

# KIC 004479000

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 004479000-01 | OBS      | No   | 271.557356    | 337.750508   | 353.0       | 7.534            | 7.4 | 7.9 | 1.47                        | 6617            | 2.93                   | 4.82                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                    |
|--------------|----------|------|-------|---|---|---|---|-----------------------------|
| 004479000-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL |

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

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

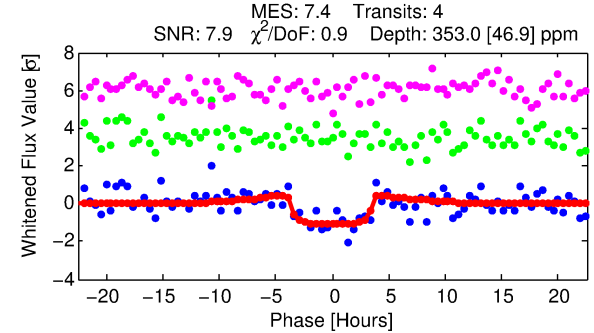
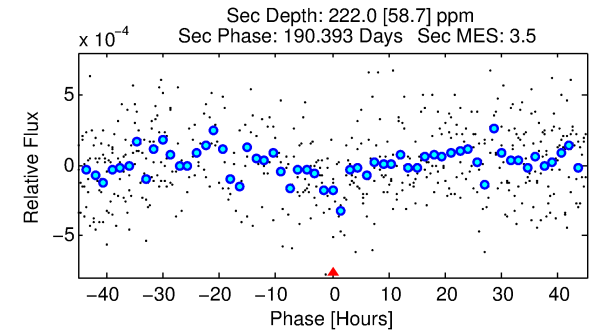
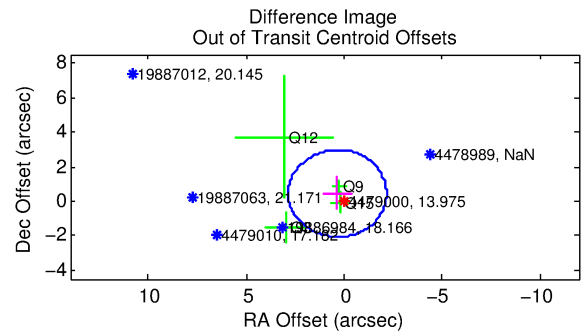
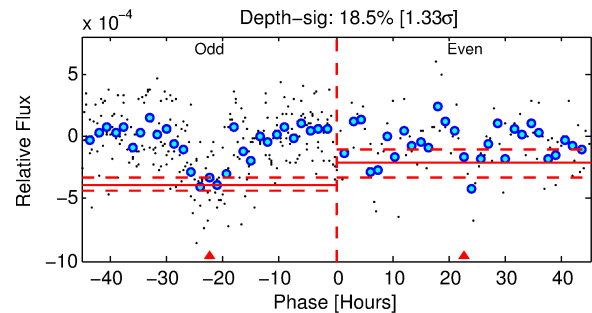
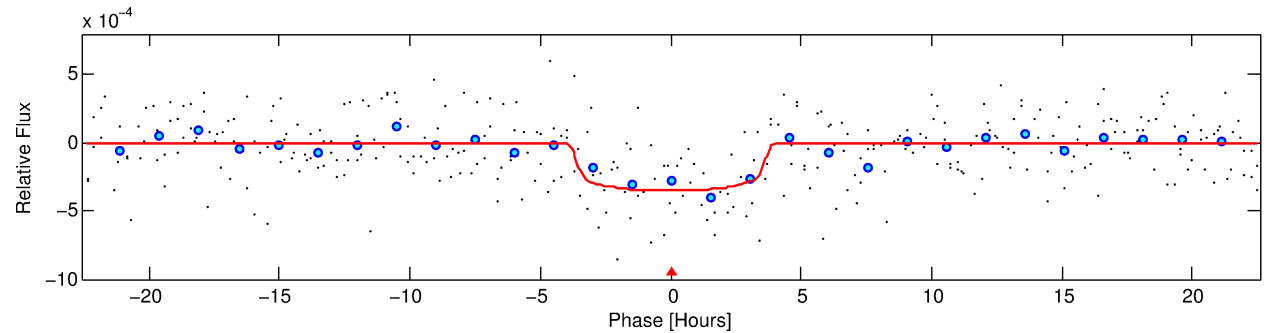
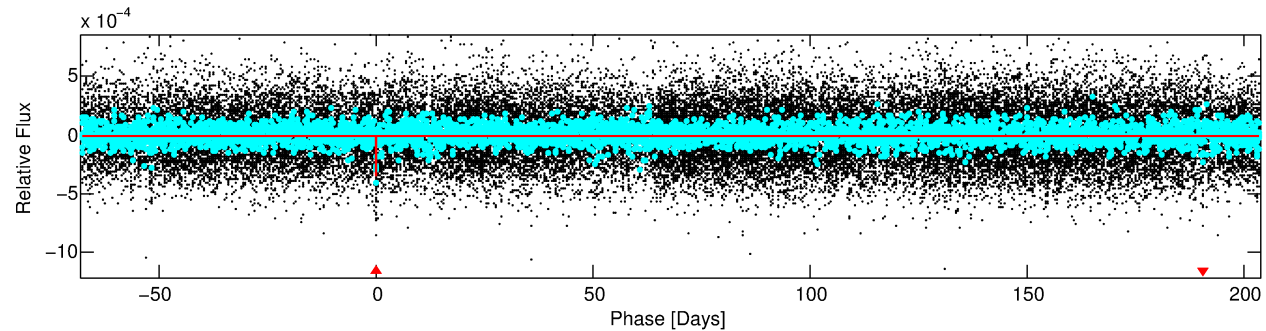
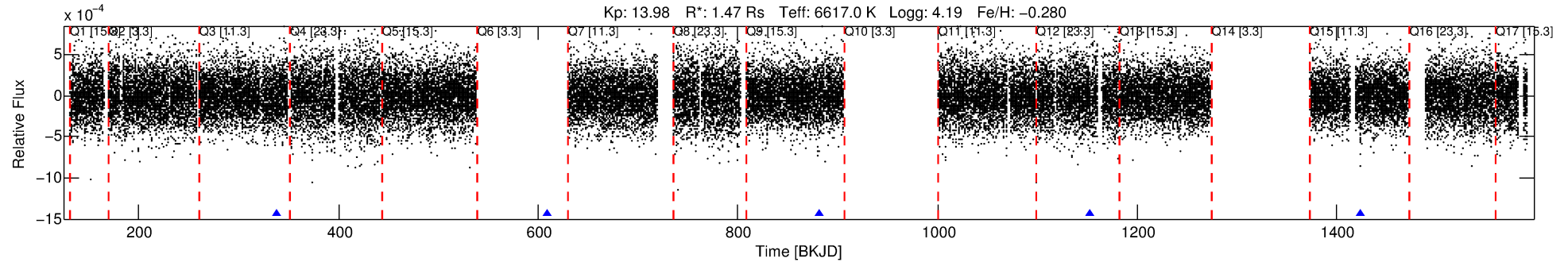
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004479000-01

No Significant Match Found

# DV One-Page Summary

KIC: 4479000 Candidate: 1 of 1 Period: 271.557 d



## DV Fit Results:

Period = 271.55736 [0.00434] d  
Epoch = 337.7505 [0.0121] BKJD  
Rp/R\* = 0.0183 [0.0136]  
a/R\* = 211.49 [872.06]  
b = 0.67 [3.43]  
Seff = 4.82 [1.74]  
Teq = 378 [34] K  
Rp = 2.93 [2.33] Re  
a = 0.8750 [0.2053] AU  
Ag = 10910.91 [16828.23] [0.65σ]  
Teffp = 5971 [2259] K [2.48σ]

