

# KIC 008262210

## Q1-17 DR25 TCE Parameters

| TCE          | Run Type | KOI?    | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES  | SNR  | R <sub>★</sub> (R <sub>☉</sub> ) | T <sub>★</sub> (K) | R <sub>p</sub> (R <sub>⊕</sub> ) | S <sub>p</sub> (S <sub>⊕</sub> ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 008262210-01 | OBS      | 1073.01 | 1.612951      | 131.775178   | 80.1        | 2.412            | 13.2 | 14.0 | 1.21                             | 5580               | 1.31                             | 1887.68                          |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                    |
|--------------|----------|------|-------|---|---|---|---|---|
| 008262210-01 | OBS      | FP   | 0.00  | 0 | 1 | 1 | 1 | MOD_SEC_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH |

**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 008262210-01

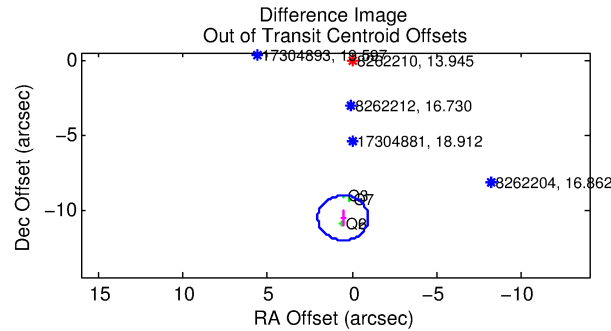
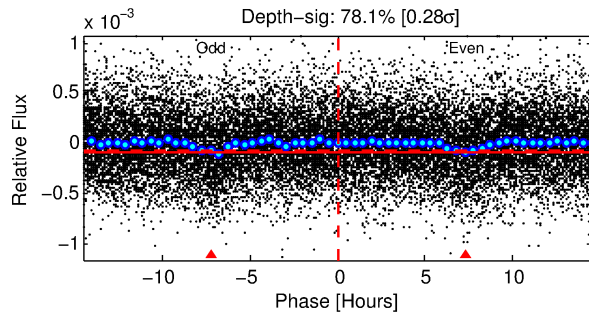
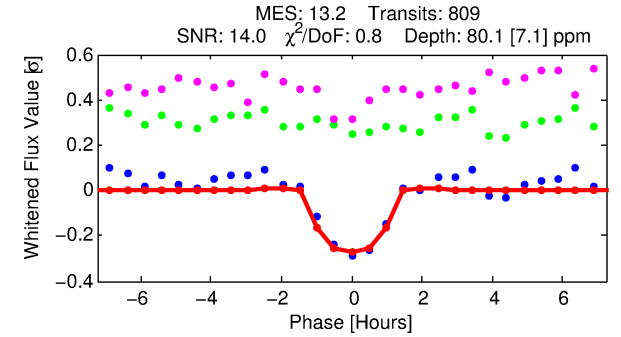
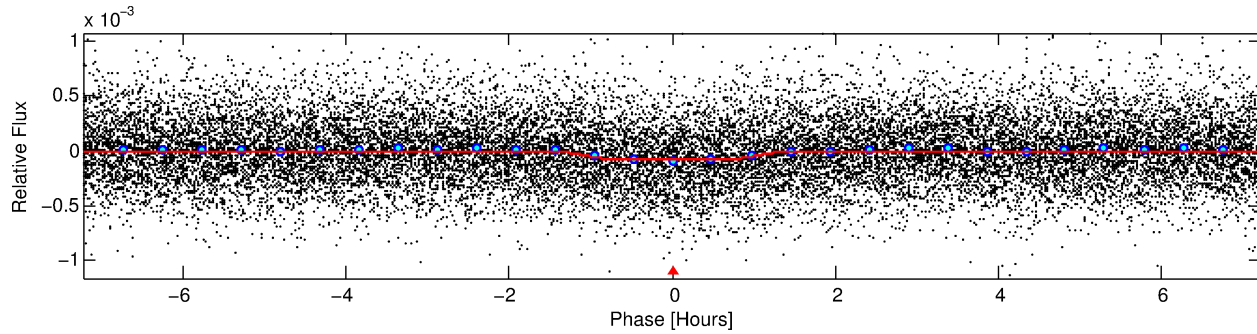
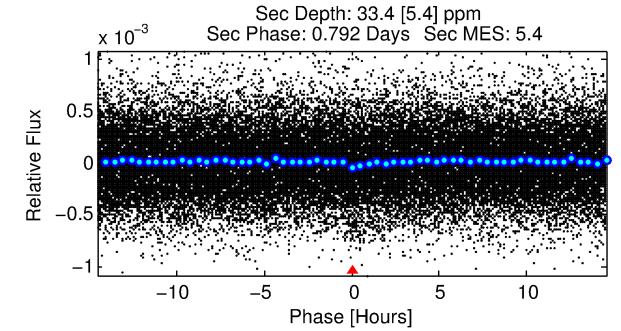
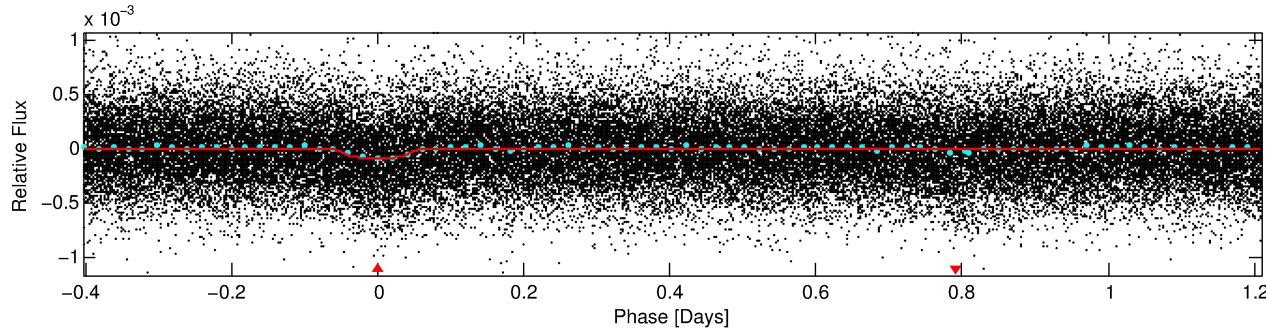
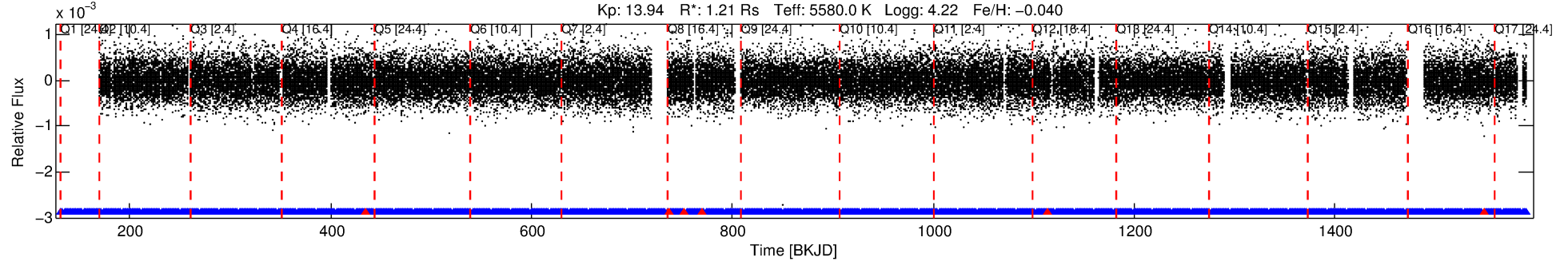
| TCE (1)      | KIC     | Parent (2)    | Parent KIC | P <sub>1</sub> :P <sub>2</sub> | Dist (″) | ΔRow | ΔCol | m <sub>2</sub> | m <sub>1</sub> | D <sub>2</sub> /D <sub>1</sub> | Mechanism  | Flag | σ <sub>P</sub> | σ <sub>T</sub> |
|--------------|---------|---------------|------------|--------------------------------|----------|------|------|----------------|----------------|--------------------------------|------------|------|----------------|----------------|
| 008262210-01 | 8262210 | 008262223-pri | 8262223    | 1:1                            | 26.7     | -1   | 6    | 12.15          | 13.95          | 1947.50                        | Direct-PRF | 0    | 3.07           | 1.65           |

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8262210 Candidate: 1 of 1 Period: 1.613 d  
KOI: K01073.01 Corr: 0.875

Kp: 13.94 R\*: 1.21 Rs Teff: 5580.0 K Logg: 4.22 Fe/H: -0.040



## DV Fit Results:

Period = 1.61295 [0.00001] d  
Epoch = 131.7752 [0.0025] BKJD  
Rp/R\* = 0.0100 [0.0049]  
a/R\* = 2.39 [4.60]  
b = 0.91 [0.43]  
Seff = 1887.68 [936.00]  
Teff = 1681 [208] K  
Rp = 1.31 [0.76] Re  
a = 0.0258 [0.0077] AU  
Ag = 7.16 [7.96] [0.77σ]  
Teffp = 4251 [1075] K [2.35σ]

