

# KIC 008263752

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263752-01 | OBS      | 3338.02 | 10.993824     | 138.806080   | 3969.2      | 4.678            | 415.9 | 277.6 | 1.16                        | 6553            | 13.20                  | 217.11                 |
| 008263752-02 | OBS      | 3338.01 | 10.993856     | 133.250997   | 2238.8      | 3.582            | 203.5 | 164.2 | 1.16                        | 6553            | 10.10                  | 217.11                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263752-01 | OBS      | FP   | 0.00  | 0 | 1 | 1 | 1 | MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH |
| 008263752-02 | OBS      | FP   | 0.00  | 1 | 1 | 1 | 1 | IS_SEC_TCE—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 008263752-01

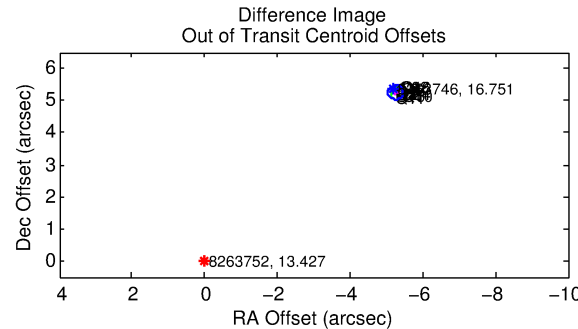
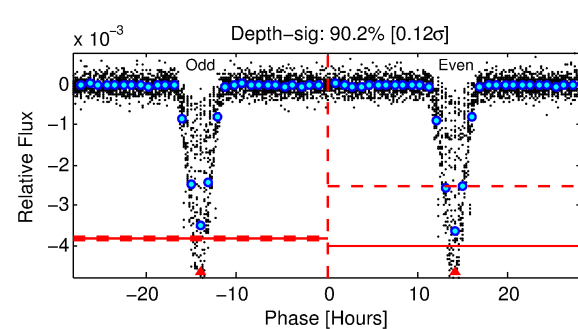
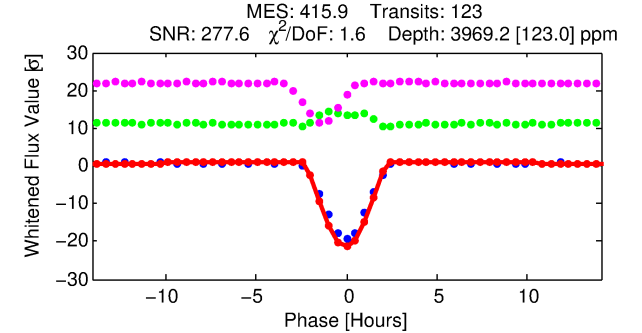
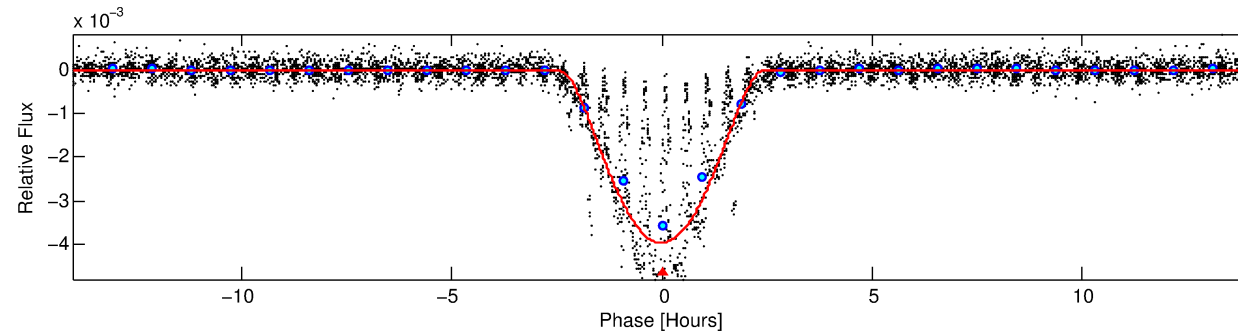
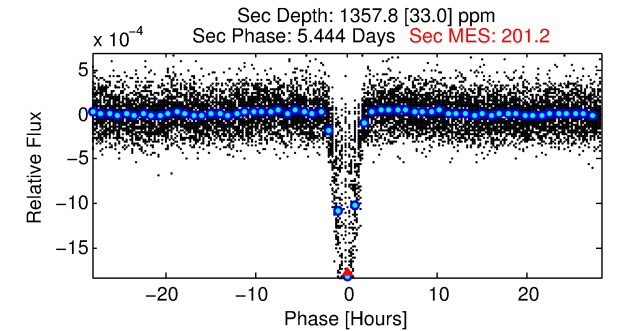
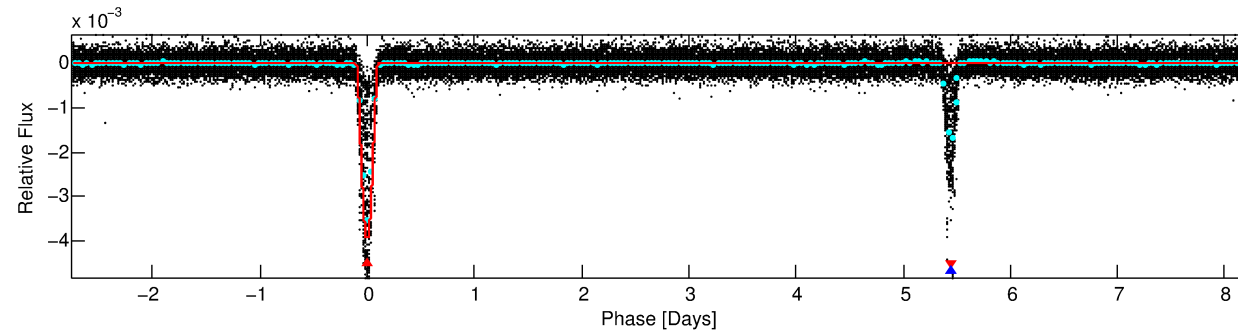
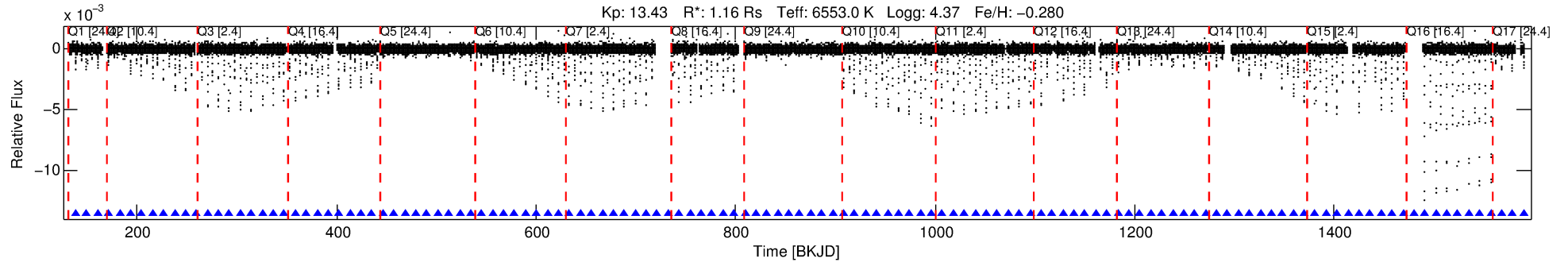
| TCE (1)      | KIC     | Parent (2) | Parent KIC | $P_1:P_2$ | Dist ( $''$ ) | $\Delta$ Row | $\Delta$ Col | $m_2$ | $m_1$ | $D_2/D_1$ | Mechanism  | Flag | $\sigma_P$ | $\sigma_T$ |
|--------------|---------|------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|------------|------|------------|------------|
| 008263752-01 | 8263752 | 3581.01    | 8263746    | 1:1       | 7.4           | 0            | -1           | 16.75 | 13.43 | 123.95    | Direct-PRF | 0    | 0.00       | 0.02       |

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8263752 Candidate: 1 of 2 Period: 10.994 d  
KOI: K03338.02 Corr: 0.986

Kp: 13.43 R\*: 1.16 Rs Teff: 6553.0 K Logg: 4.37 Fe/H: -0.280



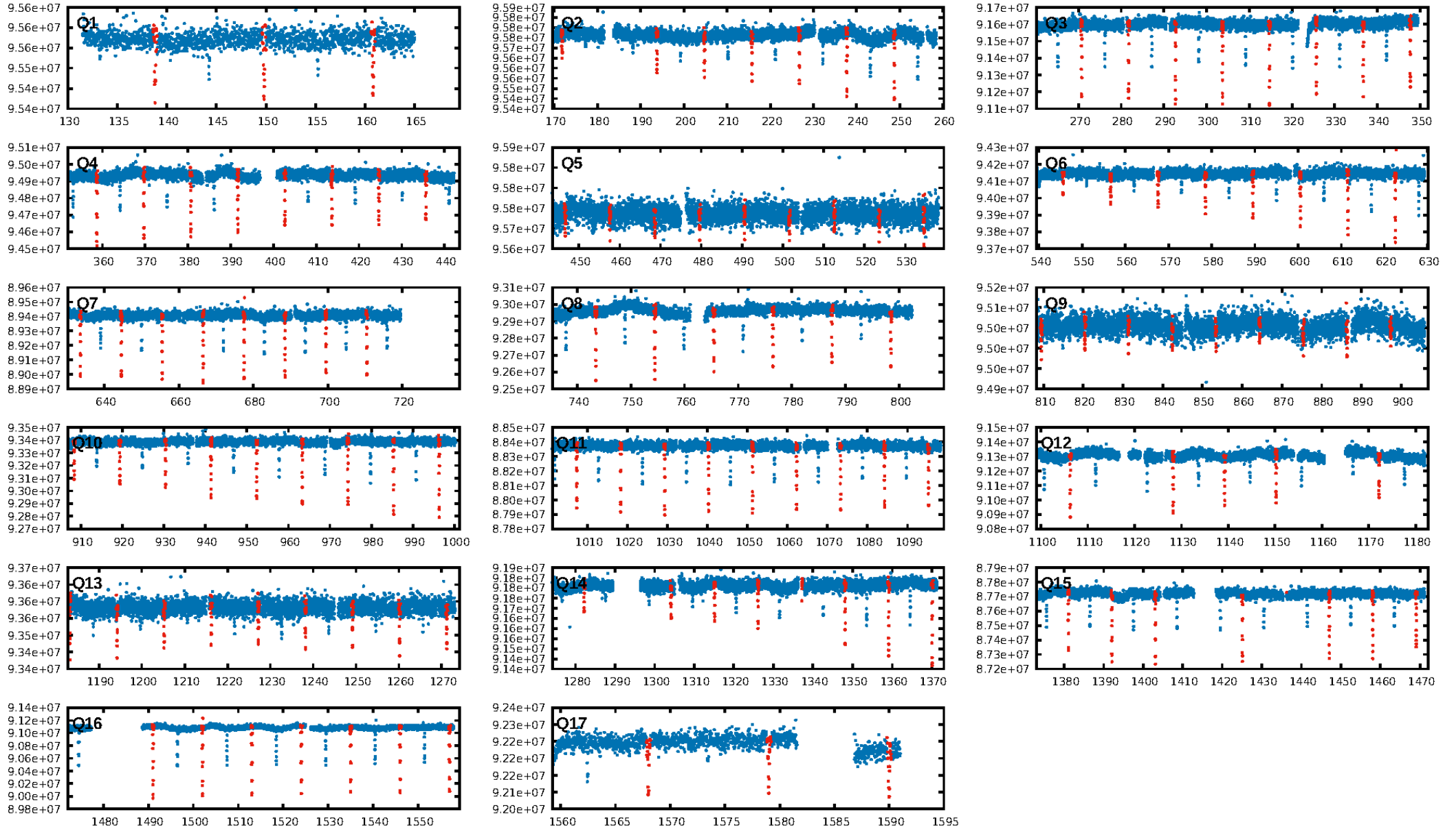
## DV Fit Results:

Period = 10.99382 [0.00000] d  
Epoch = 138.8061 [0.0003] BKJD  
Rp/R\* = 0.1046 [0.0145]  
a/R\* = 8.49 [0.23]  
b = 1.00 [0.02]  
Seff = 217.11 [88.90]  
Teq = 979 [100] K  
Rp = 13.20 [4.65] Re  
a = 0.1009 [0.0272] AU  
Ag = 43.65 [20.82] [2.05σ]  
**Teff = 3890 [298] K [9.25σ]**

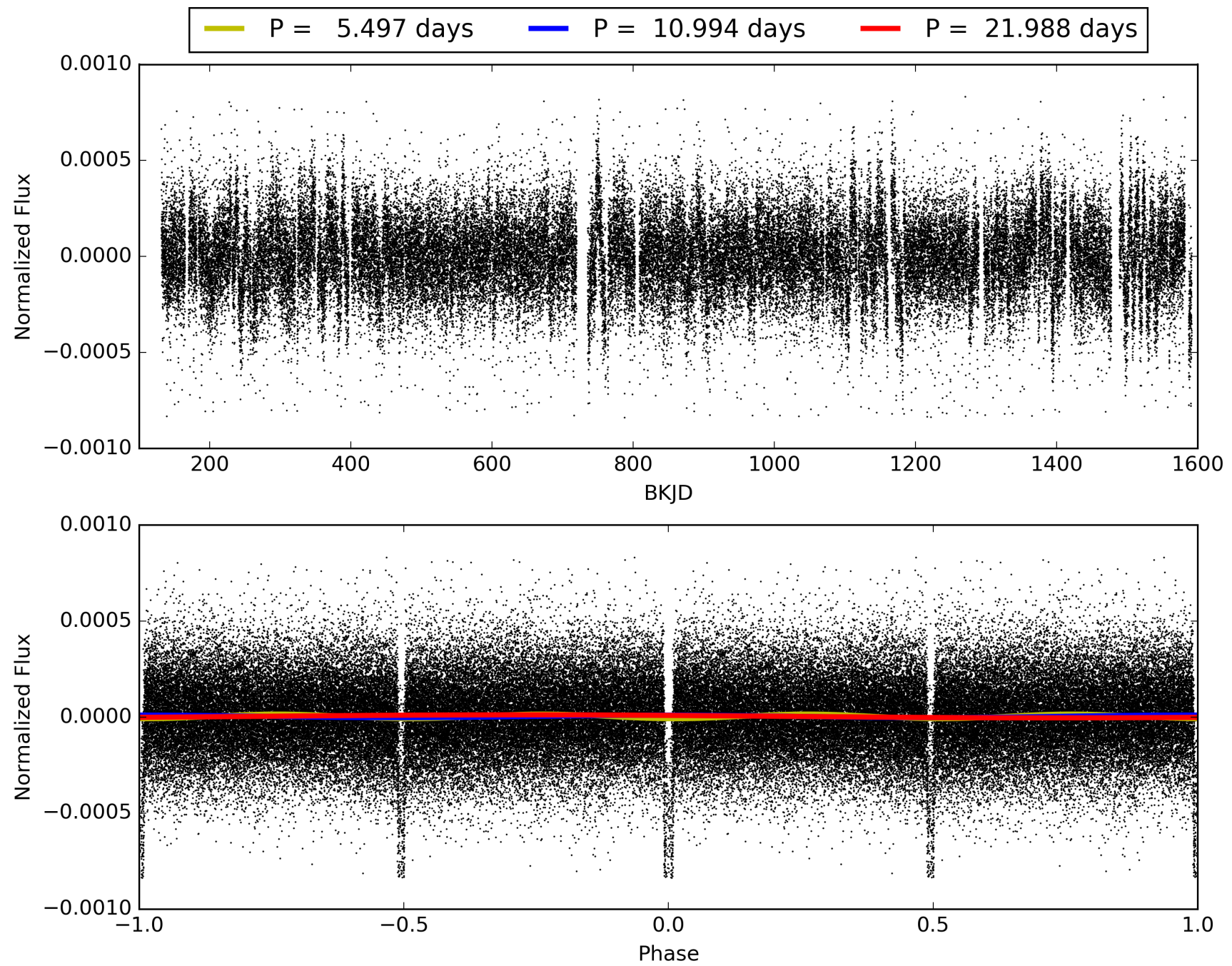
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00σ]**  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGoF-sig: 0.3%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [117/117]  
**GhostDiagnostic-chr: -0.2521**  
Centroid-sig: 0.0%  
Centroid-so: 23.280 arcsec [808.62σ]  
**OotOffset-rm: 7.423 arcsec [103.90σ]**  
**KicOffset-rm: 7.371 arcsec [100.23σ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008263752-01, PDC Light Curves