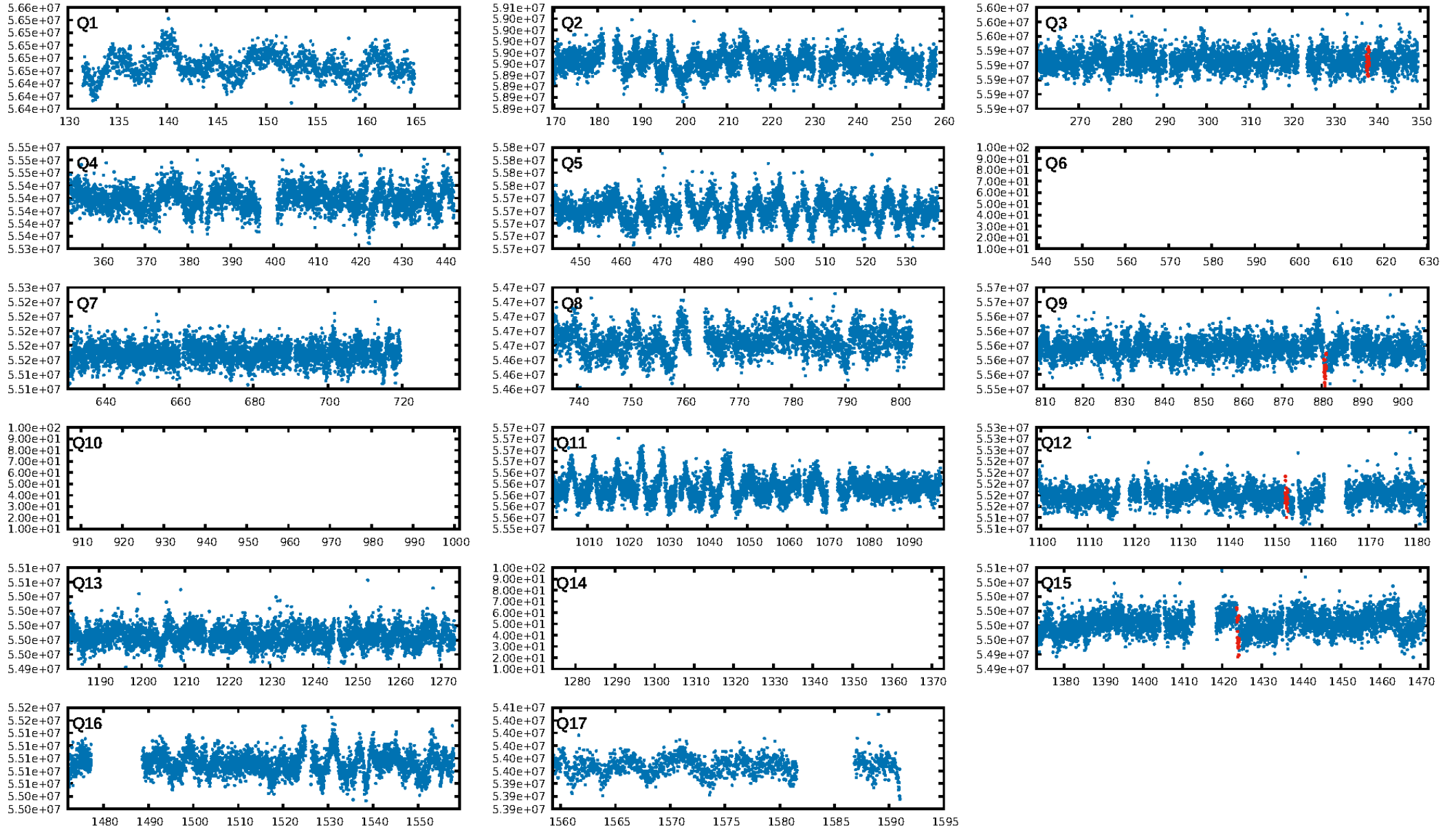
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.6%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 4.91e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -3.782  
Centroid-sig: 48.8%  
Centroid-so: 1.429 arcsec [1.20σ]  
OotOffset-rm: 0.570 arcsec [0.68σ]  
KicOffset-rm: 0.503 arcsec [0.67σ]  
OotOffset-st: 0/2/1/1 [4]  
KicOffset-st: 0/2/1/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

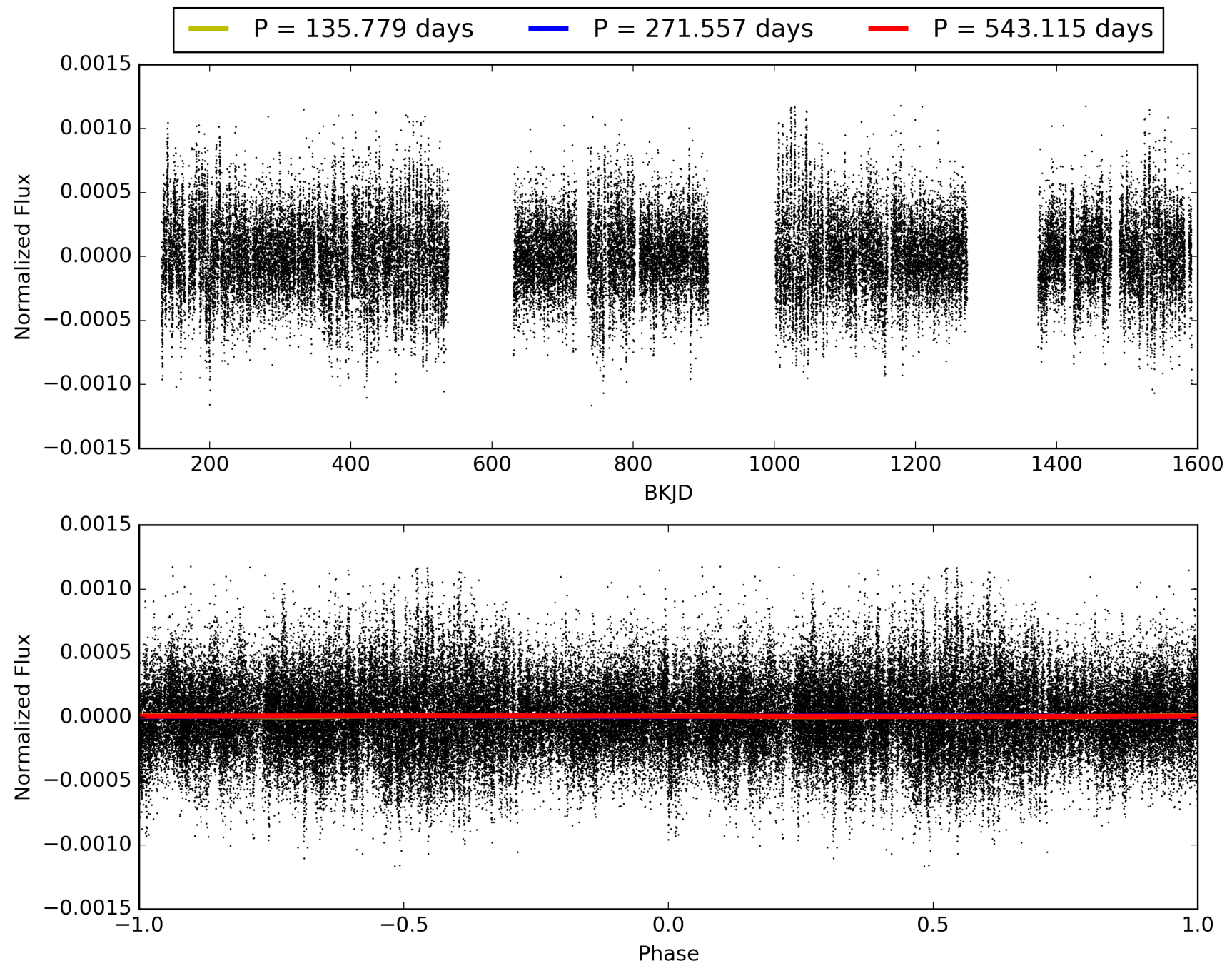
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:44:26 Z

