

# KIC 005727773

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005727773-01 | OBS      | No   | 0.796473      | 131.807742   | 147.4       | 3.276            | 11.0 | 11.6 | 1.96                        | 7159            | 2.77                   | 24186.89               |
| 005727773-02 | OBS      | No   | 0.542711      | 132.012375   | 390.6       | 1.032            | 10.1 | 12.4 | 1.96                        | 7159            | 4.53                   | 40338.14               |
| 005727773-03 | OBS      | No   | 0.542712      | 131.683551   | 393.6       | 0.998            | 8.4  | 12.2 | 1.96                        | 7159            | 4.56                   | 40338.06               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 005727773-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 005727773-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT                 |
| 005727773-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD |

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

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

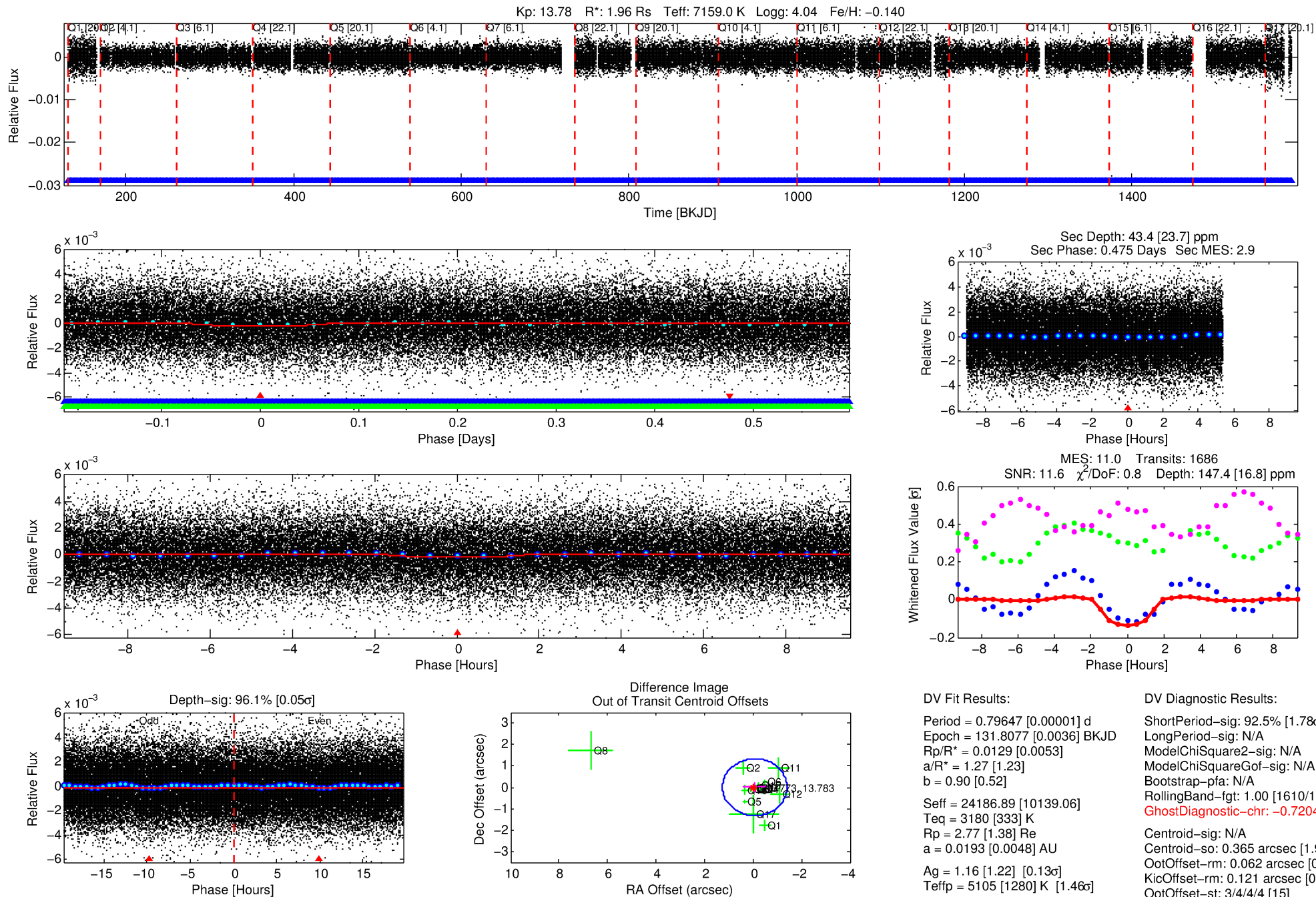
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005727773-01

No Significant Match Found

# DV One-Page Summary

KIC: 5727773 Candidate: 1 of 3 Period: 0.796 d



## DV Fit Results:

Period = 0.79647 [0.00001] d  
Epoch = 131.8077 [0.0036] BKJD  
Rp/R\* = 0.0129 [0.0053]  
a/R\* = 1.27 [1.23]  
b = 0.90 [0.52]  
Seff = 24186.89 [10139.06]  
Teq = 3180 [333] K  
Rp = 2.77 [1.38] Re  
a = 0.0193 [0.0048] AU  
Ag = 1.16 [1.22] [0.13σ]  
Teffp = 5105 [1280] K [1.46σ]

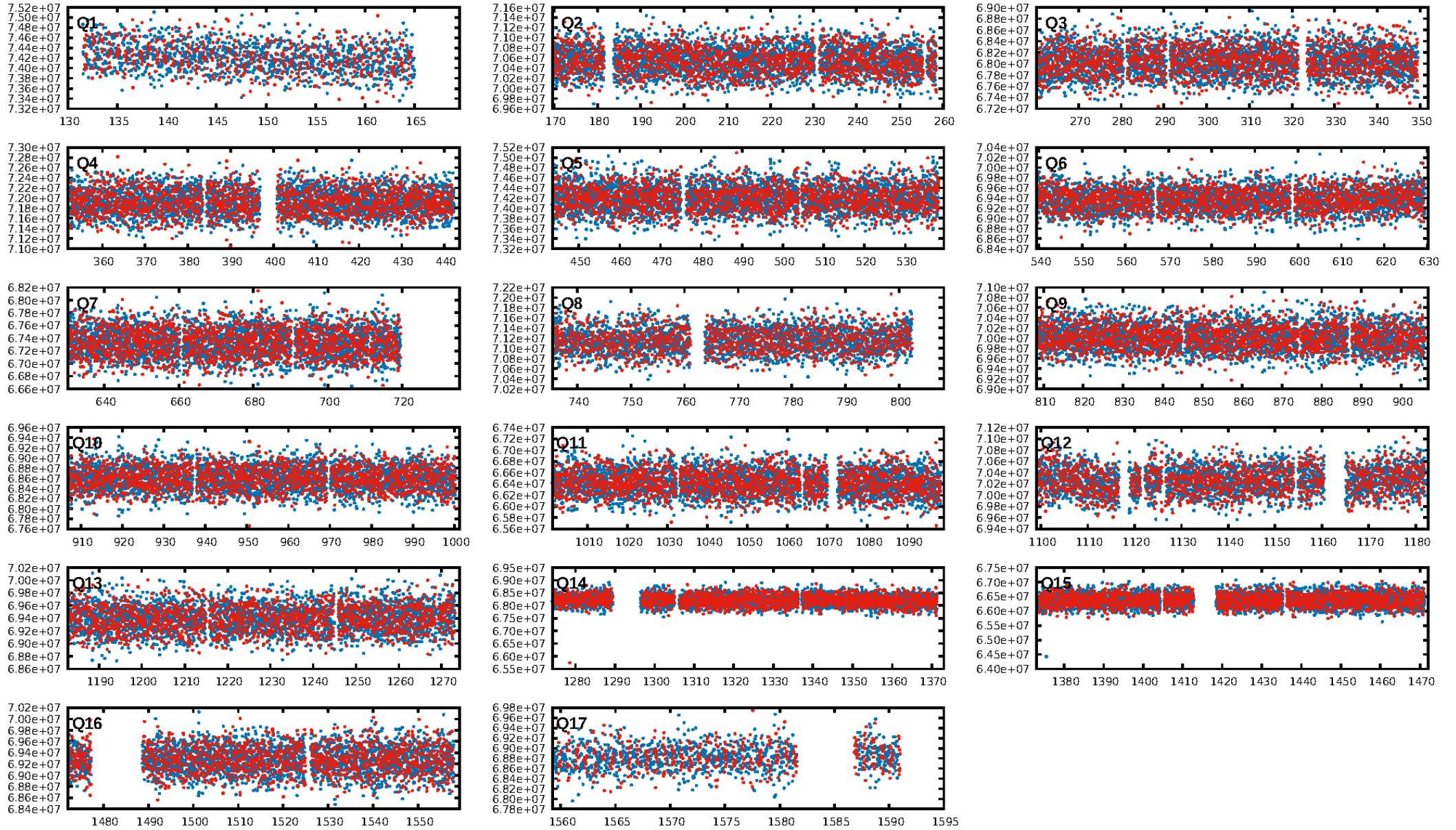
## DV Diagnostic Results:

ShortPeriod-sig: 92.5% [1.78σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1610/1610]  
**GhostDiagnostic-chr: -0.7204**  
Centroid-sig: N/A  
Centroid-so: 0.365 arcsec [1.98σ]  
OotOffset-rm: 0.062 arcsec [0.14σ]  
KicOffset-rm: 0.121 arcsec [0.29σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.87 [13/15]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:32:23 Z

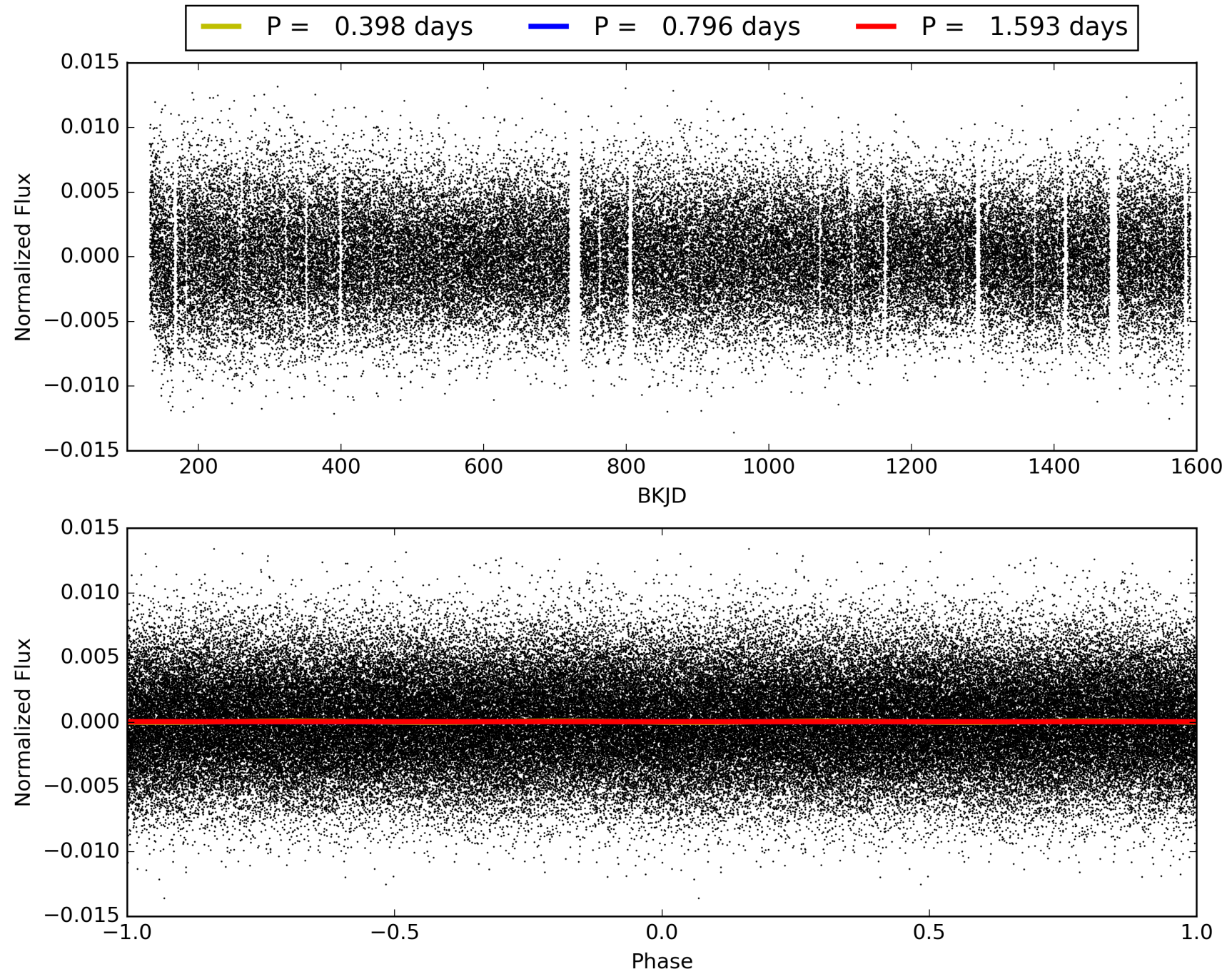
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005727773-01, PDC Light Curves





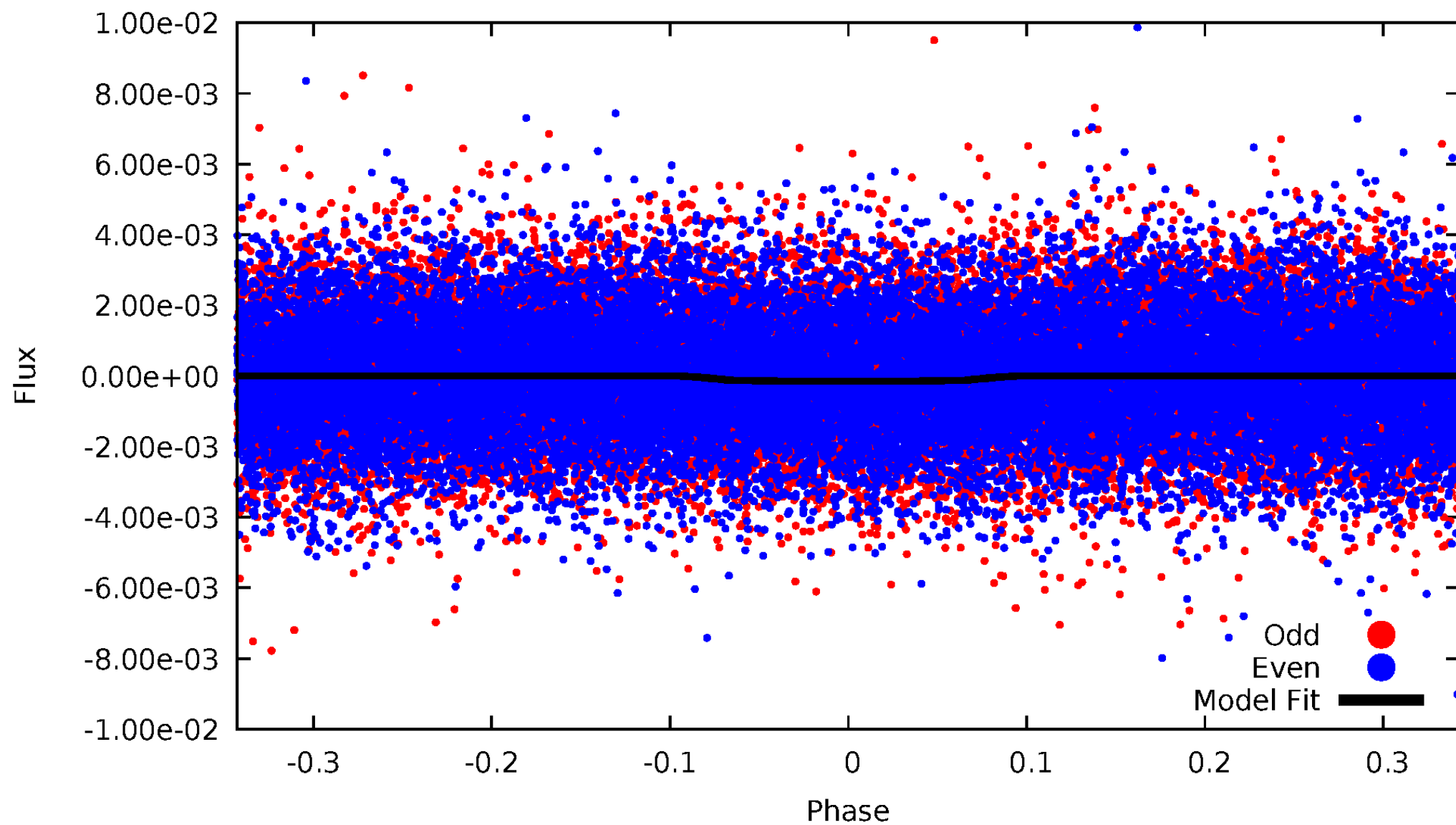
TCE 005727773-01





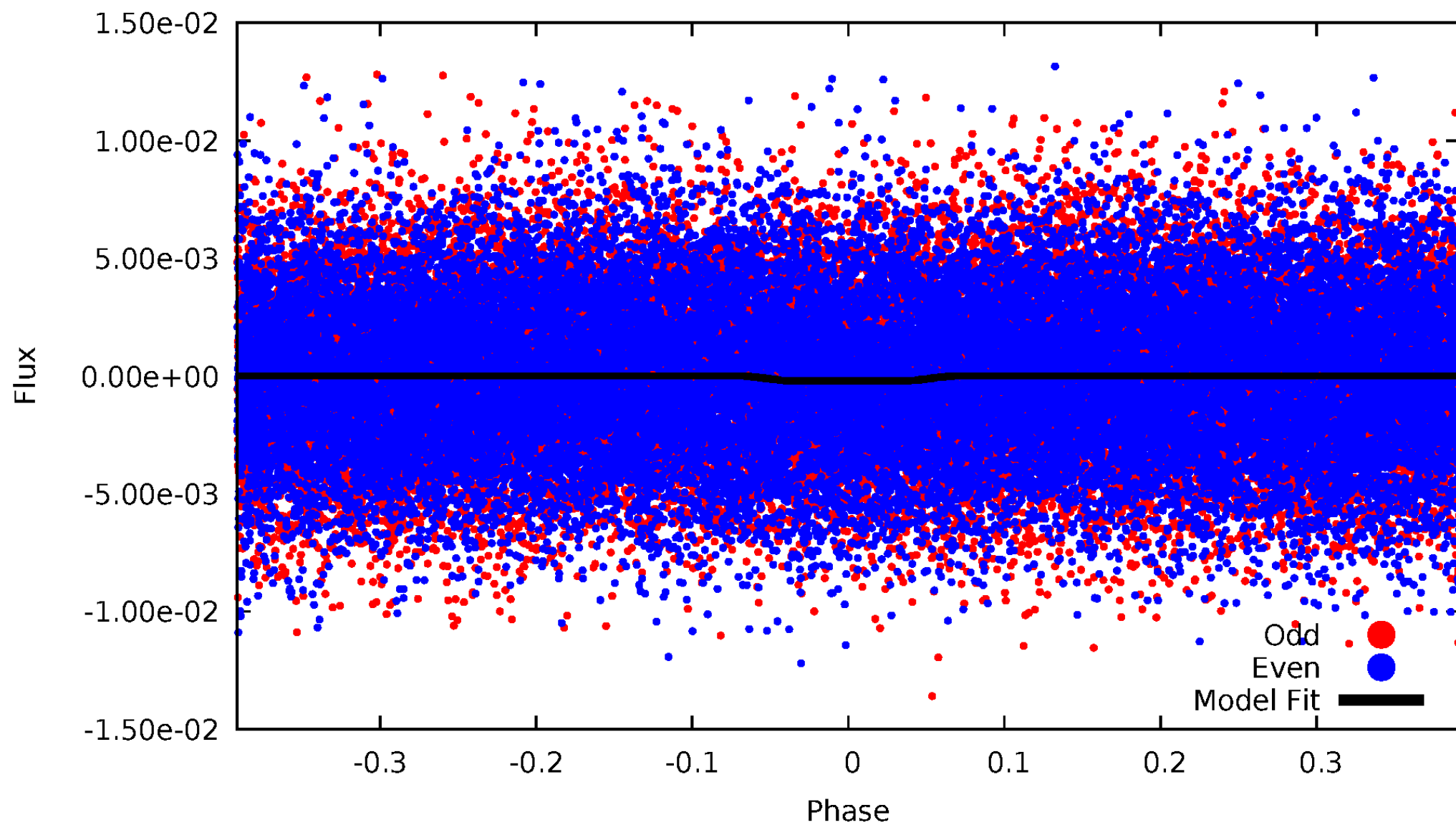
# DV Odd/Even

TCE 00572773-01

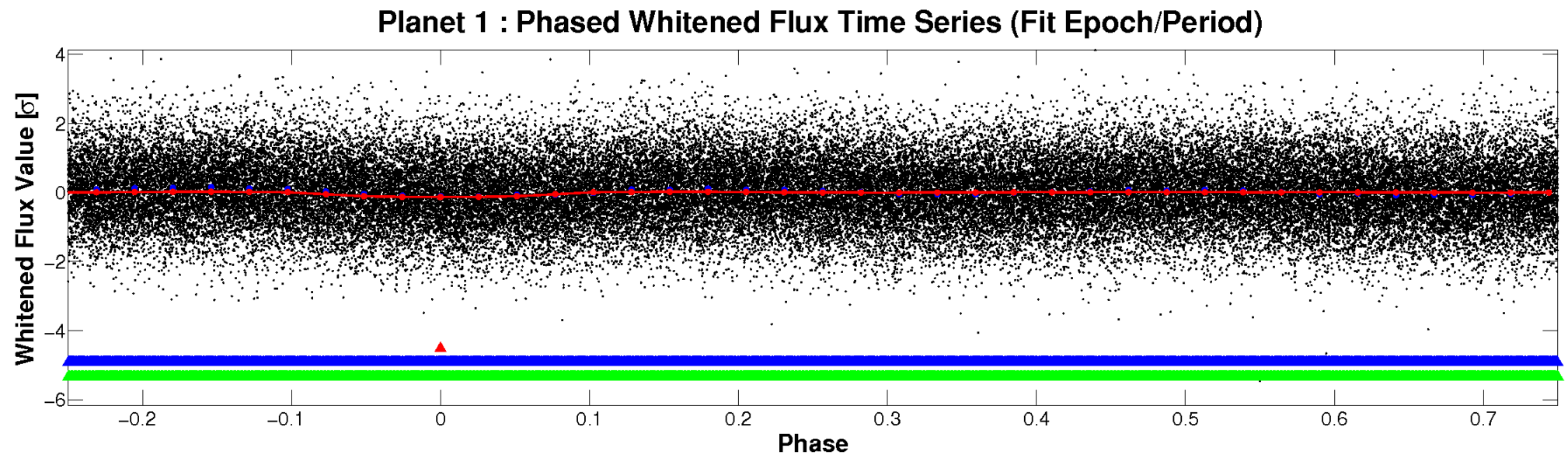
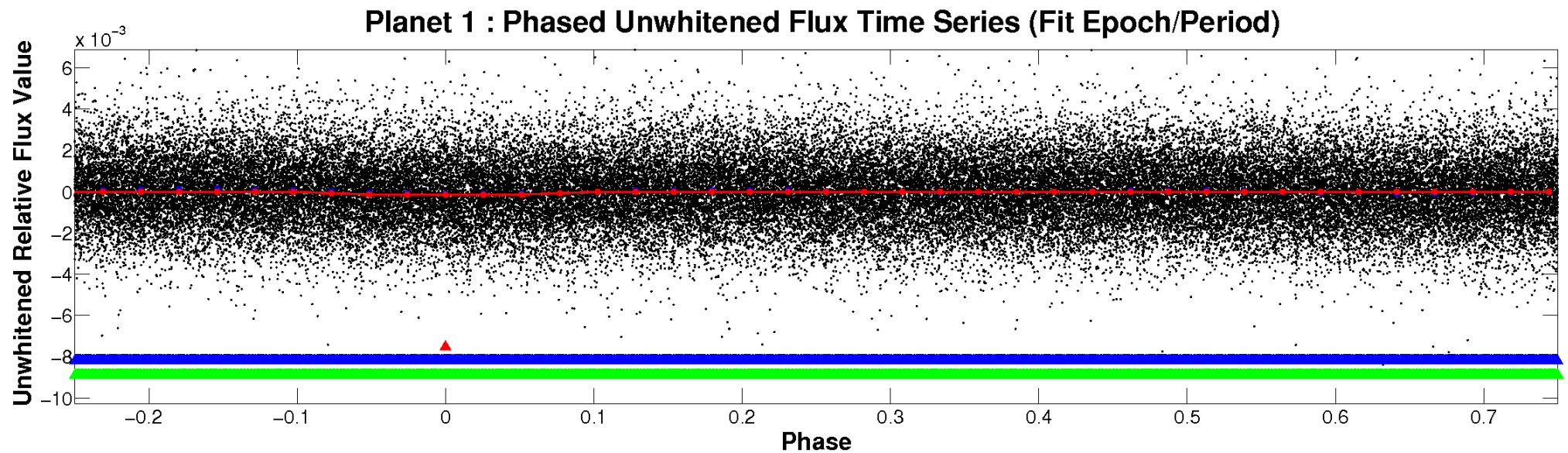


