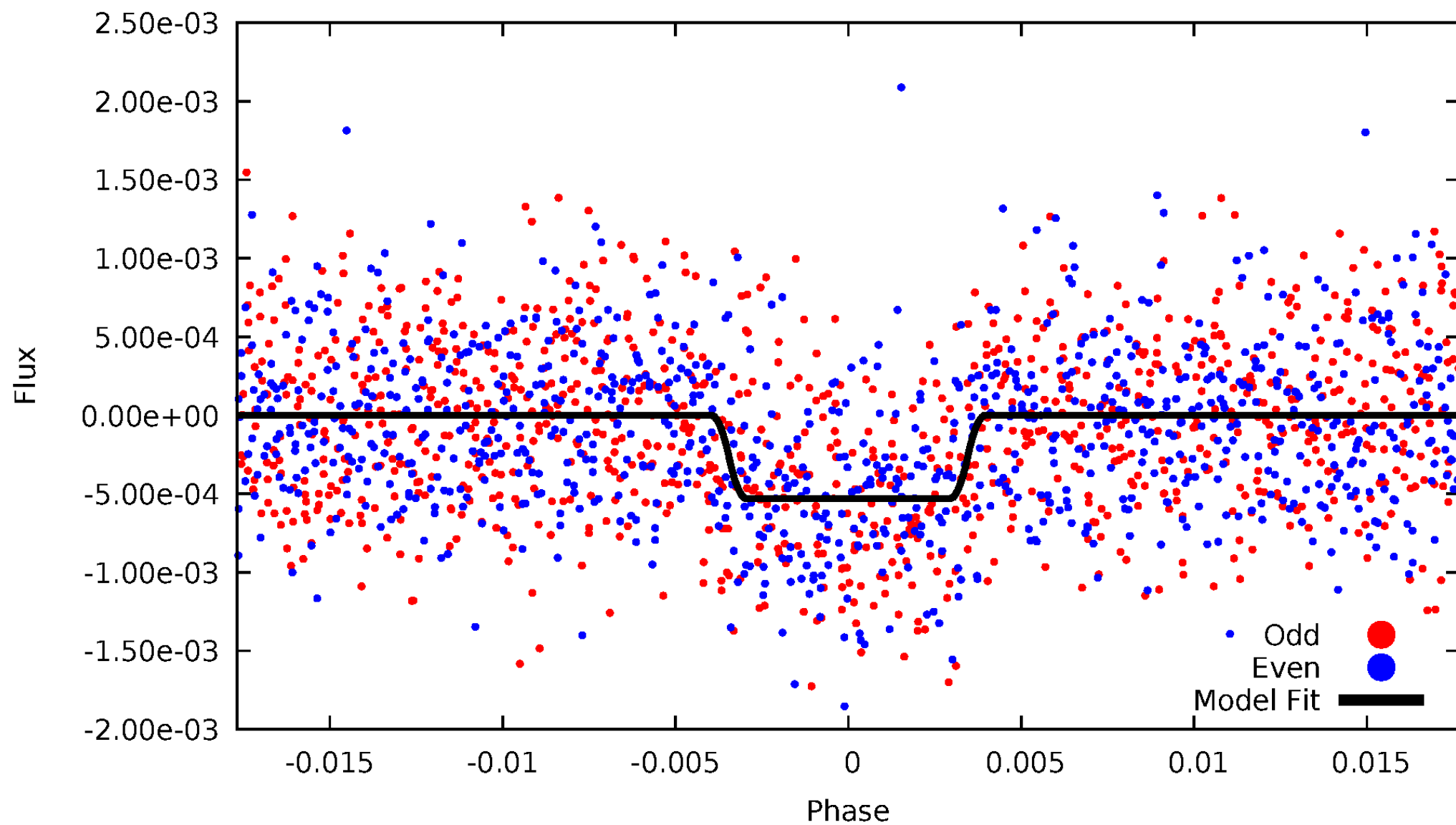
# DV Odd/Even

TCE 005980783-01



# ALT Odd/Even

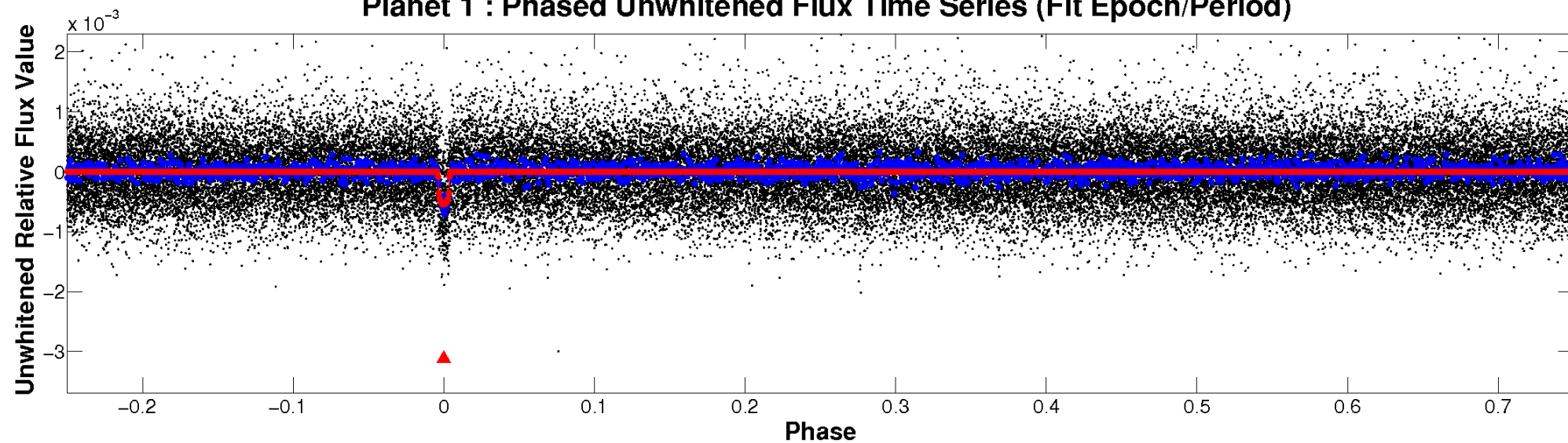
TCE 005980783-01



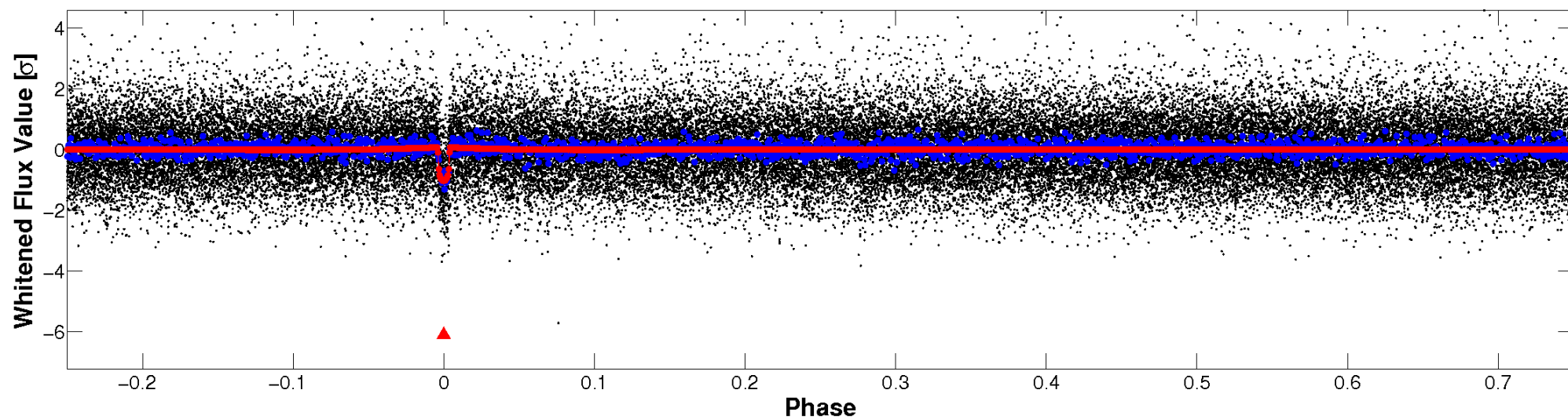


# Non-Whitened Vs. Whitened Light Curve

