

# KIC 007940533

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 007940533-01 | OBS      | 6167.01 | 3.905529      | 133.348838   | 72662.2     | 6.669            | 1350.7 | 1839.5 | 0.80                        | 5495            | 21.28                  | 253.82                 |
| 007940533-02 | OBS      | No      | 1.952718      | 133.369047   | 2838.2      | 6.421            | 182.4  | 100.4  | 0.80                        | 5495            | 4.69                   | 639.61                 |
| 007940533-03 | OBS      | No      | 257.966884    | 241.715994   | 413.6       | 10.500           | 18.2   | -1.0   | 0.80                        | 5495            | 1.60                   | 0.95                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 007940533-01 | OBS      | FP   | 0.00  | 0 | 1 | 0 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE   |
| 007940533-02 | OBS      | FP   | 0.00  | 1 | 1 | 0 | 0 | IS_SEC_TCE  |
| 007940533-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS |

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

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

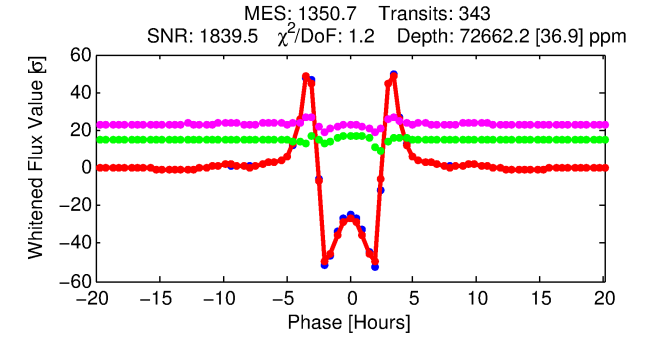
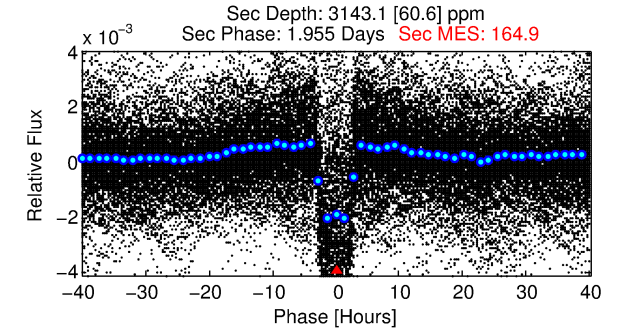
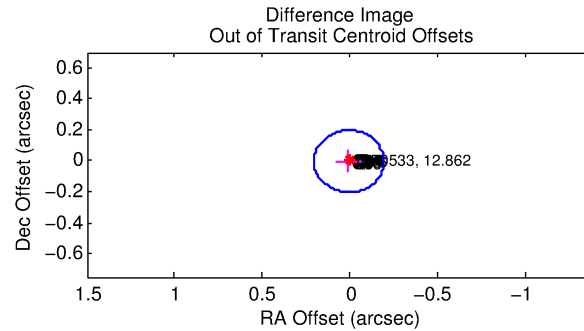
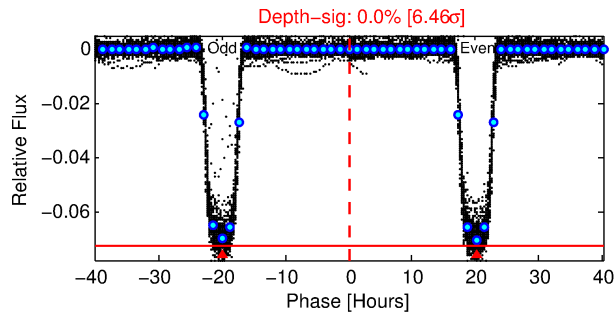
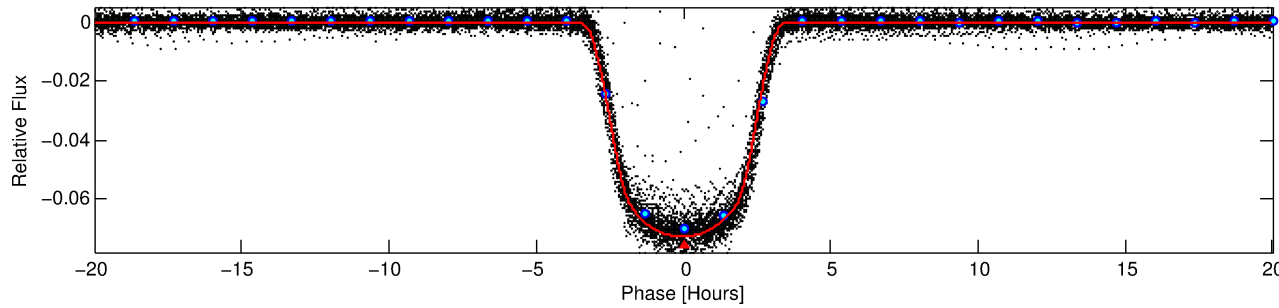
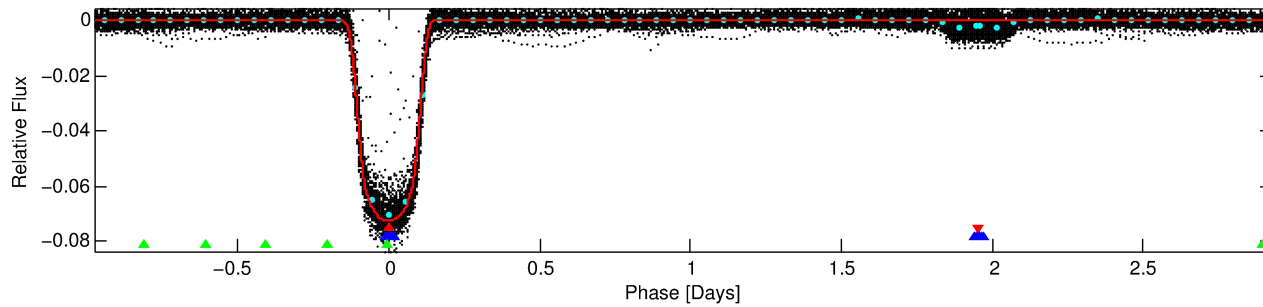
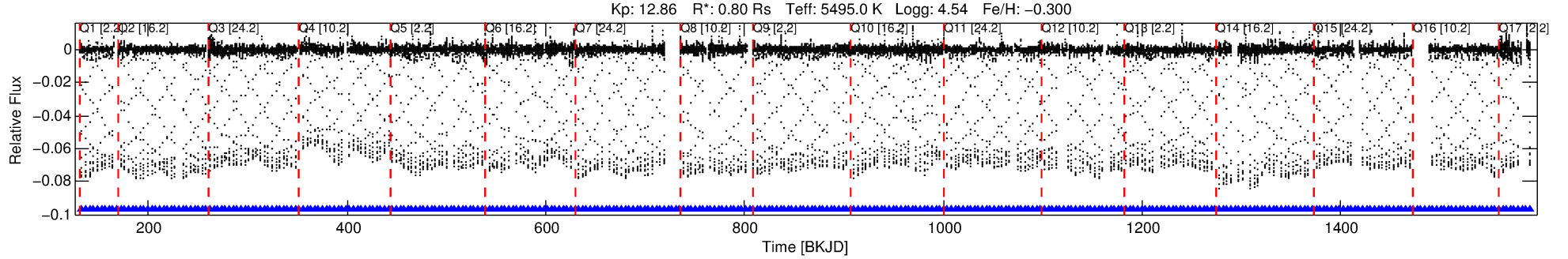
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007940533-01

No Significant Match Found

# DV One-Page Summary

KIC: 7940533 Candidate: 1 of 3 Period: 3.906 d  
KOI: K06167.01 Corr: 0.994



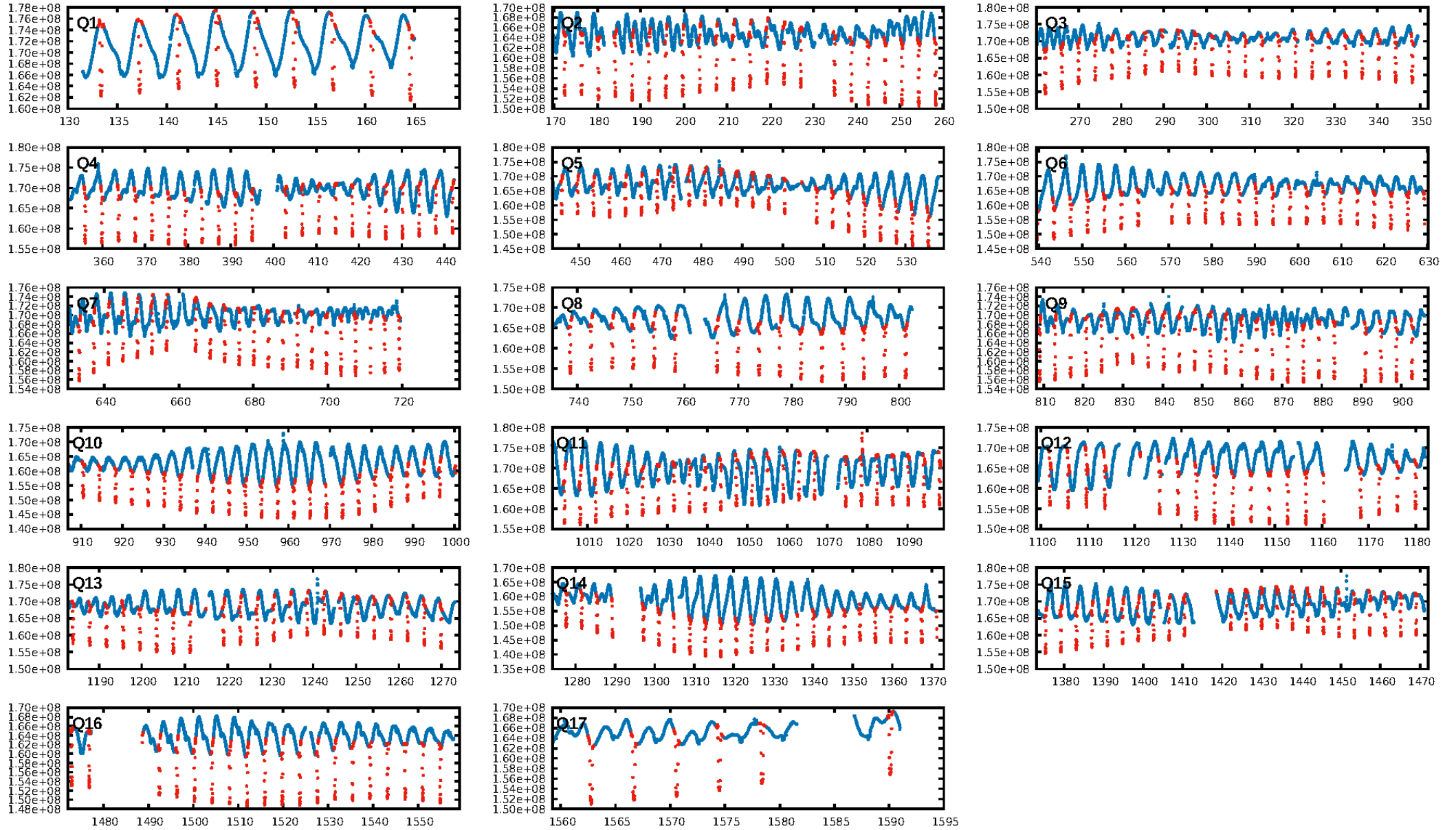
## DV Fit Results:

Period = 3.90553 [0.00000] d  
Epoch = 133.3488 [0.0000] BKJD  
Rp/R\* = 0.2444 [0.0001]  
a/R\* = 5.61 [0.00]  
b = 0.00 [0.30]  
Seff = 253.82 [62.25]  
Teq = 1018 [62] K  
Rp = 21.28 [4.05] Re  
a = 0.0453 [0.0070] AU  
Ag = 7.82 [1.73] [3.95 $\sigma$ ]  
Teffp = 2632 [72] K [16.88 $\sigma$ ]

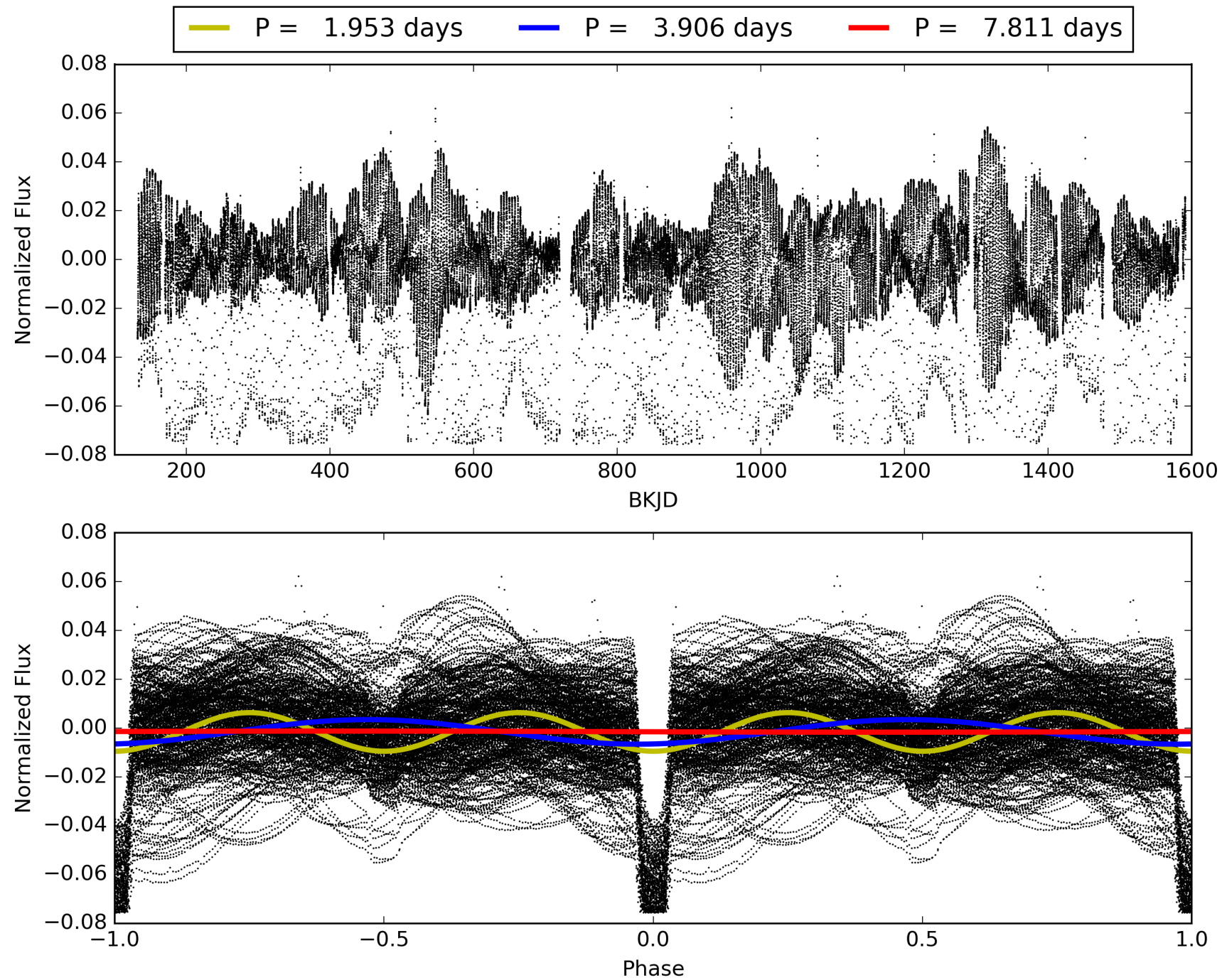
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.06 $\sigma$ ]  
LongPeriod-sig: 100.0% [490.19 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [328/328]  
GhostDiagnostic-chr: 1.113  
Centroid-sig: 0.0%  
Centroid-so: 0.326 arcsec [455.24 $\sigma$ ]  
OotOffset-rm: 0.008 arcsec [0.12 $\sigma$ ]  
KicOffset-rm: 0.332 arcsec [4.93 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 007940533-01, PDC Light Curves

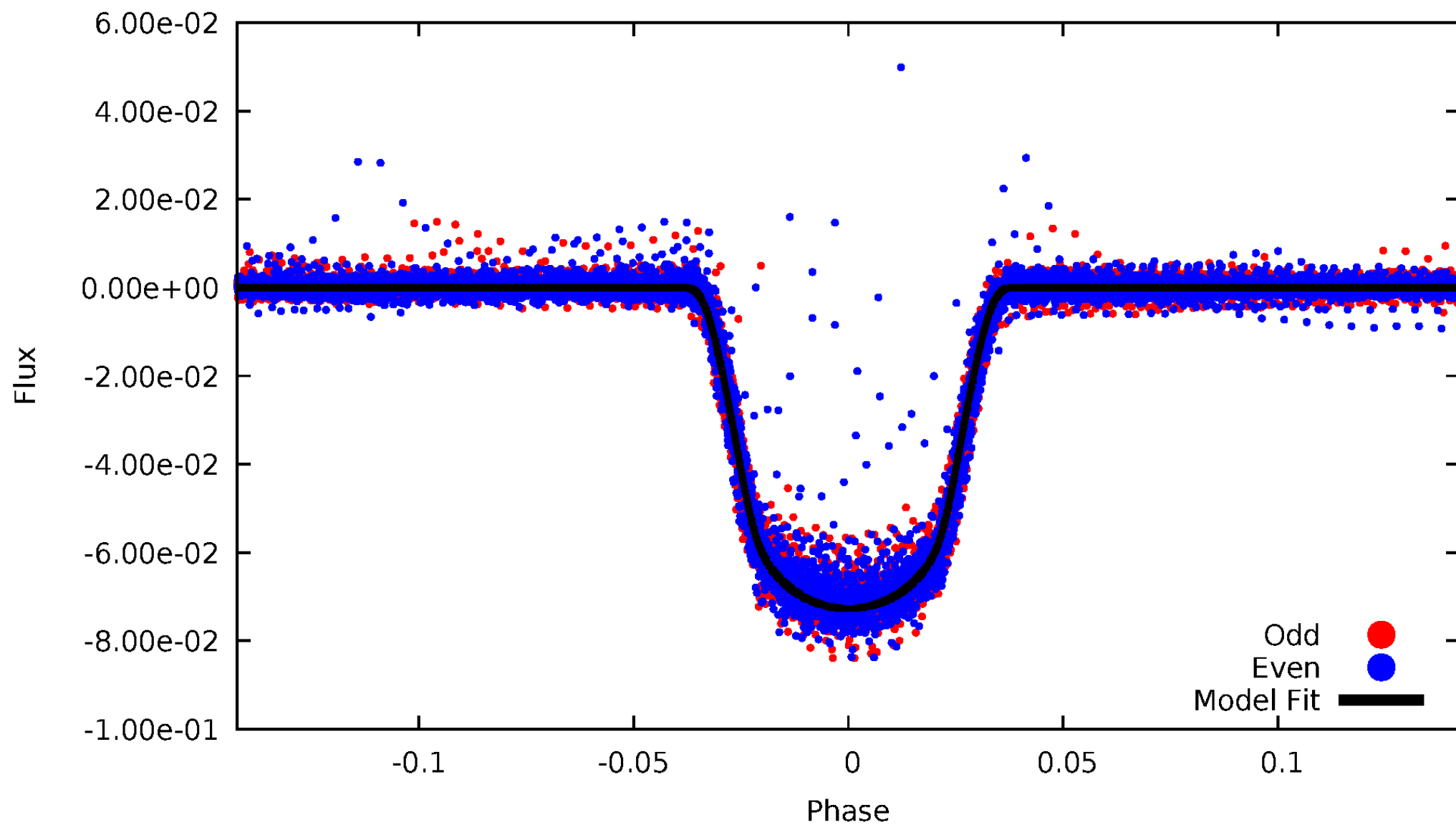


TCE 007940533-01



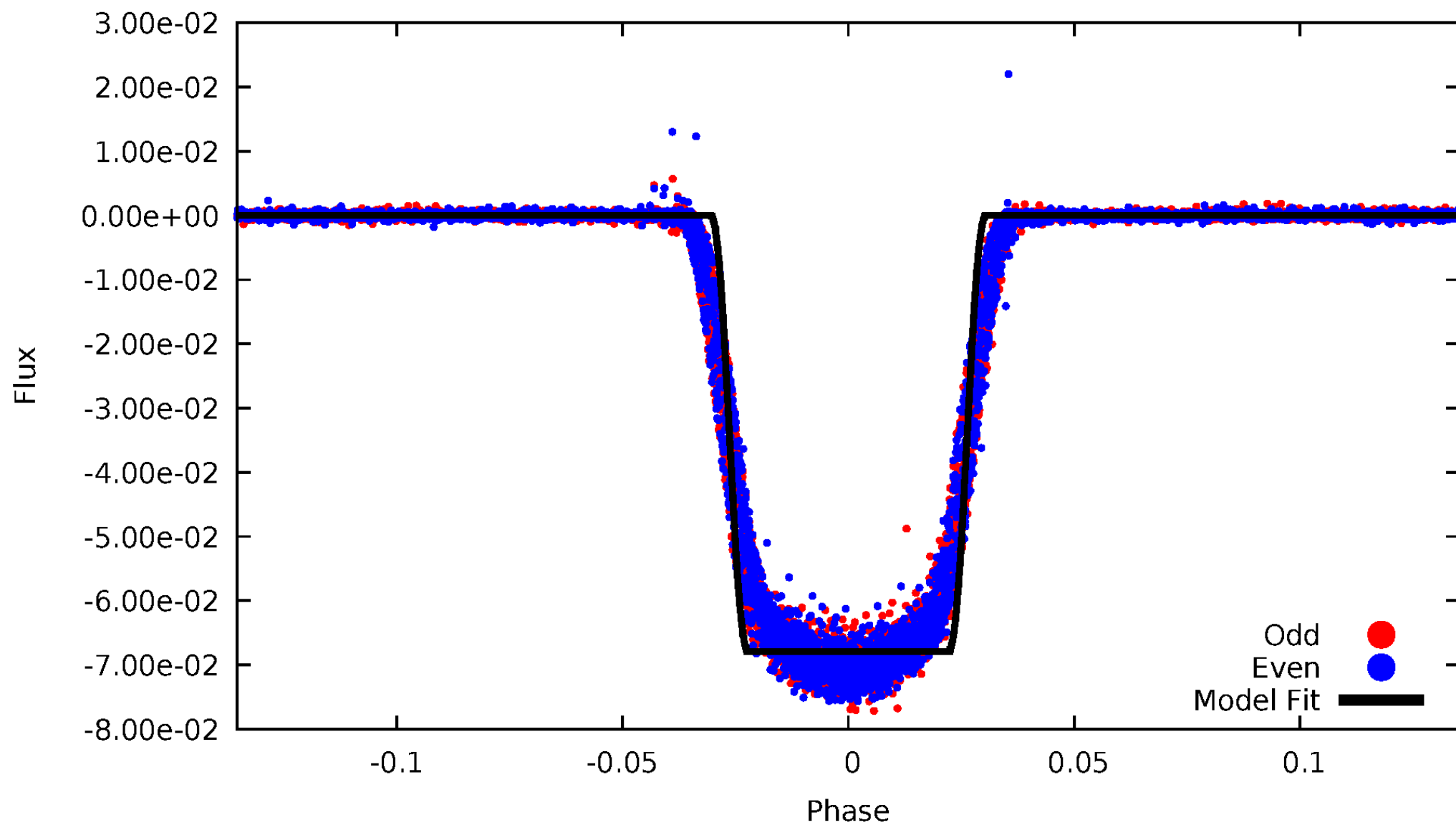
# DV Odd/Even

TCE 007940533-01



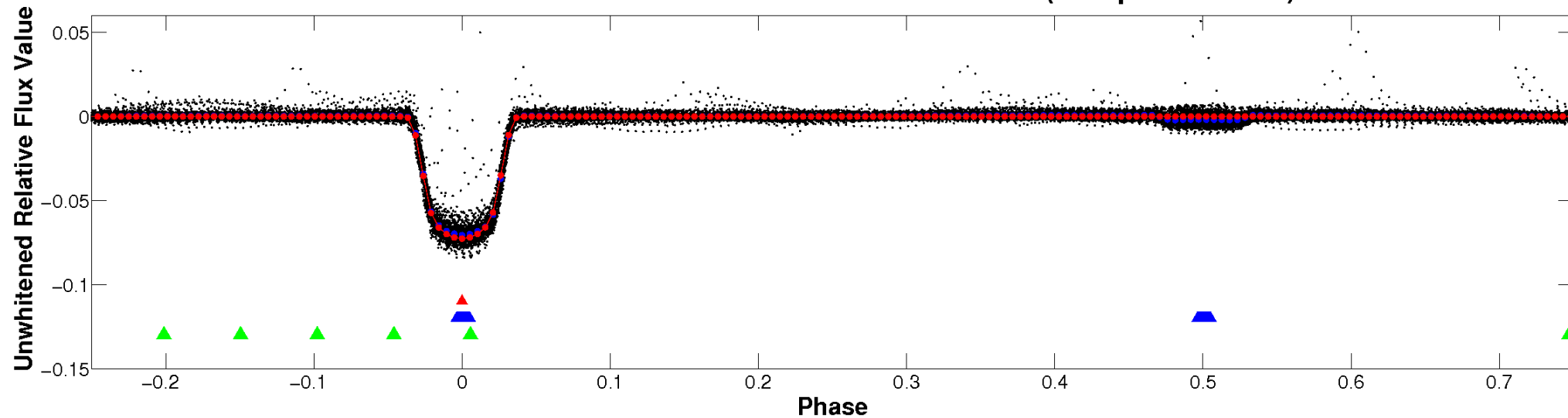
# ALT Odd/Even

TCE 007940533-01

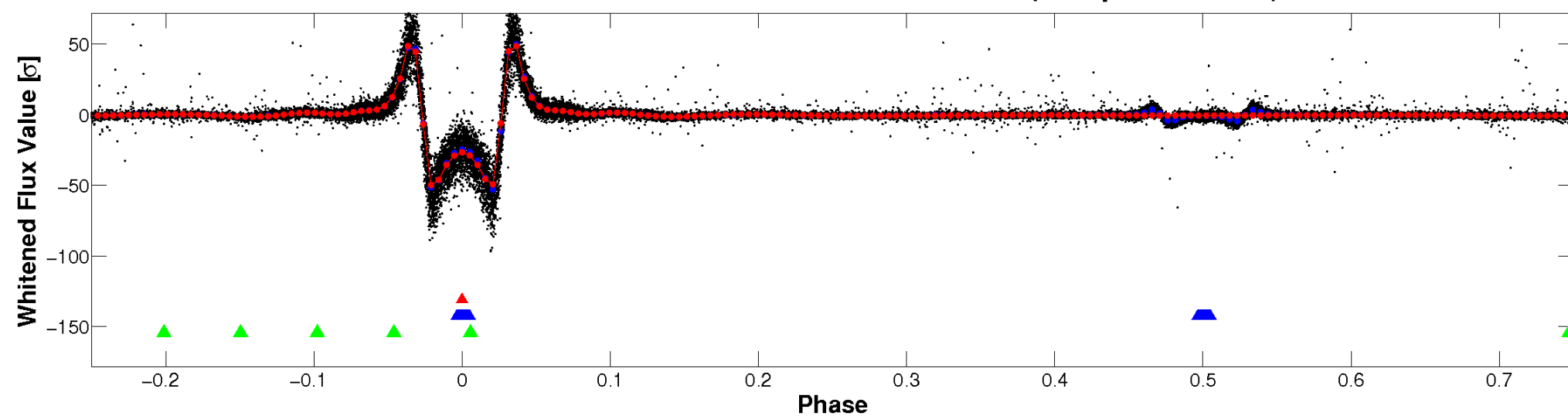


# Non-Whitened Vs. Whitened Light Curve

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



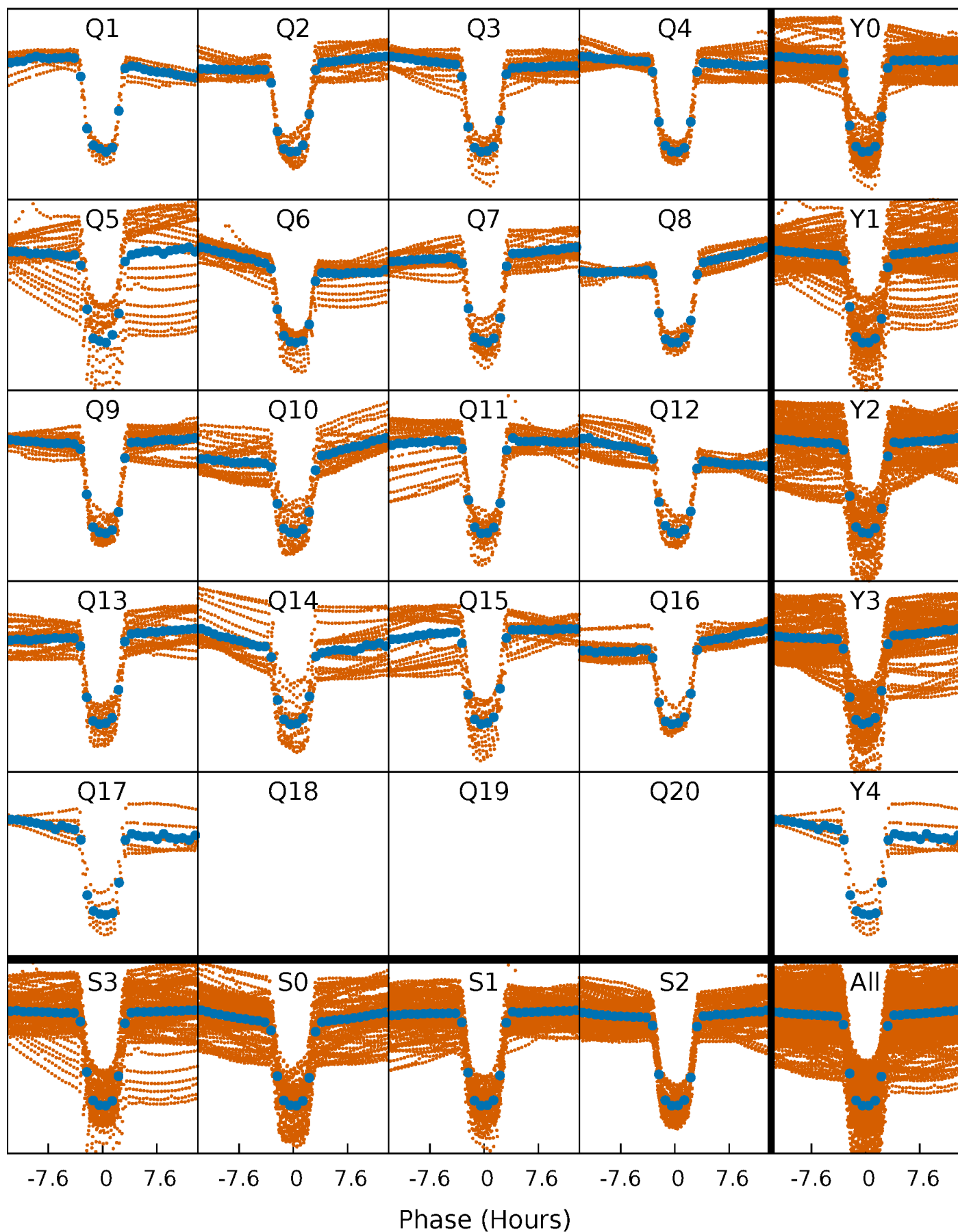
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