# ALT Odd/Even

TCE 00572773-01



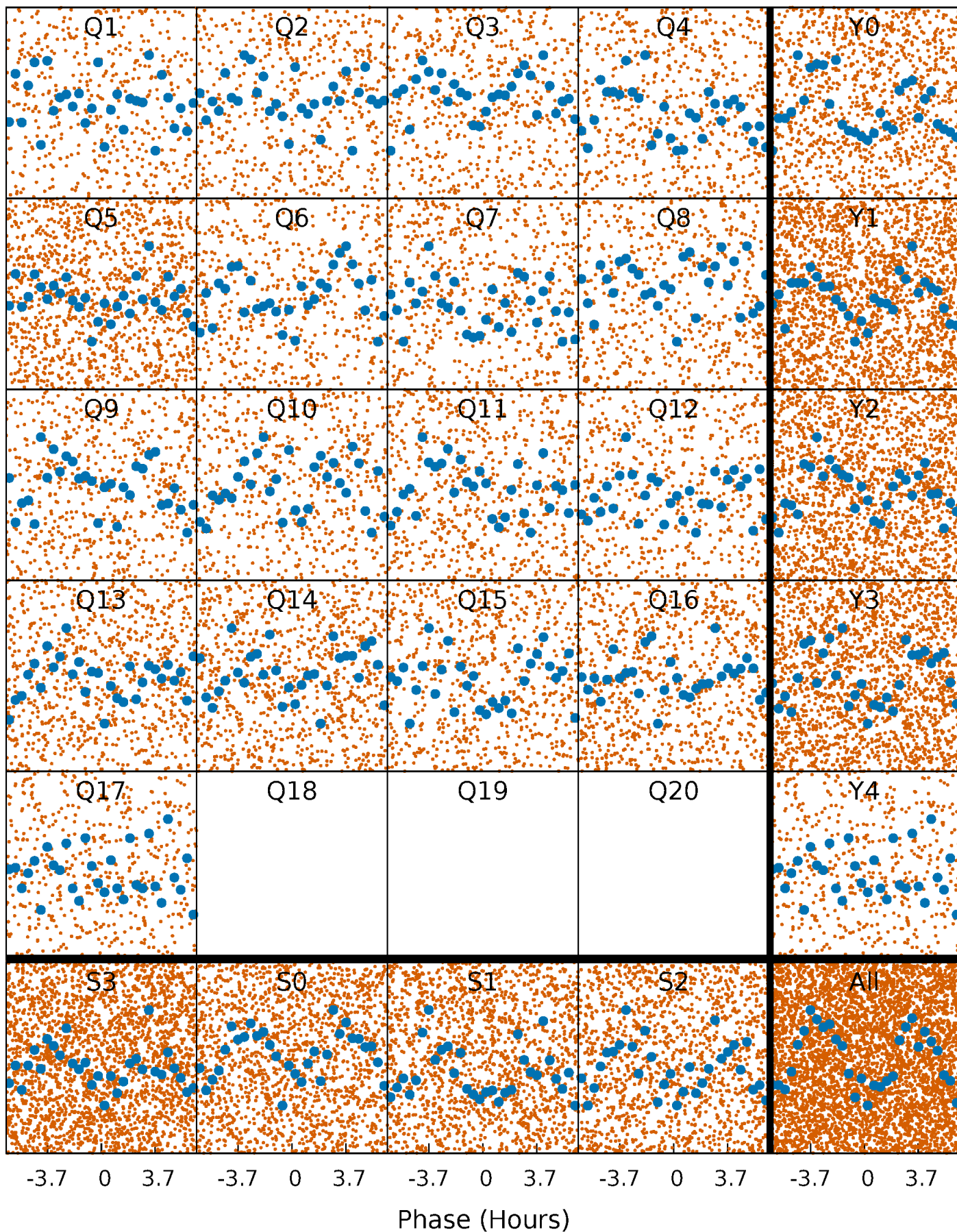
# Non-Whitened Vs. Whitened Light Curve





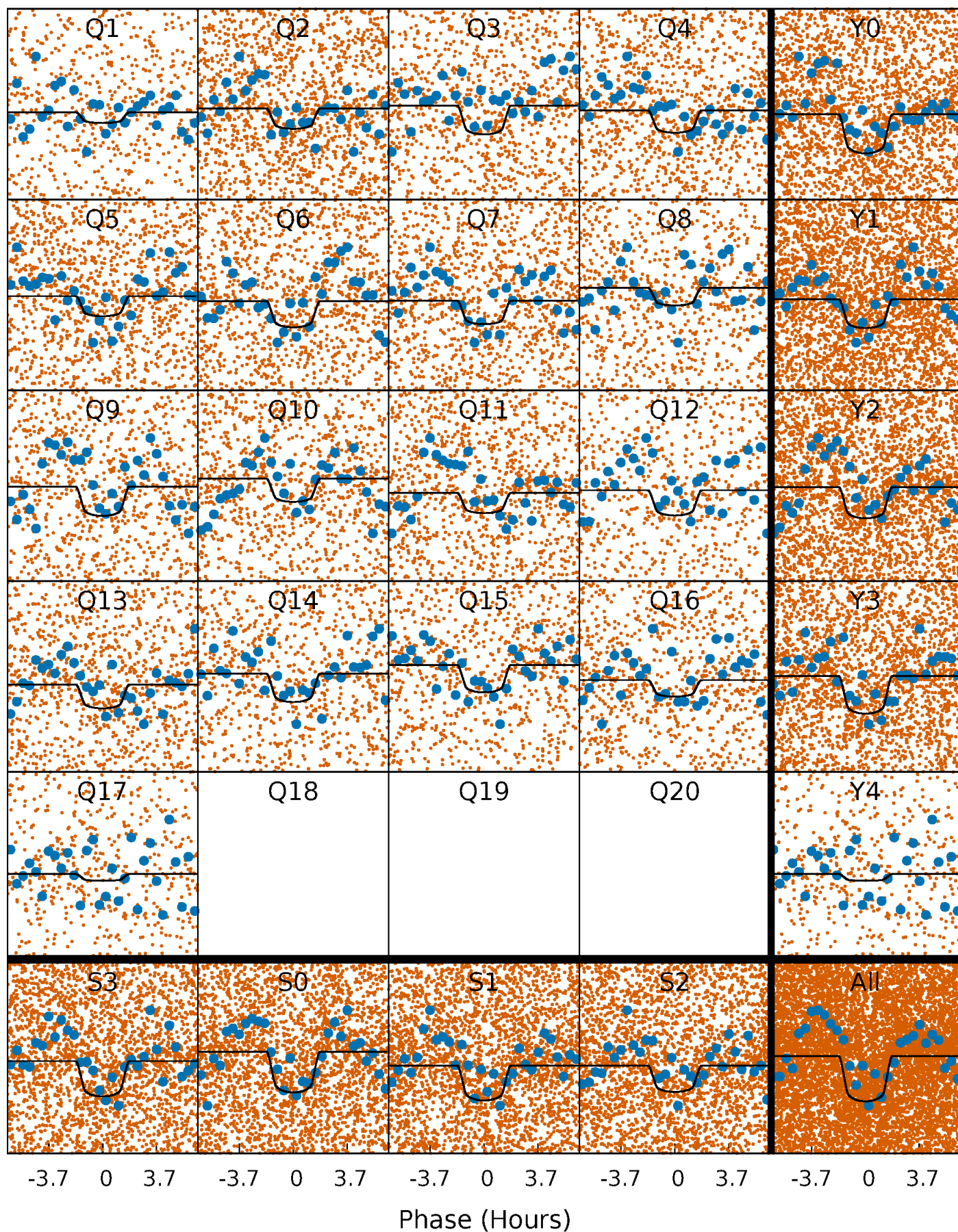
# PDC Quarter-Phased Transit Curves

TCE 005727773-01 P= 0.796473 Days  $T_0=131.807742$  (BKJD)



# DV Quarter-Phased Transit Curves

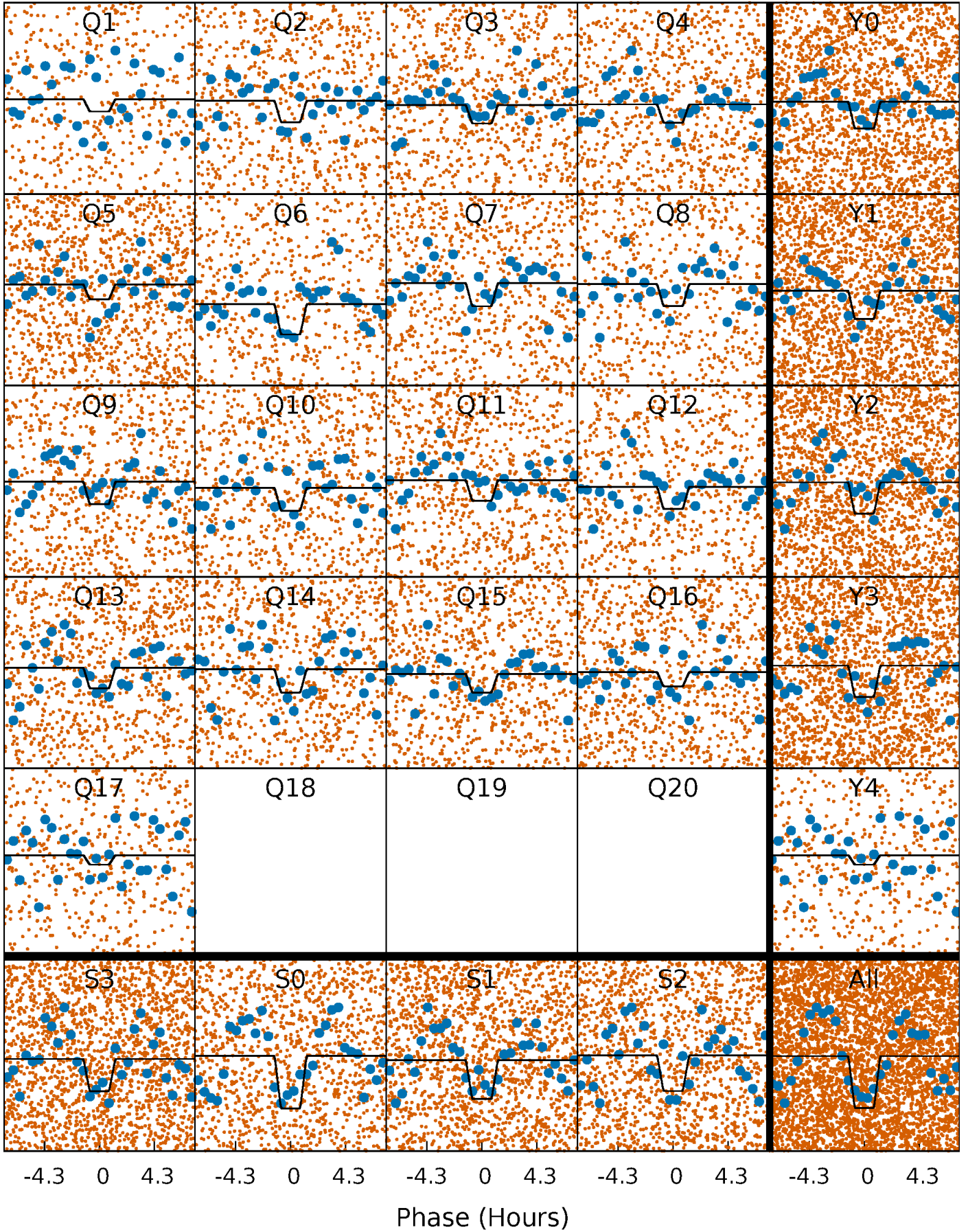
TCE 005727773-01 P= 0.796473 Days  $T_0=131.807742$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 005727773-01 P= 0.796487 Days  $T_0=131.804336$  (BKJD)

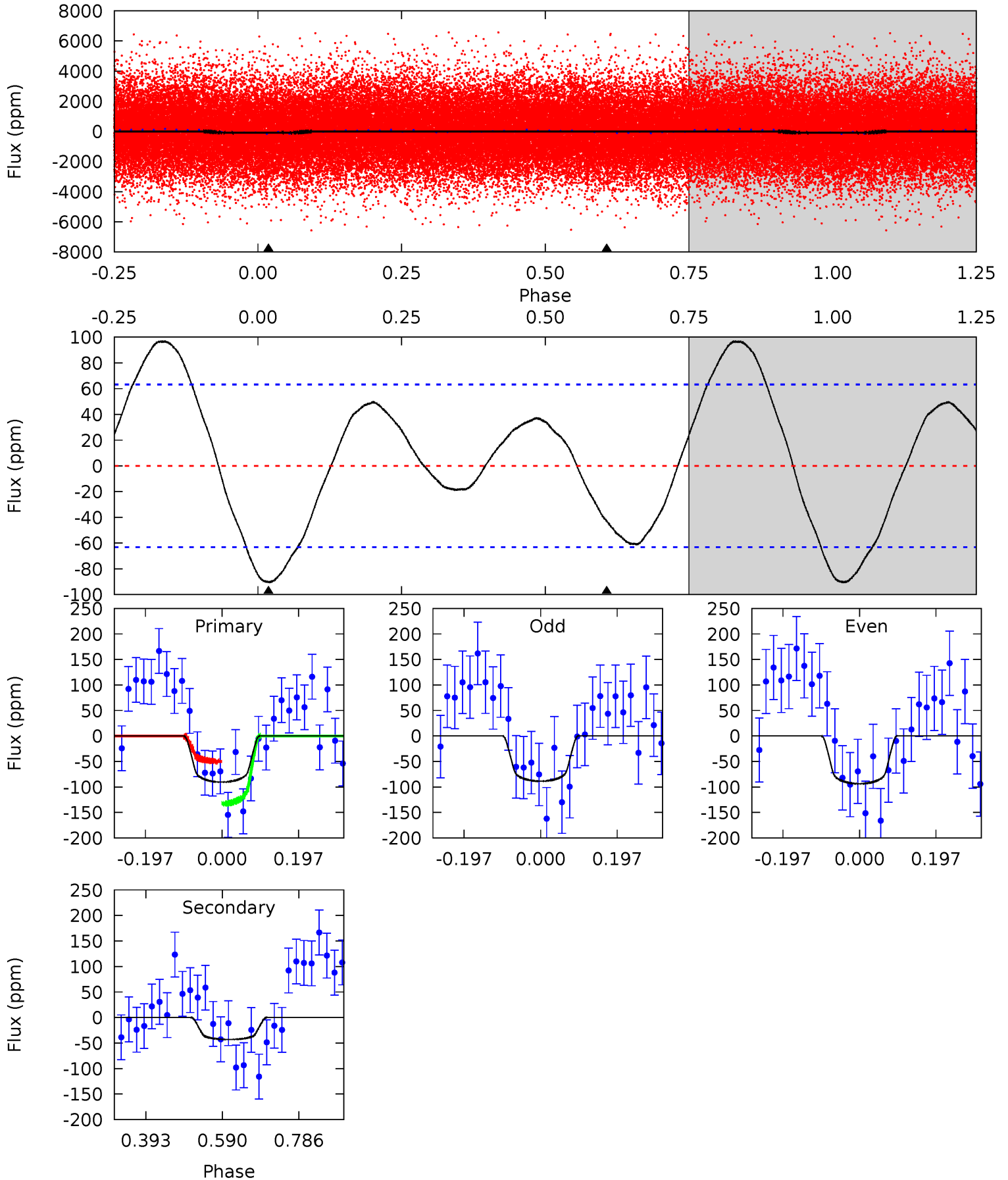




# DV Model-Shift Uniqueness Test

005727773-01, P = 0.796473 Days, E = 131.011269 Days

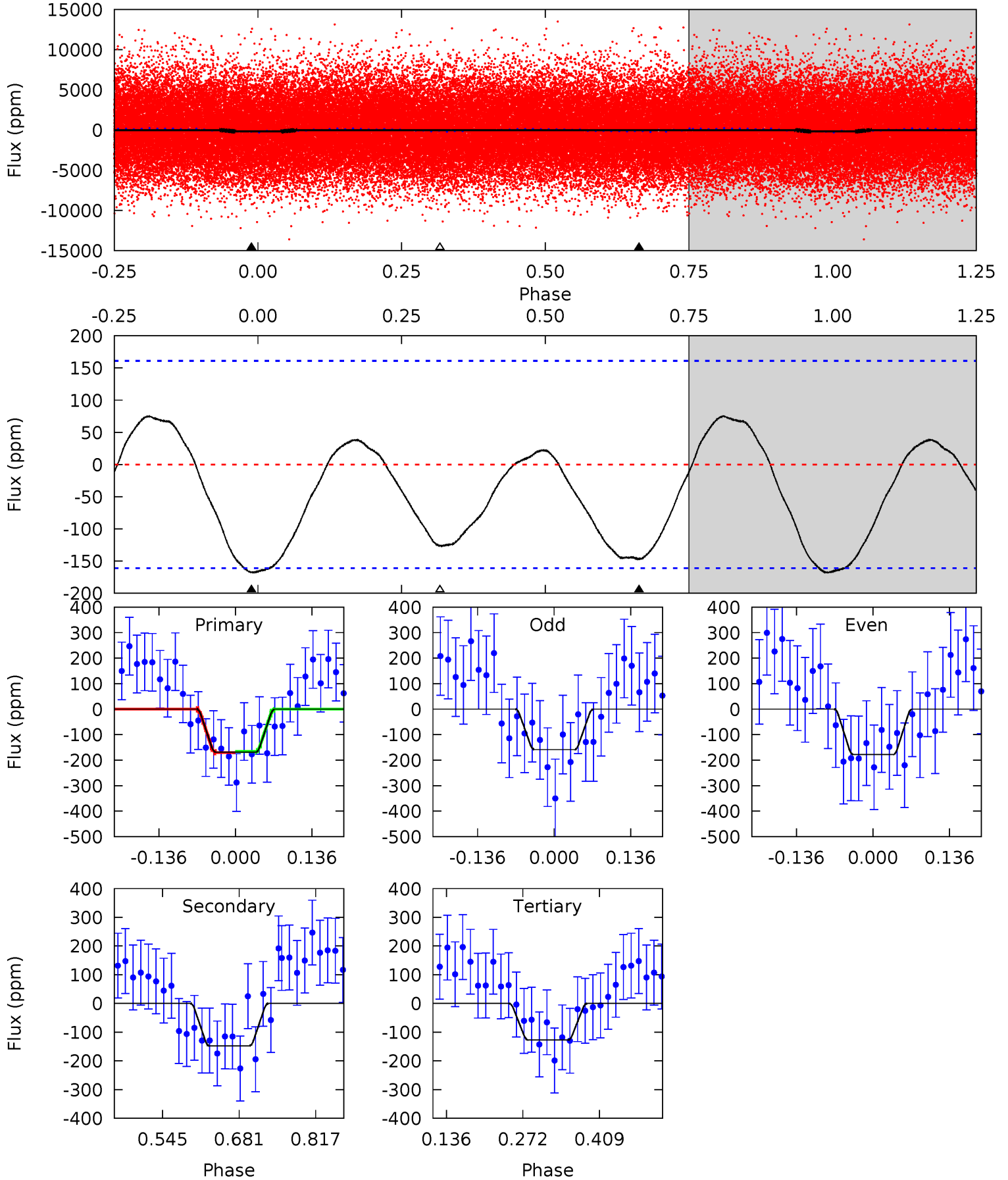
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.33 | 3.02 | 0   | 0   | 4.42            | 1.29            | 2.16             | 6.33    | 6.33    | 3.02    | 3.02    | 0.17    | 0.88 | 0.52  | 2.91 |



# Alt Model-Shift Uniqueness Test

005727773-01, P = 0.796487 Days, E = 131.007849 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  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.70 | 4.12 | 3.55 | 0   | 4.50            | 1.49            | 1.72             | 1.15    | 4.70    | 0.57    | 4.12    | 0.26    | 0.91 | 0.31  | 0.06 |



### Stellar Parameters For KIC 005727773

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R (R_{\odot})$           | $M(M_{\odot})$            | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $7159^{+228}_{-342}$ | $4.035^{+0.209}_{-0.171}$ | $-0.140^{+0.250}_{-0.350}$ | $1.960^{+0.560}_{-0.560}$ | $1.517^{+0.222}_{-0.271}$ | $0.284^{+0.354}_{-0.137}$                 |
|        | +3%/-5%              | +5%/-4%                   | +179%/-250%                | +29%/-29%                 | +15%/-18%                 | +125%/-48%                                |
| 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 005727773-01 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{max} (K)$        | $T_{obs} (K)$          | $A_{obs}$                 |
|---------|---------------|------------------------|----------------------|------------------------|---------------------------|
| DV      | $-43 \pm 14$  | $2.69^{+1.32}_{-1.08}$ | $4426^{+327}_{-349}$ | $4803^{+1657}_{-1167}$ | $1.173^{+2.234}_{-0.707}$ |
| Alt.    | $-148 \pm 36$ | $3.02^{+1.35}_{-1.06}$ | $4412^{+349}_{-381}$ | $6268^{+2034}_{-1092}$ | $3.334^{+4.908}_{-1.799}$ |