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

# TCE 004479000-01, PDC Light Curves

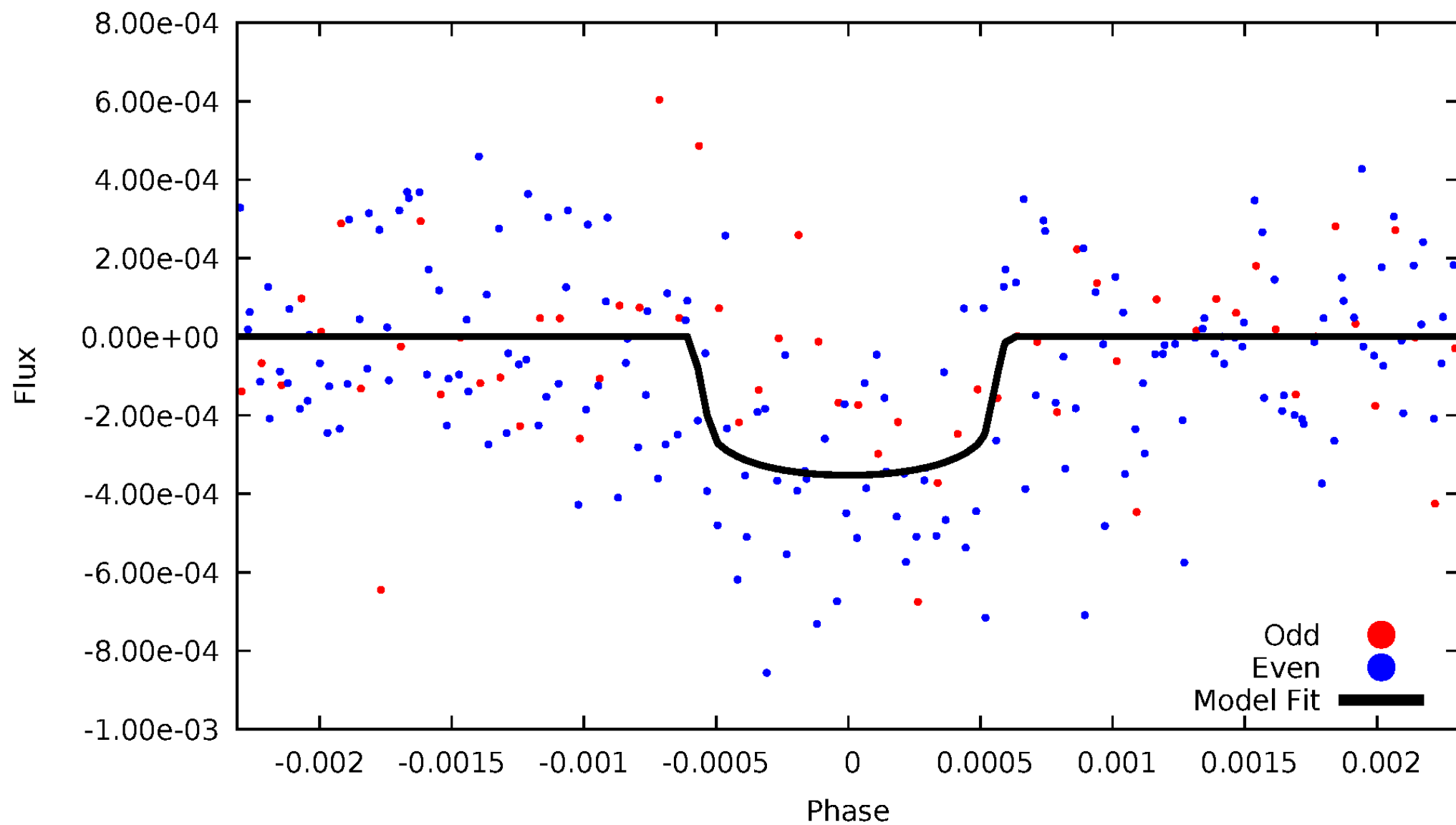


TCE 004479000-01



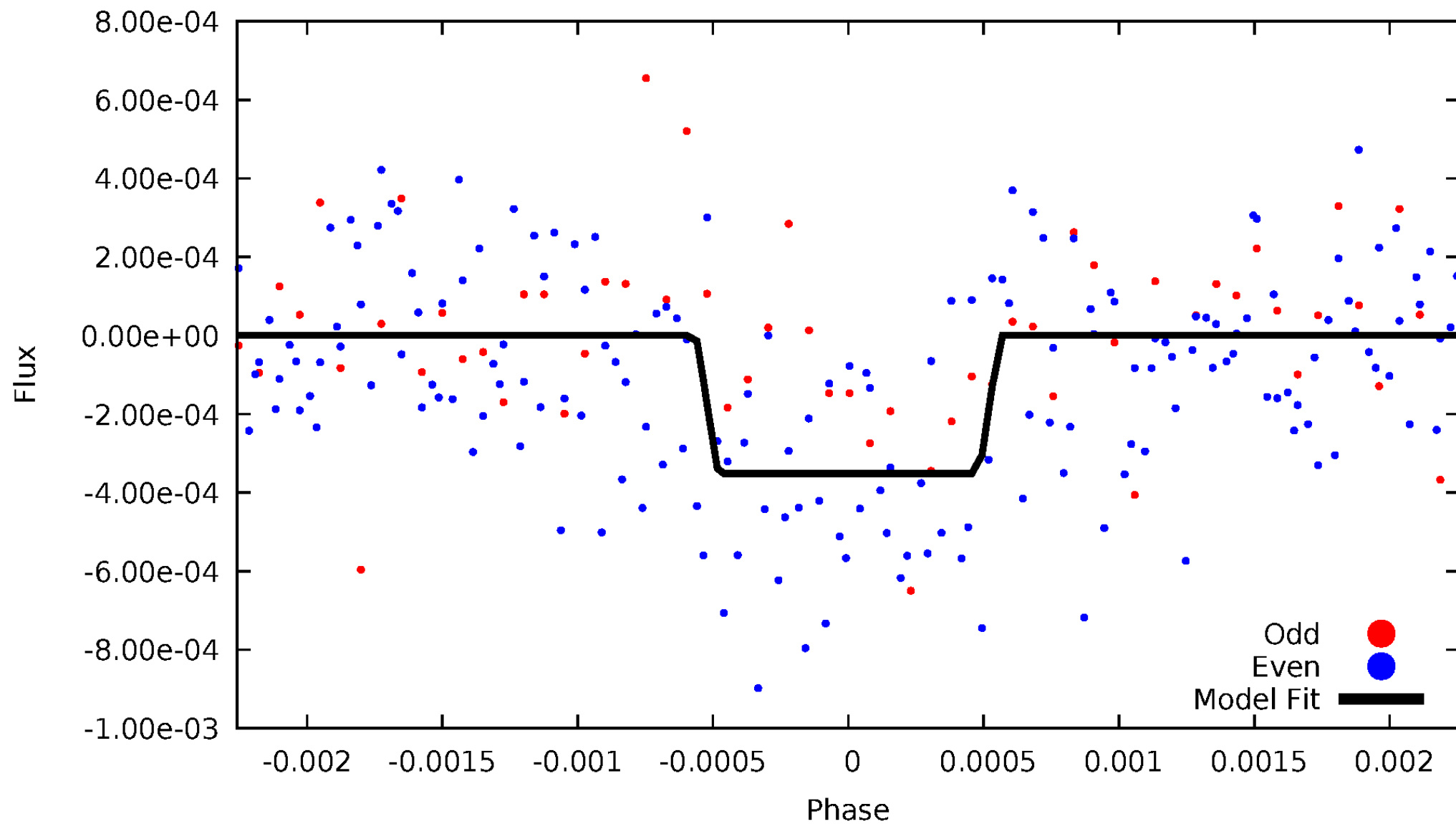
# DV Odd/Even

TCE 004479000-01



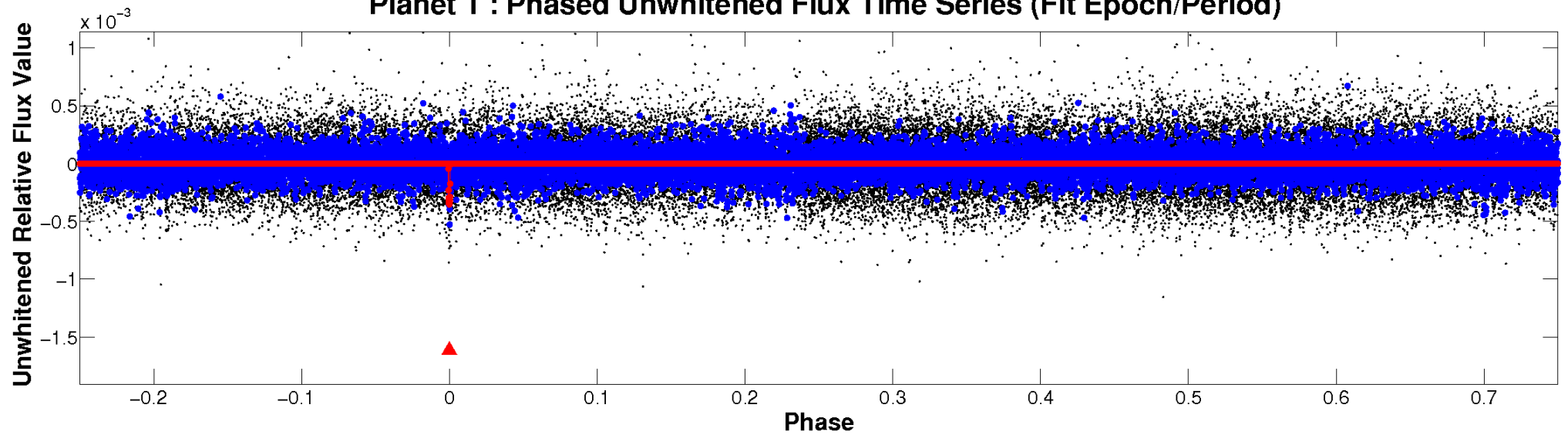
# ALT Odd/Even

TCE 004479000-01