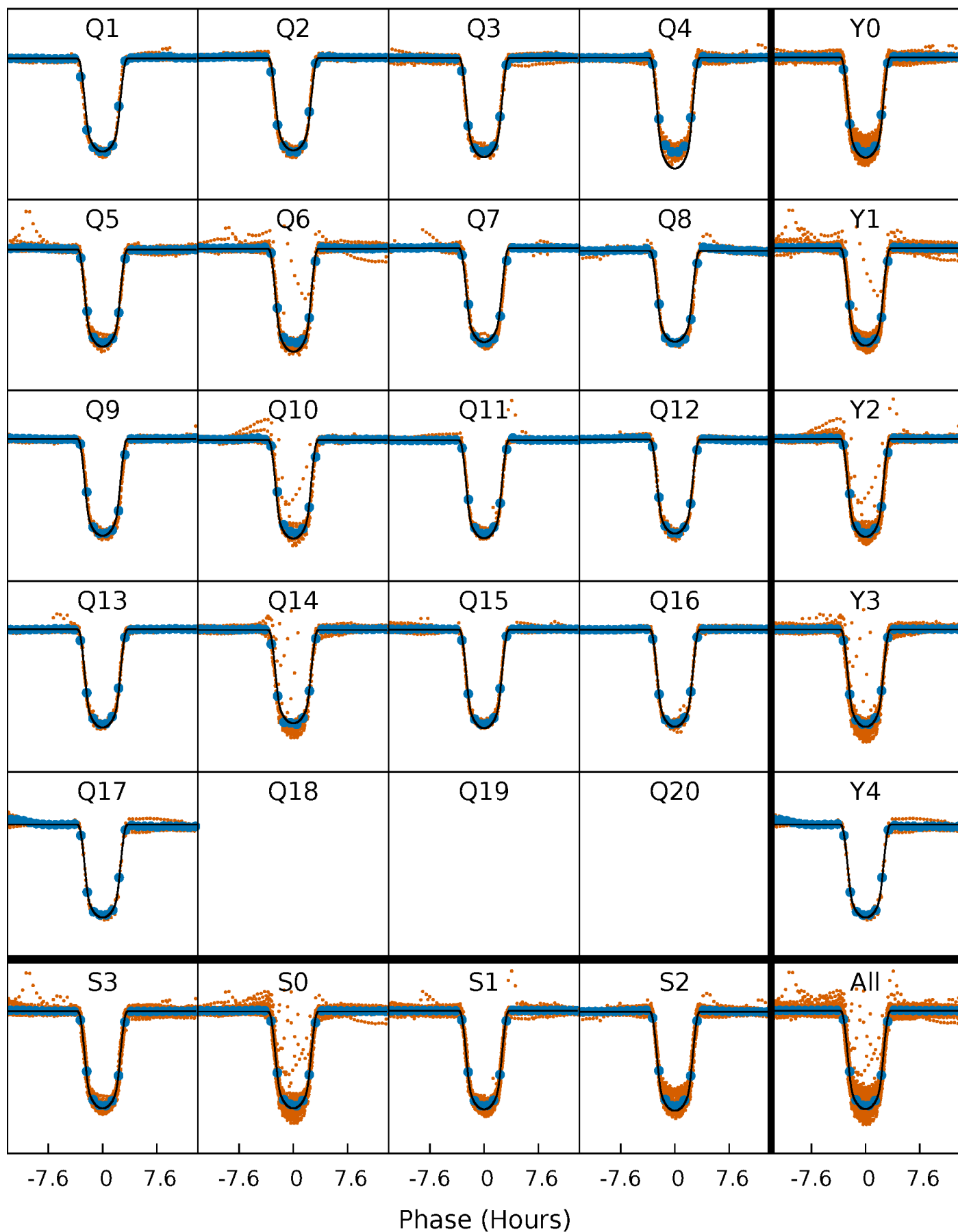
TCE 007940533-01 P= 3.905529 Days  $T_0=133.348838$  (BKJD)





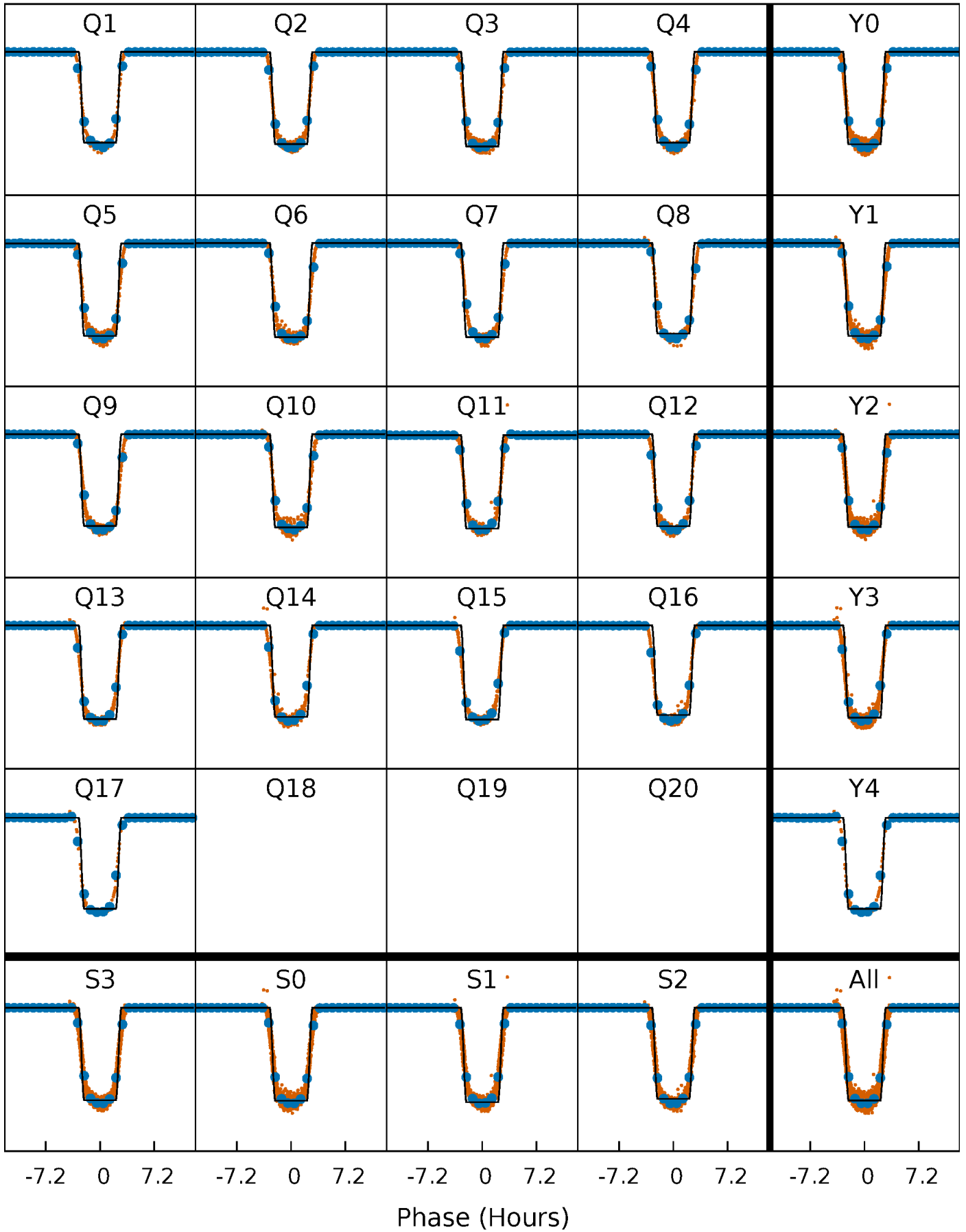
# DV Quarter-Phased Transit Curves

TCE 007940533-01 P= 3.905529 Days  $T_0=133.348838$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

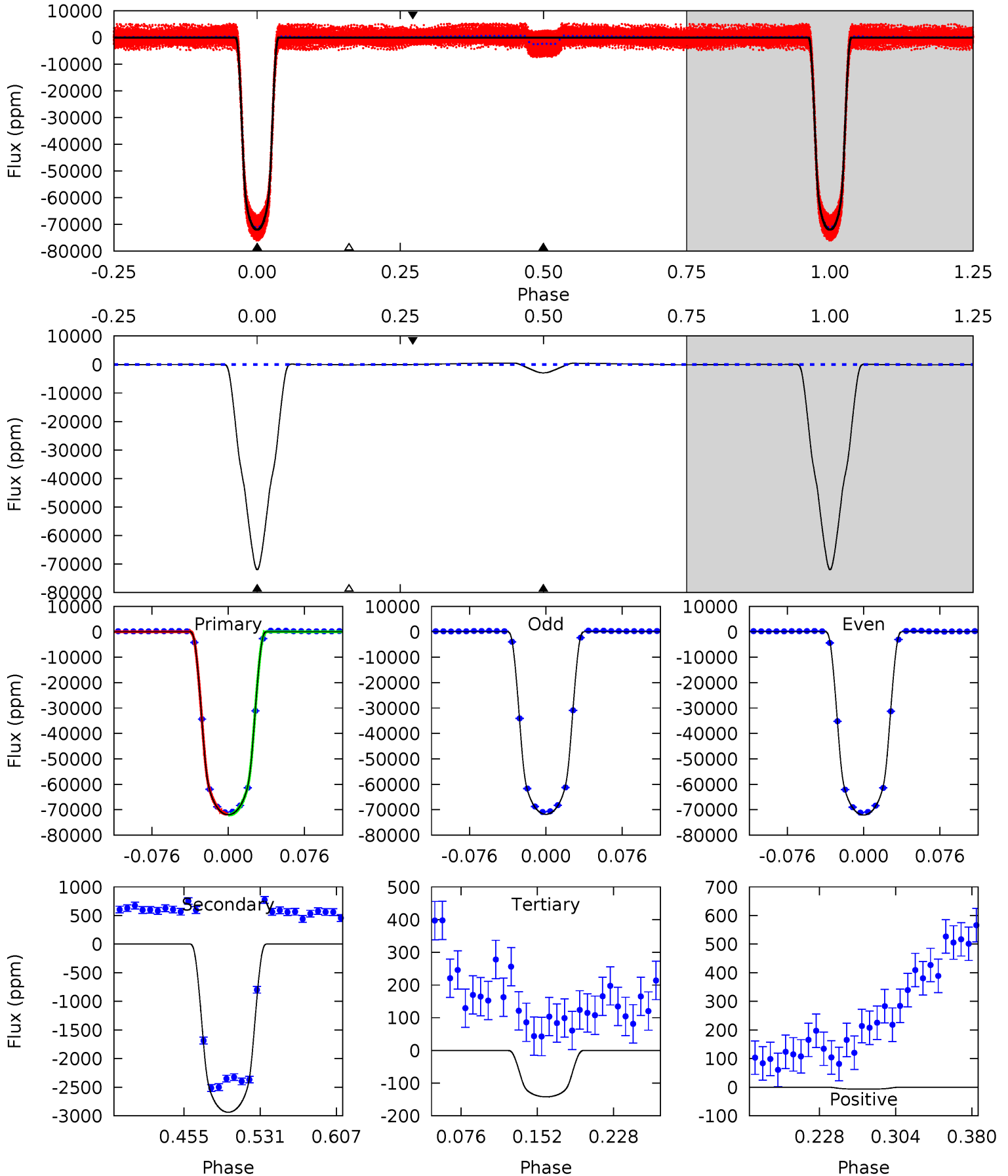
TCE 007940533-01 P= 3.905561 Days  $T_0=133.343730$  (BKJD)



# DV Model-Shift Uniqueness Test

007940533-01, P = 3.905529 Days, E = 129.443309 Days

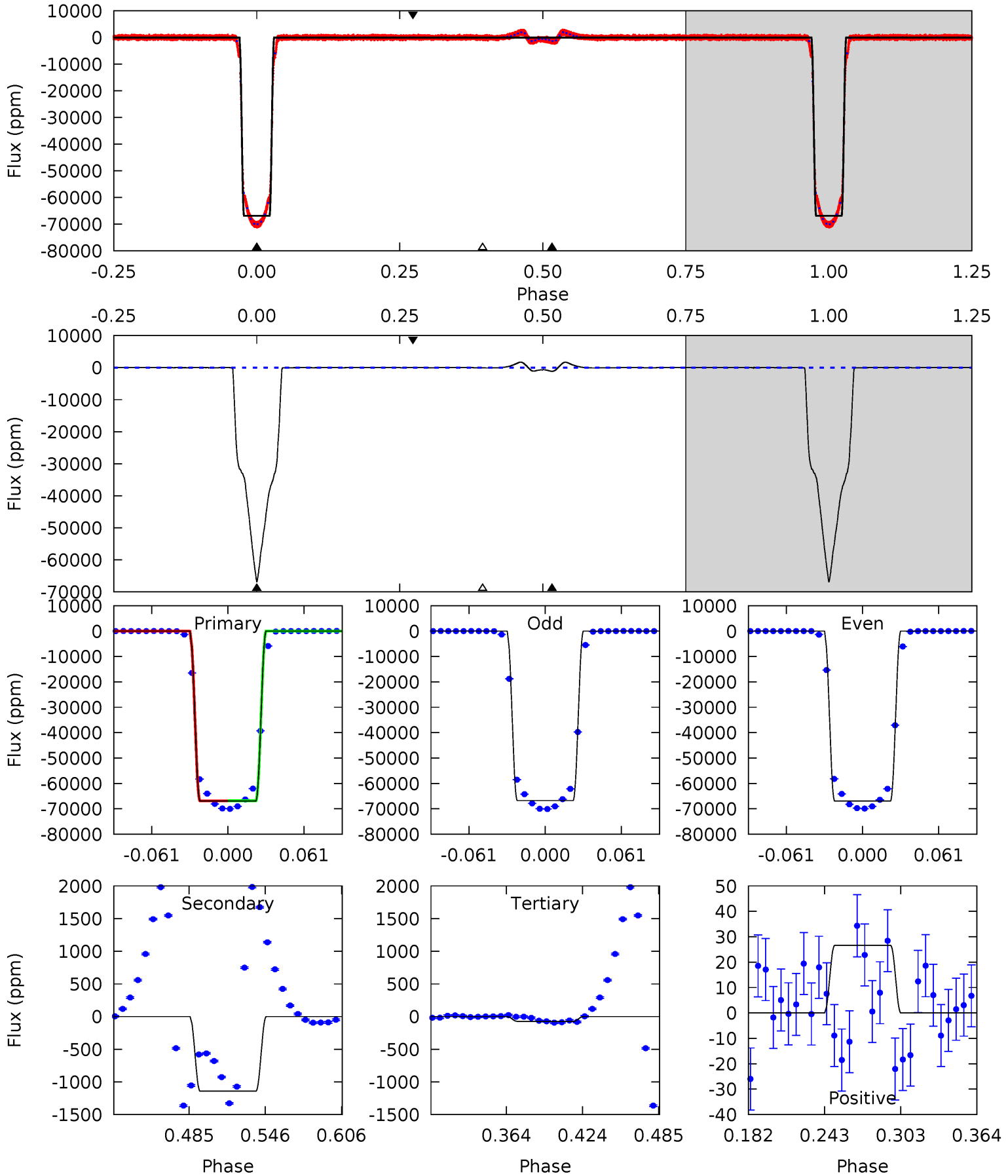
| Pri  | Sec   | Ter  | Pos   | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT |
|------|-------|------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 3482 | 142.1 | 6.87 | -0.32 | 4.62            | 1.77            | 8.61             | 3475    | 3482    | 135.3   | 142.5   | 6.35    | 0.99 | 0.01  | 0   |



# Alt Model-Shift Uniqueness Test

007940533-01, P = 3.905561 Days, E = 129.438169 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  |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7864 | 134.2 | 8.63 | 3.13 | 4.67            | 1.88            | 15.0             | 7855    | 7861    | 125.6   | 131.1   | 9.89    | 1.00 | 0.03  | 1.57 |



### Stellar Parameters For KIC 007940533

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M$ ( $M_{\odot}$ )       | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5495^{+149}_{-149}$ | $4.543^{+0.063}_{-0.117}$ | $-0.300^{+0.300}_{-0.300}$ | $0.798^{+0.152}_{-0.082}$ | $0.812^{+0.100}_{-0.075}$ | $2.253^{+0.600}_{-0.802}$                     |
|        | +3%/-3%              | +1%/-3%                   | +100%/-100%                | +19%/-10%                 | +12%/-9%                  | +27%/-36%                                     |
| 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 007940533-01 / KOI 6167.01

| Detrend | Depth (ppm)    | $R_p$ ( $R_{\oplus}$ )  | $T_{max}$ (K)      | $T_{obs}$ (K)      | $A_{obs}$                 |
|---------|----------------|-------------------------|--------------------|--------------------|---------------------------|
| DV      | $-2938 \pm 21$ | $21.43^{+2.16}_{-1.30}$ | $1434^{+72}_{-59}$ | $3160^{+56}_{-54}$ | $7.159^{+0.808}_{-1.042}$ |
| Alt.    | $-1141 \pm 9$  | $23.04^{+2.13}_{-1.54}$ | $1434^{+71}_{-55}$ | $2695^{+40}_{-42}$ | $2.445^{+0.292}_{-0.364}$ |

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

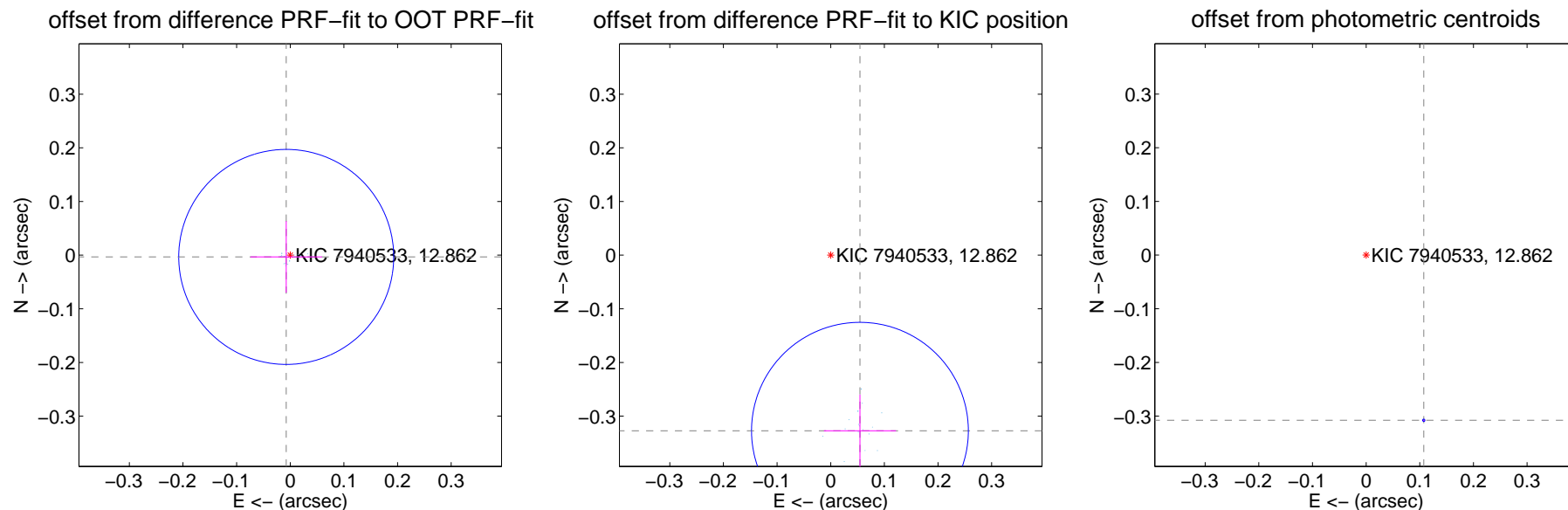
## DV Centroid Data

Supplemental centroid analysis for 007940533-01. Kepler magnitude: 12.86. Transit SNR 1839.50

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

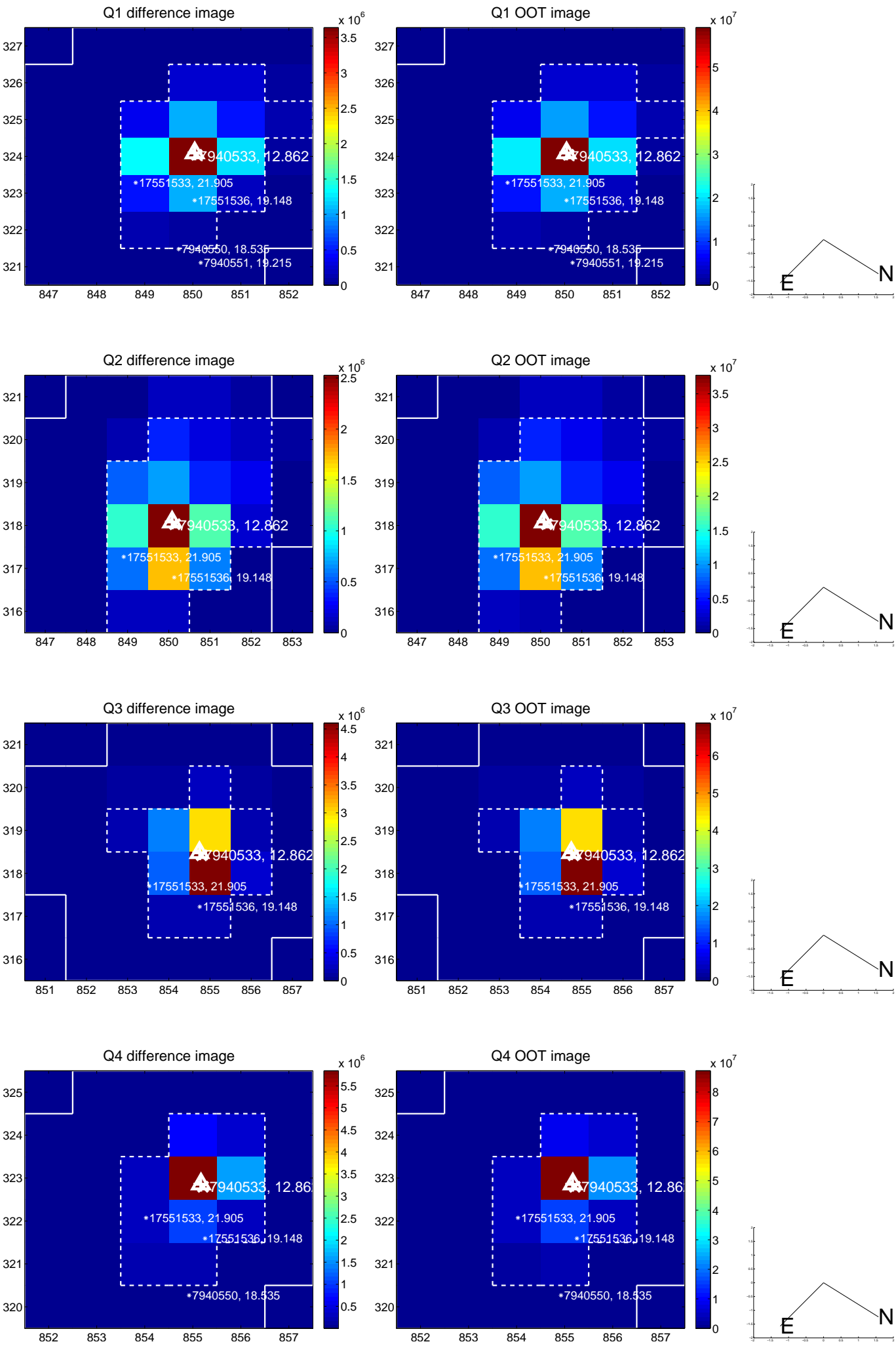
|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.008 \pm 0.067$  | 0.12                | $0.008 \pm 0.067$  | $-0.003 \pm 0.067$ |
| PRF-fit source offset from KIC position | $0.332 \pm 0.067$  | 4.93                | $-0.054 \pm 0.067$ | $-0.327 \pm 0.067$ |
| photometric centroid source offset      | $0.33 \pm 0.00$    | 455.24              | $-0.11 \pm 0.00$   | $-0.31 \pm 0.00$   |