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



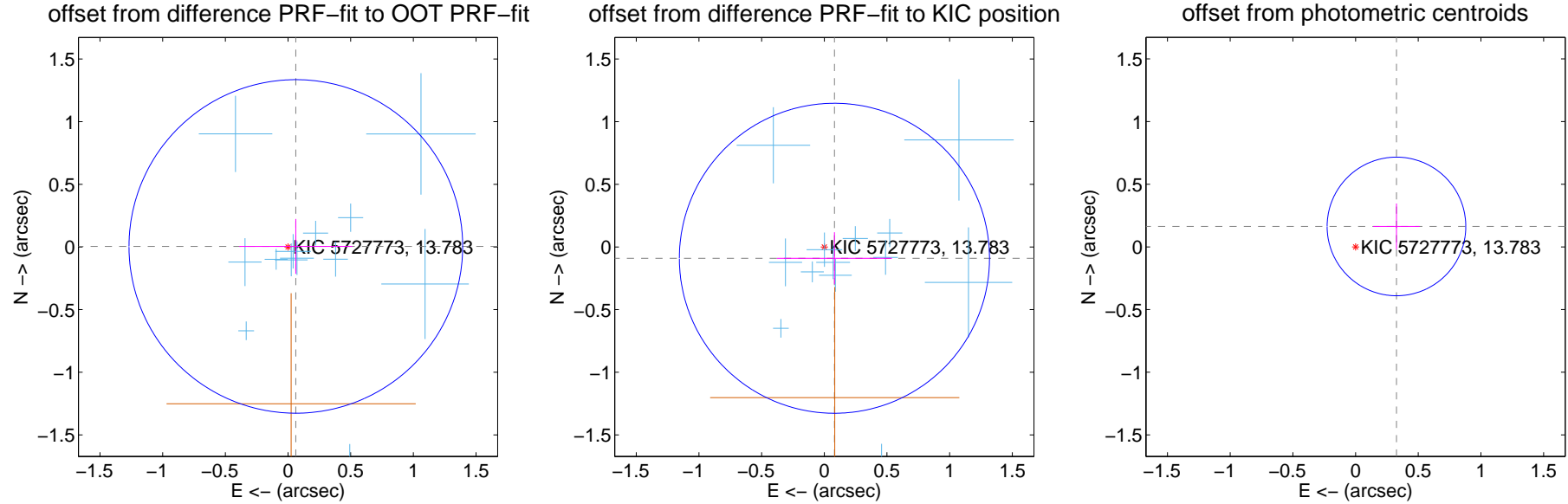
## DV Centroid Data

Supplemental centroid analysis for 005727773-01. Kepler magnitude: 13.78. Transit SNR 11.64

There are 13 quarters with good PRF difference image offsets

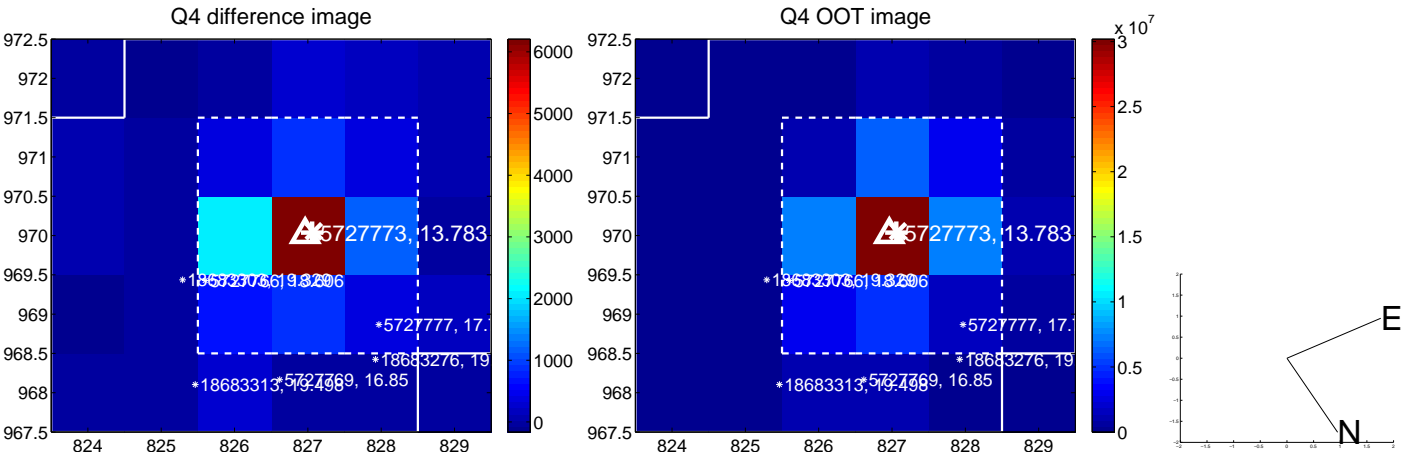
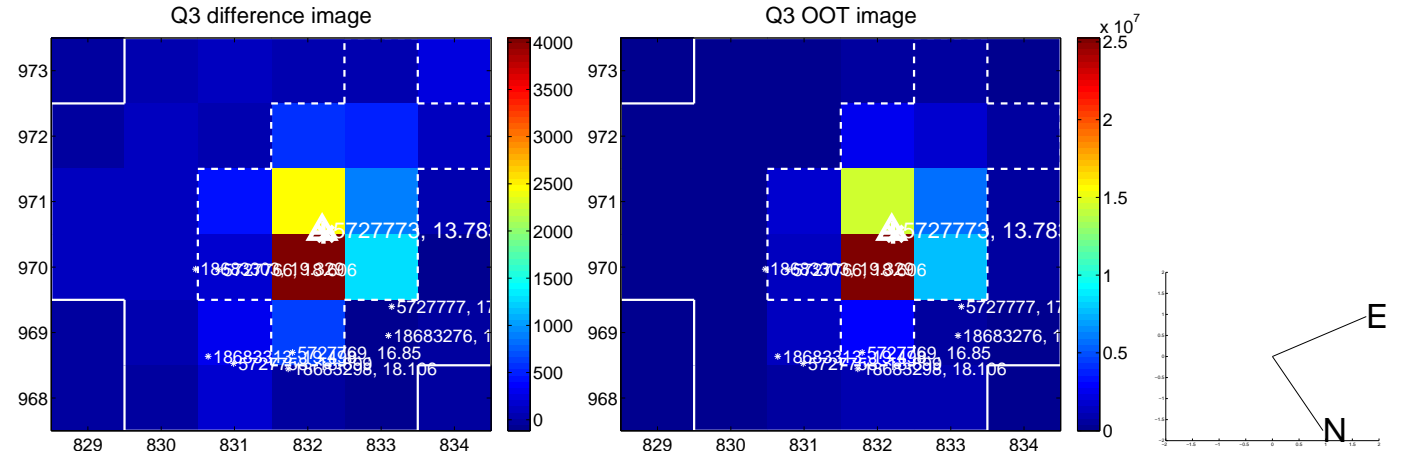
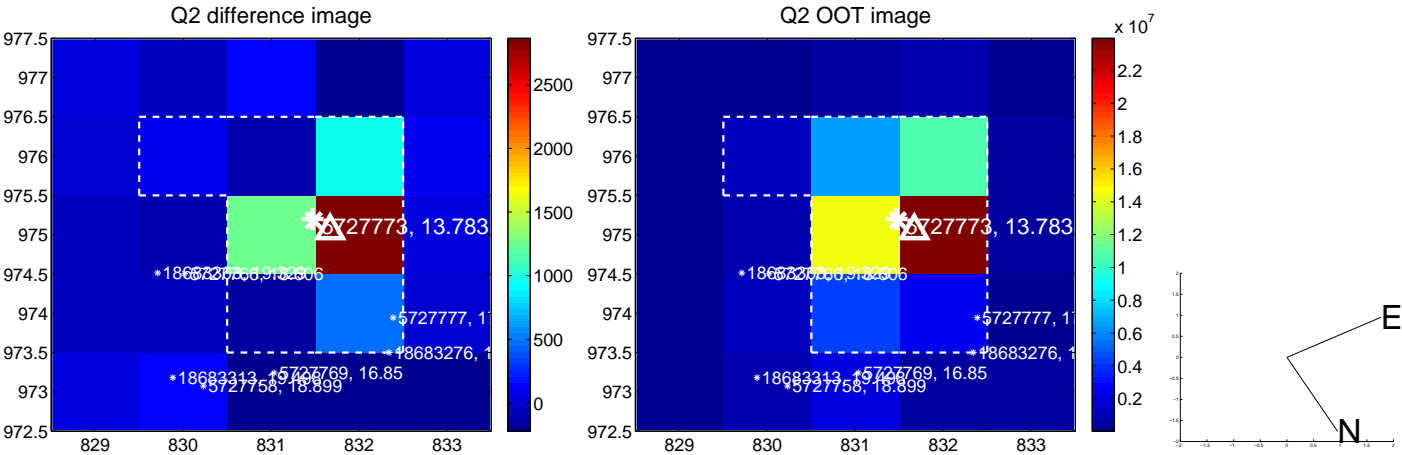
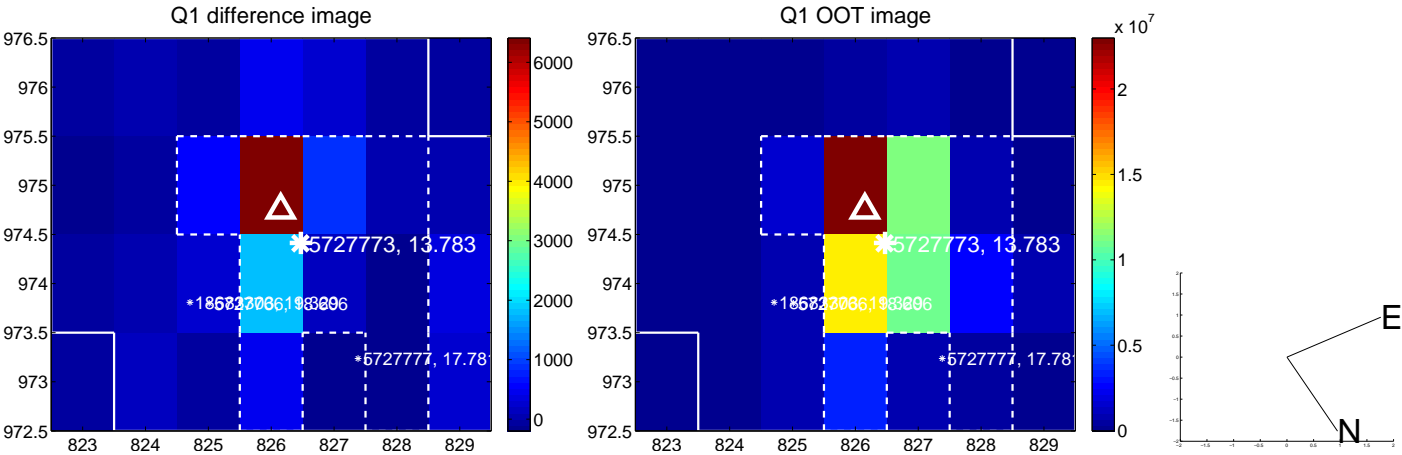
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.062 \pm 0.444$  | 0.14                | $-0.062 \pm 0.451$ | $0.004 \pm 0.219$  |
| PRF-fit source offset from KIC position | $0.121 \pm 0.412$  | 0.29                | $-0.081 \pm 0.459$ | $-0.090 \pm 0.208$ |
| photometric centroid source offset      | $0.36 \pm 0.18$    | 1.98                | $-0.33 \pm 0.18$   | $0.16 \pm 0.18$    |

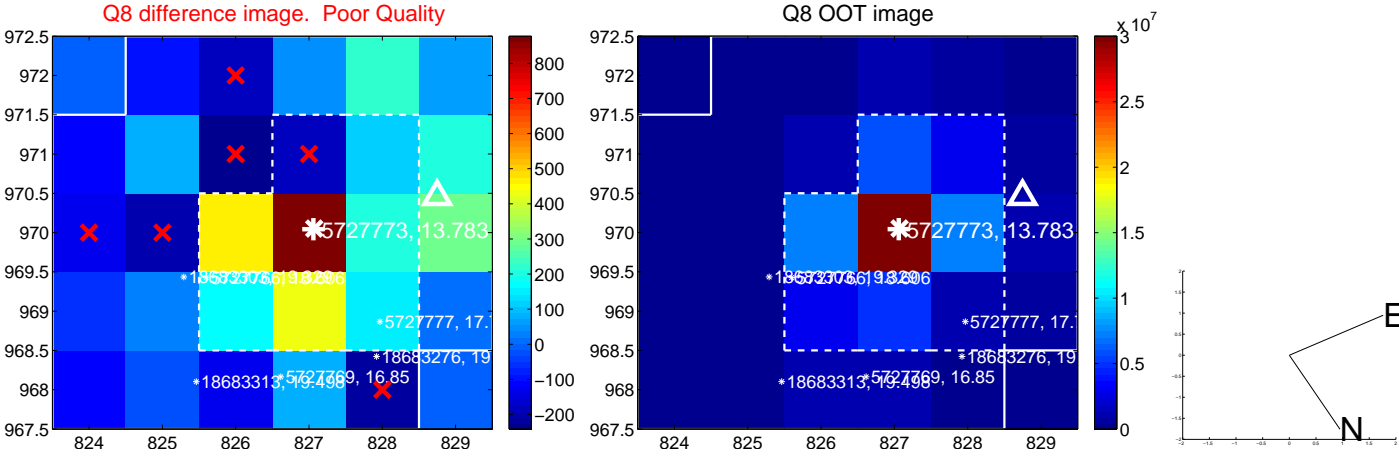
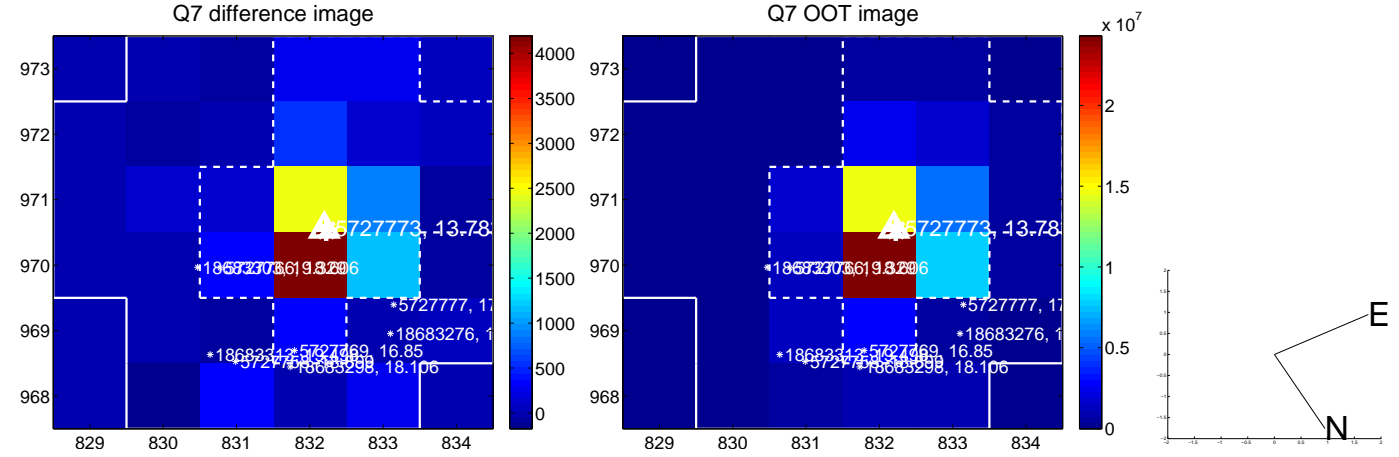
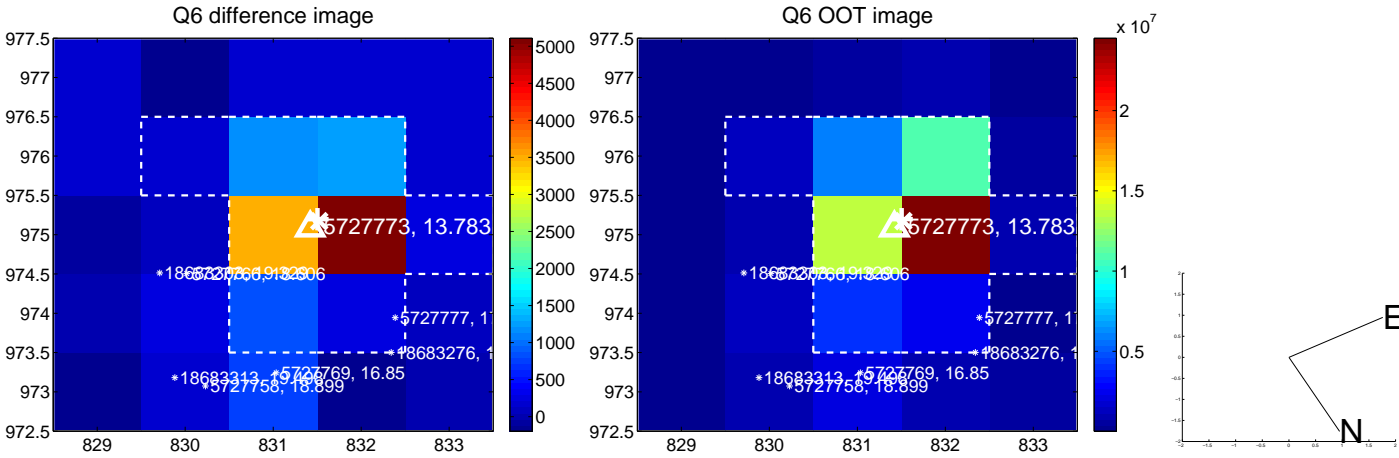
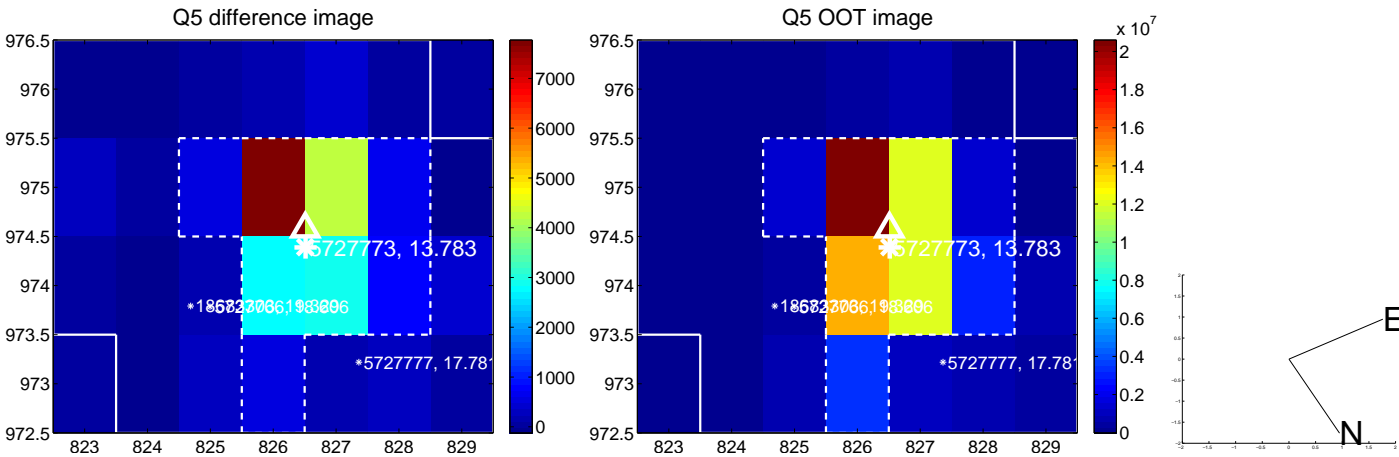