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

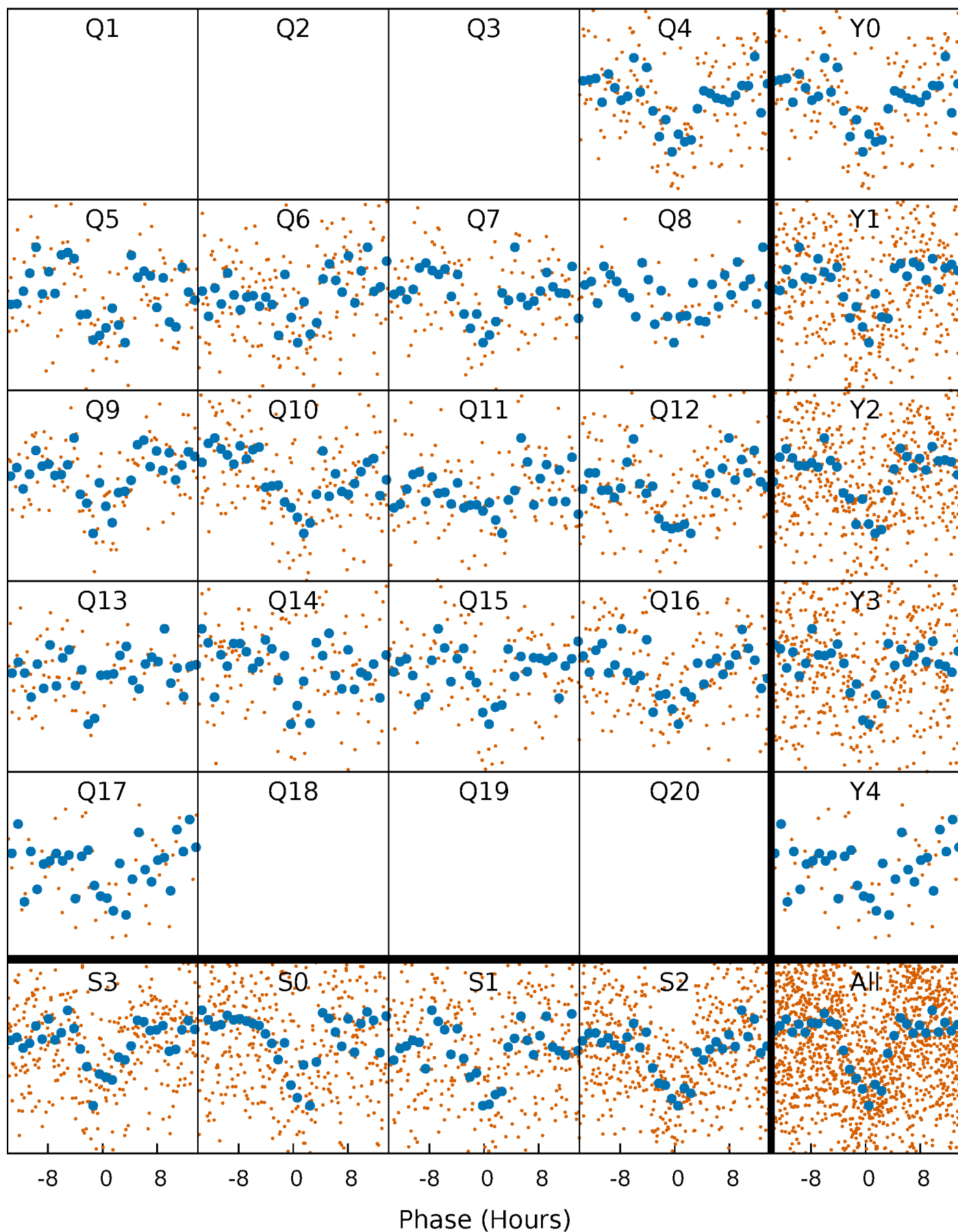


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

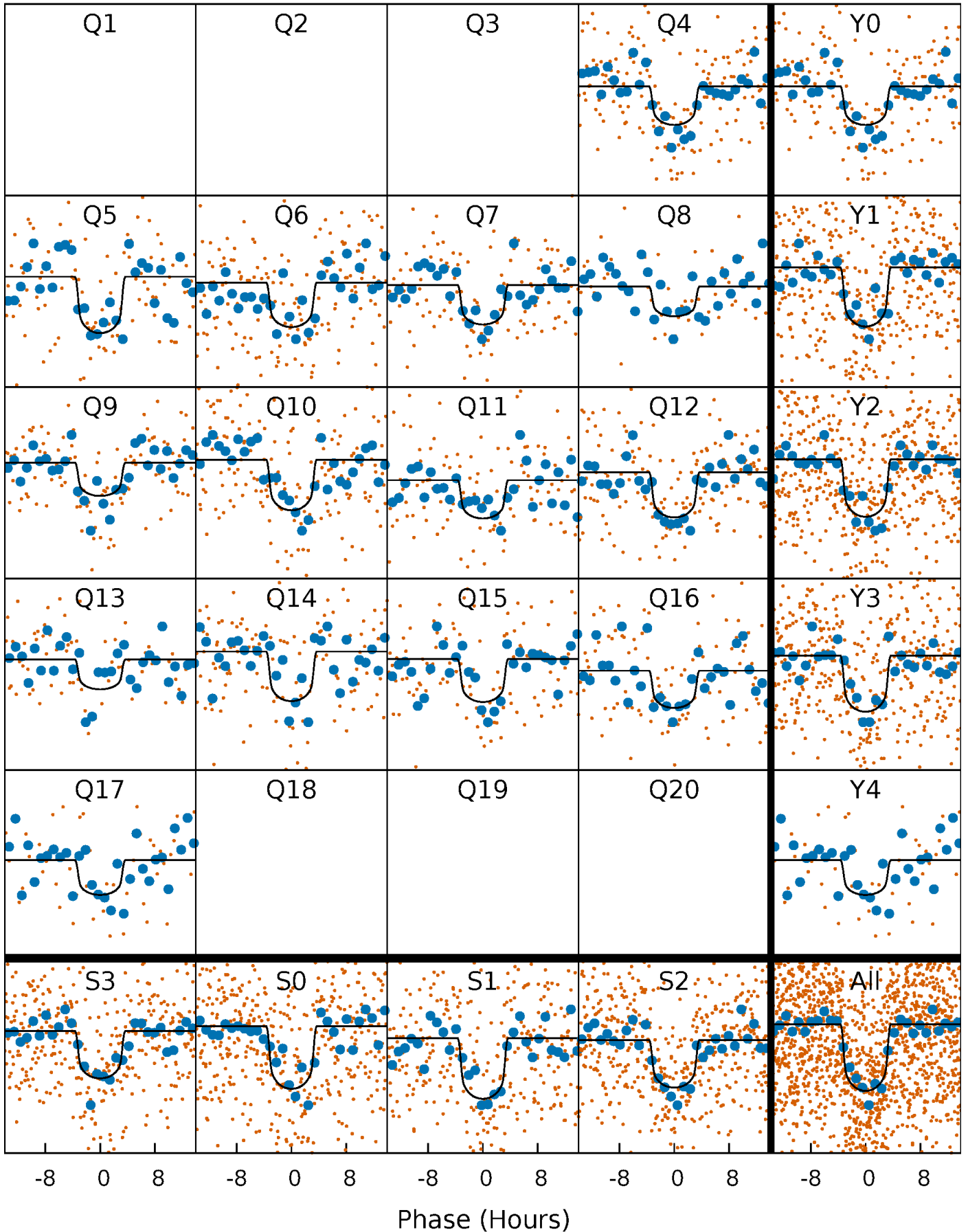
TCE 005980783-01 P= 37.303714 Days  $T_0=133.296179$  (BKJD)