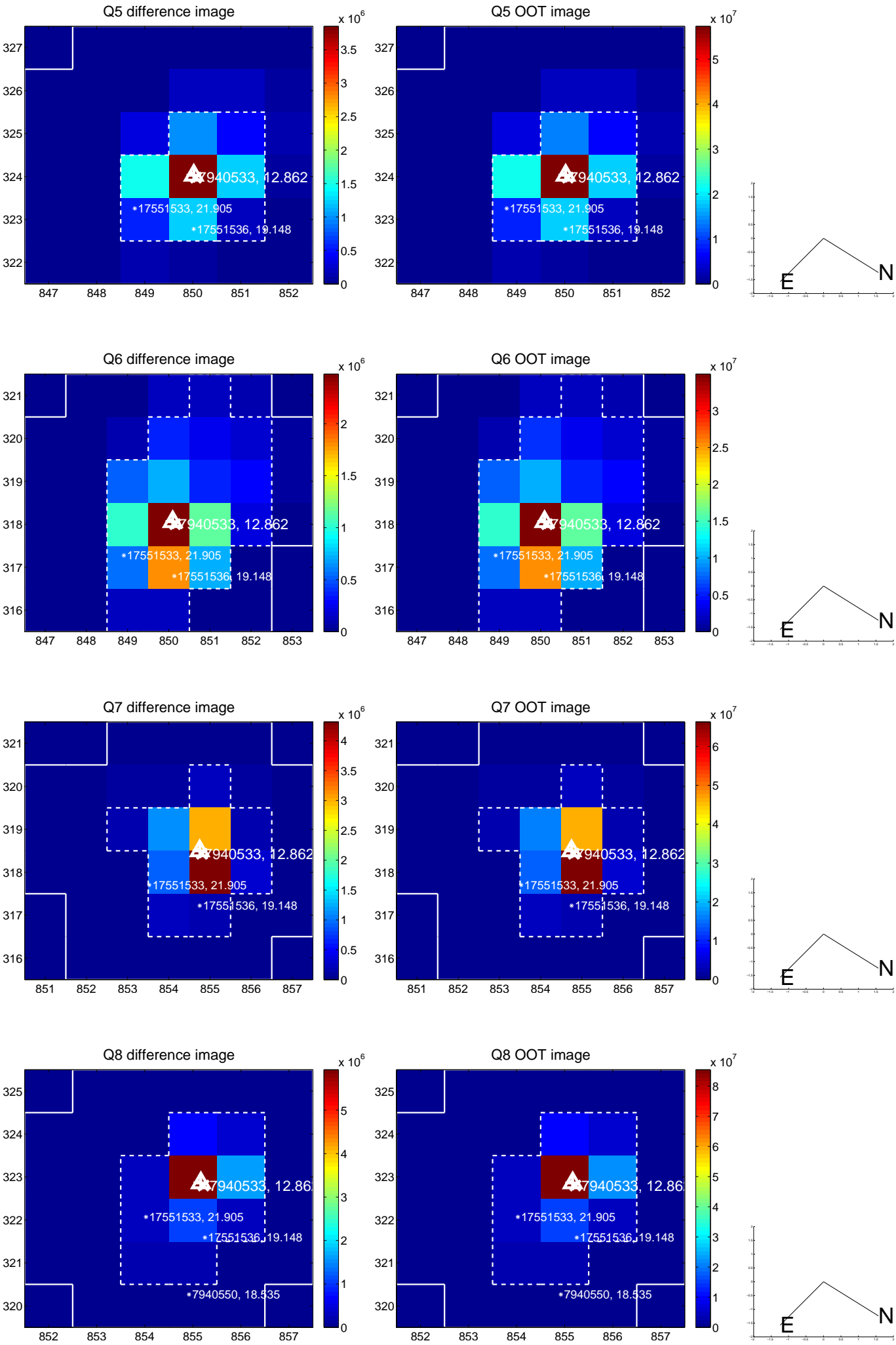
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



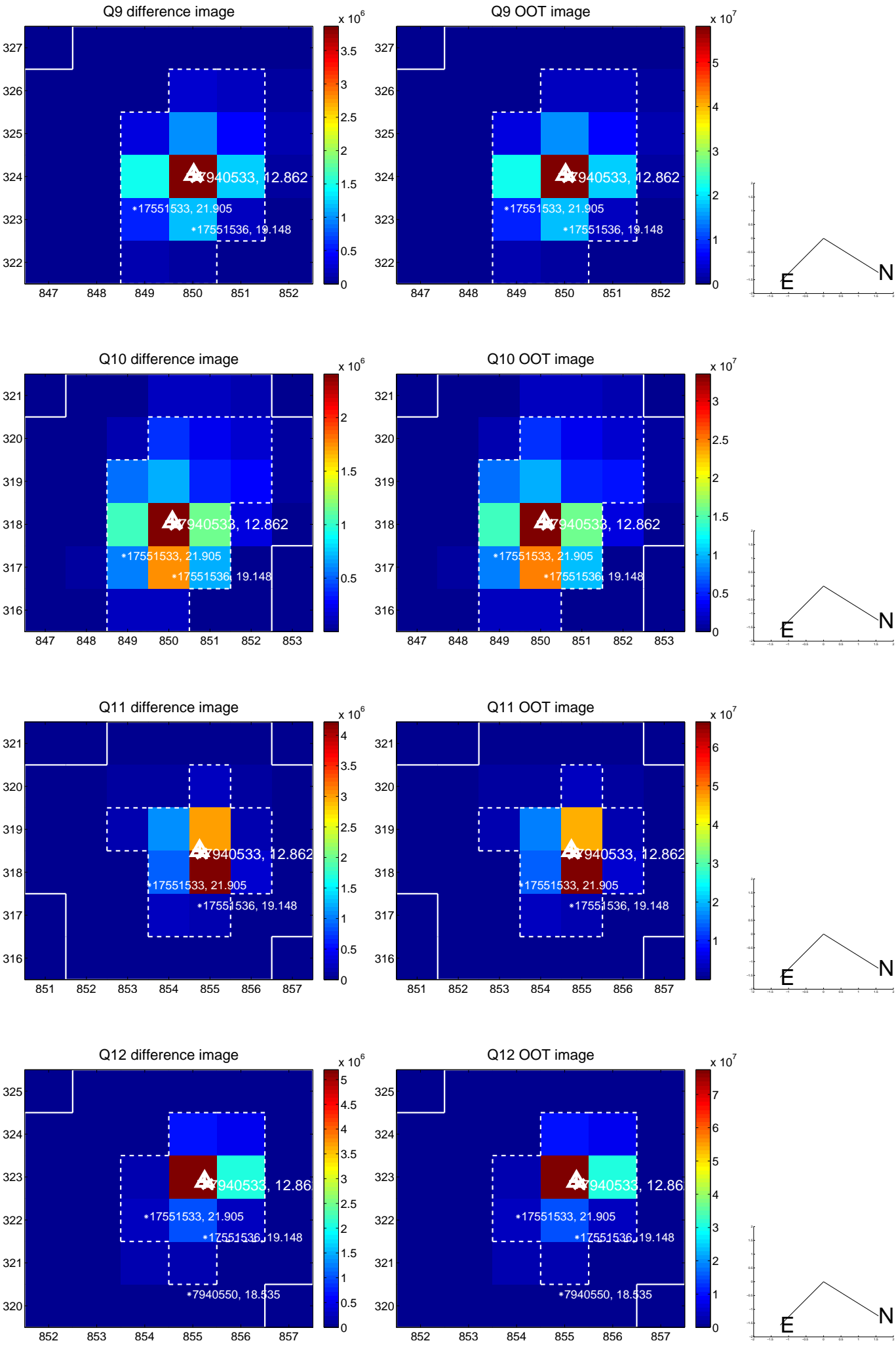
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



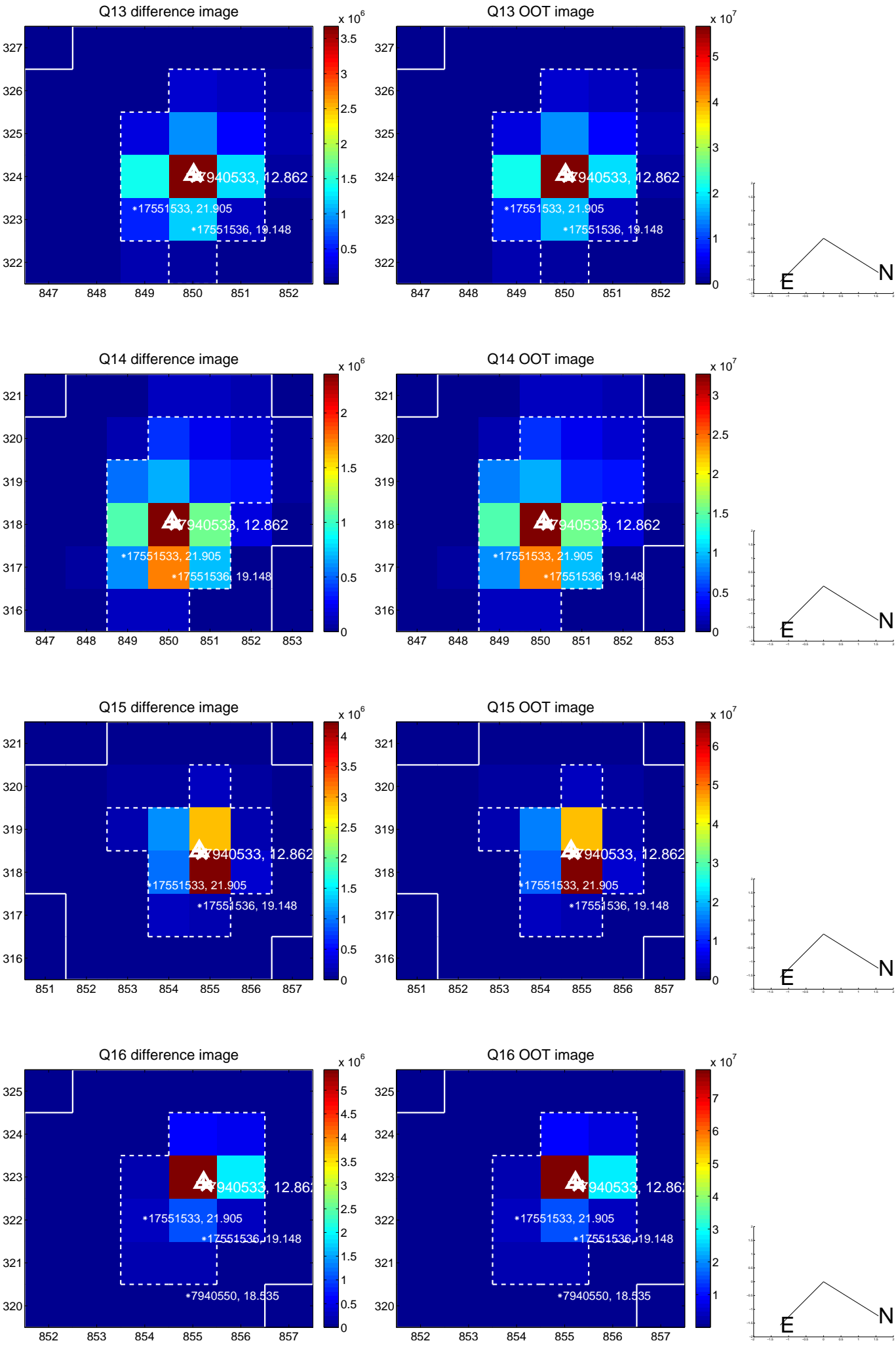
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



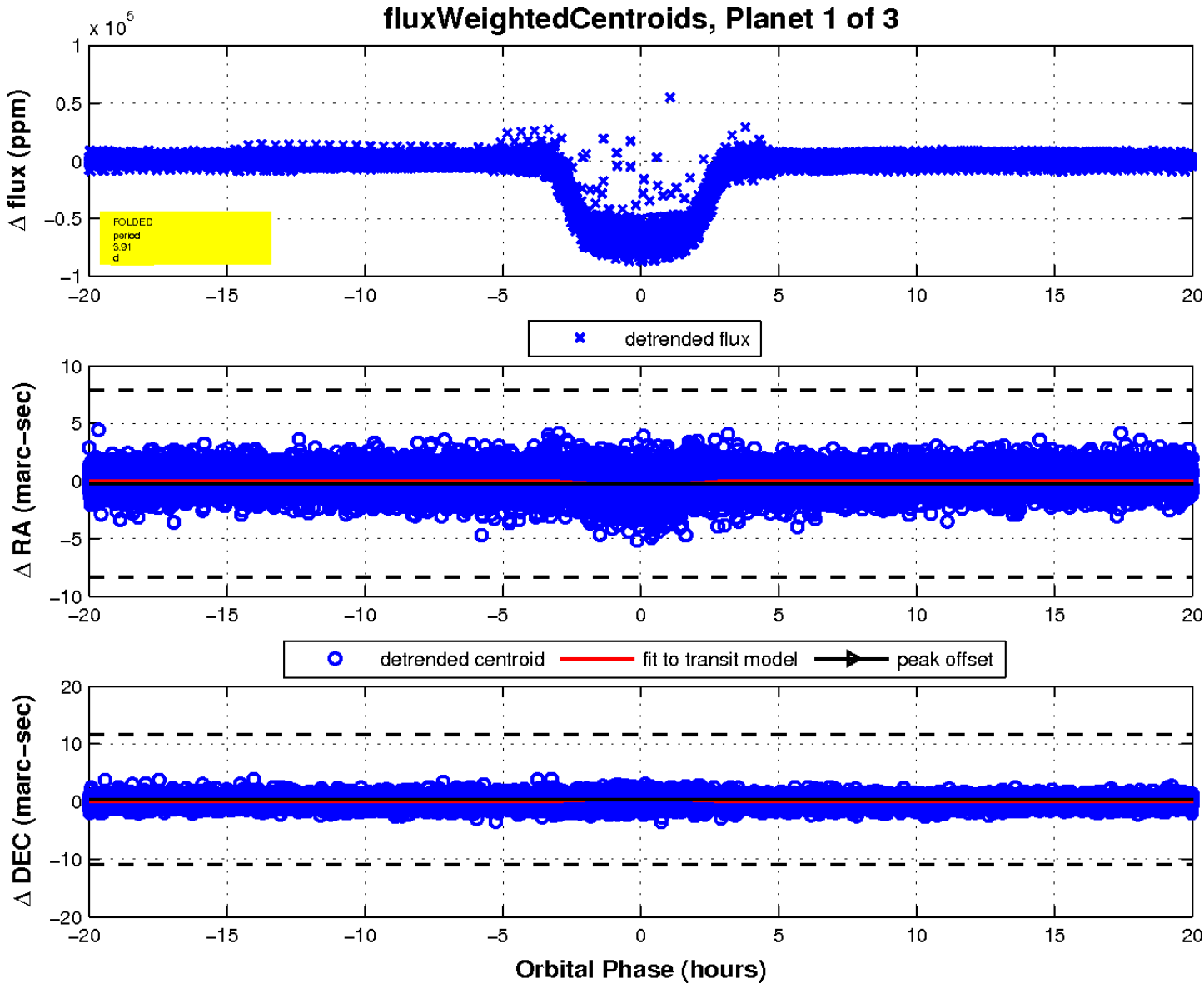
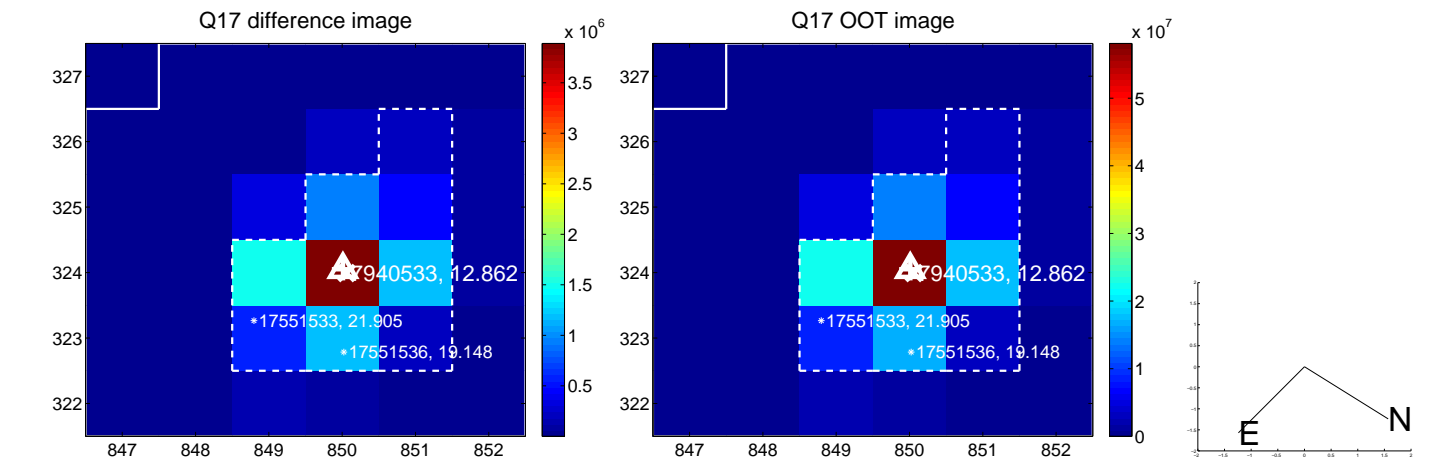
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

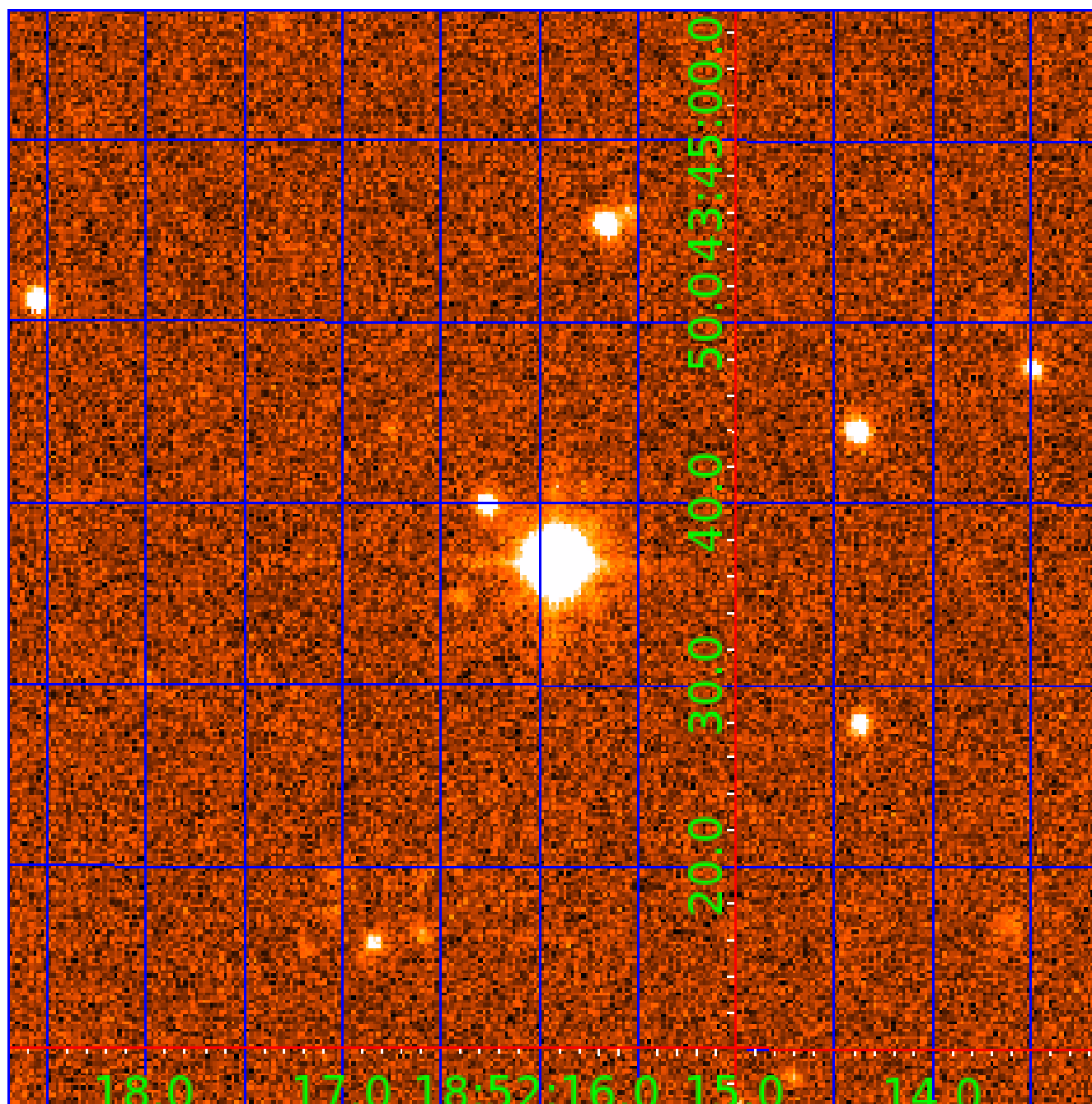


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007940533

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 007940533-01 | OBS      | 6167.01 | 3.905529      | 133.348838   | 72662.2     | 6.669            | 1350.7 | 1839.5 | 0.80                        | 5495            | 21.28                  | 253.82                 |
| 007940533-02 | OBS      | No      | 1.952718      | 133.369047   | 2838.2      | 6.421            | 182.4  | 100.4  | 0.80                        | 5495            | 4.69                   | 639.61                 |
| 007940533-03 | OBS      | No      | 257.966884    | 241.715994   | 413.6       | 10.500           | 18.2   | -1.0   | 0.80                        | 5495            | 1.60                   | 0.95                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments  |
|--------------|----------|------|-------|---|---|---|---|---|
| 007940533-01 | OBS      | FP   | 0.00  | 0 | 1 | 0 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE   |
| 007940533-02 | OBS      | FP   | 0.00  | 1 | 1 | 0 | 0 | IS_SEC_TCE  |
| 007940533-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS |

**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 007940533-02

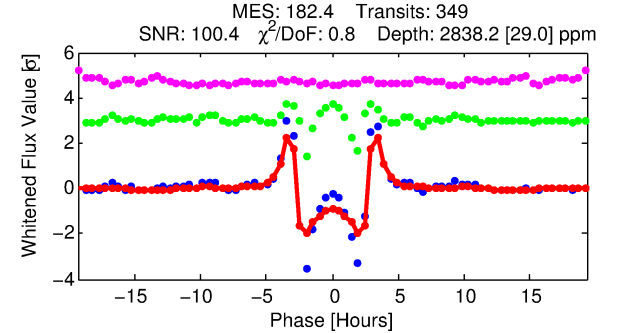
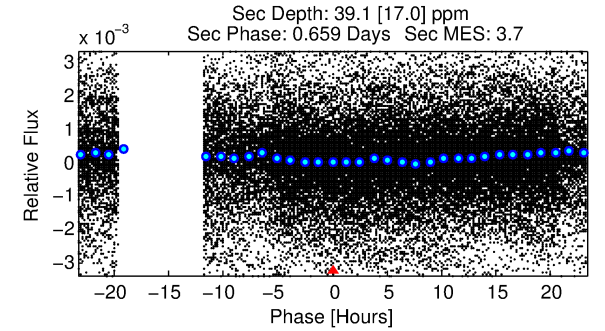
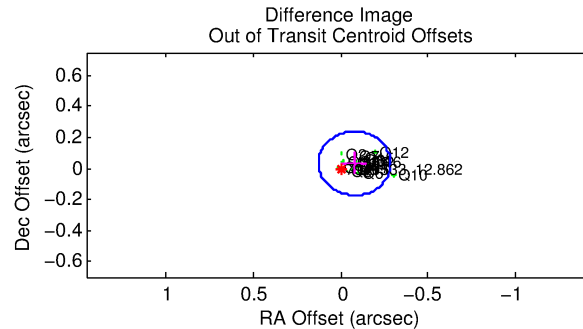
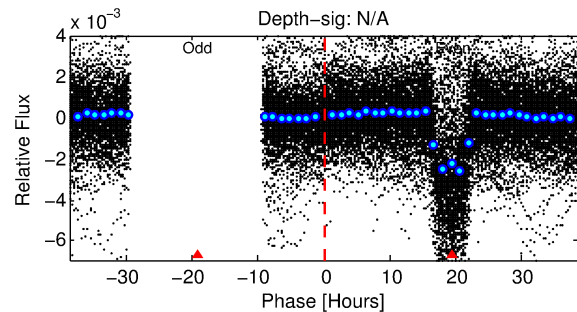
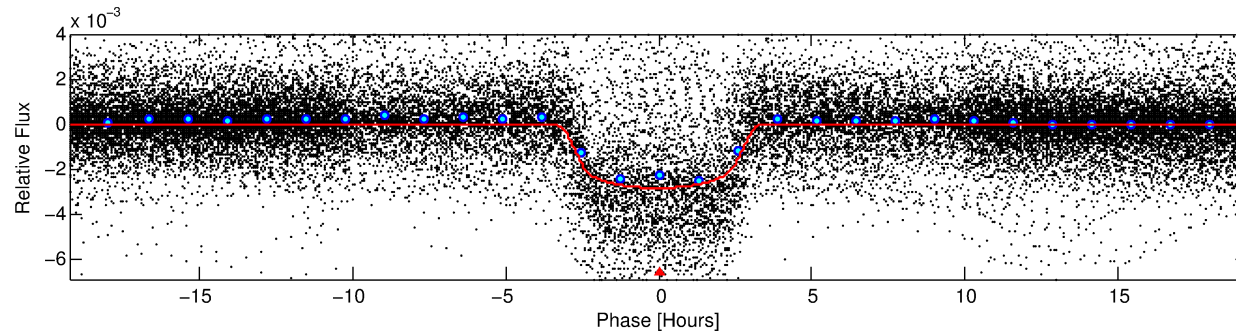
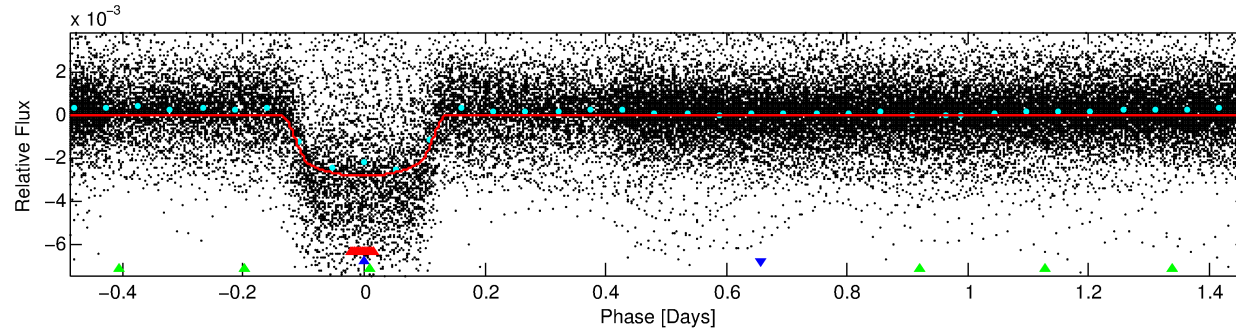
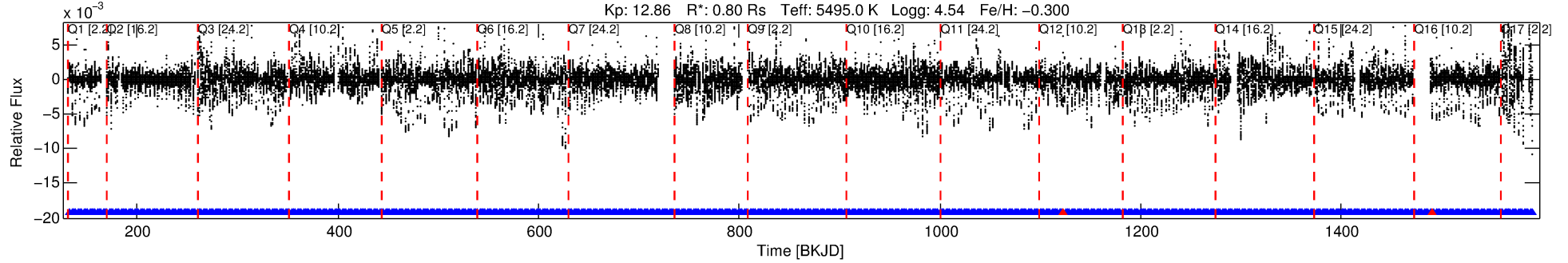
No Significant Match Found