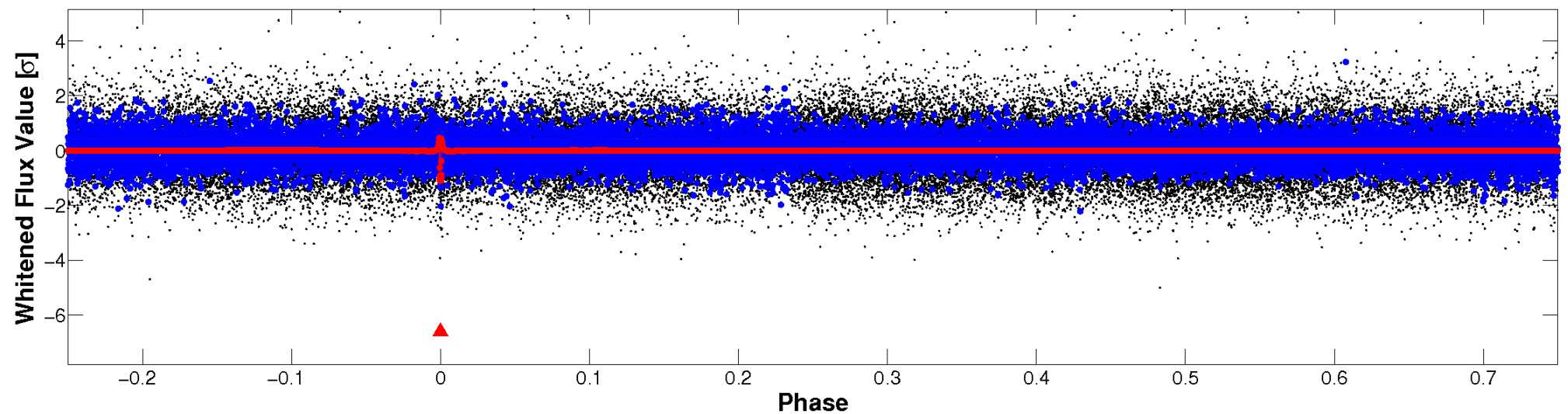


# Non-Whitened Vs. Whitened Light Curve

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



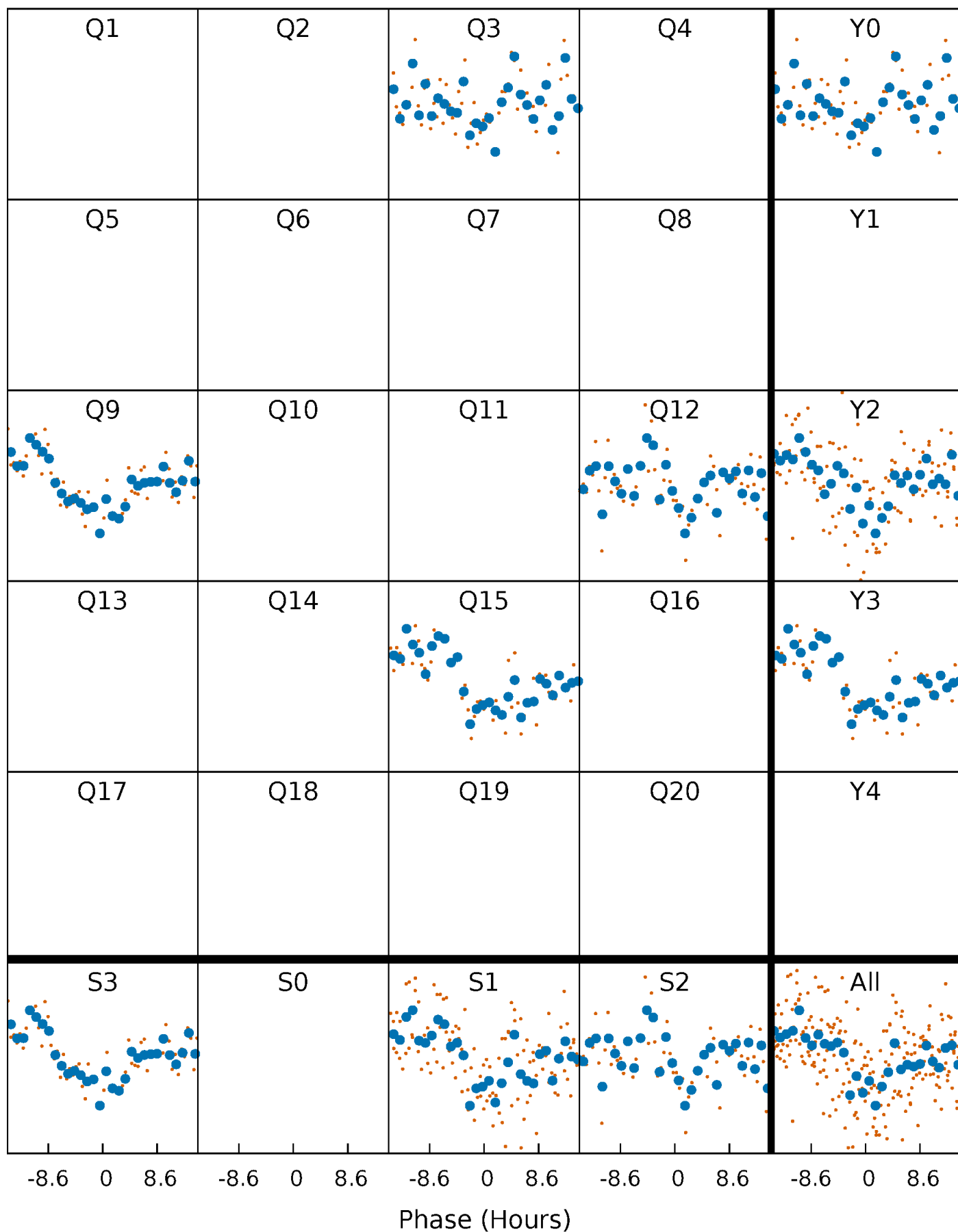
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

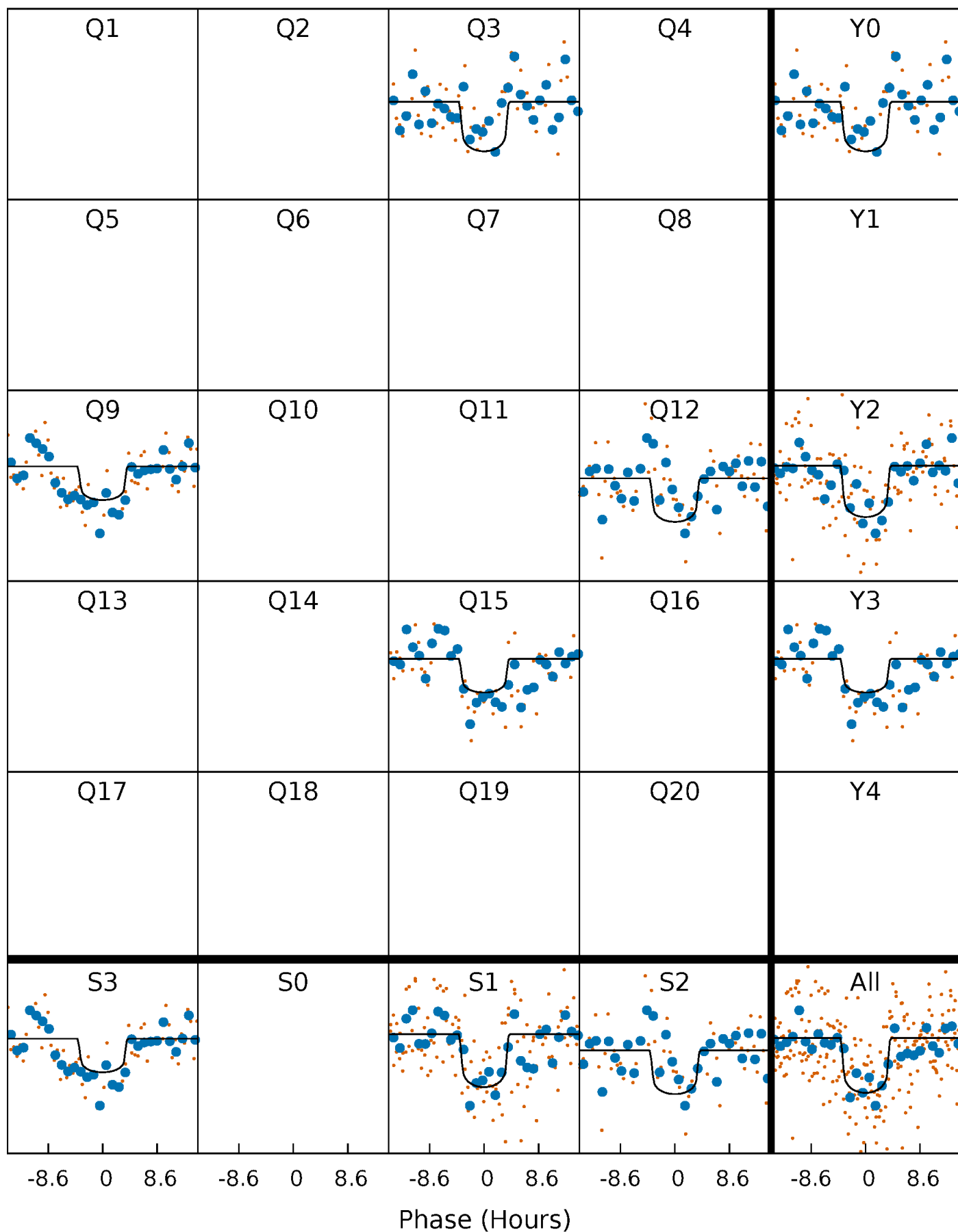
TCE 004479000-01 P=271.557356 Days  $T_0=337.750508$  (BKJD)