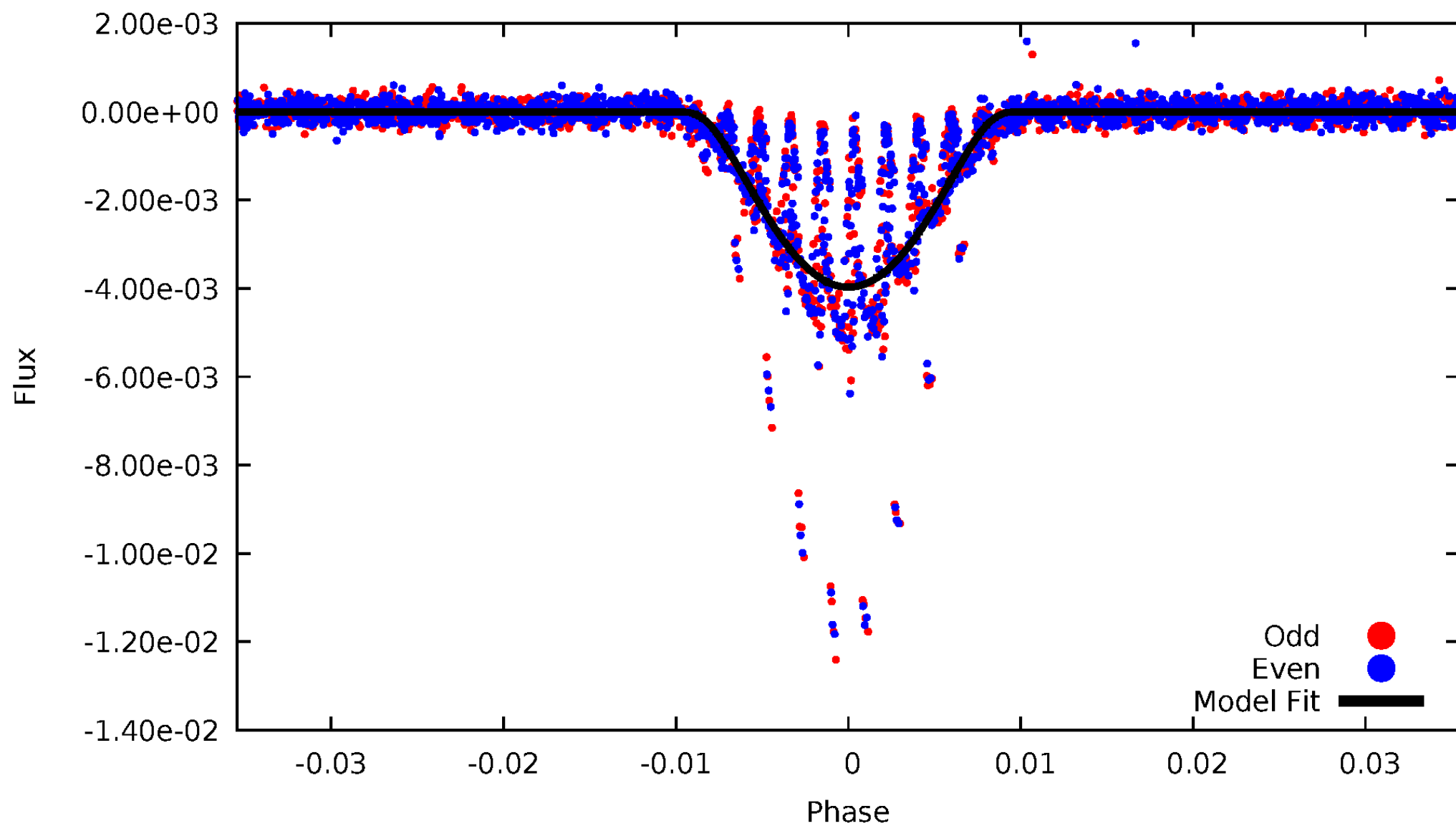


TCE 008263752-01



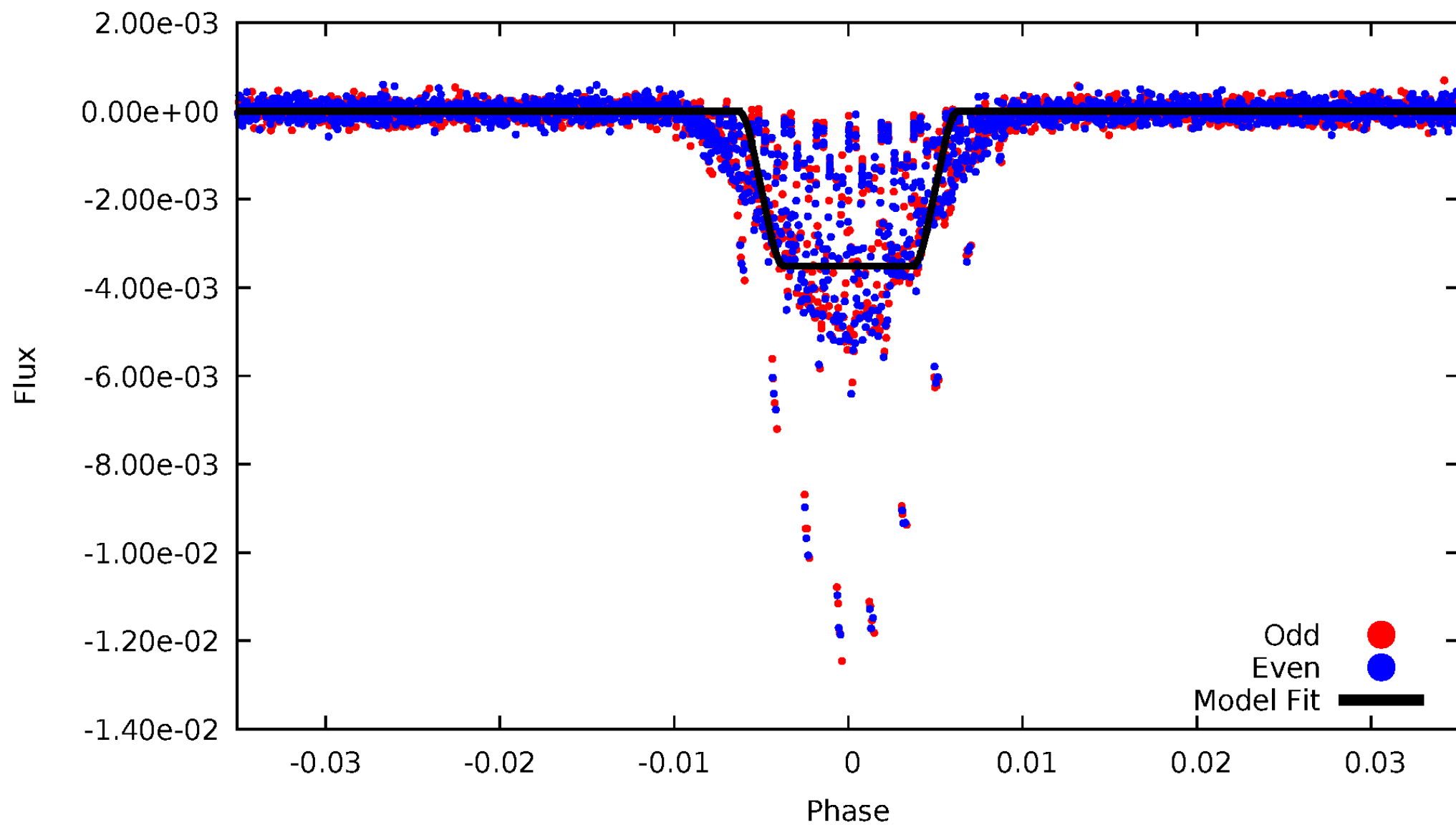
# DV Odd/Even

TCE 008263752-01



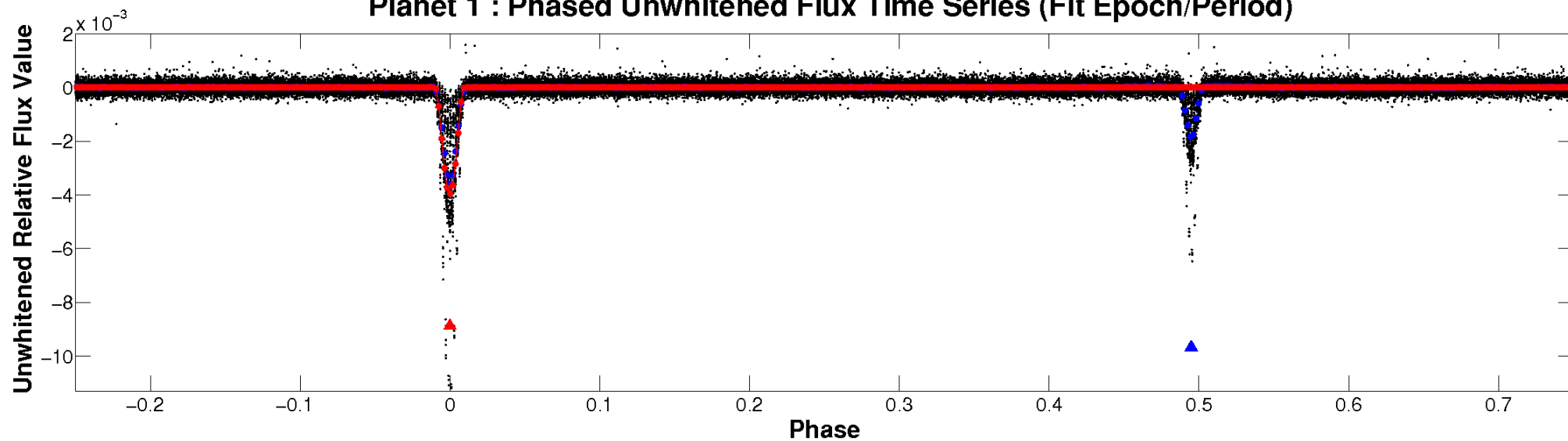
# ALT Odd/Even

TCE 008263752-01

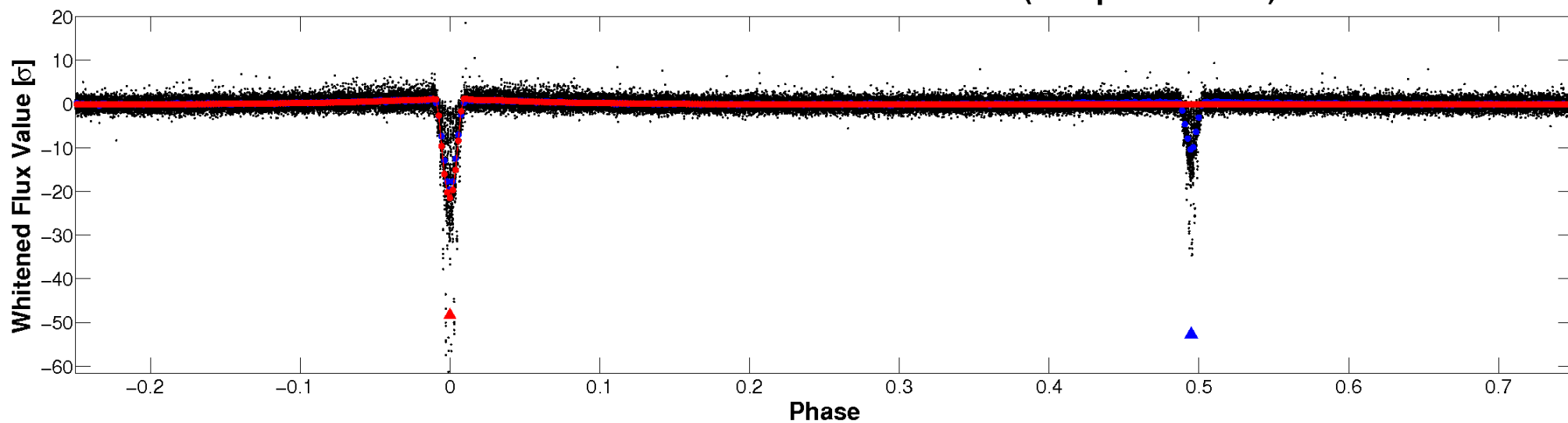


# Non-Whitened Vs. Whitened Light Curve

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



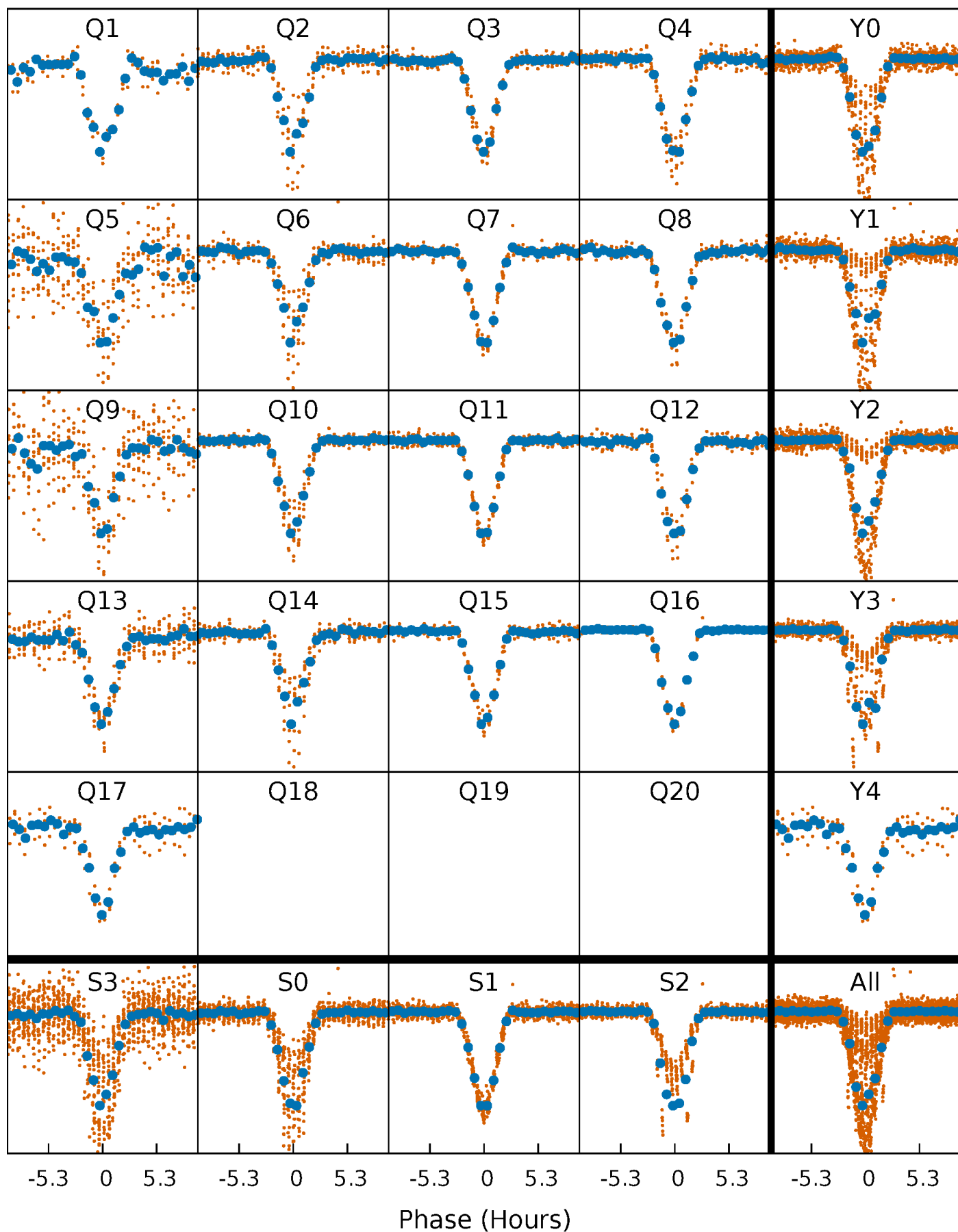
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

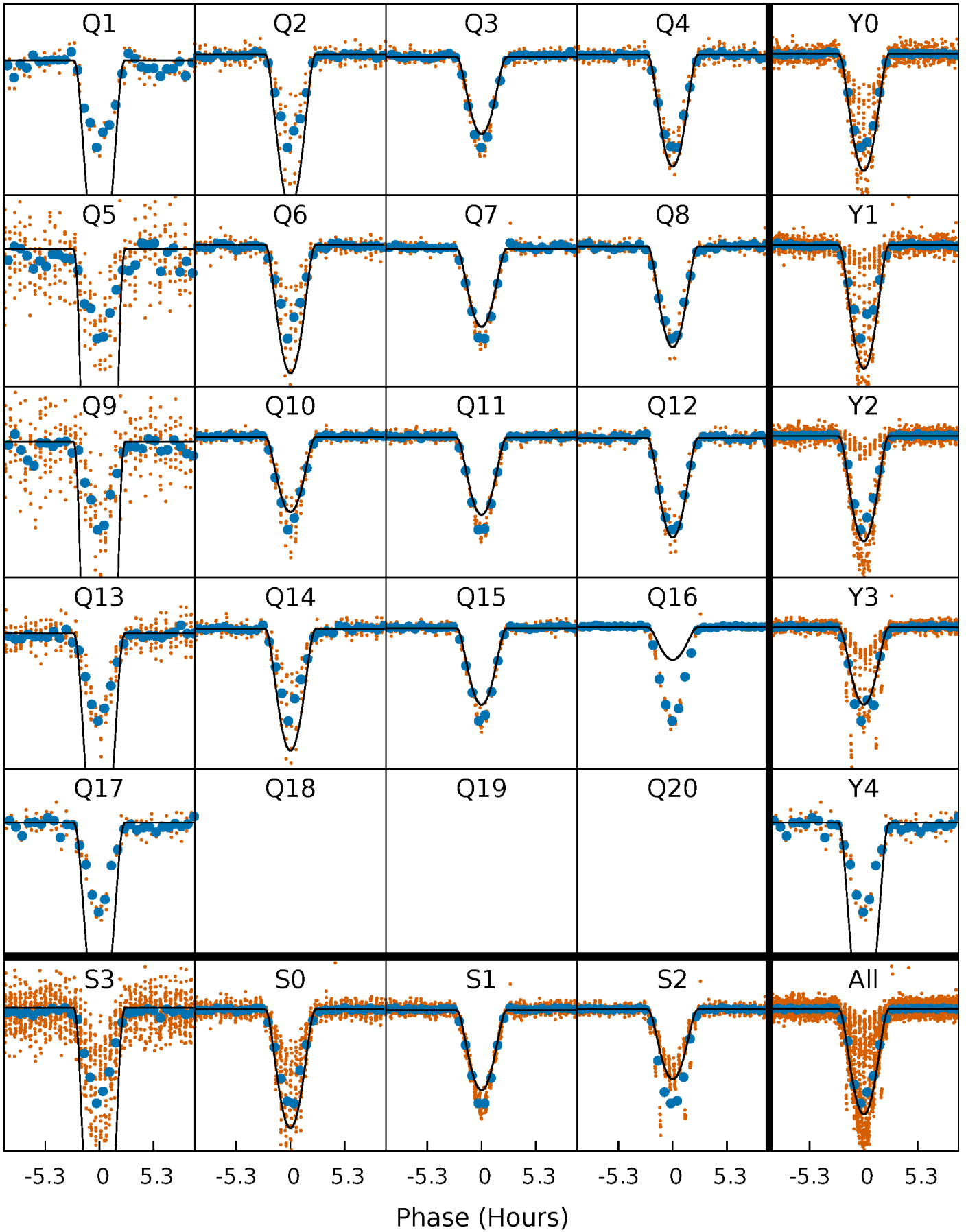
TCE 008263752-01 P= 10.993824 Days  $T_0=138.806080$  (BKJD)





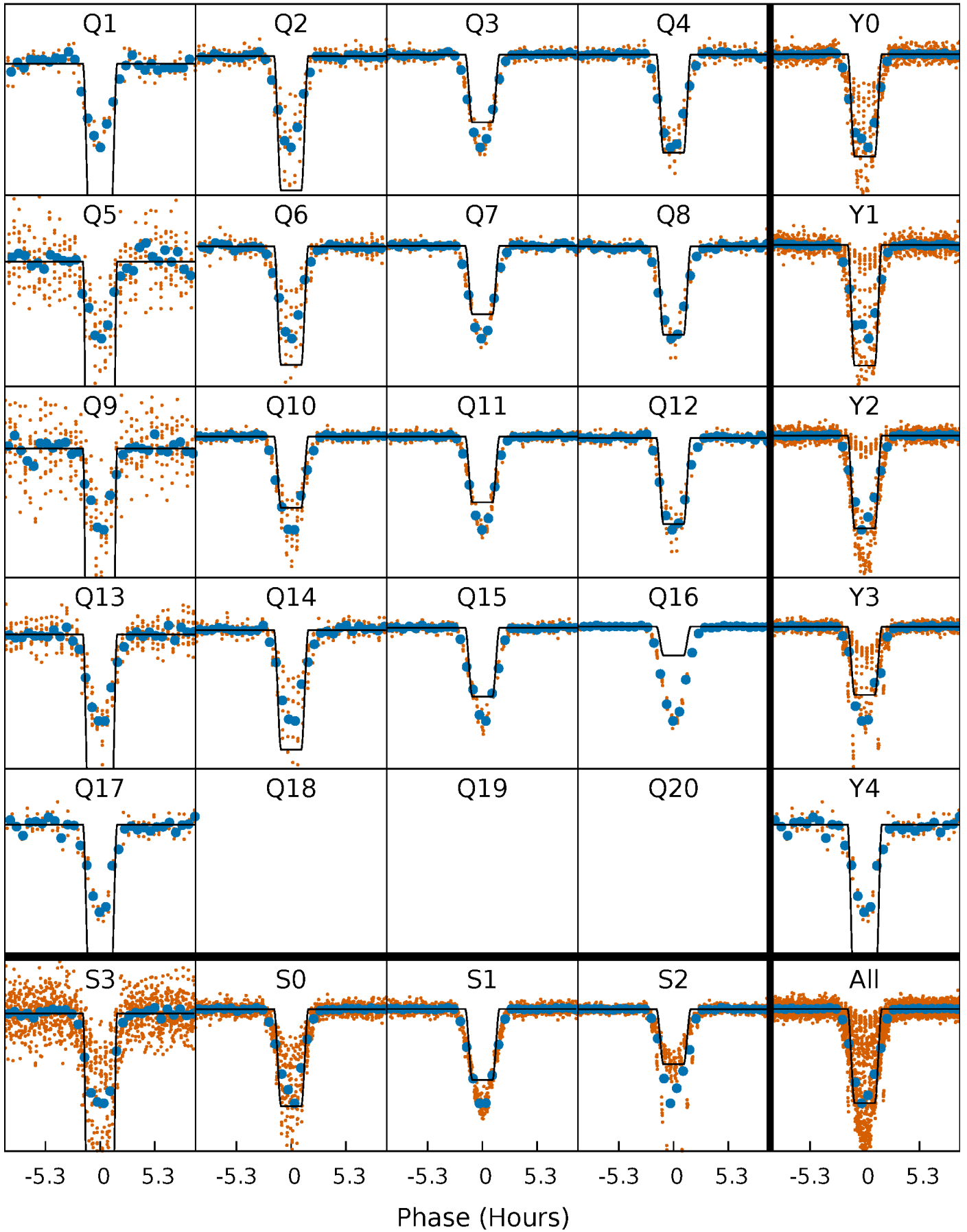
# DV Quarter-Phased Transit Curves

TCE 008263752-01 P= 10.993824 Days  $T_0=138.806080$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