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

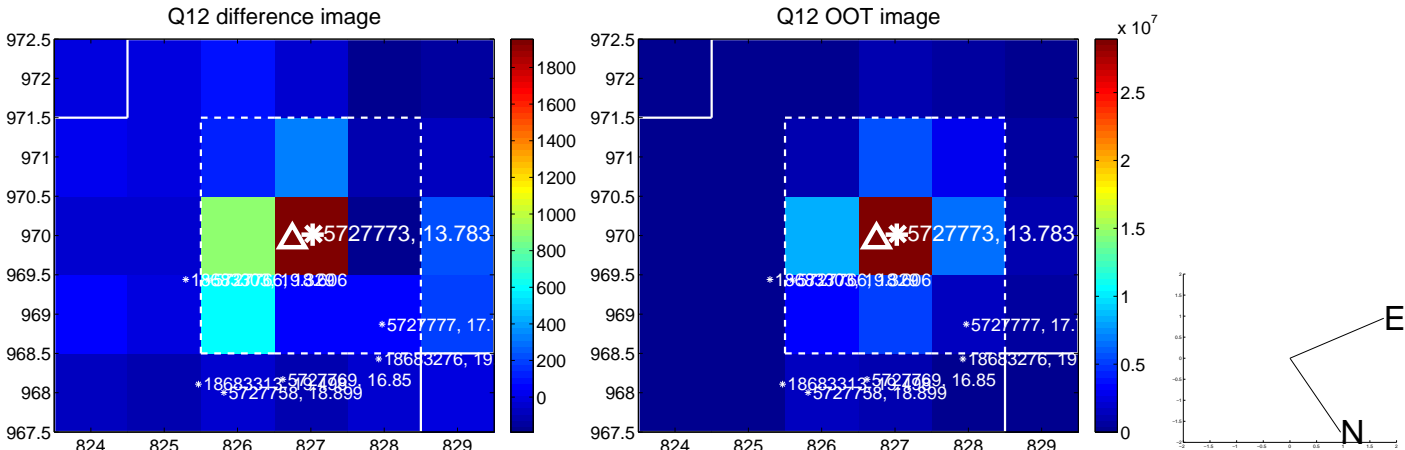
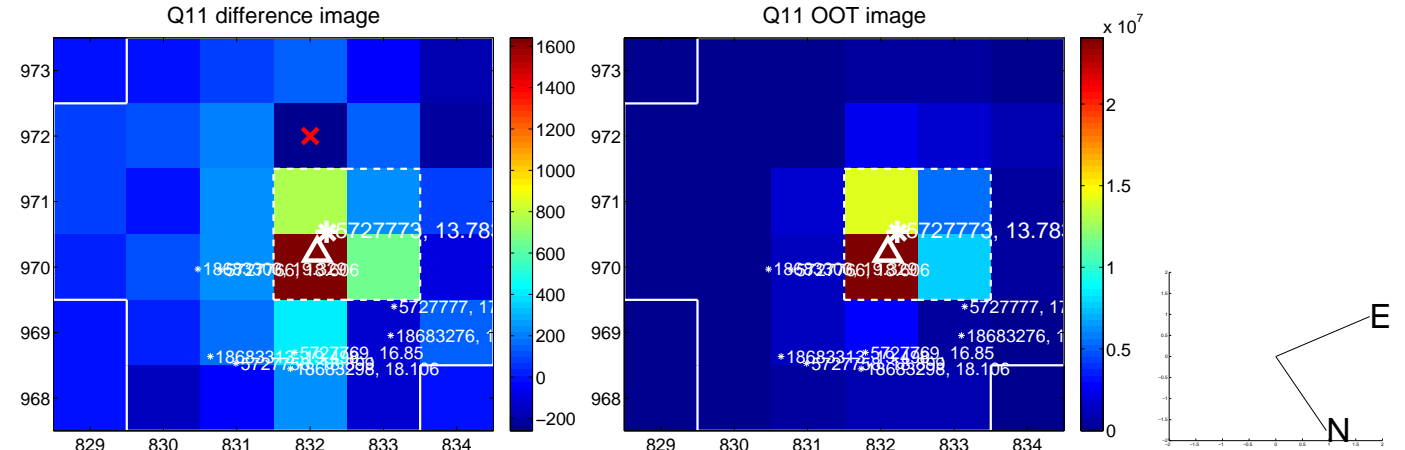
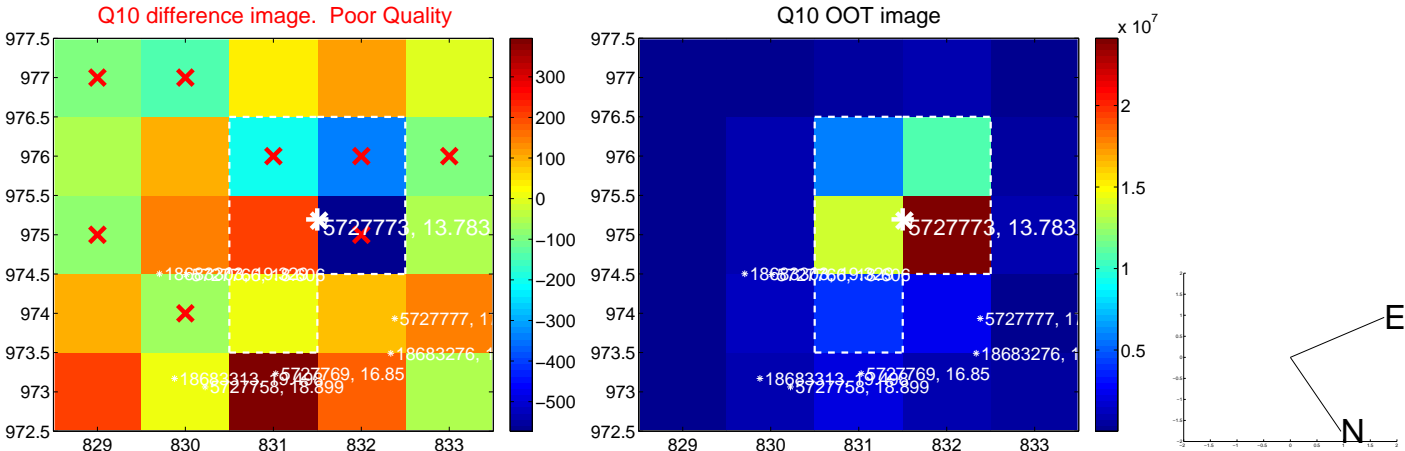
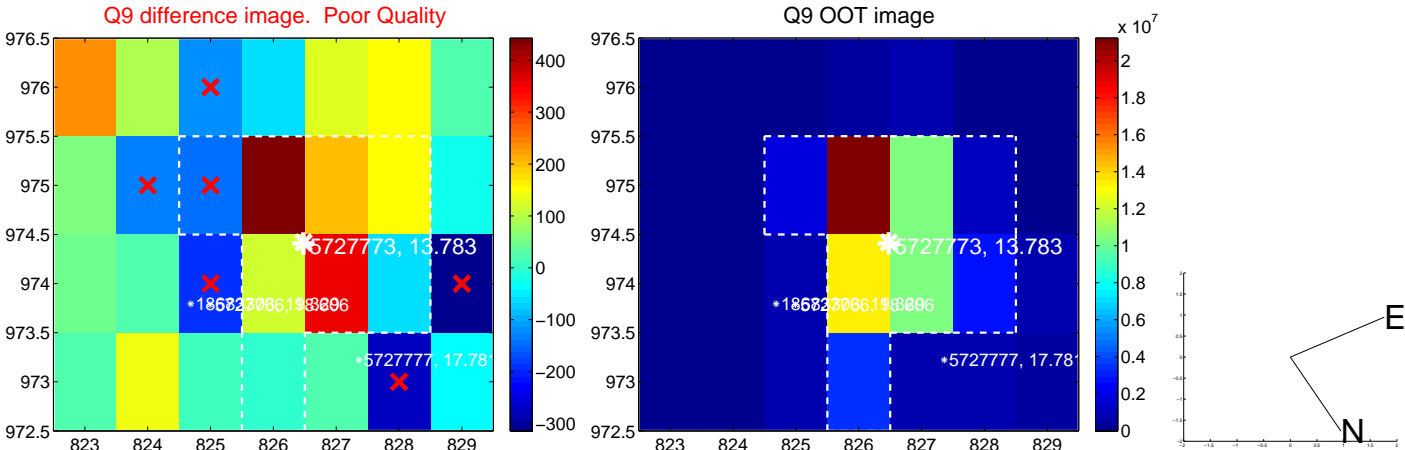


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

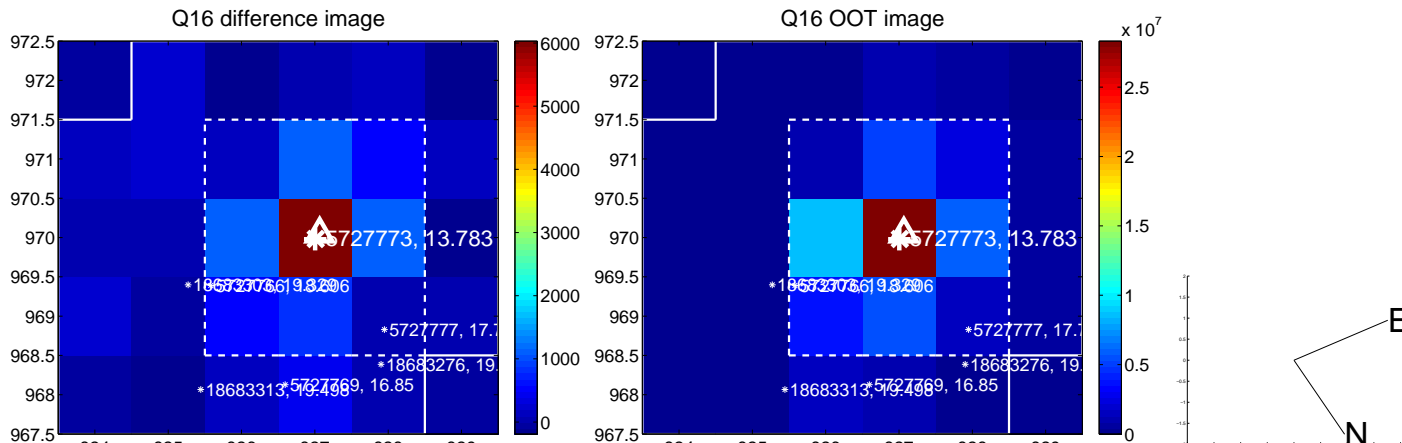
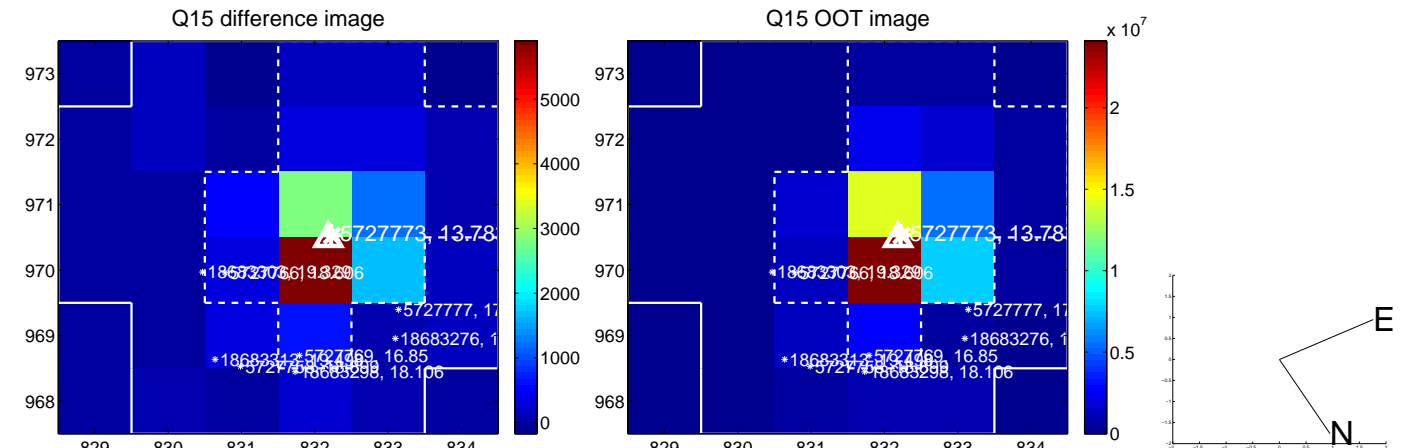
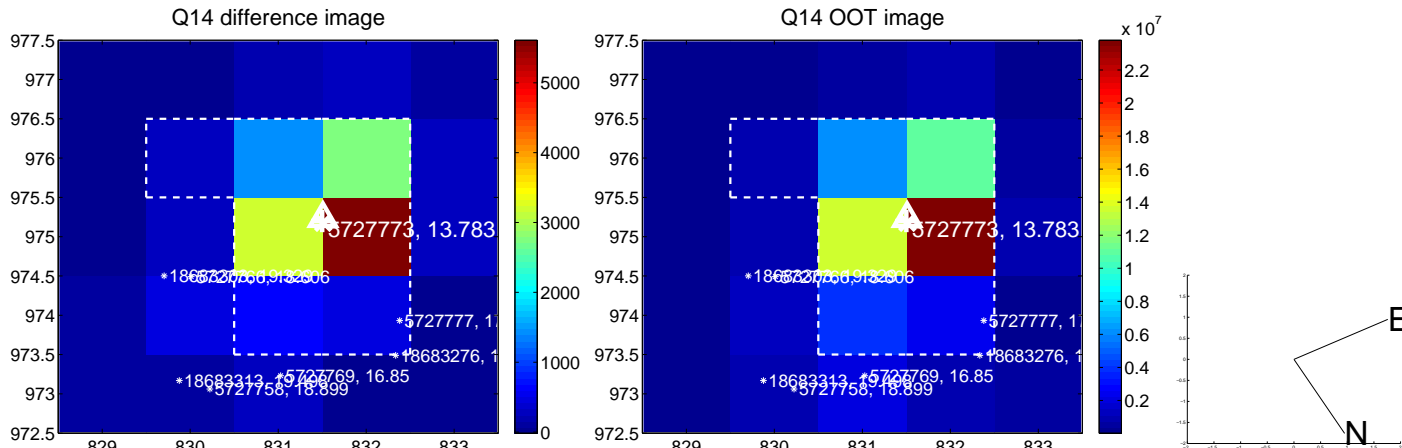
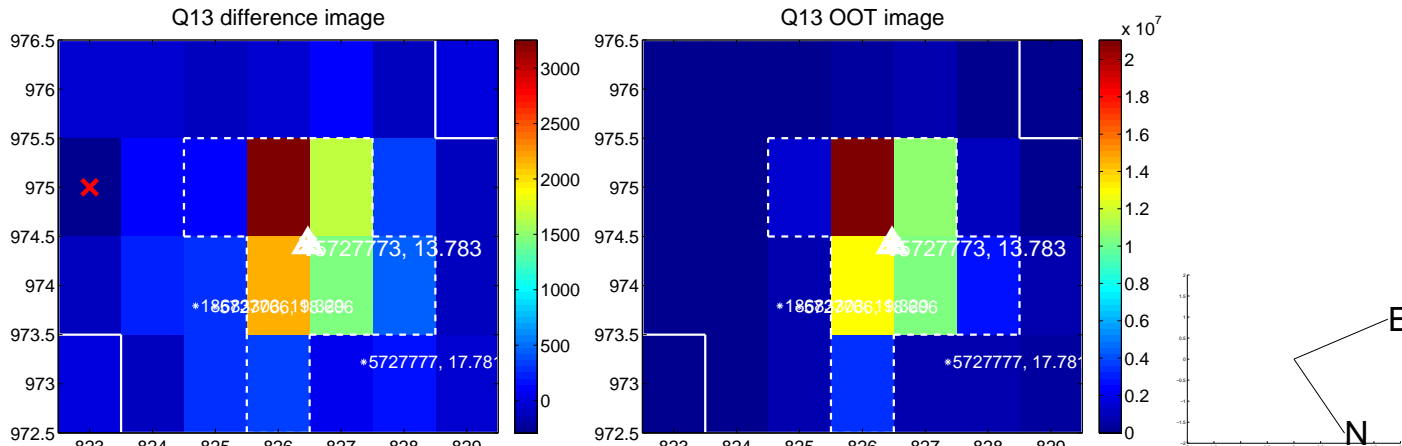




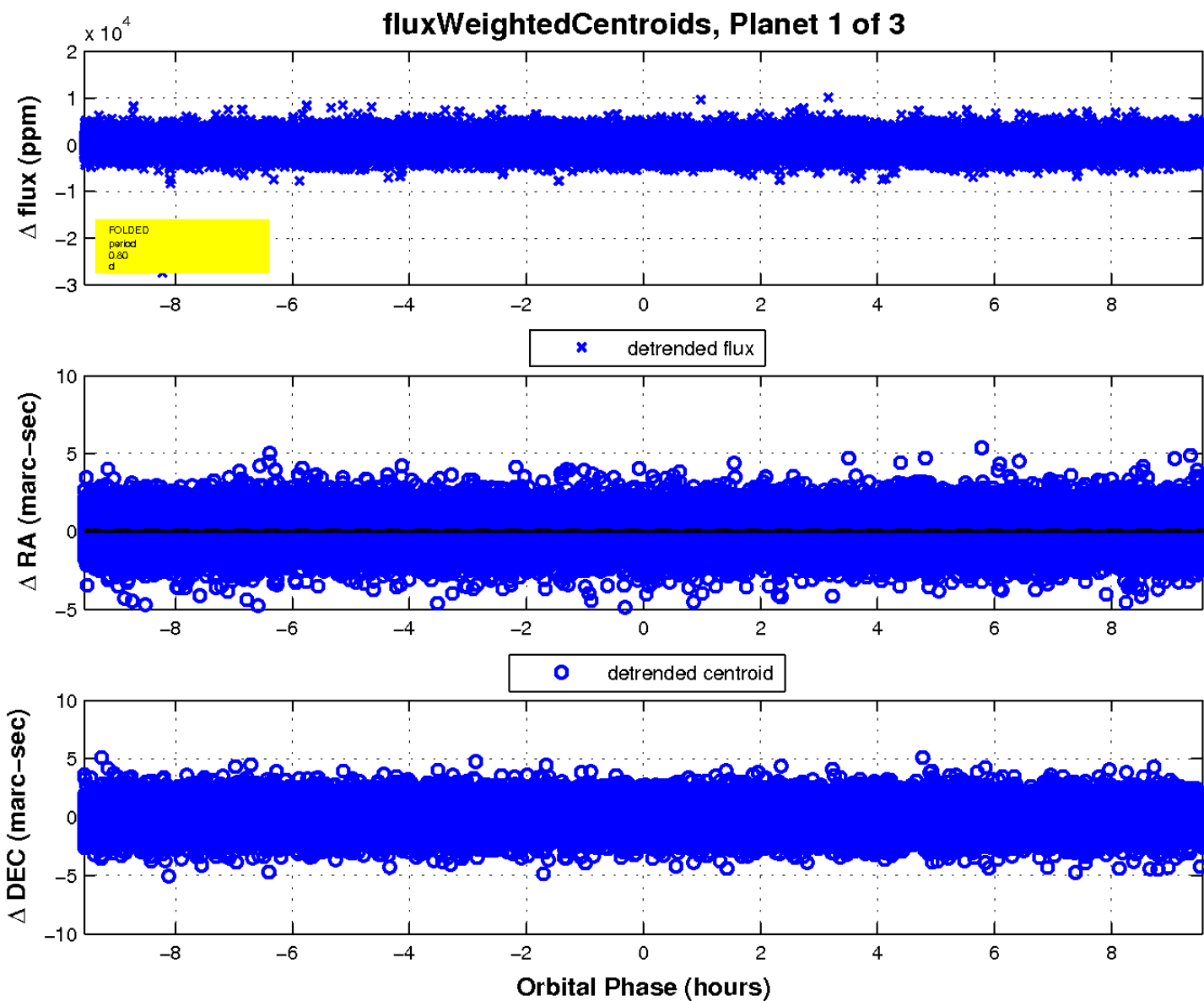
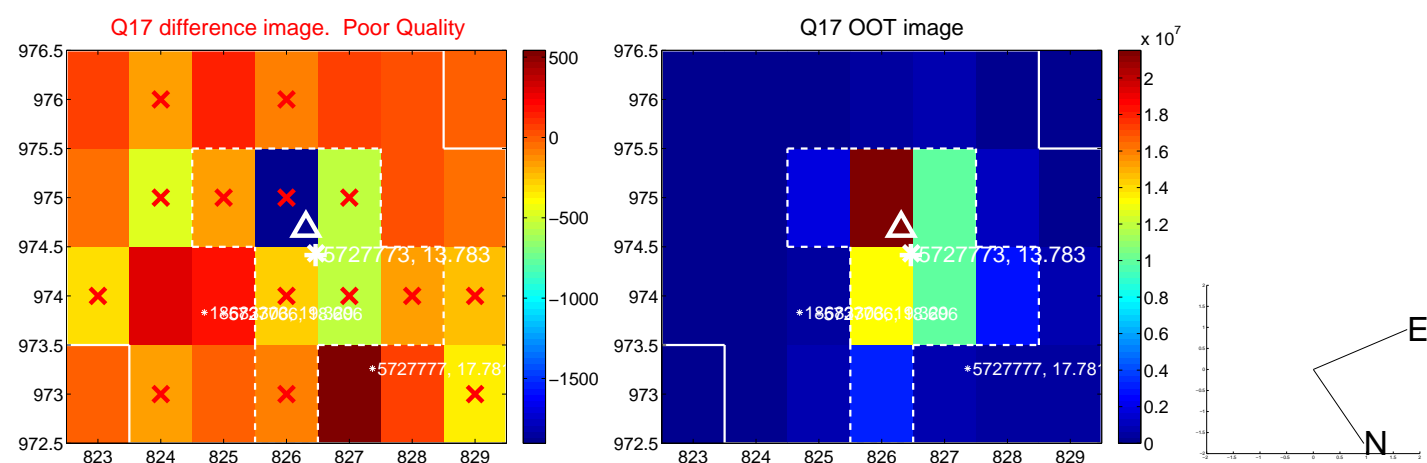
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

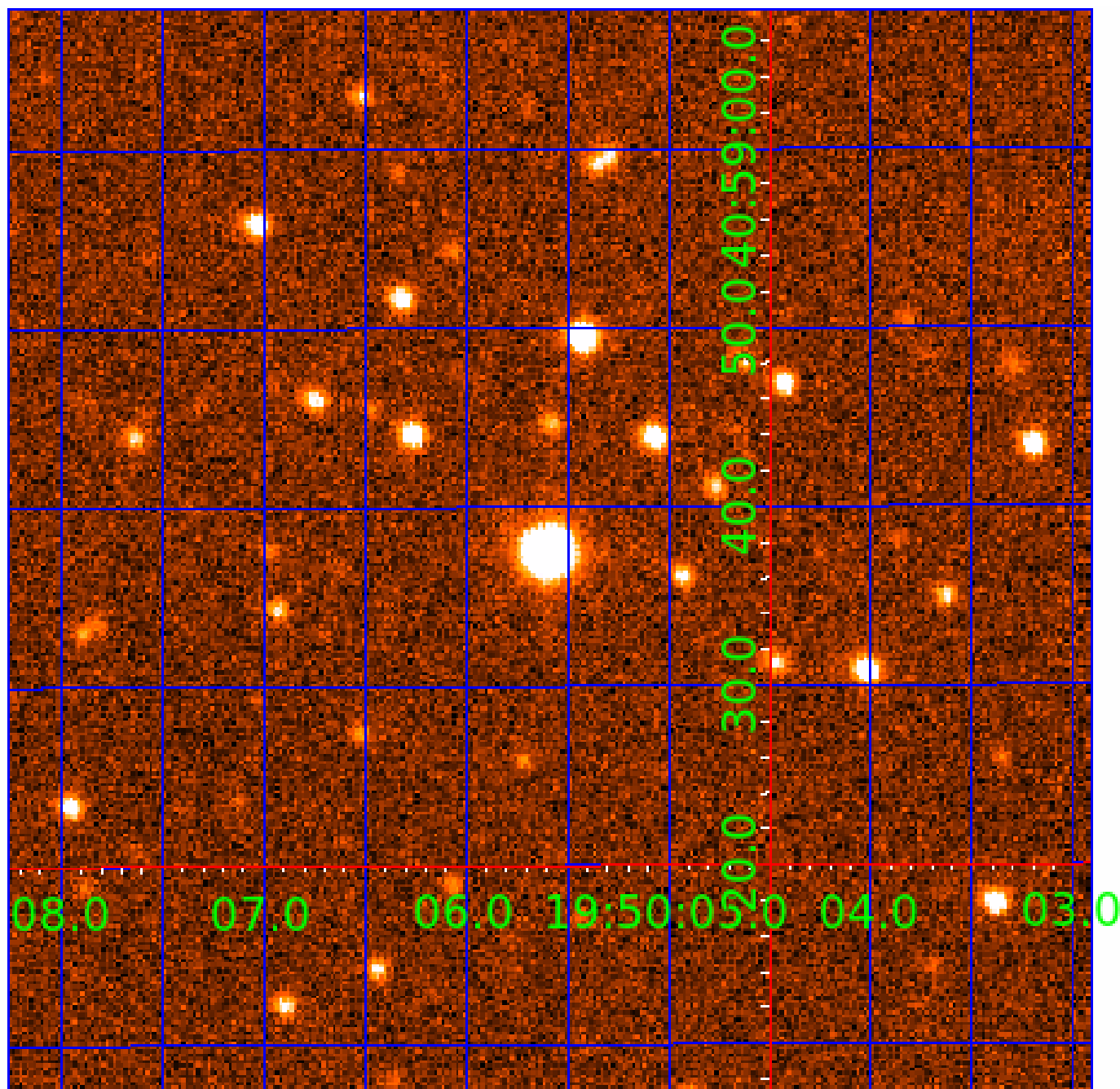


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005727773

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005727773-01 | OBS      | No   | 0.796473      | 131.807742   | 147.4       | 3.276            | 11.0 | 11.6 | 1.96                        | 7159            | 2.77                   | 24186.89               |
| 005727773-02 | OBS      | No   | 0.542711      | 132.012375   | 390.6       | 1.032            | 10.1 | 12.4 | 1.96                        | 7159            | 4.53                   | 40338.14               |
| 005727773-03 | OBS      | No   | 0.542712      | 131.683551   | 393.6       | 0.998            | 8.4  | 12.2 | 1.96                        | 7159            | 4.56                   | 40338.06               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 005727773-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 005727773-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT                 |
| 005727773-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD |