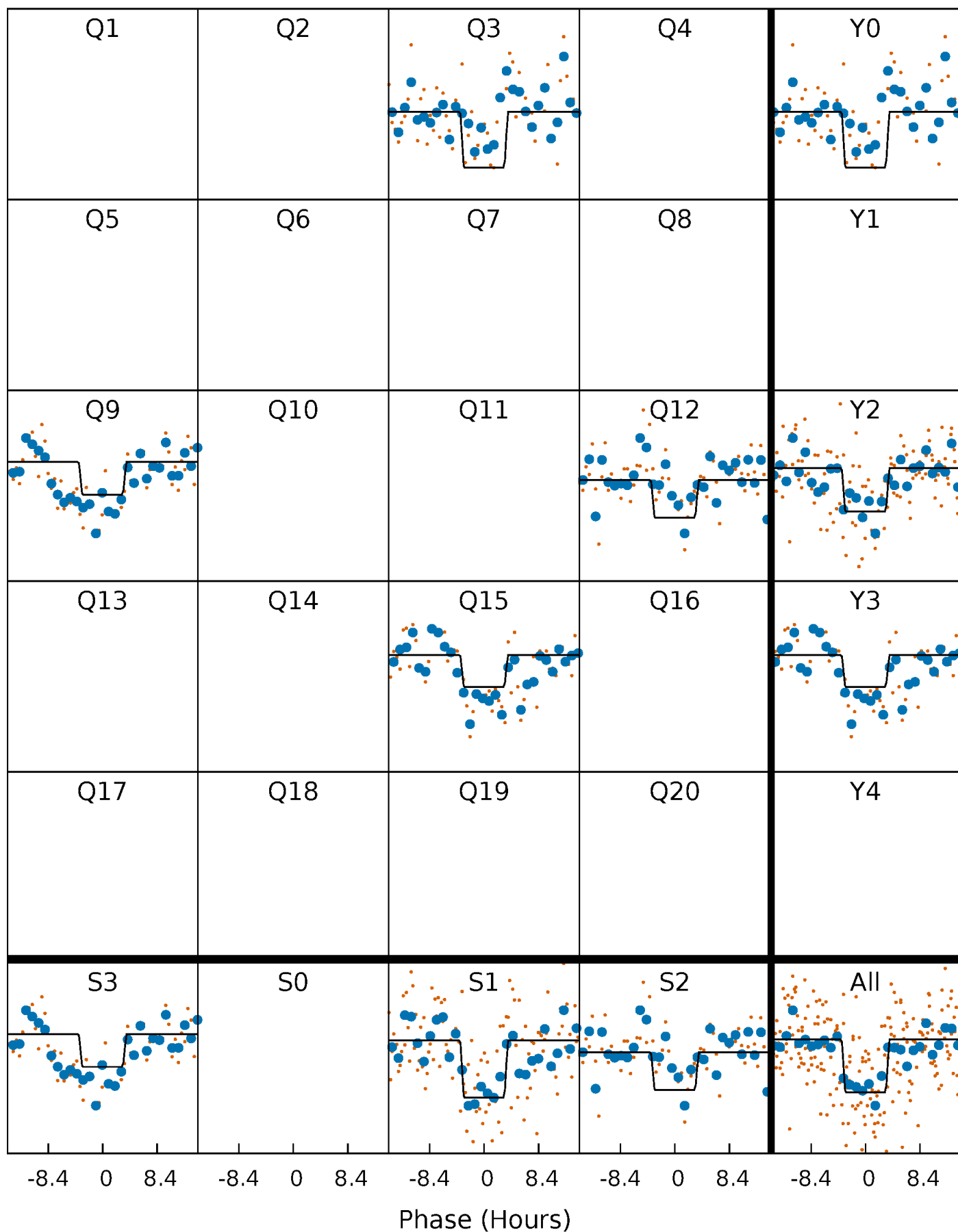
# DV Quarter-Phased Transit Curves

TCE 004479000-01 P=271.557356 Days  $T_0=337.750508$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

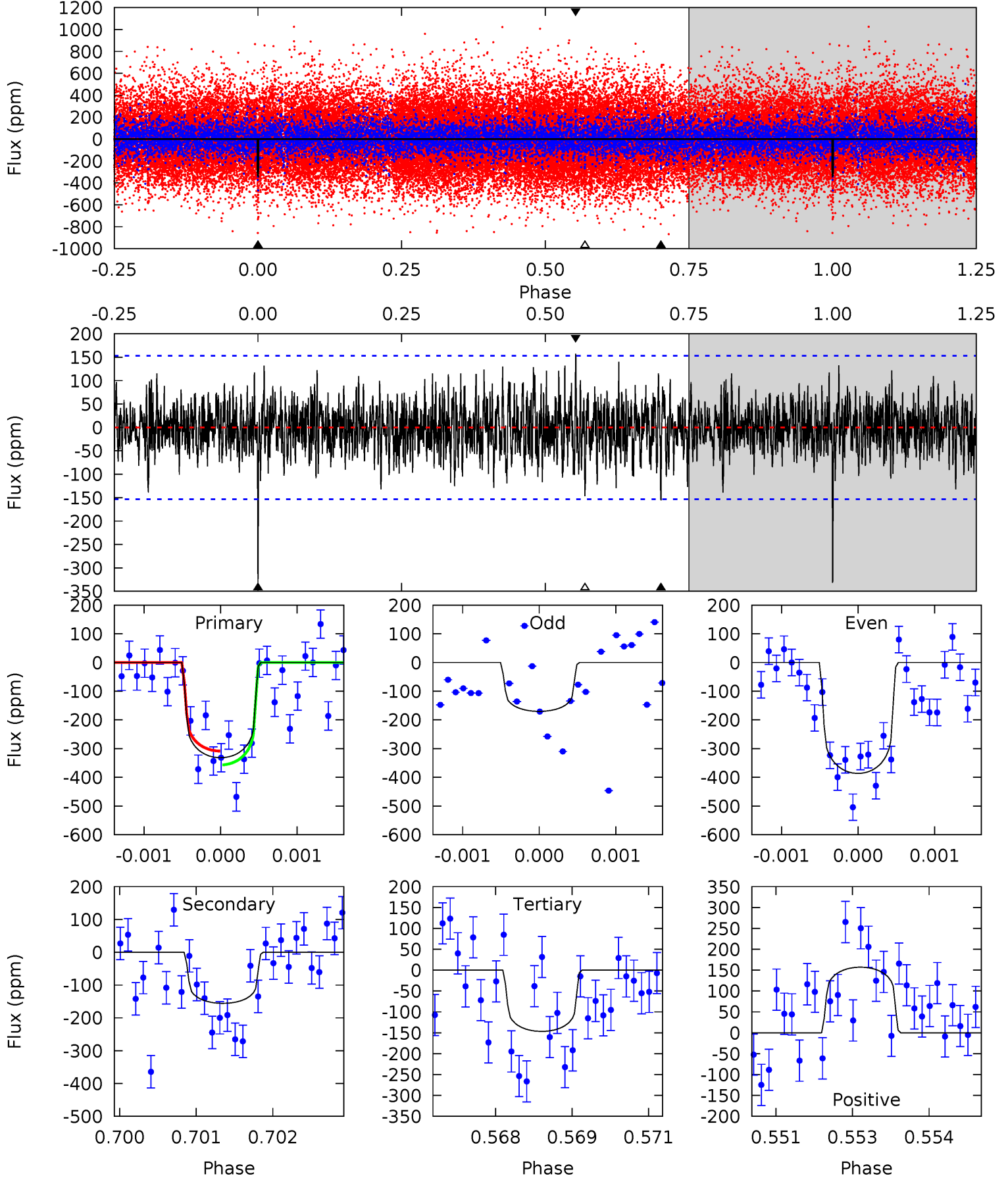
TCE 004479000-01 P=271.555201 Days  $T_0=337.765839$  (BKJD)