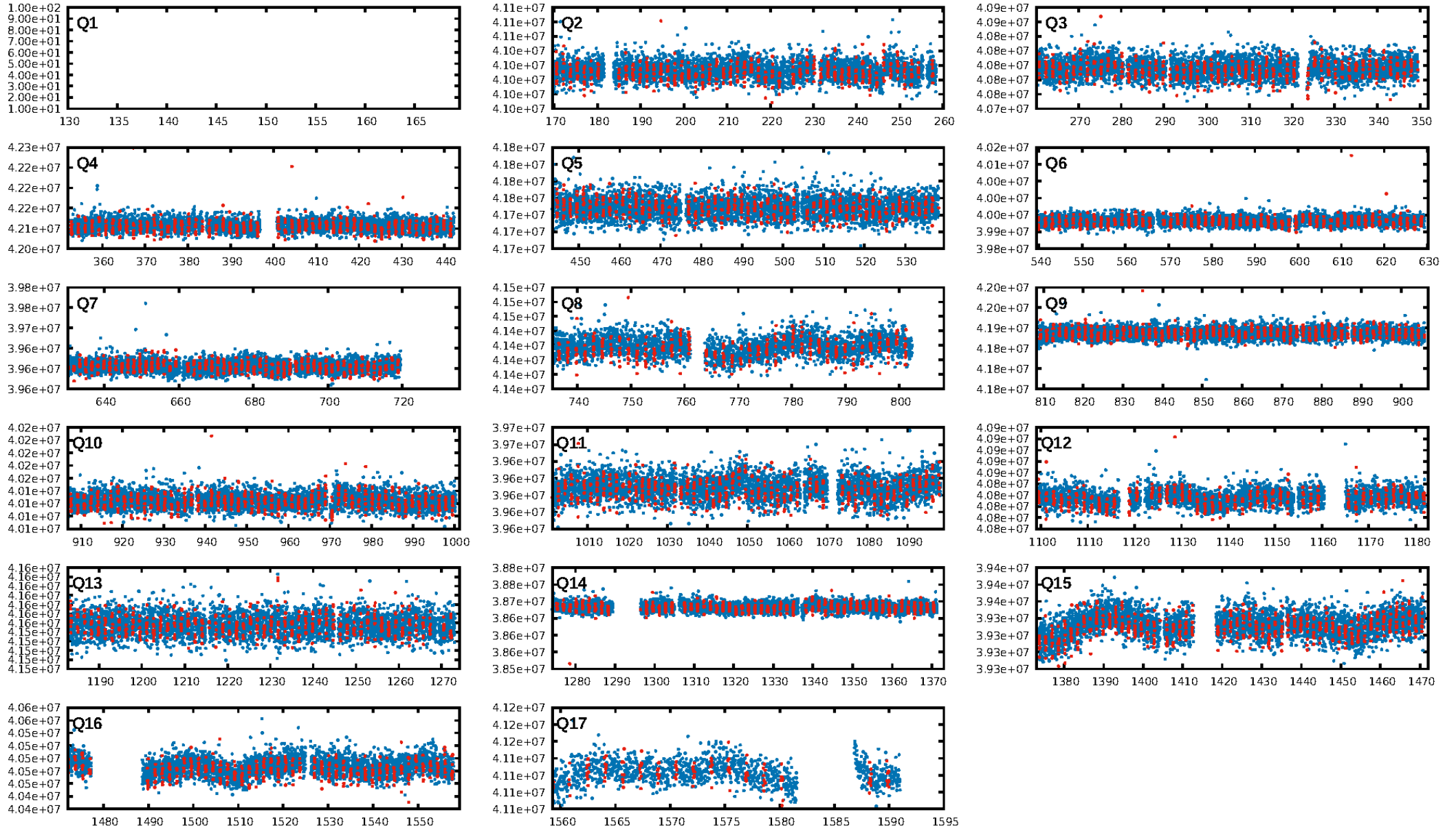
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.62e-39  
RollingBand-fgt: 0.99 [787/793]  
GhostDiagnostic-chr: -0.2983  
Centroid-sig: 0.0%  
Centroid-so: 12.670 arcsec [11.66σ]  
OotOffset-rm: 10.568 arcsec [21.20σ]  
KicOffset-rm: 10.640 arcsec [22.14σ]  
OotOffset-st: 2/2/0/0 [4]  
KicOffset-st: 2/2/0/0 [4]  
DiffImageQuality-fgm: 0.75 [3/4]  
DiffImageOverlap-fno: 1.00 [16/16]

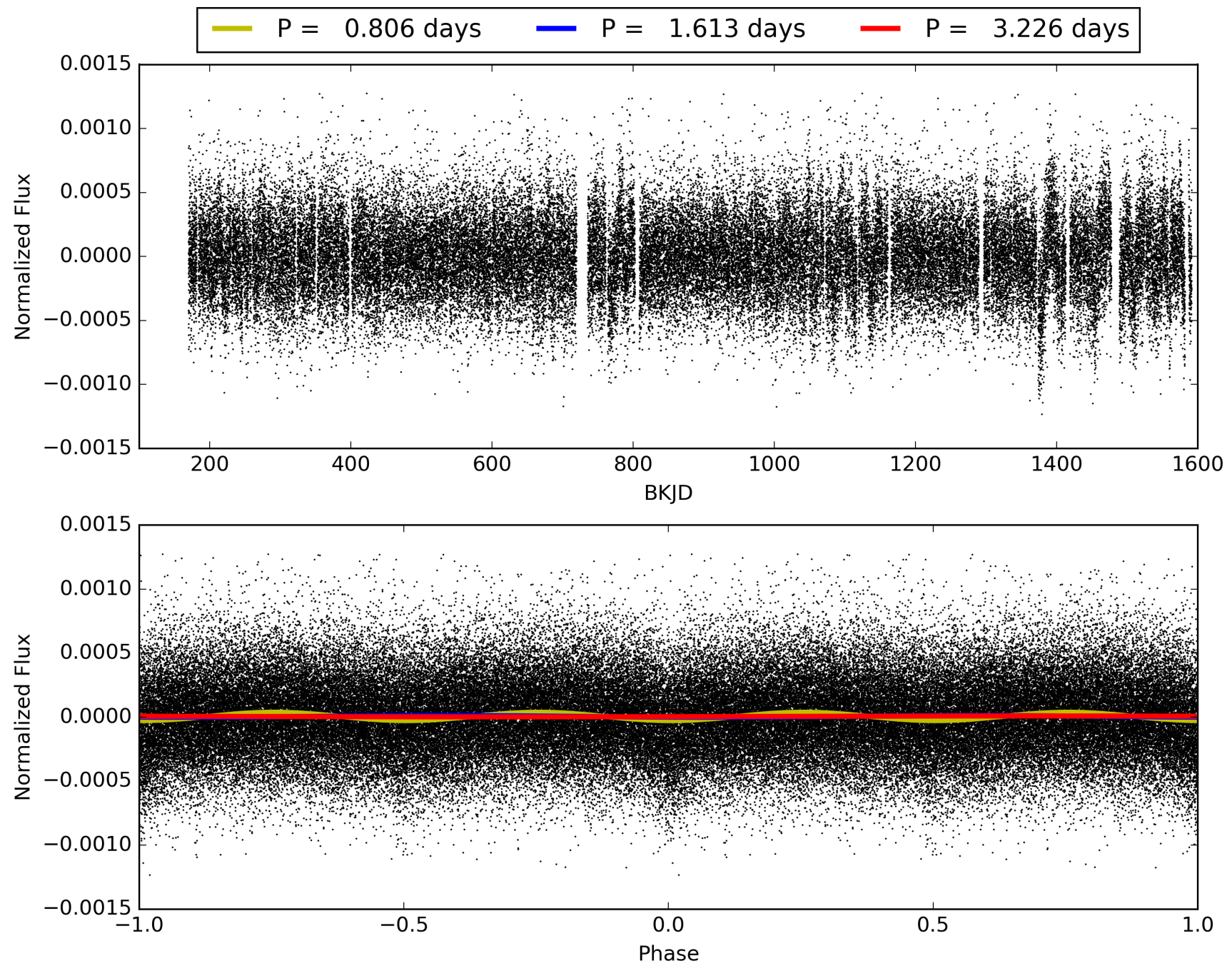
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:40:49 Z

