

# KIC 008008913

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008008913-01 | OBS      | 8271.01 | 34.998908     | 160.320374   | 439.9       | 1.695            | 7.5 | 7.6 | 0.65                        | 4559            | 1.66                   | 4.75                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                       |
|--------------|----------|------|-------|---|---|---|---|--------------------------------|
| 008008913-01 | OBS      | FP   | 0.28  | 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.

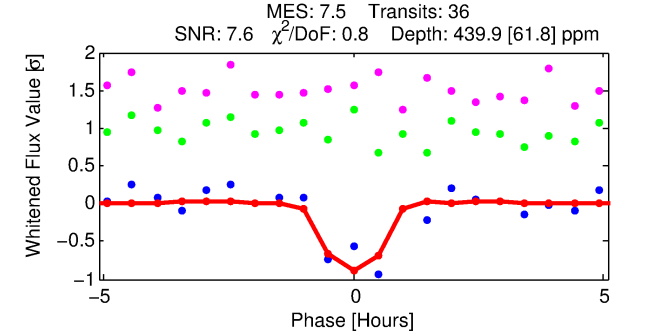
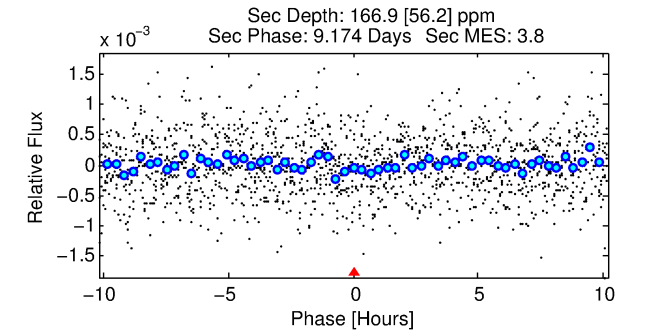
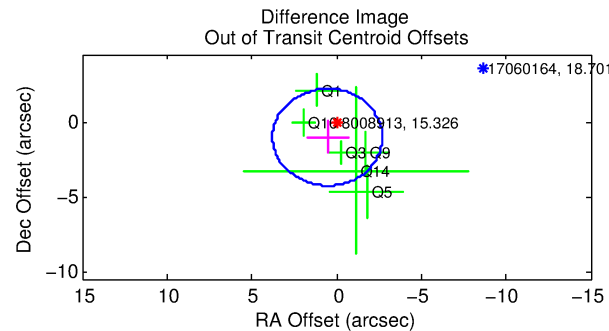
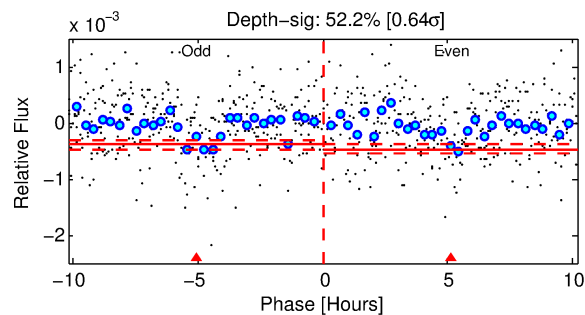
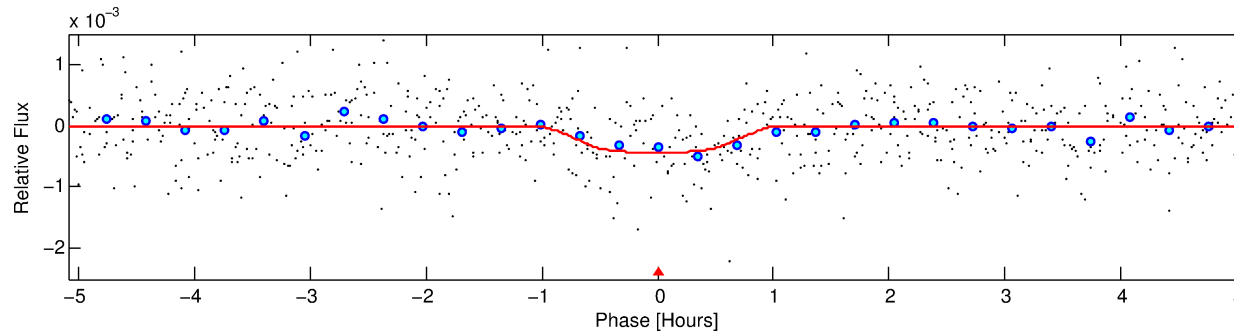
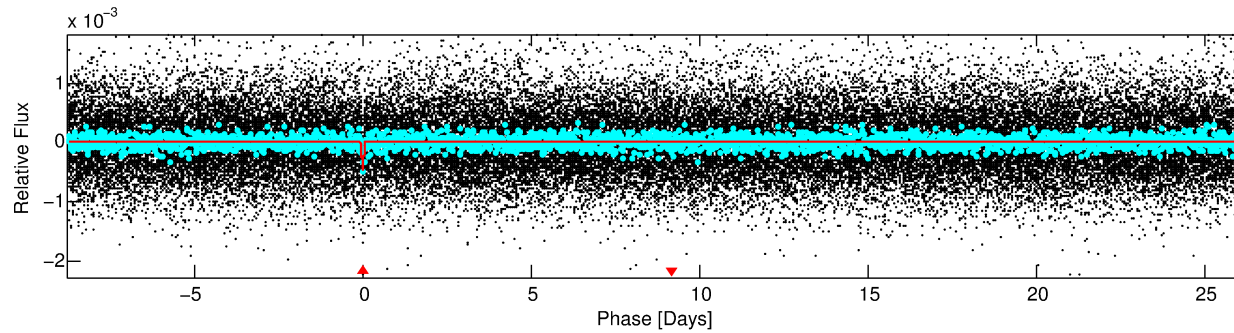
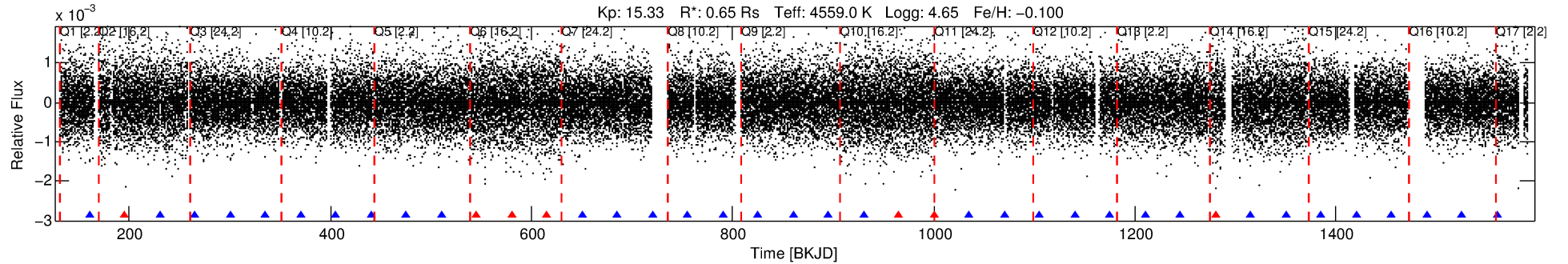
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008008913-01

No Significant Match Found

# DV One-Page Summary

KIC: 8008913 Candidate: 1 of 1 Period: 34.999 d



## DV Fit Results:

Period = 34.99891 [0.00027] d  
Epoch = 160.3204 [0.0060] BKJD  
Rp/R\* = 0.0234 [0.0318]  
a/R\* = 80.08 [394.80]  
b = 0.89 [1.21]  
Seff = 4.75 [0.75]  
Teq = 376 [15] K  
Rp = 1.66 [2.25] Re  
a = 0.1850 [0.0146] AU  
Ag = 1144.32 [3131.46] [0.37 $\sigma$ ]  
Teffp = 3385 [2316] K [1.30 $\sigma$ ]

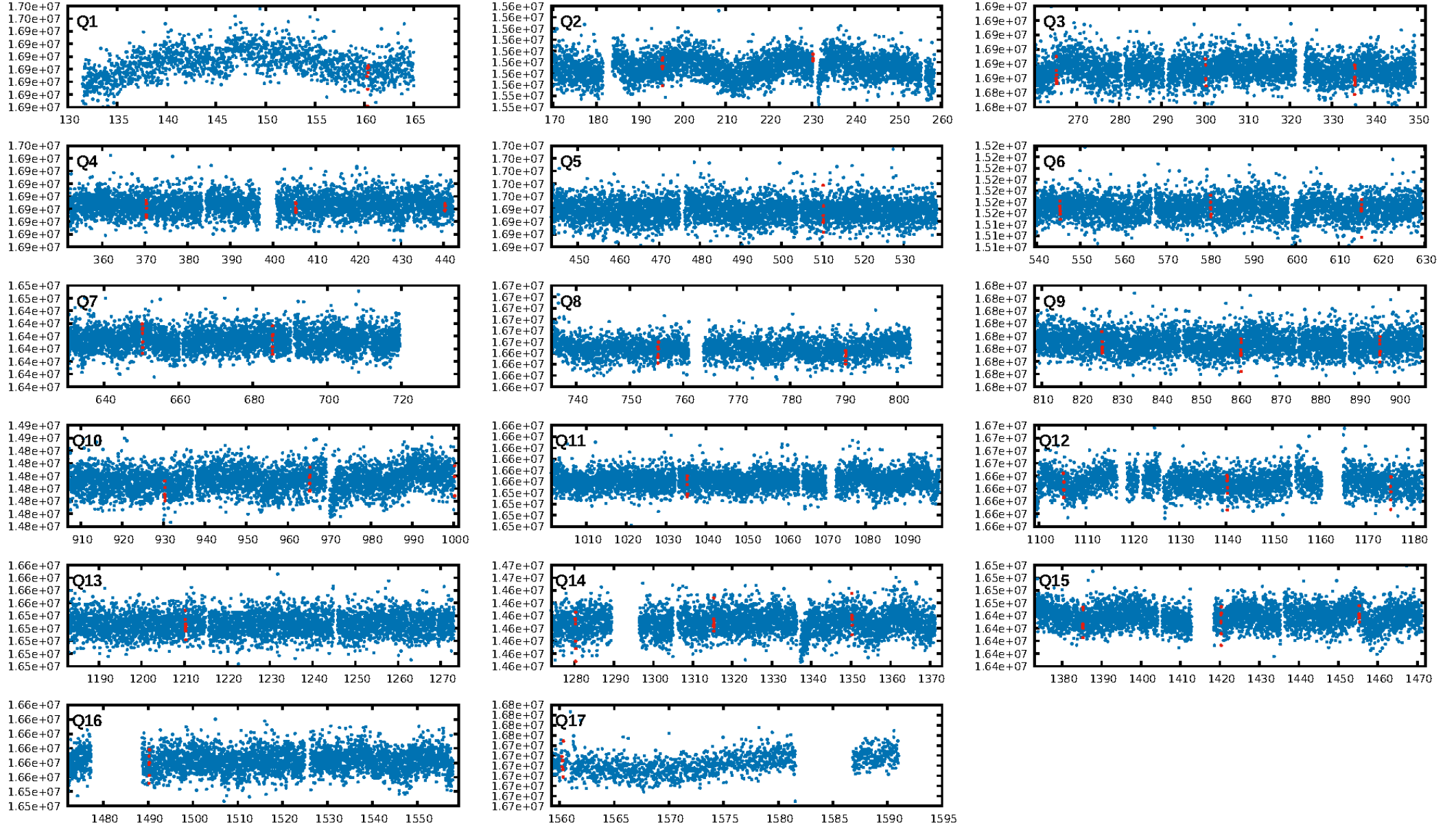
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.29e-13  
RollingBand-fgt: 0.79 [27/34]  
GhostDiagnostic-chr: 2.578  
Centroid-sig: 3.3%  
Centroid-so: 4.059 arcsec [2.10 $\sigma$ ]  
OotOffset-rm: 1.168 arcsec [1.08 $\sigma$ ]  
KicOffset-rm: 1.378 arcsec [1.32 $\sigma$ ]  
OotOffset-st: 1/1/1/3 [6]  
KicOffset-st: 1/1/1/3 [6]  
DiffImageQuality-fgm: 0.17 [1/6]  
DiffImageOverlap-fno: 1.00 [16/16]