# DV Model-Shift Uniqueness Test

004479000-01, P = 271.557356 Days, E = 66.193152 Days

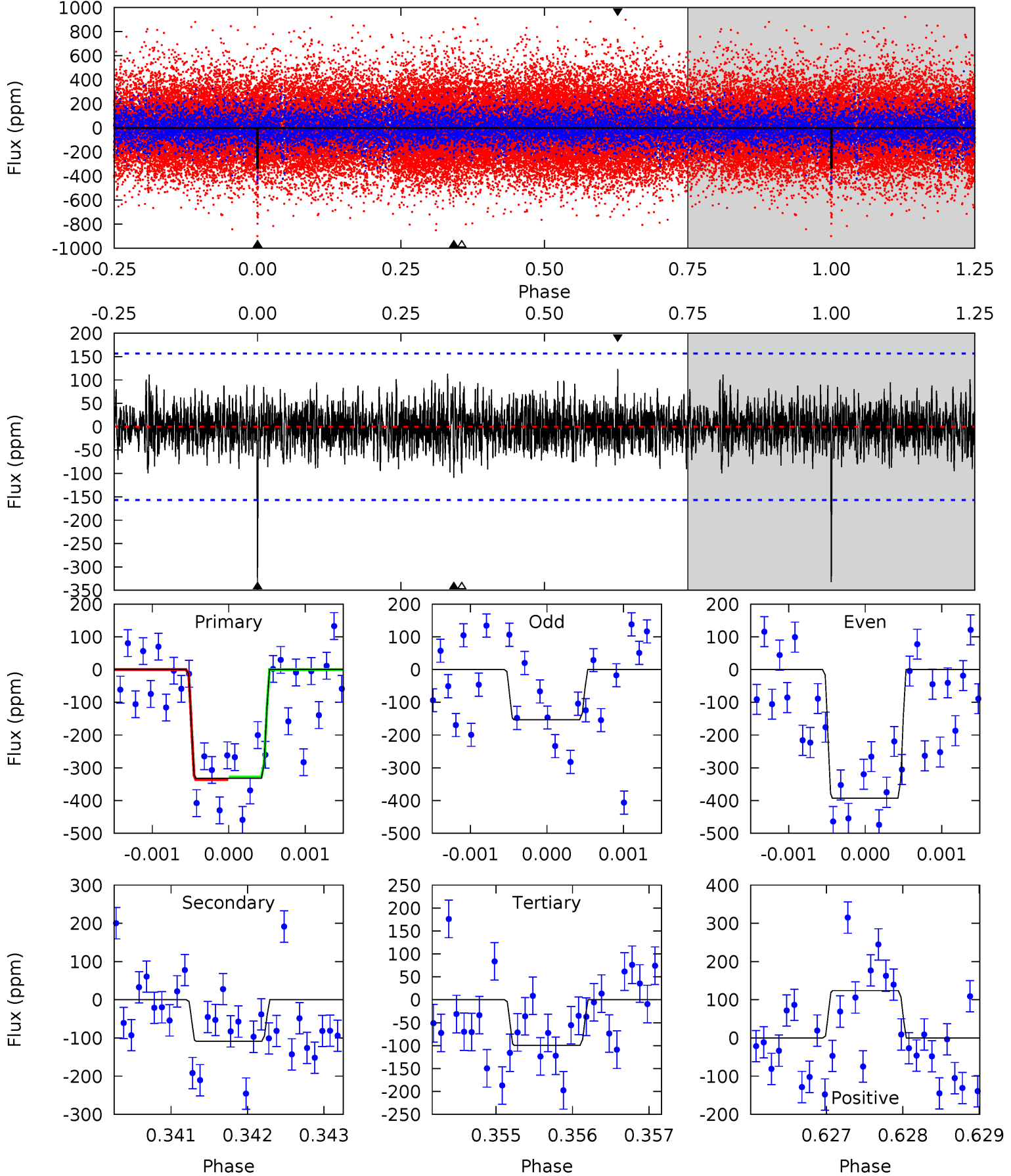
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.7 | 5.51 | 5.19 | 5.55 | 5.42            | 3.24            | 1.54             | 6.54    | 6.18    | 0.32    | -0.05   | 3.36    | 1.01 | 0.32  | 0.85 |



# Alt Model-Shift Uniqueness Test

004479000-01, P = 271.555201 Days, E = 66.210638 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.5 | 3.78 | 3.45 | 4.30 | 5.44            | 3.27            | 1.13             | 8.07    | 7.22    | 0.33    | -0.52   | 3.62    | 0.98 | 0.27  | 0.14 |



### Stellar Parameters For KIC 004479000

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
|        | $6617^{+181}_{-241}$ | $4.189^{+0.175}_{-0.175}$ | $-0.280^{+0.250}_{-0.300}$ | $1.466^{+0.423}_{-0.346}$ | $1.219^{+0.172}_{-0.191}$ | $0.545^{+0.532}_{-0.273}$                 |
|        | +3%/-4%              | +4%/-4%                   | +89%/-107%                 | +29%/-24%                 | +14%/-16%                 | +98%/-50%                                 |
| 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 004479000-01 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$          | $A_{obs}$               |
|---------|---------------|------------------------|-------------------|------------------------|-------------------------|
| DV      | $-156 \pm 28$ | $3.13^{+2.46}_{-1.85}$ | $525^{+41}_{-36}$ | $5270^{+3335}_{-1054}$ | $6809^{+34170}_{-4786}$ |
| Alt.    | $-109 \pm 29$ | $3.22^{+2.20}_{-1.73}$ | $527^{+38}_{-37}$ | $4795^{+2152}_{-865}$  | $4254^{+16851}_{-2815}$ |

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

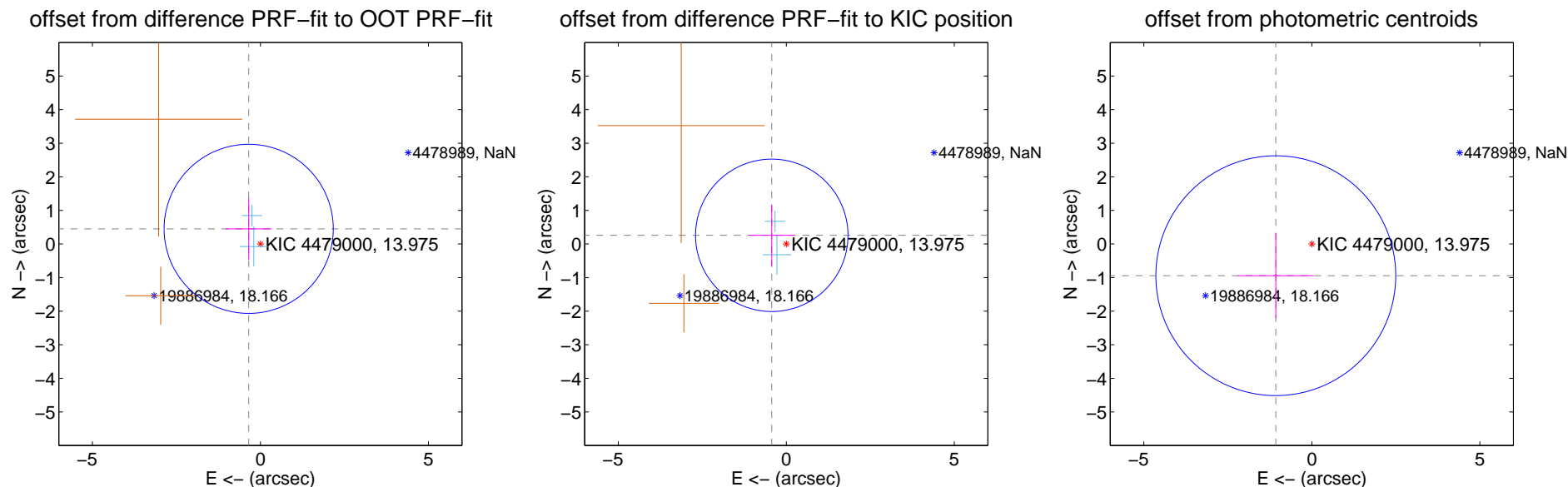
## DV Centroid Data

Supplemental centroid analysis for 004479000-01. Kepler magnitude: 13.97. Transit SNR 7.90