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

# TCE 008262210-01, PDC Light Curves



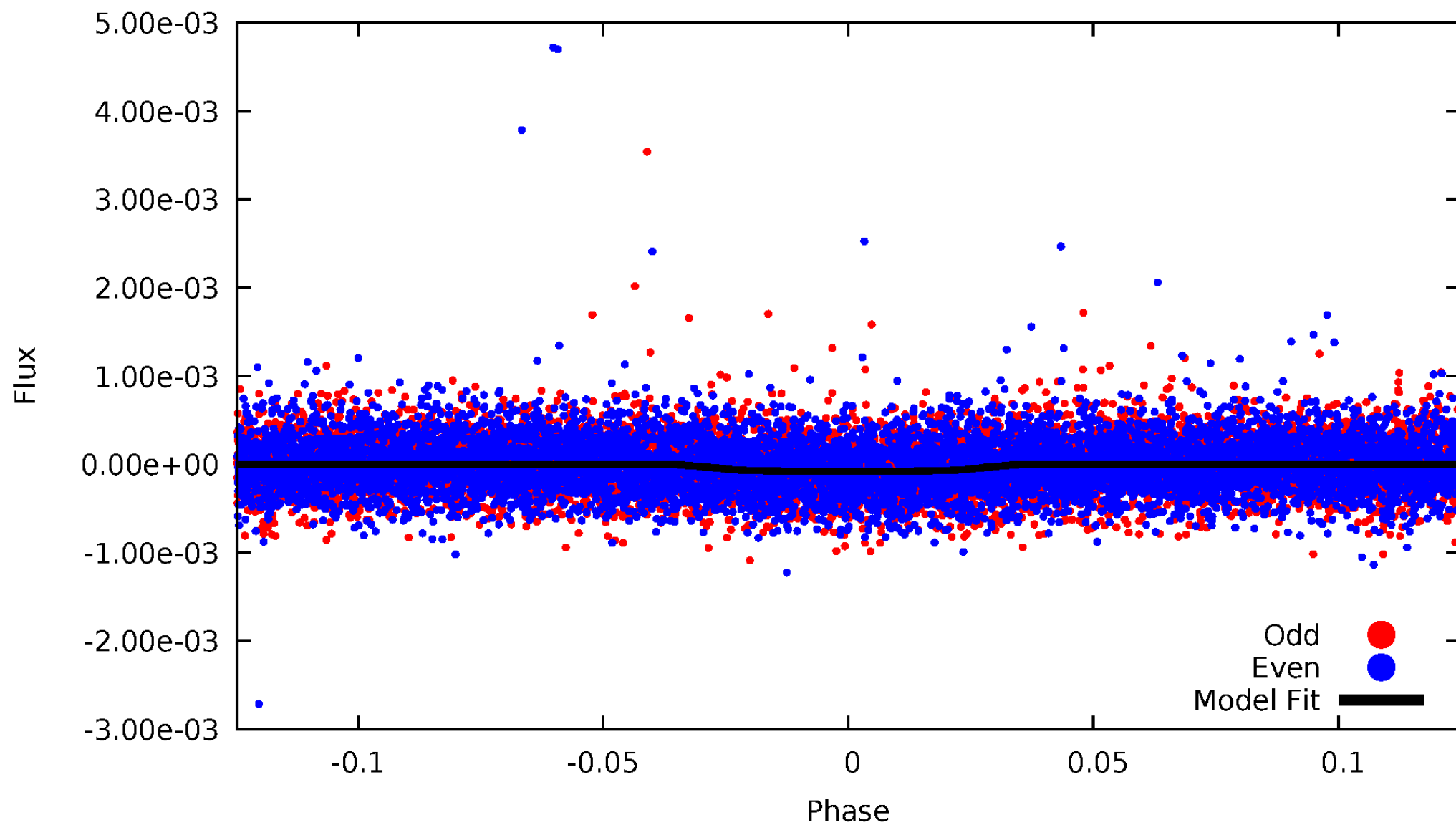
TCE 008262210-01





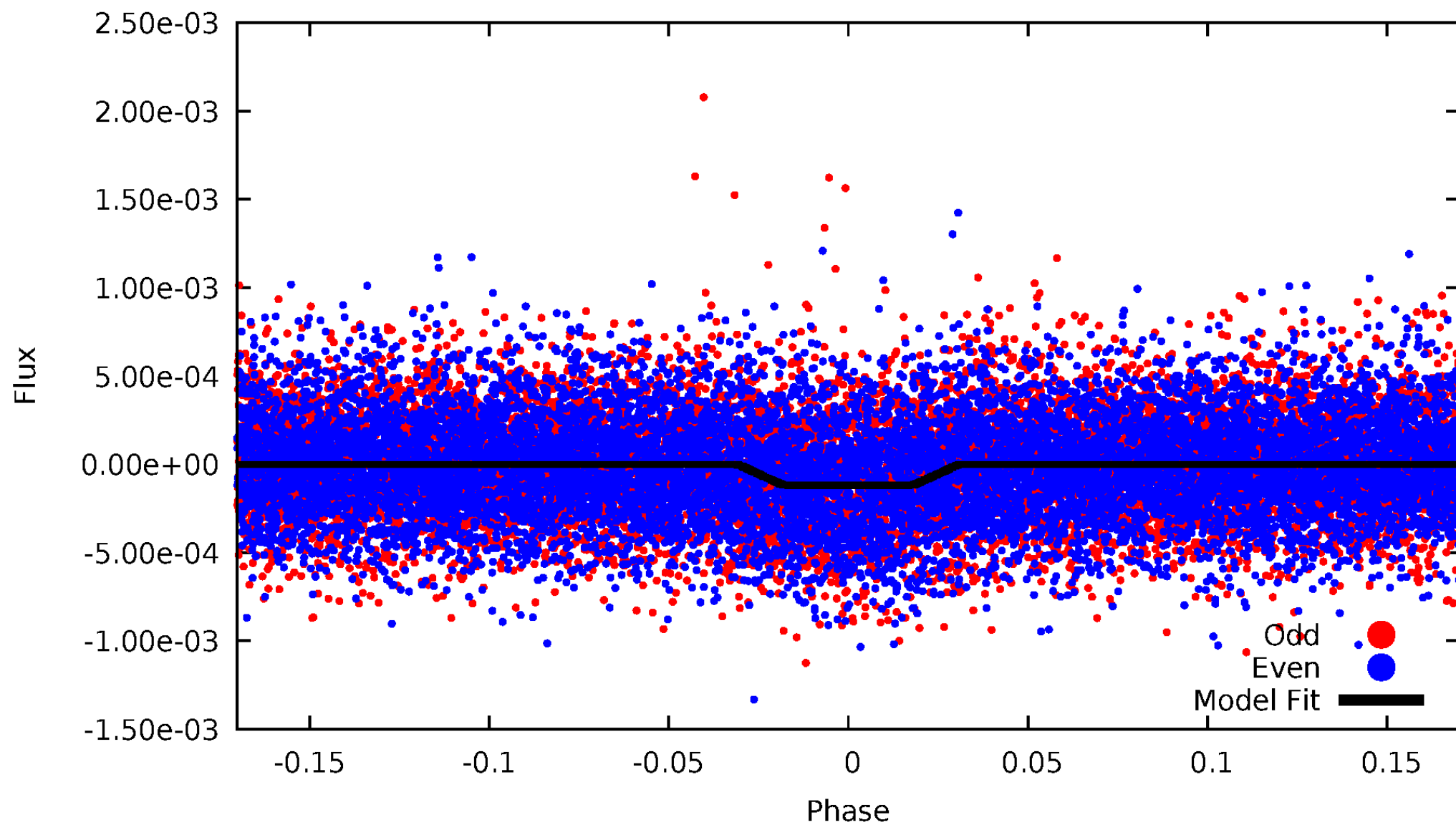
# DV Odd/Even

TCE 008262210-01



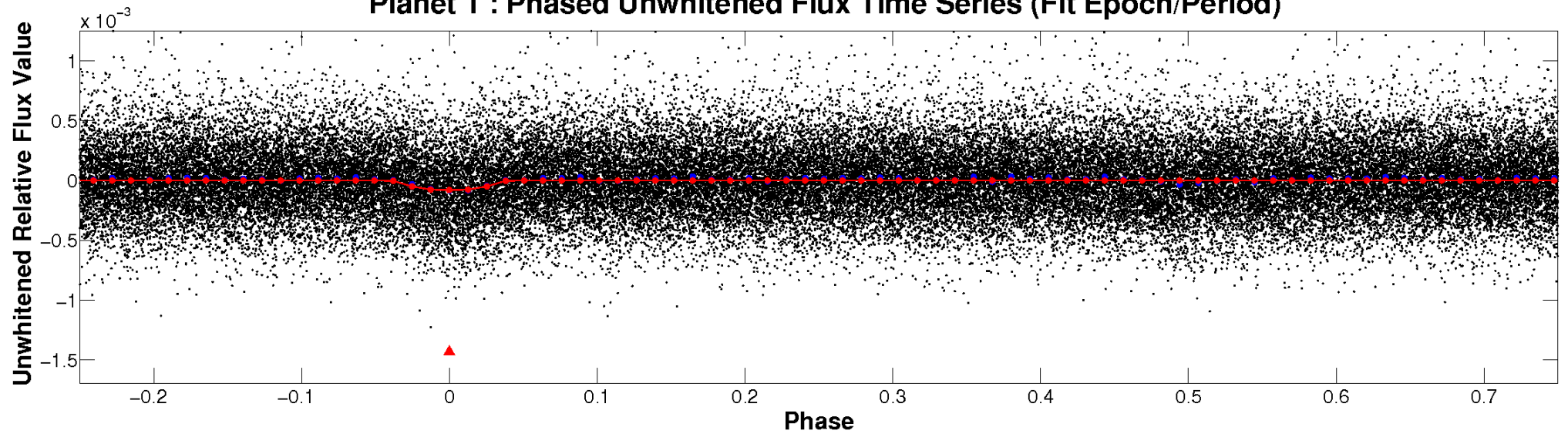
# ALT Odd/Even

TCE 008262210-01

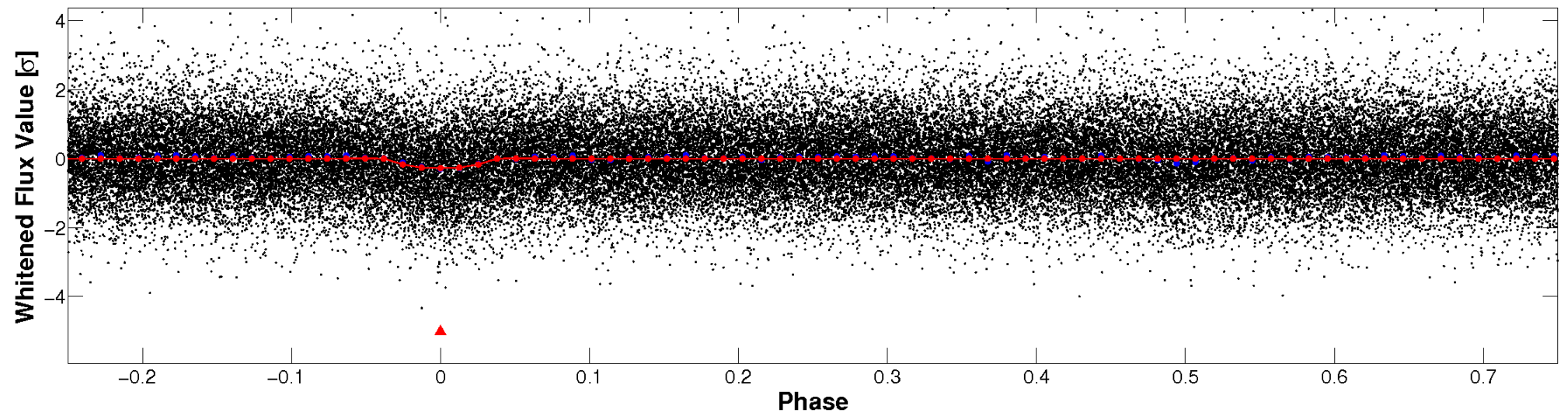


# Non-Whitened Vs. Whitened Light Curve

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