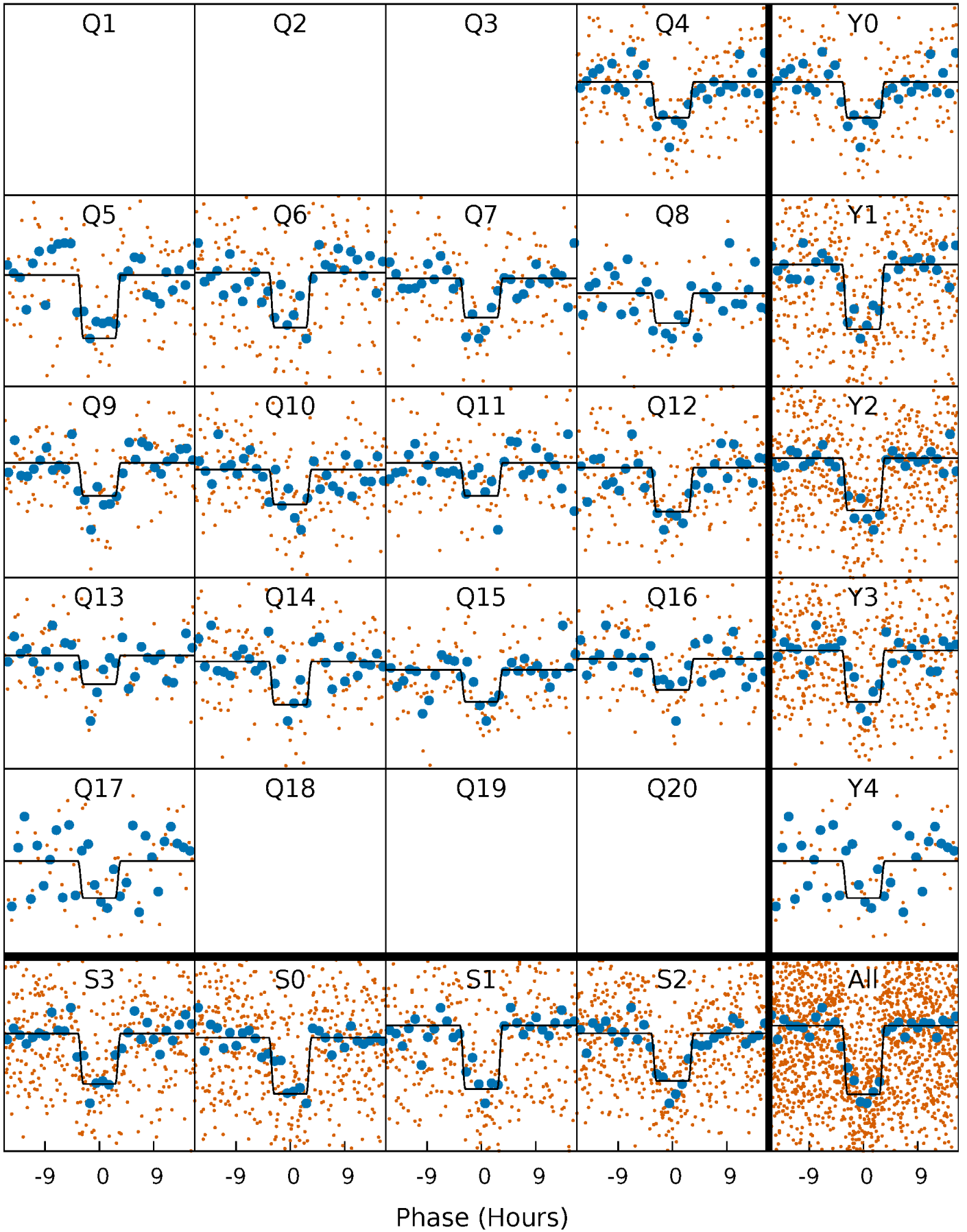
# DV Quarter-Phased Transit Curves

TCE 005980783-01 P= 37.303714 Days  $T_0=133.296179$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

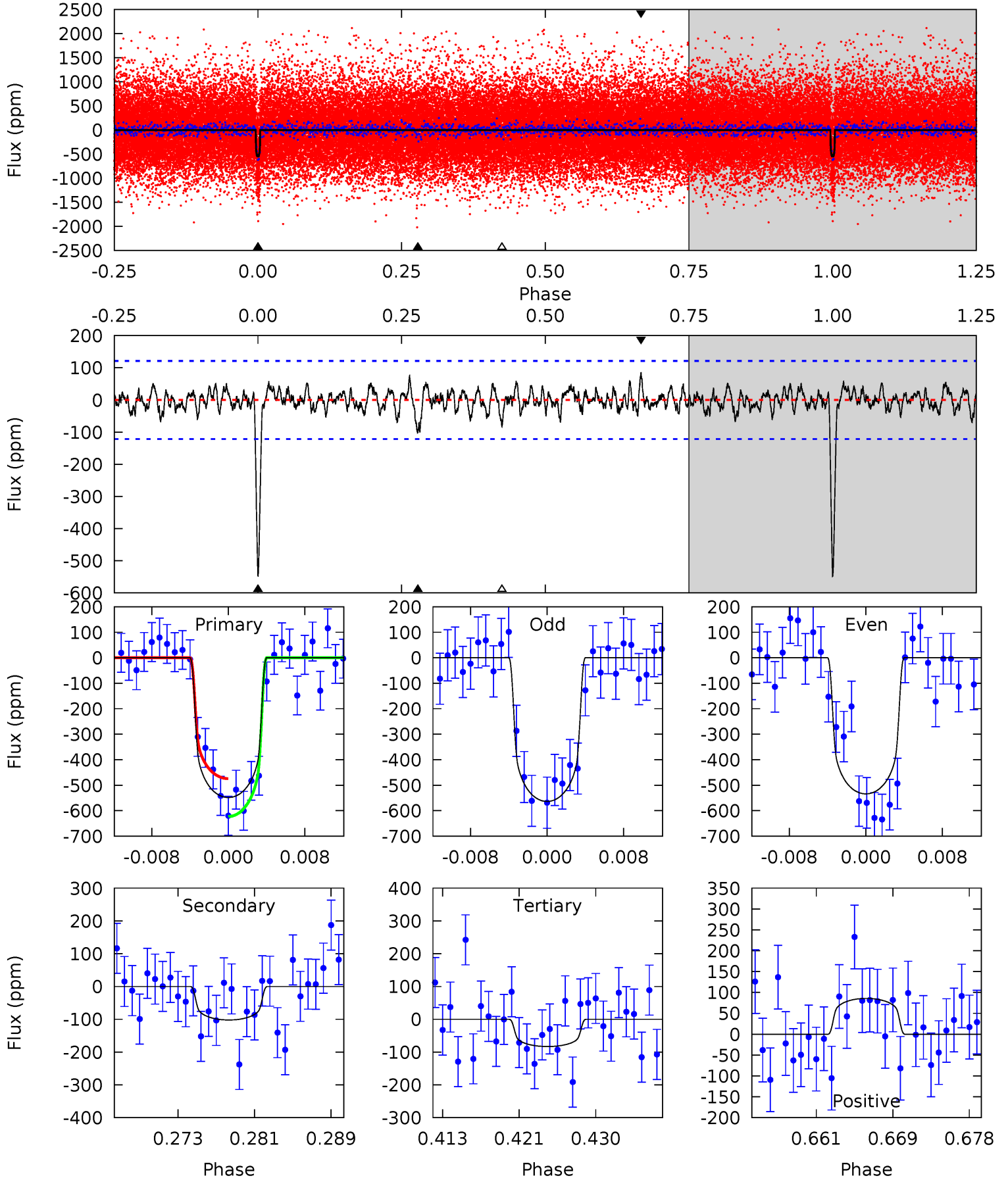
TCE 005980783-01 P= 37.302852 Days  $T_0=133.321500$  (BKJD)