There are 2 quarters with good PRF difference image offsets

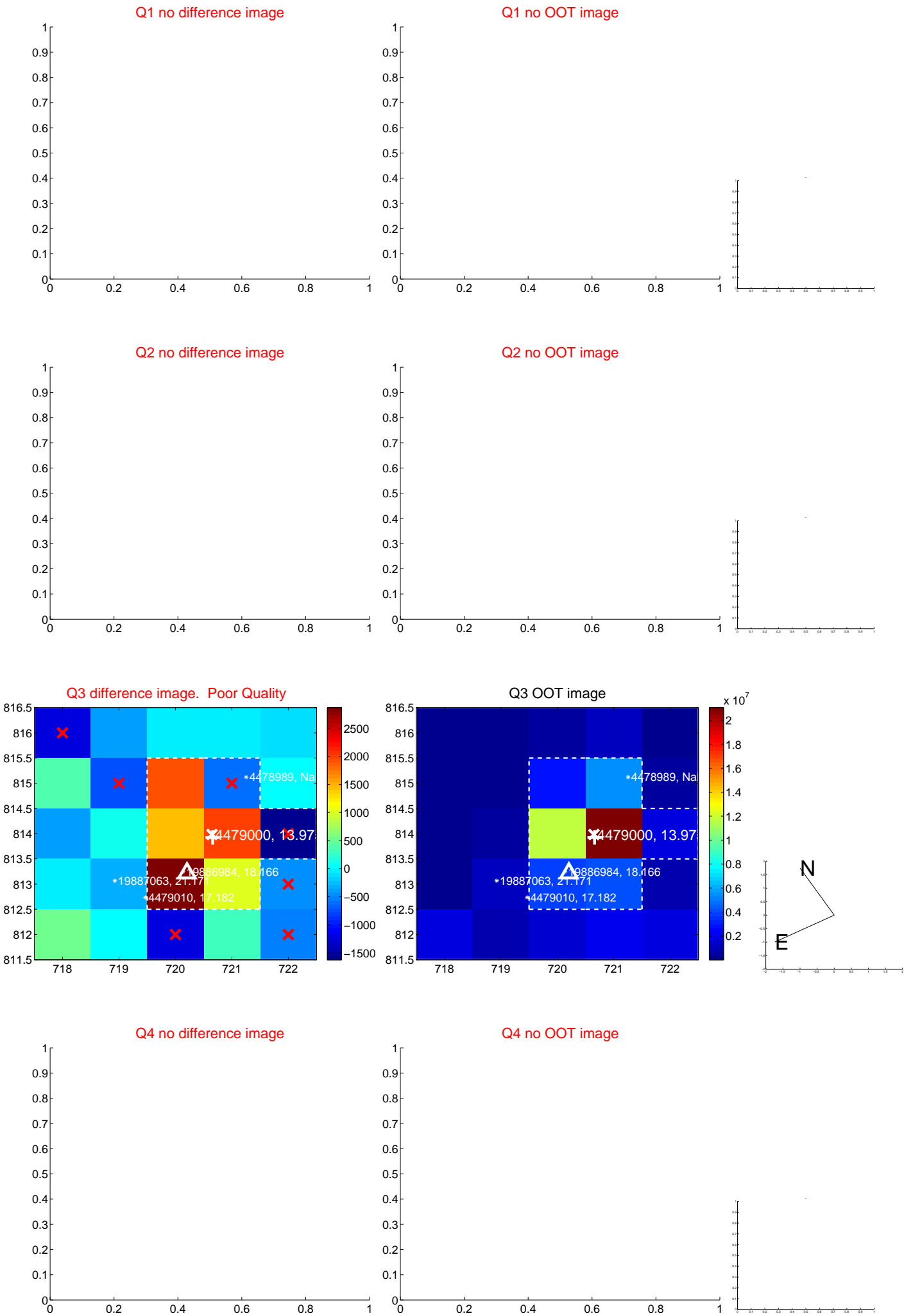
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

|                                         | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|-----------------------------------------|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $0.570 \pm 0.839$  | 0.68                | $0.349 \pm 0.690$ | $0.451 \pm 0.917$ |
| PRF-fit source offset from KIC position | $0.503 \pm 0.756$  | 0.67                | $0.432 \pm 0.690$ | $0.258 \pm 0.917$ |
| photometric centroid source offset      | $1.43 \pm 1.19$    | 1.20                | $1.07 \pm 1.13$   | $-0.94 \pm 1.26$  |



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.

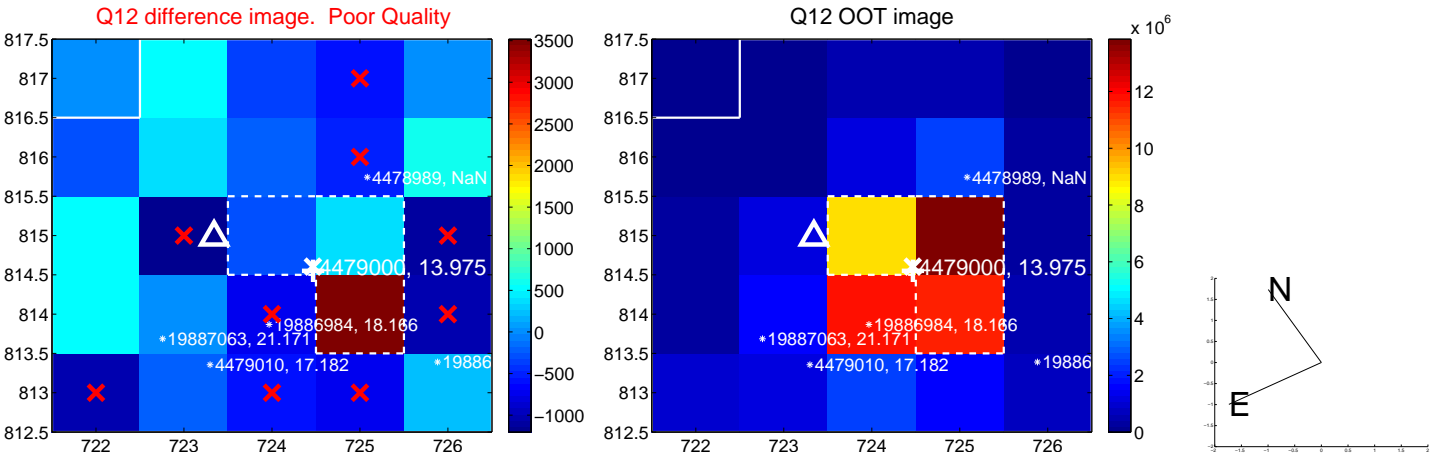
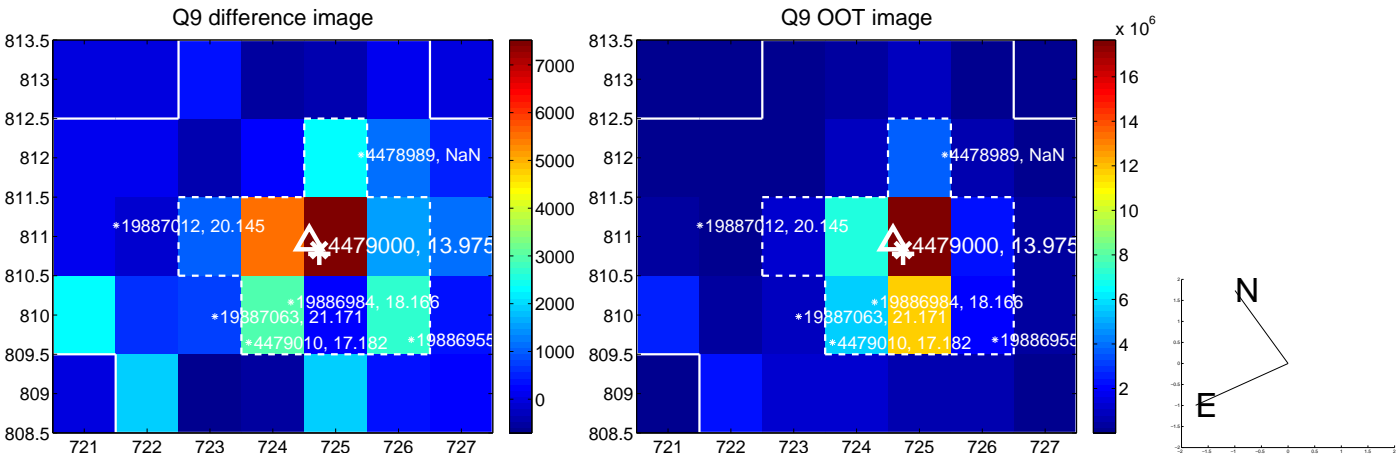