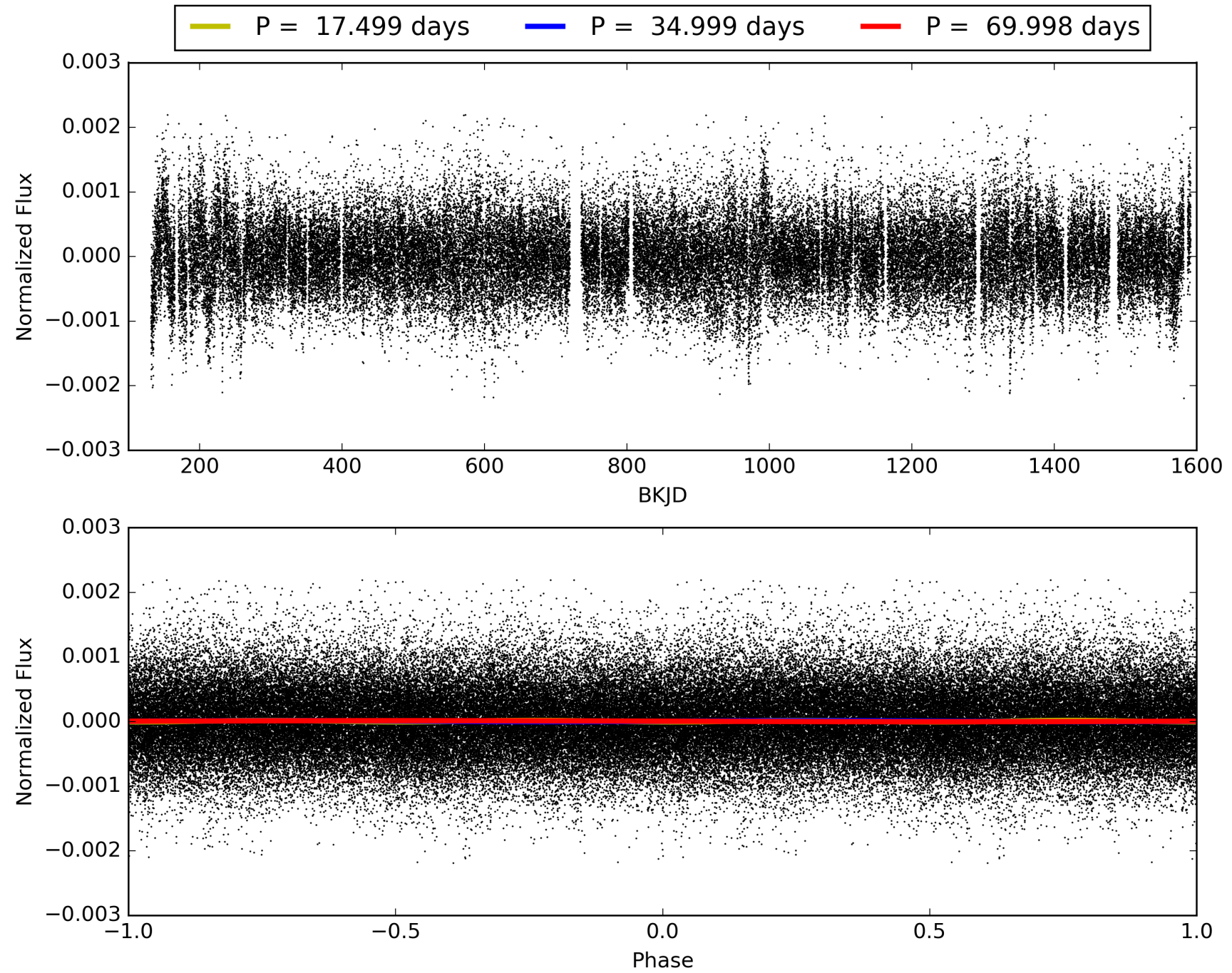
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:56:52 Z