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

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

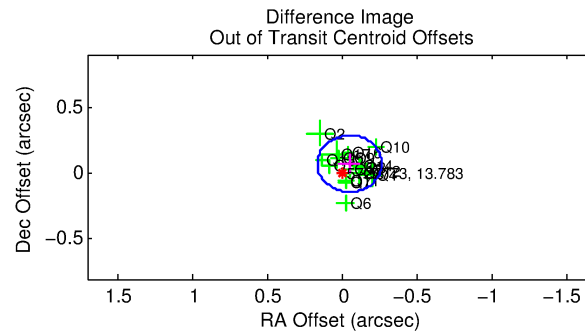
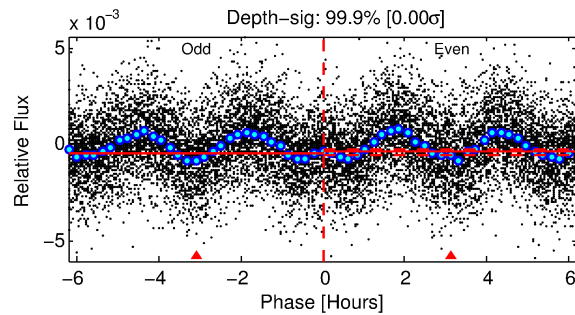
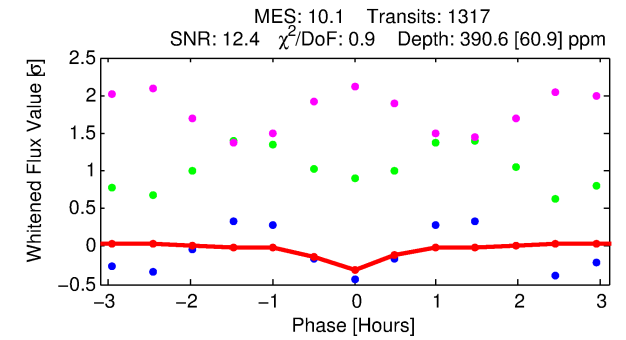
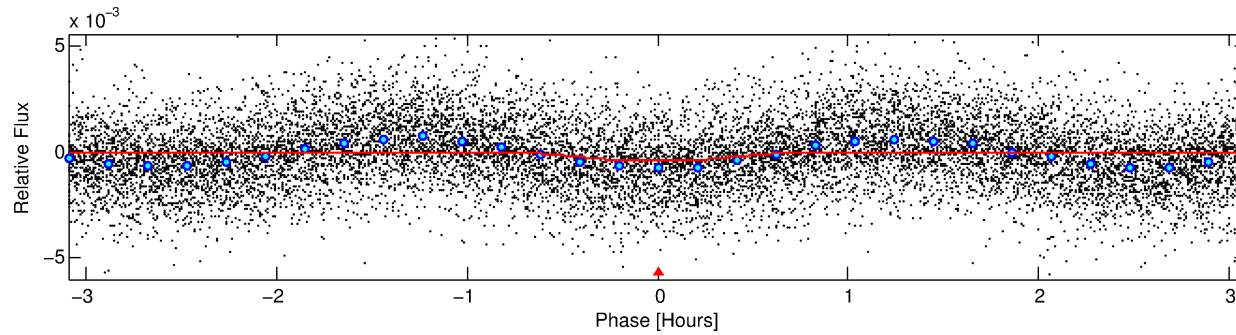
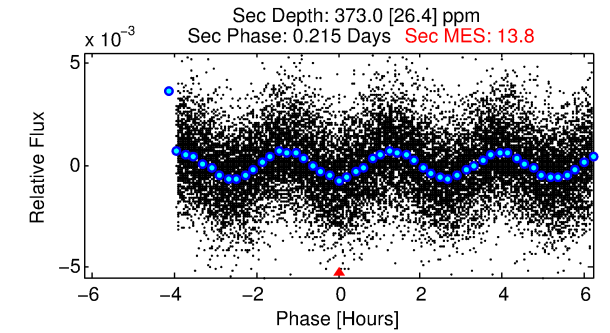
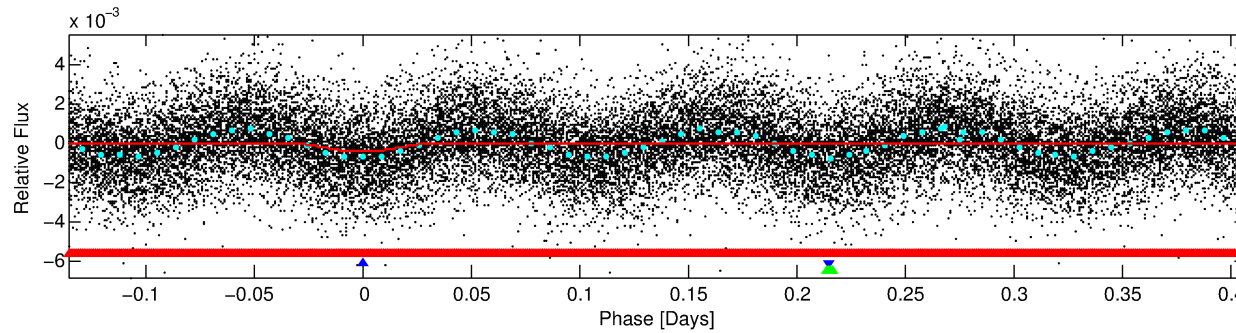
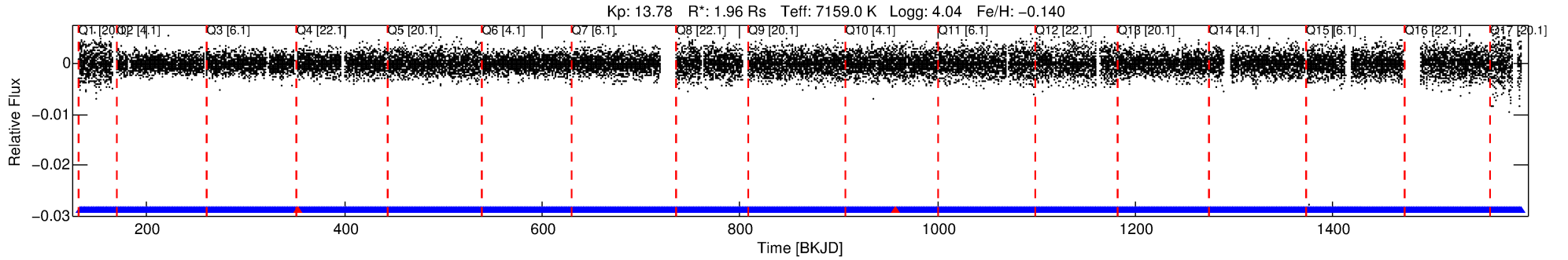
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## Ephemeris Match Information For 005727773-02

No Significant Match Found

# DV One-Page Summary

KIC: 5727773 Candidate: 2 of 3 Period: 0.543 d



## DV Fit Results:

Period = 0.54271 [0.00001] d  
Epoch = 132.0124 [0.0016] BKJD  
Rp/R\* = 0.0212 [0.0109]  
a/R\* = 2.16 [5.22]  
b = 0.90 [0.66]  
Seff = 40338.14 [16909.61]  
Teq = 3614 [379] K  
Rp = 4.53 [2.66] Re  
a = 0.0150 [0.0037] AU  
Ag = 2.24 [2.45] [0.51σ]  
Teffp = 6837 [1786] K [1.77σ]

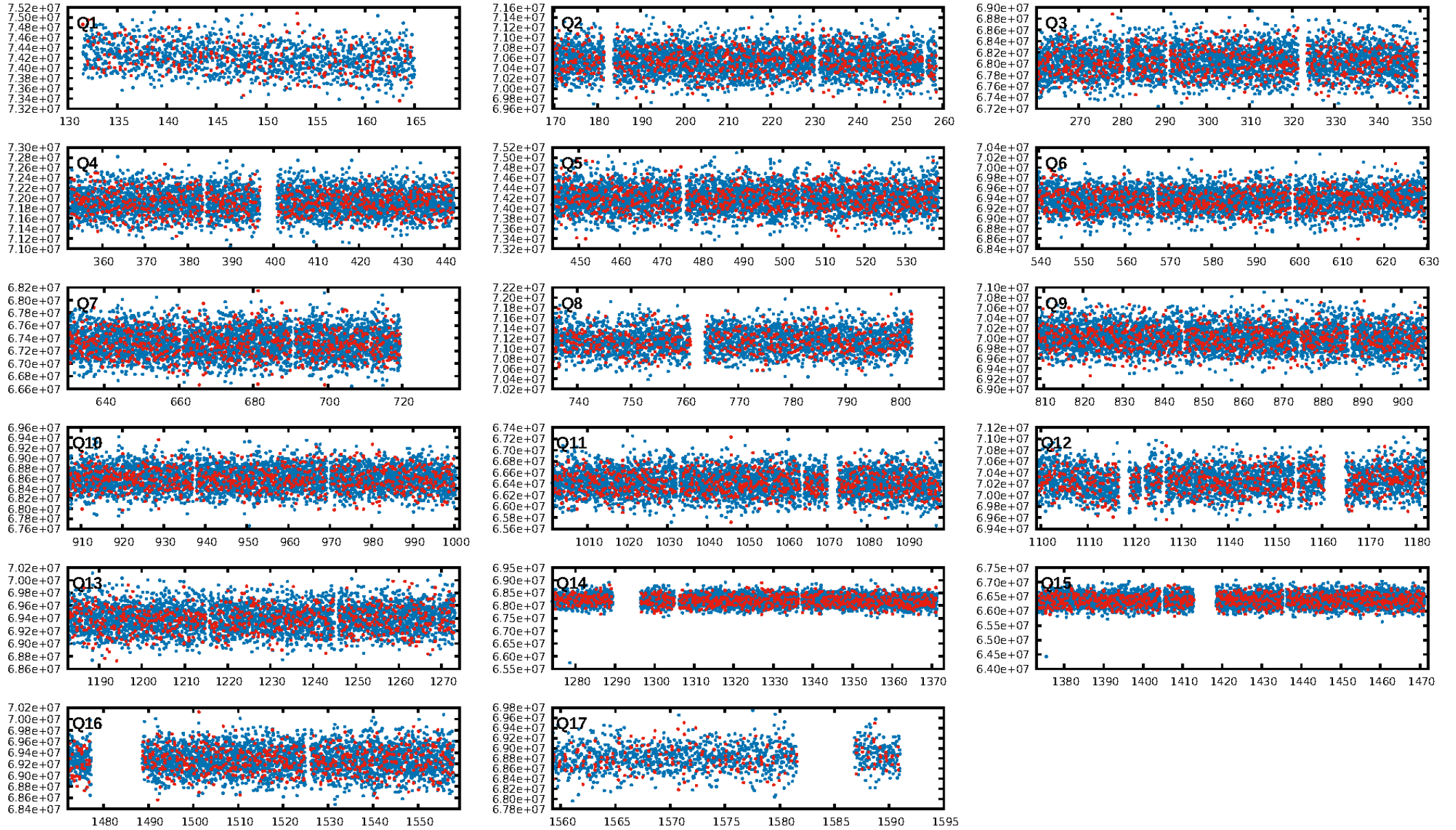
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
**LongPeriod-sig: 0.0% [0.00σ]**  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1256/1258]  
GhostDiagnostic-chr: 0.6572  
Centroid-sig: N/A  
Centroid-so: 0.188 arcsec [1.76σ]  
OotOffset-rm: 0.089 arcsec [1.26σ]  
KicOffset-rm: 0.087 arcsec [1.16σ]  
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]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:32:35 Z

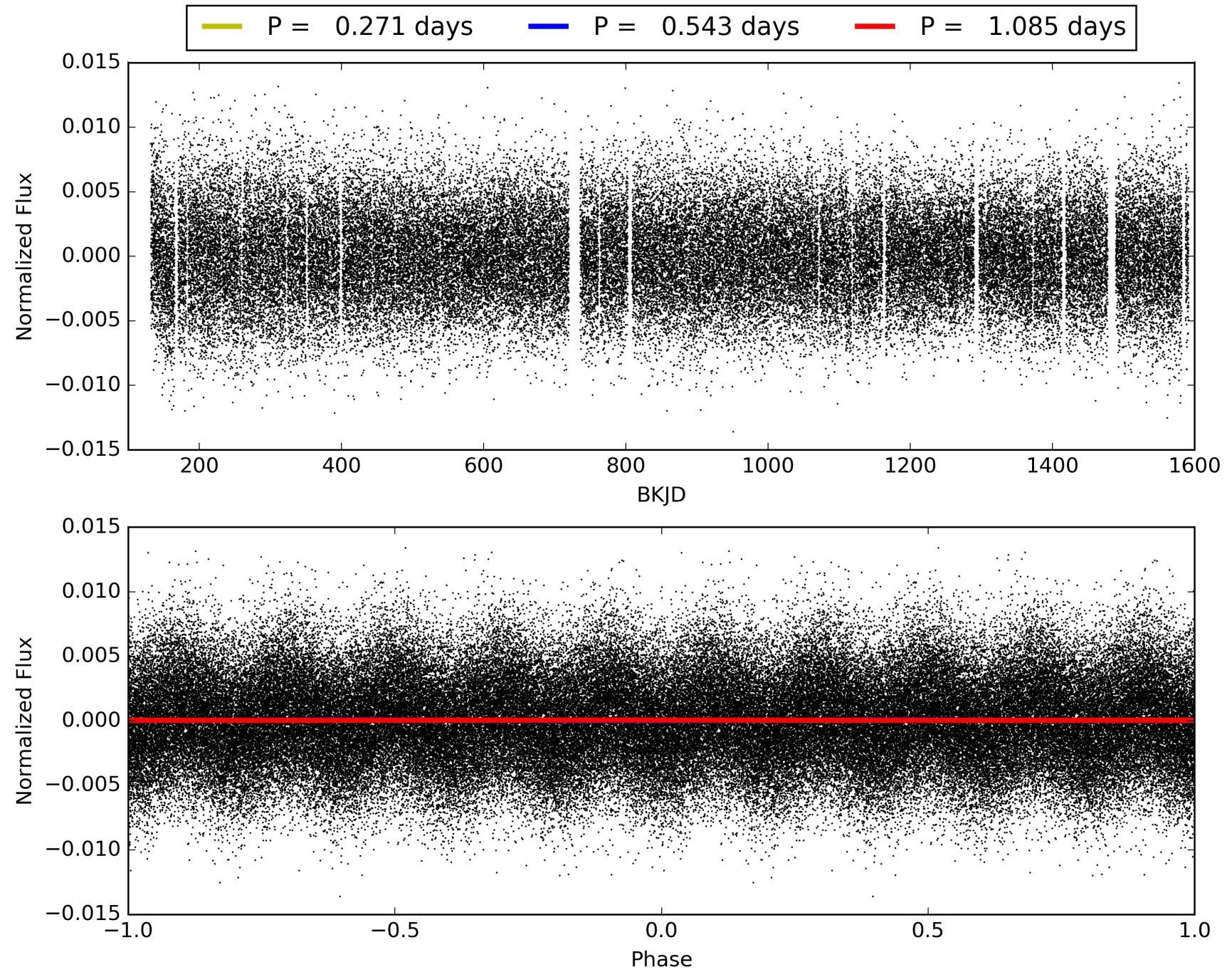
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005727773-02, PDC Light Curves