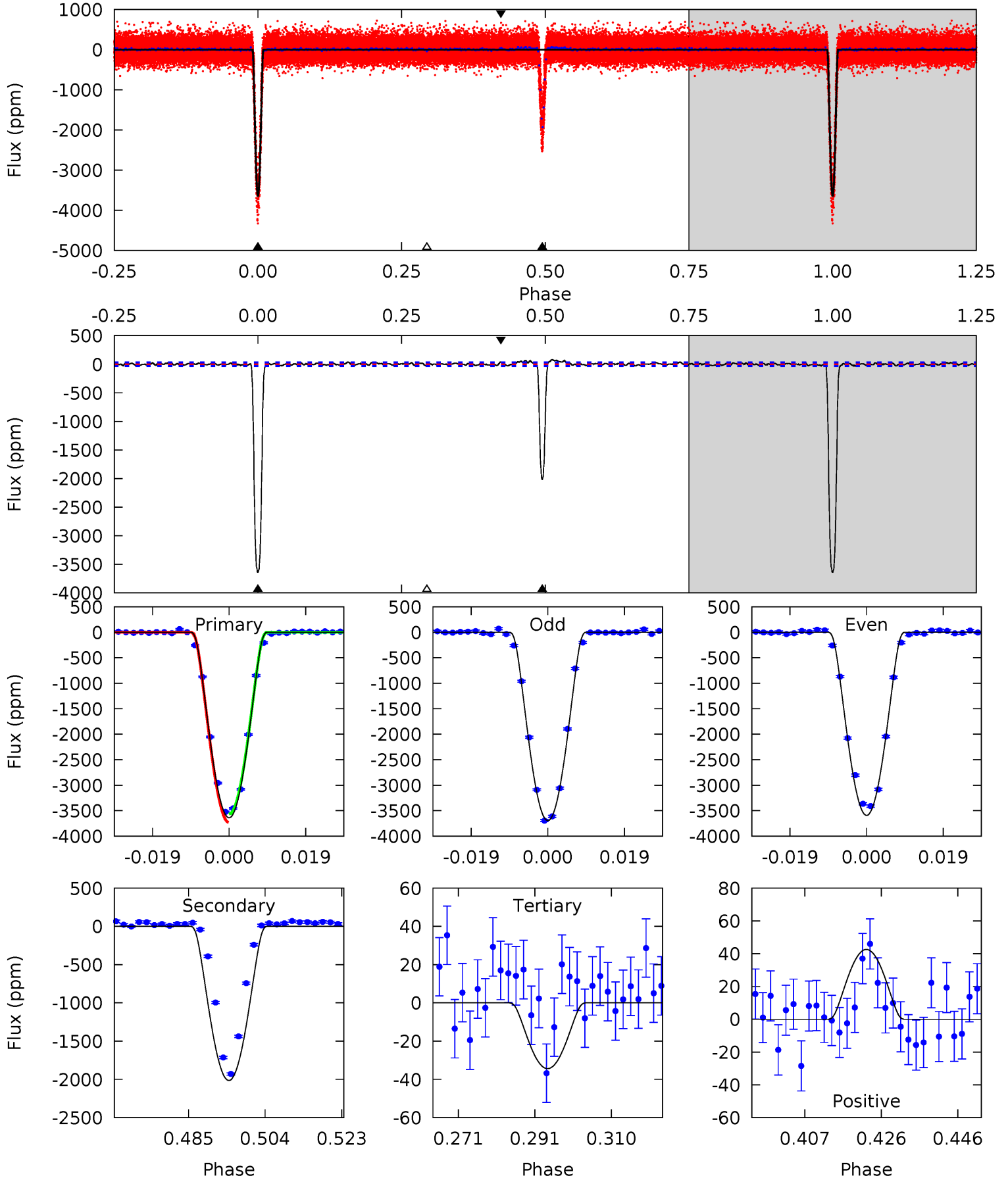
TCE 008263752-01 P= 10.993758 Days  $T_0=138.810540$  (BKJD)



# DV Model-Shift Uniqueness Test

008263752-01, P = 10.993824 Days, E = 127.812256 Days

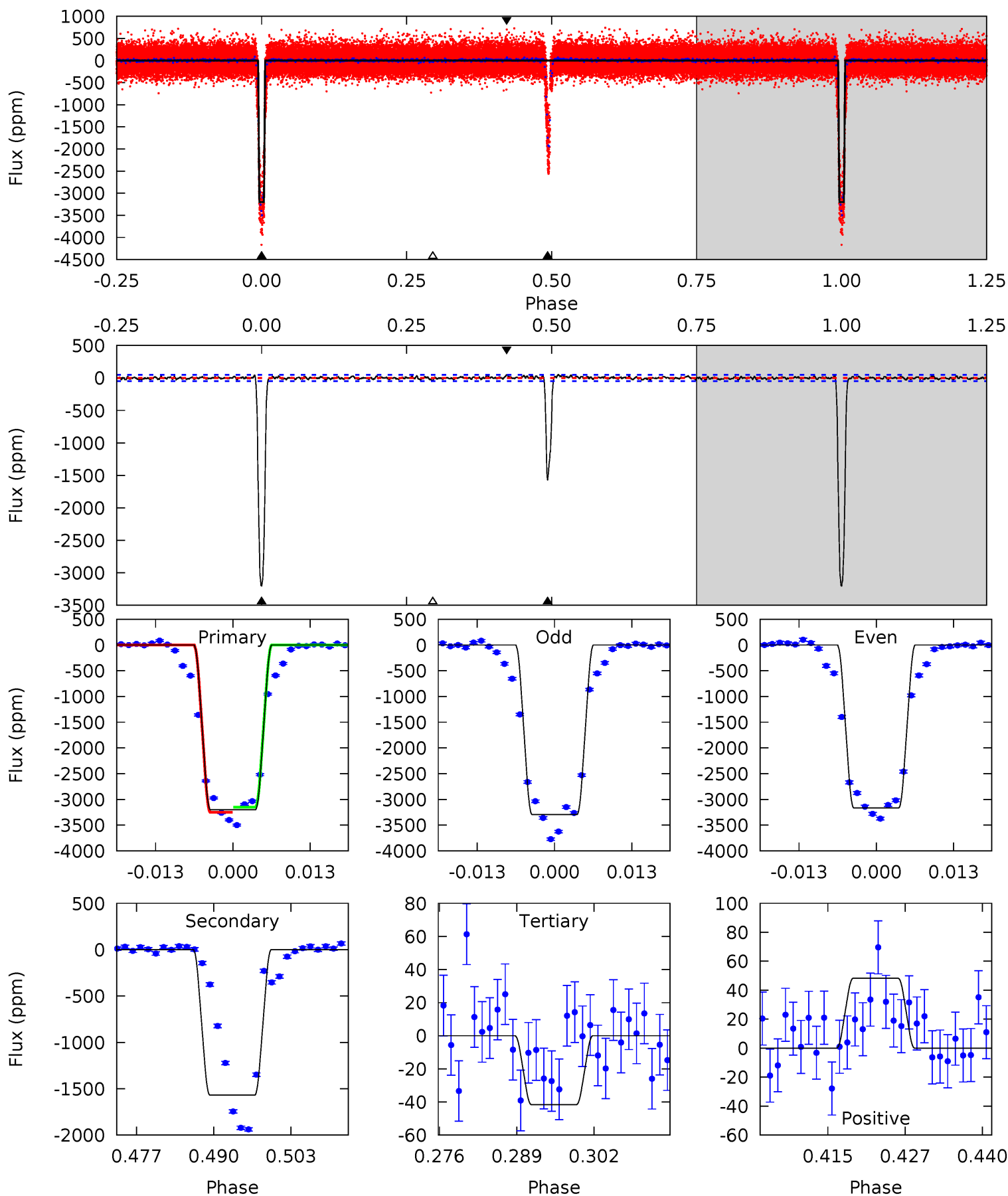
| Pri   | Sec   | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT |
|-------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 586.6 | 324.8 | 5.54 | 6.87 | 4.90            | 2.34            | 2.71             | 581.1   | 579.8   | 319.3   | 317.9   | 8.27    | 0.99 | 0.02  | 0   |



# Alt Model-Shift Uniqueness Test

008263752-01, P = 10.993758 Days, E = 127.816782 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 |
|-------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 331.2 | 162.3 | 4.31 | 4.99 | 4.98            | 2.50            | 1.37             | 326.9   | 326.2   | 158.0   | 157.3   | 6.58    | 0.99 | 0.02  | 0   |



### Stellar Parameters For KIC 008263752

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M$ ( $M_{\odot}$ )       | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6553^{+148}_{-214}$ | $4.366^{+0.070}_{-0.210}$ | $-0.280^{+0.250}_{-0.300}$ | $1.157^{+0.375}_{-0.150}$ | $1.136^{+0.178}_{-0.146}$ | $1.035^{+0.391}_{-0.547}$                     |
|        | +2%/-3%              | +2%/-5%                   | +89%/-107%                 | +32%/-13%                 | +16%/-13%                 | +38%/-53%                                     |
| 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 008263752-01 / KOI 3338.02

| Detrend | Depth (ppm)    | $R_p$ ( $R_{\oplus}$ )  | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K) | $A_{\text{obs}}$   |
|---------|----------------|-------------------------|----------------------|----------------------|--------------------|
| DV      | $-2015 \pm 6$  | $13.93^{+2.68}_{-2.36}$ | $1390^{+107}_{-66}$  | $4458^{+284}_{-244}$ | $58^{+24}_{-17}$   |
| Alt.    | $-1569 \pm 10$ | $7.85^{+2.19}_{-1.99}$  | $1388^{+96}_{-68}$   | $5336^{+791}_{-471}$ | $140^{+111}_{-53}$ |

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

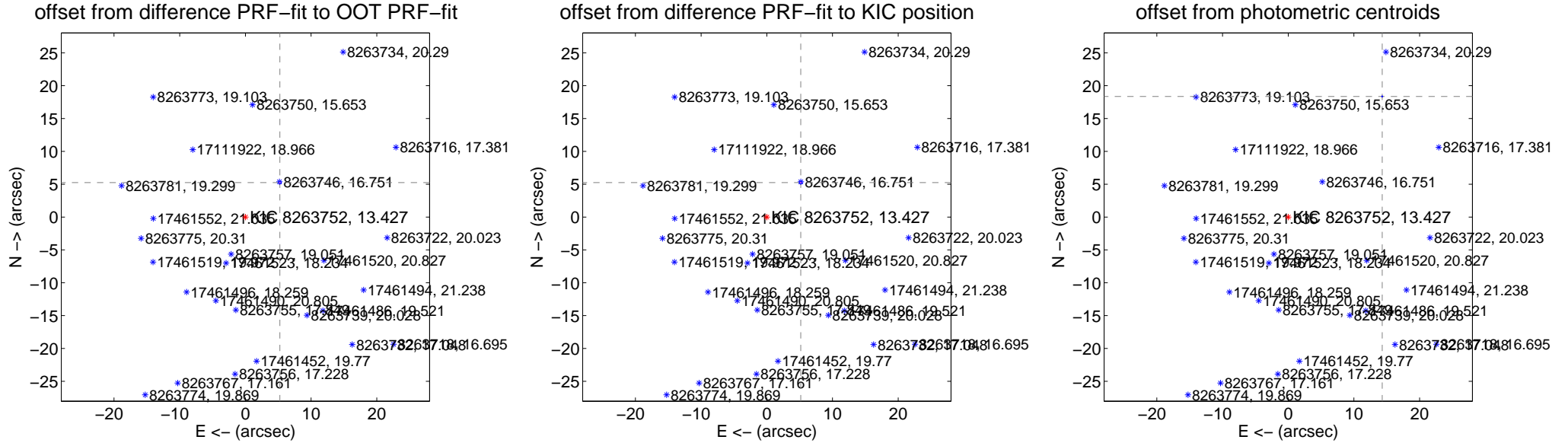
## DV Centroid Data

Supplemental centroid analysis for 008263752-01. Kepler magnitude: 13.43. Transit SNR 277.60

There are 17 quarters with good PRF difference image offsets

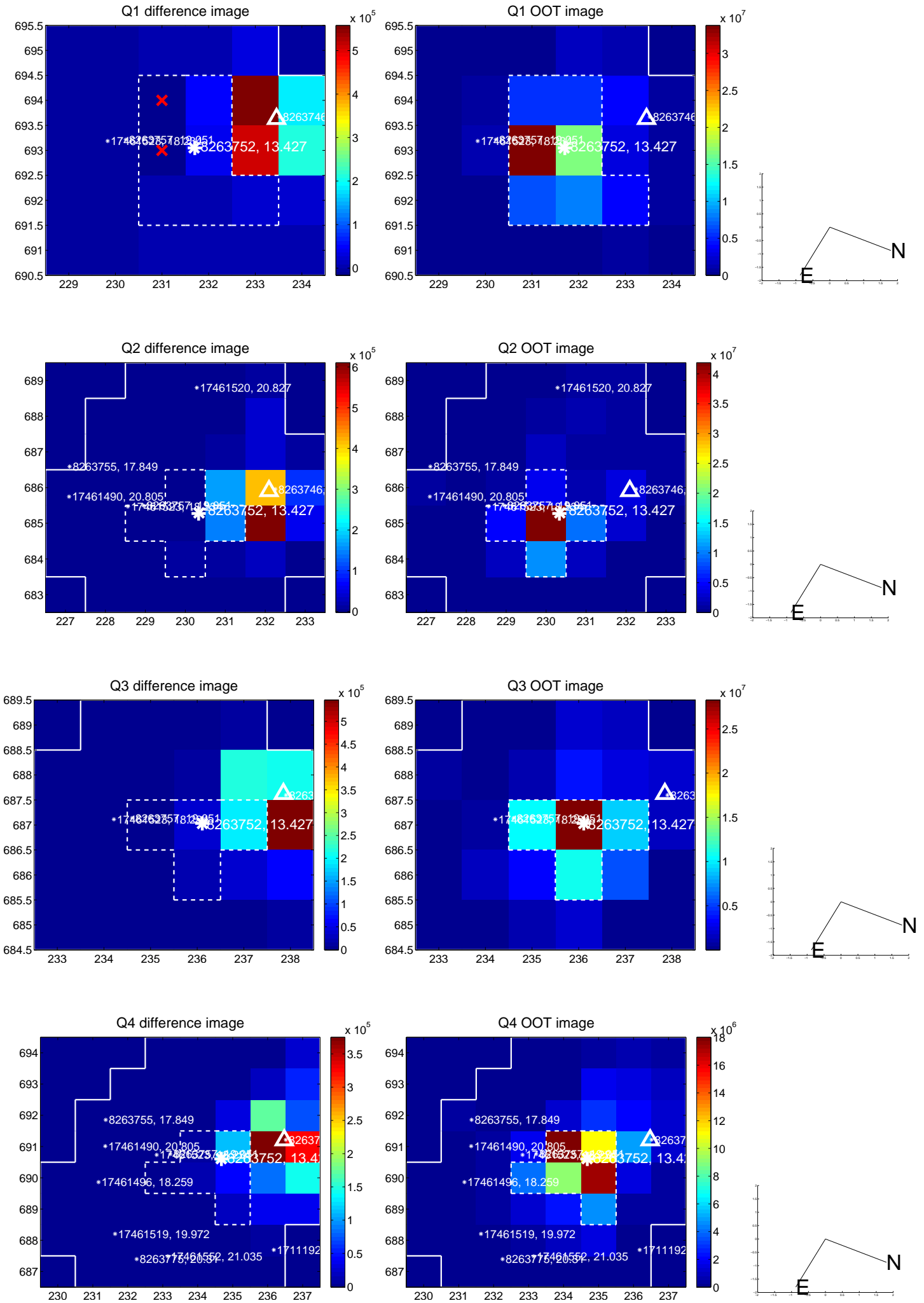
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

|   | Distance in arcsec                  | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | <b>7.423 <math>\pm</math> 0.071</b> | <b>103.90</b>       | -5.248 $\pm$ 0.070 | 5.250 $\pm$ 0.073 |
| PRF-fit source offset from KIC position | <b>7.371 <math>\pm</math> 0.074</b> | <b>100.23</b>       | -5.172 $\pm$ 0.068 | 5.252 $\pm$ 0.074 |
| photometric centroid source offset      | <b>23.28 <math>\pm</math> 0.03</b>  | <b>808.62</b>       | -14.31 $\pm$ 0.03  | 18.36 $\pm$ 0.03  |