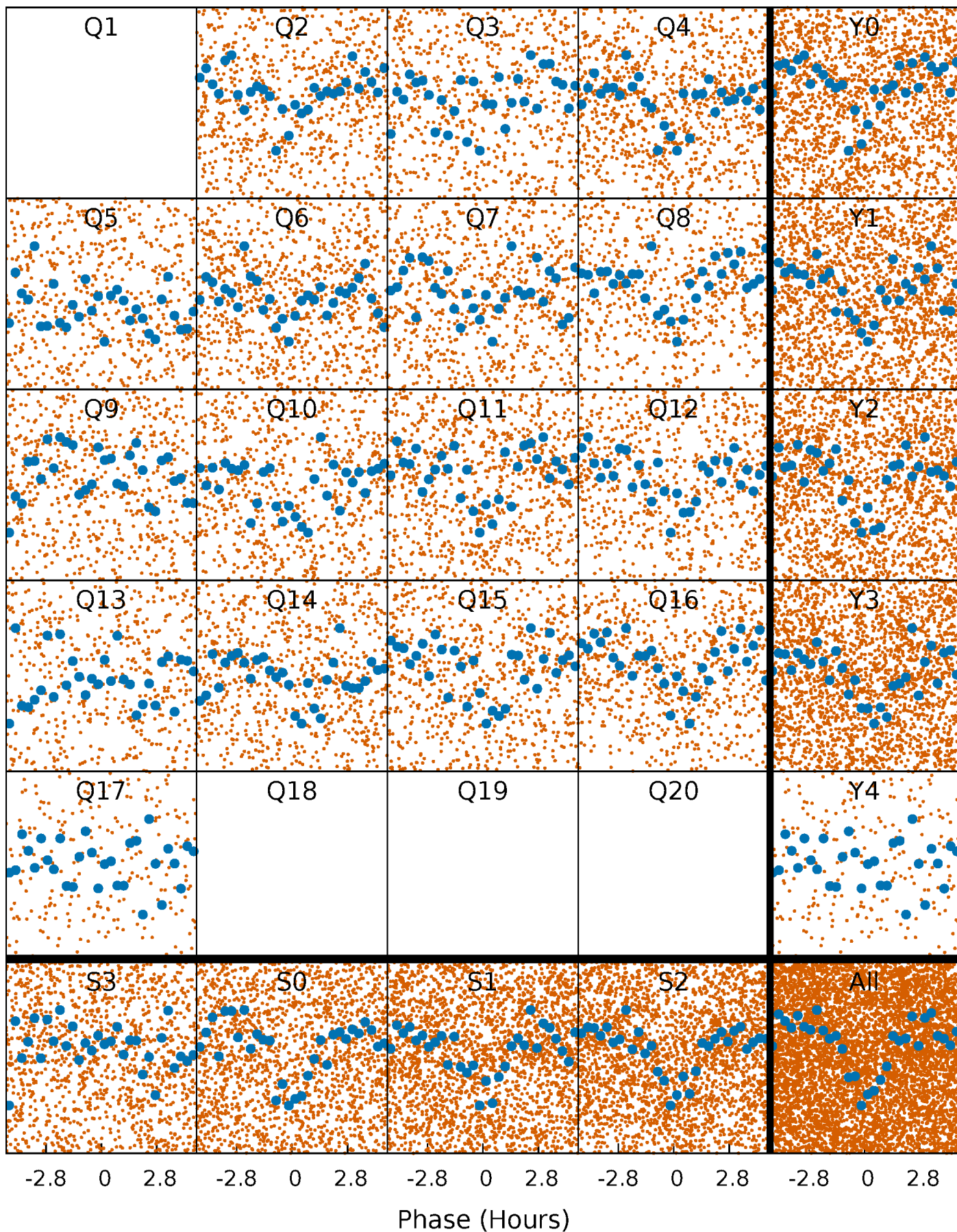


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

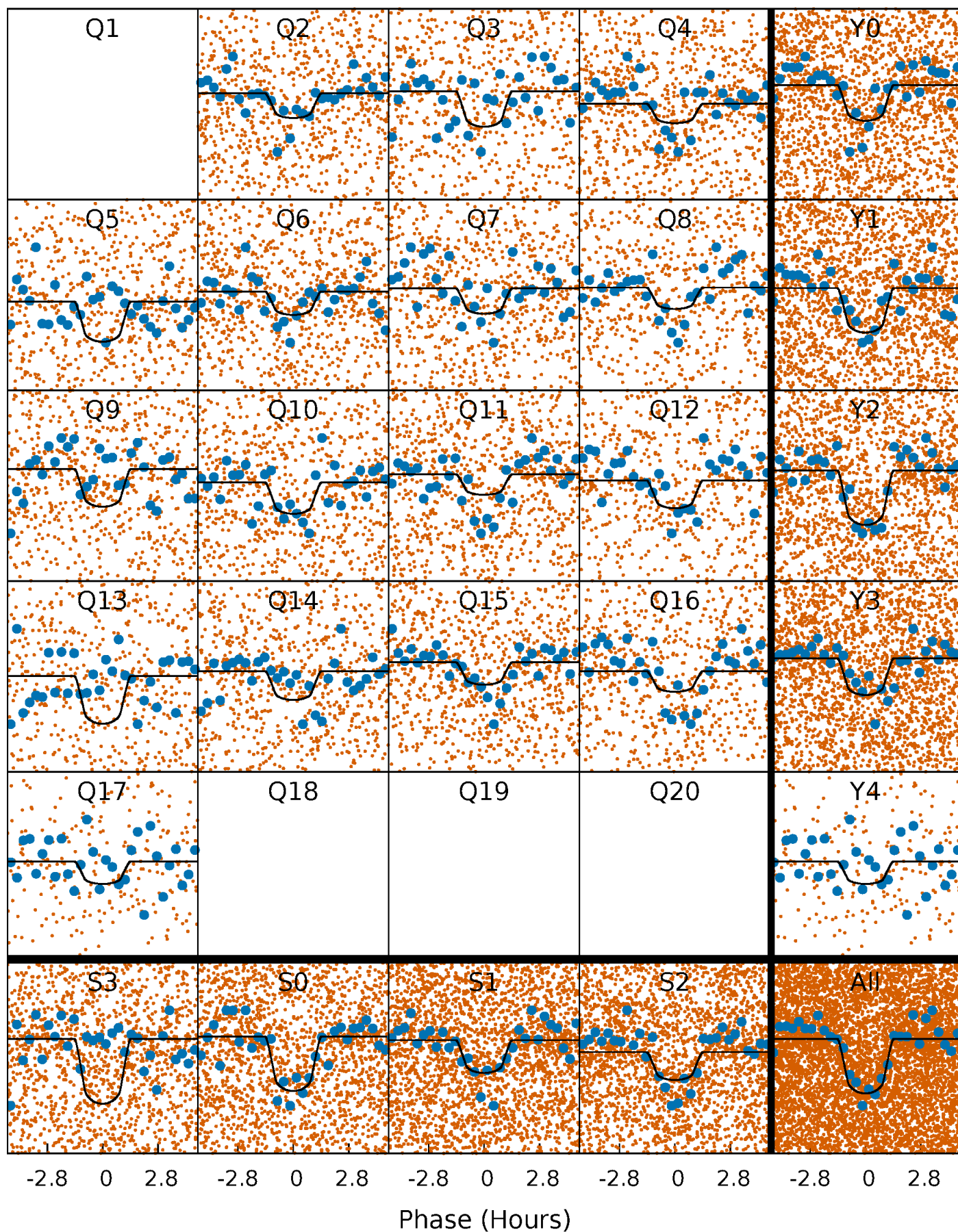
TCE 008262210-01 P= 1.612951 Days  $T_0=131.775178$  (BKJD)





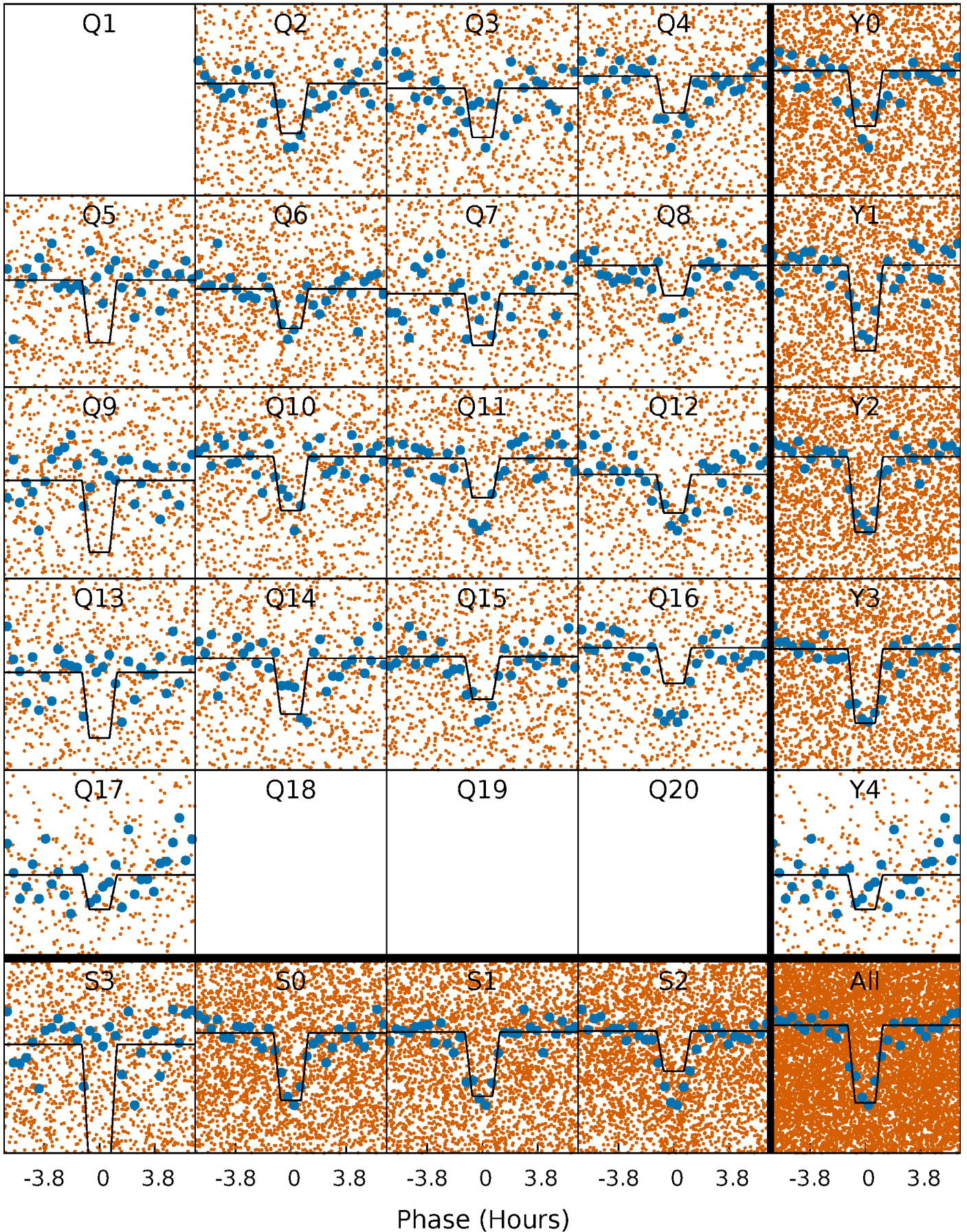
# DV Quarter-Phased Transit Curves

TCE 008262210-01 P= 1.612951 Days  $T_0=131.775178$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