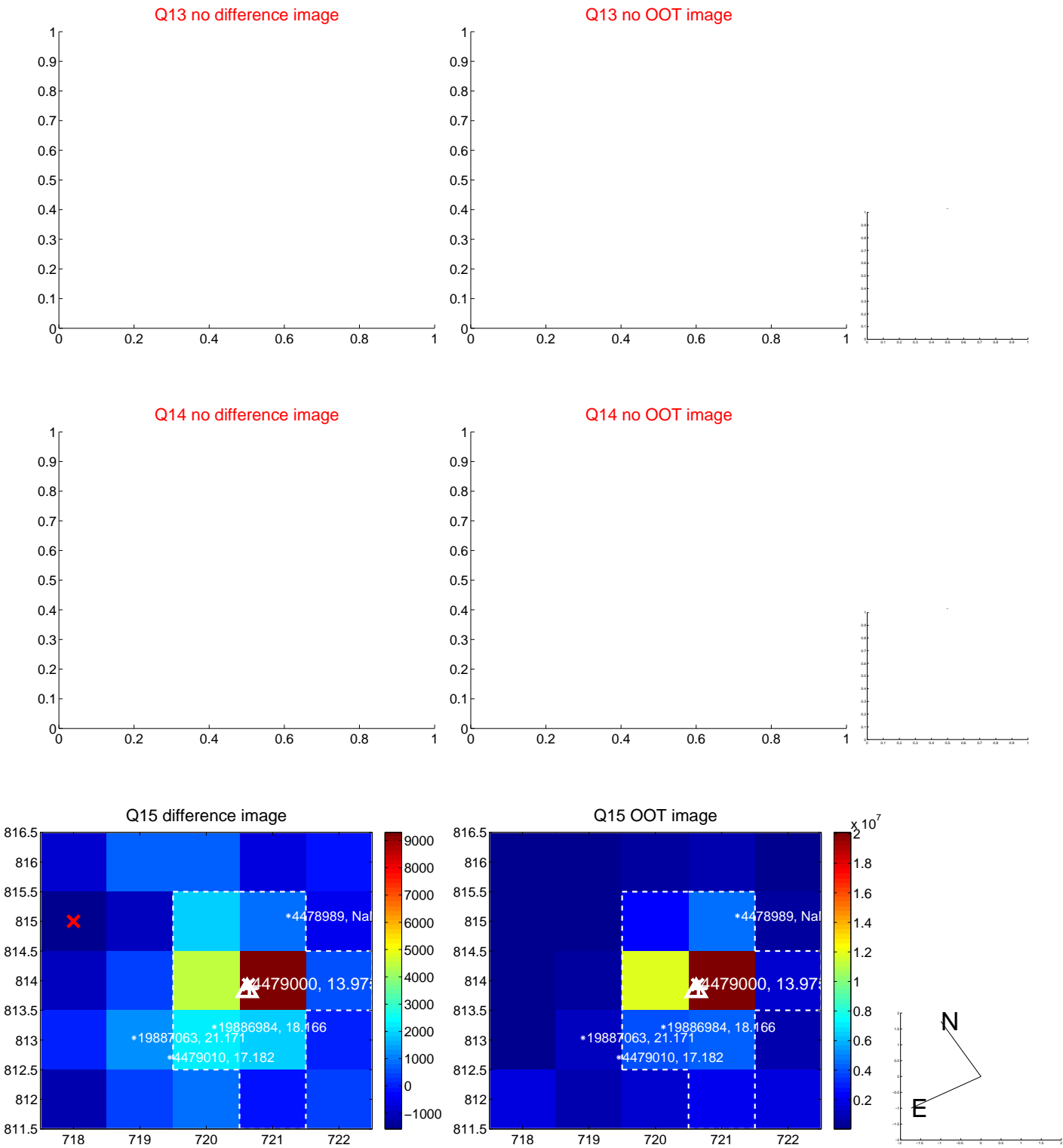
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



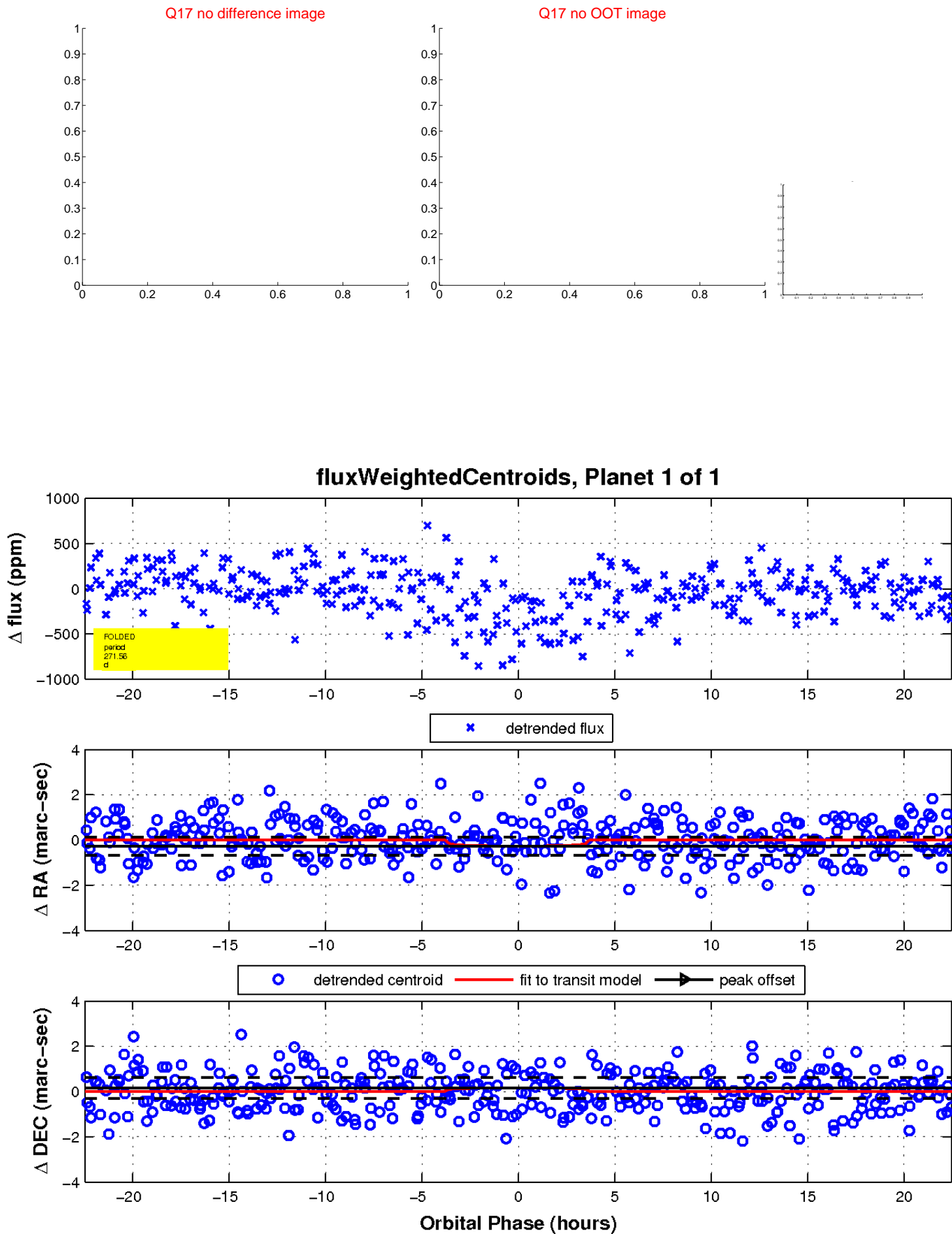
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