# DV Model-Shift Uniqueness Test

005980783-01,  $P = 37.303714$  Days,  $E = 133.296179$  Days

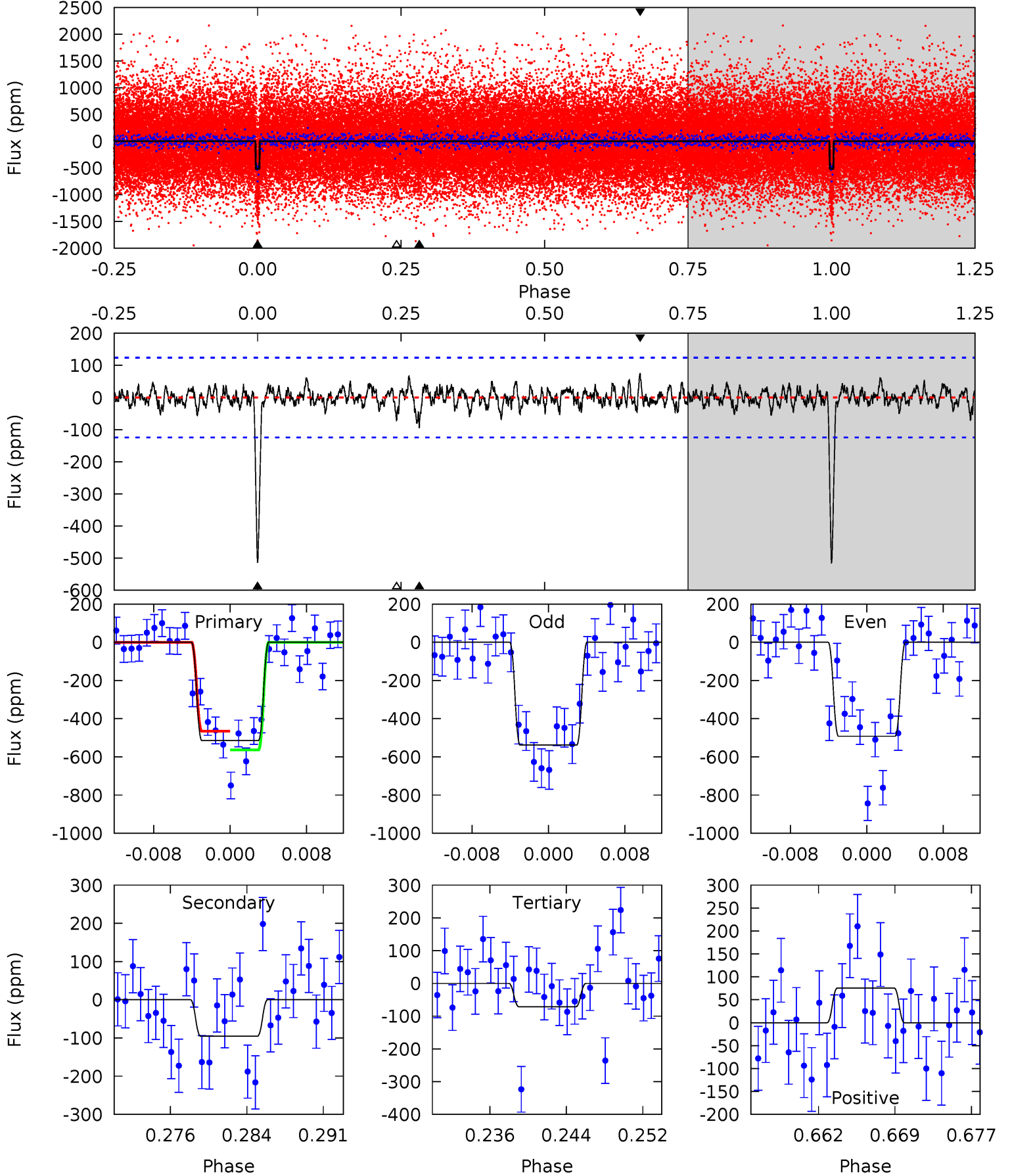
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 22.9 | 4.26 | 3.47 | 3.57 | 5.06            | 2.64            | 1.04             | 19.4    | 19.3    | 0.80    | 0.69    | 0.62    | 0.92 | 0.14  | 3.10 |



# Alt Model-Shift Uniqueness Test

005980783-01,  $P = 37.302852$  Days,  $E = 133.321500$  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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.0 | 3.90 | 2.93 | 3.09 | 5.07            | 2.66            | 0.89             | 18.1    | 17.9    | 0.97    | 0.81    | 0.94    | 0.91 | 0.13  | 2.01 |



### Stellar Parameters For KIC 005980783

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
|        | $5646^{+186}_{-186}$ | $4.550^{+0.053}_{-0.158}$ | $-0.280^{+0.300}_{-0.300}$ | $0.817^{+0.203}_{-0.087}$ | $0.864^{+0.097}_{-0.088}$ | $2.232^{+0.504}_{-0.964}$                 |
|        | +3%/-3%              | +1%/-3%                   | +107%/-107%                | +25%/-11%                 | +11%/-10%                 | +23%/-43%                                 |
| 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 005980783-01 / KOI 2967.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$        | $A_{obs}$           |
|---------|---------------|------------------------|-------------------|----------------------|---------------------|
| DV      | $-102 \pm 24$ | $2.16^{+0.60}_{-0.52}$ | $703^{+42}_{-33}$ | $3996^{+471}_{-328}$ | $512^{+390}_{-217}$ |
| Alt.    | $-95 \pm 24$  | $2.12^{+0.55}_{-0.53}$ | $702^{+40}_{-37}$ | $3999^{+471}_{-358}$ | $506^{+398}_{-211}$ |

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

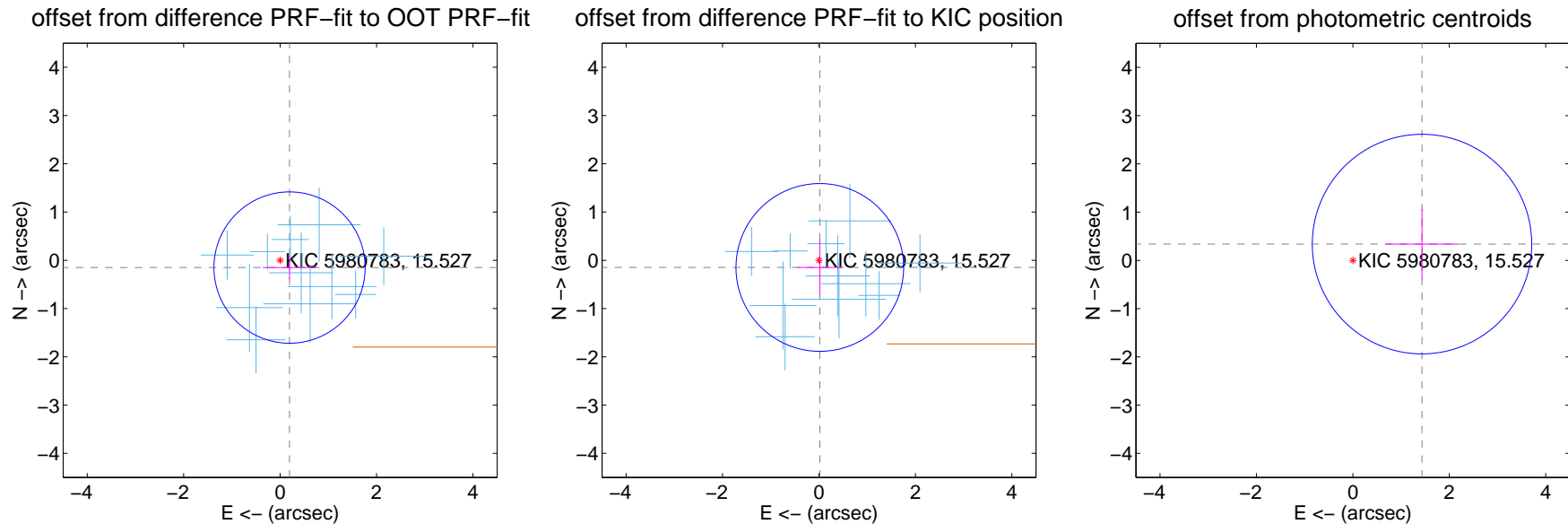
## DV Centroid Data

Supplemental centroid analysis for 005980783-01. Kepler magnitude: 15.53. Transit SNR 17.32