# DV One-Page Summary

KIC: 7940533 Candidate: 2 of 3 Period: 1.953 d

KOI: K06167 Corr: No Ephemeris Match

Kp: 12.86 R\*: 0.80 Rs Teff: 5495.0 K Logg: 4.54 Fe/H: -0.300



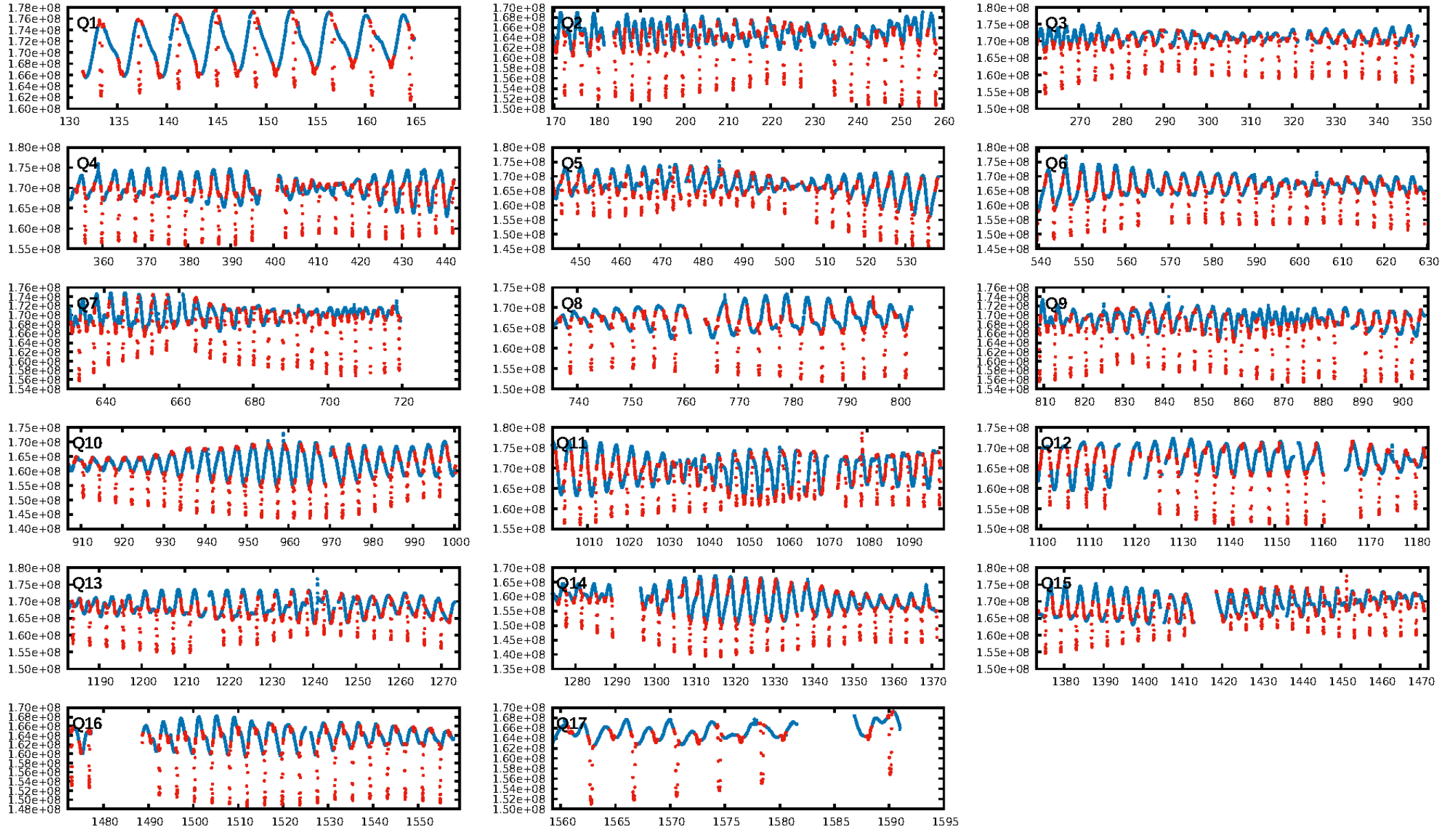
## DV Fit Results:

Period = 1.95272 [0.00000] d  
Epoch = 133.3690 [0.0002] BKJD  
Rp/R\* = 0.0539 [0.0003]  
a/R\* = 1.86 [0.01]  
b = 0.78 [0.01]  
Seff = 639.61 [156.86]  
Teff = 1282 [79] K  
Rp = 4.69 [0.89] Re  
a = 0.0285 [0.0044] AU  
Ag = 0.79 [0.39] [-0.53σ]  
Teffp = 1872 [209] K [2.64σ]

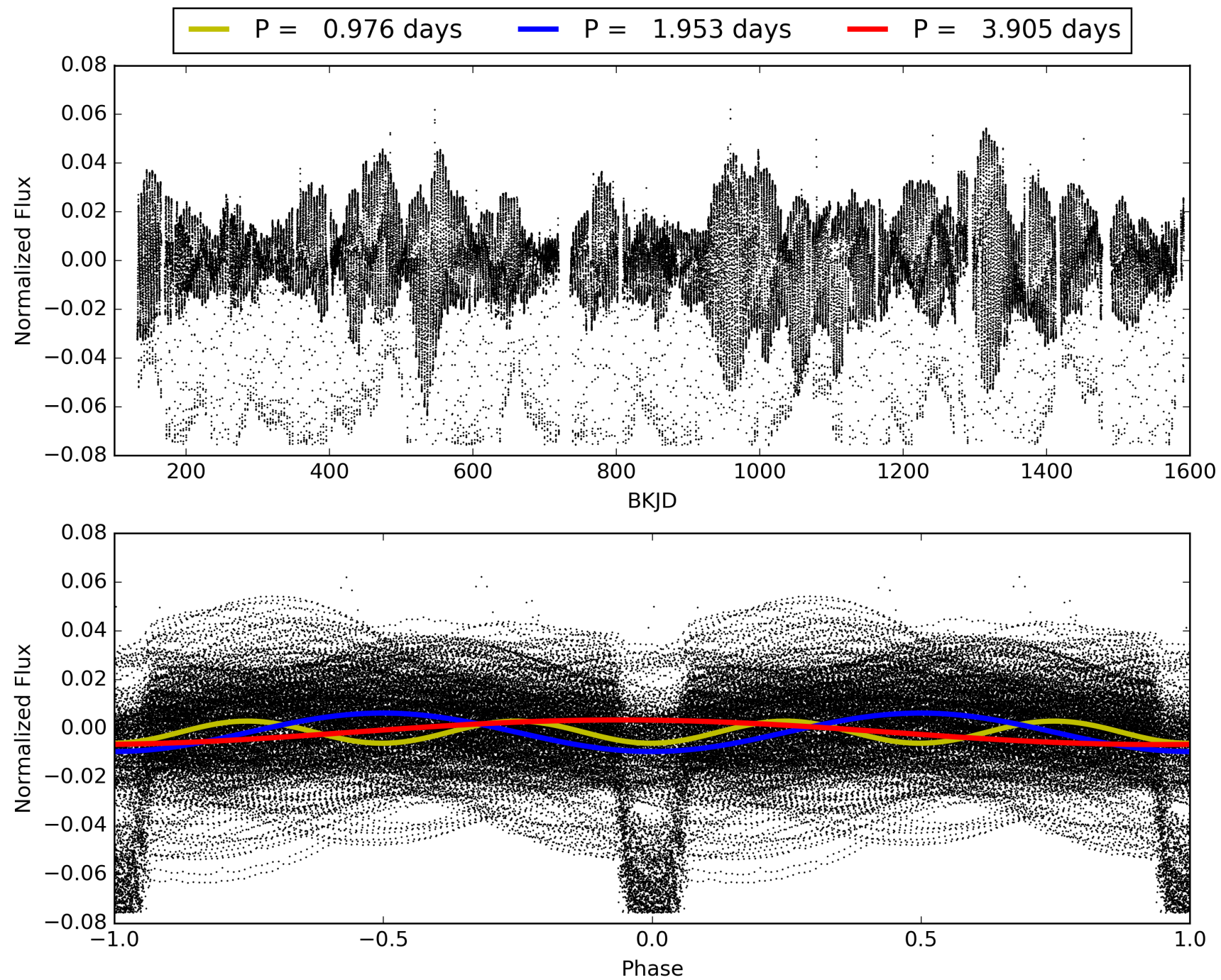
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [5.06σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [331/333]  
GhostDiagnostic-chr: 1.603  
Centroid-sig: 0.0%  
Centroid-so: 0.398 arcsec [31.69σ]  
OotOffset-rm: 0.085 arcsec [1.23σ]  
KicOffset-rm: 0.311 arcsec [4.51σ]  
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 007940533-02, PDC Light Curves

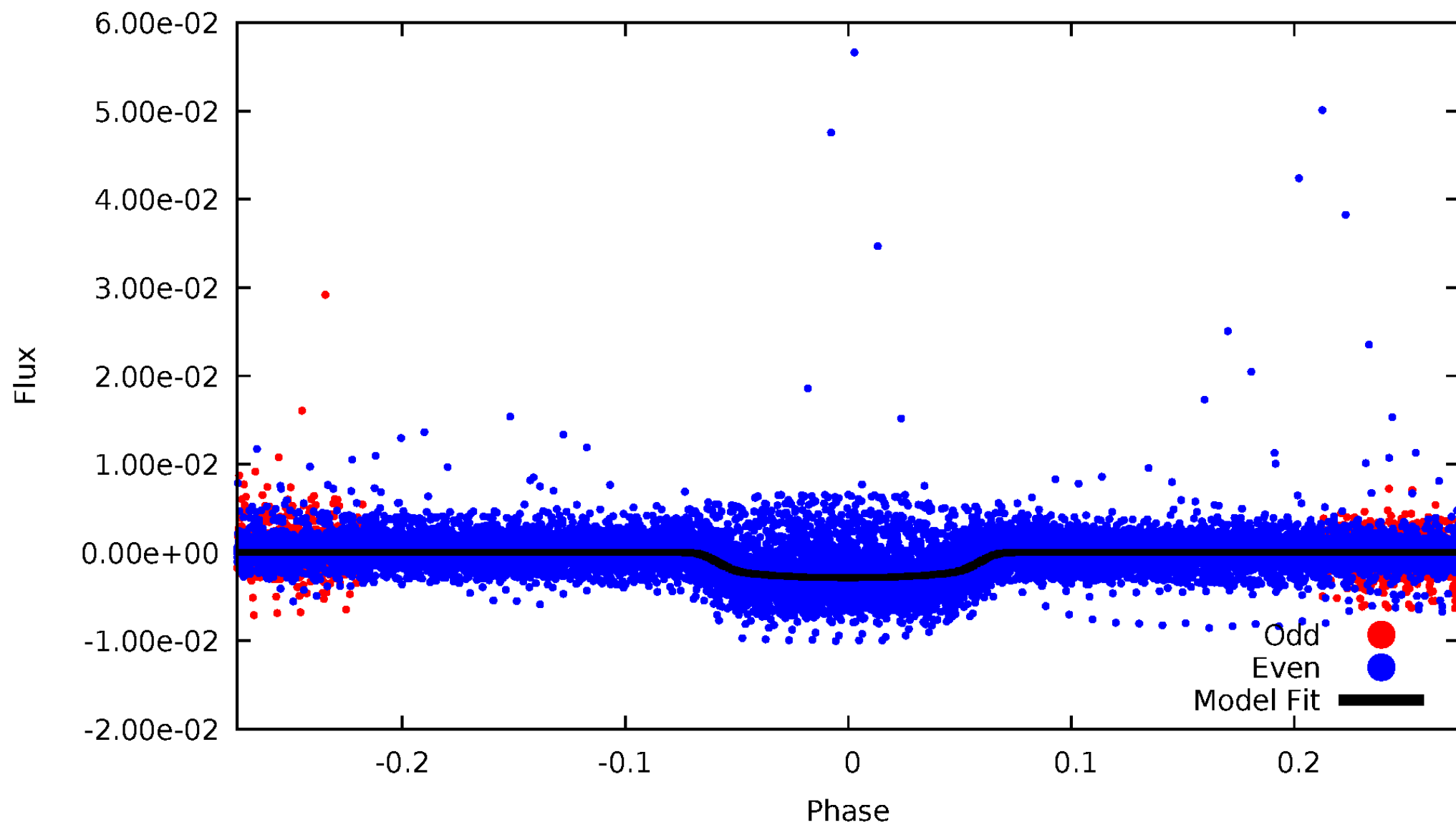


TCE 007940533-02



# DV Odd/Even

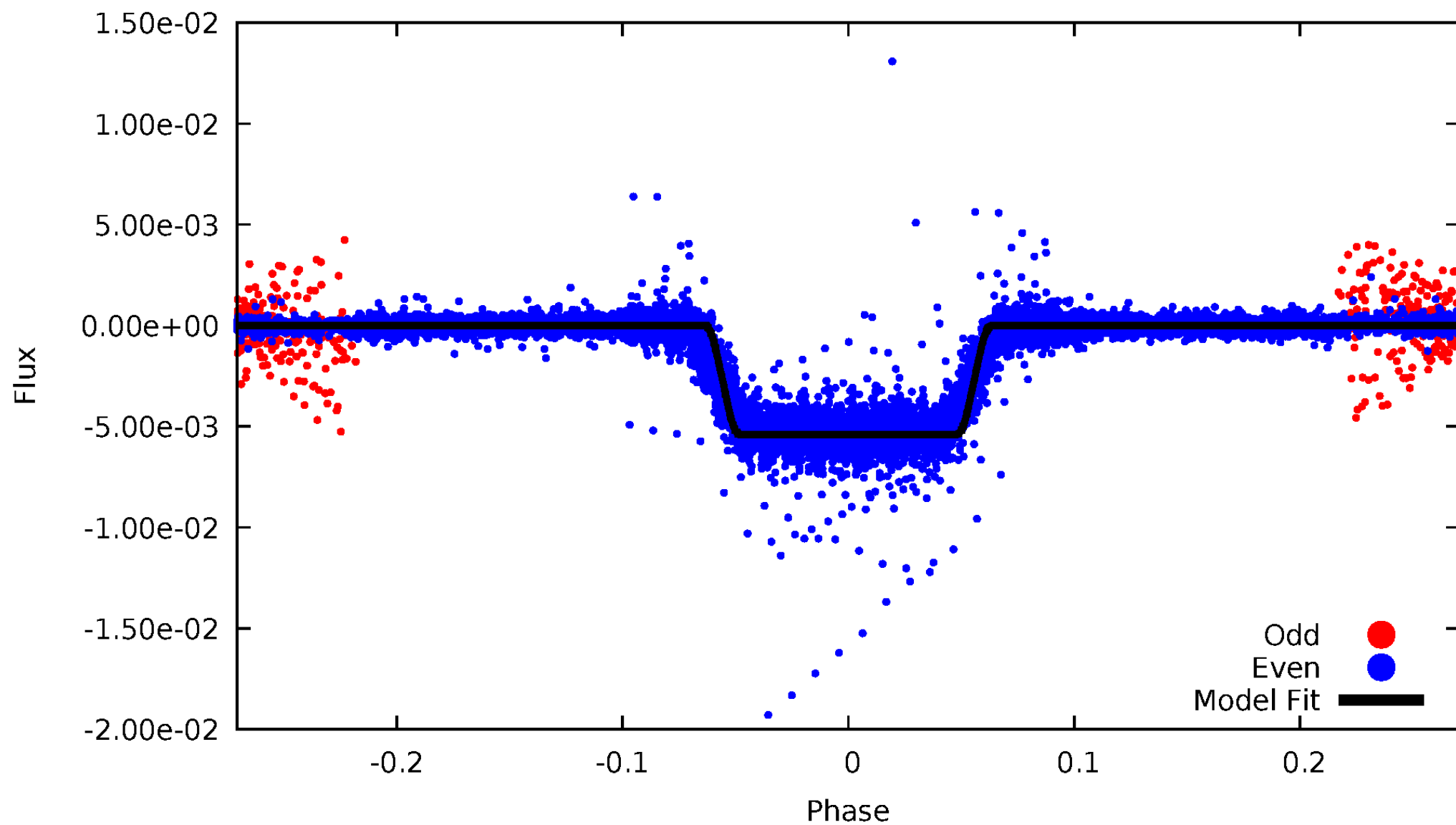
TCE 007940533-02





# ALT Odd/Even

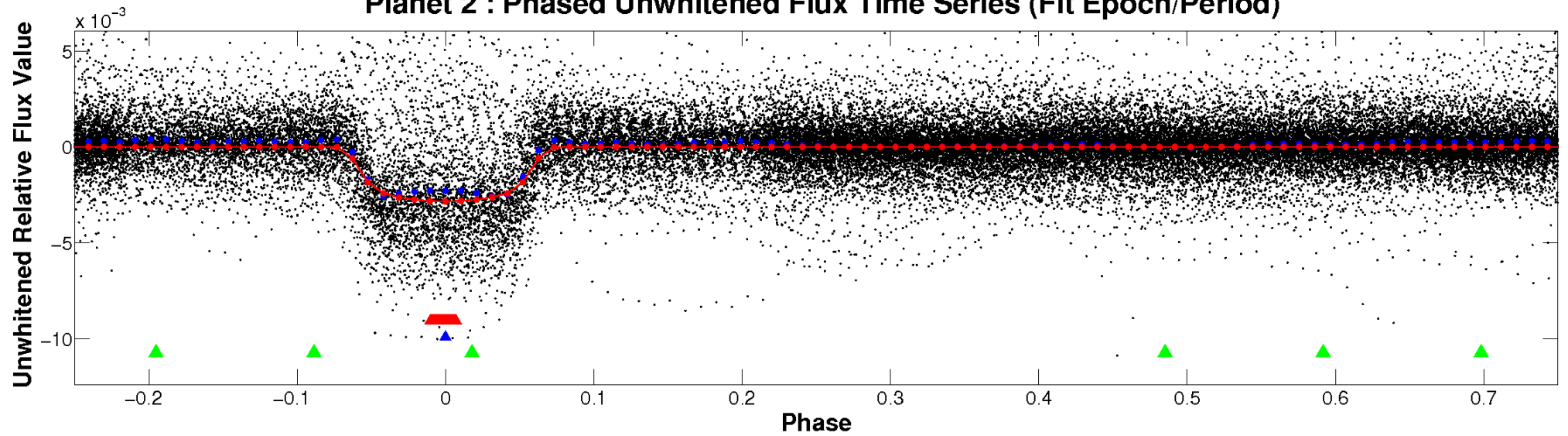
TCE 007940533-02



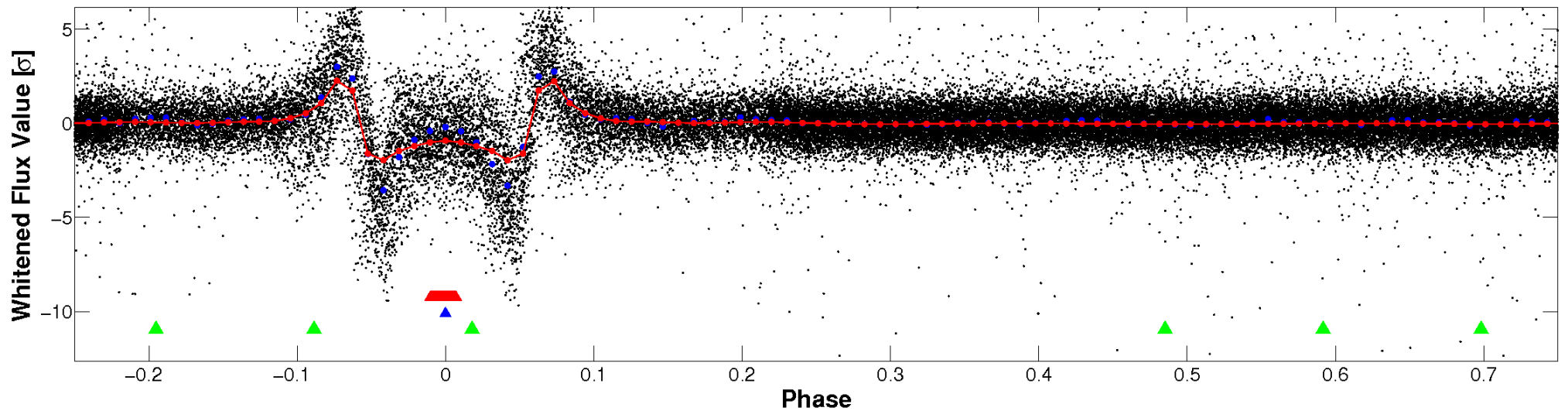


# Non-Whitened Vs. Whitened Light Curve

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

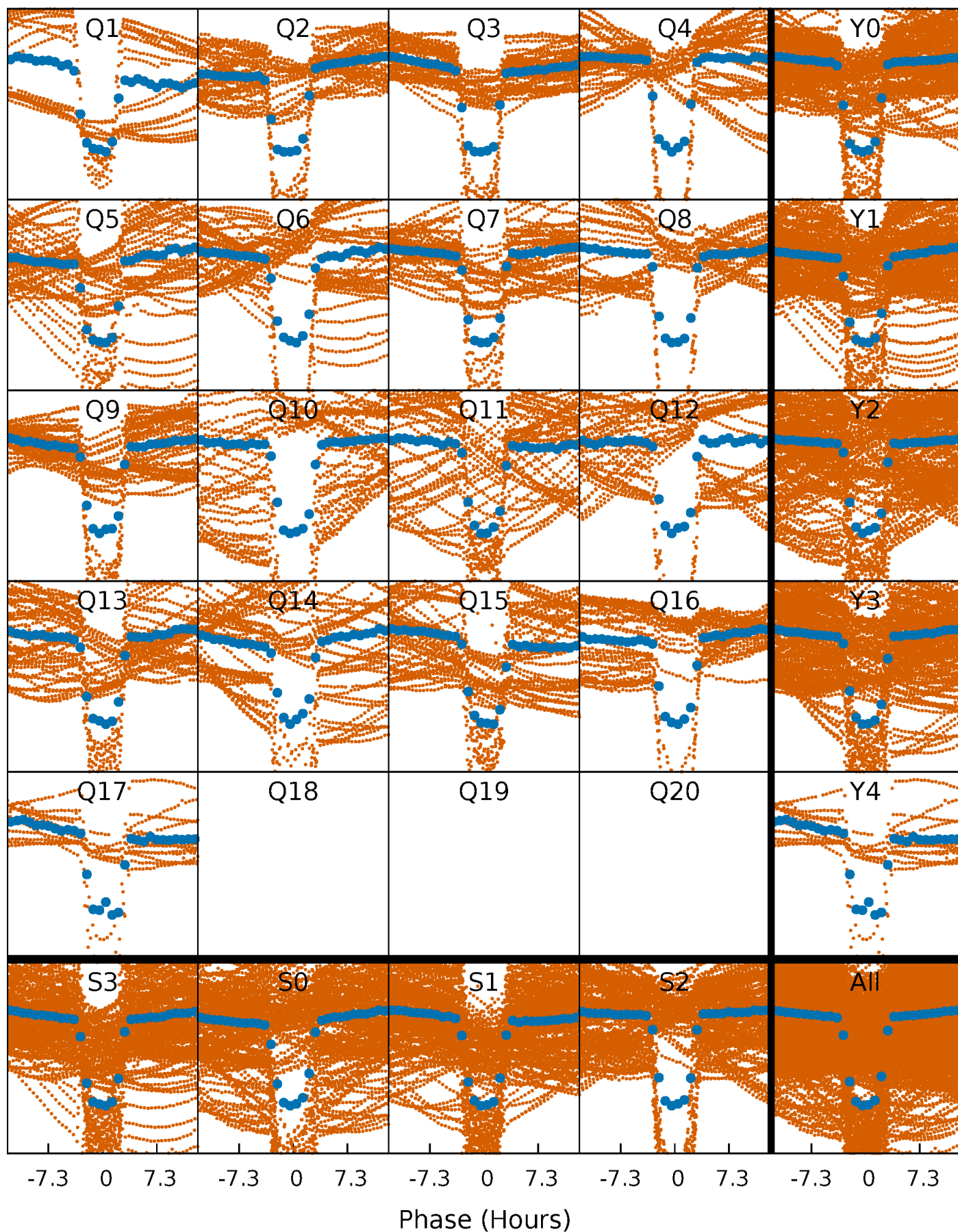


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



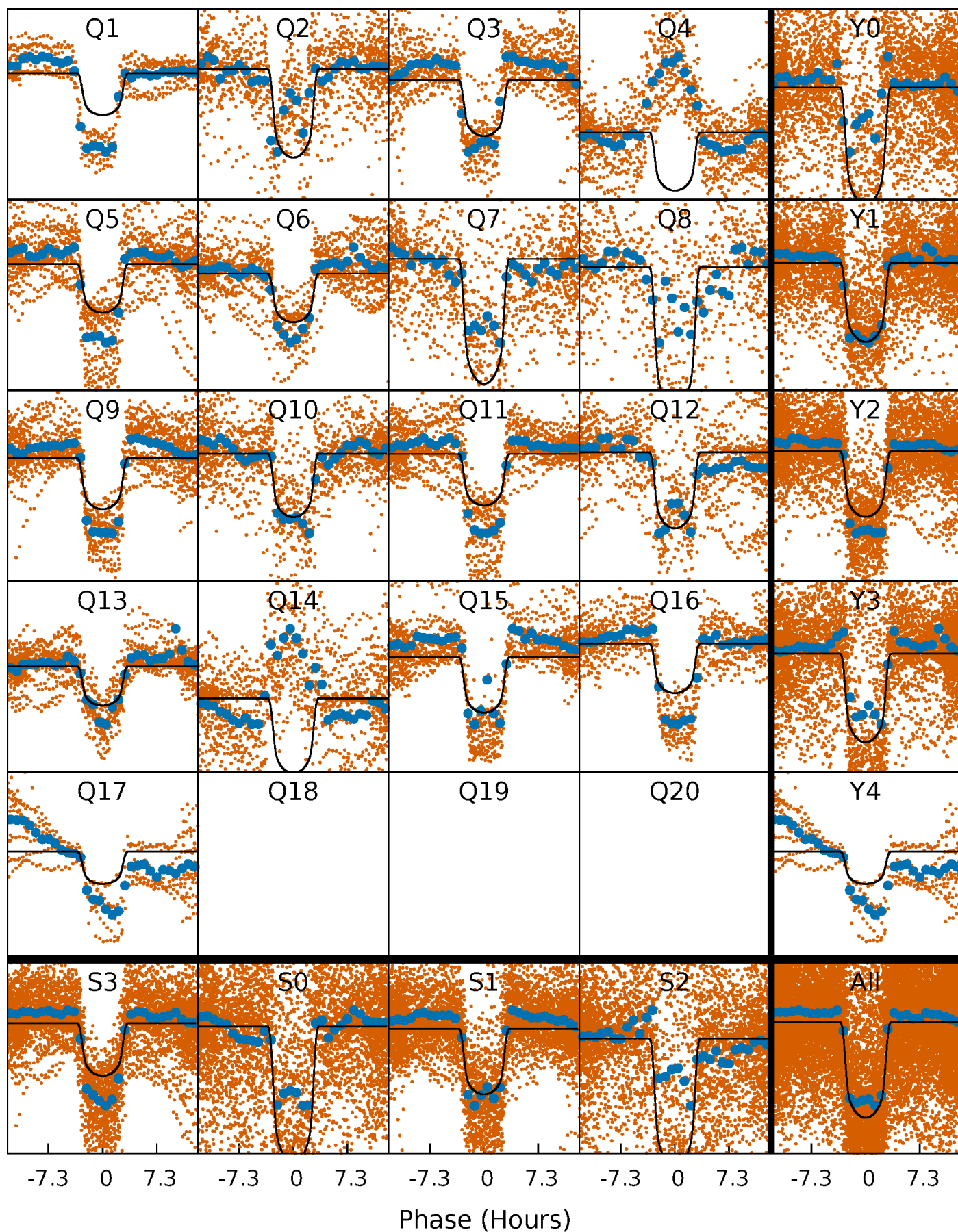
# PDC Quarter-Phased Transit Curves

TCE 007940533-02 P= 1.952718 Days  $T_0=133.369046$  (BKJD)