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

# TCE 008008913-01, PDC Light Curves

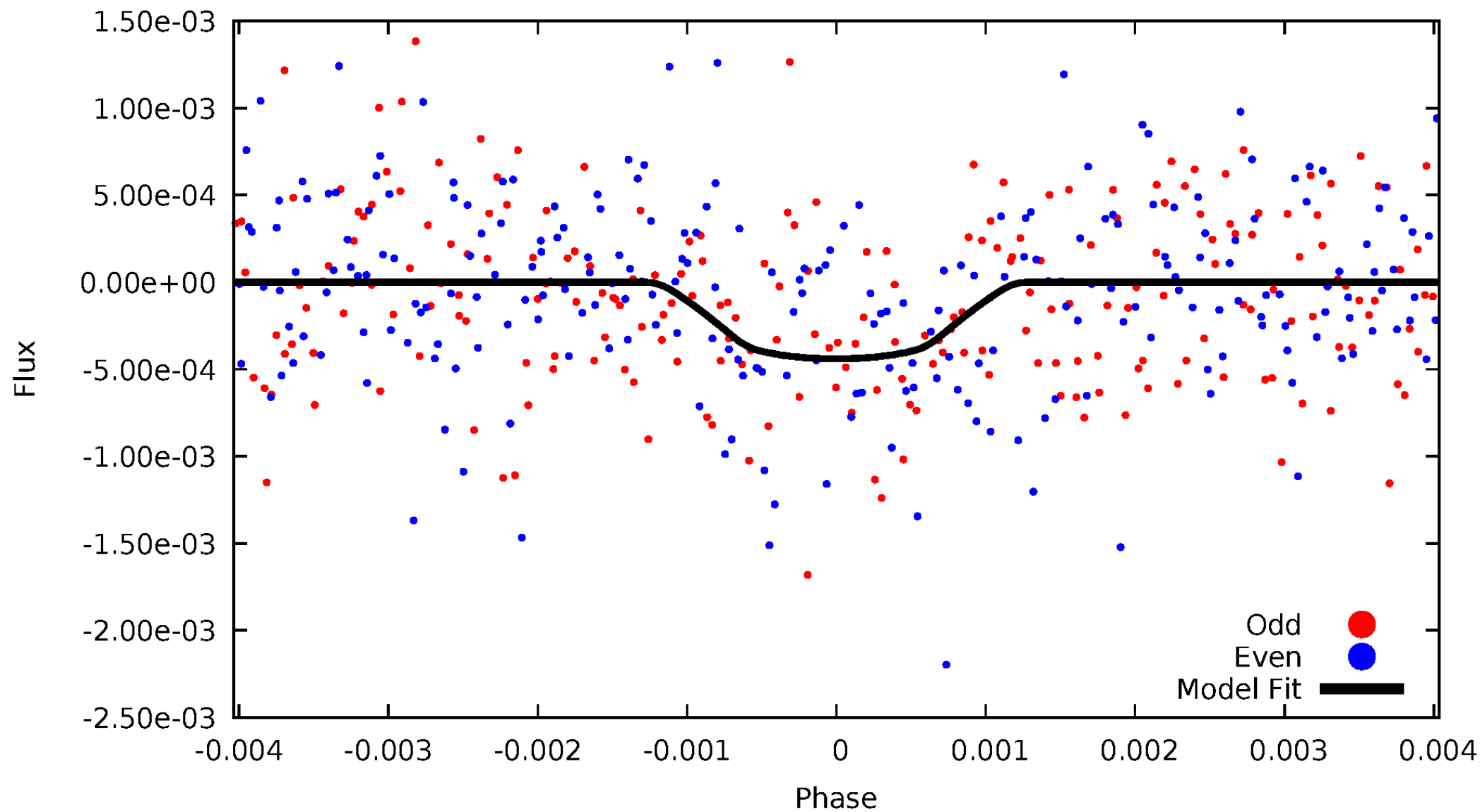


TCE 008008913-01



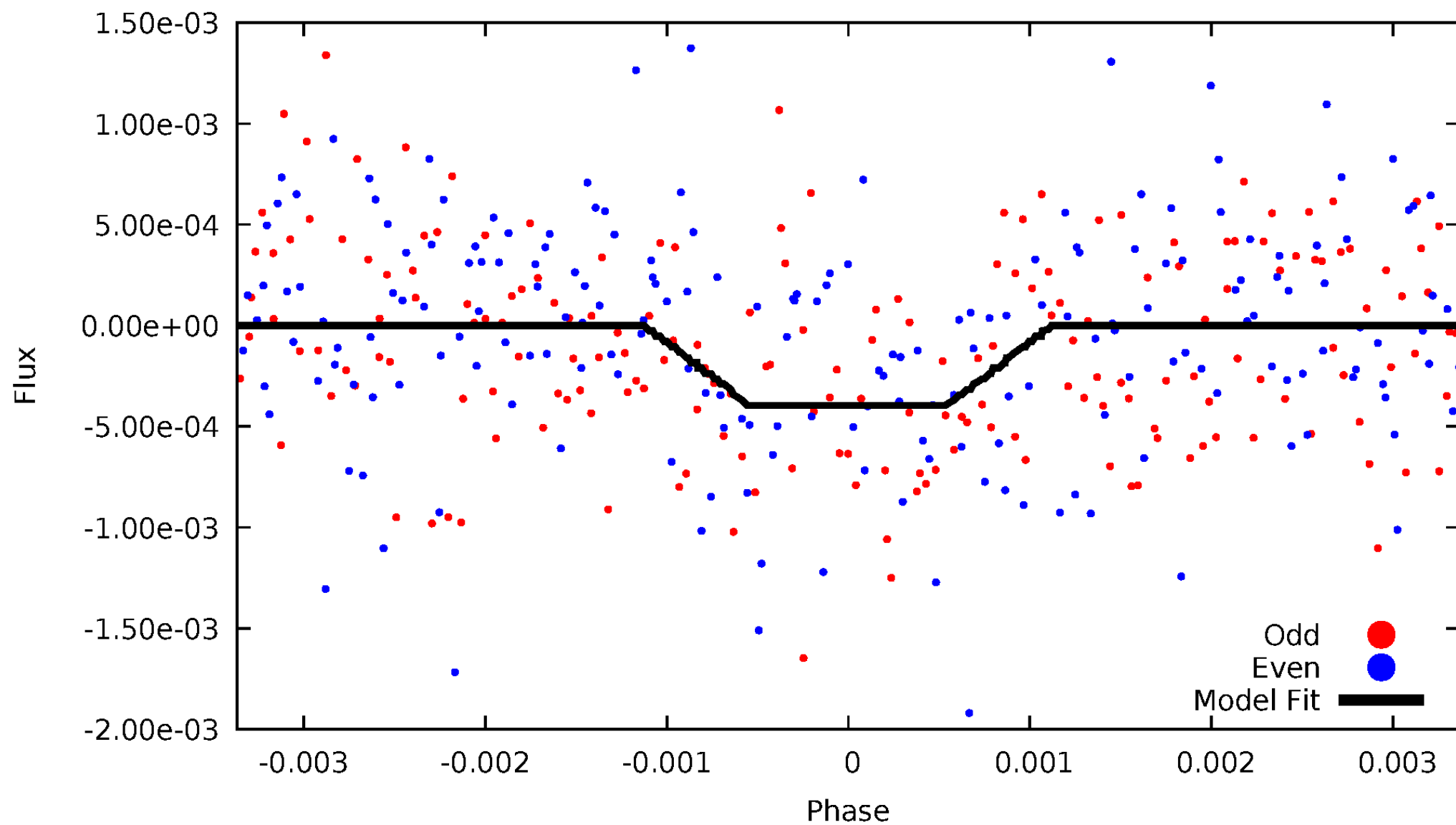
# DV Odd/Even

TCE 008008913-01



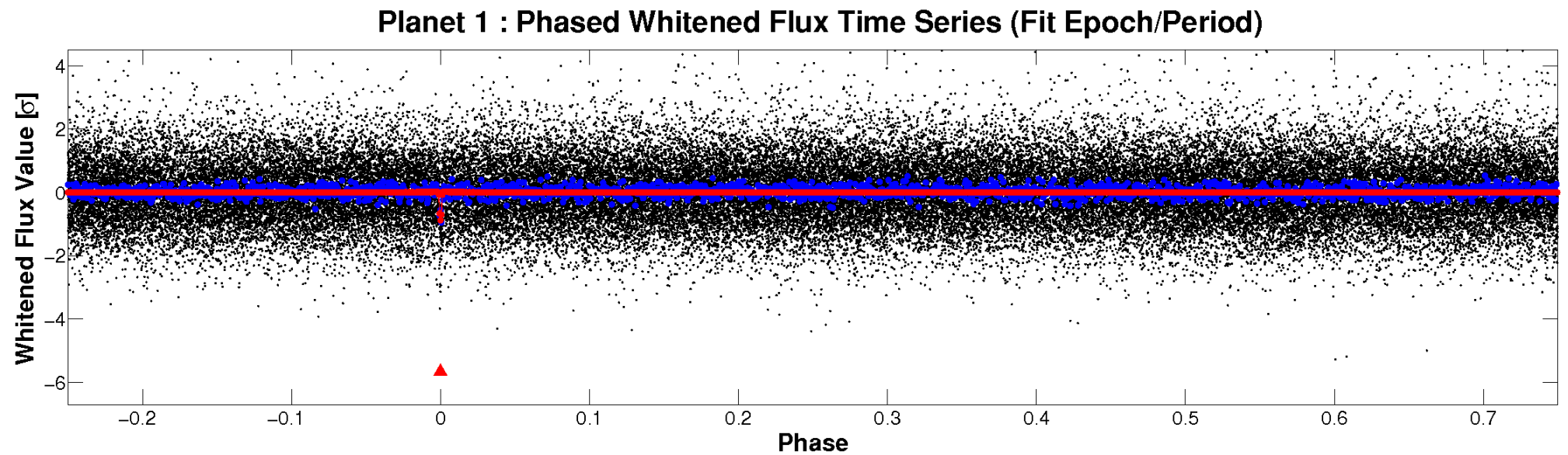
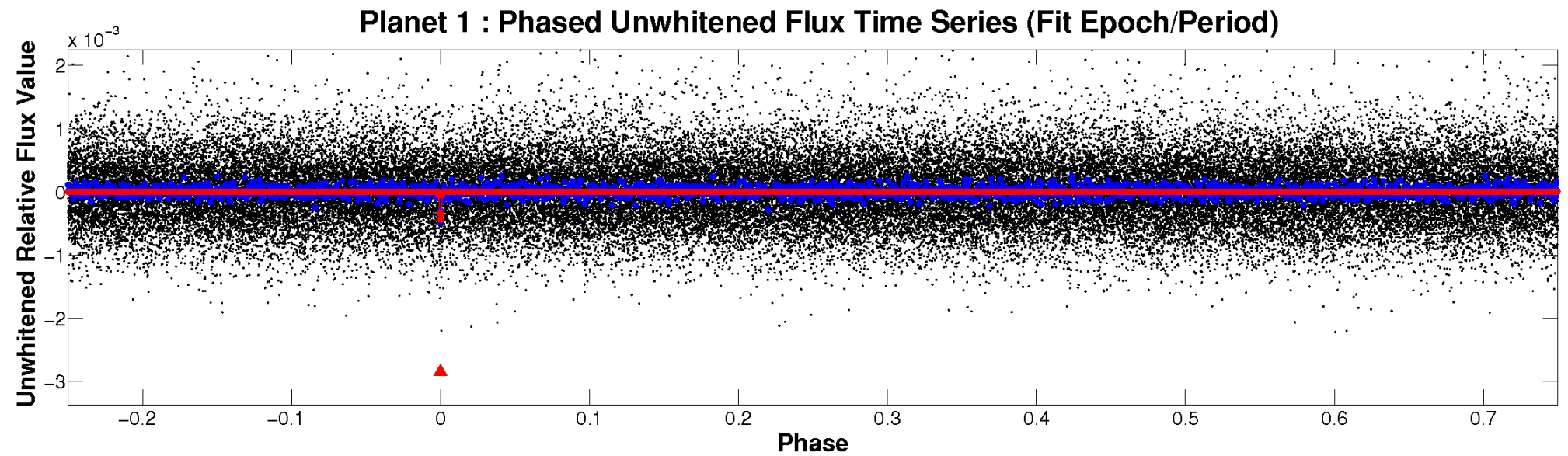
# ALT Odd/Even