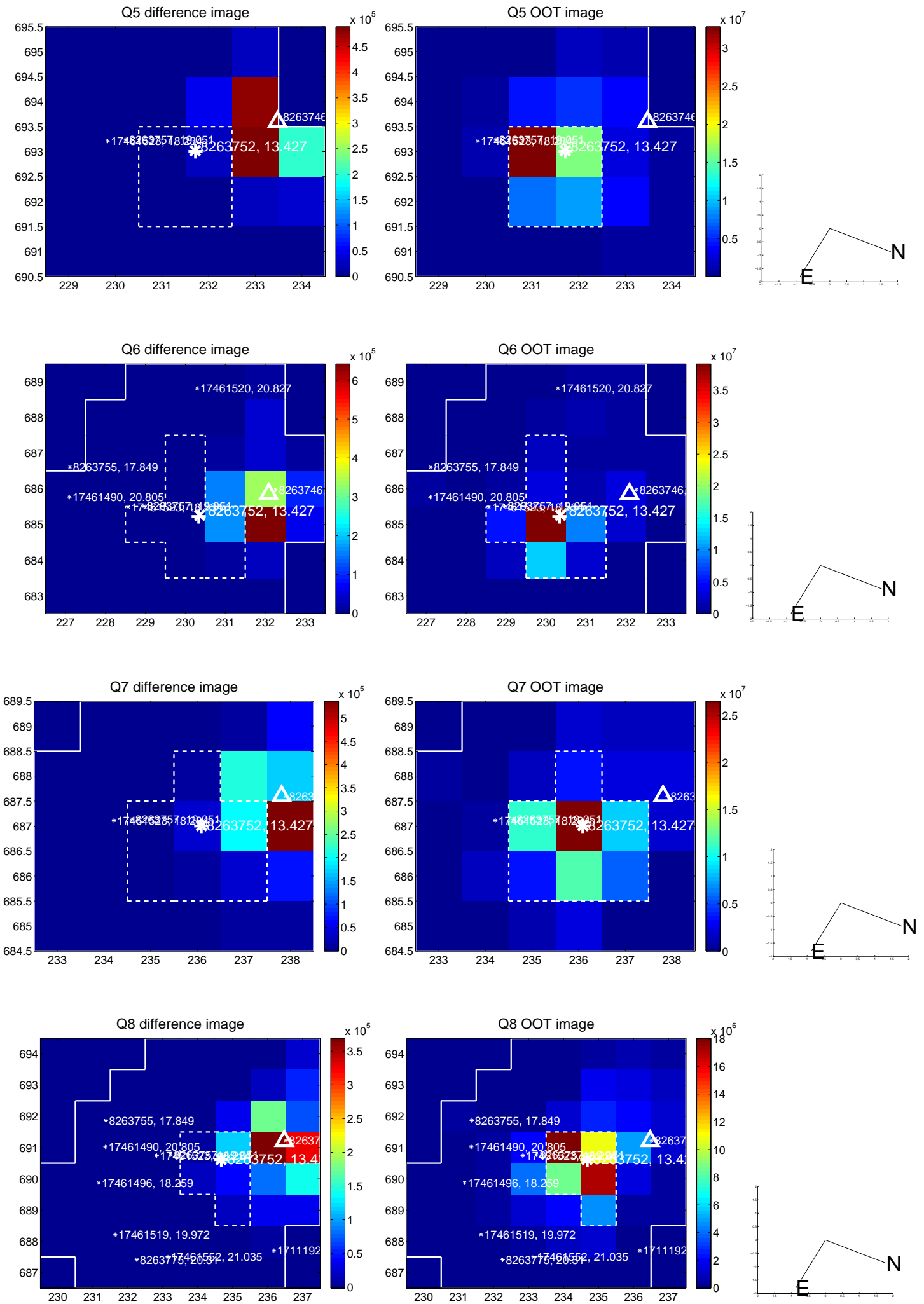
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

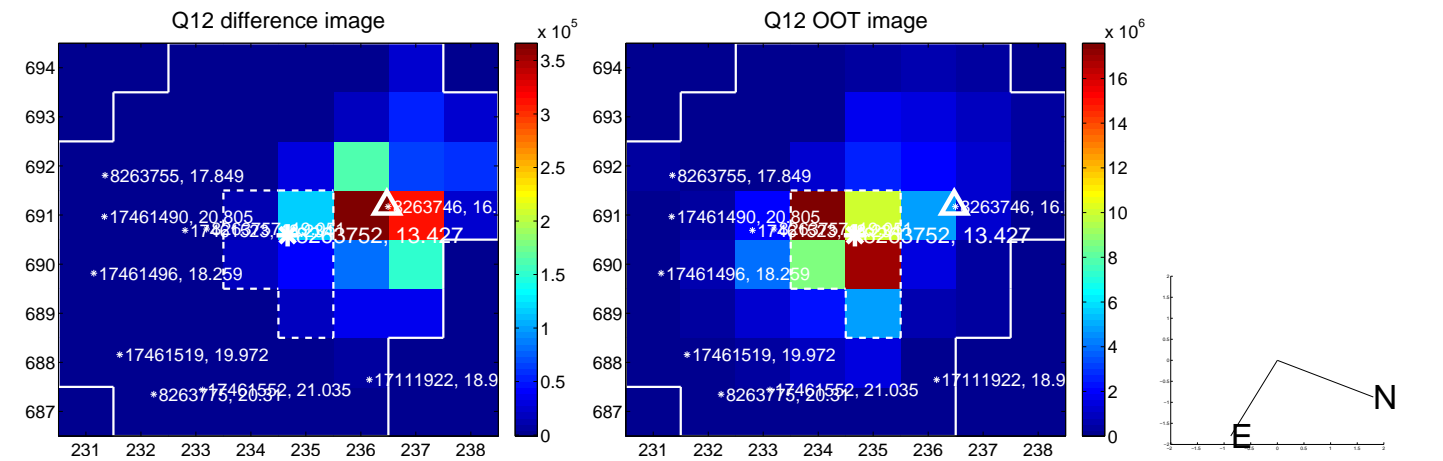
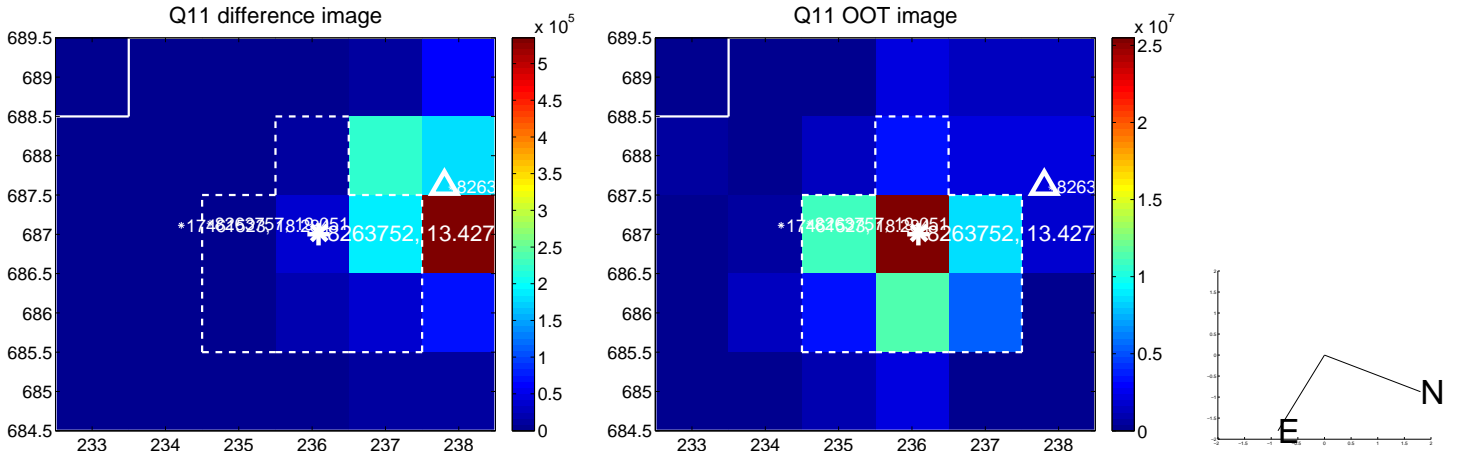
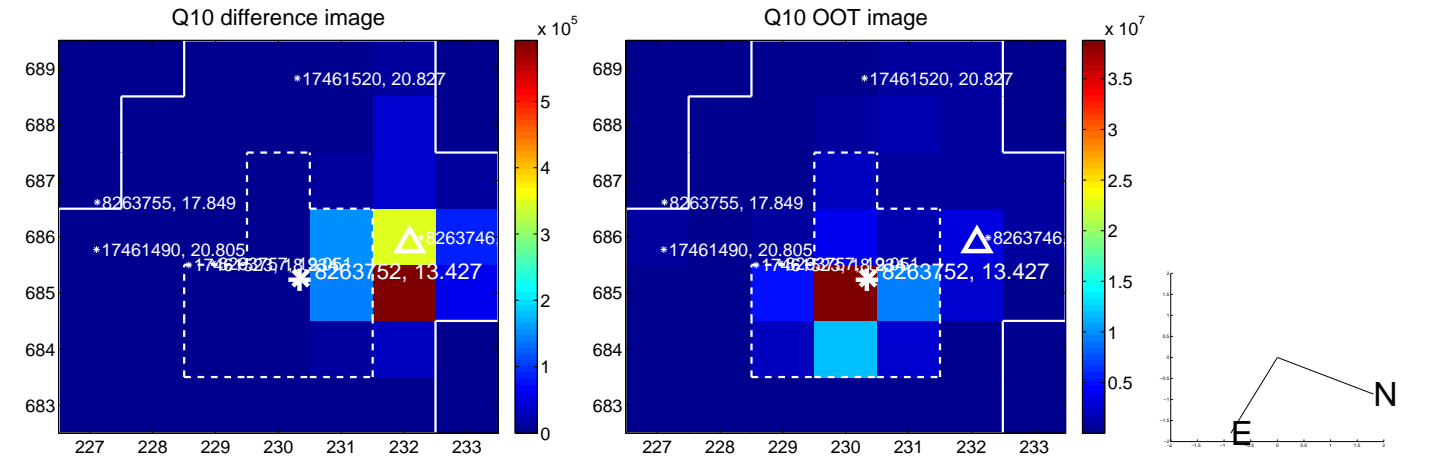
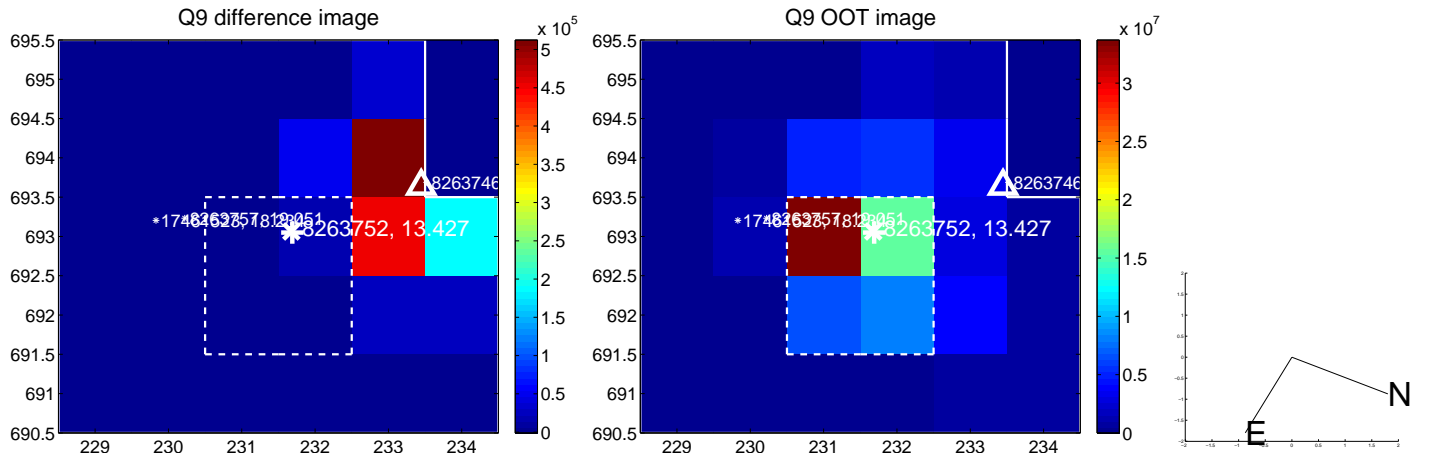




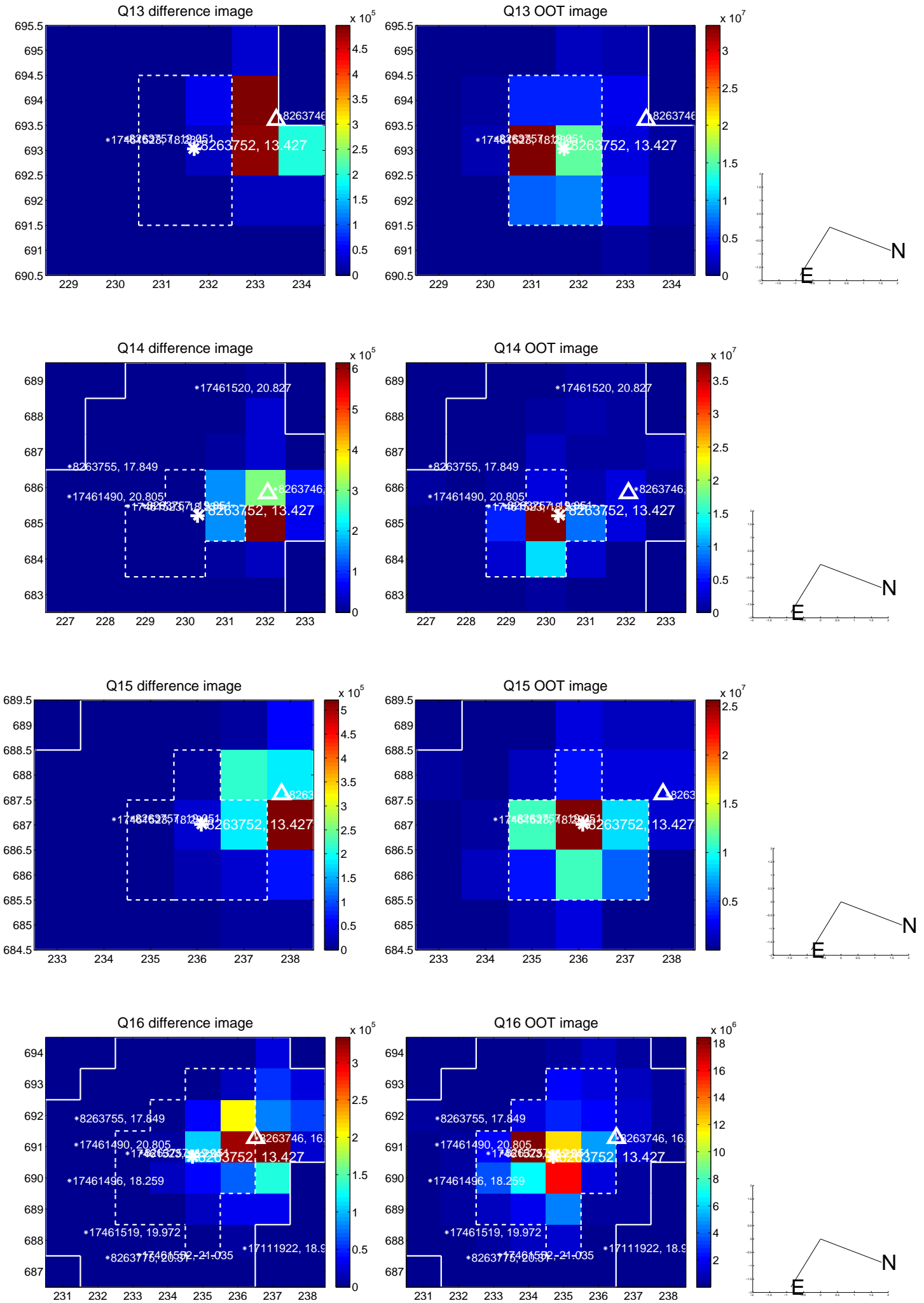
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



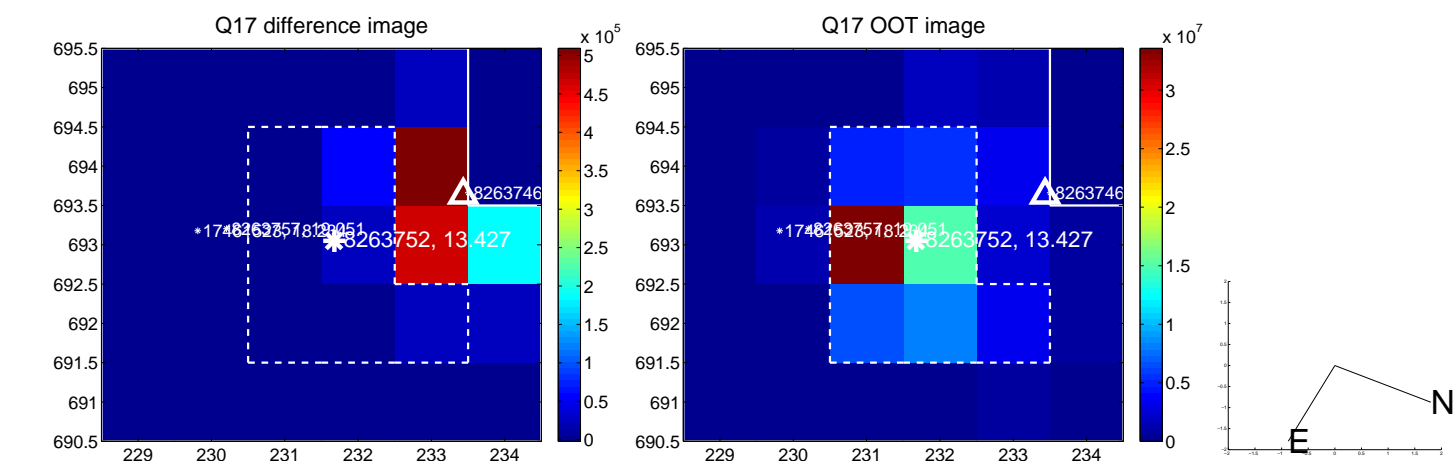
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



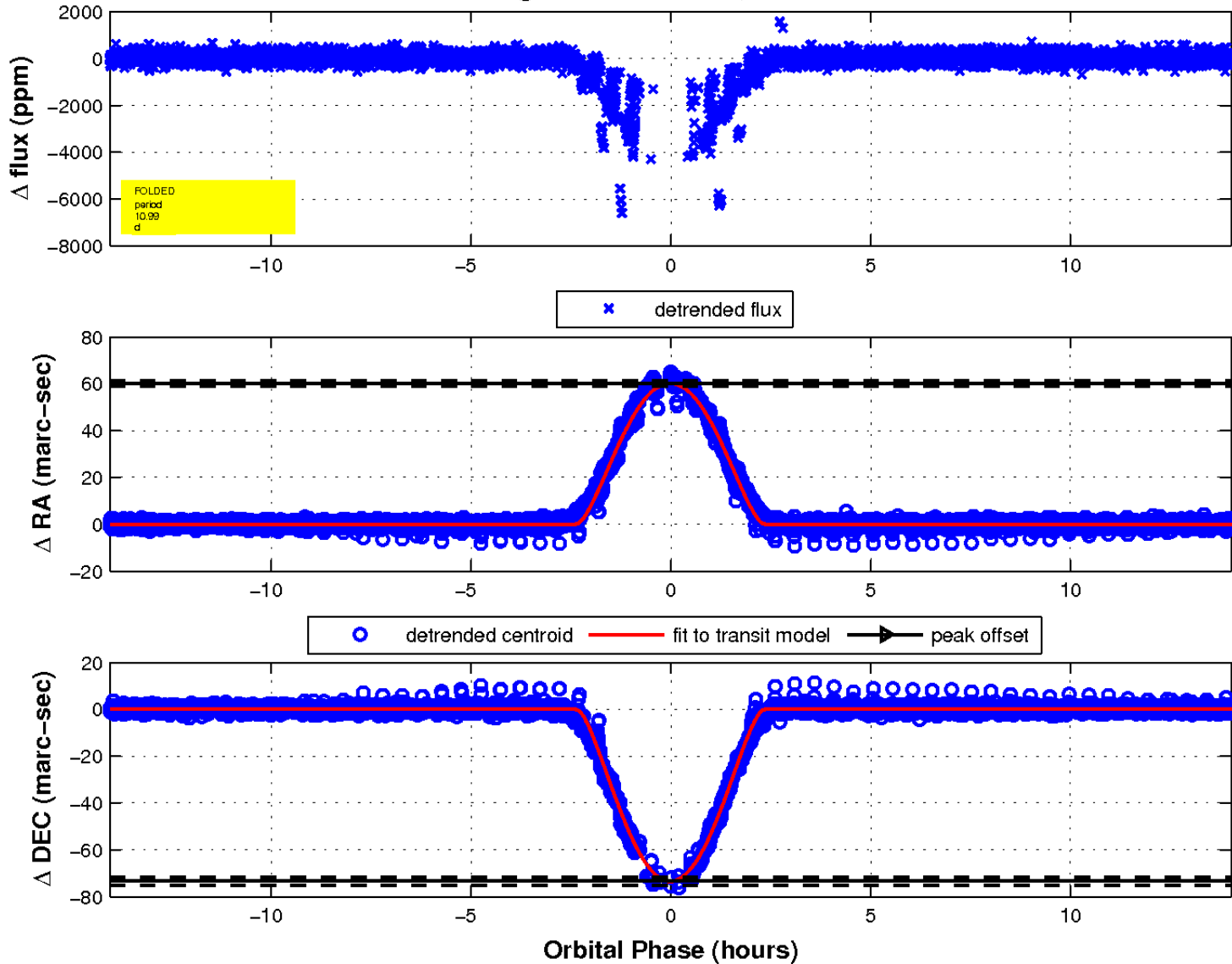
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