# DV Quarter-Phased Transit Curves

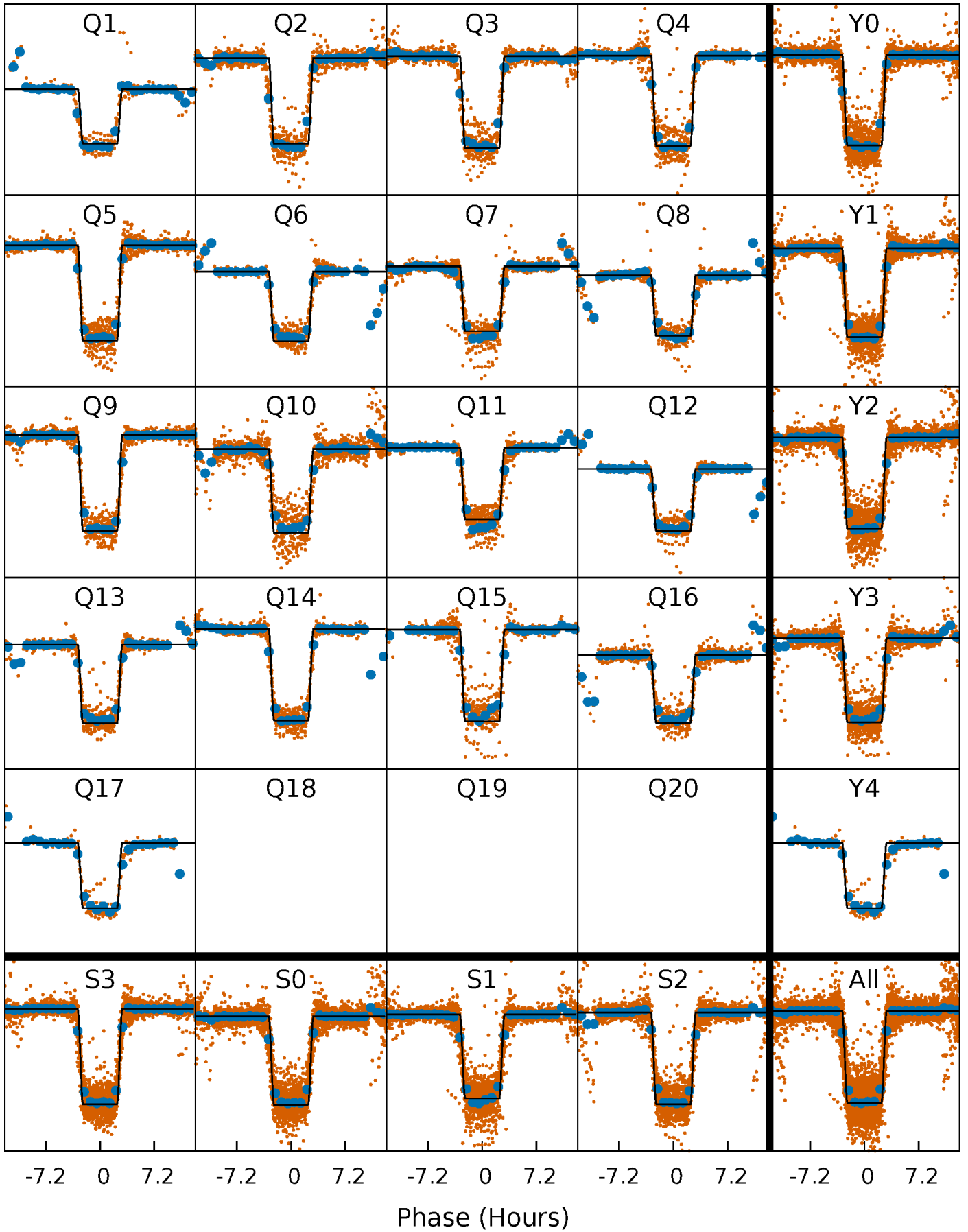
TCE 007940533-02   P= 1.952718 Days    $T_0=133.369046$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

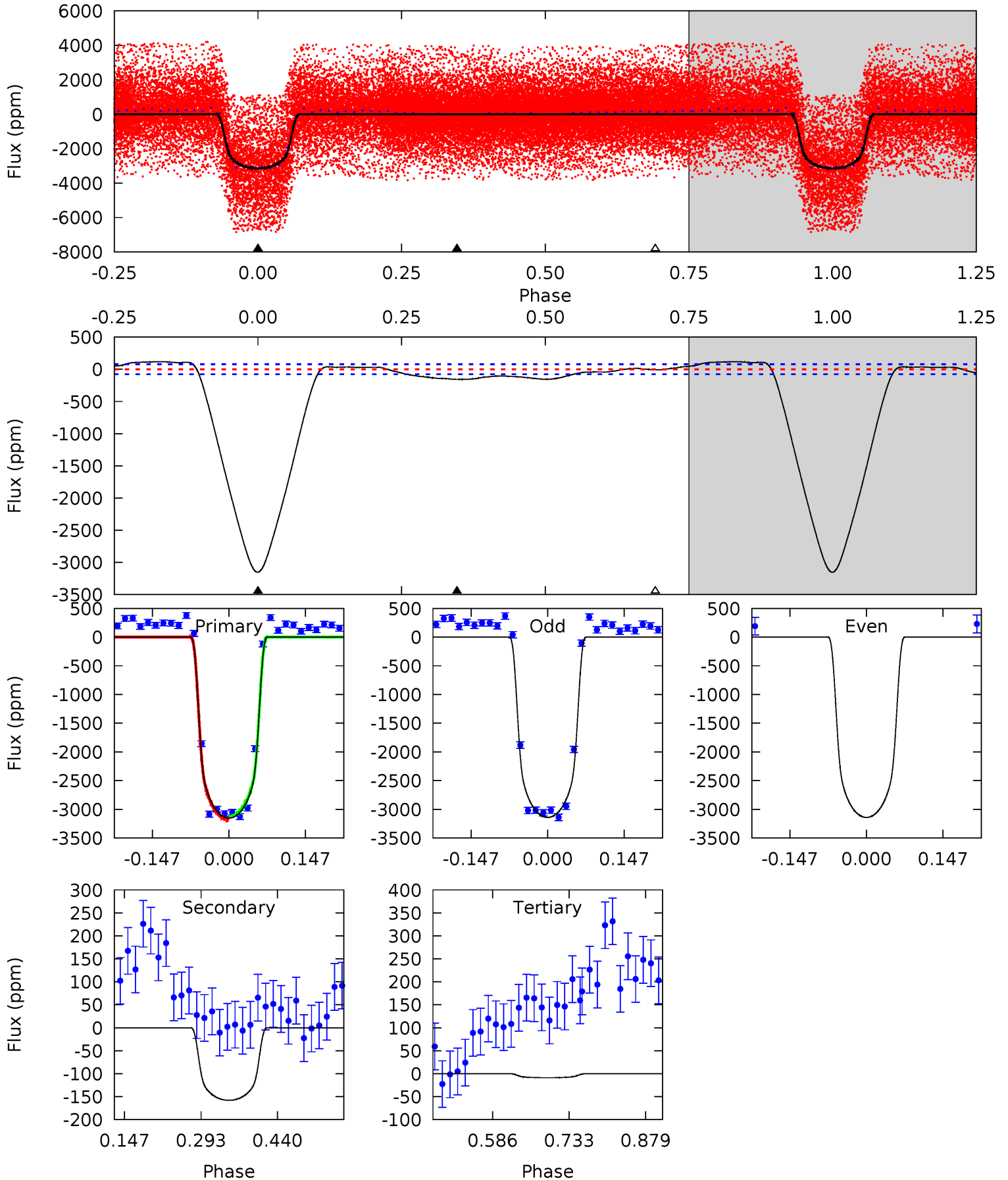
TCE 007940533-02     $P = 1.952750$  Days     $T_0 = 133.355992$  (BKJD)



# DV Model-Shift Uniqueness Test

007940533-02, P = 1.952718 Days, E = 131.416328 Days

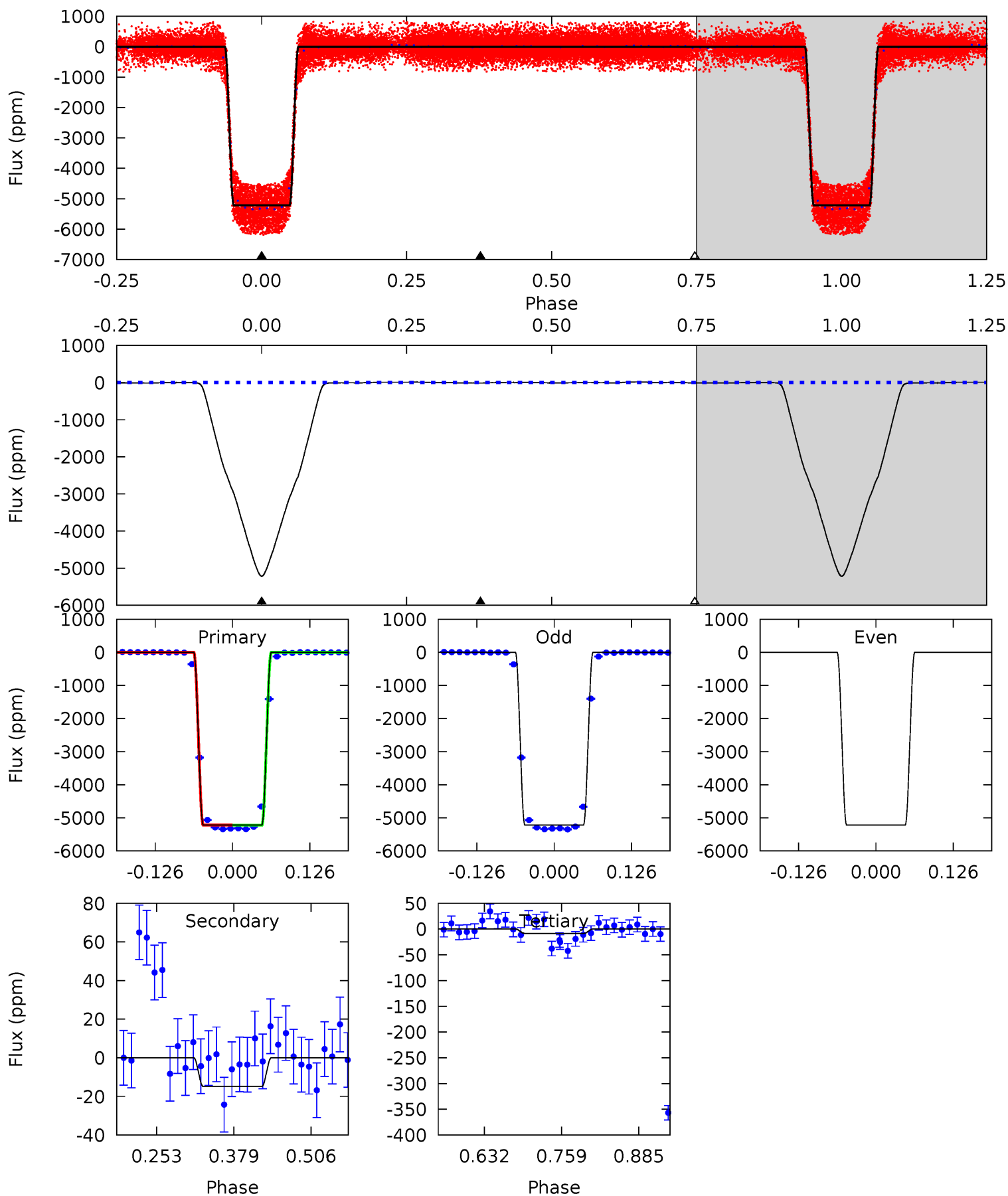
| Pri   | Sec  | Ter  | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|-------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 184.0 | 9.22 | 0.51 | 0   | 4.48            | 1.45            | 4.23             | 183.5   | 184.0   | 8.71    | 9.22    | 0       | 0.85 | 0.04  | 1.56 |



# Alt Model-Shift Uniqueness Test

007940533-02, P = 1.952750 Days, E = 131.403242 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  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1322 | 3.76 | 2.18 | 0   | 4.52            | 1.53            | 1.98             | 1320    | 1322    | 1.58    | 3.76    | 0       | 1.01 | 0.00  | 0.74 |





### Stellar Parameters For KIC 007940533

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5495^{+149}_{-149}$ | $4.543^{+0.063}_{-0.117}$ | $-0.300^{+0.300}_{-0.300}$ | $0.798^{+0.152}_{-0.082}$ | $0.812^{+0.100}_{-0.075}$ | $2.253^{+0.600}_{-0.802}$                 |
|        | +3%/-3%              | +1%/-3%                   | +100%/-100%                | +19%/-10%                 | +12%/-9%                  | +27%/-36%                                 |
| 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 007940533-02 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$      | $T_{obs} (K)$        | $A_{obs}$                 |
|---------|---------------|------------------------|--------------------|----------------------|---------------------------|
| DV      | $-158 \pm 17$ | $4.74^{+0.49}_{-0.31}$ | $1801^{+91}_{-67}$ | $3175^{+82}_{-83}$   | $3.102^{+0.564}_{-0.518}$ |
| Alt.    | $-15 \pm 4$   | $6.49^{+0.67}_{-0.41}$ | $1808^{+90}_{-71}$ | $-2186^{+103}_{-94}$ | $0.153^{+0.048}_{-0.042}$ |

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

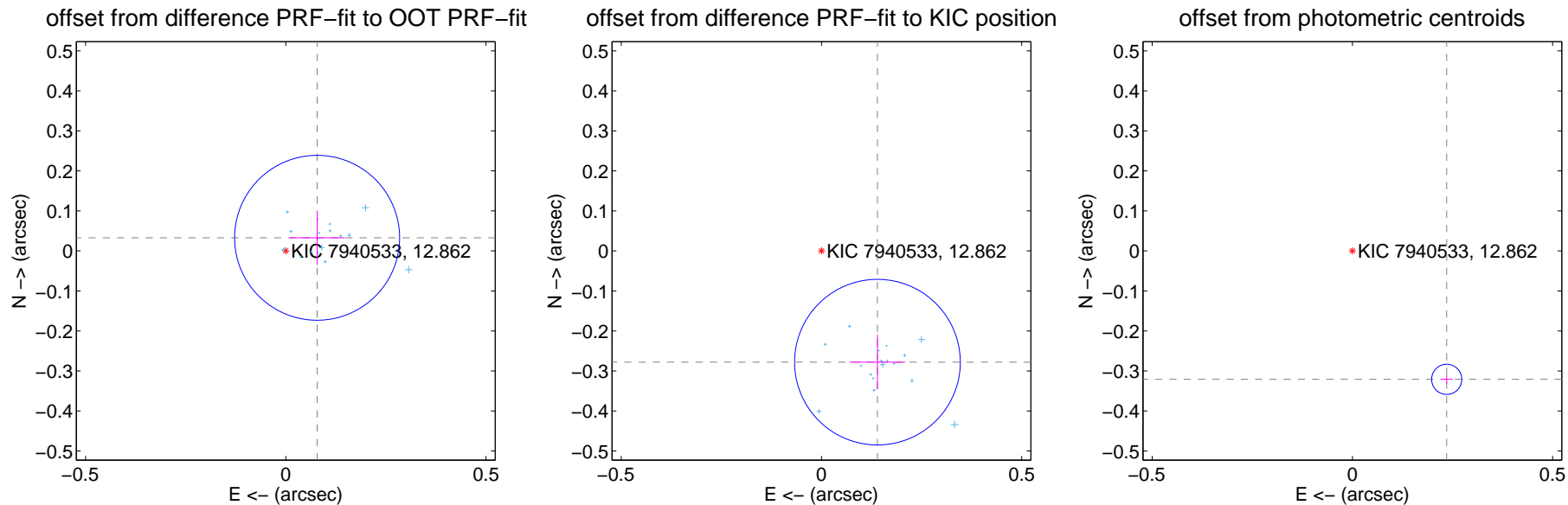
## DV Centroid Data

Supplemental centroid analysis for 007940533-02. Kepler magnitude: 12.86. Transit SNR 100.42

There are 17 quarters with good PRF difference image offsets

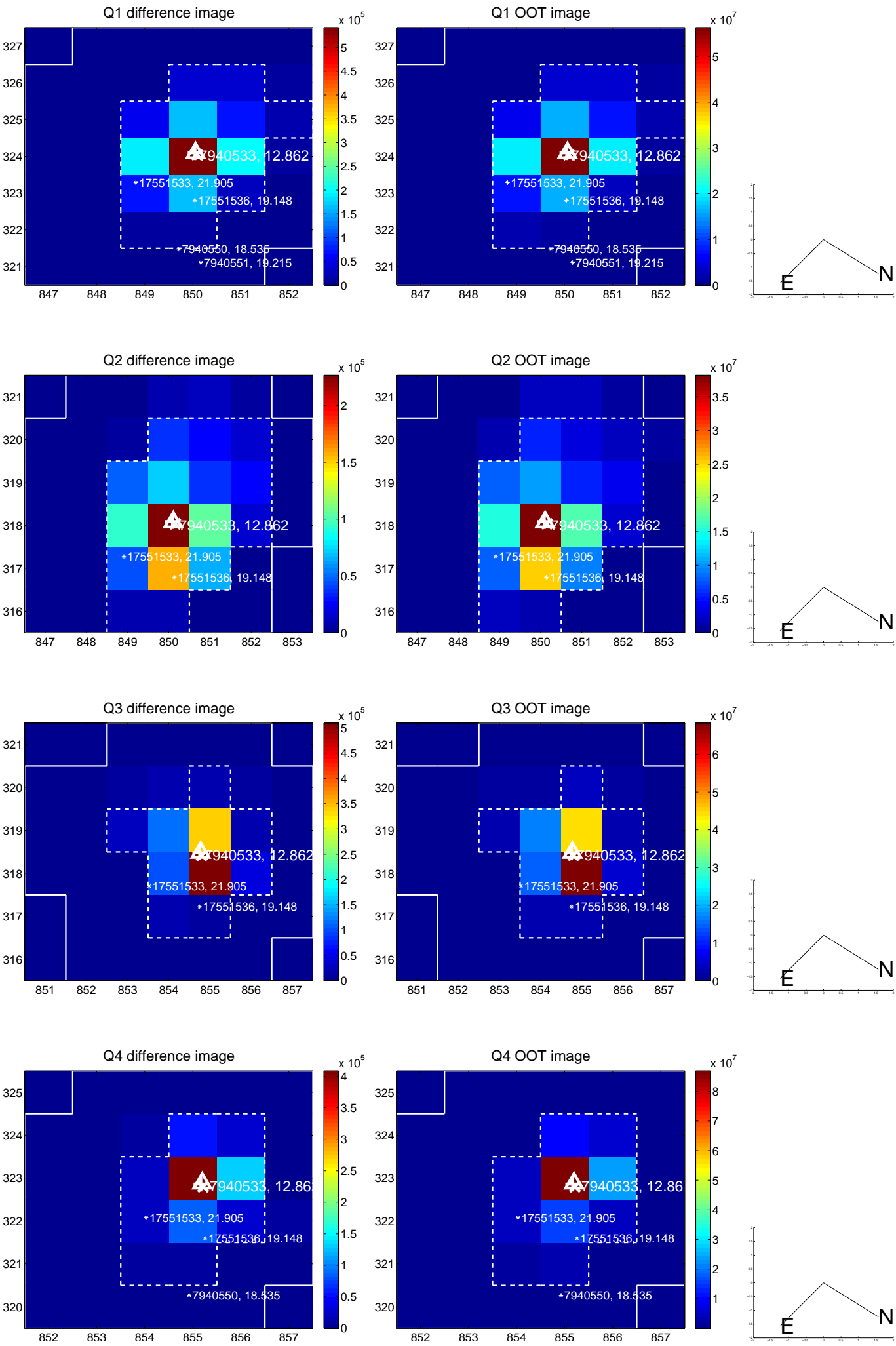
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.085 \pm 0.069$  | 1.23                | $-0.078 \pm 0.069$ | $0.033 \pm 0.068$  |
| PRF-fit source offset from KIC position | $0.311 \pm 0.069$  | 4.51                | $-0.140 \pm 0.069$ | $-0.278 \pm 0.068$ |
| photometric centroid source offset      | $0.40 \pm 0.01$    | 31.69               | $-0.24 \pm 0.01$   | $-0.32 \pm 0.01$   |

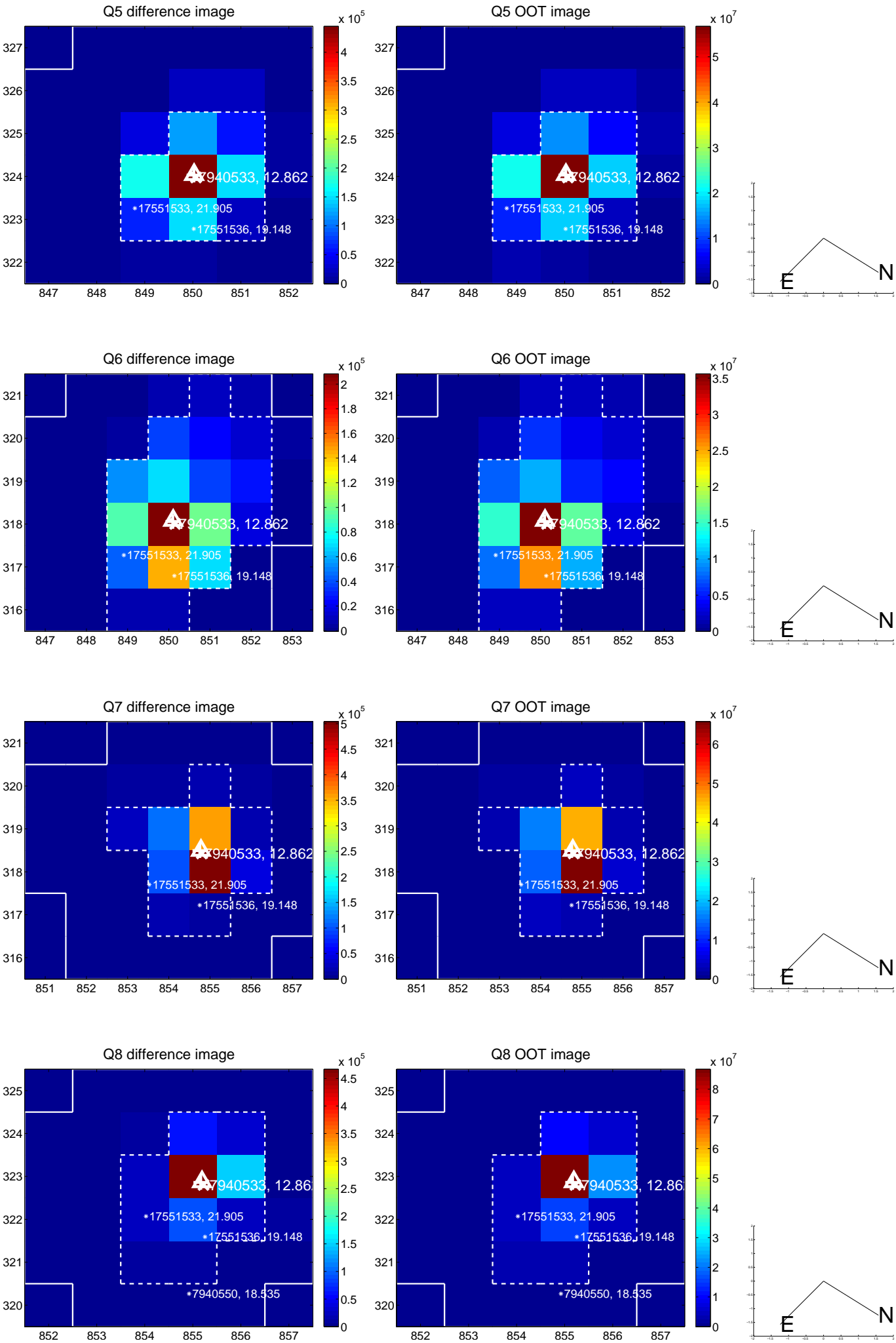


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

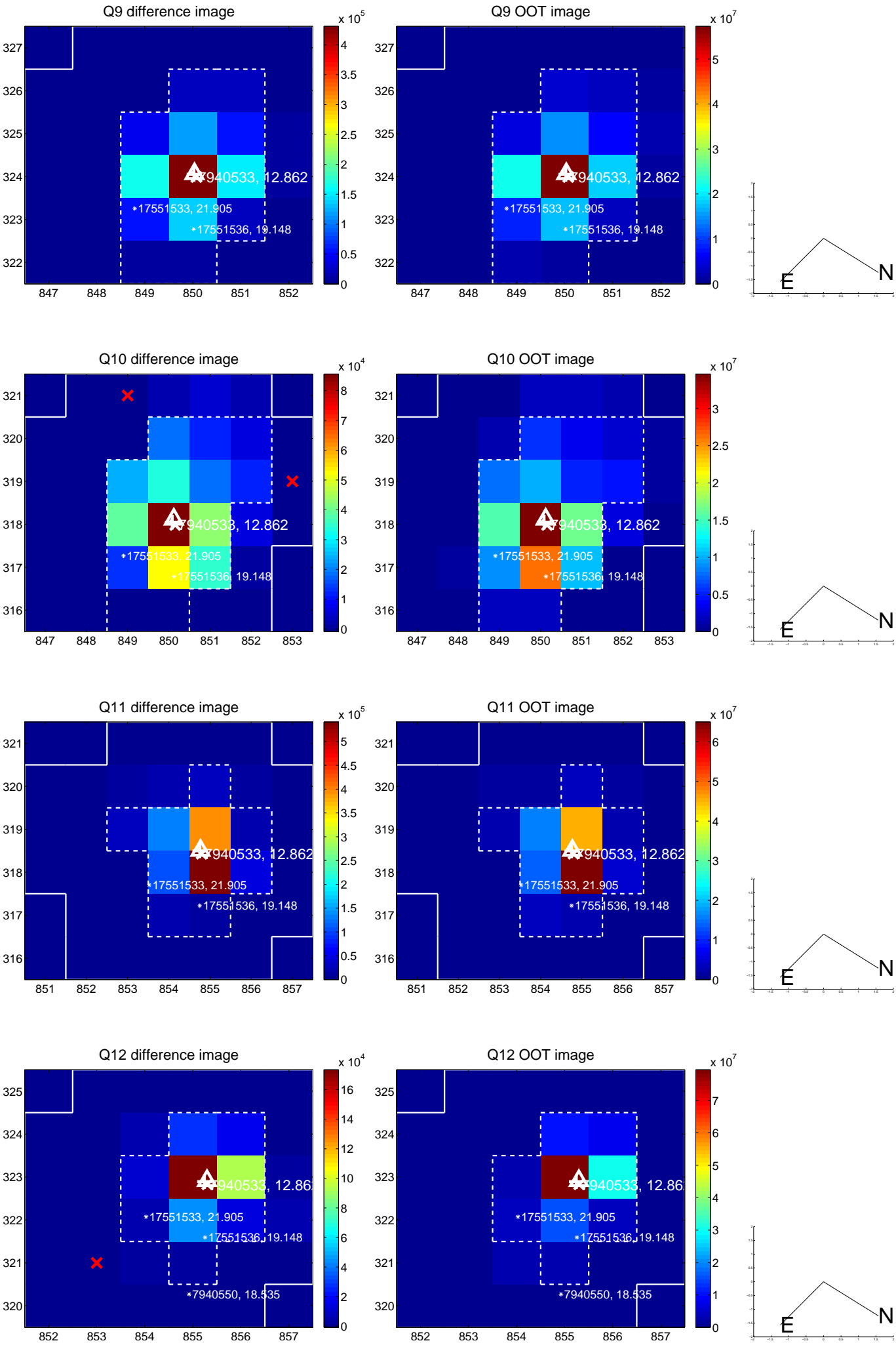
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