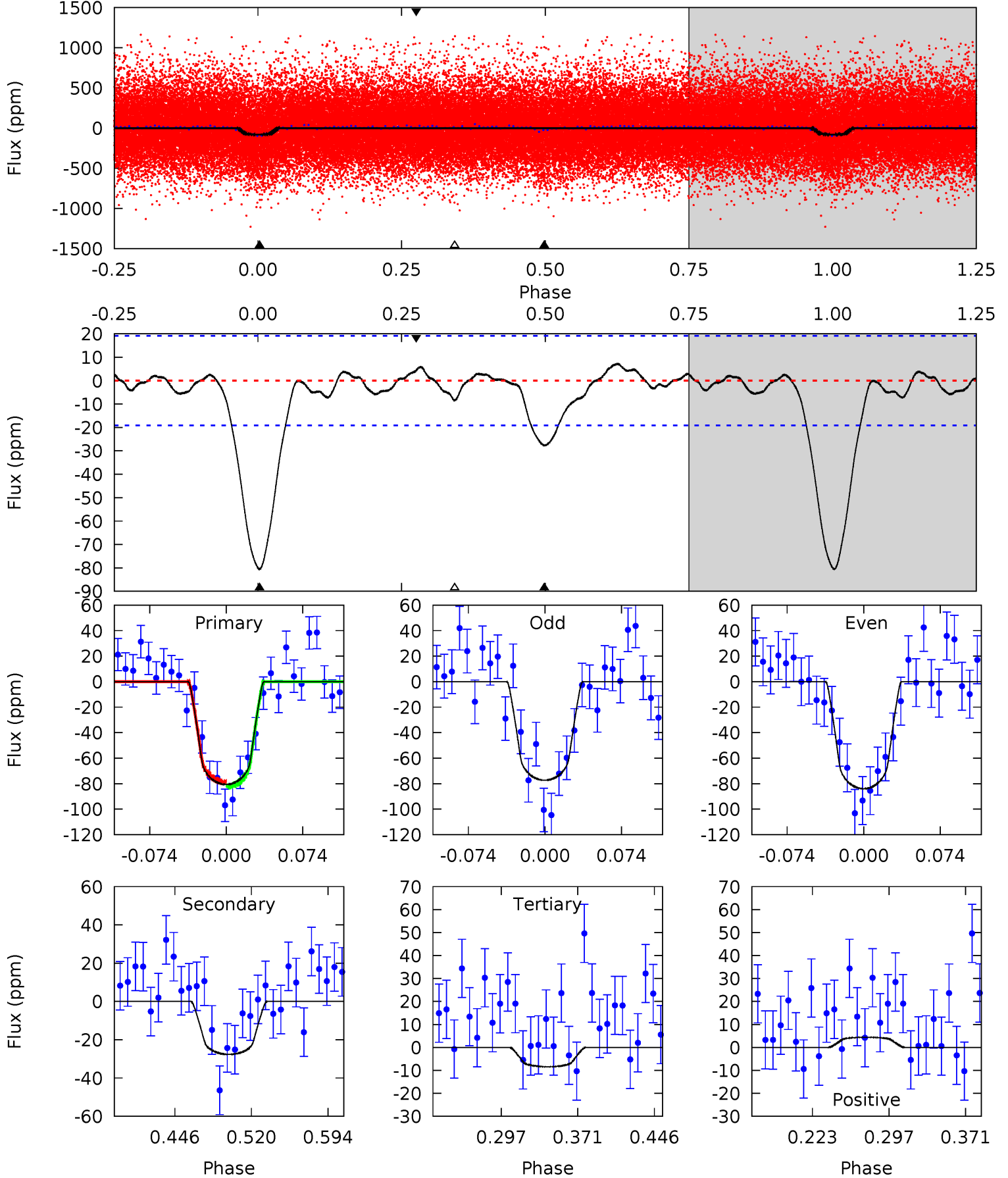
TCE 008262210-01 P= 1.612998 Days  $T_0=131.755686$  (BKJD)



# DV Model-Shift Uniqueness Test

008262210-01, P = 1.612951 Days, E = 131.775178 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.5 | 6.69 | 2.04 | 1.07 | 4.63            | 1.78            | 0.82             | 17.4    | 18.4    | 4.65    | 5.62    | 0.80    | 0.96 | 0.08  | 0.41 |

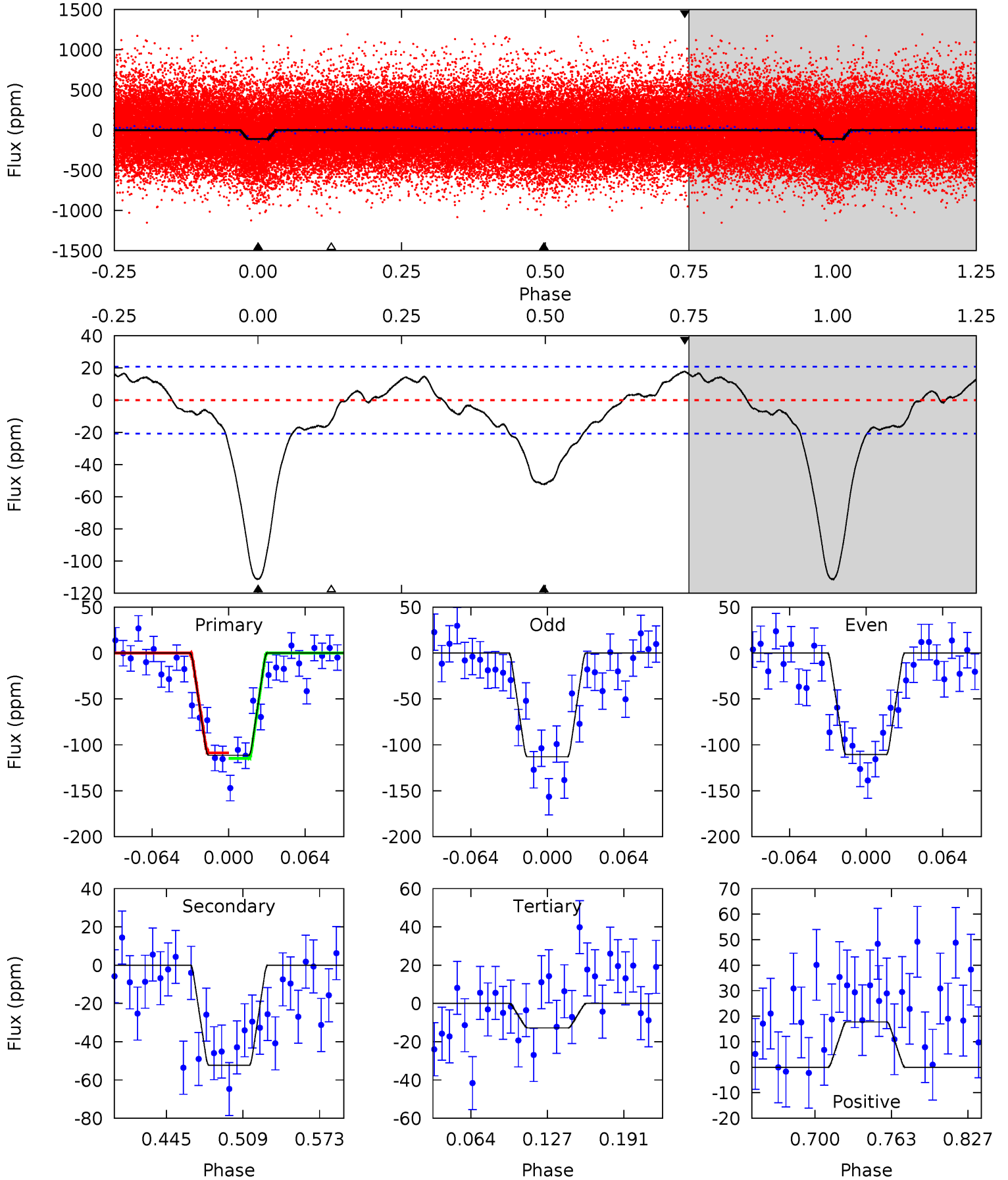




# Alt Model-Shift Uniqueness Test

008262210-01, P = 1.612998 Days, E = 131.755686 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 24.9 | 11.7 | 2.86 | 3.97 | 4.66            | 1.85            | 2.39             | 22.1    | 20.9    | 8.84    | 7.73    | 0.27    | 0.96 | 0.14  | 0.66 |