TCE 008008913-01



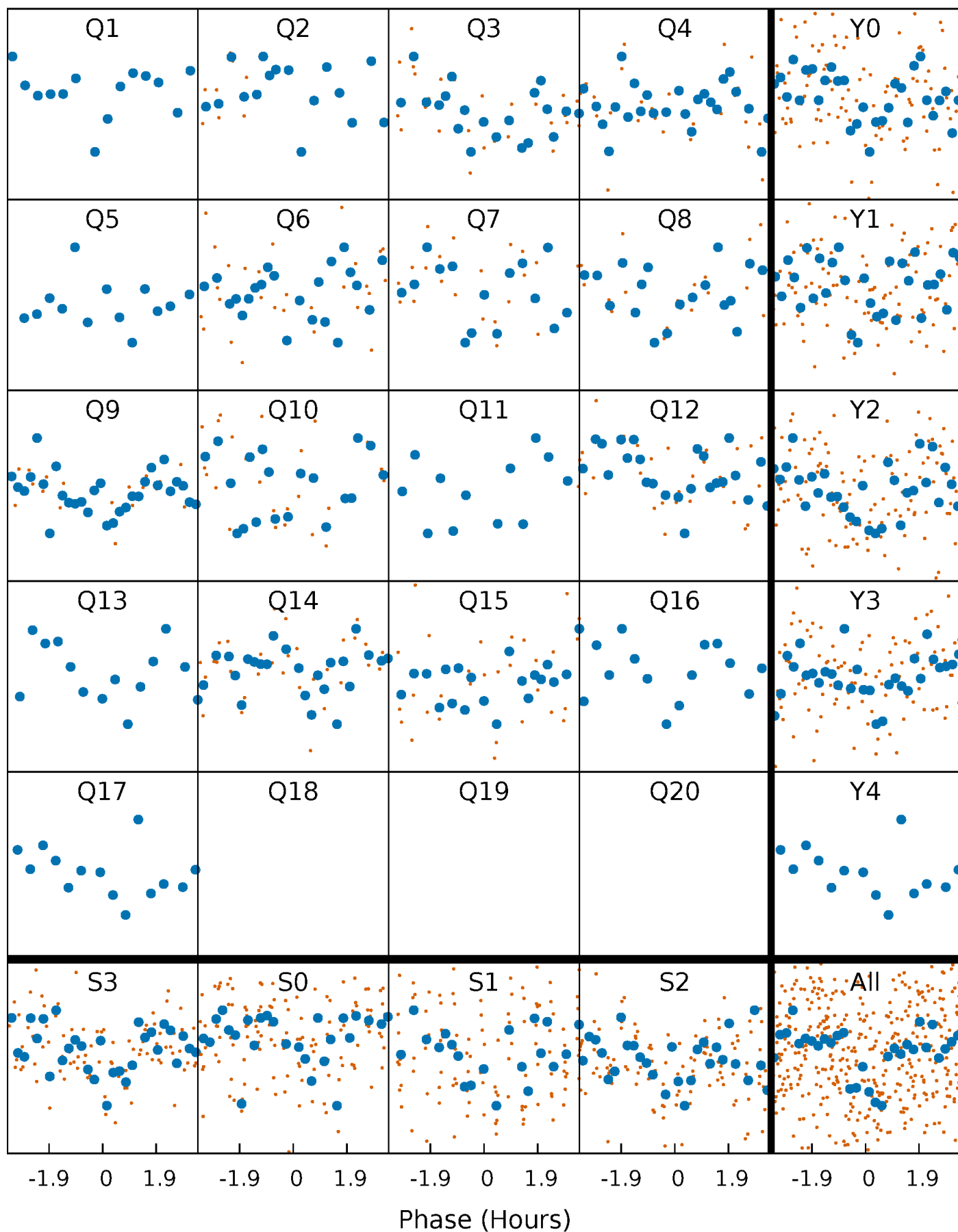


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

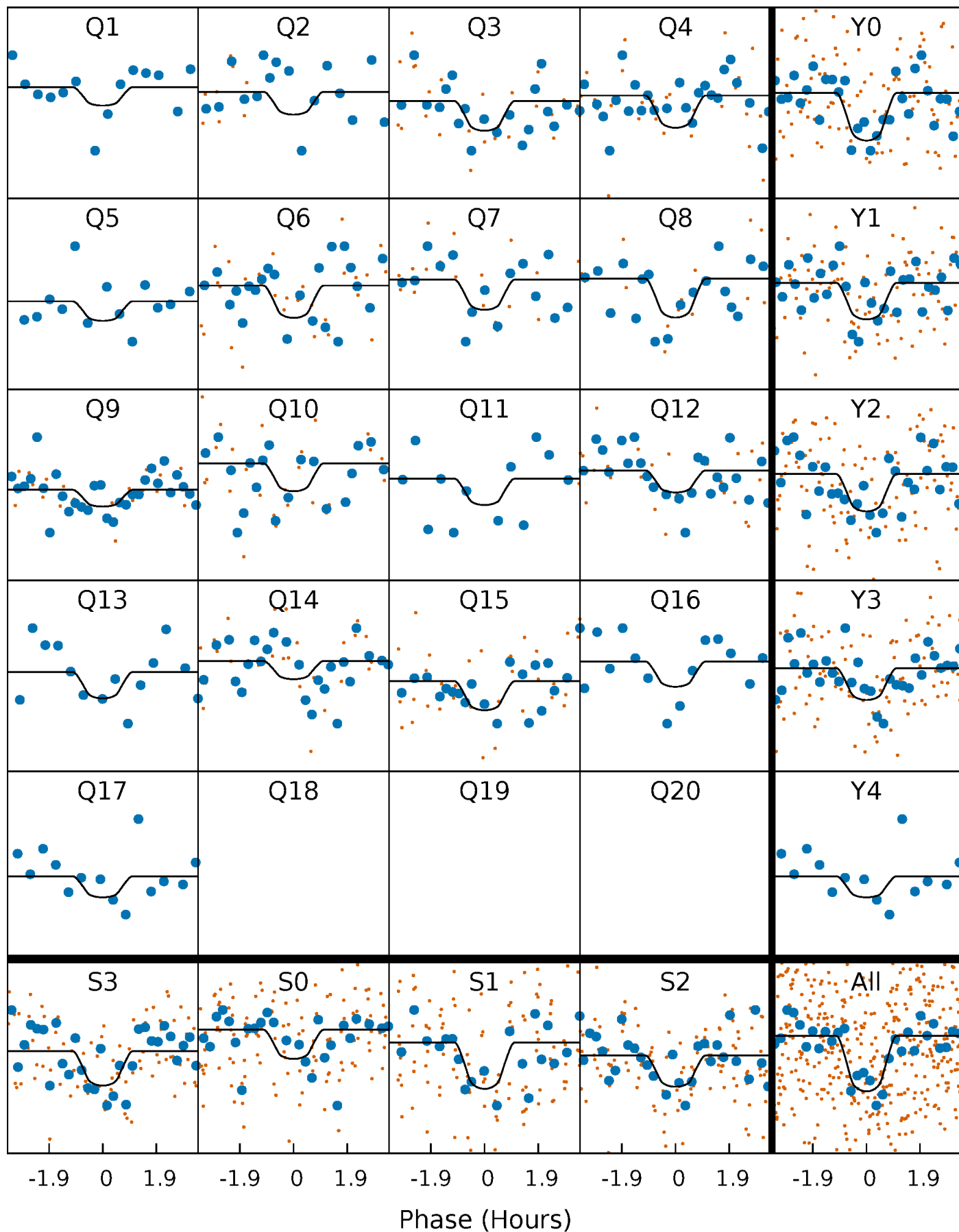
TCE 008008913-01 P= 34.998908 Days  $T_0=160.320374$  (BKJD)





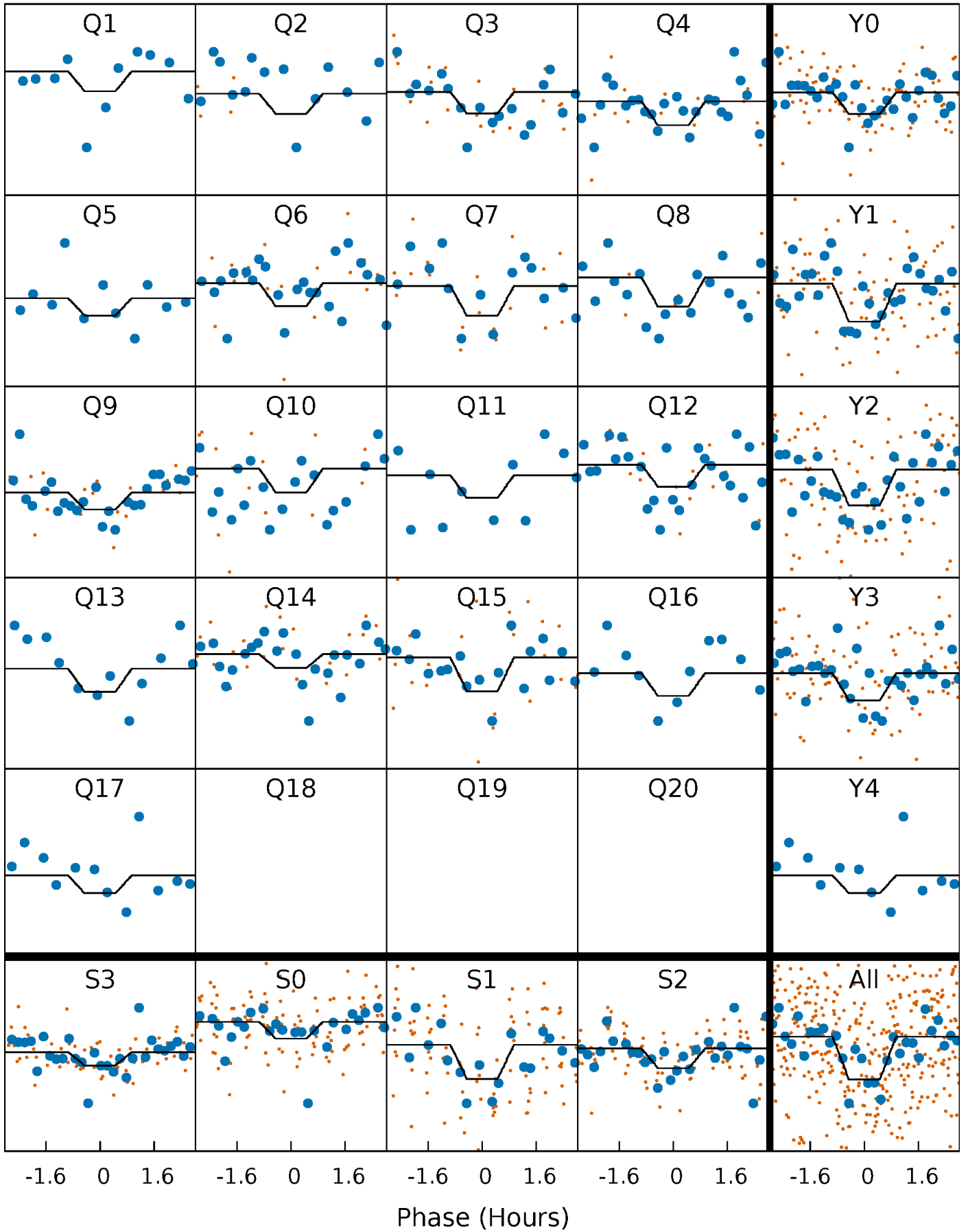
# DV Quarter-Phased Transit Curves

TCE 008008913-01 P= 34.998908 Days  $T_0=160.320374$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

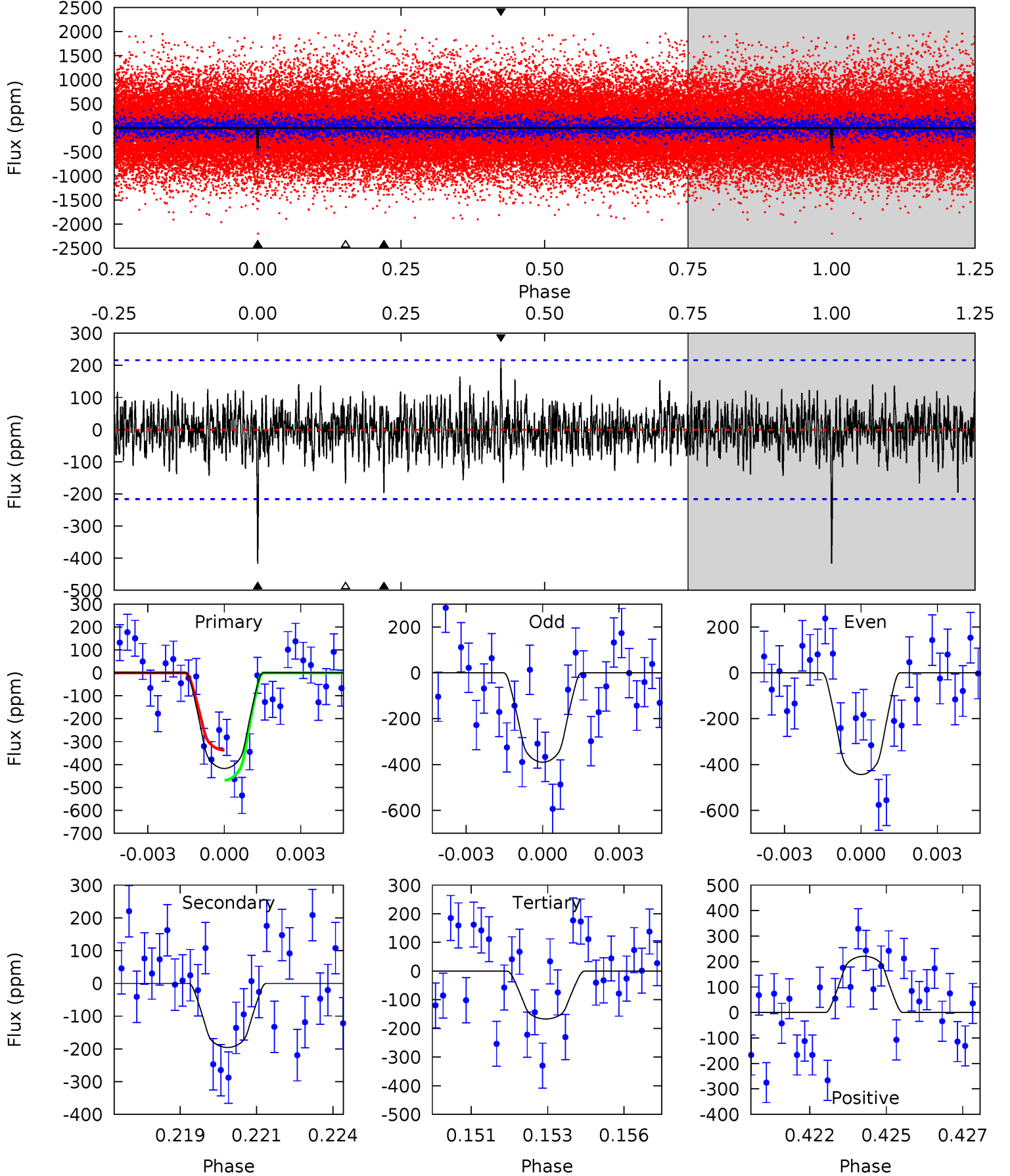
TCE 008008913-01 P= 34.998936 Days  $T_0=160.321911$  (BKJD)