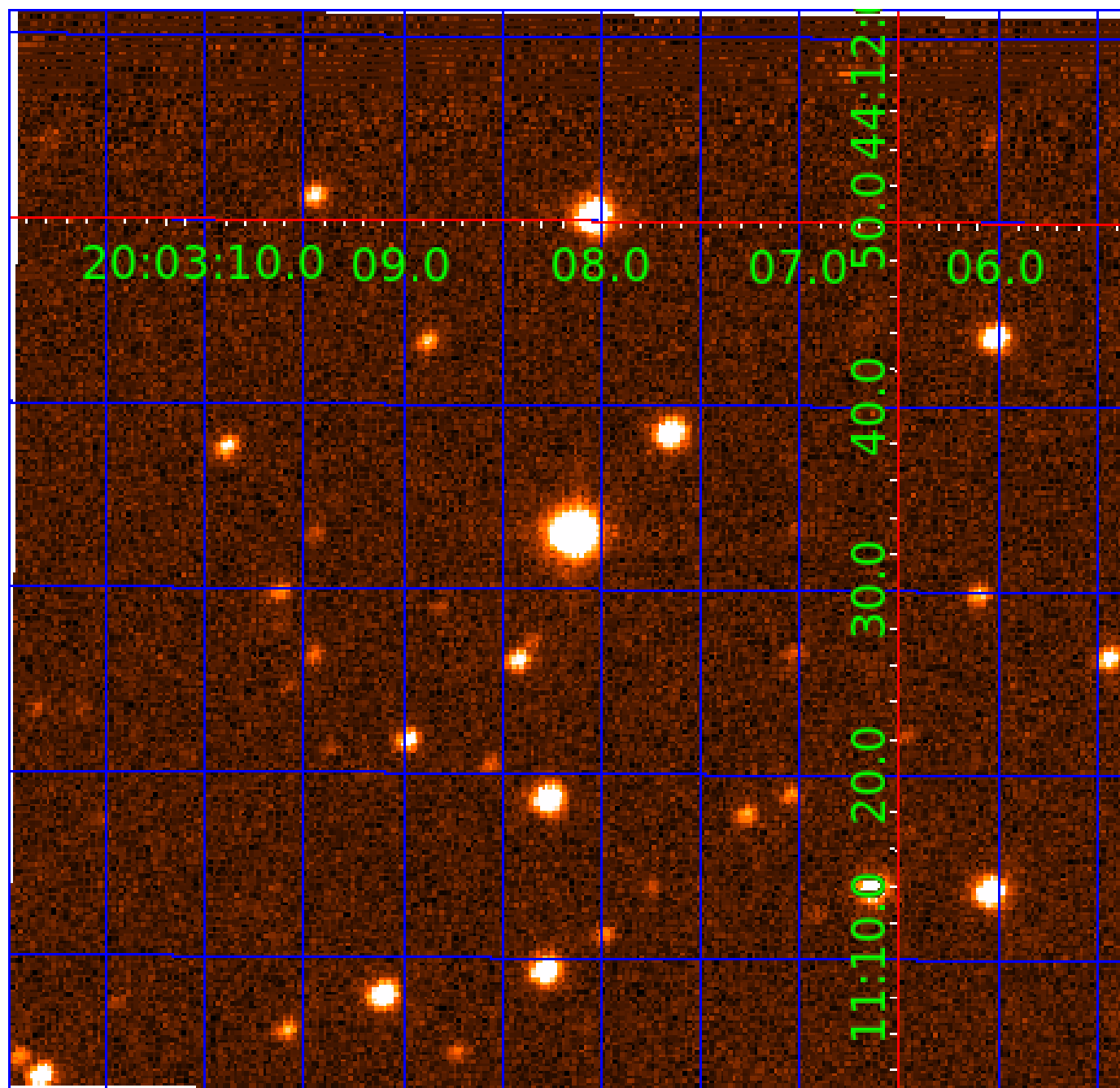


fluxWeightedCentroids, Planet 1 of 2



# UKIRT Image

Declination



# KIC 008263752

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263752-01 | OBS      | 3338.02 | 10.993824     | 138.806080   | 3969.2      | 4.678            | 415.9 | 277.6 | 1.16                        | 6553            | 13.20                  | 217.11                 |
| 008263752-02 | OBS      | 3338.01 | 10.993856     | 133.250997   | 2238.8      | 3.582            | 203.5 | 164.2 | 1.16                        | 6553            | 10.10                  | 217.11                 |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263752-01 | OBS      | FP   | 0.00  | 0 | 1 | 1 | 1 | MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH |
| 008263752-02 | OBS      | FP   | 0.00  | 1 | 1 | 1 | 1 | IS_SEC_TCE—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.

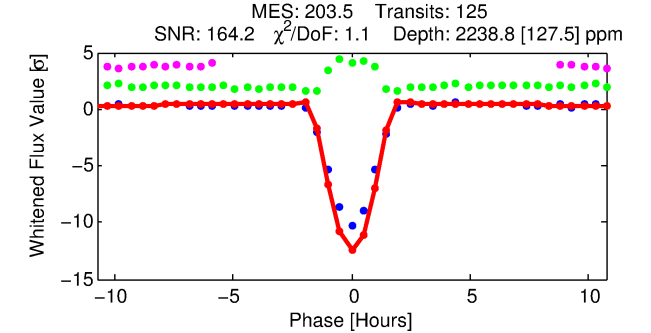
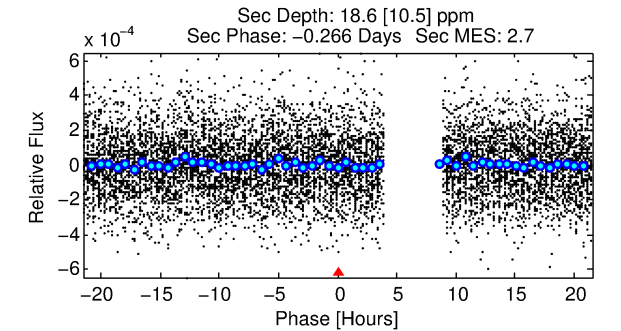
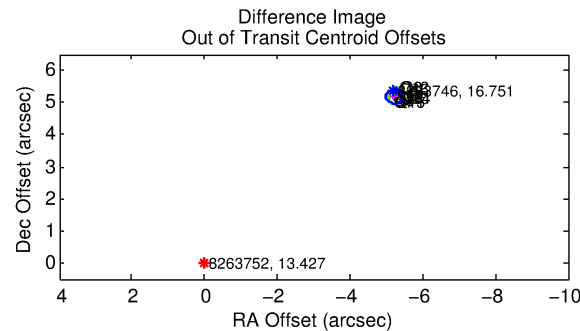
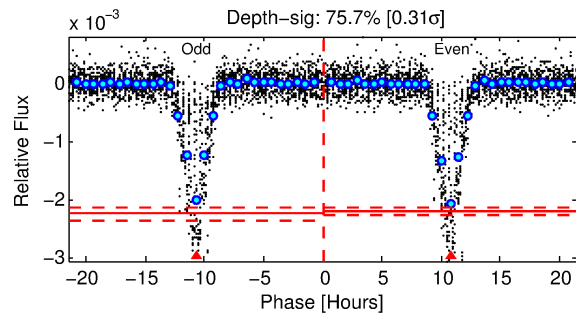
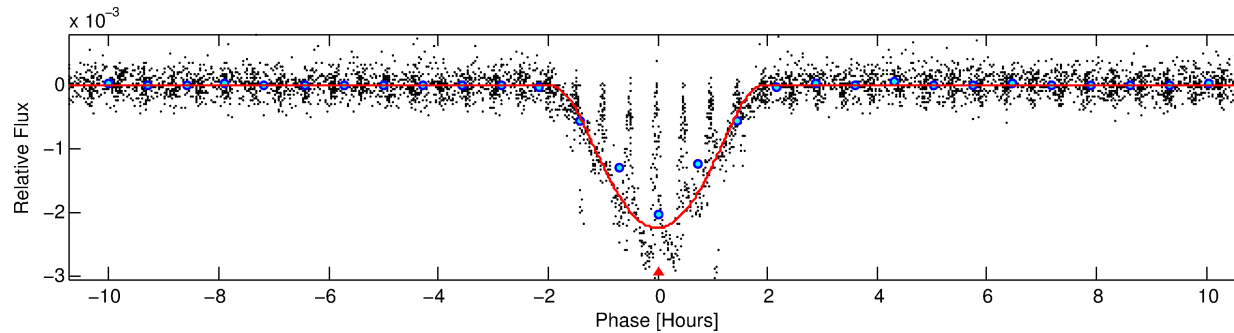
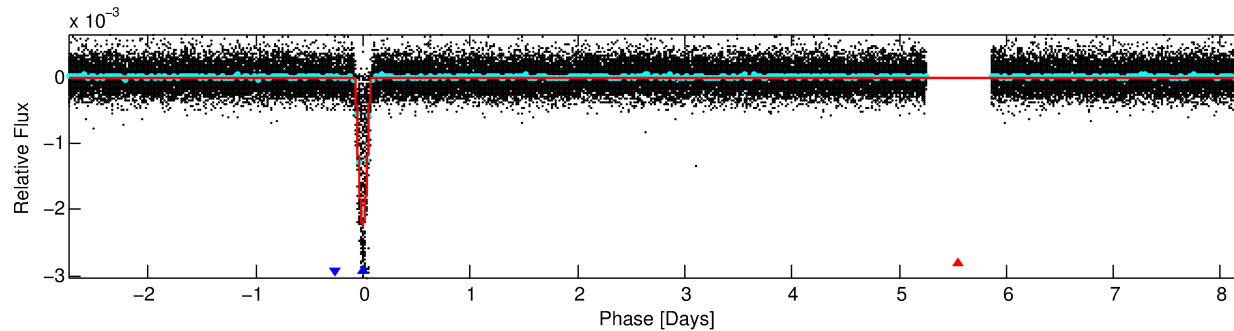
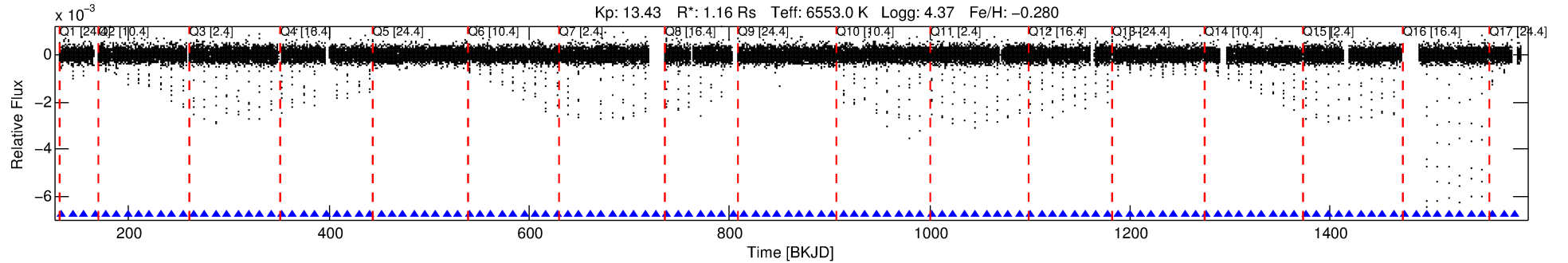
## Ephemeris Match Information For 008263752-02

| TCE (1)      | KIC     | Parent (2)   | Parent KIC | $P_1:P_2$ | Dist ( $''$ ) | $\Delta$ Row | $\Delta$ Col | $m_2$ | $m_1$ | $D_2/D_1$ | Mechanism  | Flag | $\sigma_P$ | $\sigma_T$ |
|--------------|---------|--------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|------------|------|------------|------------|
| 008263752-02 | 8263752 | 008263746-02 | 8263746    | 1:1       | 7.4           | 0            | -1           | 16.75 | 13.43 | 89.55     | Direct-PRF | 0    | 0.10       | 0.07       |

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8263752 Candidate: 2 of 2 Period: 10.994 d  
KOI: K03338.01 Corr: 0.954



## DV Fit Results:

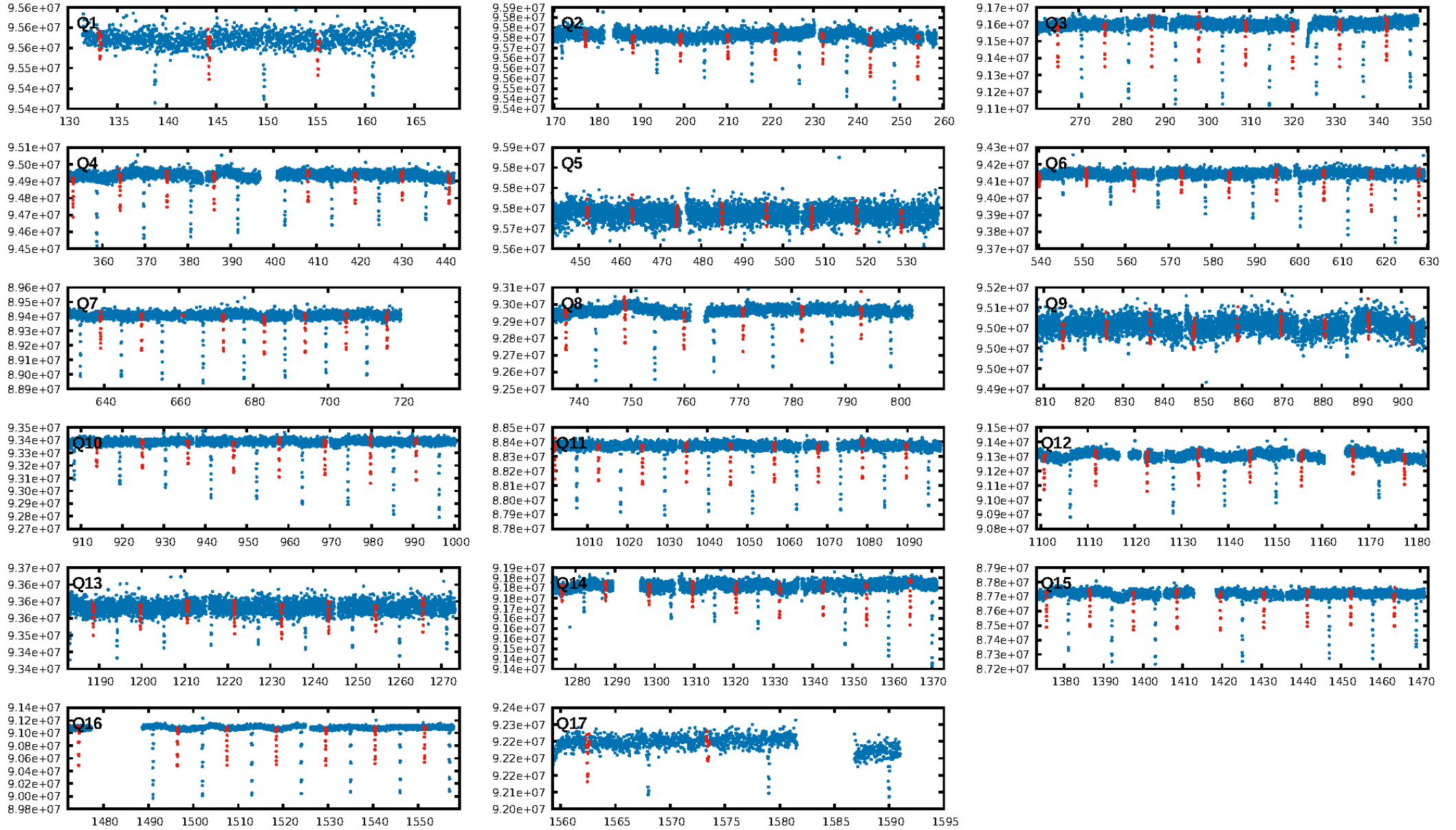
Period = 10.99386 [0.00001] d  
Epoch = 133.2510 [0.0004] BKJD  
Rp/R\* = 0.0800 [0.0185]  
a/R\* = 9.62 [0.48]  
b = 1.00 [0.02]  
Seff = 217.11 [88.90]  
Teq = 979 [100] K  
Rp = 10.10 [4.02] Re  
a = 0.1009 [0.0272] AU  
Ag = 1.02 [0.85] [0.03 $\sigma$ ]  
Teff = 1522 [282] K [1.81 $\sigma$ ]