### Stellar Parameters For KIC 008262210

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5580^{+182}_{-182}$ | $4.223^{+0.282}_{-0.188}$ | $-0.040^{+0.300}_{-0.250}$ | $1.205^{+0.368}_{-0.335}$ | $0.886^{+0.122}_{-0.081}$ | $0.712^{+1.212}_{-0.345}$                 |
|        | +3%/-3%              | +7%/-4%                   | +750%/-625%                | +31%/-28%                 | +14%/-9%                  | +170%/-48%                                |
| Source | PHO54                | PHO54                     | PHO54                      | DSEP                      |                           |   |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008262210-01 / KOI 1073.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$  | $A_{\text{obs}}$           |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV      | $-28 \pm 4$ | $1.25^{+0.73}_{-0.61}$ | $2326^{+216}_{-219}$ | $4261^{+1355}_{-641}$ | $6.880^{+18.201}_{-4.300}$ |
| Alt.    | $-52 \pm 4$ | $1.45^{+0.75}_{-0.61}$ | $2330^{+215}_{-196}$ | $4596^{+1255}_{-659}$ | $9.595^{+18.205}_{-5.561}$ |

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

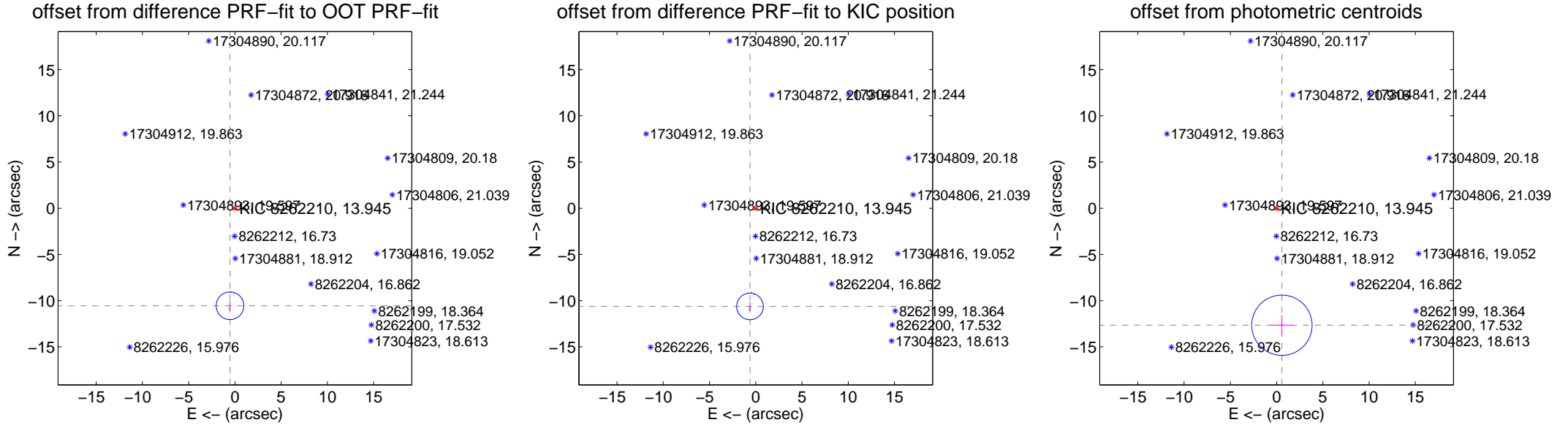
## DV Centroid Data

Supplemental centroid analysis for 008262210-01. Kepler magnitude: 13.95. Transit SNR 14.04

There are 3 quarters with good PRF difference image offsets

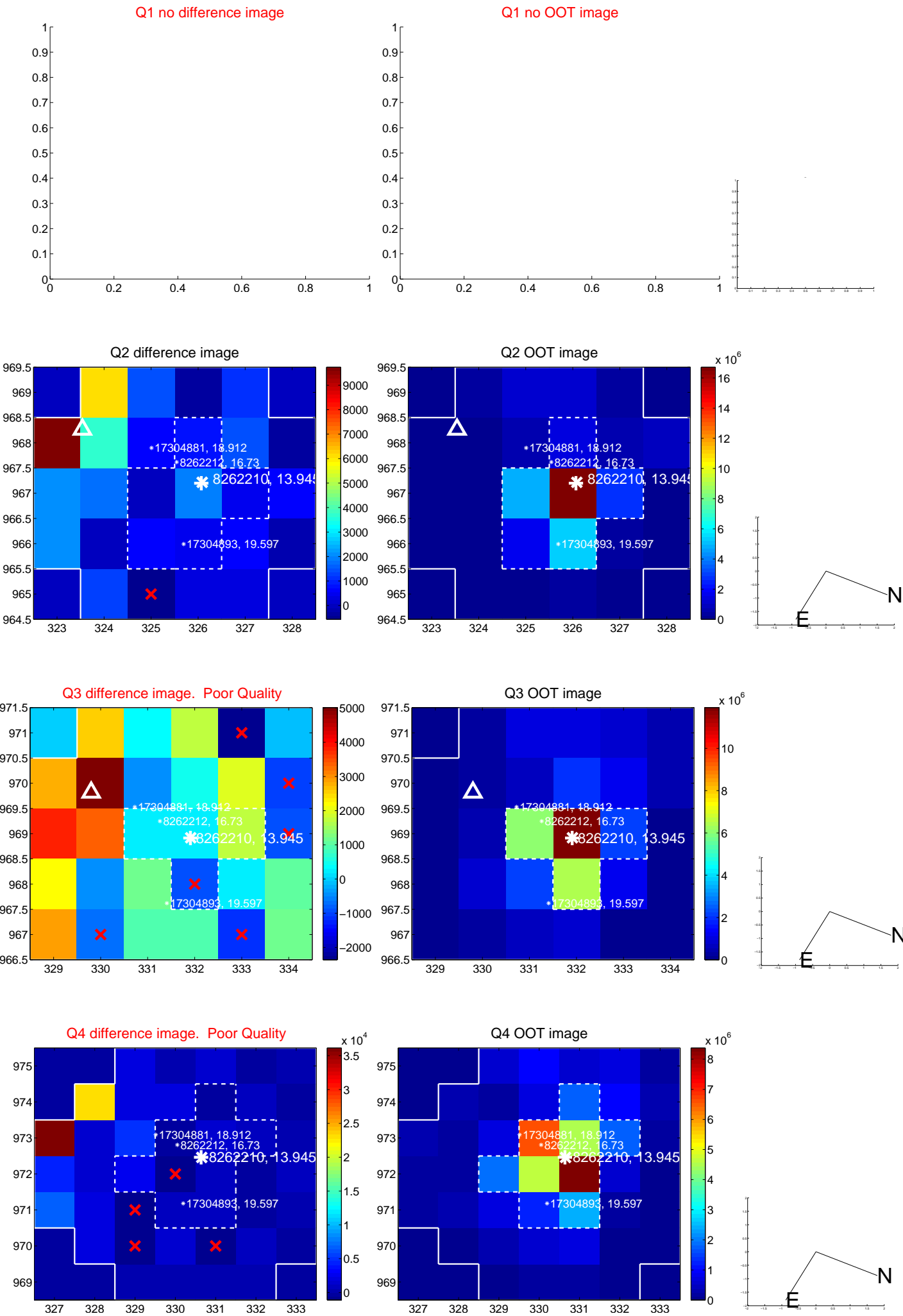
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec        |
|---|--------------------|---------------------|-------------------|---------------------|
| PRF-fit source offset from OOT          | $10.568 \pm 0.498$ | 21.20               | $0.529 \pm 0.127$ | $-10.555 \pm 0.494$ |
| PRF-fit source offset from KIC position | $10.640 \pm 0.481$ | 22.14               | $0.621 \pm 0.157$ | $-10.622 \pm 0.481$ |
| photometric centroid source offset      | $12.67 \pm 1.09$   | 11.66               | $-0.58 \pm 1.14$  | $-12.66 \pm 1.09$   |