# DV Model-Shift Uniqueness Test

008008913-01, P = 34.998908 Days, E = 125.321466 Days

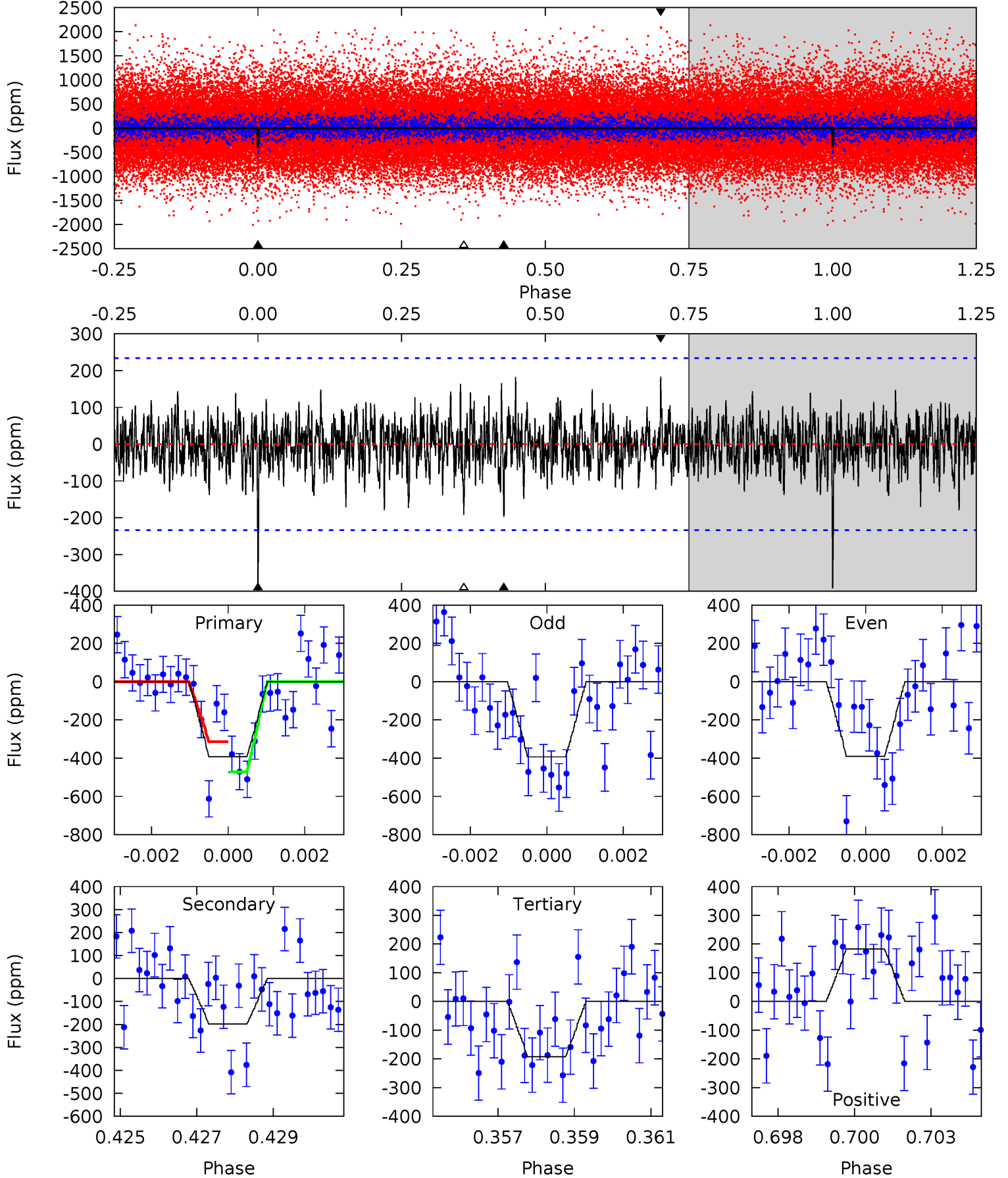
| Pri  | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.2 | 4.78 | 4.09 | 5.40 | 5.29            | 3.02            | 1.25             | 6.12    | 4.80    | 0.70    | -0.62   | 0.66    | 1.01 | 0.35  | 1.60 |



# Alt Model-Shift Uniqueness Test

008008913-01,  $P = 34.998936$  Days,  $E = 125.322975$  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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.90 | 4.50 | 4.37 | 4.16 | 5.31            | 3.06            | 1.19             | 4.53    | 4.74    | 0.13    | 0.34    | 0.03    | 0.95 | 0.32  | 1.79 |



### Stellar Parameters For KIC 008008913

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (g \cdot \text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--------------------------------------|
|        | $4559^{+121}_{-134}$ | $4.653^{+0.025}_{-0.053}$ | $-0.100^{+0.300}_{-0.300}$ | $0.648^{+0.066}_{-0.044}$ | $0.707^{+0.054}_{-0.066}$ | $3.659^{+0.472}_{-0.738}$            |
|        | +3%/-3%              | +1%/-1%                   | +300%/-300%                | +10%/-7%                  | +8%/-9%                   | +13%/-20%                            |
| 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 008008913-01 / KOI 8271.01

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$     | $T_{obs} (K)$         | $A_{obs}$            |
|---------|---------------|------------------------|-------------------|-----------------------|----------------------|
| DV      | $-196 \pm 41$ | $2.37^{+2.16}_{-1.51}$ | $531^{+16}_{-17}$ | $3370^{+1523}_{-571}$ | $639^{+4871}_{-462}$ |
| Alt.    | $-198 \pm 44$ | $2.23^{+2.12}_{-1.36}$ | $531^{+17}_{-17}$ | $3436^{+1492}_{-574}$ | $731^{+4465}_{-530}$ |

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

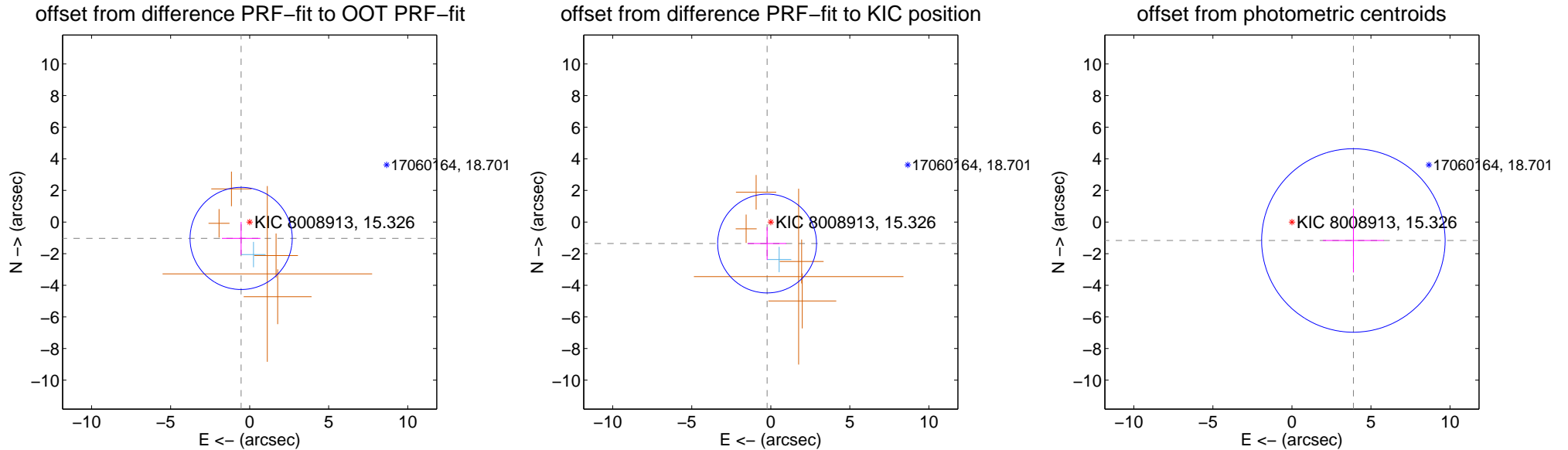
## DV Centroid Data

Supplemental centroid analysis for 008008913-01. Kepler magnitude: 15.33. Transit SNR 7.60

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

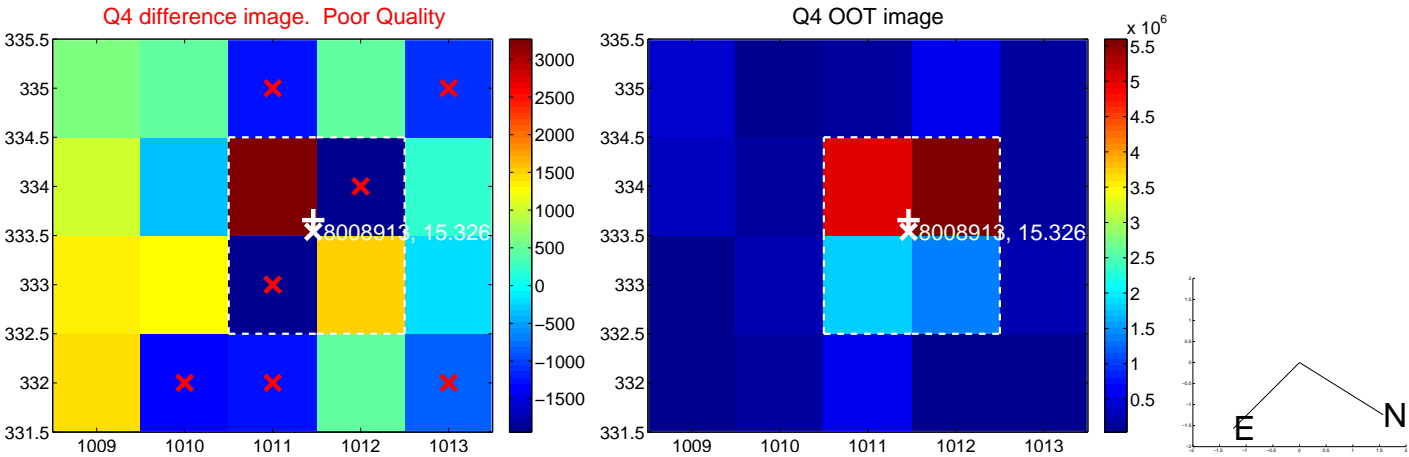
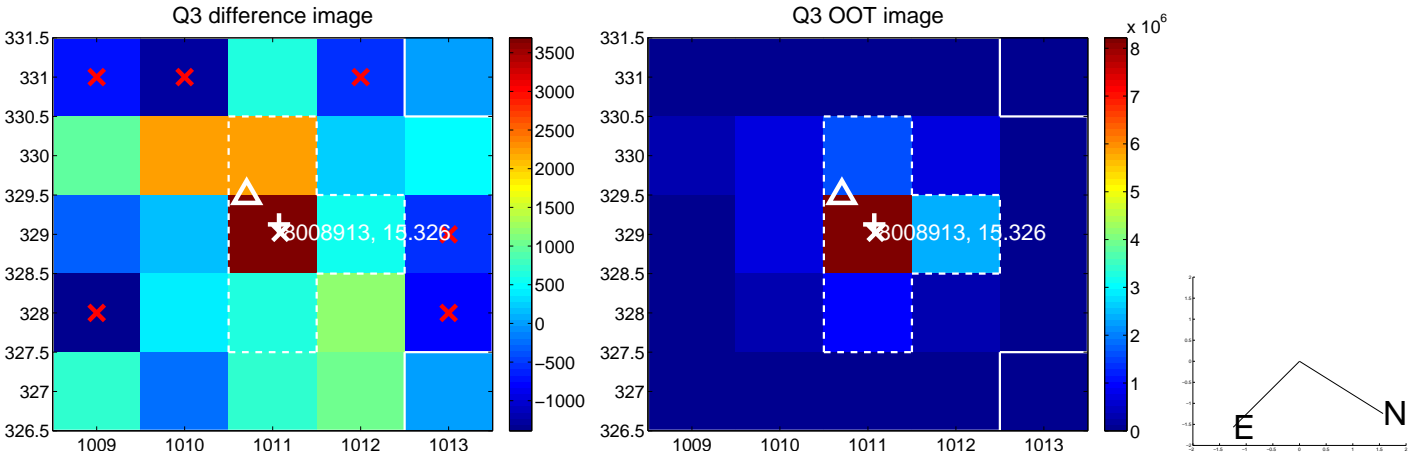
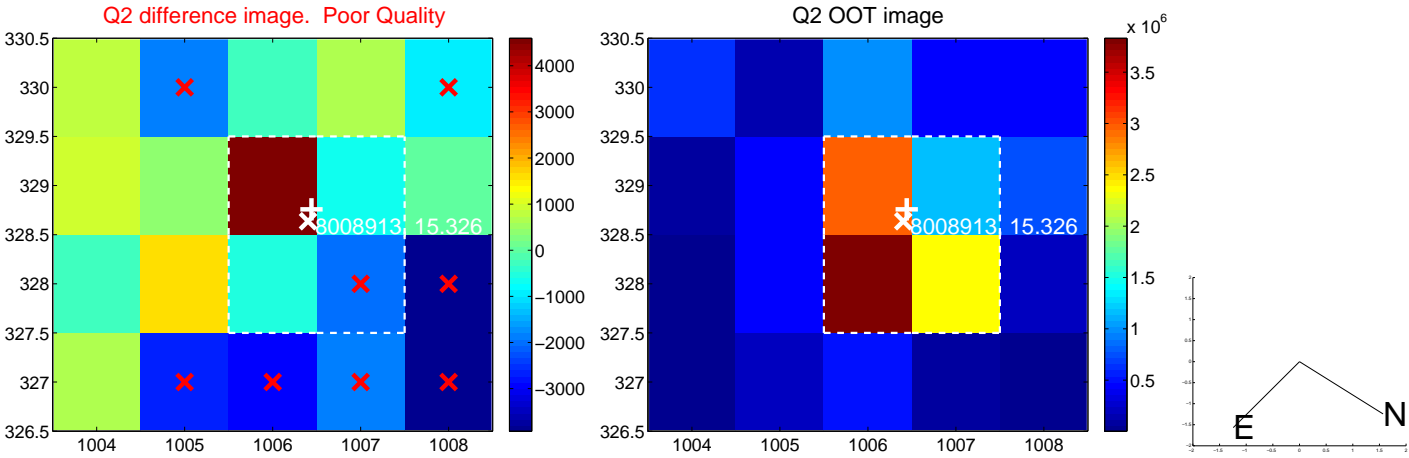
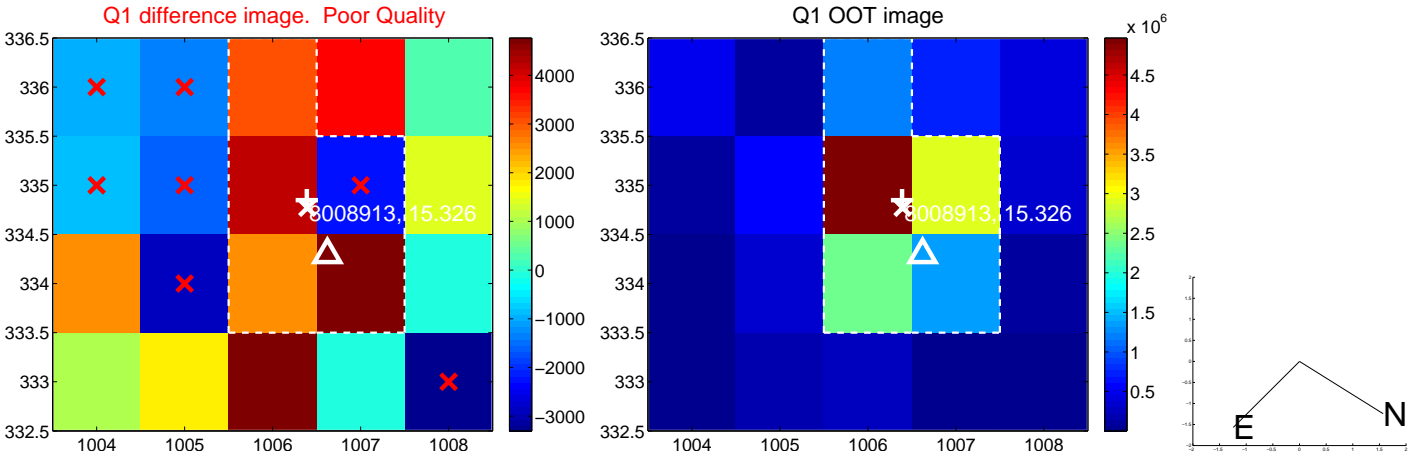
|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec       |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT          | $1.168 \pm 1.077$  | 1.08                | $0.538 \pm 1.217$ | $-1.036 \pm 1.037$ |
| PRF-fit source offset from KIC position | $1.378 \pm 1.042$  | 1.32                | $0.234 \pm 1.217$ | $-1.358 \pm 1.037$ |
| photometric centroid source offset      | $4.06 \pm 1.93$    | 2.10                | $-3.89 \pm 1.93$  | $-1.17 \pm 2.02$   |