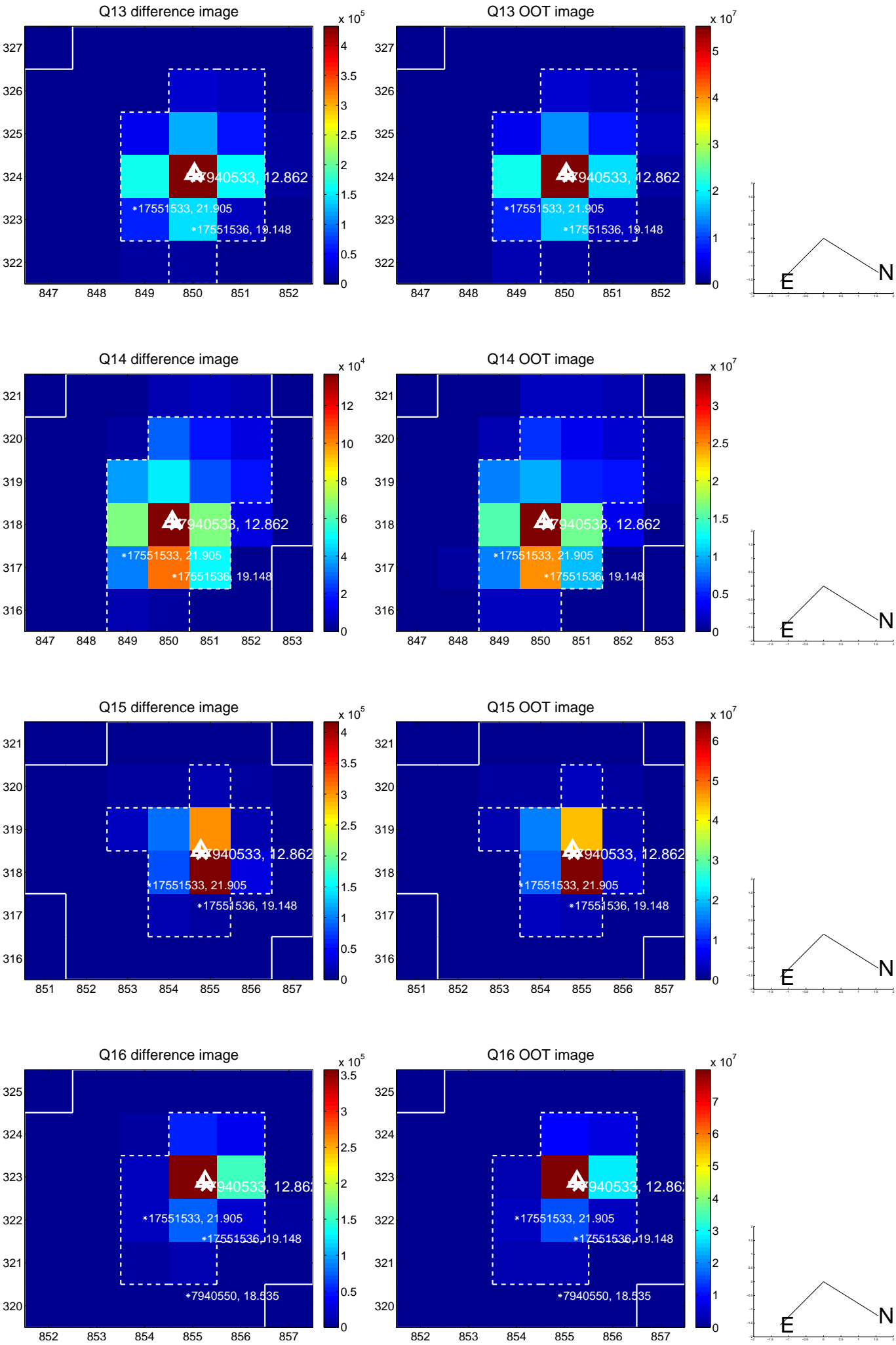
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



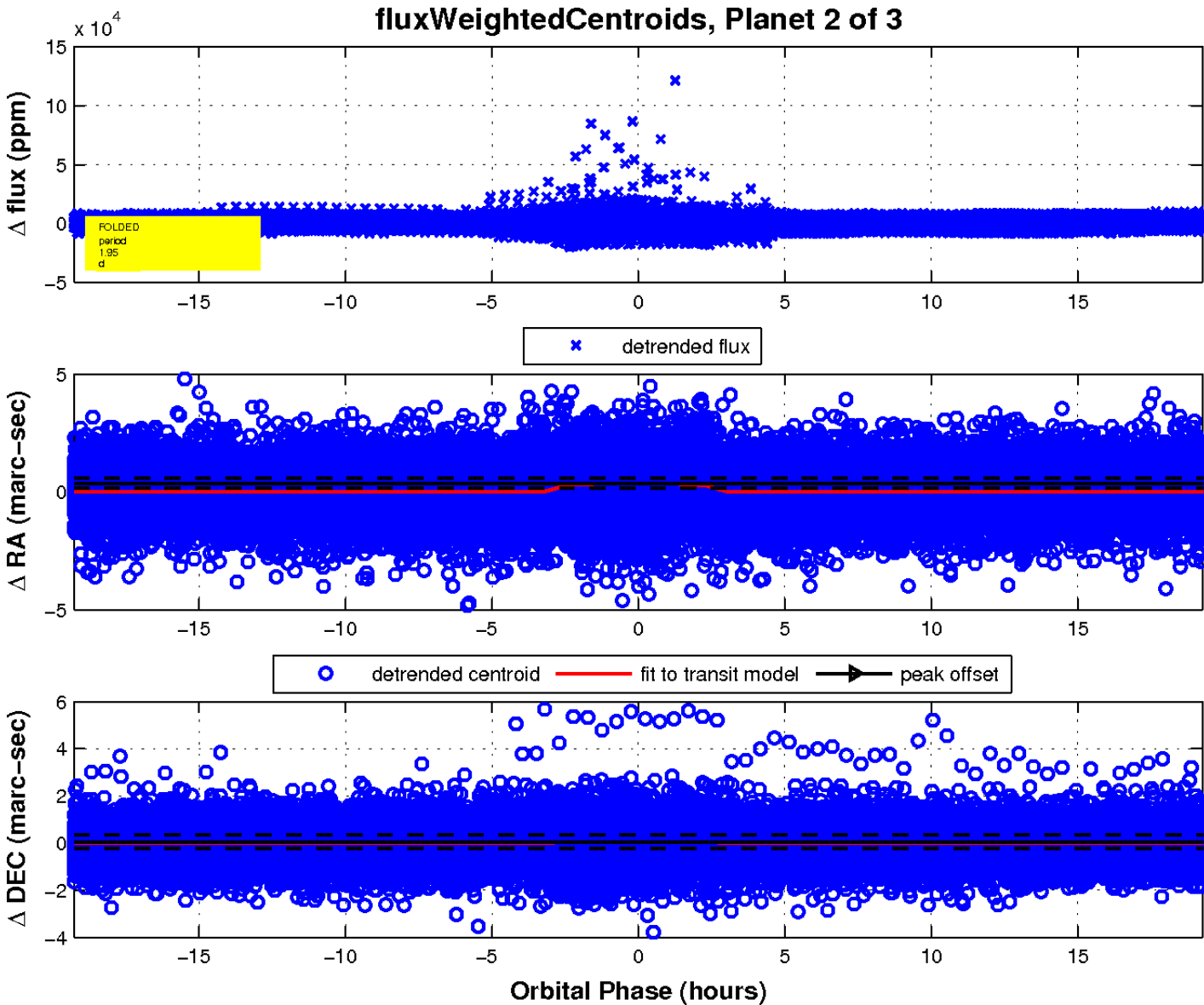
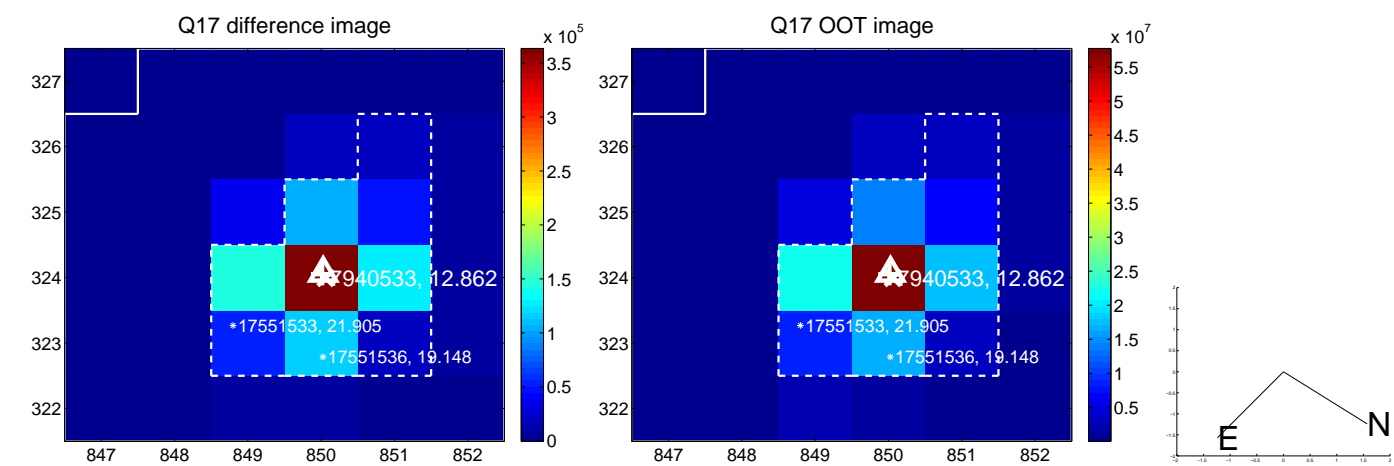
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

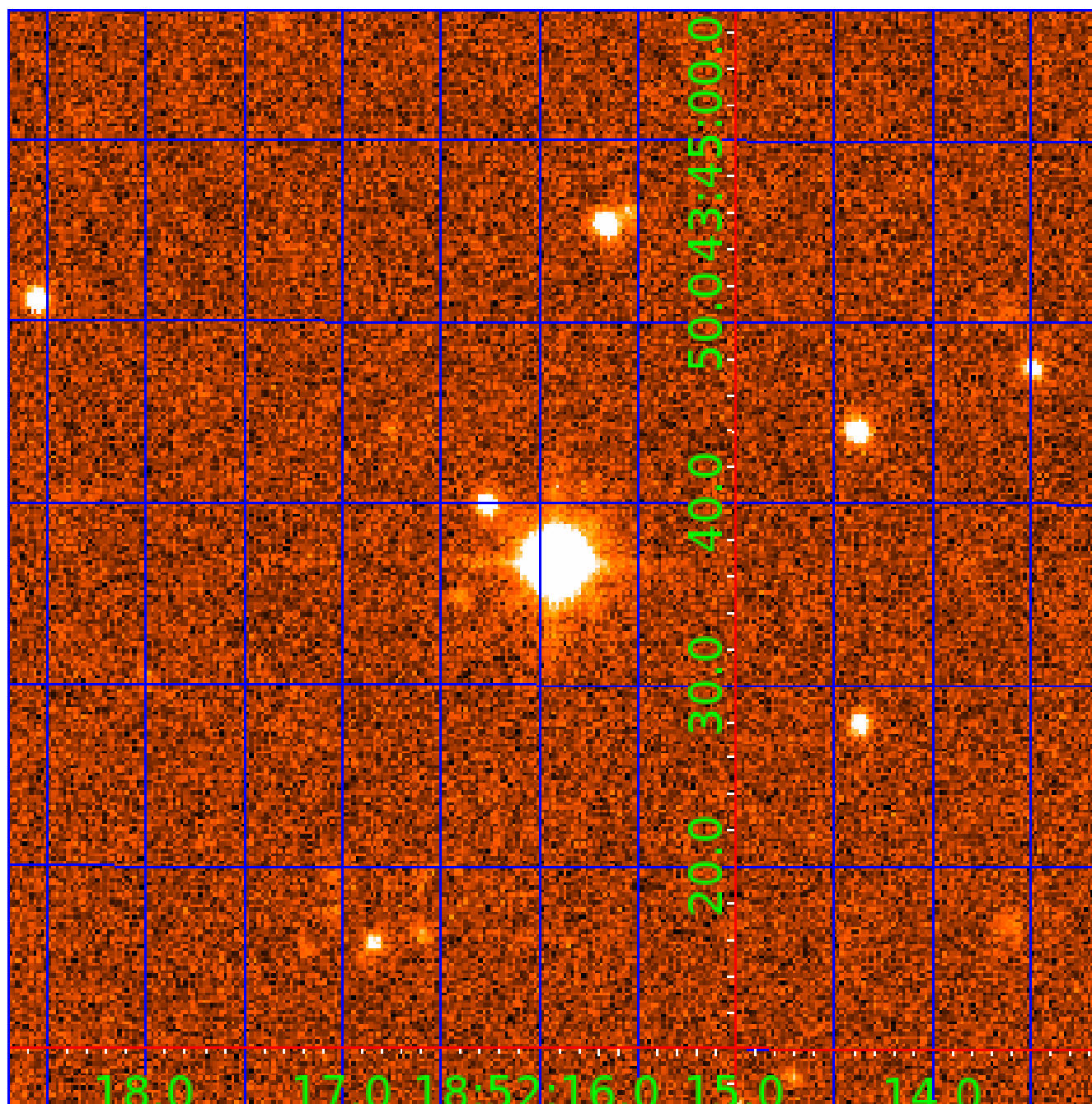


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 007940533

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 007940533-01 | OBS      | 6167.01 | 3.905529      | 133.348838   | 72662.2     | 6.669            | 1350.7 | 1839.5 | 0.80                        | 5495            | 21.28                  | 253.82                 |
| 007940533-02 | OBS      | No      | 1.952718      | 133.369047   | 2838.2      | 6.421            | 182.4  | 100.4  | 0.80                        | 5495            | 4.69                   | 639.61                 |
| 007940533-03 | OBS      | No      | 257.966884    | 241.715994   | 413.6       | 10.500           | 18.2   | -1.0   | 0.80                        | 5495            | 1.60                   | 0.95                   |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 007940533-01 | OBS      | FP   | 0.00  | 0 | 1 | 0 | 0 | <del>SWEET_EB</del> <del>MOD_SEC_DV</del> <del>MOD_SEC_ALT</del> <del>HAS_SEC_TCE</del>  |
| 007940533-02 | OBS      | FP   | 0.00  | 1 | 1 | 0 | 0 | <del>IS_SEC_TCE</del>  |
| 007940533-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | <del>INDIV_TRANS_RUBBLE</del> <del>TRANS_GAPPED</del> <del>LPP_DV</del> <del>MOD_NONUNIQ_ALT</del> <del>MOD_POS_ALT</del> <del>INCONSISTENT_TRANS</del> <del>CENT_NOFITS</del> |

**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.

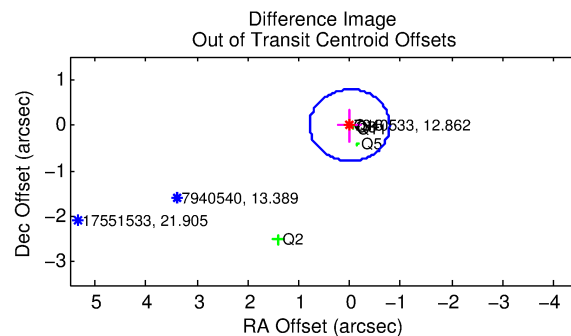
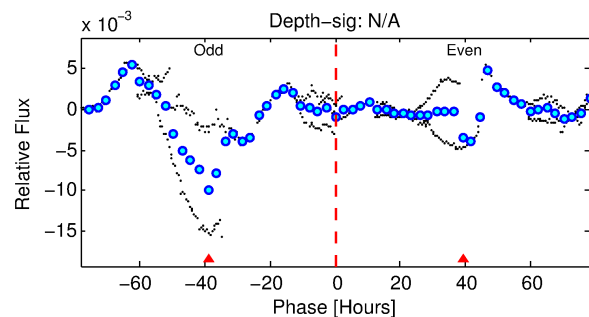
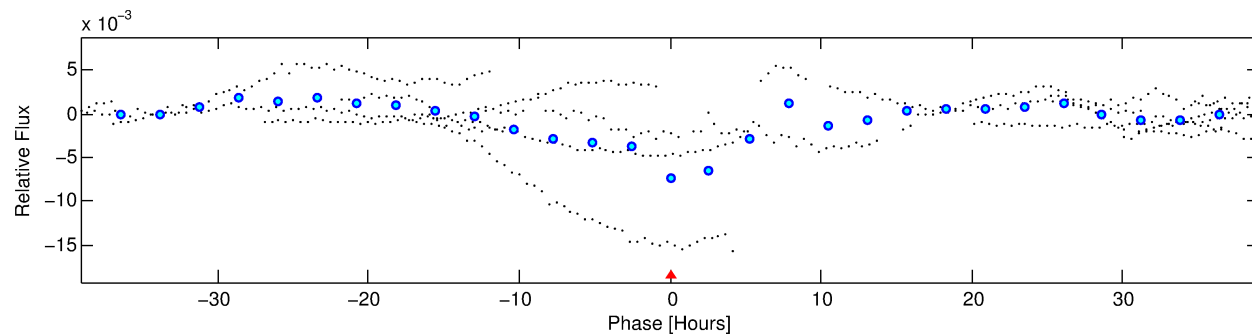
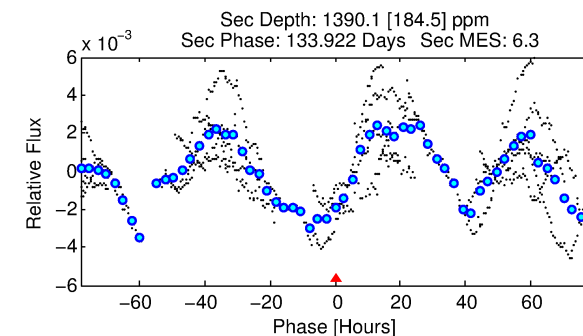
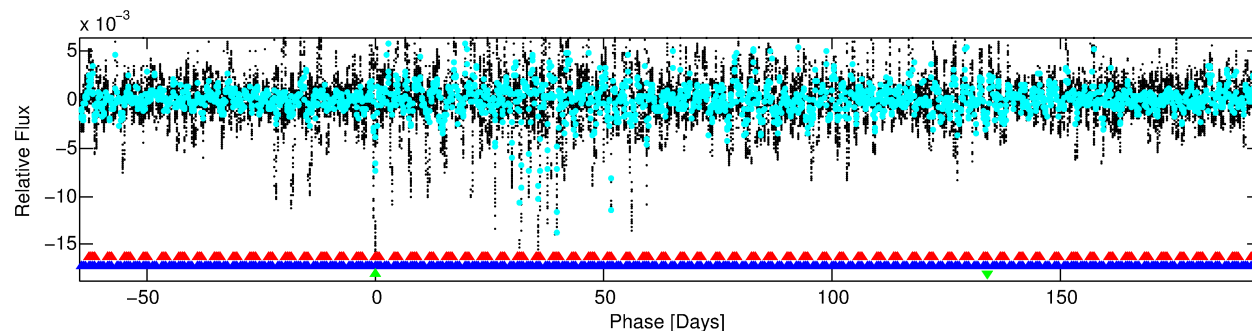
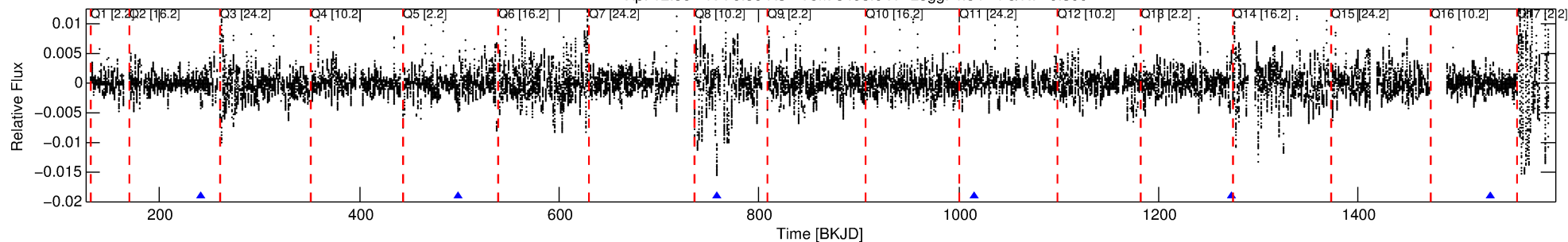
## Ephemeris Match Information For 007940533-03

No Significant Match Found

# DV One-Page Summary

KIC: 7940533 Candidate: 3 of 3 Period: 257.967 d  
KOI: K06167 Corr: No Ephemeris Match

Kp: 12.86 R\*: 0.80 Rs Teff: 5495.0 K Logg: 4.54 Fe/H: -0.300



## TPS TCE Results:

Period = 257.96688 d  
Epoch = 241.7160 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

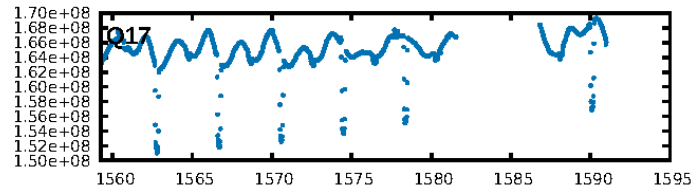
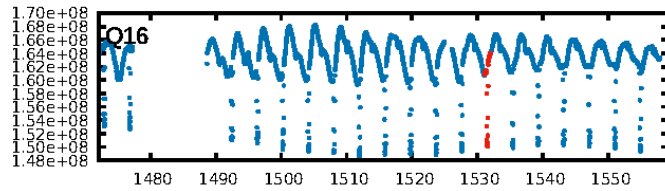
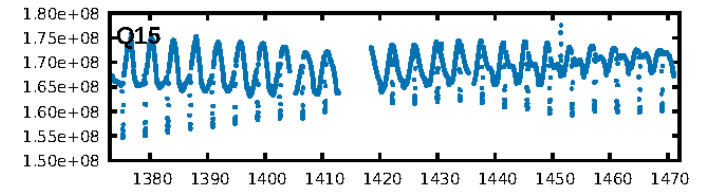
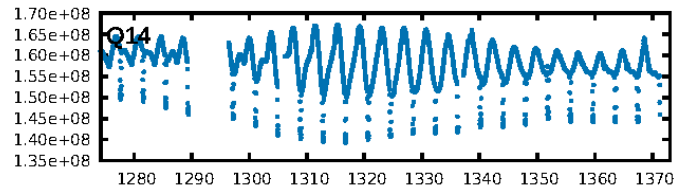
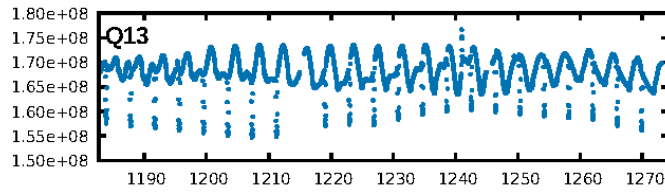
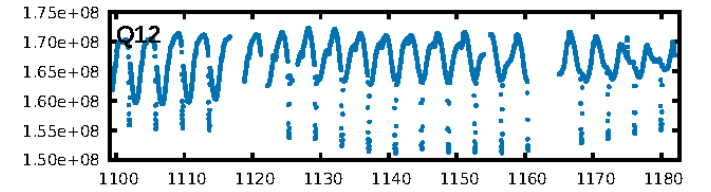
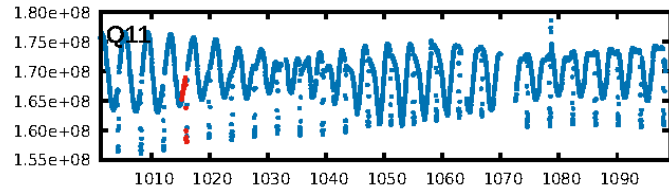
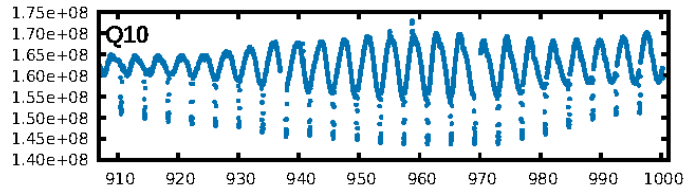
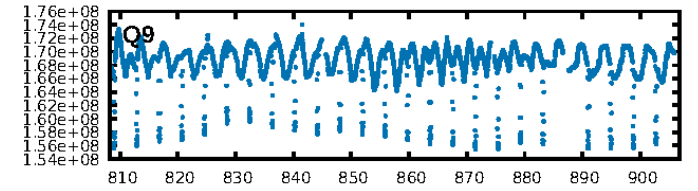
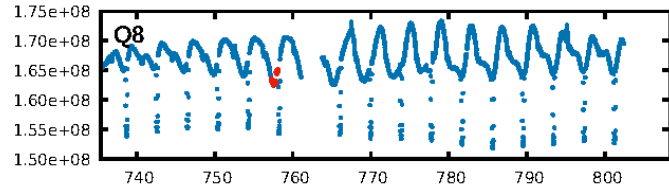
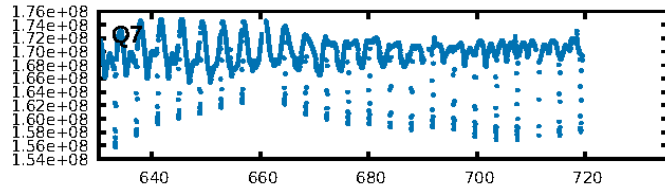
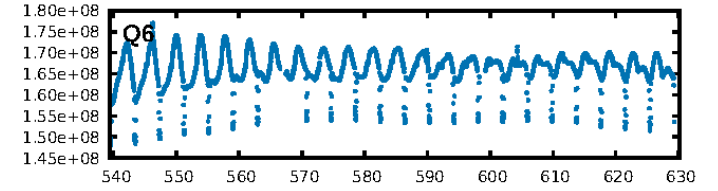
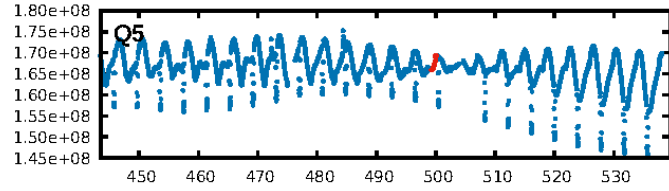
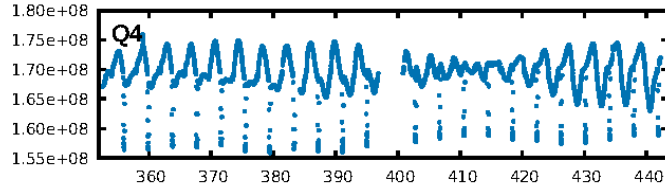
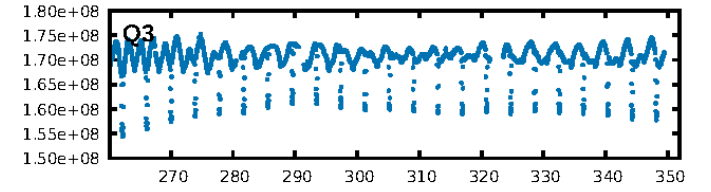
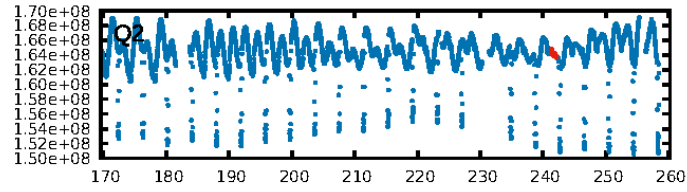
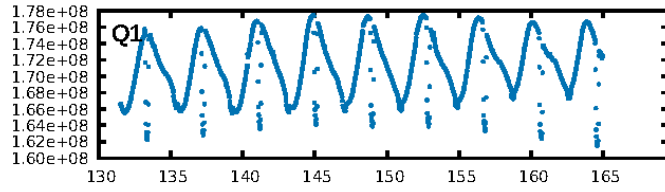
ShortPeriod-sig: 100.0% [490.19σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 4.821

Centroid-sig: 5.5%  
Centroid-so: 0.296 arcsec [14.06σ]  
OotOffset-rm: 0.005 arcsec [0.02σ]  
KicOffset-rm: 0.365 arcsec [0.84σ]  
OotOffset-st: 1/1/2/1 [5]  
KicOffset-st: 1/1/2/1 [5]  
DiffImageQuality-fgm: 0.60 [3/5]  
DiffImageOverlap-fno: 0.00 [0/5]