## DV Diagnostic Results:

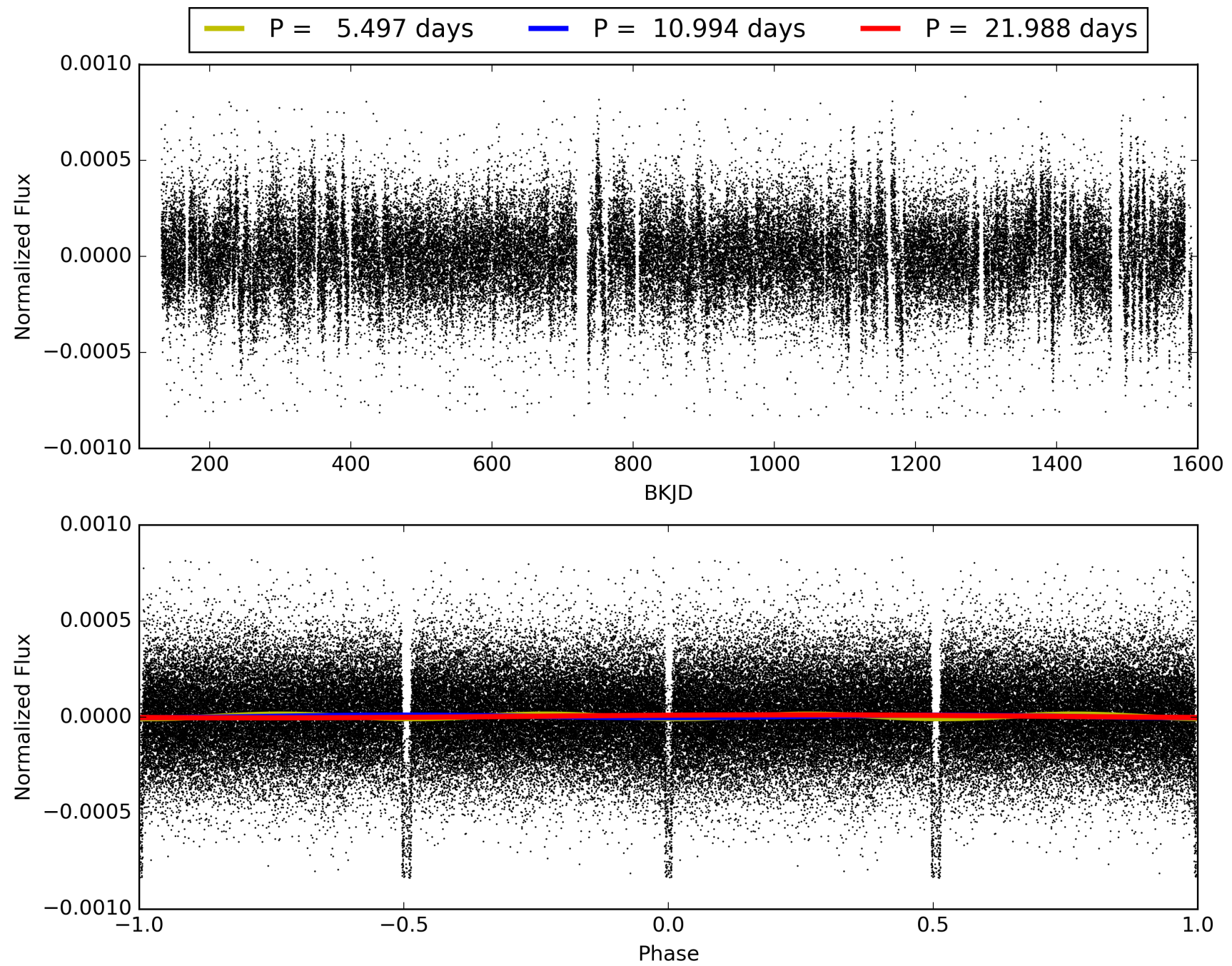
ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [120/120]  
GhostDiagnostic-chr: -0.2954  
Centroid-sig: 0.0%  
Centroid-so: 22.344 arcsec [401.51 $\sigma$ ]  
OotOffset-rm: 7.350 arcsec [97.94 $\sigma$ ]  
KicOffset-rm: 7.294 arcsec [96.36 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]



# TCE 008263752-02, PDC Light Curves

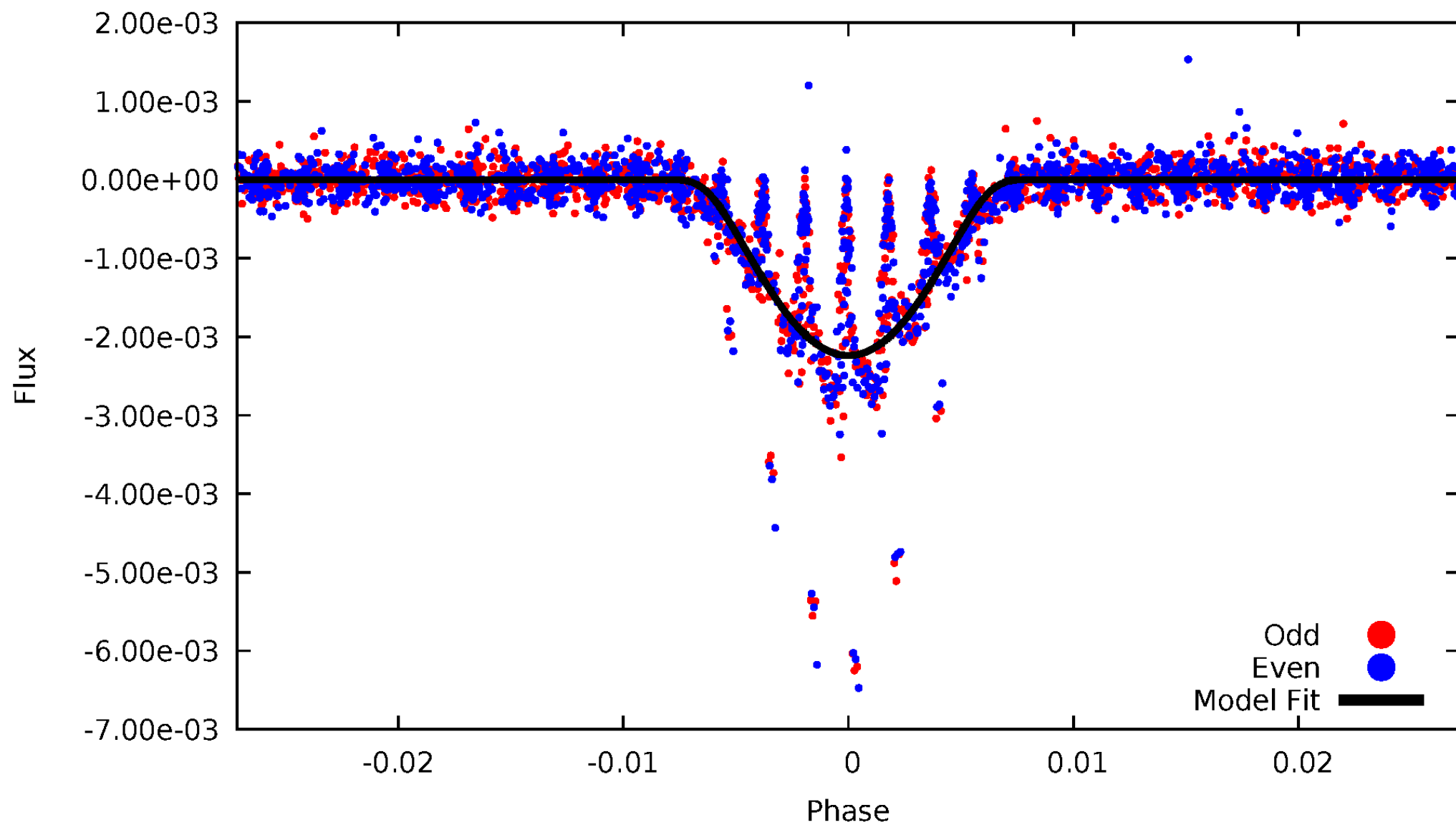


TCE 008263752-02



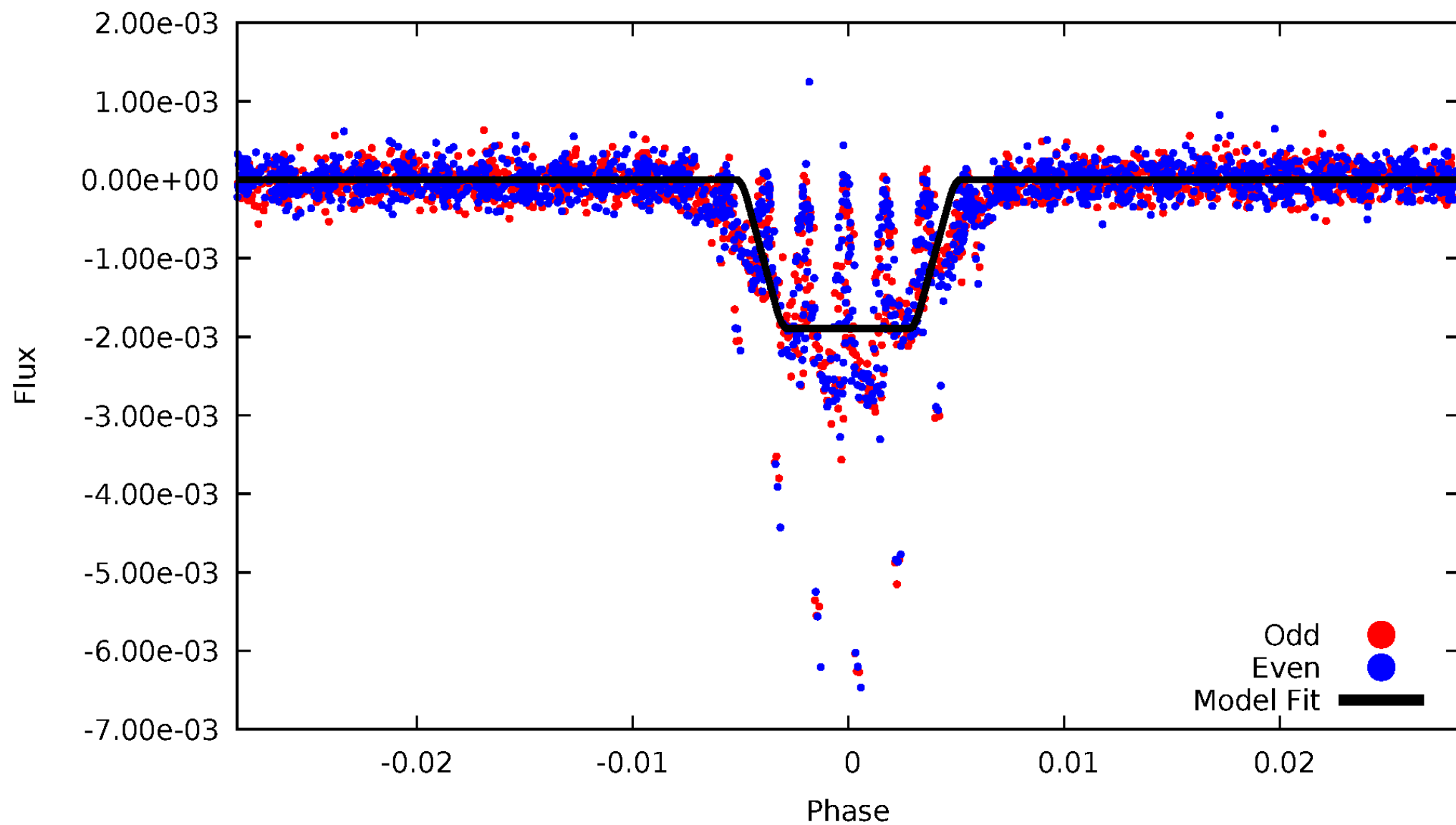
# DV Odd/Even

TCE 008263752-02



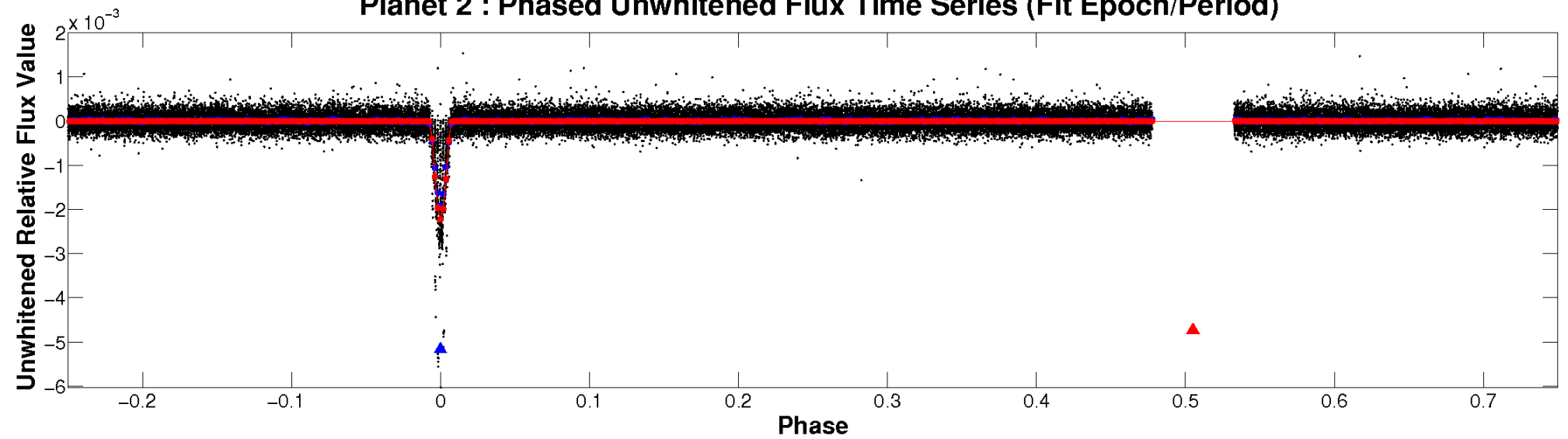
# ALT Odd/Even

TCE 008263752-02

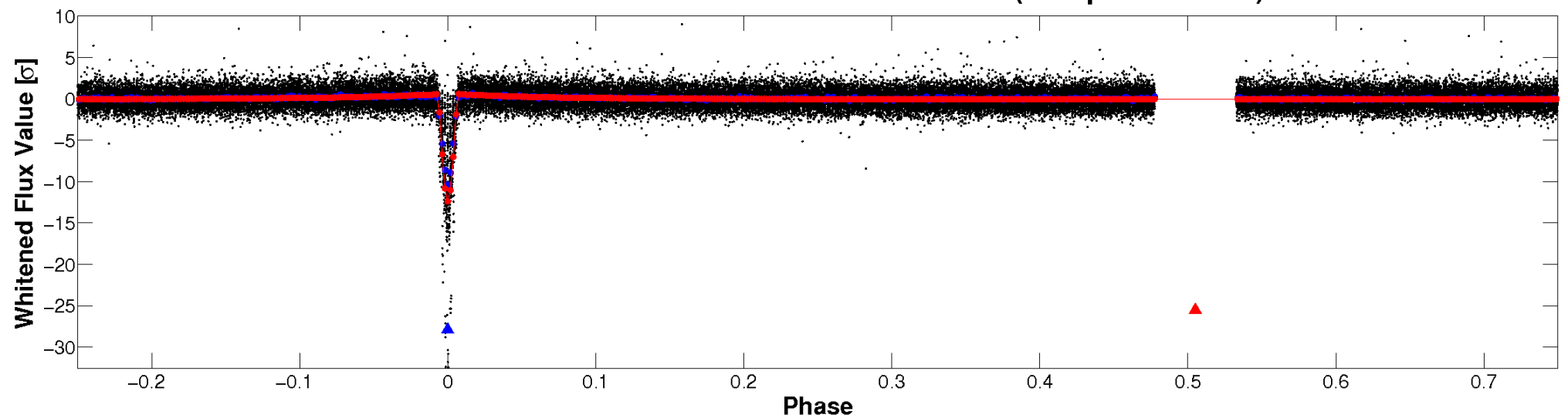


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

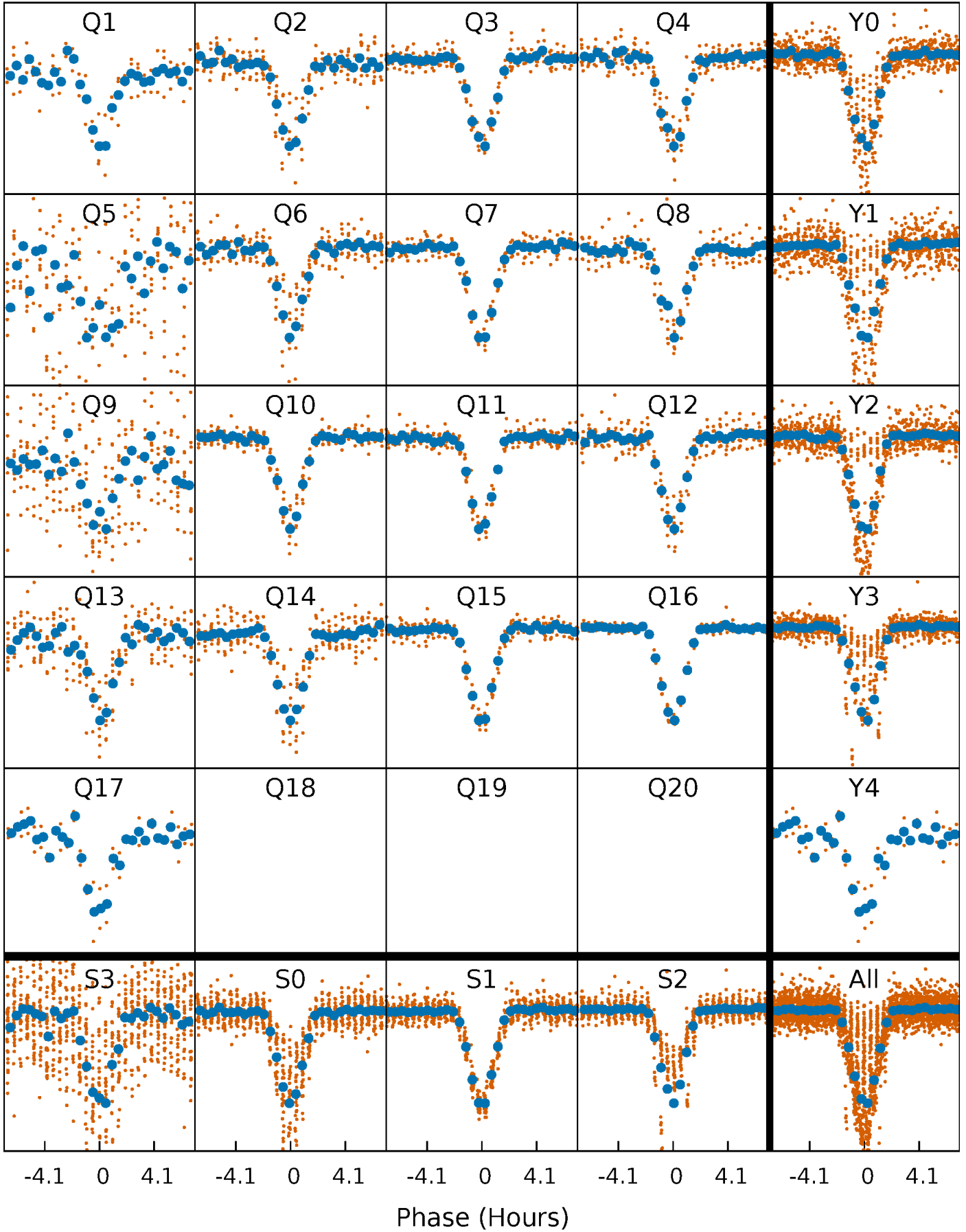


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



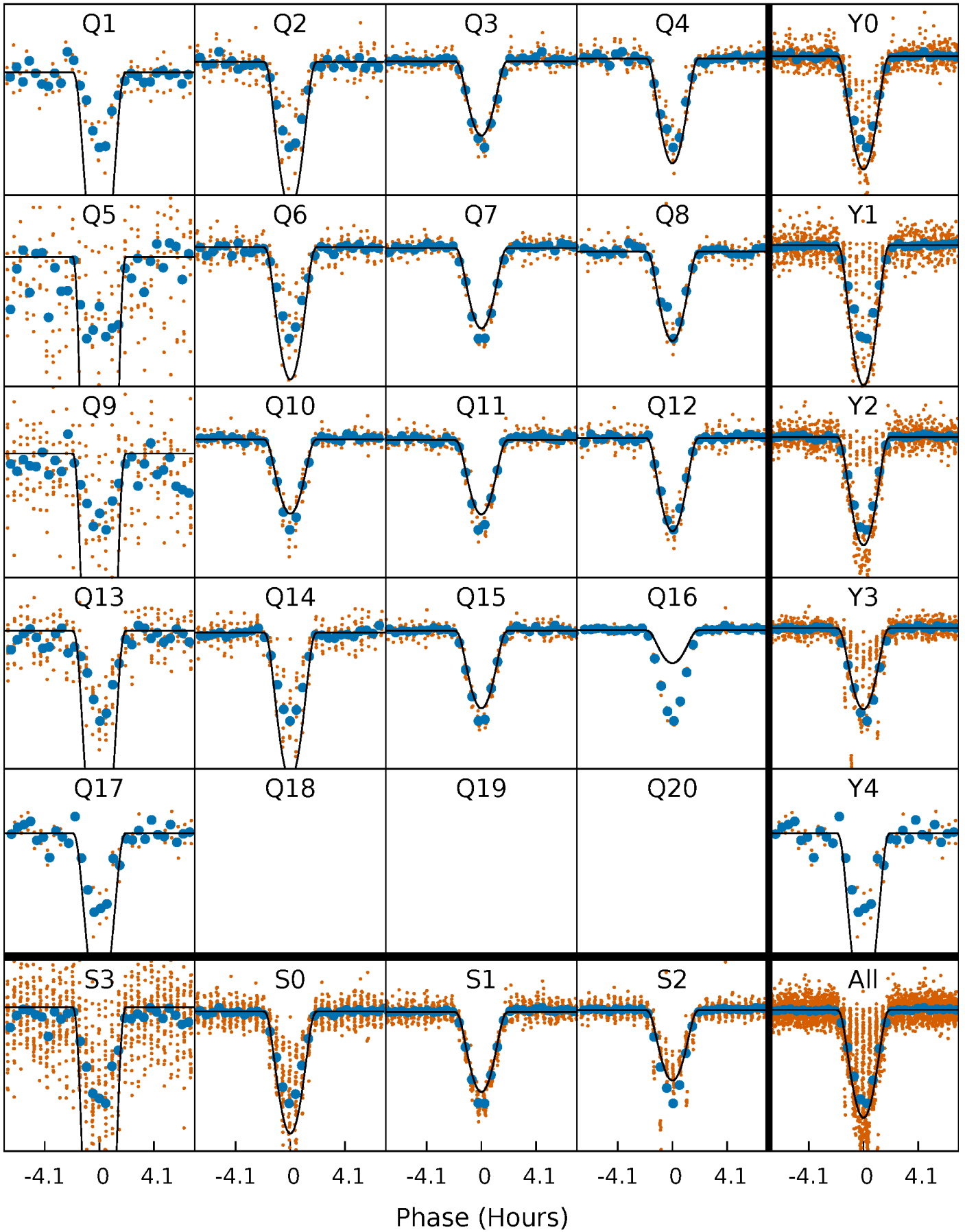
# PDC Quarter-Phased Transit Curves

TCE 008263752-02     $P = 10.993856$  Days     $T_0 = 133.250997$  (BKJD)