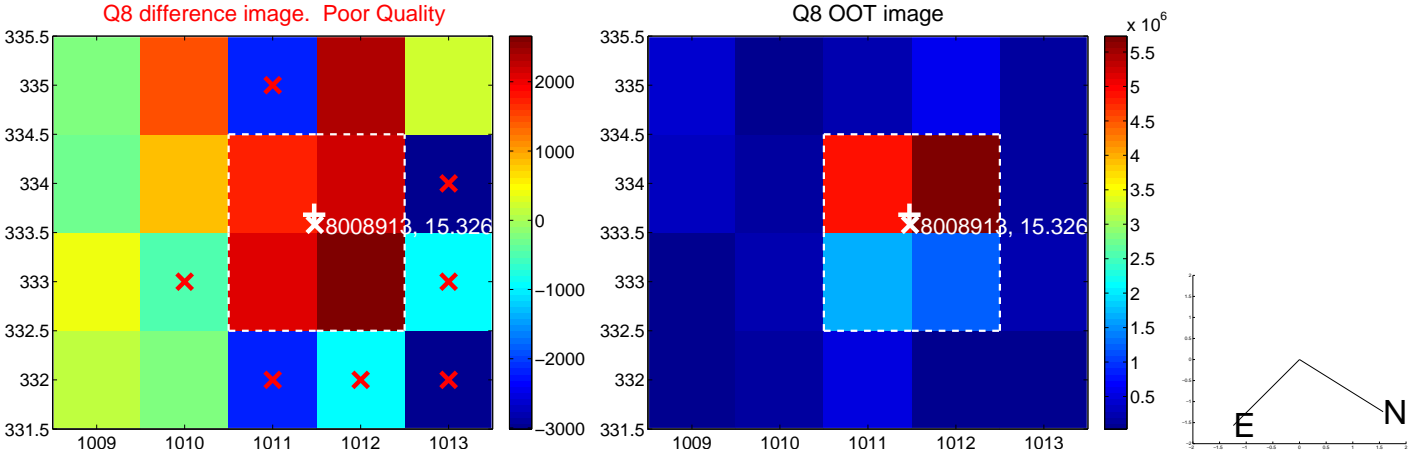
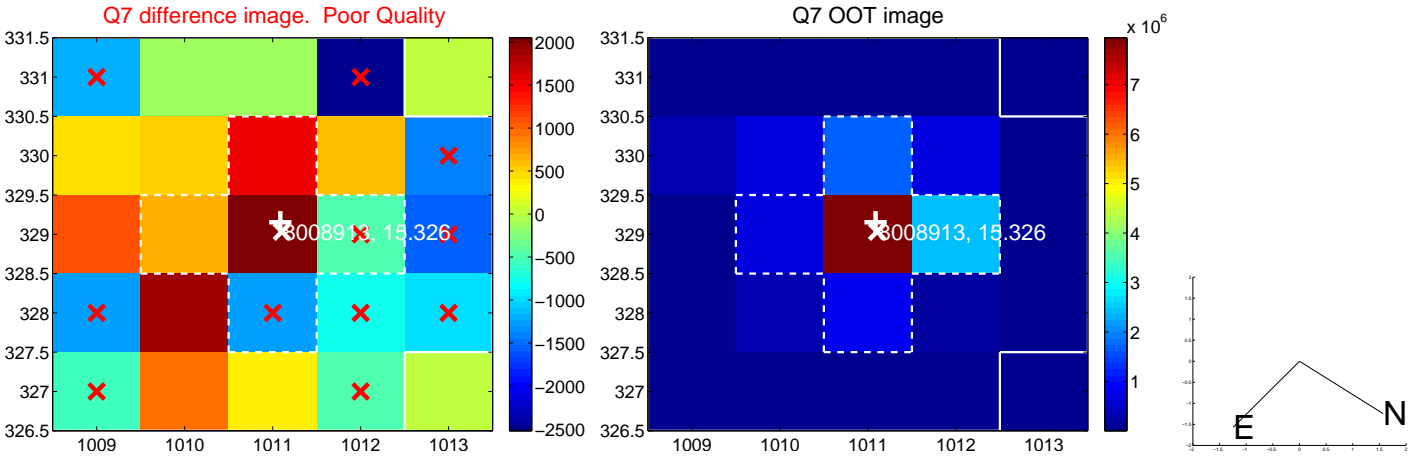
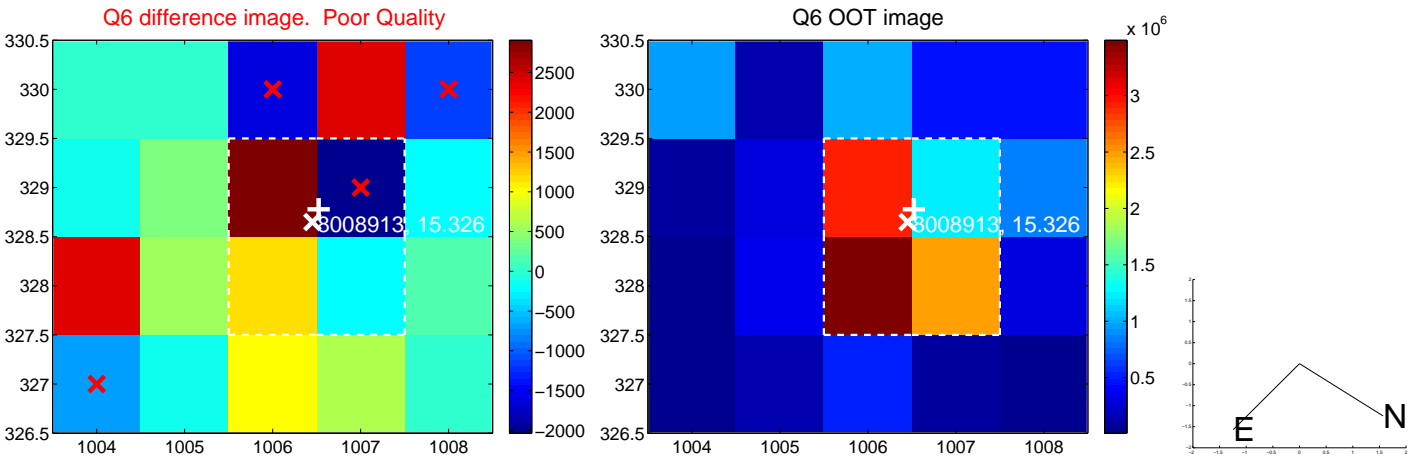
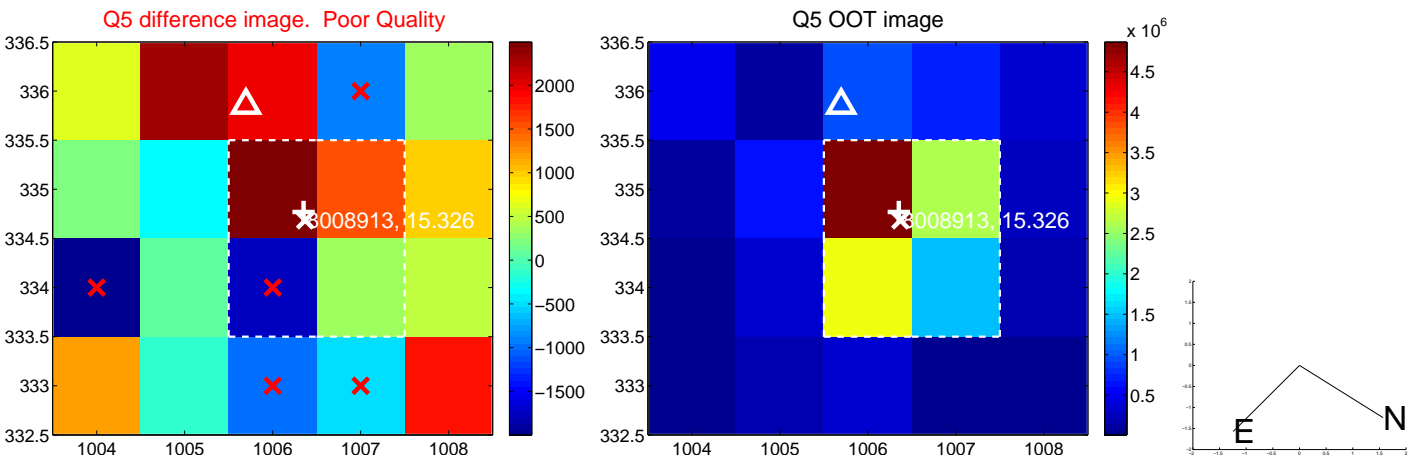
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