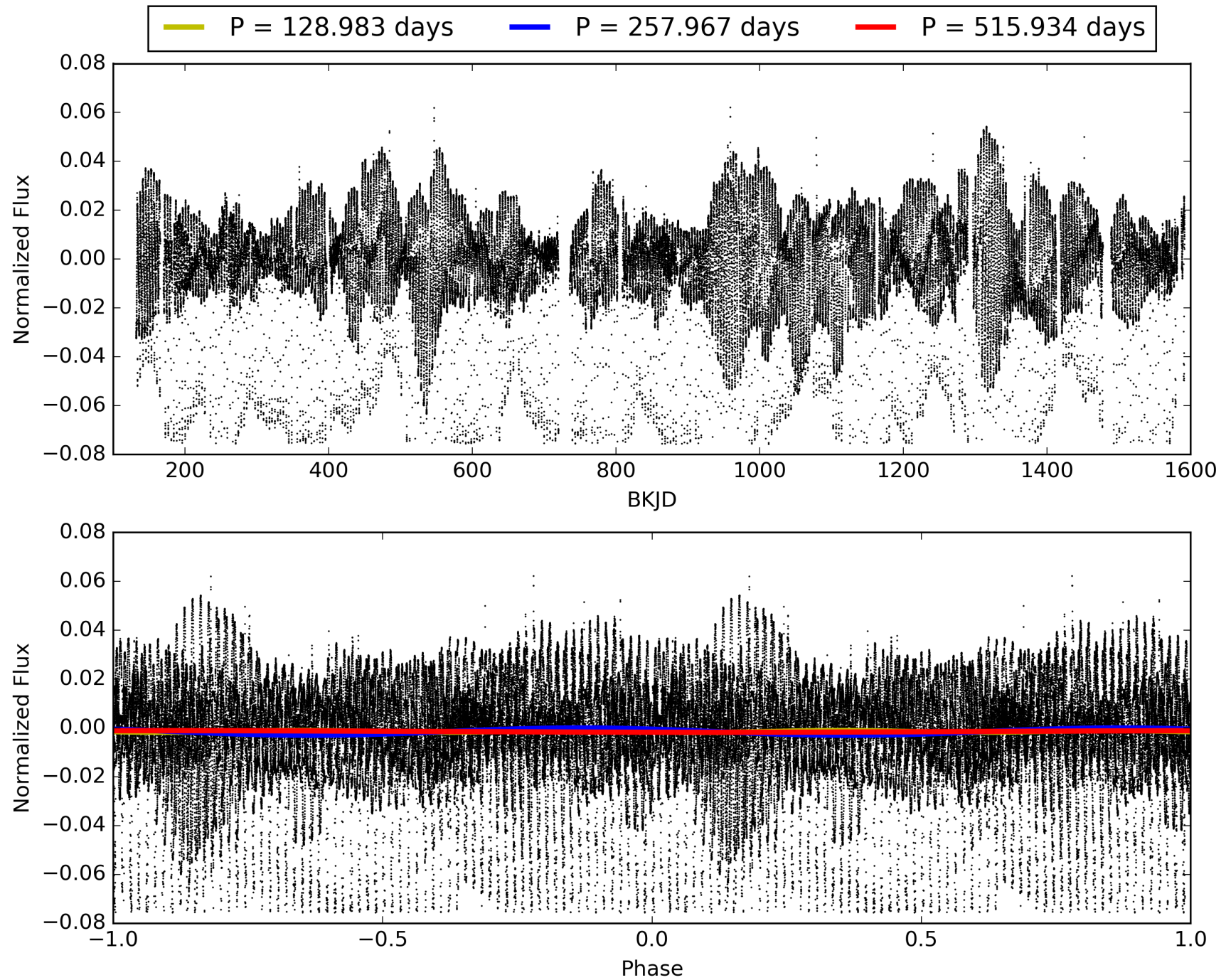
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 10:31:15 Z

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

# TCE 007940533-03, PDC Light Curves

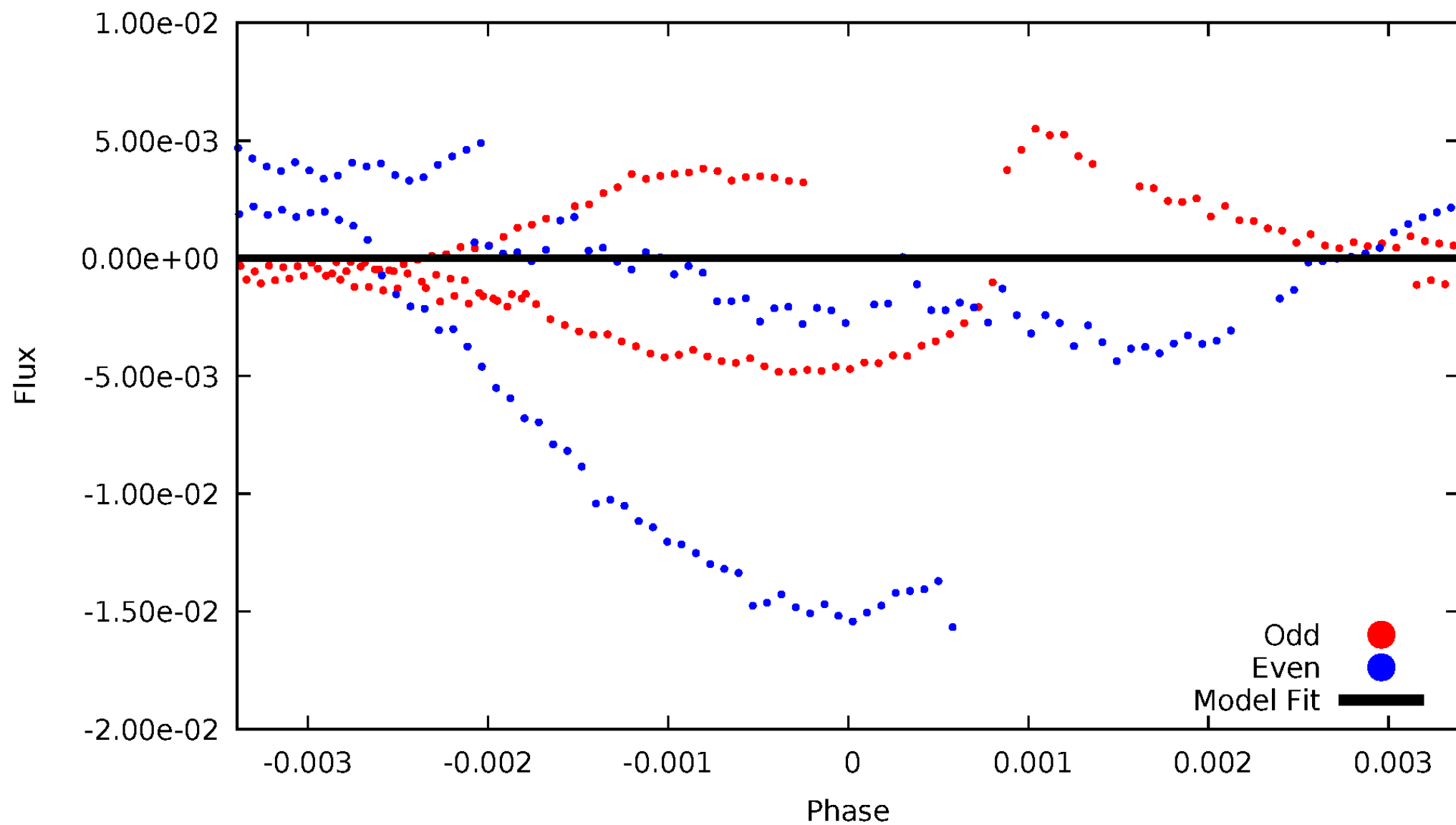


TCE 007940533-03



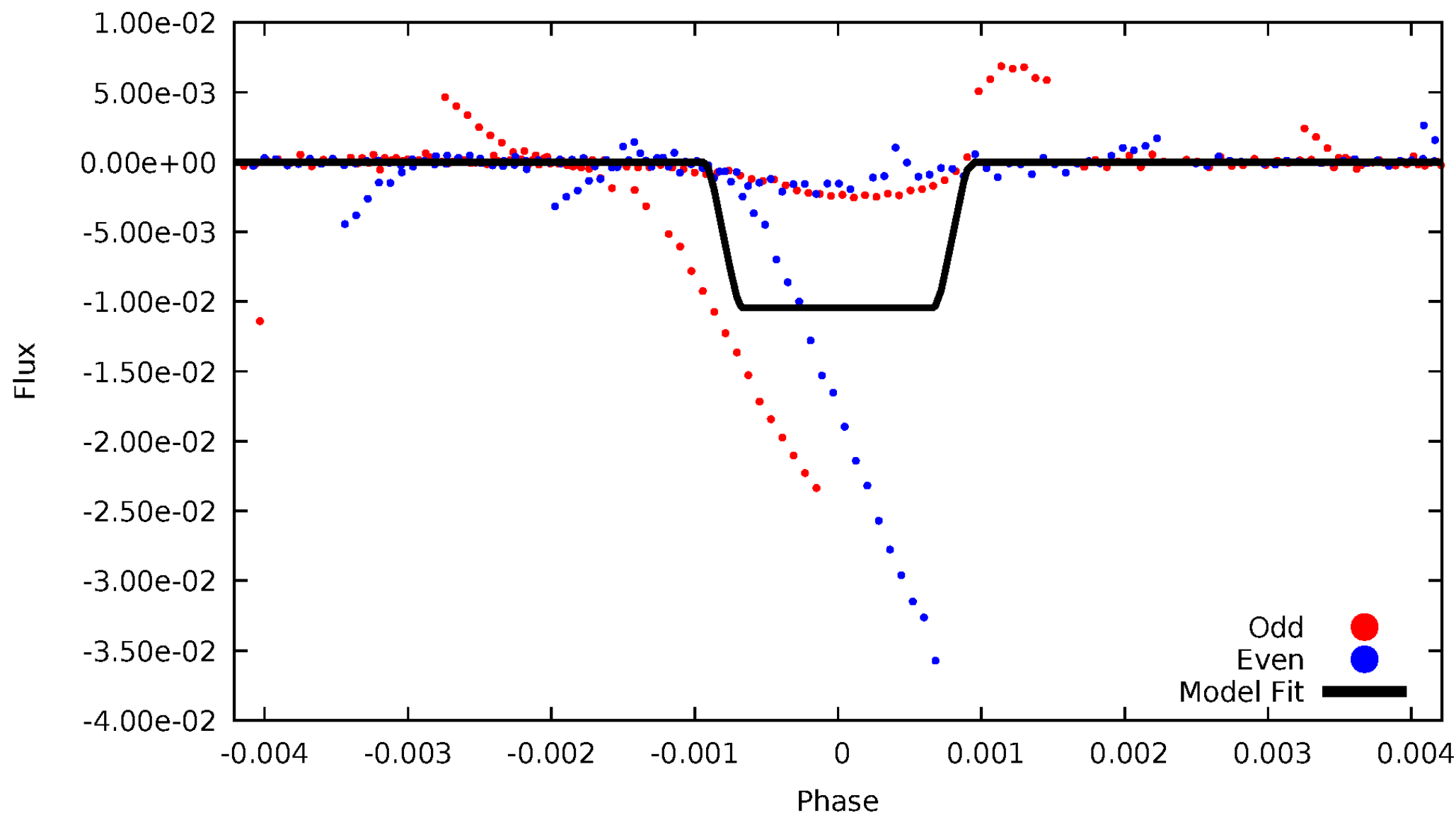
# DV Odd/Even

TCE 007940533-03



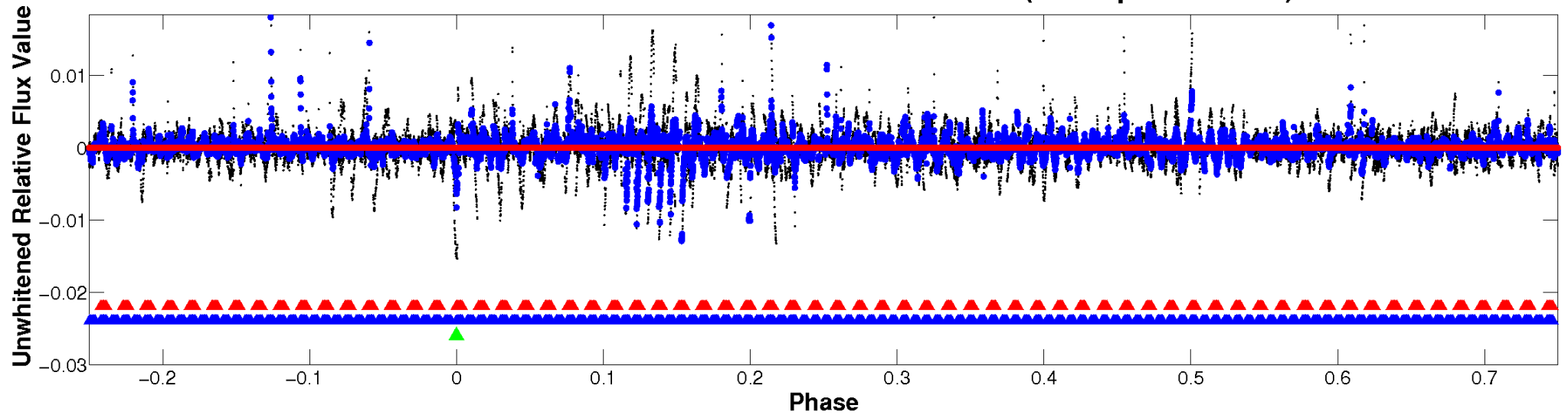
# ALT Odd/Even

TCE 007940533-03



# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

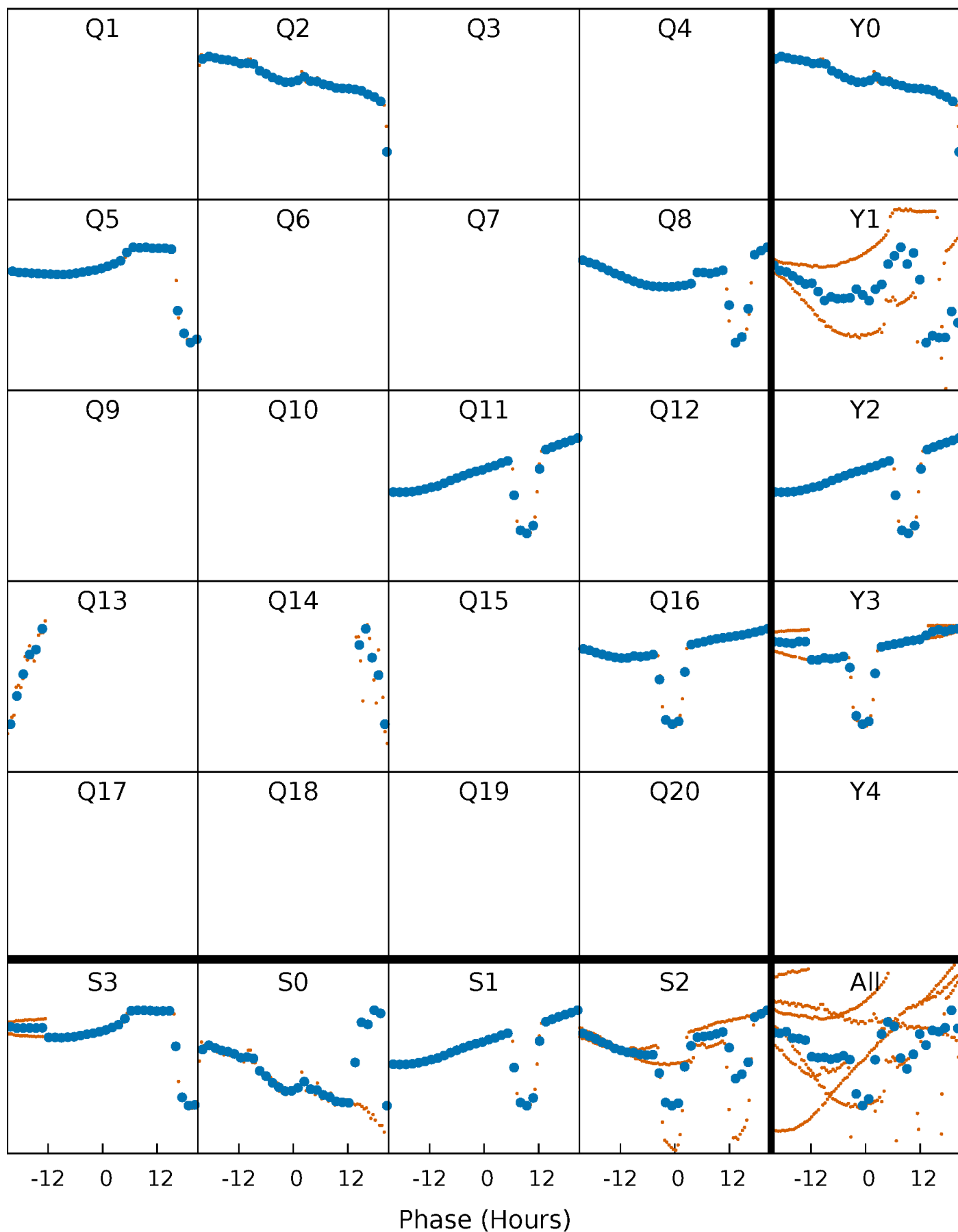


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

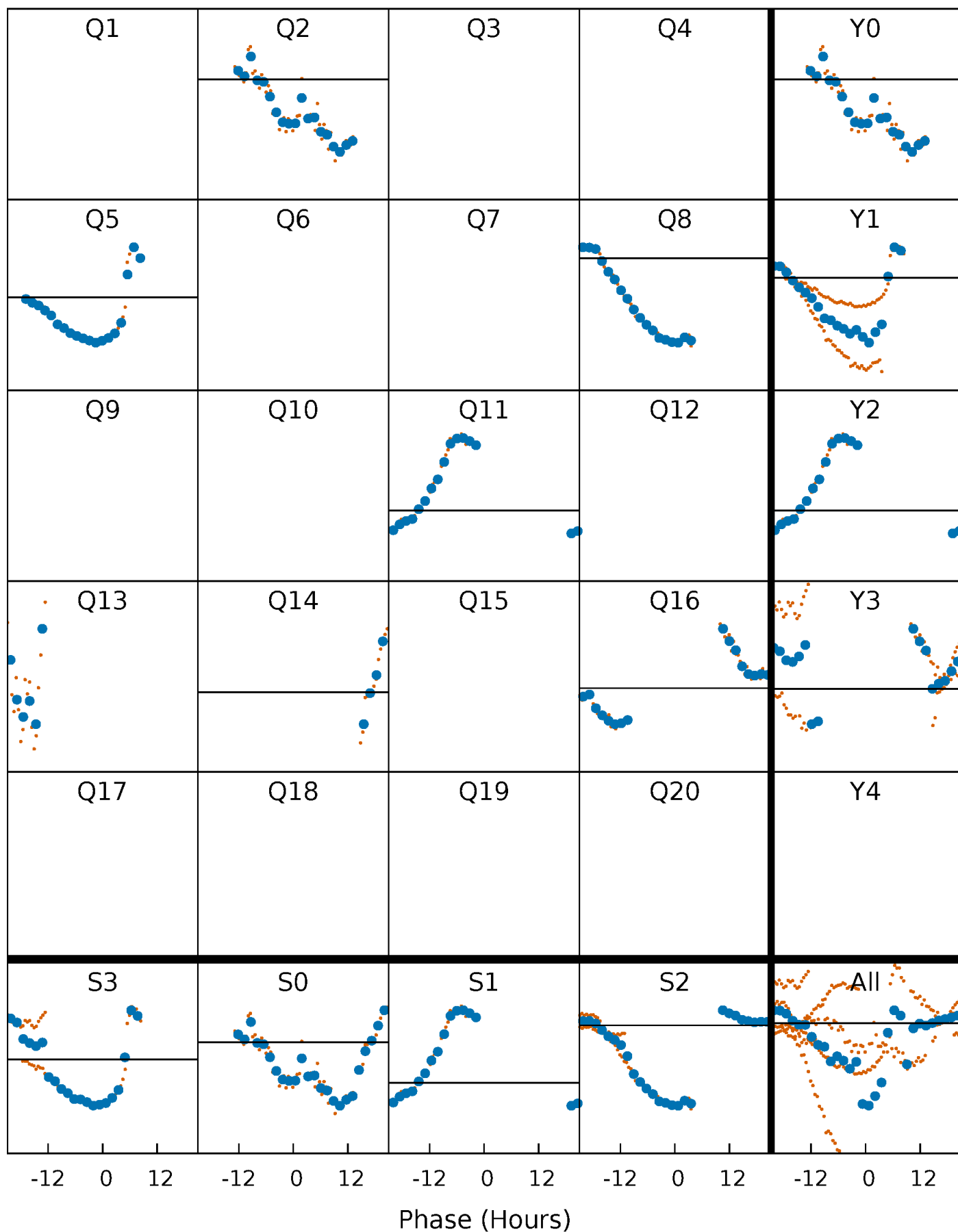
TCE 007940533-03 P=257.966884 Days  $T_0=241.715994$  (BKJD)





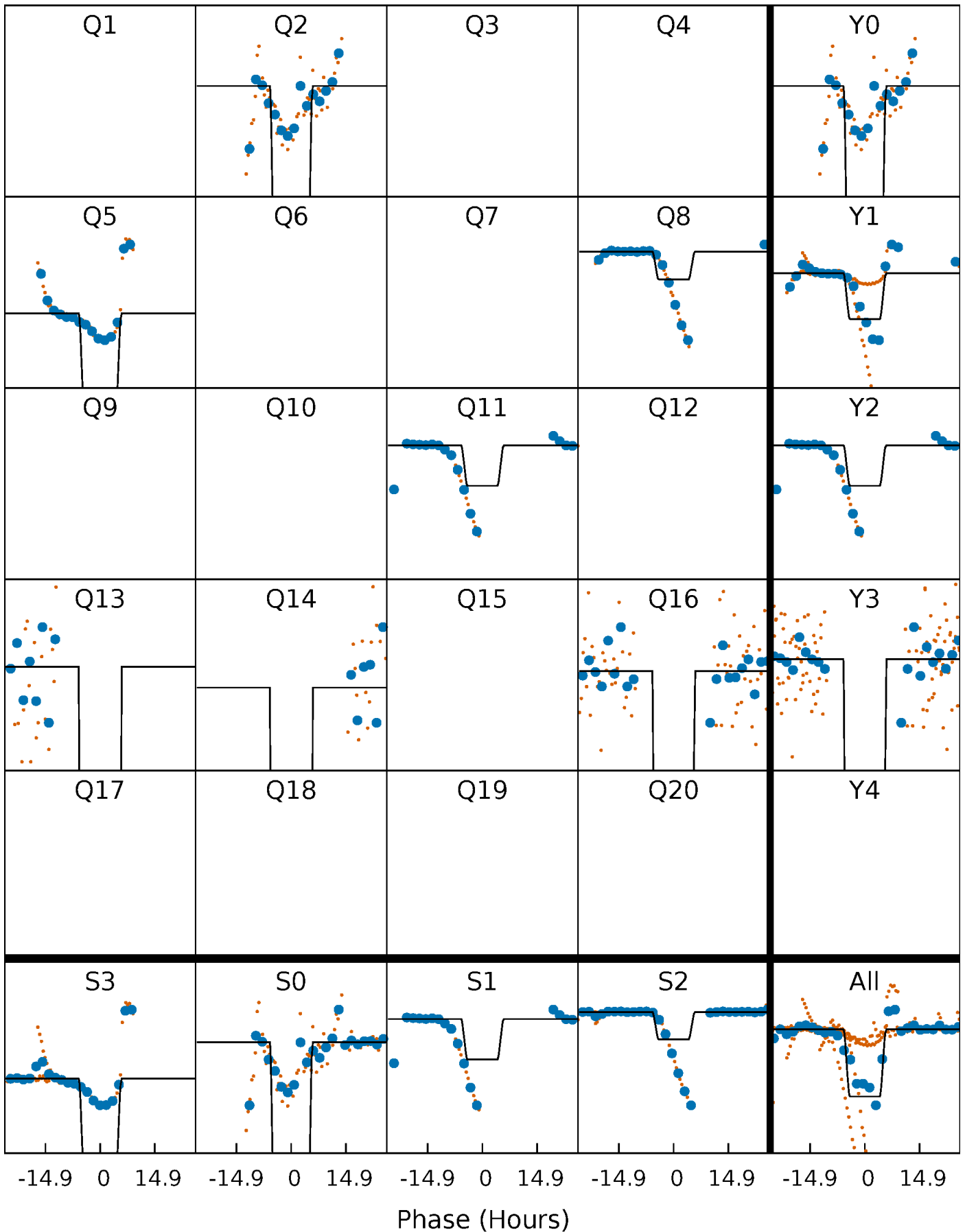
# DV Quarter-Phased Transit Curves

TCE 007940533-03     $P=257.966884$  Days     $T_0=241.715994$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

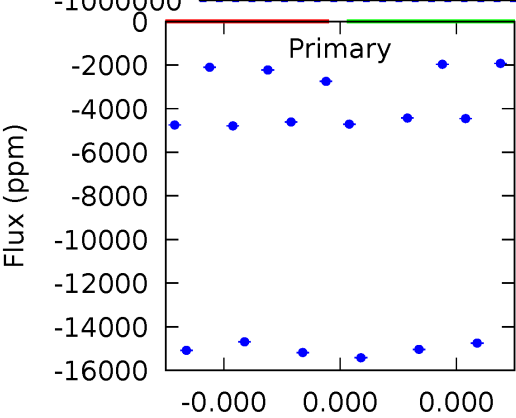
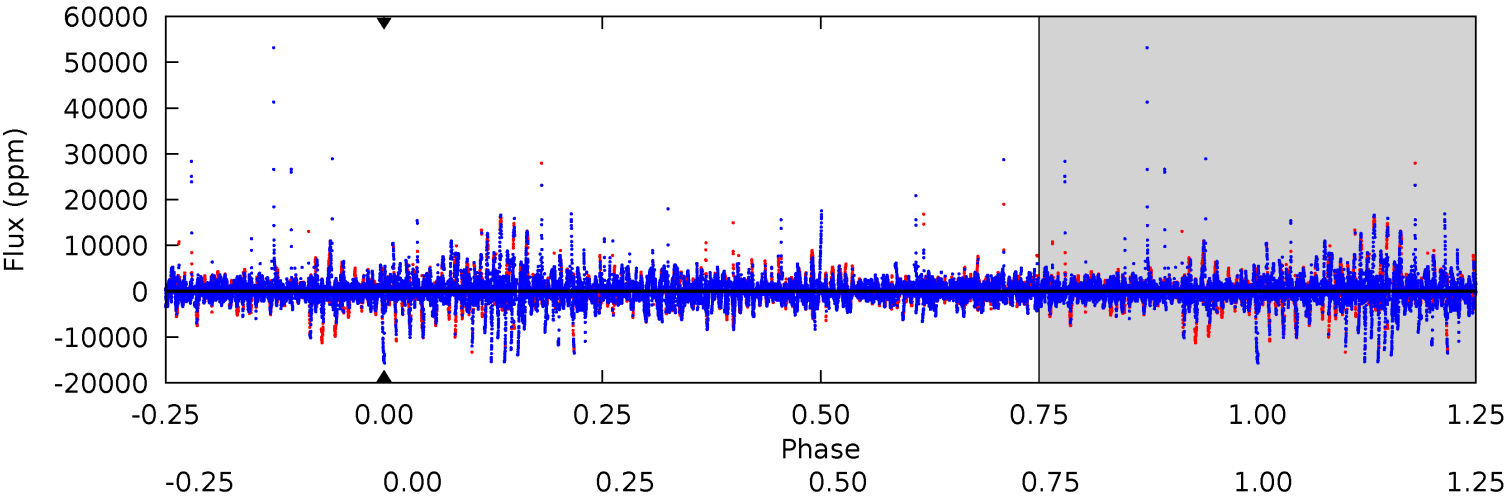
TCE 007940533-03     $P=257.966884$  Days     $T_0=241.690147$  (BKJD)