There are 11 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

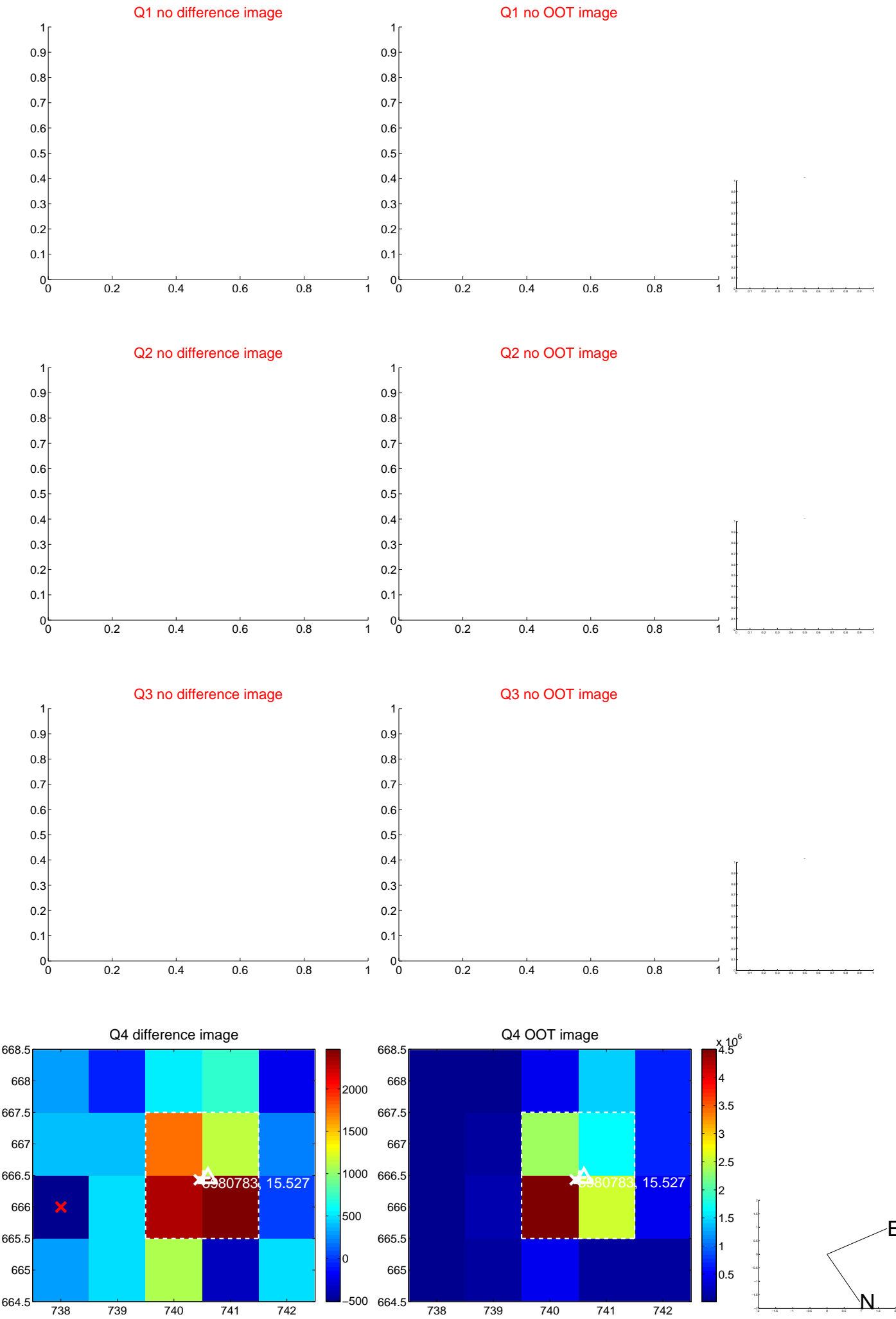
|                                         | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|-----------------------------------------|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.247 \pm 0.523$  | 0.47                | $-0.196 \pm 0.552$ | $-0.150 \pm 0.241$ |
| PRF-fit source offset from KIC position | $0.149 \pm 0.580$  | 0.26                | $-0.017 \pm 0.462$ | $-0.148 \pm 0.581$ |
| photometric centroid source offset      | $1.47 \pm 0.76$    | 1.94                | $-1.43 \pm 0.76$   | $0.34 \pm 0.73$    |



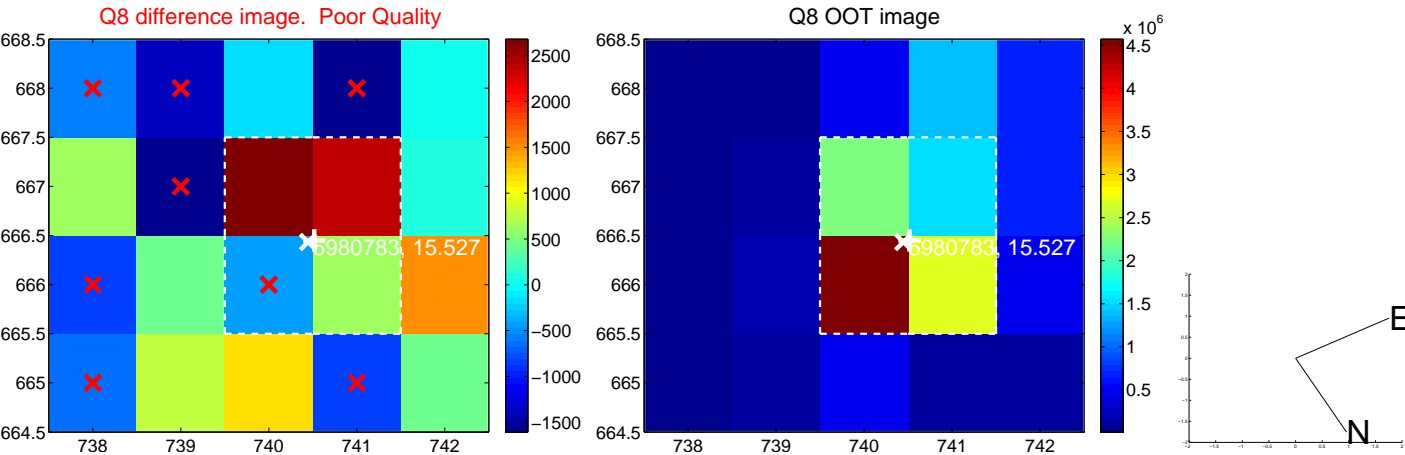
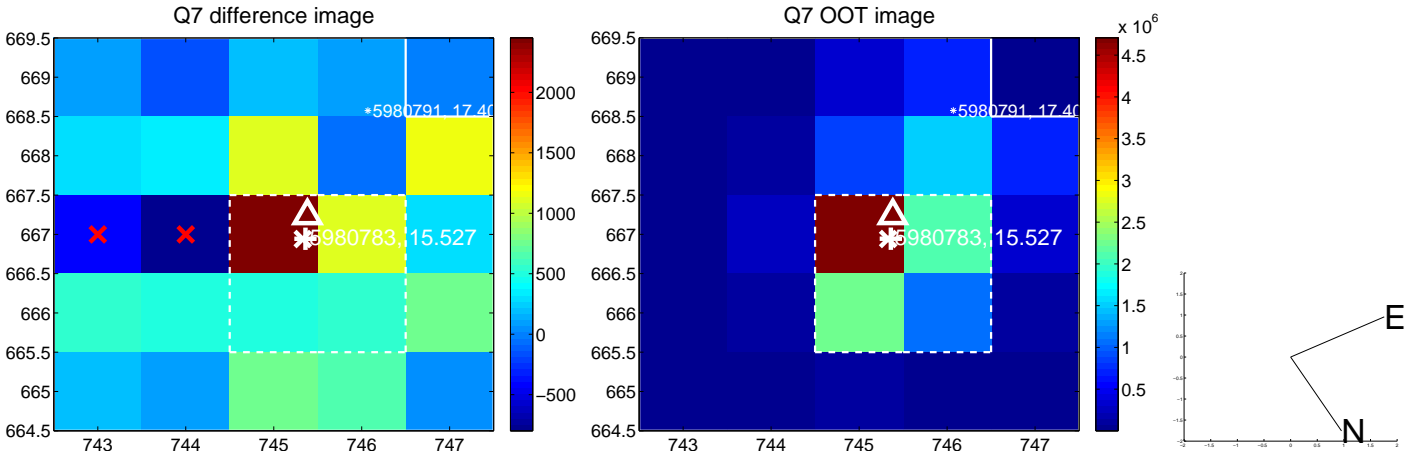
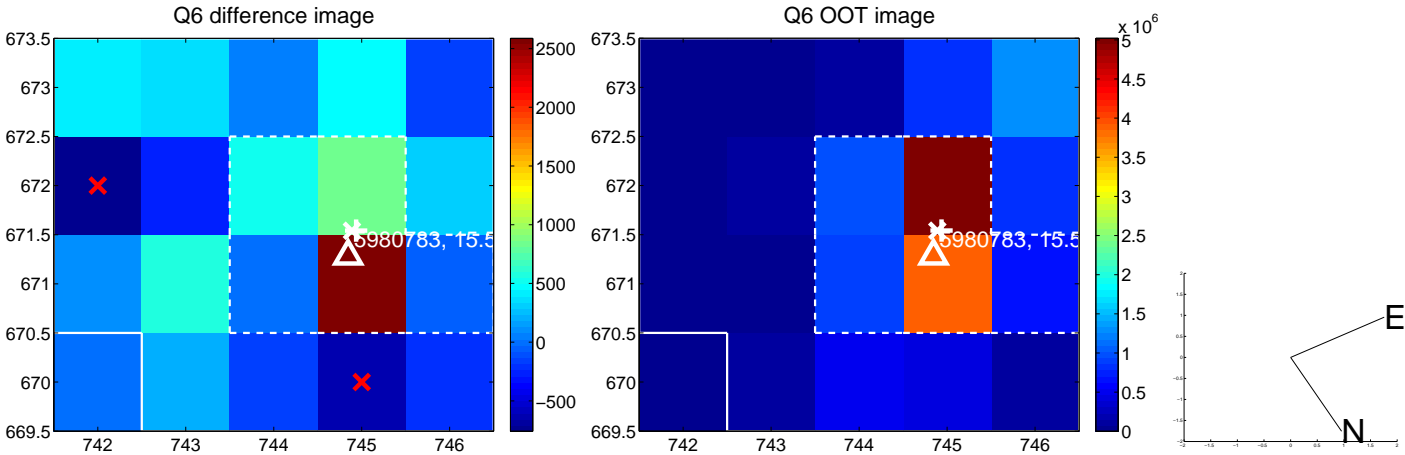
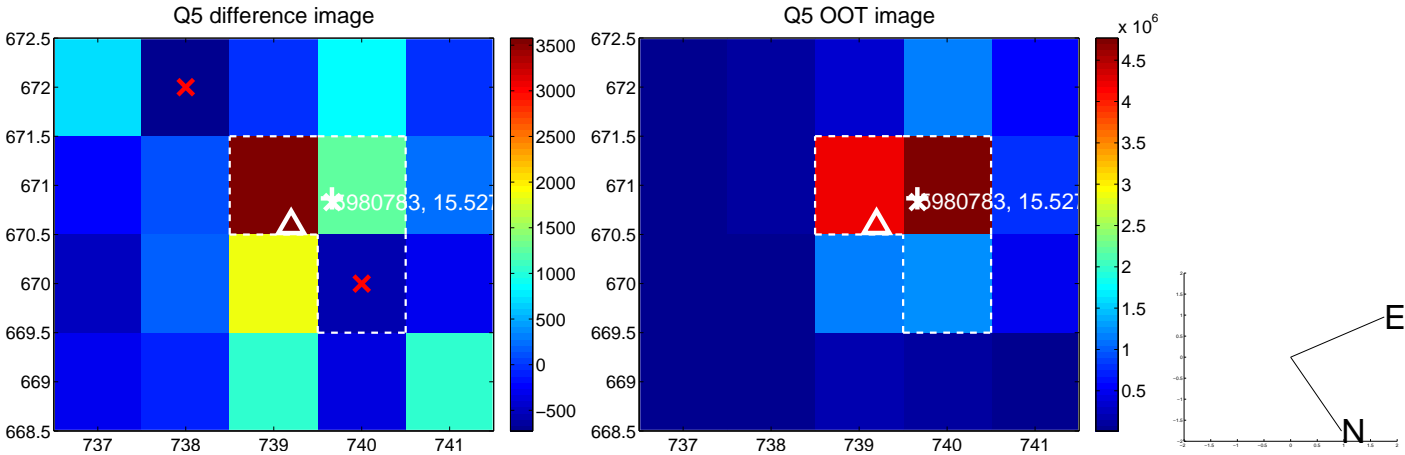
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