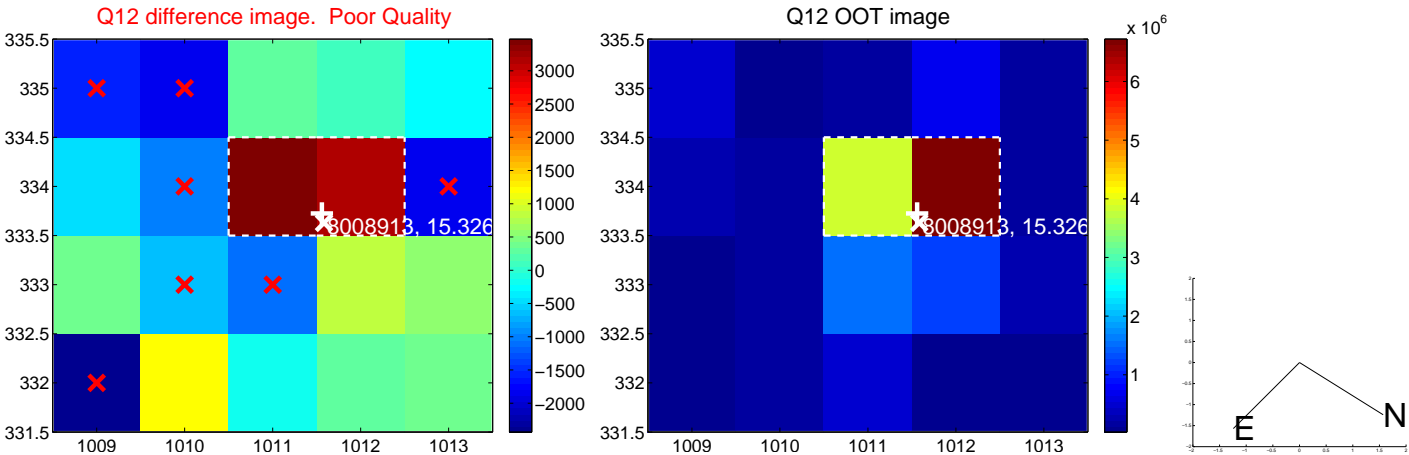
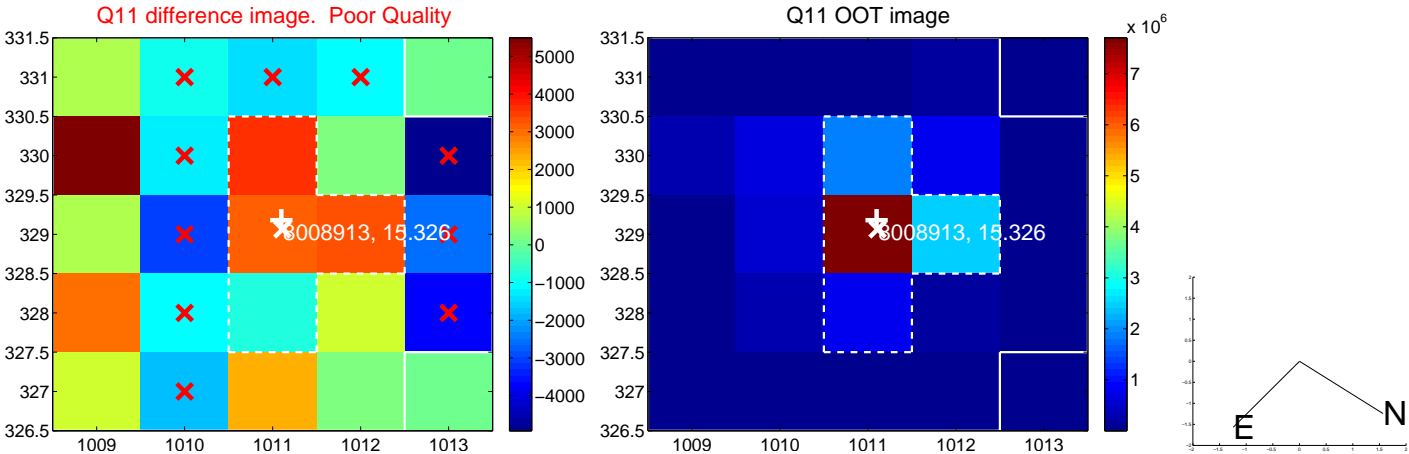
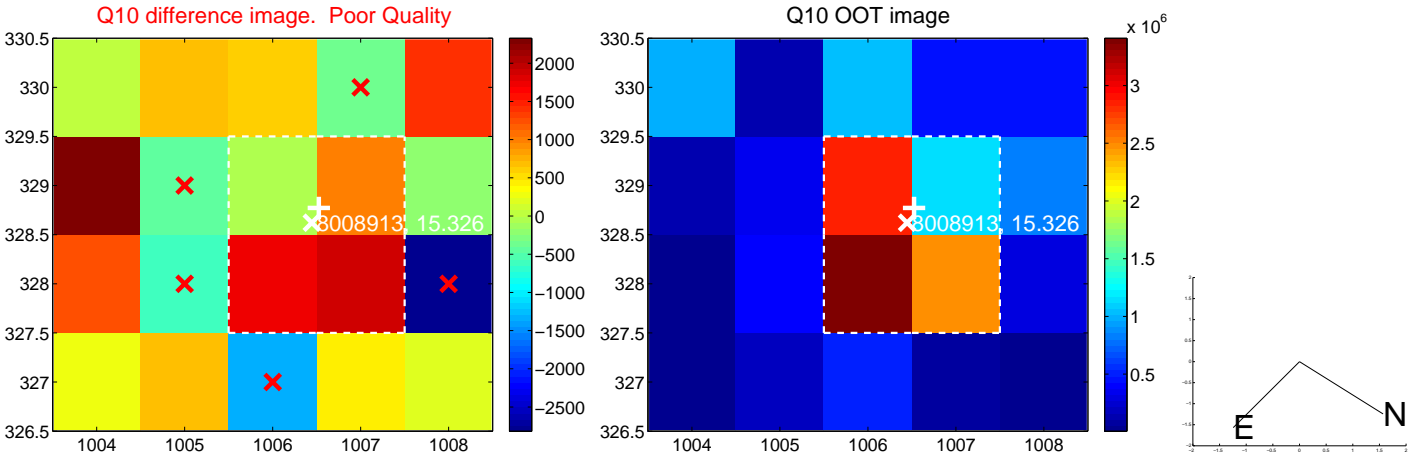
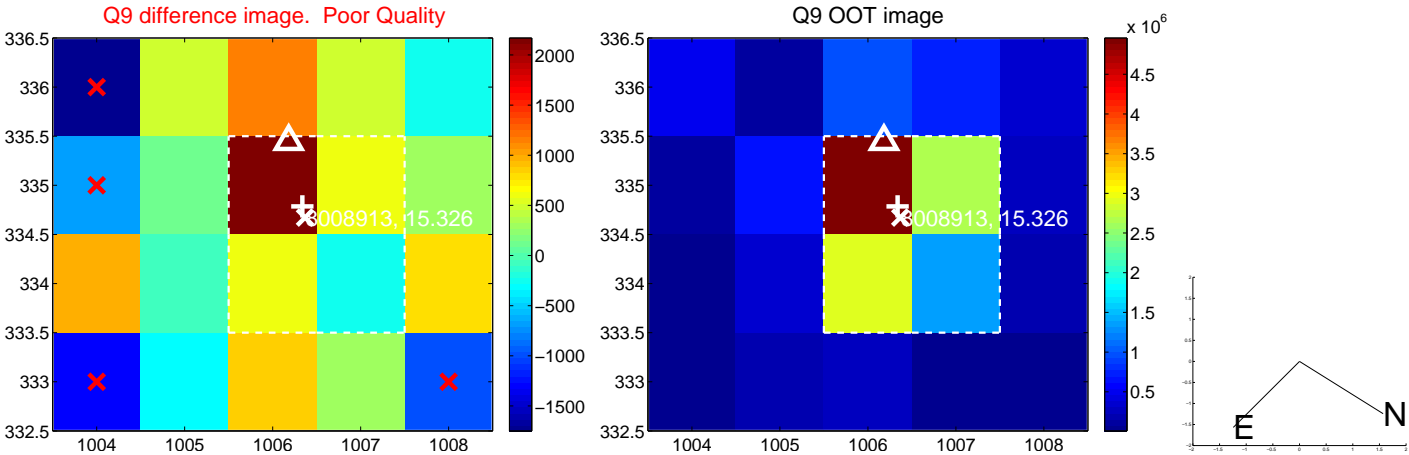
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