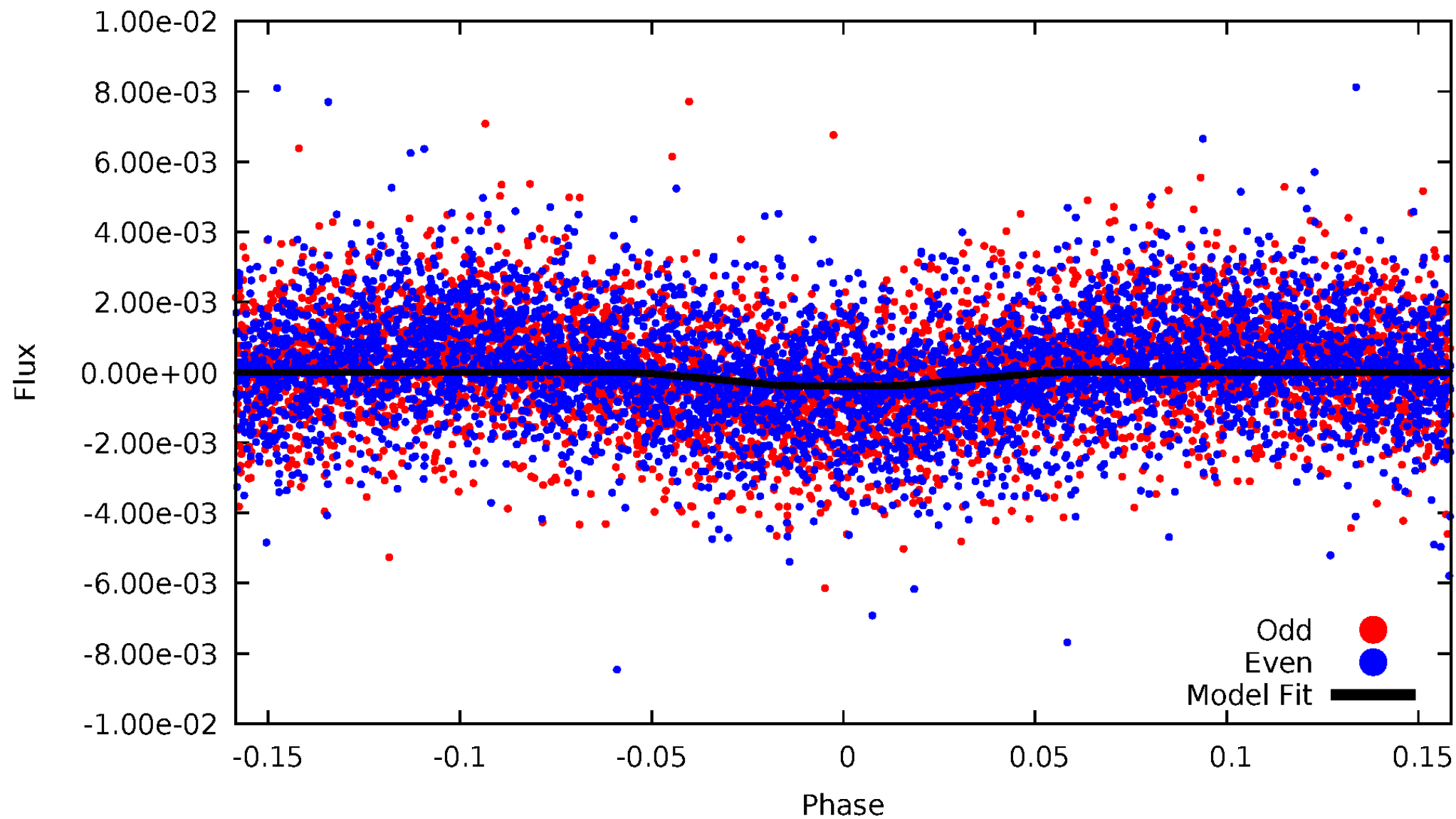
# TCE 005727773-02





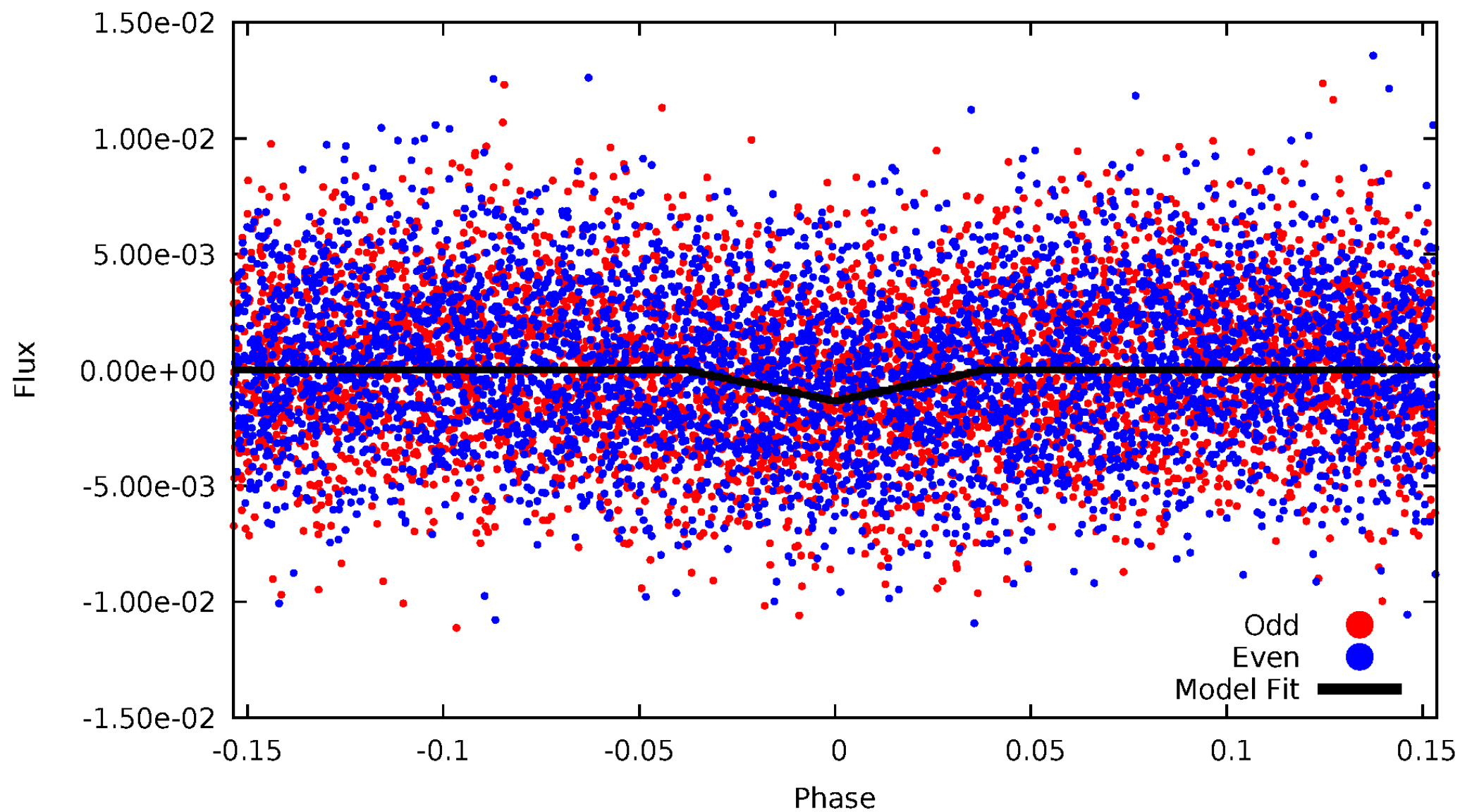
# DV Odd/Even

TCE 005727773-02



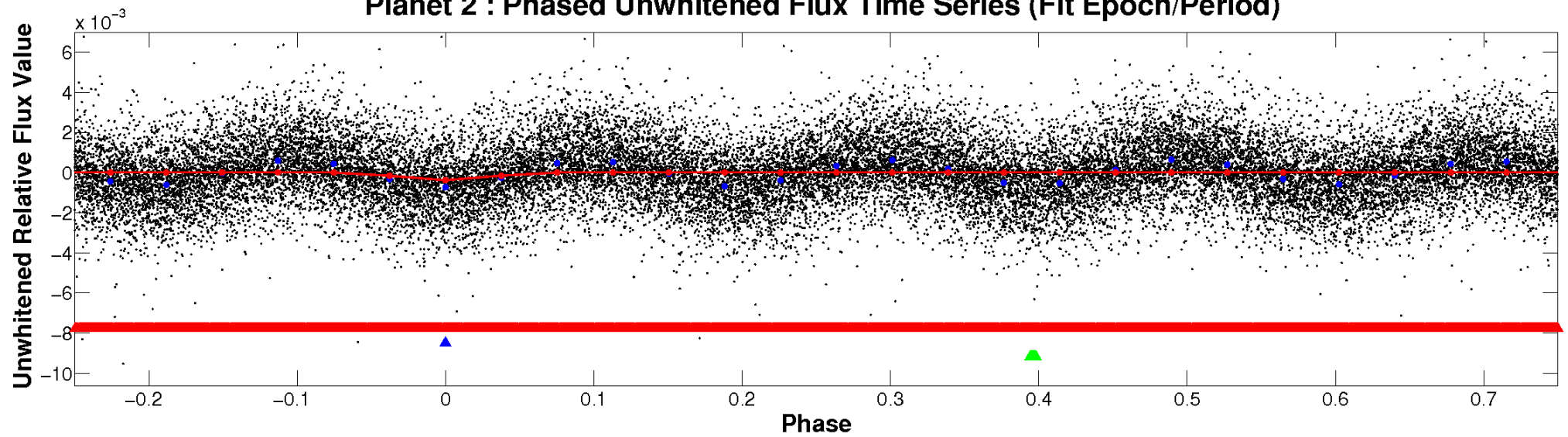
# ALT Odd/Even

TCE 005727773-02

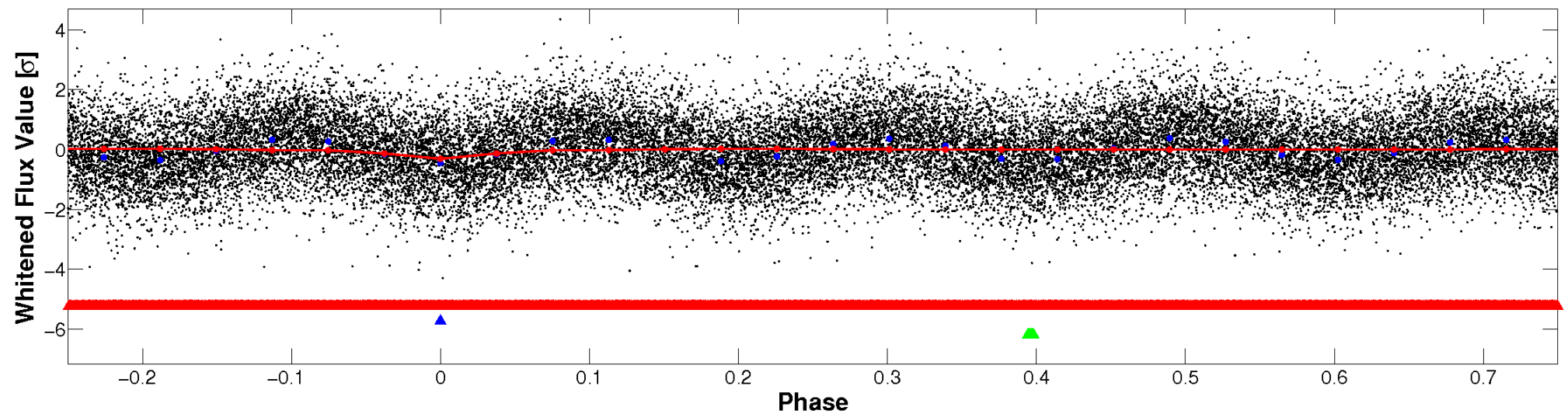


# Non-Whitened Vs. Whitened Light Curve

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

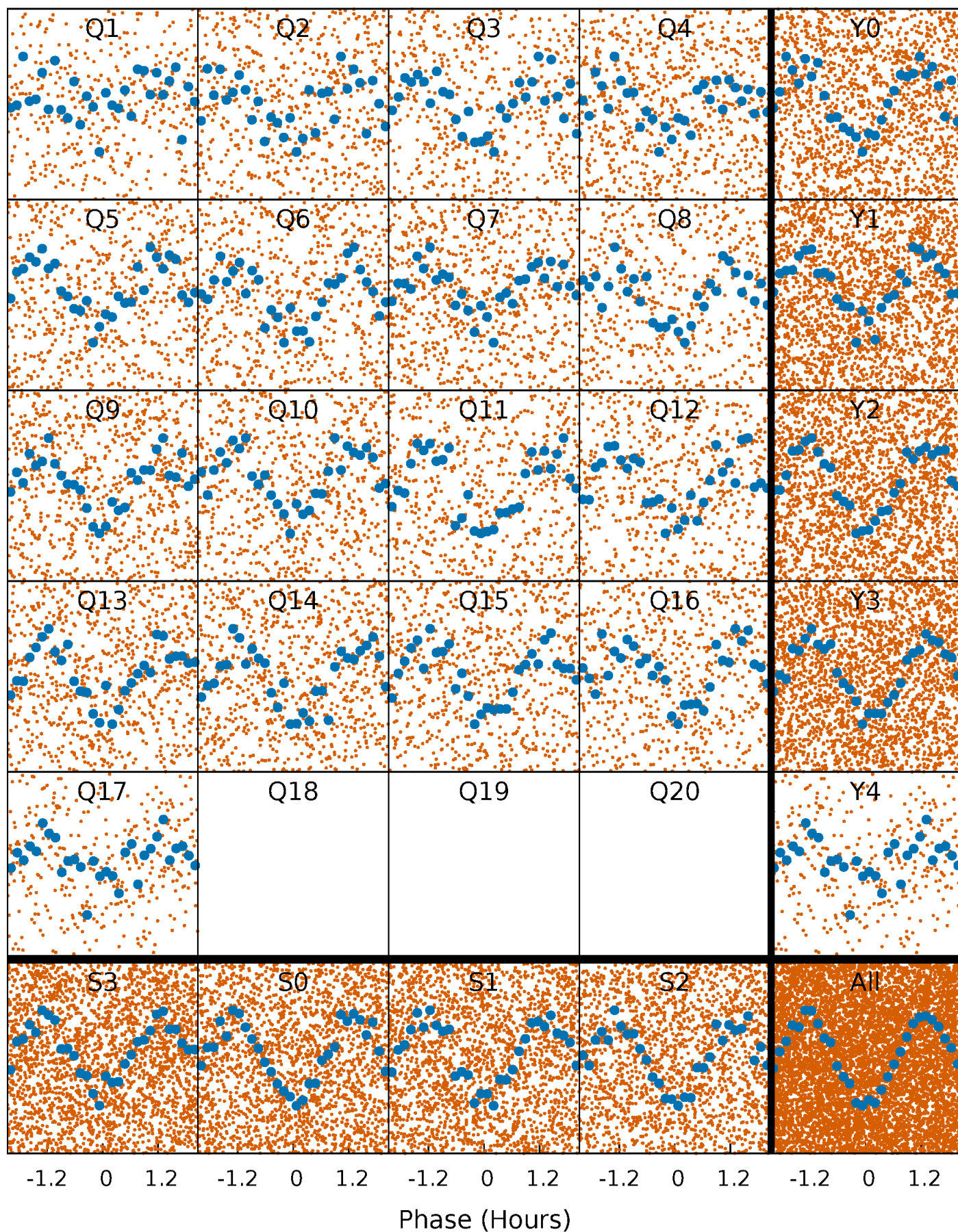


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

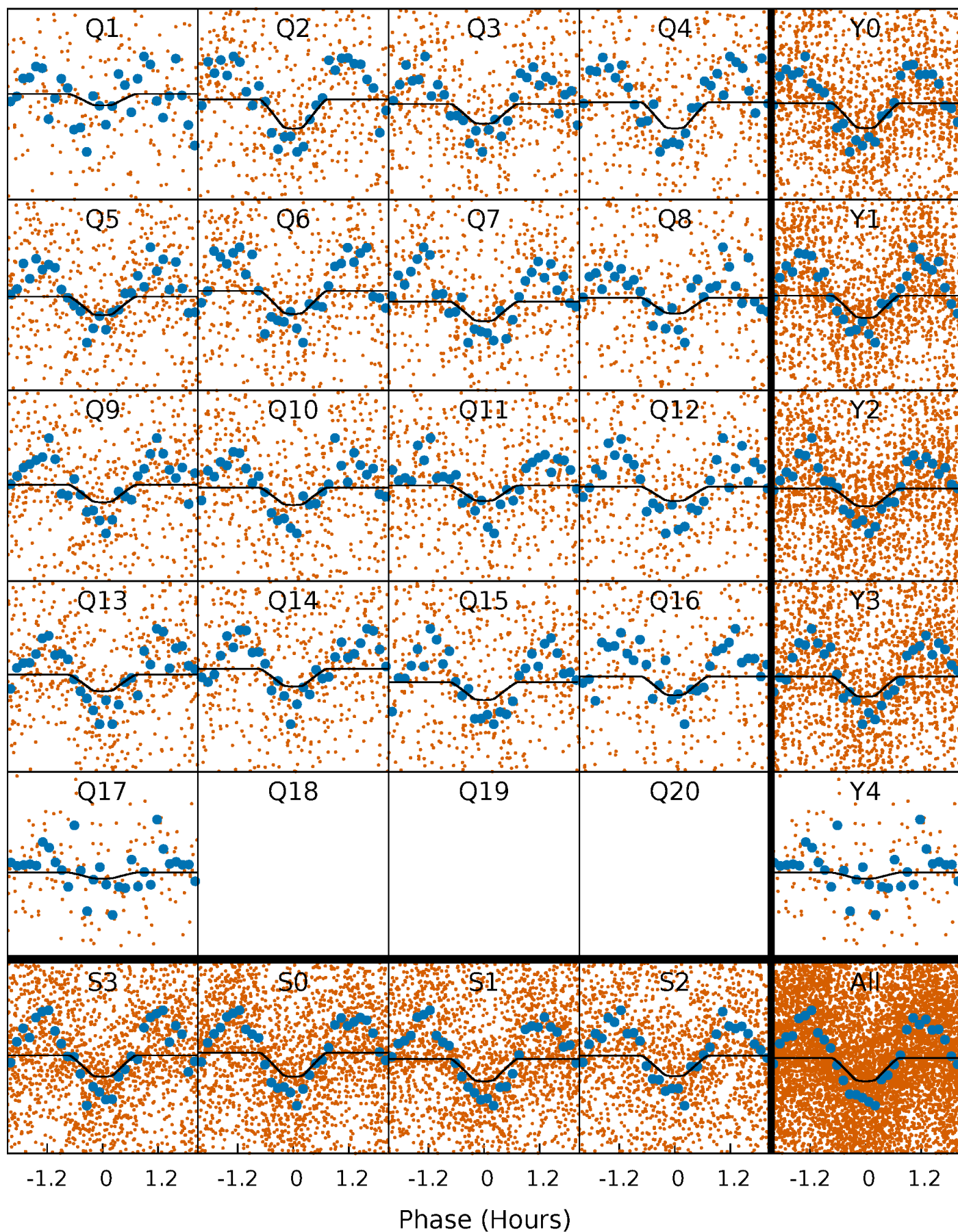
TCE 005727773-02     $P = 0.542711$  Days     $T_0 = 132.012375$  (BKJD)





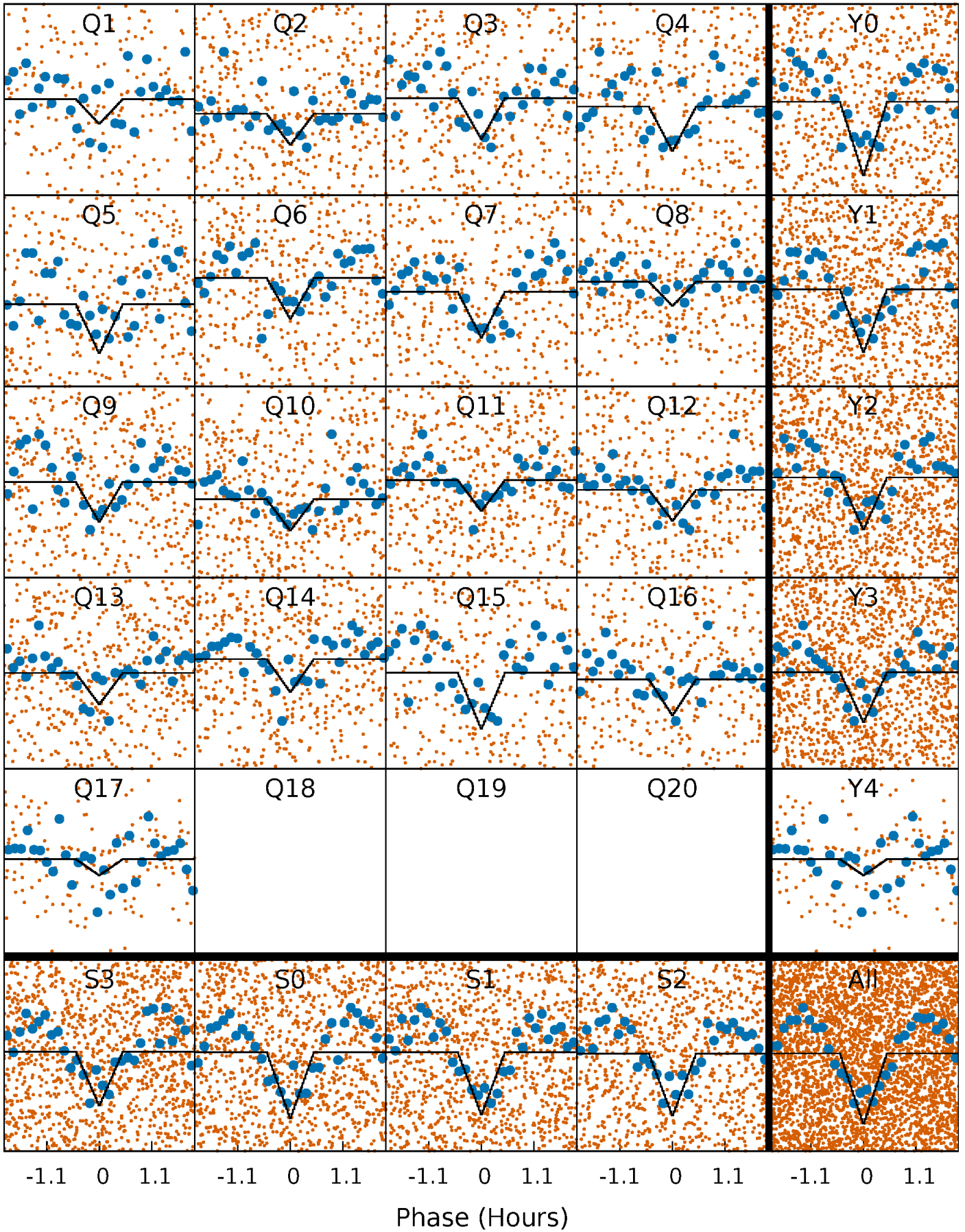
# DV Quarter-Phased Transit Curves

TCE 005727773-02     $P = 0.542711$  Days     $T_0 = 132.012375$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

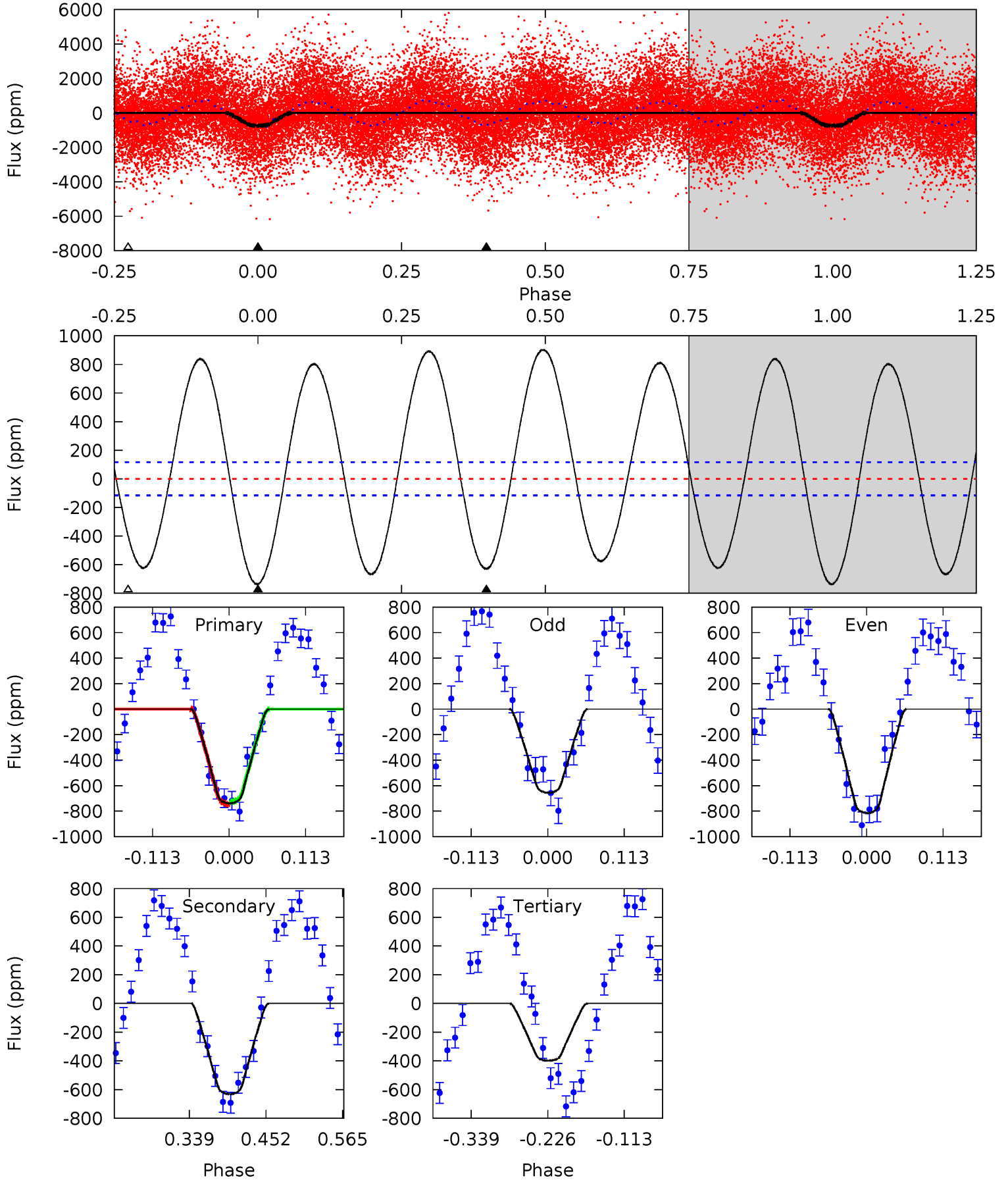
TCE 005727773-02   P= 0.542718 Days    $T_0=132.004052$  (BKJD)



# DV Model-Shift Uniqueness Test

005727773-02, P = 0.542711 Days, E = 131.469664 Days

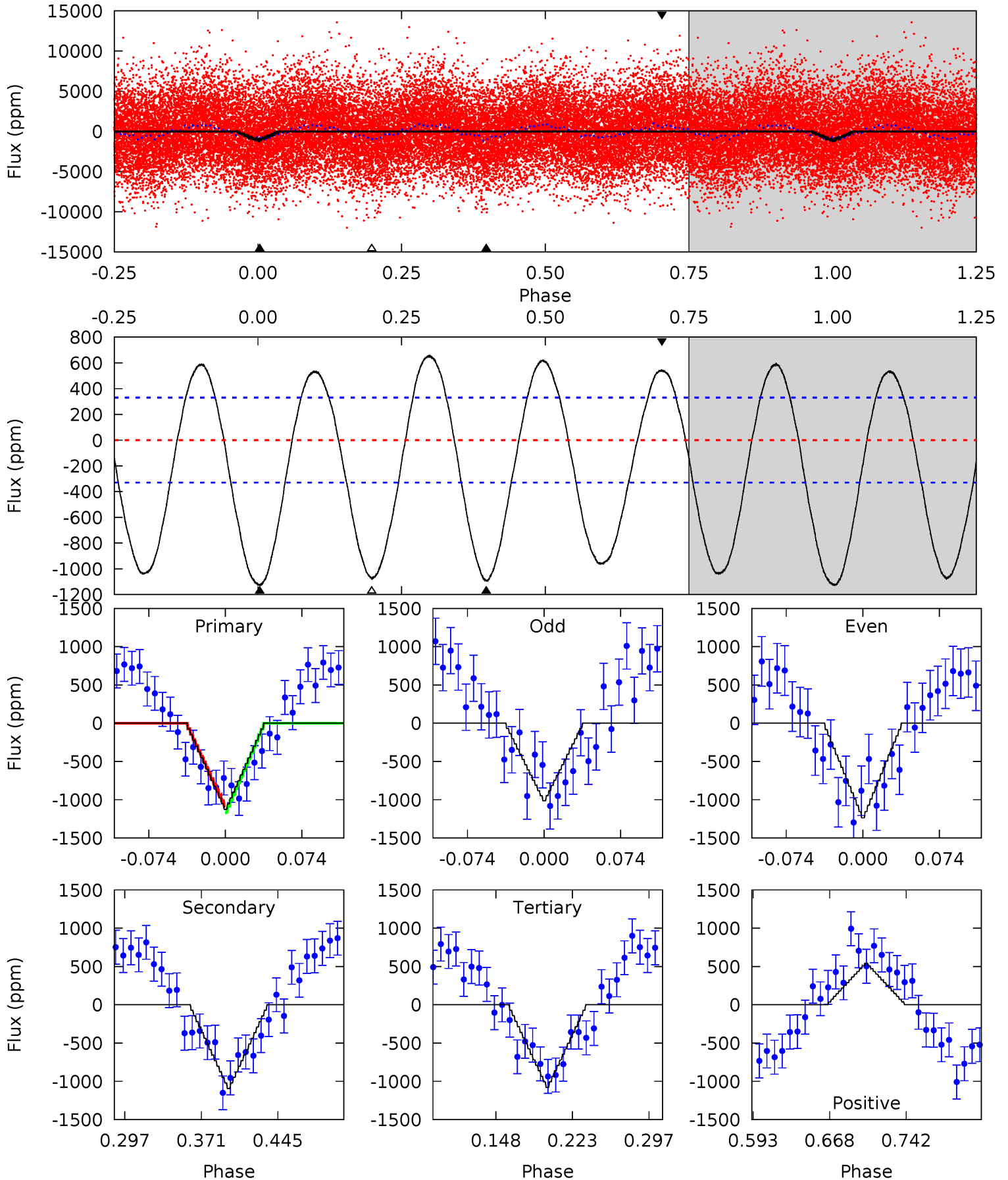
| Pri  | Sec  | Ter  | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.8 | 24.6 | 15.5 | 0   | 4.54            | 1.58            | 19.0             | 13.3    | 28.8    | 9.07    | 24.6    | 3.10    | 1.07 | 0.55  | 0.37 |