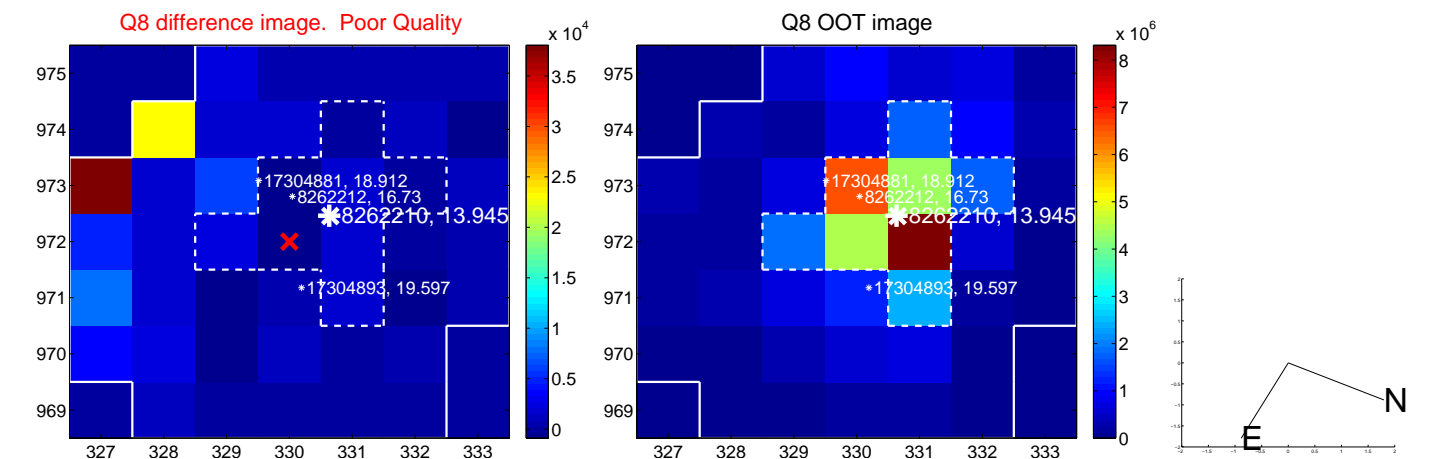
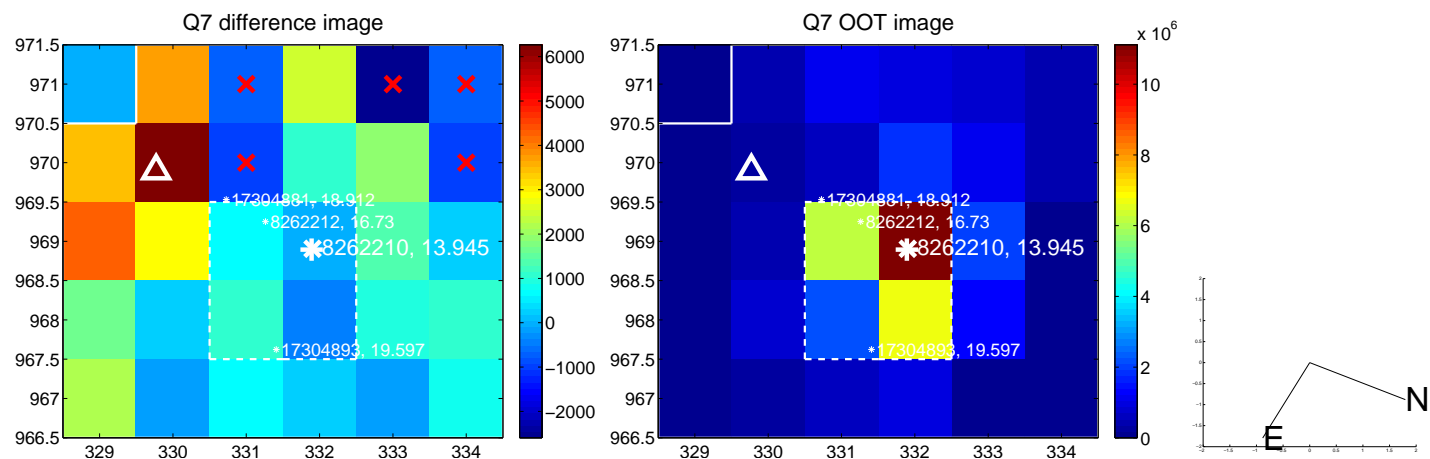
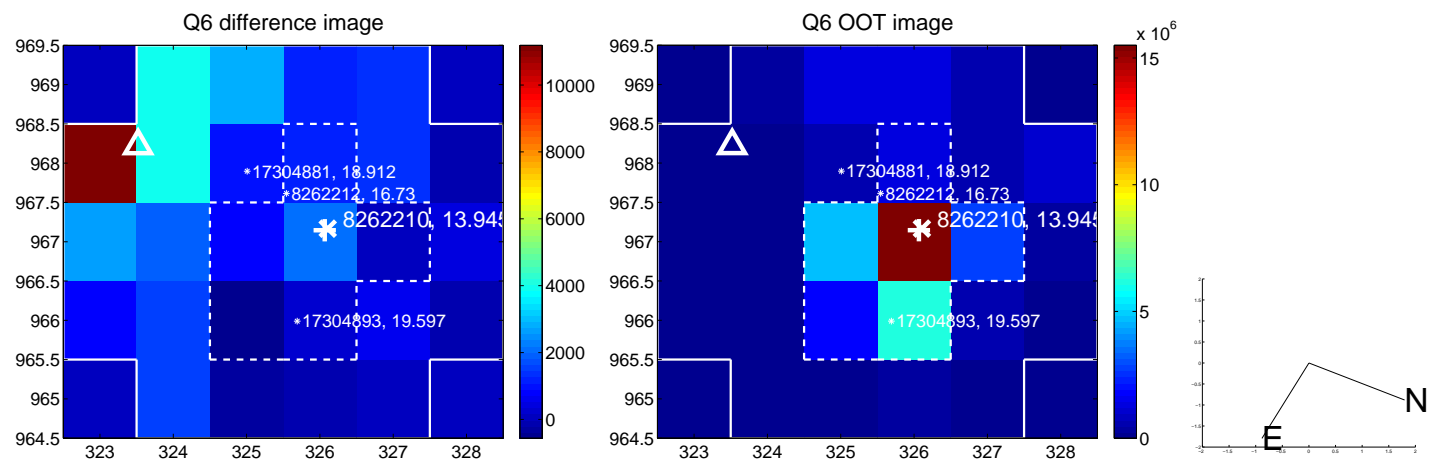
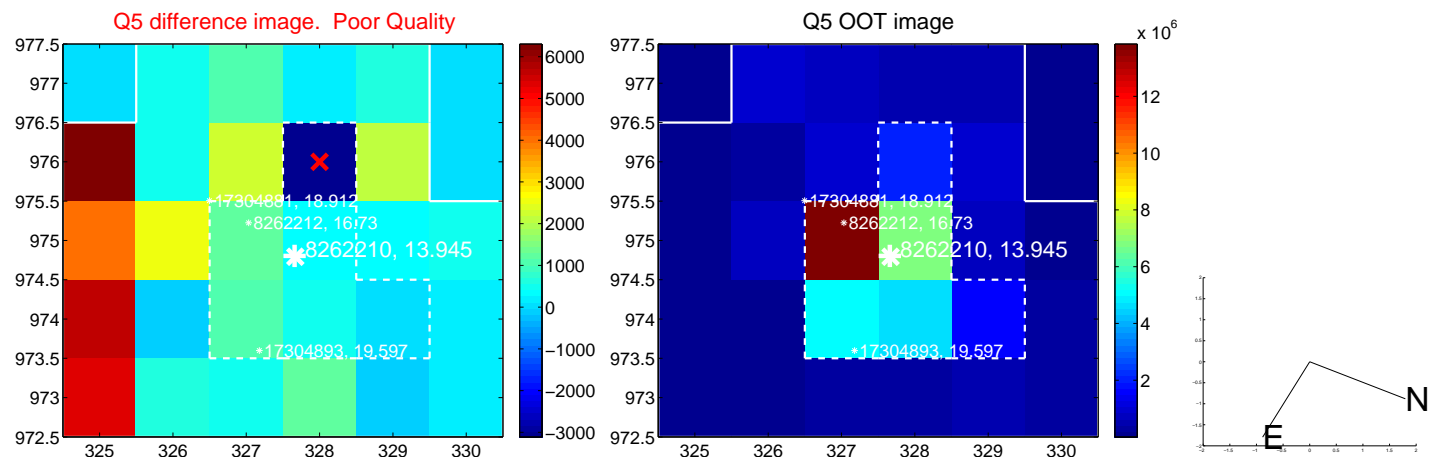