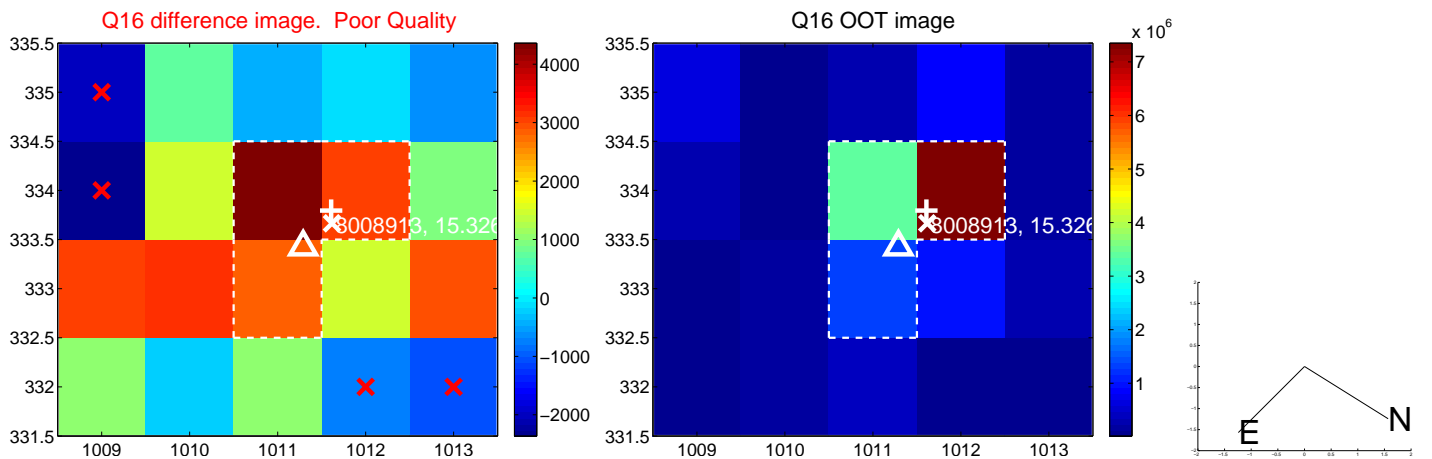
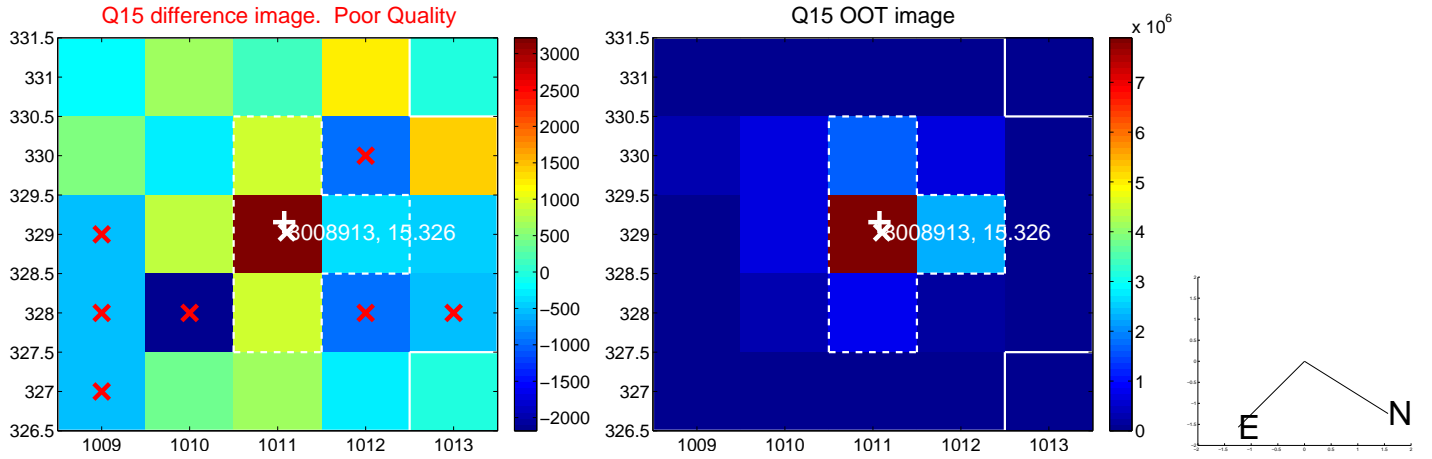
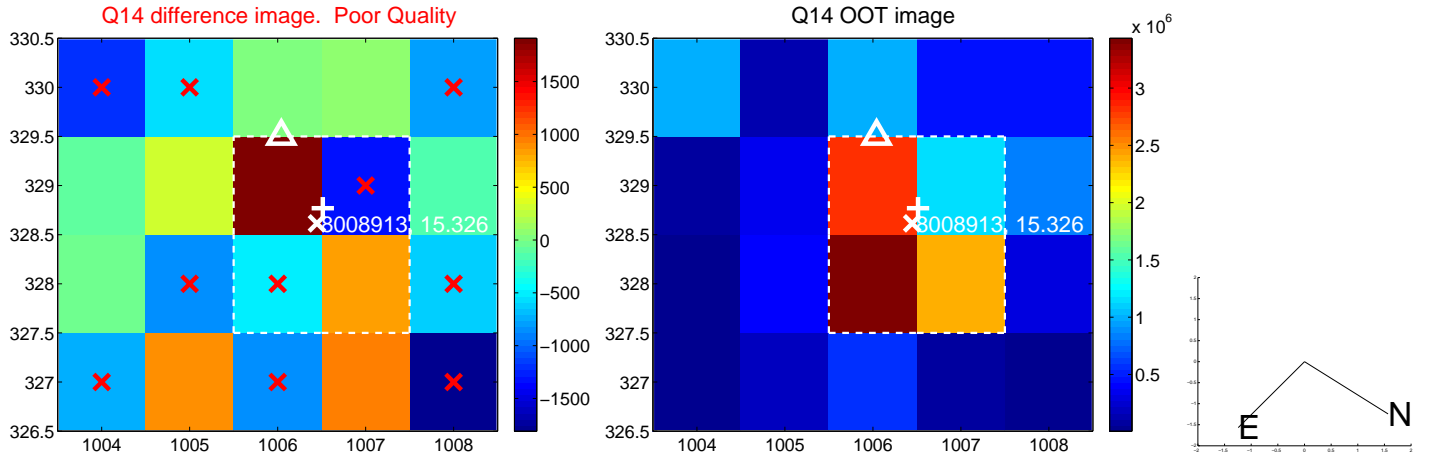
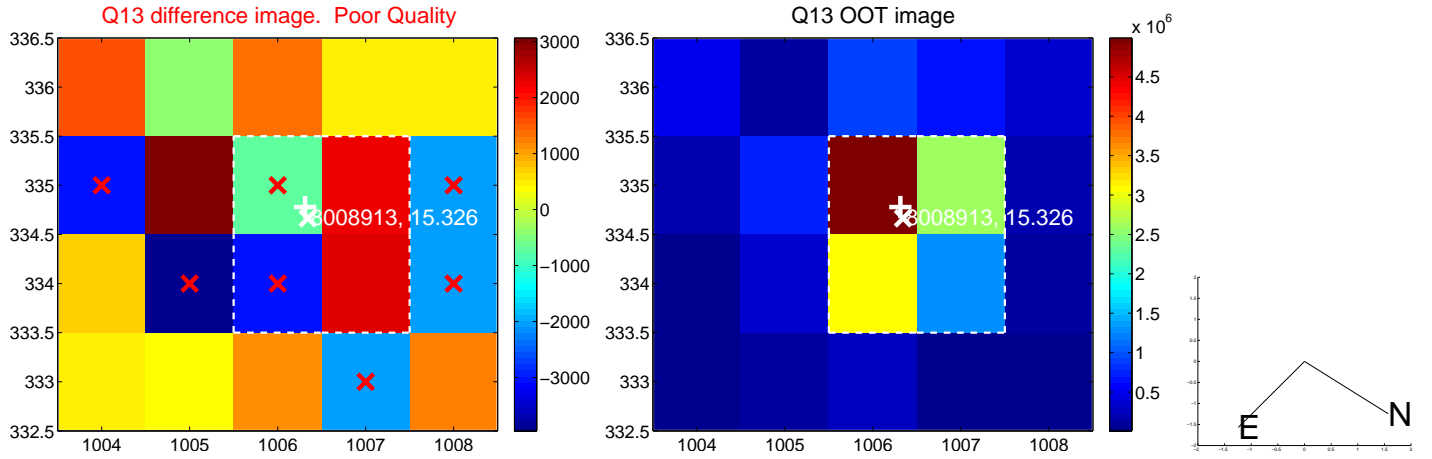
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



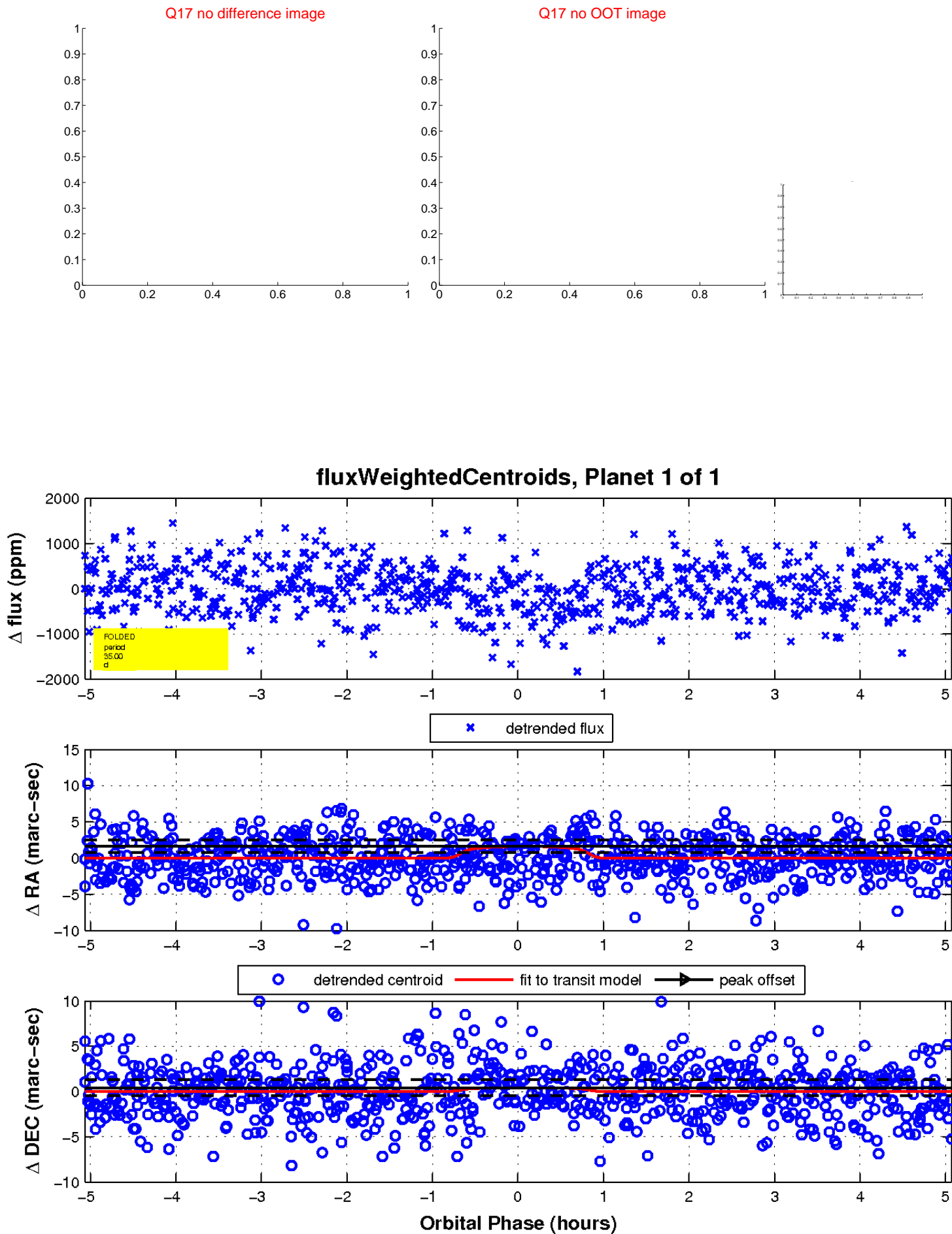
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Declination