# Alt Model-Shift Uniqueness Test

005727773-02, P = 0.542718 Days, E = 131.461334 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.8 | 15.3 | 15.1 | 7.63 | 4.63            | 1.79            | 8.20             | 0.67    | 8.16    | 0.23    | 7.71    | 1.57    | 0.95 | 0.37  | 0.58 |





### Stellar Parameters For KIC 005727773

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                     | $R$ ( $R_{\odot}$ )       | $M$ ( $M_{\odot}$ )       | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $7159^{+228}_{-342}$ | $4.035^{+0.209}_{-0.171}$ | $-0.140^{+0.250}_{-0.350}$ | $1.960^{+0.560}_{-0.560}$ | $1.517^{+0.222}_{-0.271}$ | $0.284^{+0.354}_{-0.137}$                     |
|        | +3%/-5%              | +5%/-4%                   | +179%/-250%                | +29%/-29%                 | +15%/-18%                 | +125%/-48%                                    |
| 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 005727773-02 / KOI

| Detrend | Depth (ppm)    | $R_p$ ( $R_{\oplus}$ ) | $T_{max}$ (K)        | $T_{obs}$ (K)          | $A_{obs}$                  |
|---------|----------------|------------------------|----------------------|------------------------|----------------------------|
| DV      | $-631 \pm 26$  | $4.53^{+2.54}_{-2.29}$ | $4991^{+413}_{-388}$ | $7532^{+5108}_{-1724}$ | $3.796^{+11.240}_{-2.268}$ |
| Alt.    | $-1095 \pm 71$ | $7.53^{+2.74}_{-2.51}$ | $5015^{+417}_{-400}$ | $6574^{+1851}_{-1034}$ | $2.369^{+2.874}_{-1.105}$  |

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

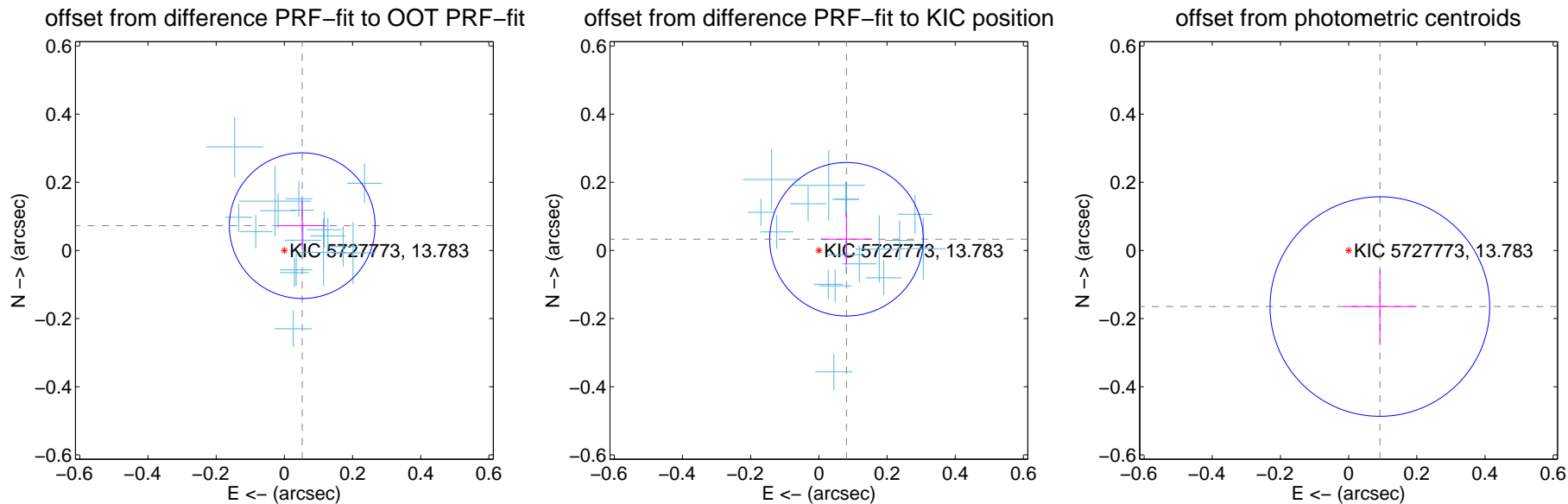
## DV Centroid Data

Supplemental centroid analysis for 005727773-02. Kepler magnitude: 13.78. Transit SNR 12.36

There are 17 quarters with good PRF difference image offsets

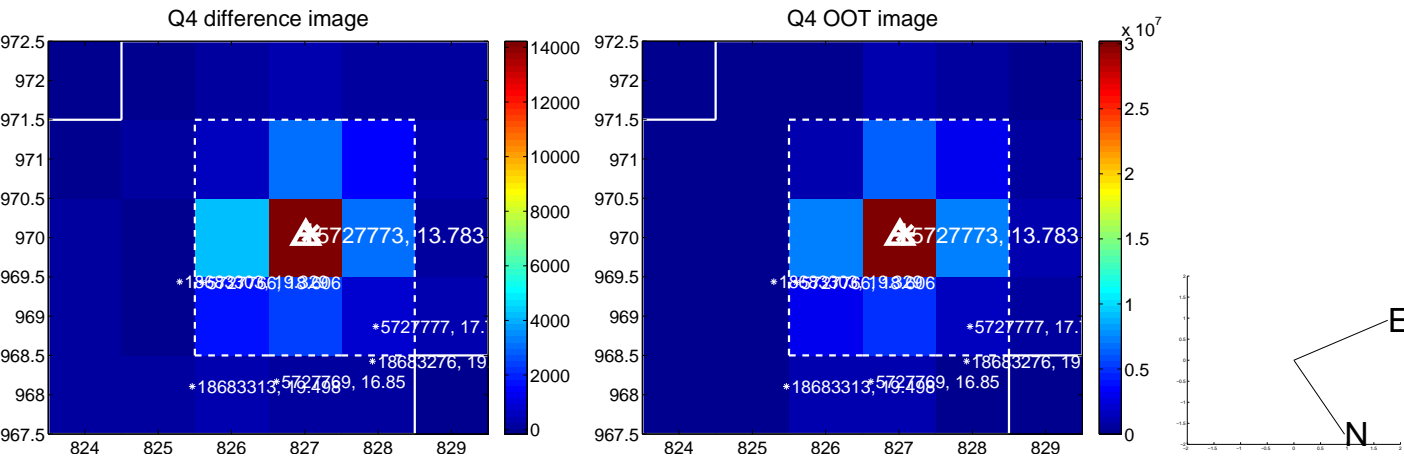
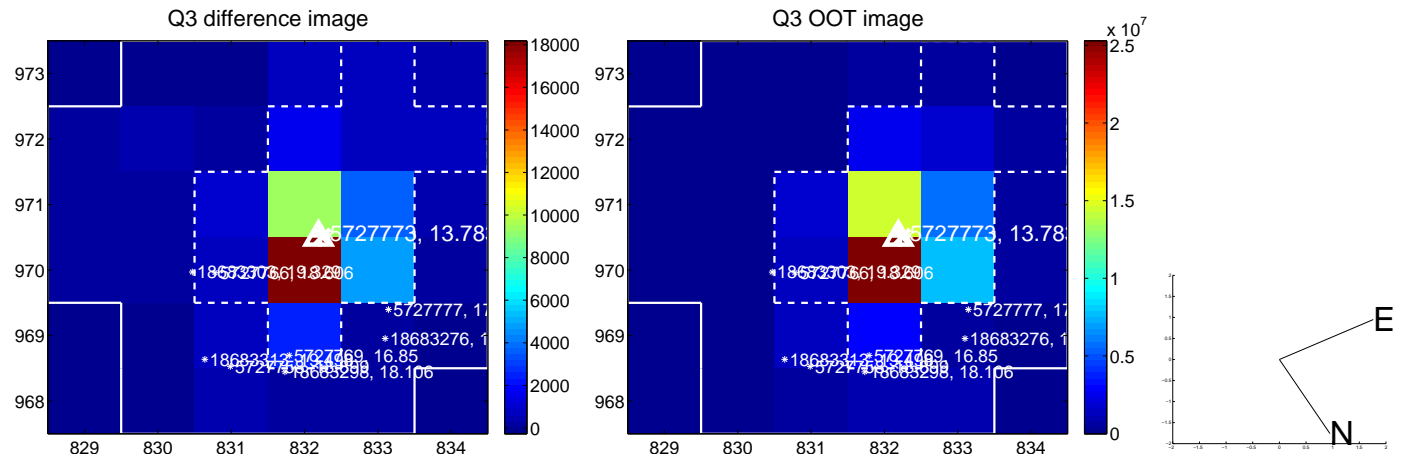
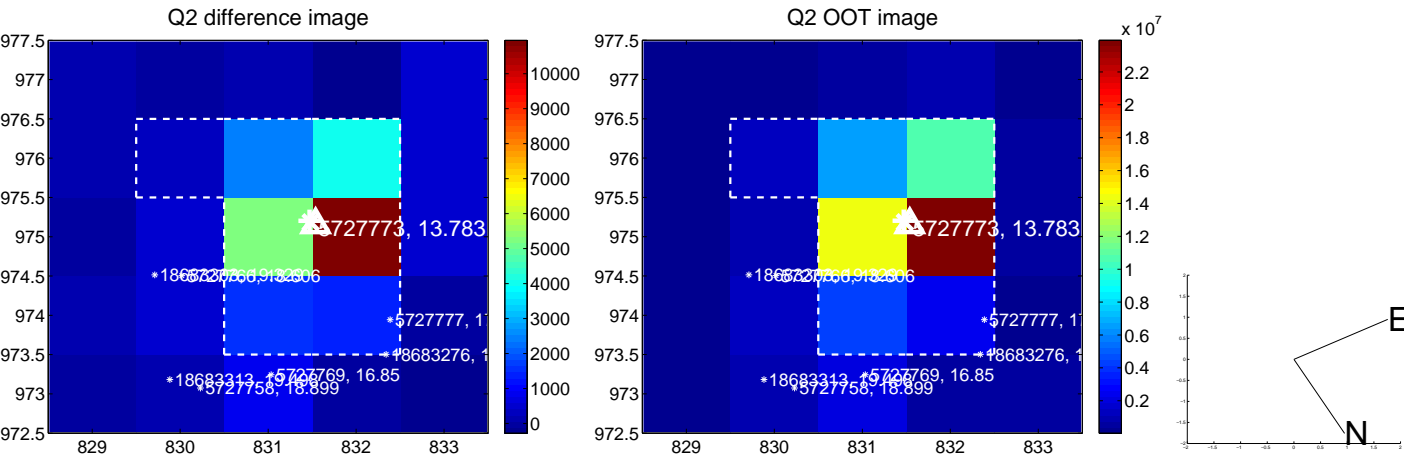
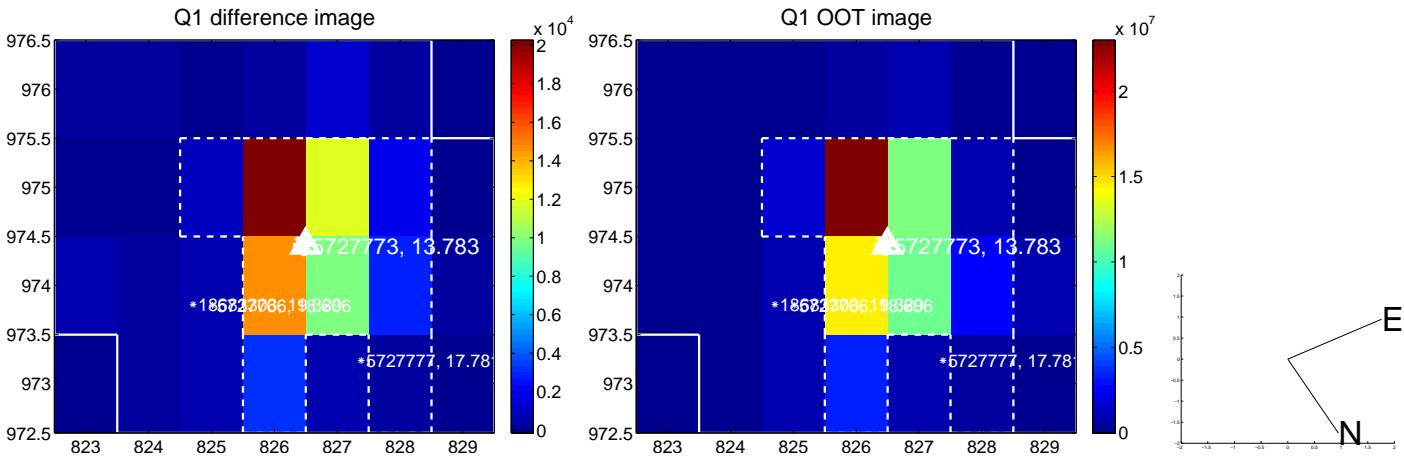
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec      |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT          | $0.089 \pm 0.071$  | 1.26                | $-0.052 \pm 0.072$ | $0.073 \pm 0.071$ |
| PRF-fit source offset from KIC position | $0.087 \pm 0.075$  | 1.16                | $-0.081 \pm 0.075$ | $0.033 \pm 0.074$ |
| photometric centroid source offset      | $0.19 \pm 0.11$    | 1.76                | $-0.09 \pm 0.11$   | $-0.16 \pm 0.11$  |

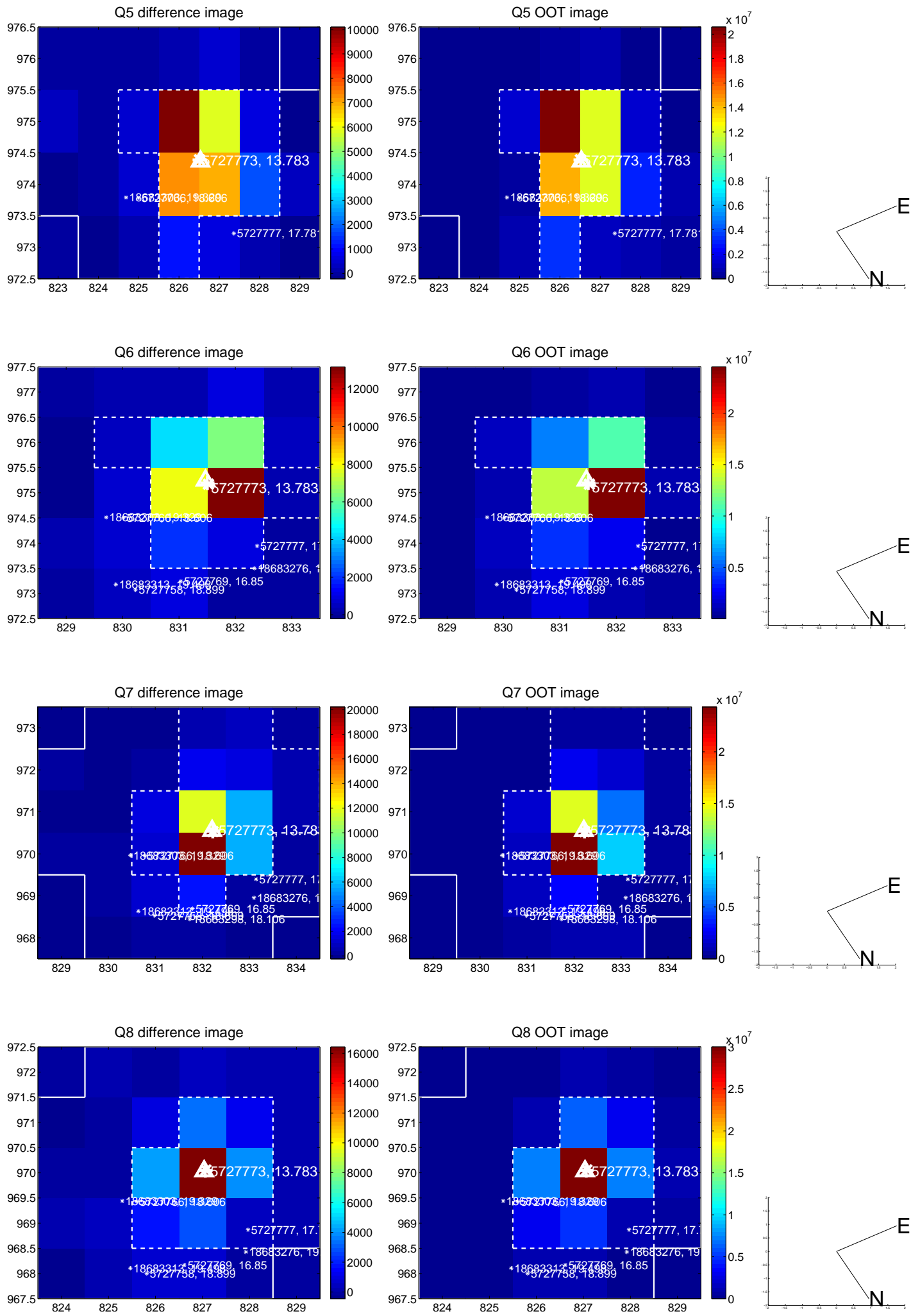


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

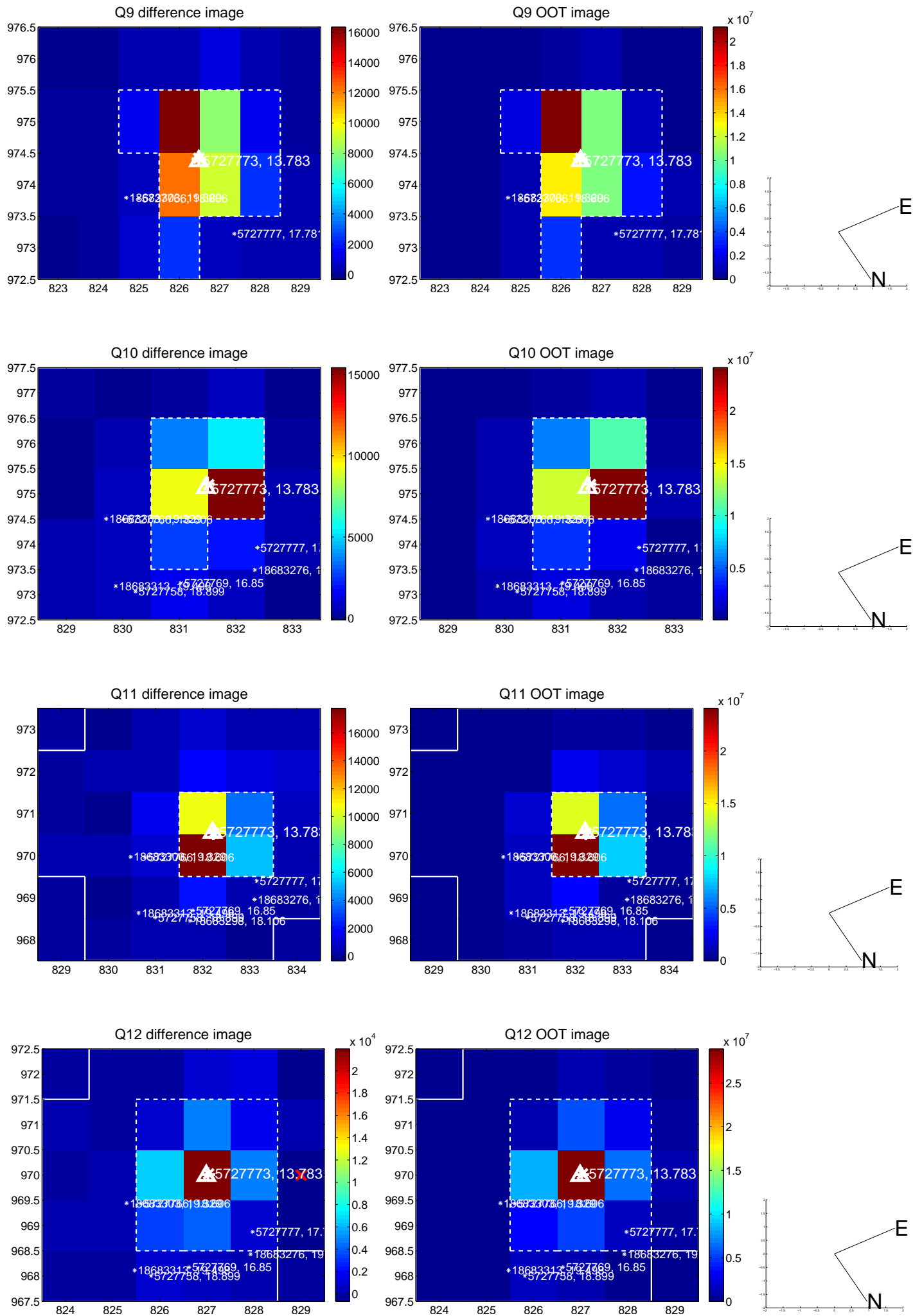
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