# DV Model-Shift Uniqueness Test

007940533-03, P = 257.966884 Days, E = 241.715994 Days

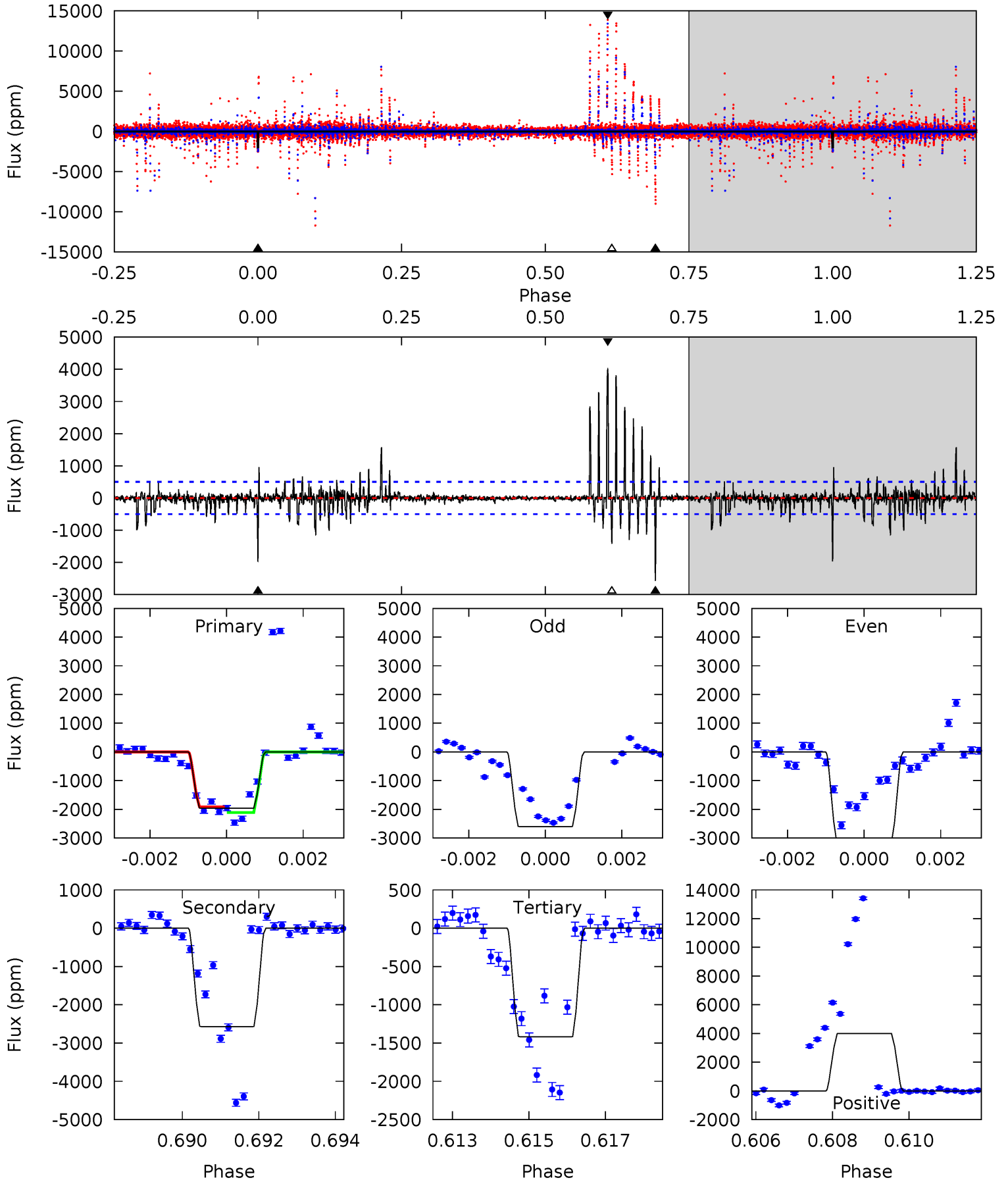
| Pri | Sec | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0   | 0   | 0   | 0   | 1.00            | 1.00            | 1.00             | 0       | 0       | 0       | 0       | 0       | 0   | 0     | 0   |



# Alt Model-Shift Uniqueness Test

007940533-03, P = 257.966884 Days, E = 241.690147 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 |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 20.9 | 27.4 | 15.1 | 42.7 | 5.34            | 3.11            | 2.96             | 5.81    | -21.7   | 12.3    | -15.3   | 2.36    | 1.03 | 0.61  | 0   |



### Stellar Parameters For KIC 007940533

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M$ ( $M_{\odot}$ )       | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $5495^{+149}_{-149}$ | $4.543^{+0.063}_{-0.117}$ | $-0.300^{+0.300}_{-0.300}$ | $0.798^{+0.152}_{-0.082}$ | $0.812^{+0.100}_{-0.075}$ | $2.253^{+0.600}_{-0.802}$                     |
|        | +3%/-3%              | +1%/-3%                   | +100%/-100%                | +19%/-10%                 | +12%/-9%                  | +27%/-36%                                     |
| 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 007940533-03 / KOI

| Detrend | Depth (ppm)     | $R_p$ ( $R_{\oplus}$ )  | $T_{max}$ (K)     | $T_{obs}$ (K)            | $A_{obs}$                    |
|---------|-----------------|-------------------------|-------------------|--------------------------|------------------------------|
| DV      | $0 \pm 1000000$ | $6.85^{+6.73}_{-4.46}$  | $354^{+18}_{-14}$ | $4738^{+14252}_{-20346}$ | $17369^{+1376033}_{-880342}$ |
| Alt.    | $-2570 \pm 94$  | $10.78^{+8.50}_{-6.75}$ | $355^{+17}_{-14}$ | $3903^{+1918}_{-664}$    | $6670^{+40489}_{-4612}$      |

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

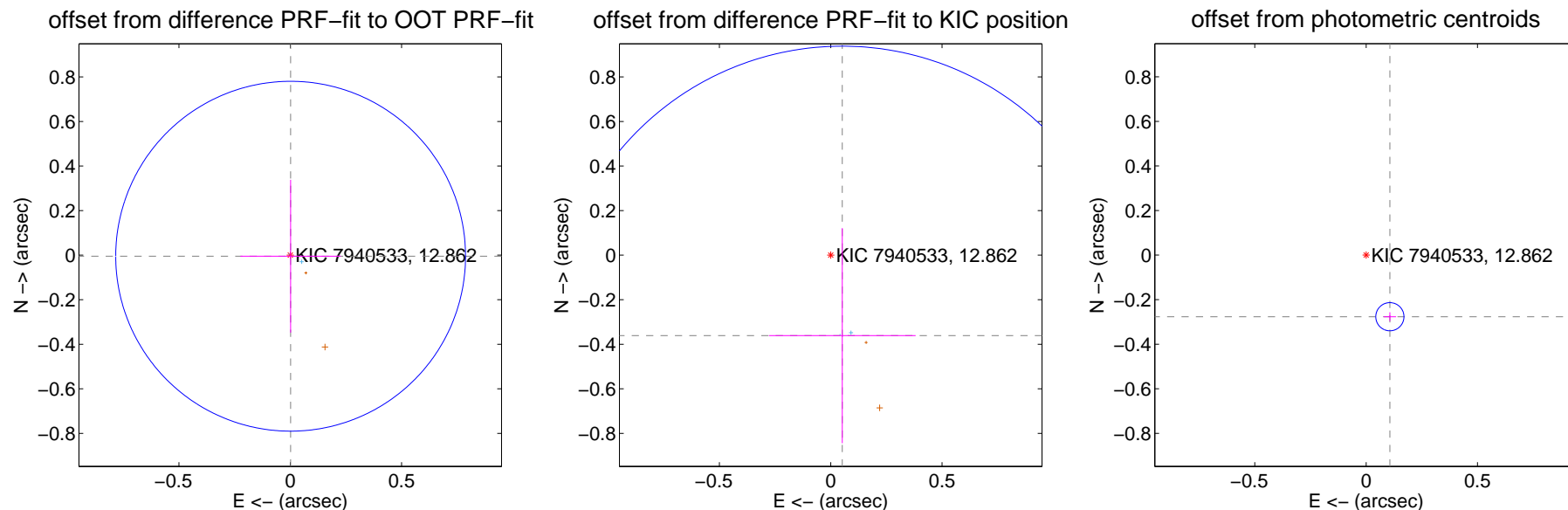
## DV Centroid Data

Supplemental centroid analysis for 007940533-03. Kepler magnitude: 12.86. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

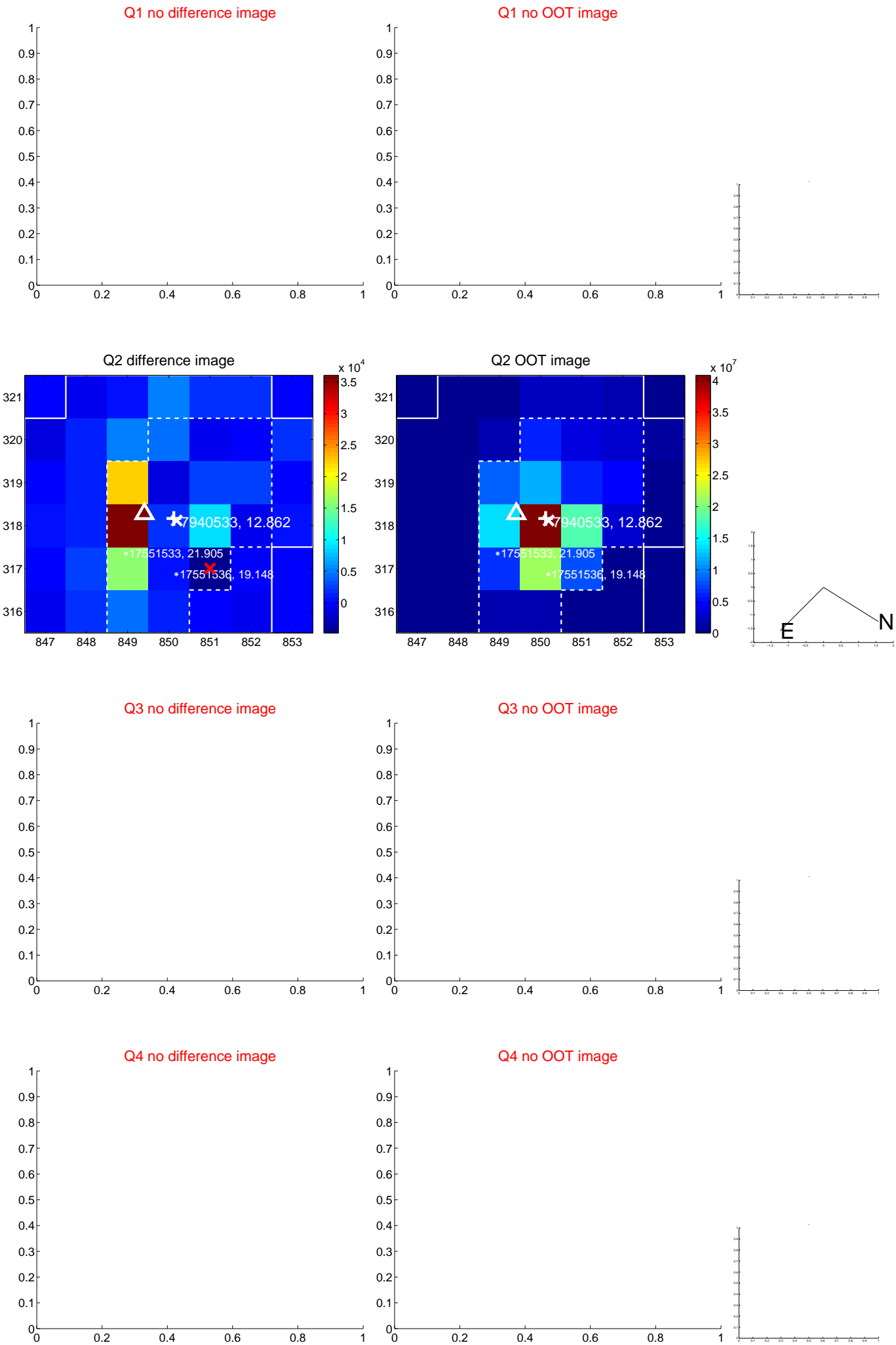
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.005 \pm 0.262$  | 0.02                | $-0.002 \pm 0.225$ | $-0.005 \pm 0.343$ |
| PRF-fit source offset from KIC position | $0.365 \pm 0.433$  | 0.84                | $-0.052 \pm 0.329$ | $-0.361 \pm 0.483$ |
| photometric centroid source offset      | $0.30 \pm 0.02$    | 14.06               | $-0.11 \pm 0.03$   | $-0.28 \pm 0.02$   |

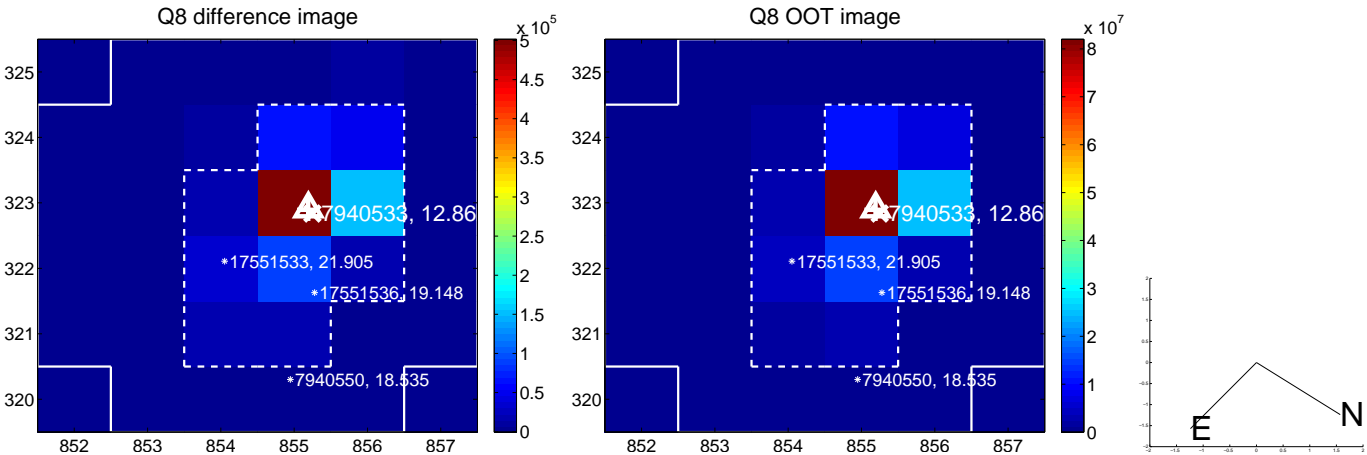
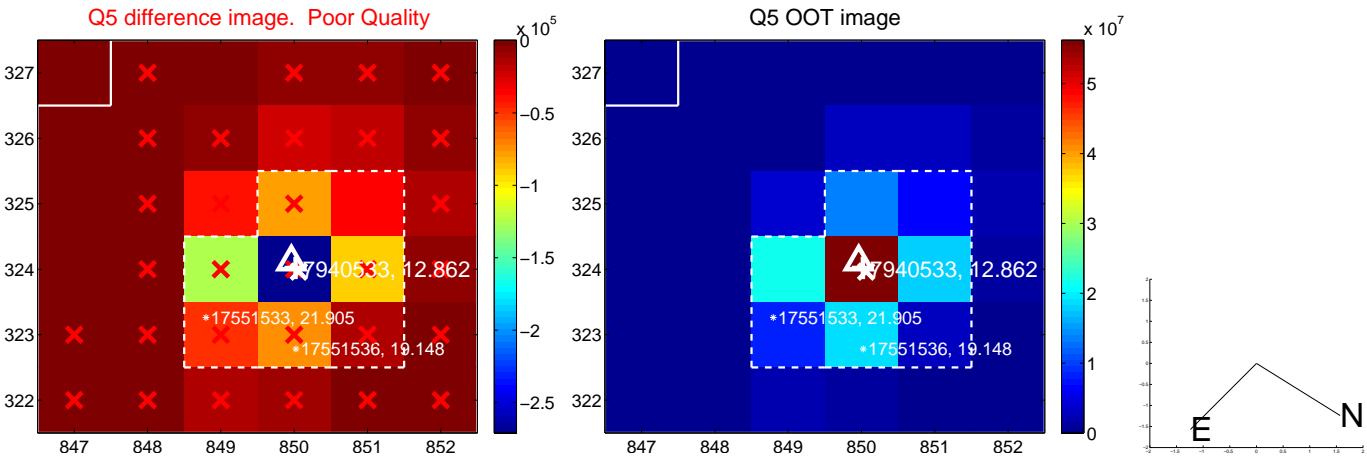


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

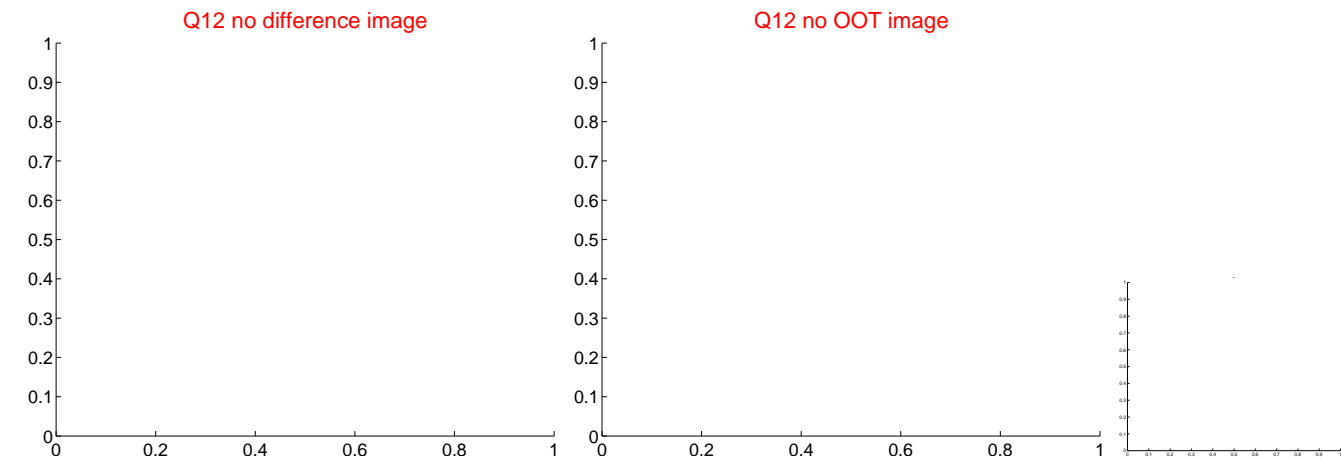
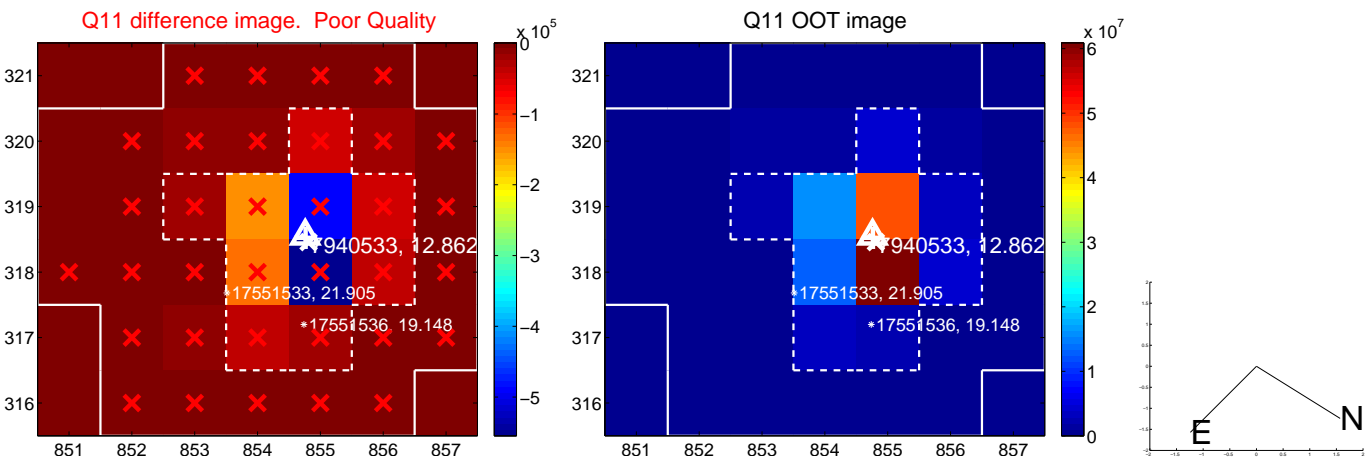


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

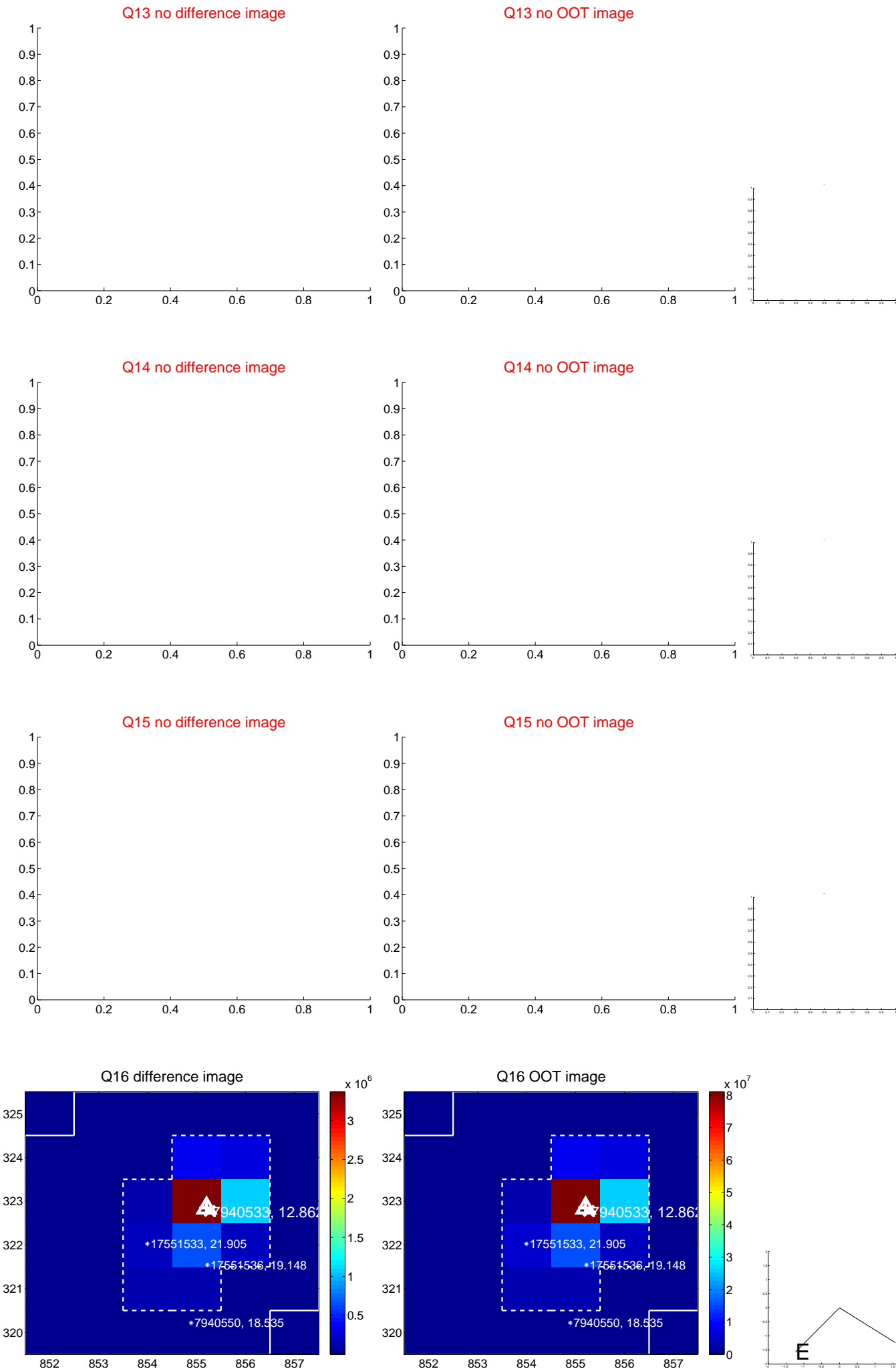




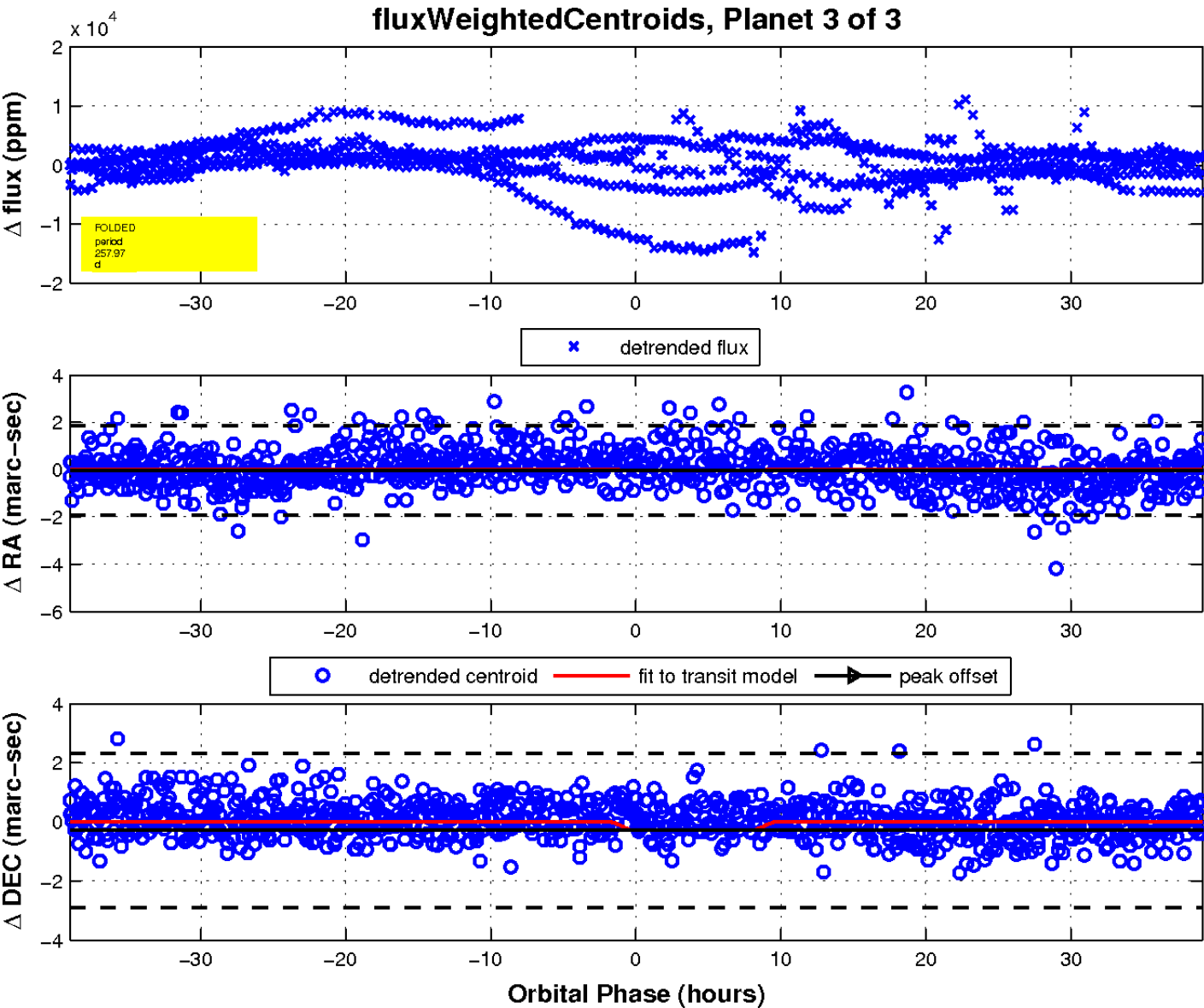
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