# DV Quarter-Phased Transit Curves

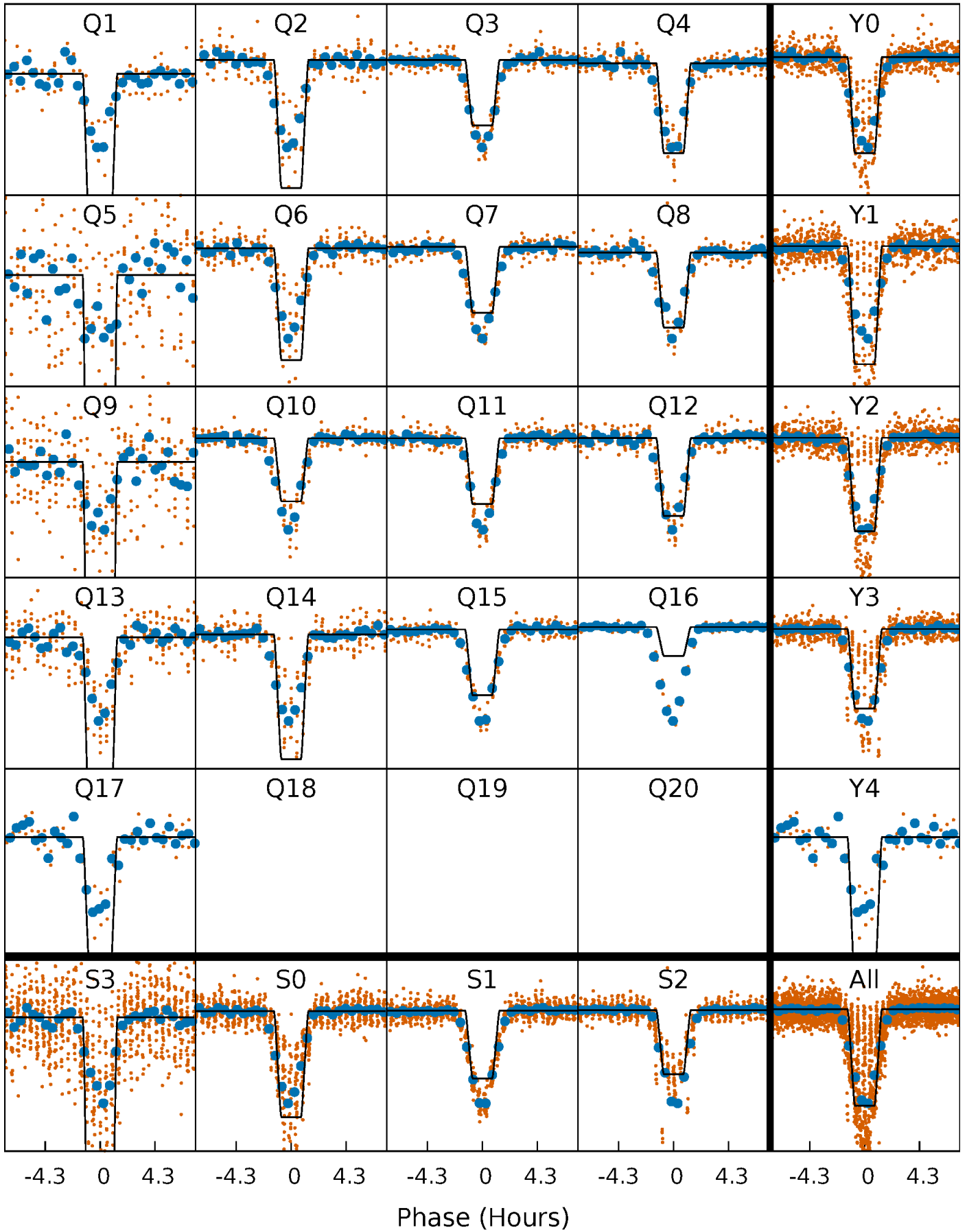
TCE 008263752-02     $P = 10.993856$  Days     $T_0 = 133.250997$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

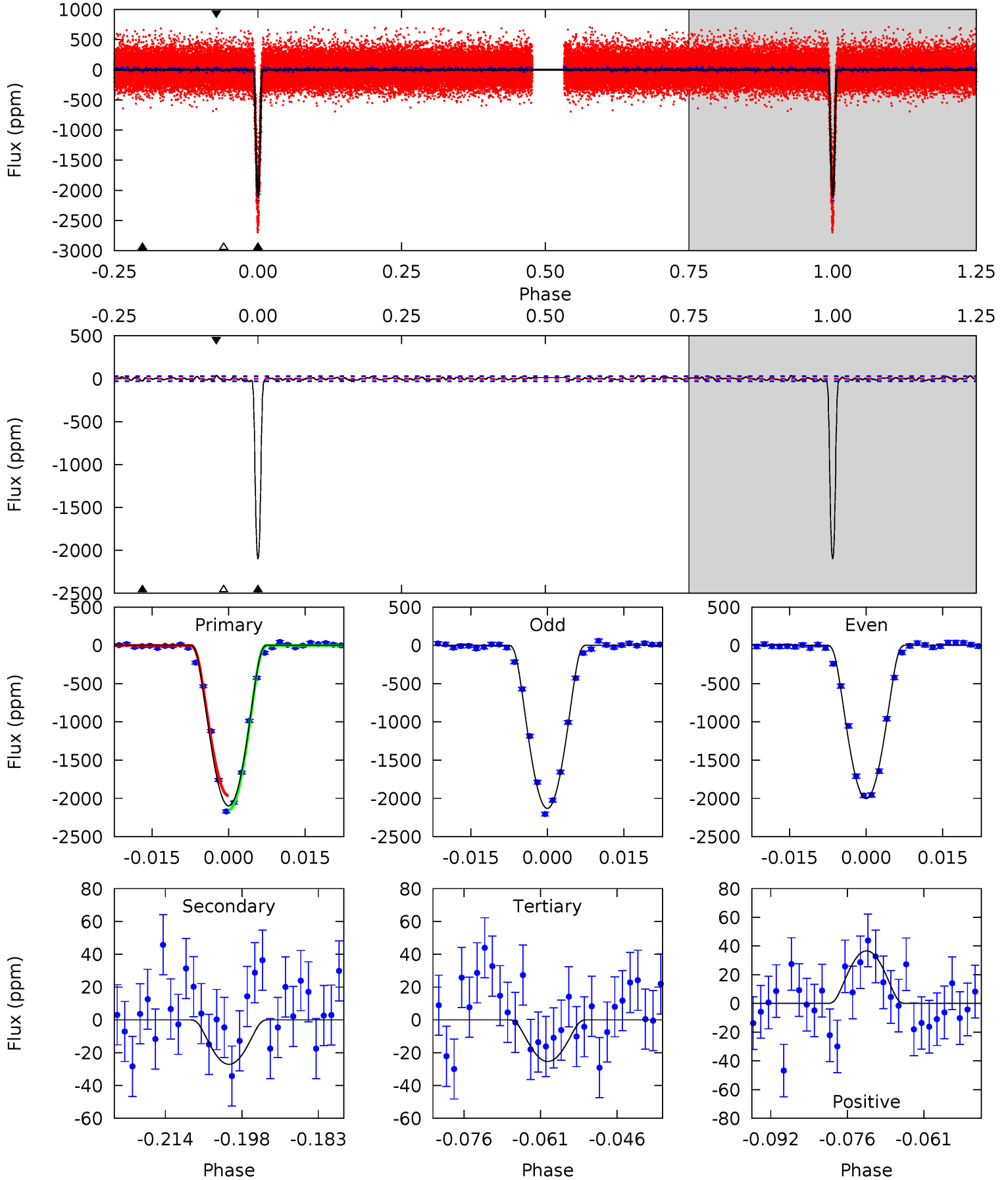
TCE 008263752-02 P= 10.993828 Days  $T_0=133.253234$  (BKJD)



# DV Model-Shift Uniqueness Test

008263752-02, P = 10.993856 Days, E = 122.257141 Days

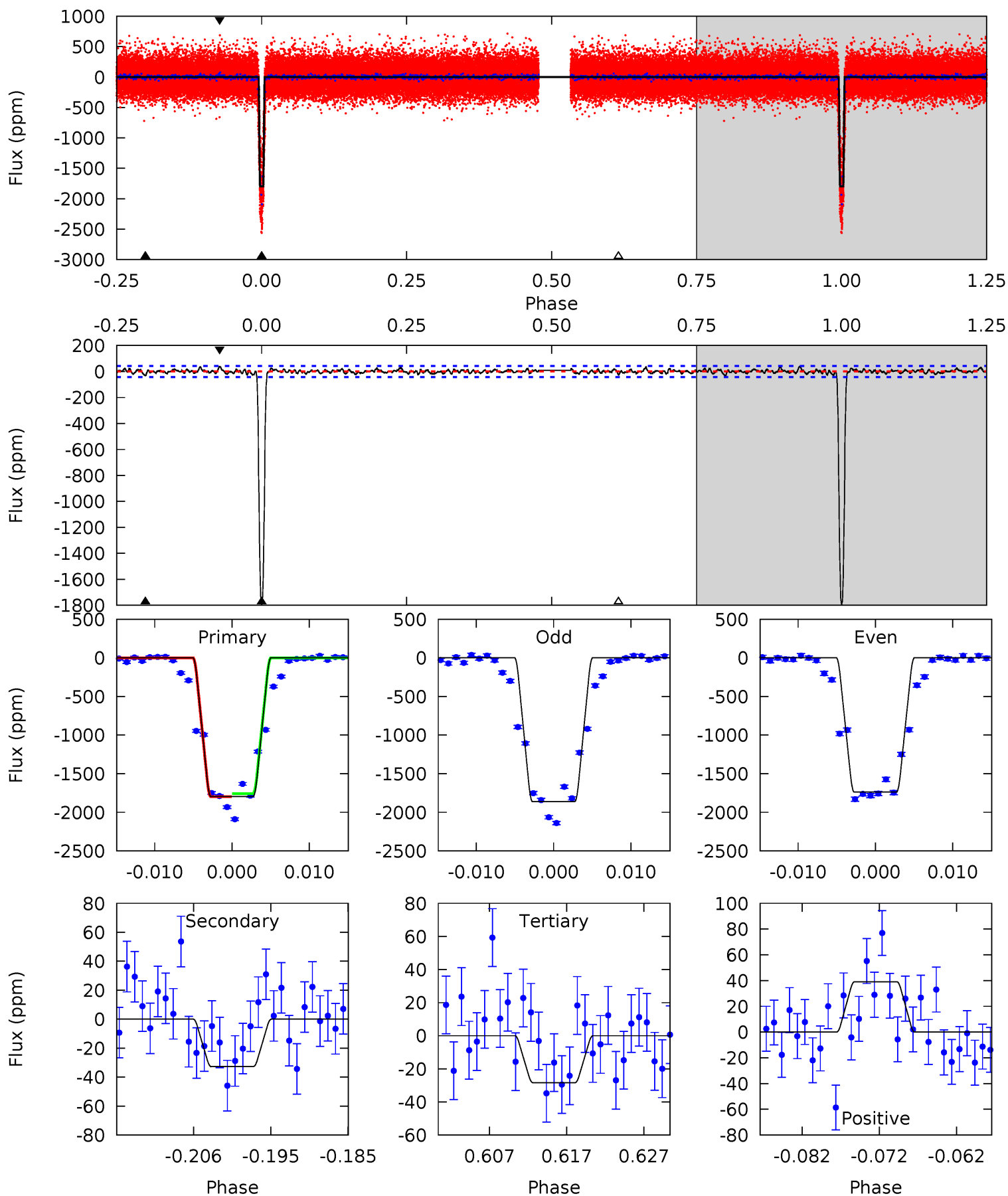
| Pri   | Sec  | Ter  | Pos  | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 348.8 | 4.51 | 4.22 | 6.09 | 4.94            | 2.43            | 1.83             | 344.6   | 342.7   | 0.28    | -1.58   | 10.5    | 0.92 | 0.02  | 0   |



# Alt Model-Shift Uniqueness Test

008263752-02, P = 10.993828 Days, E = 122.259406 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 |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 210.1 | 3.82 | 3.32 | 4.58 | 5.02            | 2.57            | 1.23             | 206.8   | 205.6   | 0.51    | -0.75   | 7.02    | 0.91 | 0.02  | 0   |



### Stellar Parameters For KIC 008263752

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $6553^{+148}_{-214}$ | $4.366^{+0.070}_{-0.210}$ | $-0.280^{+0.250}_{-0.300}$ | $1.157^{+0.375}_{-0.150}$ | $1.136^{+0.178}_{-0.146}$ | $1.035^{+0.391}_{-0.547}$                 |
|        | +2%/-3%              | +2%/-5%                   | +89%/-107%                 | +32%/-13%                 | +16%/-13%                 | +38%/-53%                                 |
| 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 008263752-02 / KOI 3338.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$      | $T_{max} (K)$       | $T_{obs} (K)$        | $A_{obs}$                  |
|---------|-------------|-------------------------|---------------------|----------------------|----------------------------|
| DV      | $-27 \pm 6$ | $10.45^{+2.73}_{-2.48}$ | $1387^{+104}_{-74}$ | $2435^{+216}_{-195}$ | $1.339^{+1.046}_{-0.553}$  |
| Alt.    | $-33 \pm 9$ | $5.97^{+2.48}_{-2.42}$  | $1390^{+99}_{-68}$  | $2953^{+567}_{-281}$ | $4.907^{+10.156}_{-2.499}$ |

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

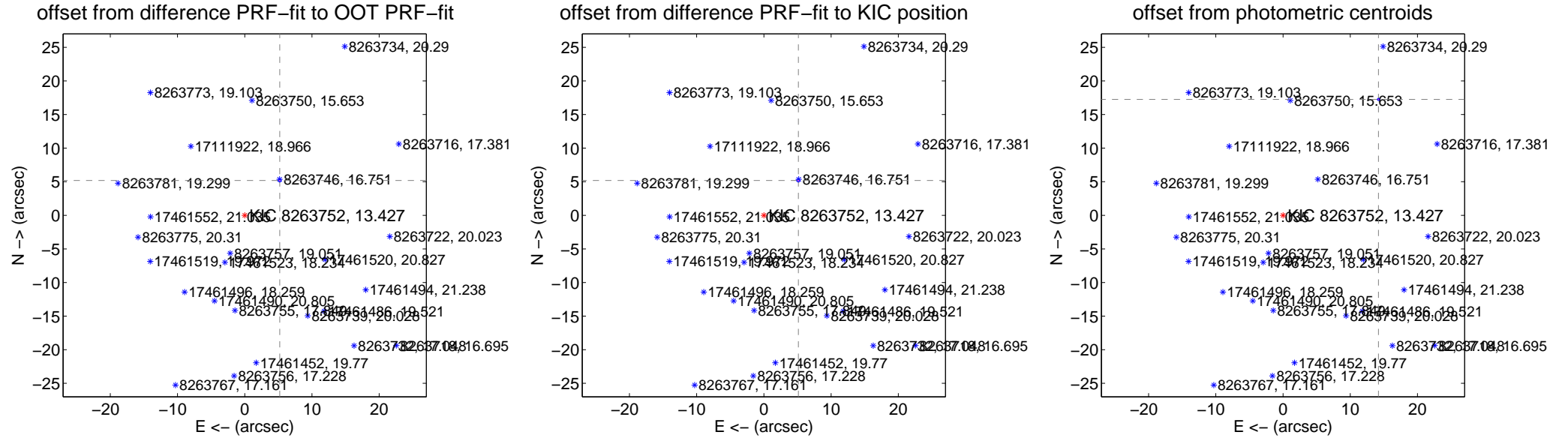
## DV Centroid Data

Supplemental centroid analysis for 008263752-02. Kepler magnitude: 13.43. Transit SNR 164.20