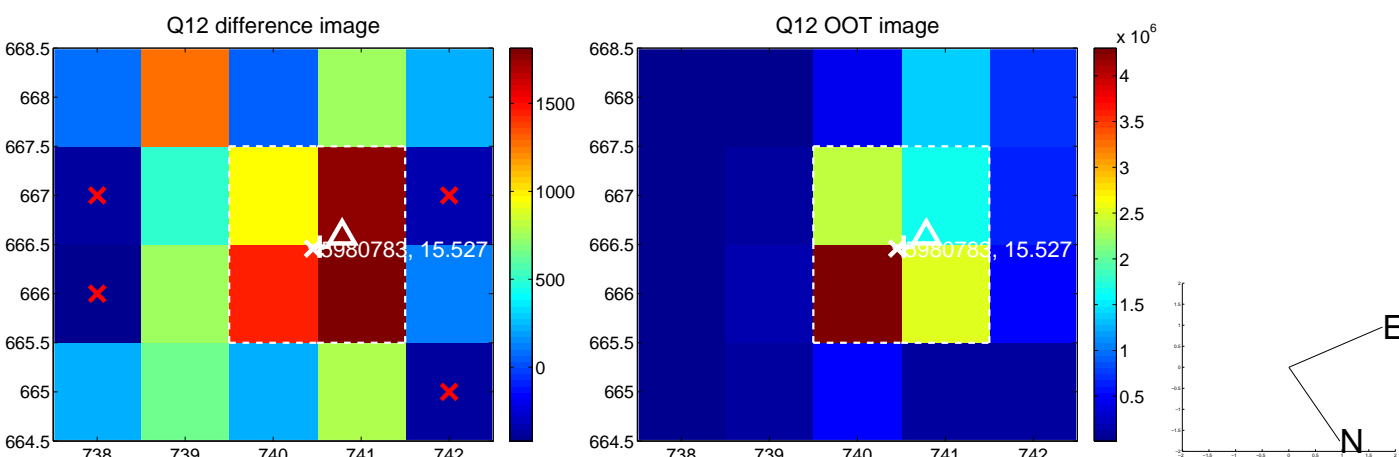
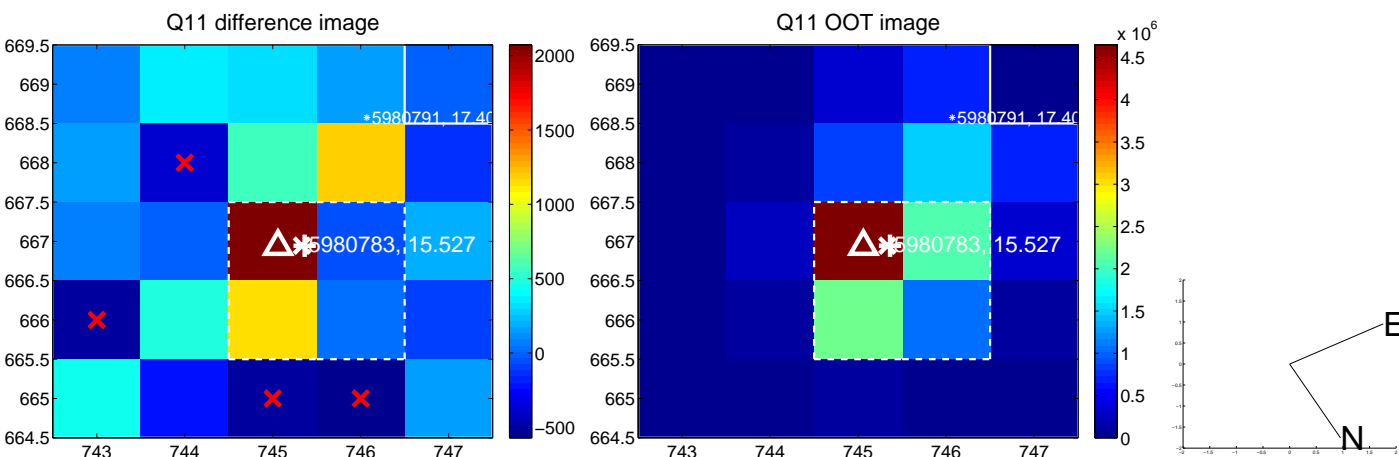
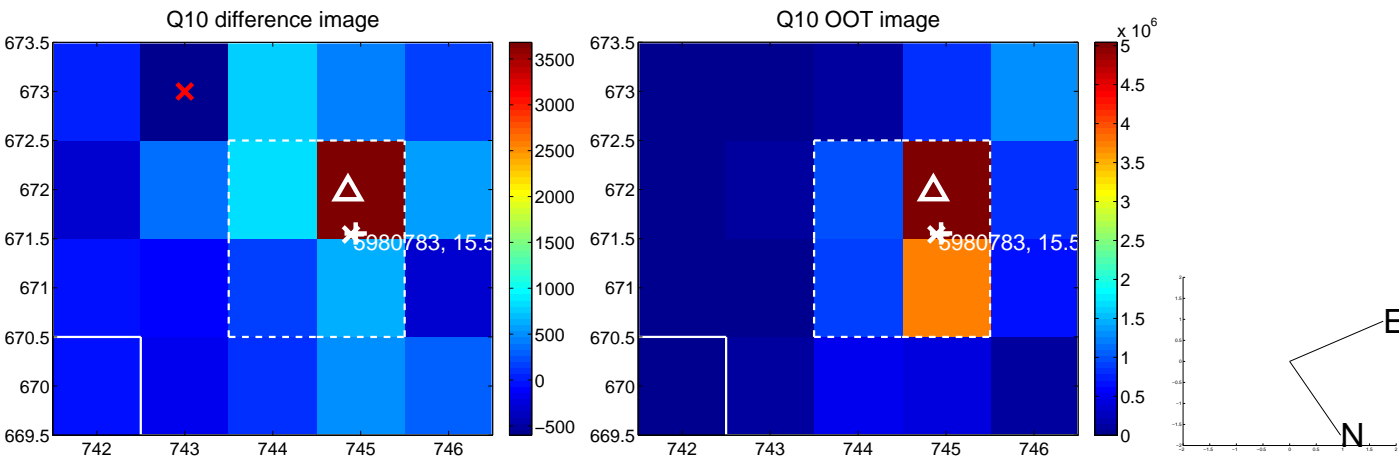
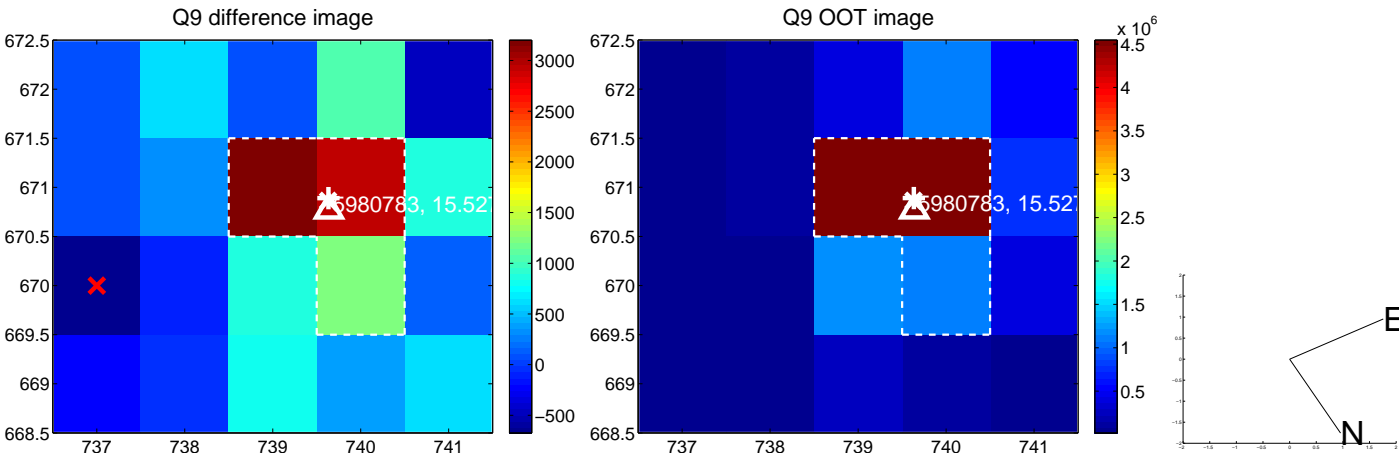
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