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

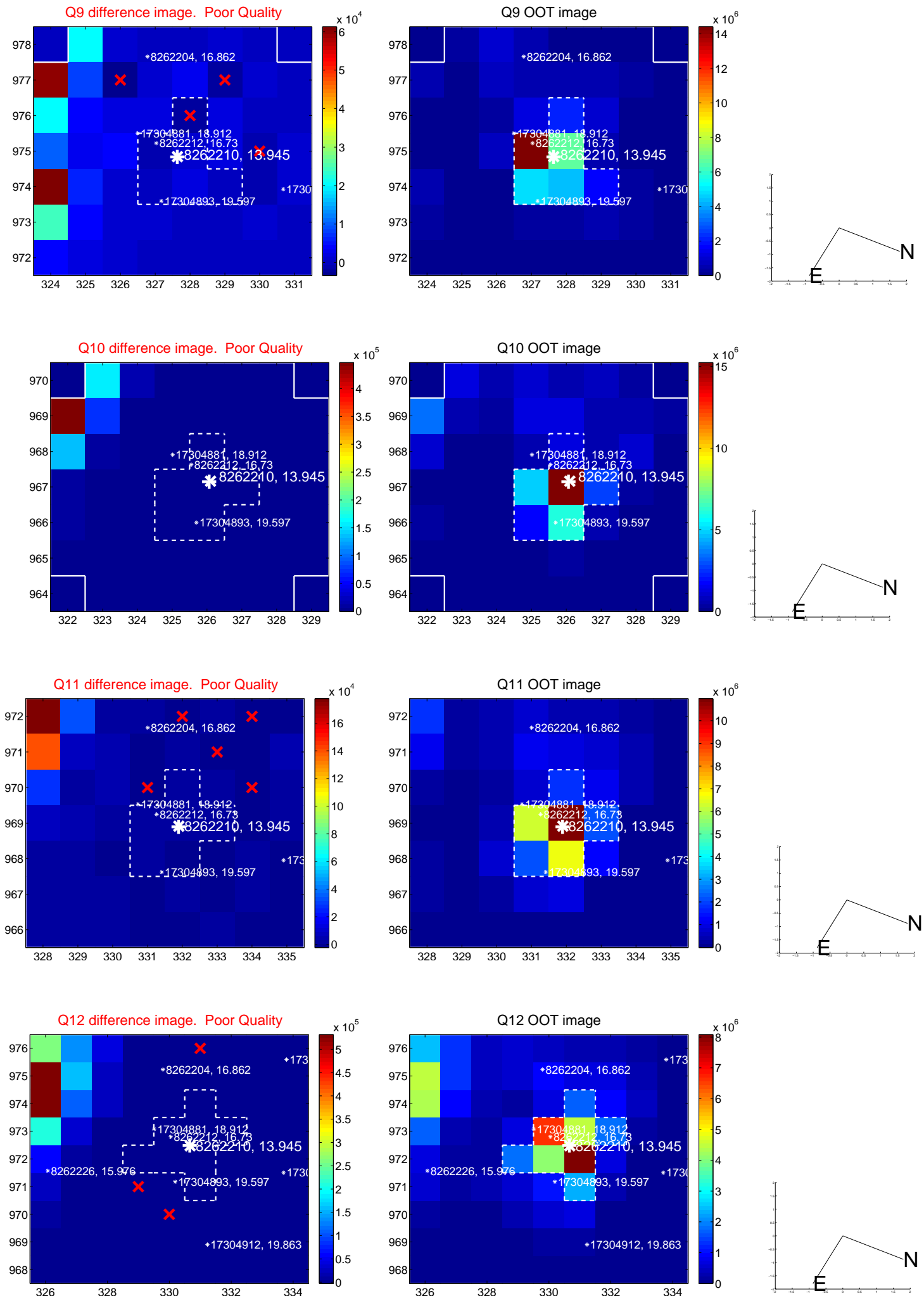


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

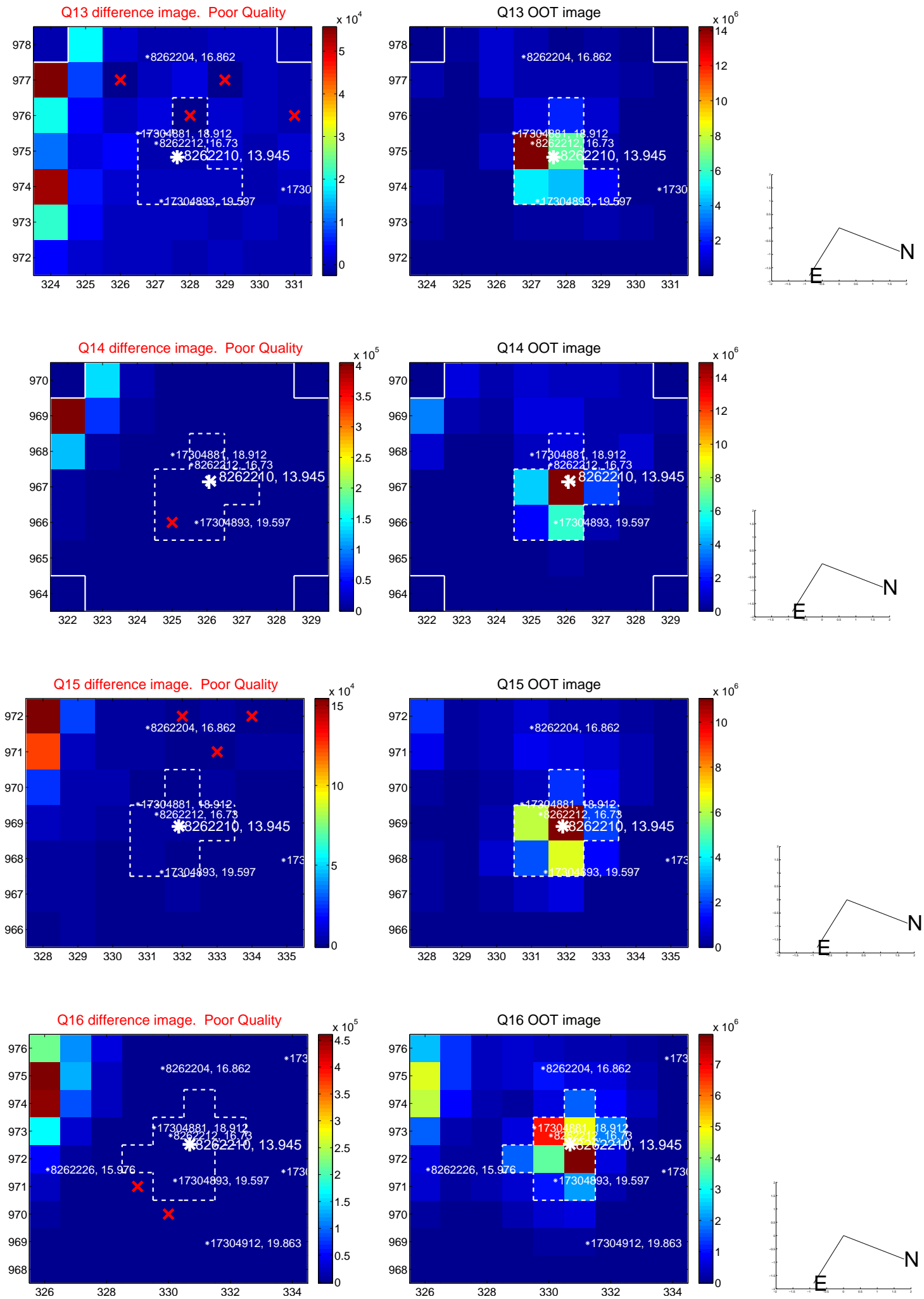




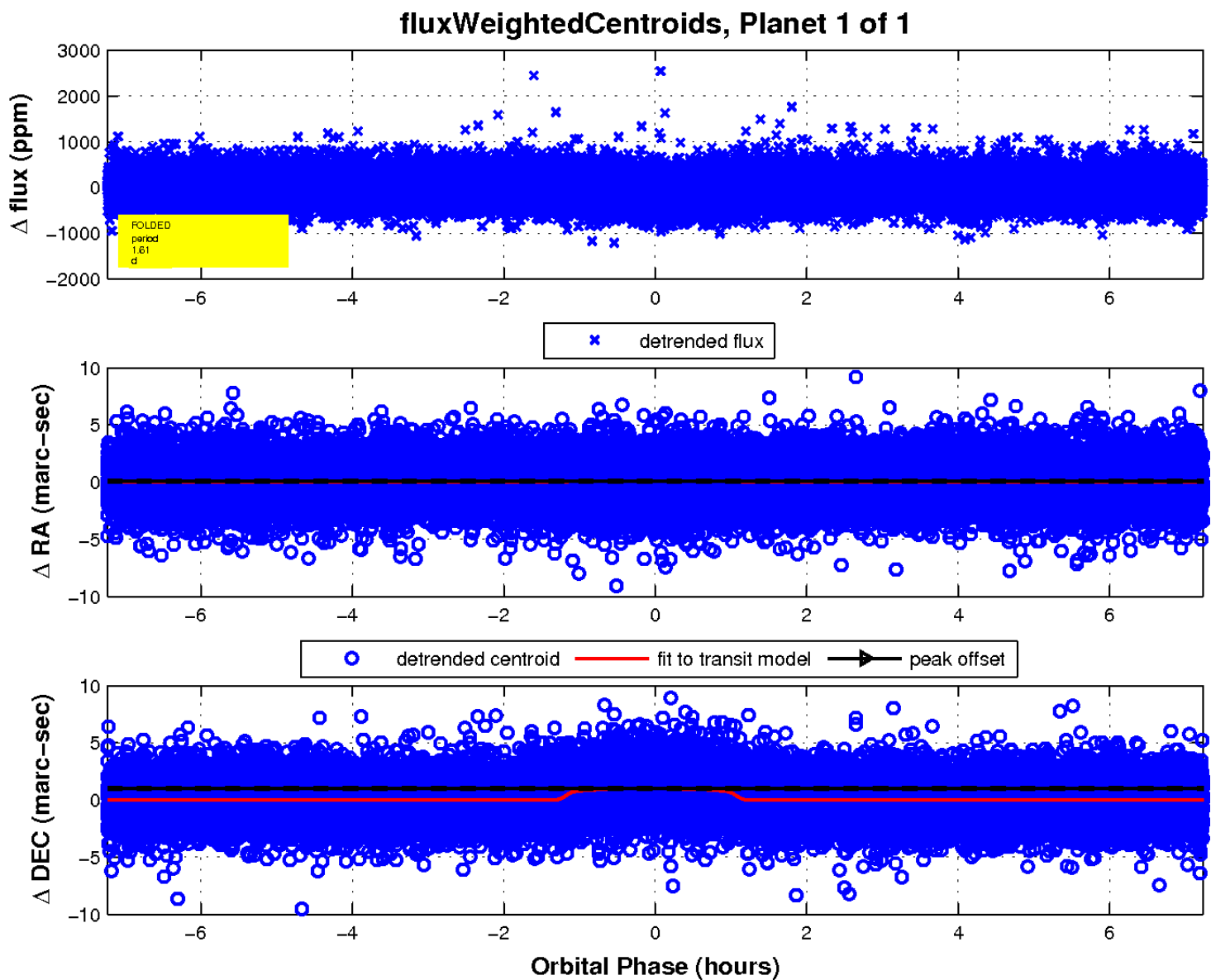
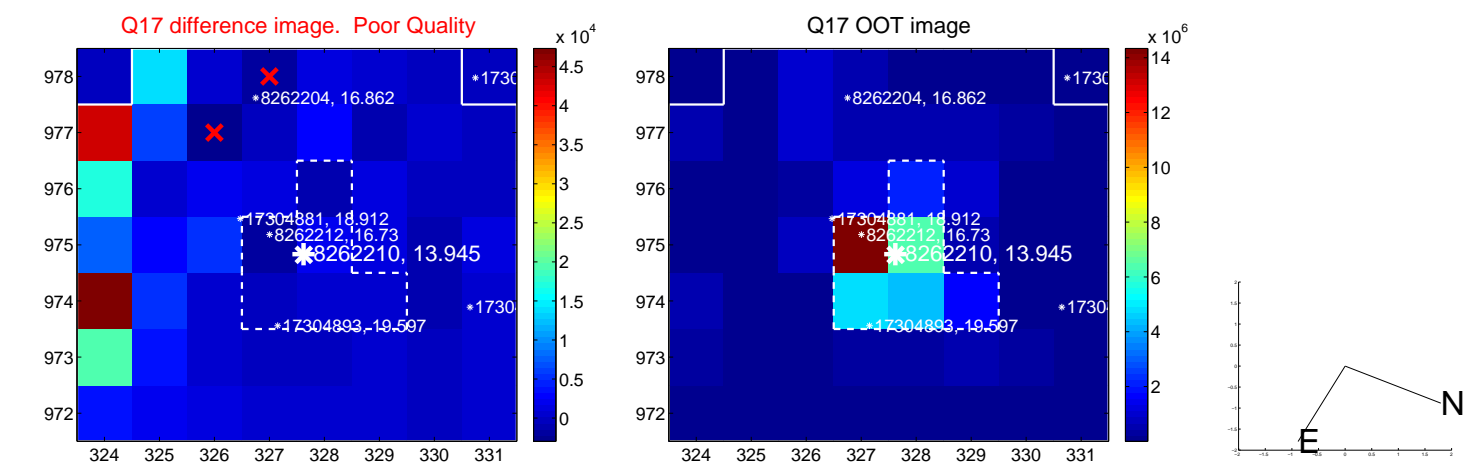
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