There are 17 quarters with good PRF difference image offsets

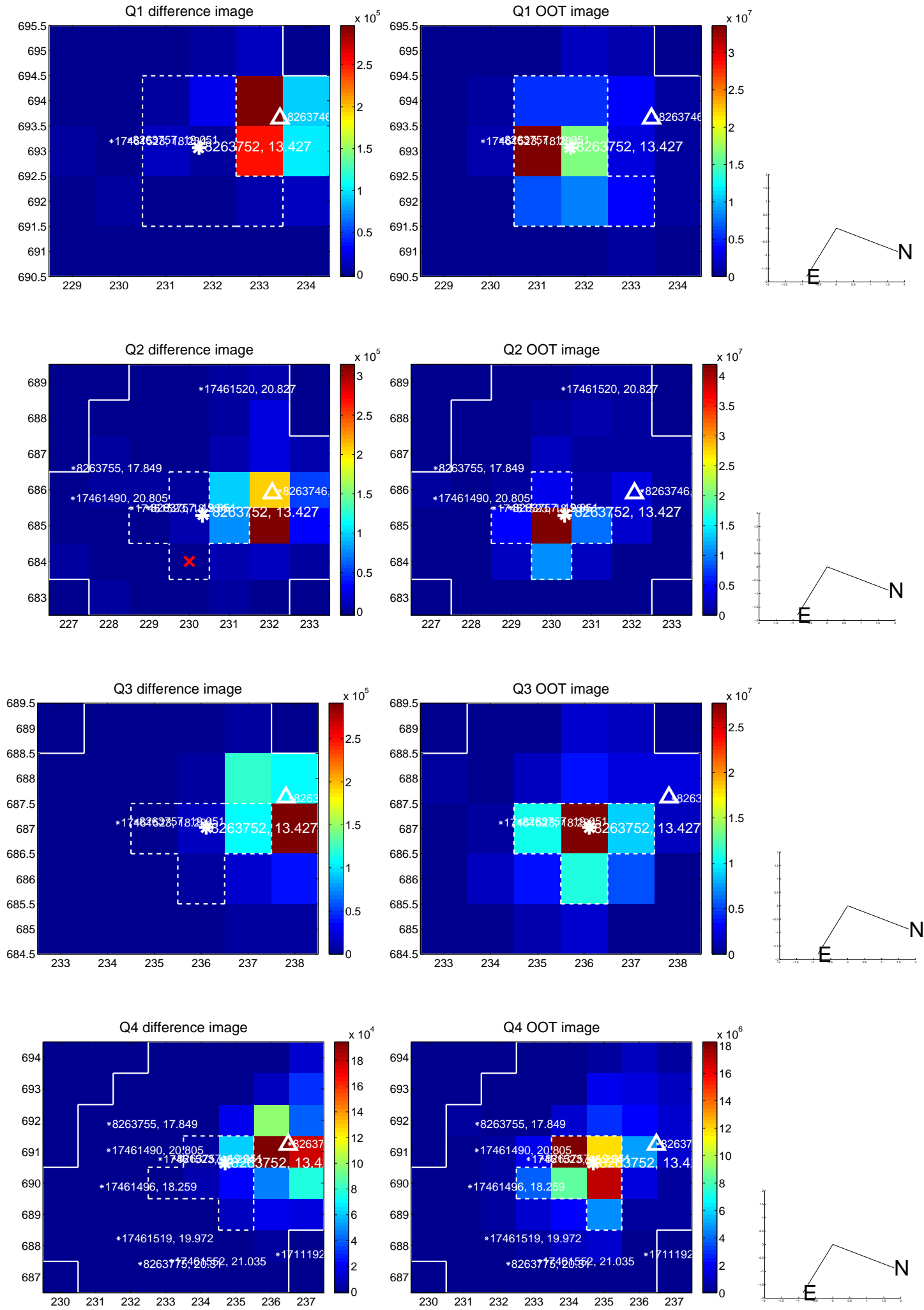
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

|   | Distance in arcsec                  | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | <b>7.350 <math>\pm</math> 0.075</b> | <b>97.94</b>        | -5.207 $\pm$ 0.070 | 5.187 $\pm$ 0.075 |
| PRF-fit source offset from KIC position | <b>7.294 <math>\pm</math> 0.076</b> | <b>96.36</b>        | -5.127 $\pm$ 0.069 | 5.189 $\pm$ 0.077 |
| photometric centroid source offset      | <b>22.34 <math>\pm</math> 0.06</b>  | <b>401.51</b>       | -14.20 $\pm$ 0.06  | 17.25 $\pm$ 0.06  |

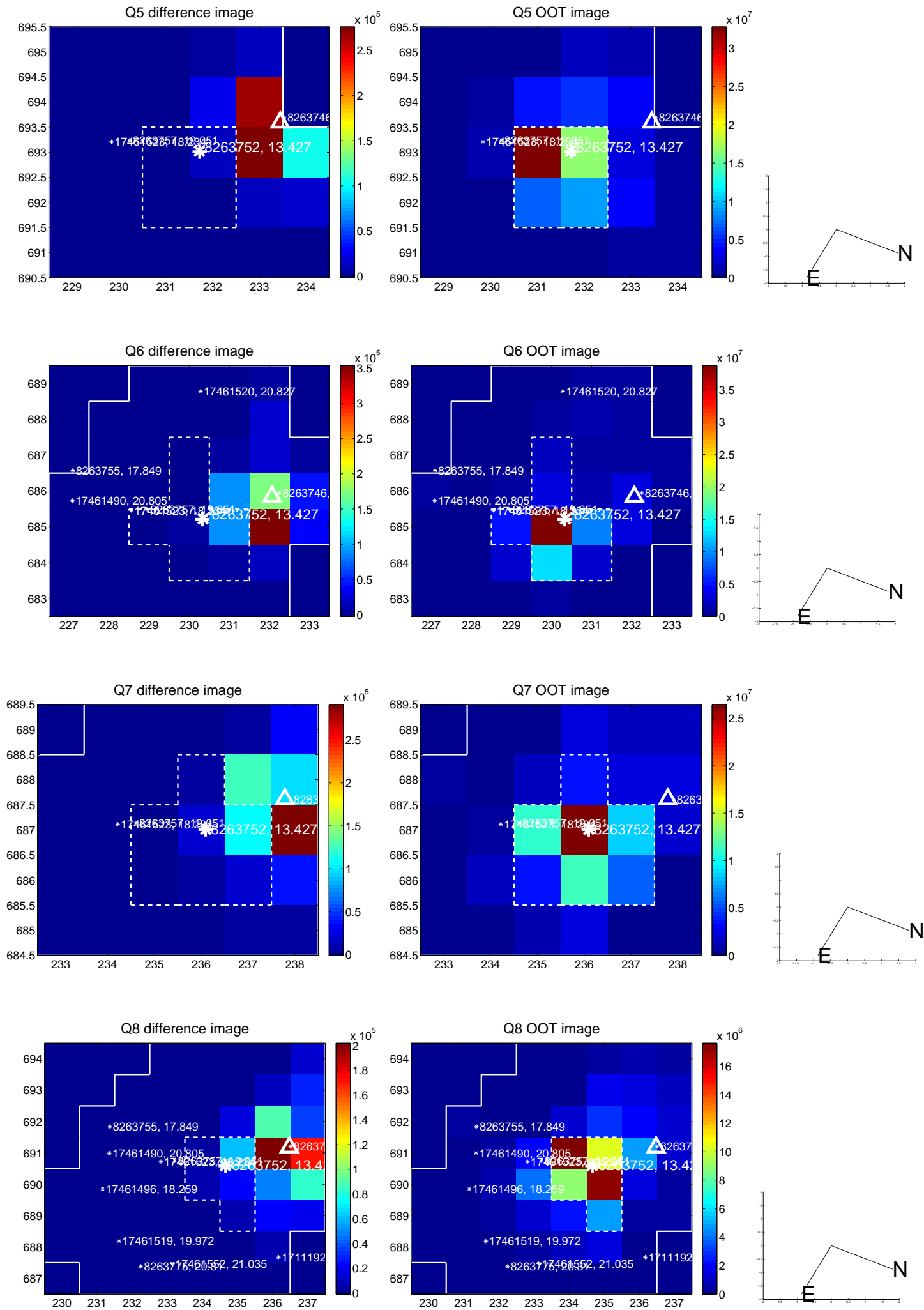


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

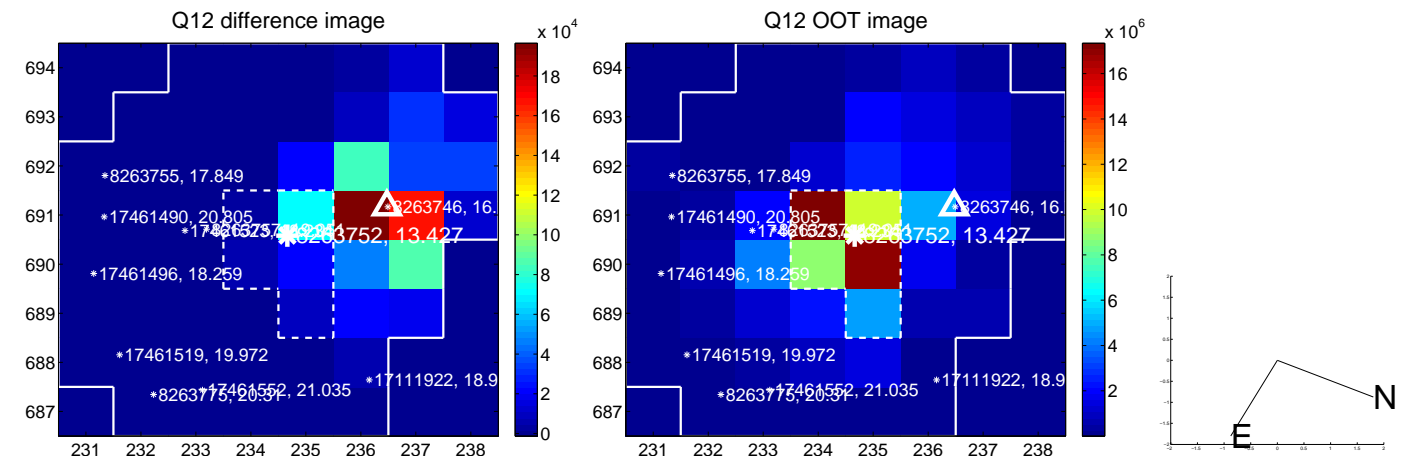
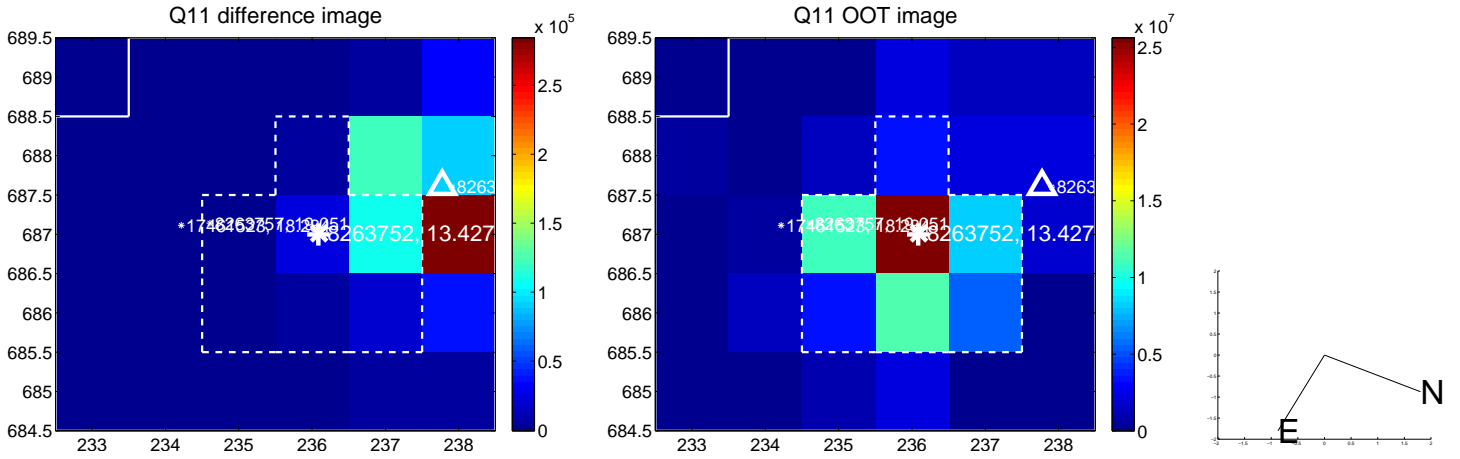
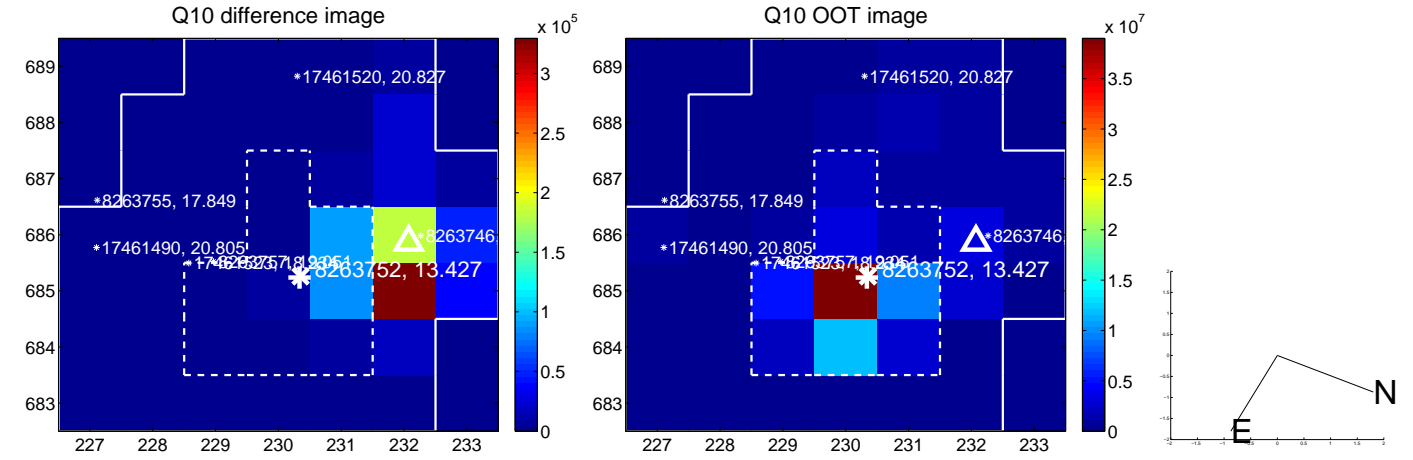
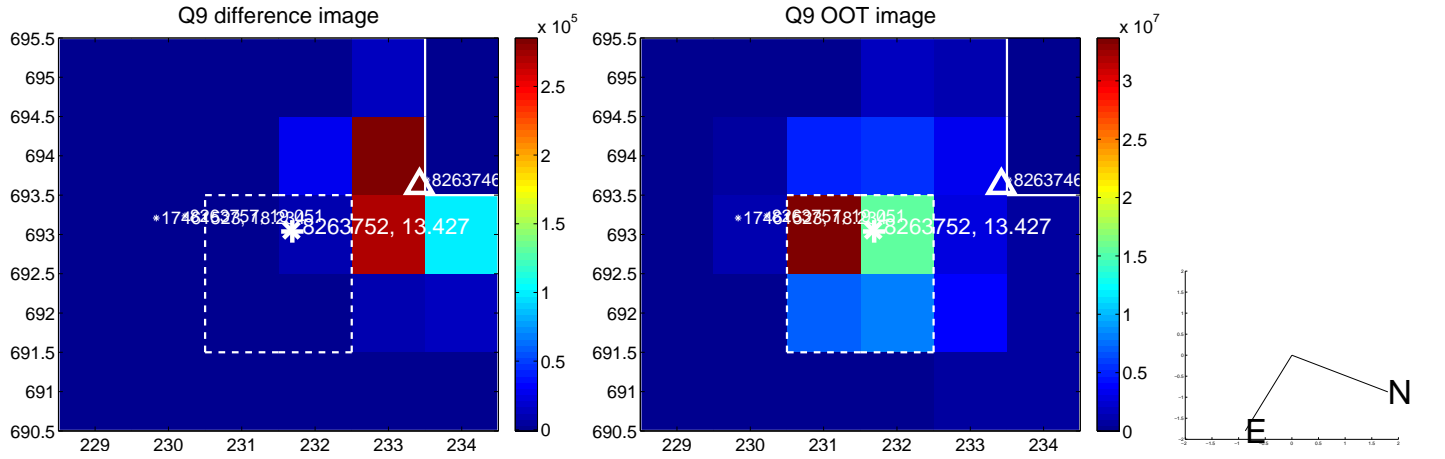


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

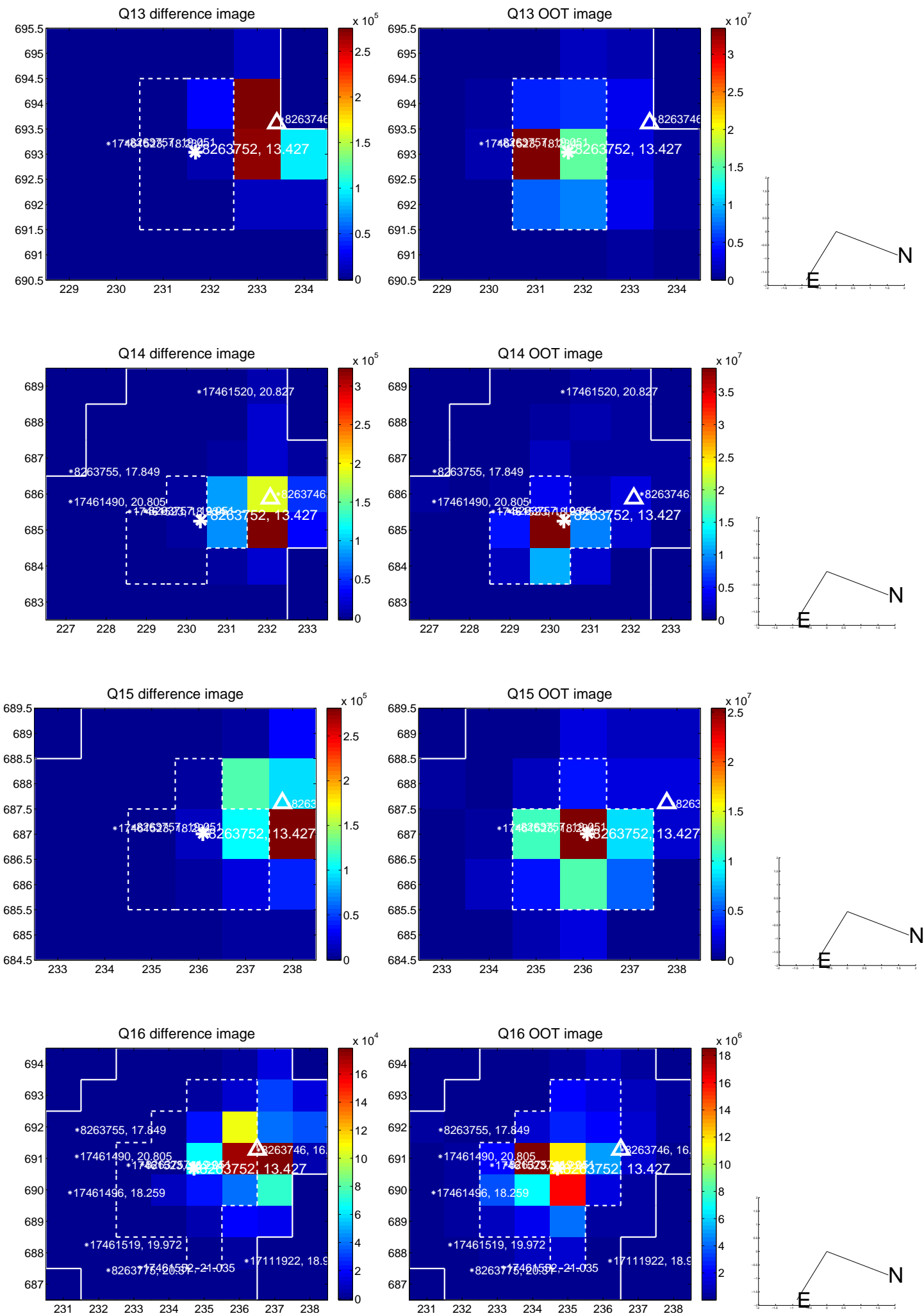




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





# UKIRT Image

Declination