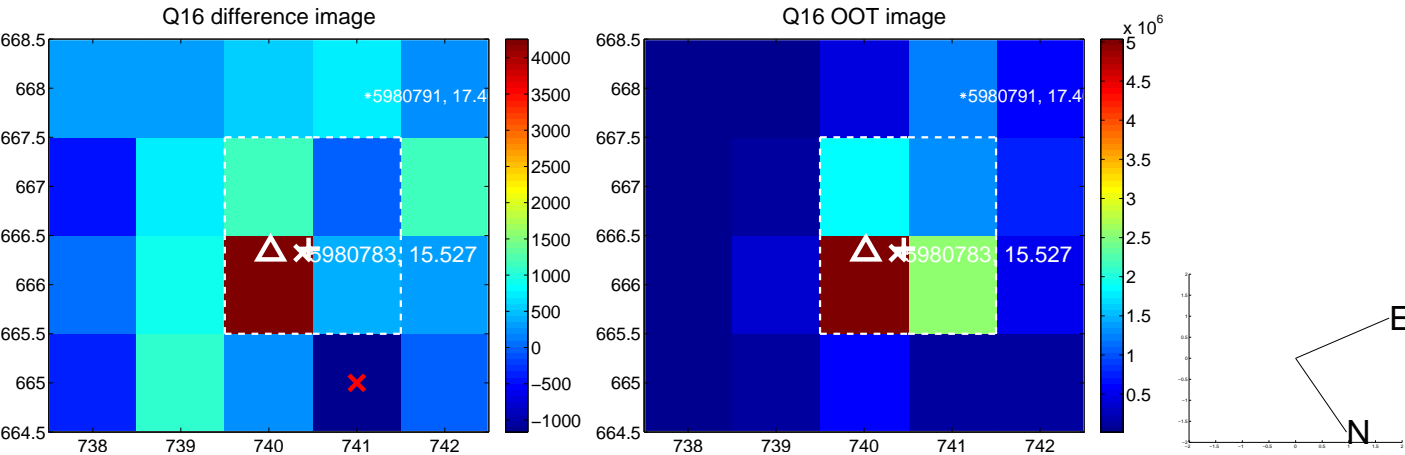
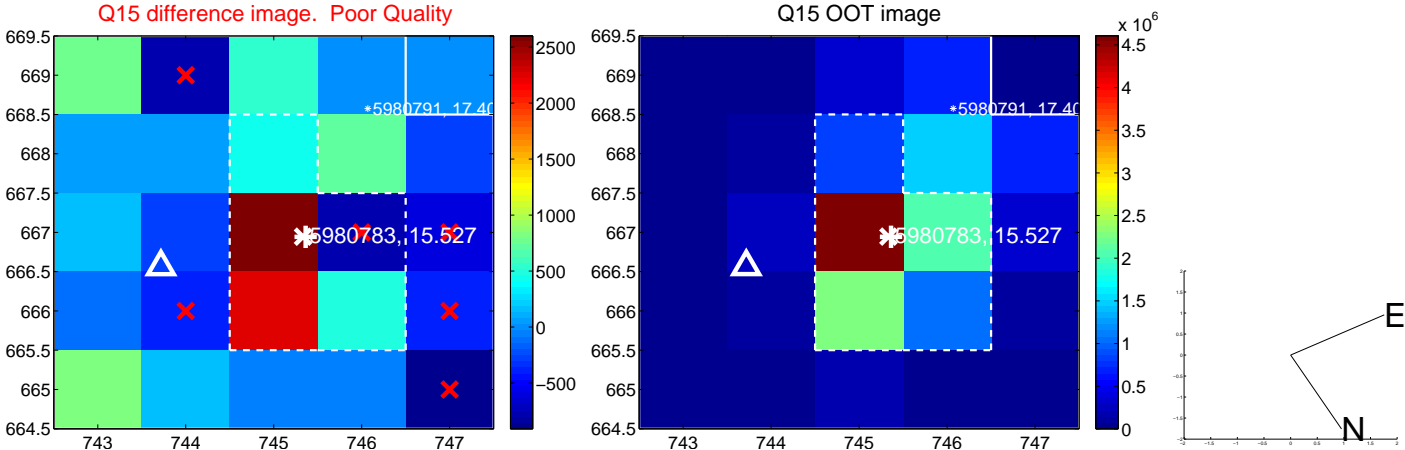
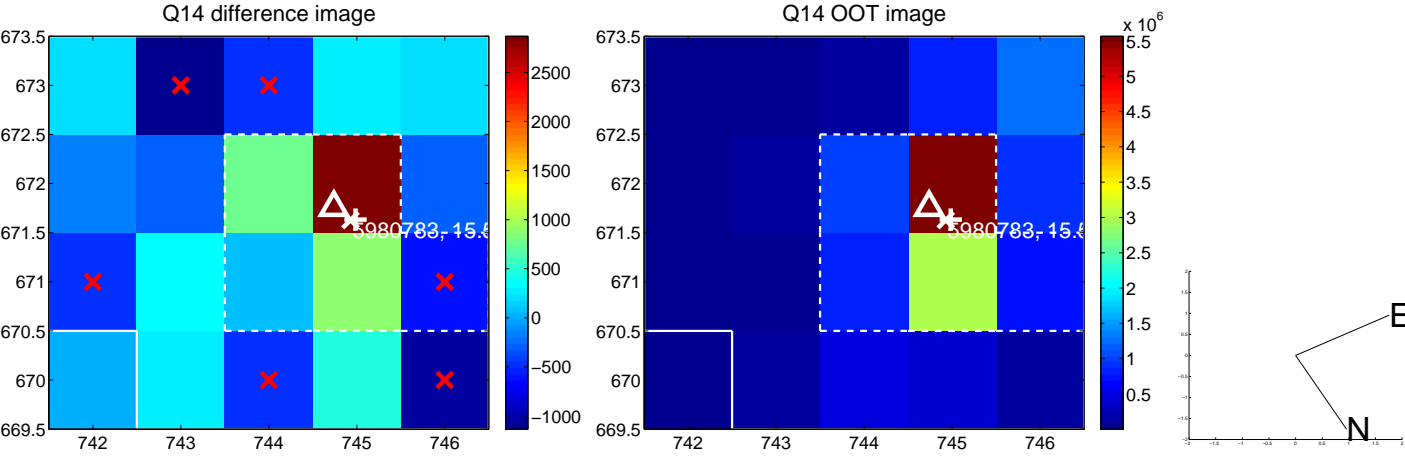
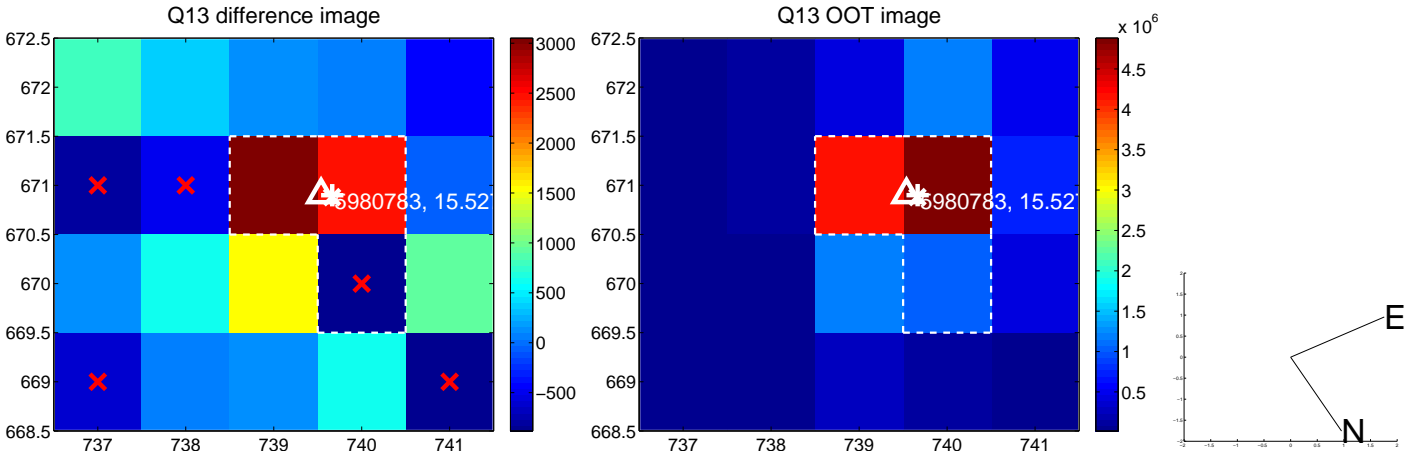
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



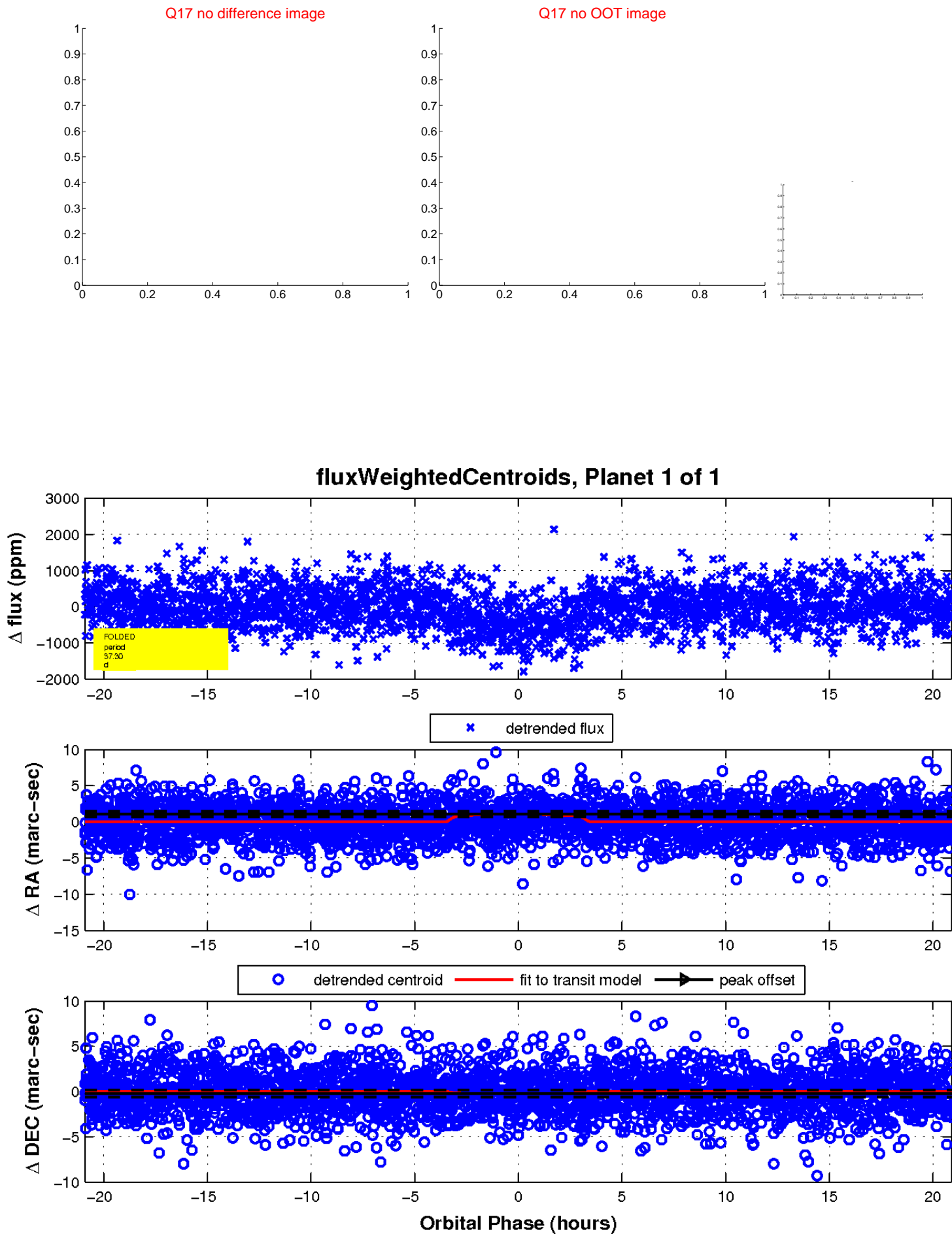
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