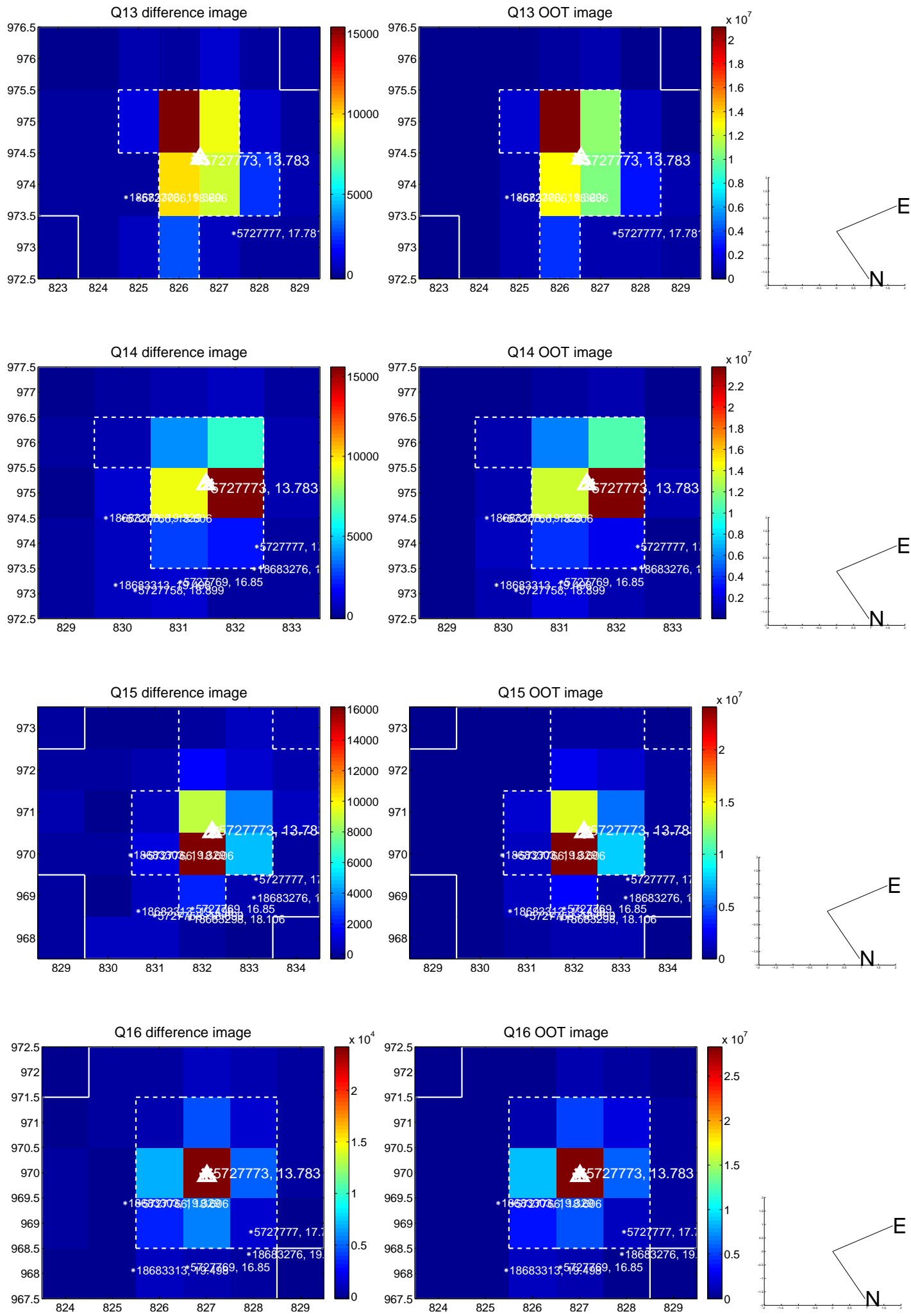


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

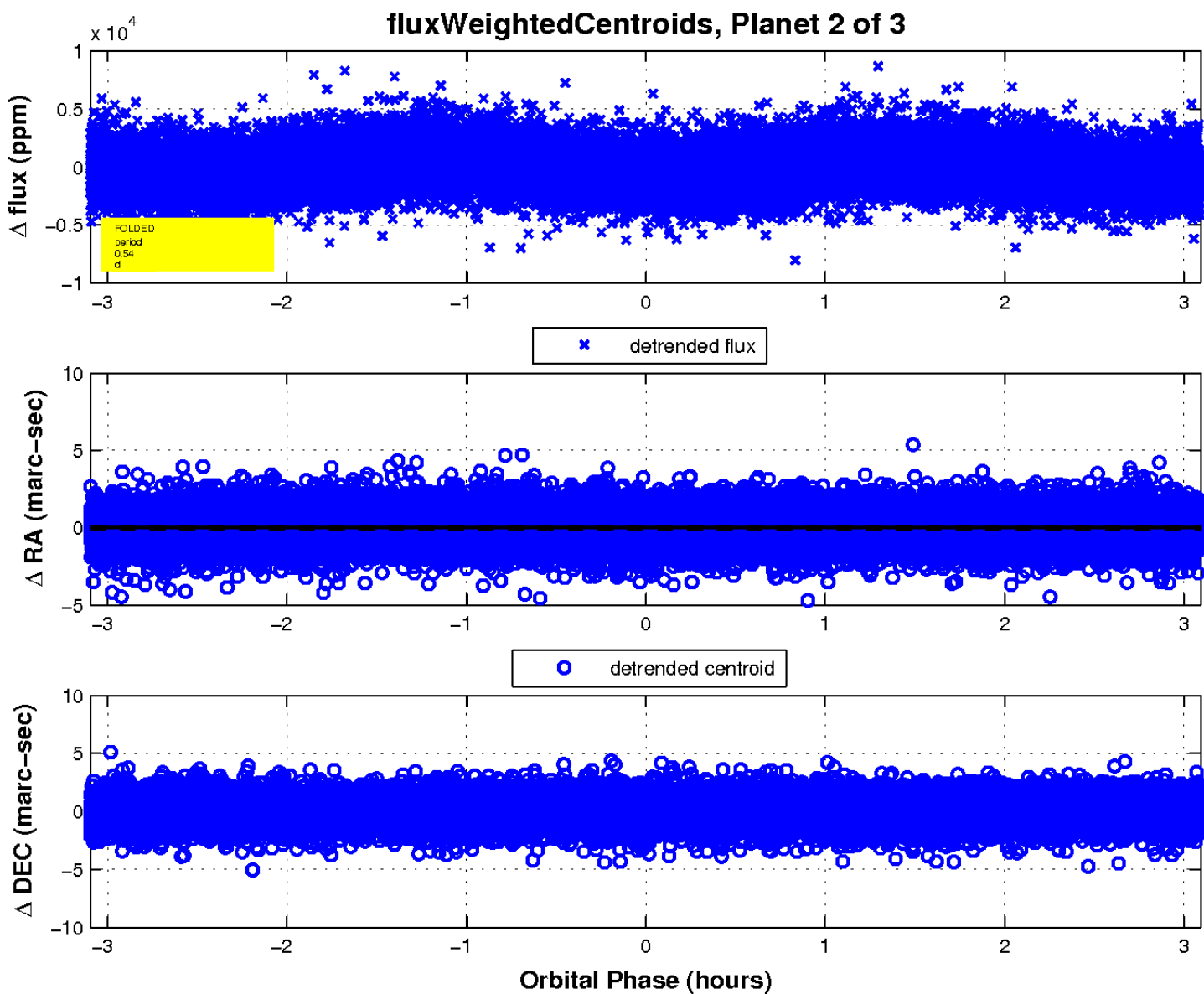
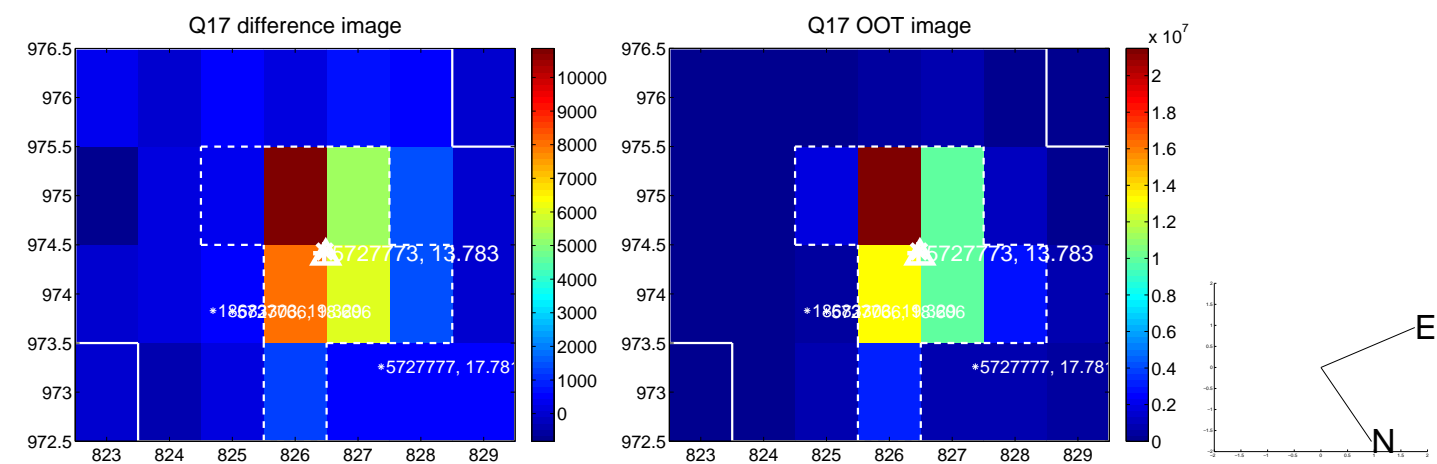




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

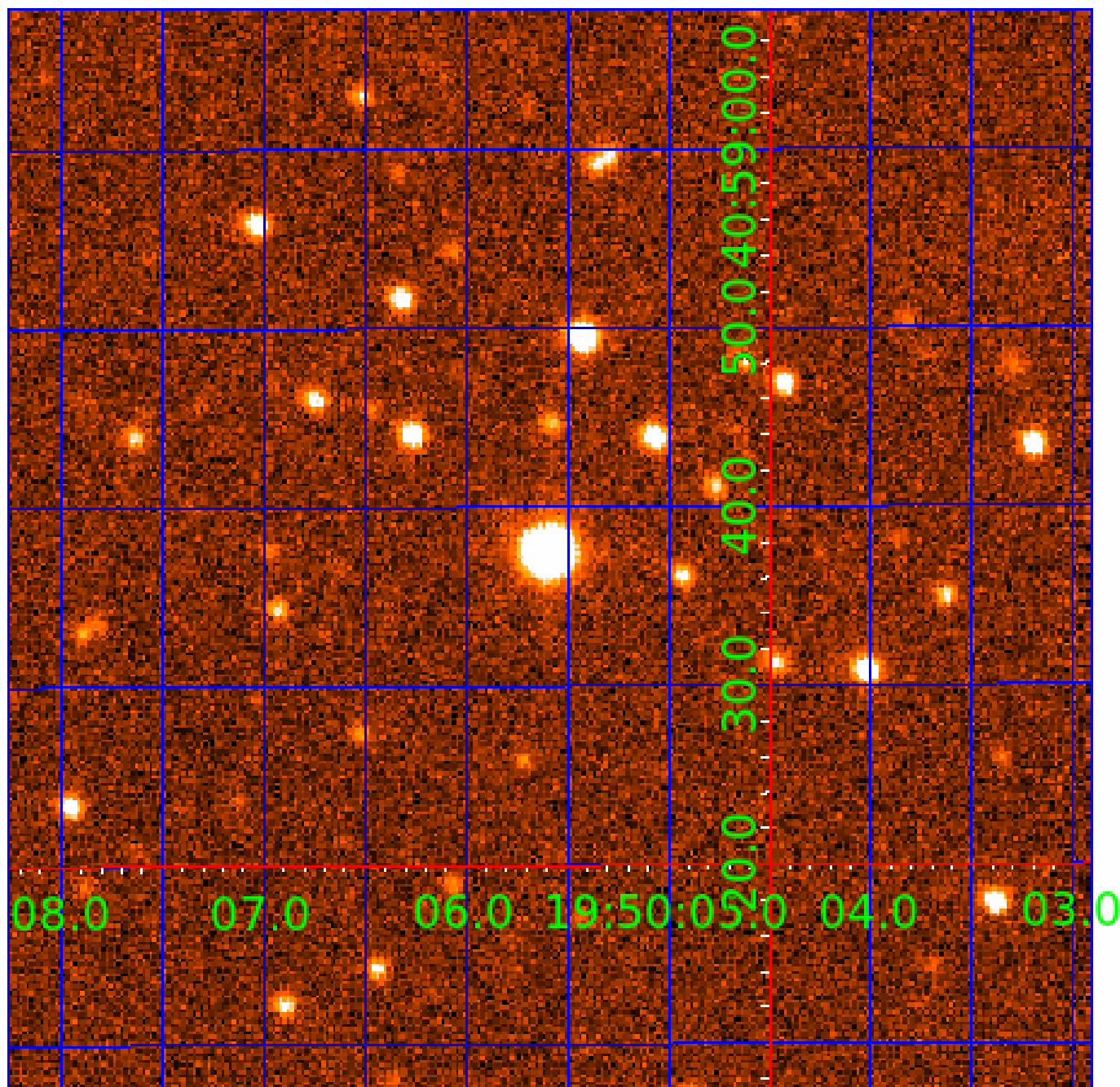


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005727773

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005727773-01 | OBS      | No   | 0.796473      | 131.807742   | 147.4       | 3.276            | 11.0 | 11.6 | 1.96                        | 7159            | 2.77                   | 24186.89               |
| 005727773-02 | OBS      | No   | 0.542711      | 132.012375   | 390.6       | 1.032            | 10.1 | 12.4 | 1.96                        | 7159            | 4.53                   | 40338.14               |
| 005727773-03 | OBS      | No   | 0.542712      | 131.683551   | 393.6       | 0.998            | 8.4  | 12.2 | 1.96                        | 7159            | 4.56                   | 40338.06               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments   |
|--------------|----------|------|-------|---|---|---|---|--|
| 005727773-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 005727773-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT                 |
| 005727773-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD |

**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.

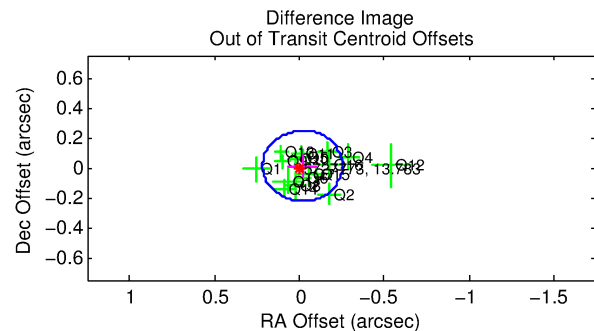
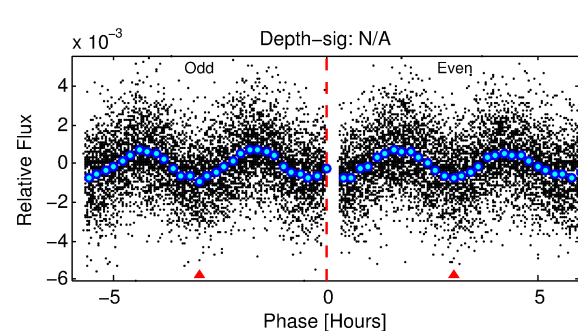
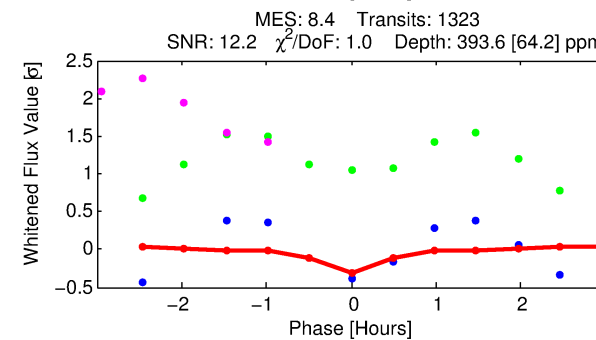
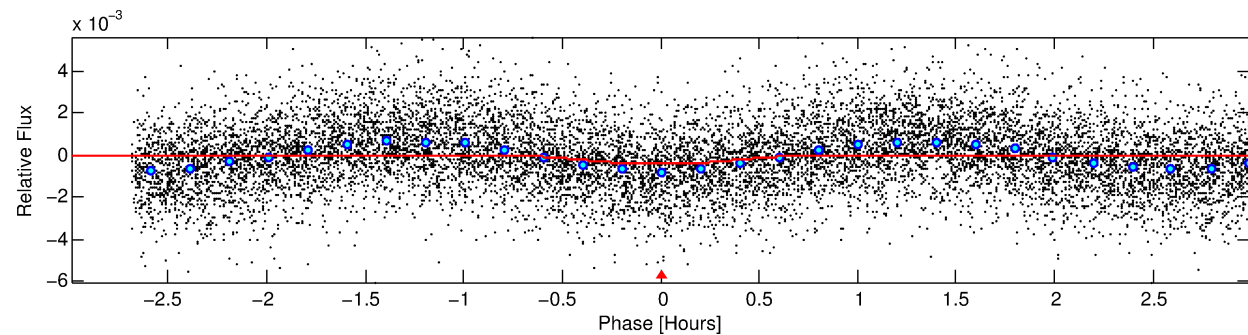
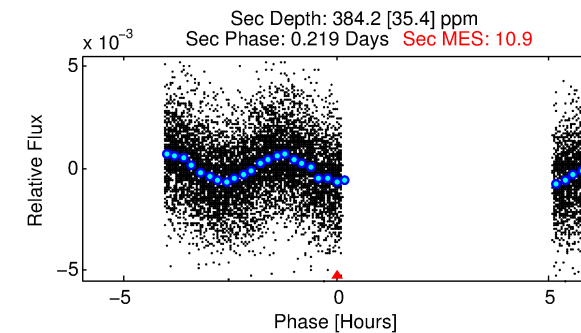
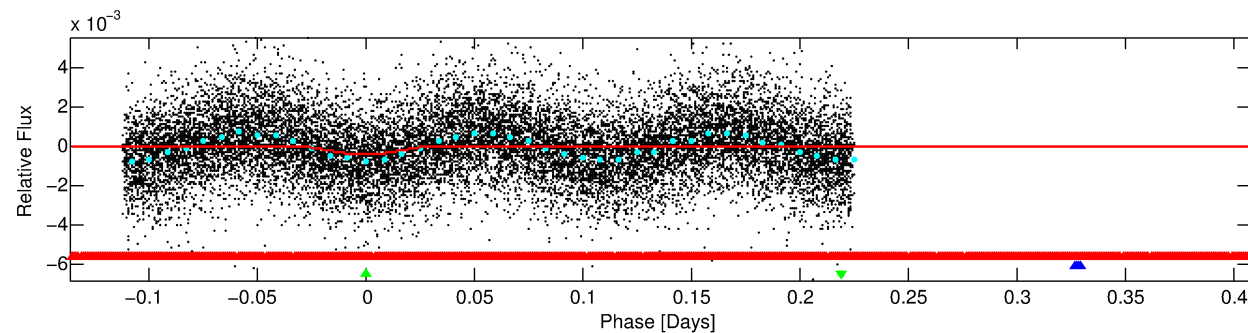
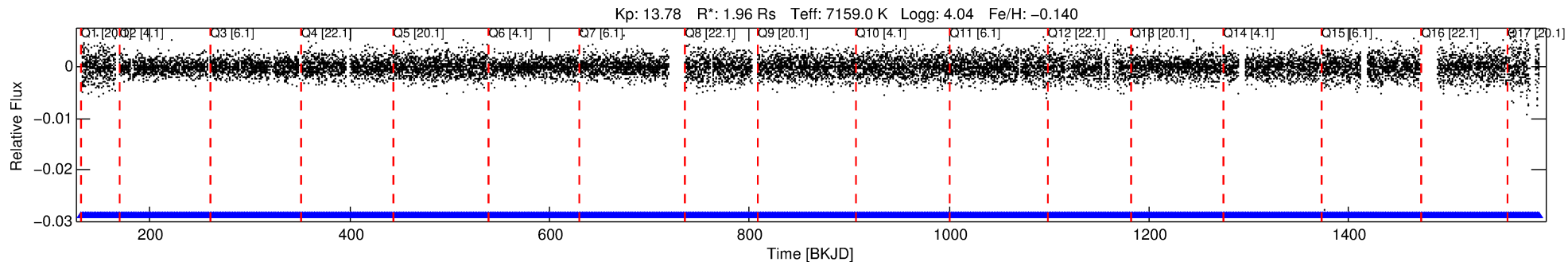
## Ephemeris Match Information For 005727773-03

No Significant Match Found



# DV One-Page Summary

KIC: 5727773 Candidate: 3 of 3 Period: 0.543 d



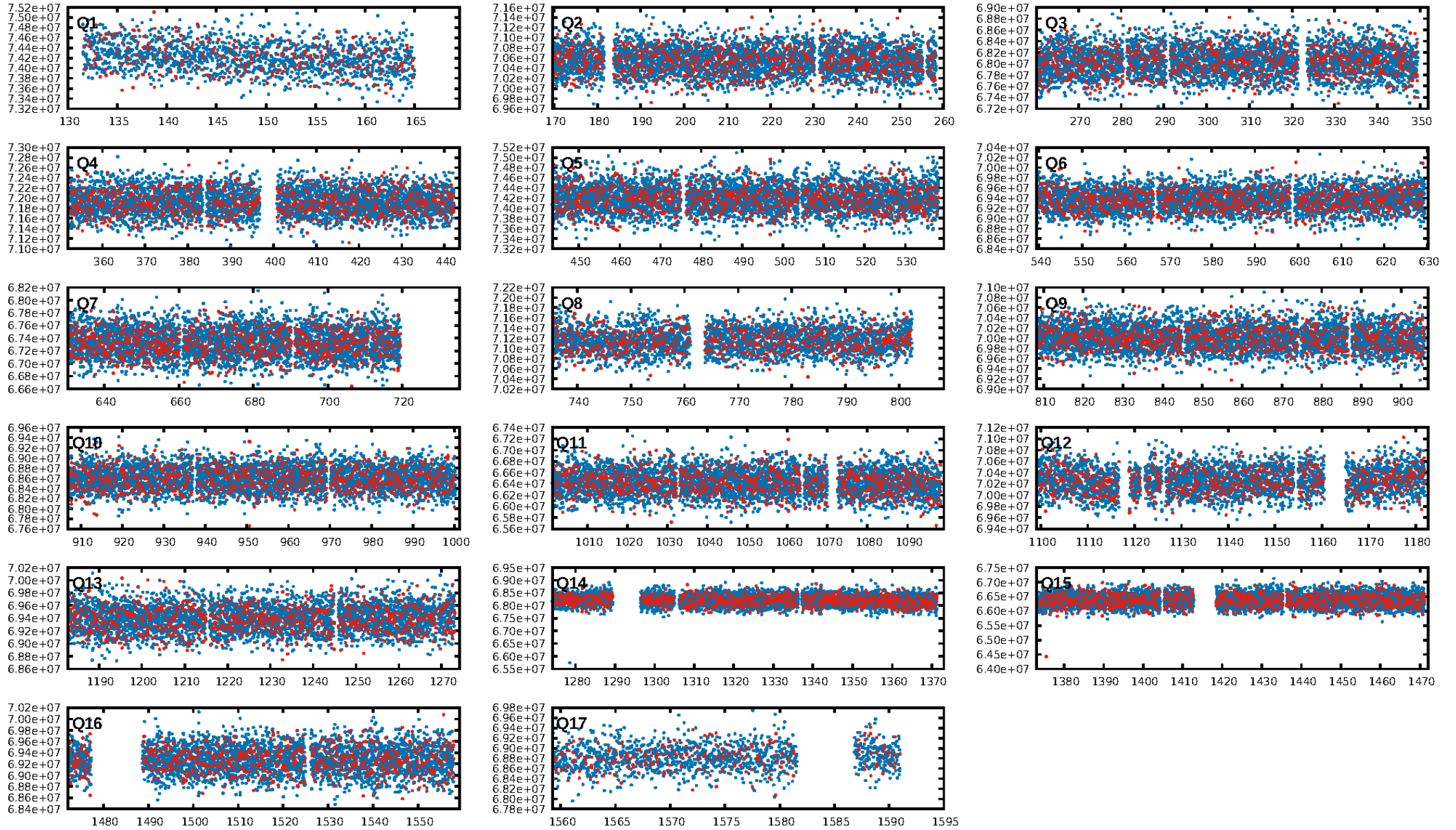
## DV Fit Results:

Period = 0.54271 [0.00001] d  
Epoch = 131.6836 [0.0016] BKJD  
Rp/R\* = 0.0213 [0.0108]  
a/R\* = 2.19 [5.30]  
b = 0.90 [0.63]  
Seff = 40338.06 [16909.57]  
Teq = 3614 [379] K  
Rp = 4.56 [2.66] Re  
a = 0.0150 [0.0037] AU  
Ag = 2.28 [2.48] [0.52 $\sigma$ ]  
Teffp = 6864 [1783] K [1.78 $\sigma$ ]

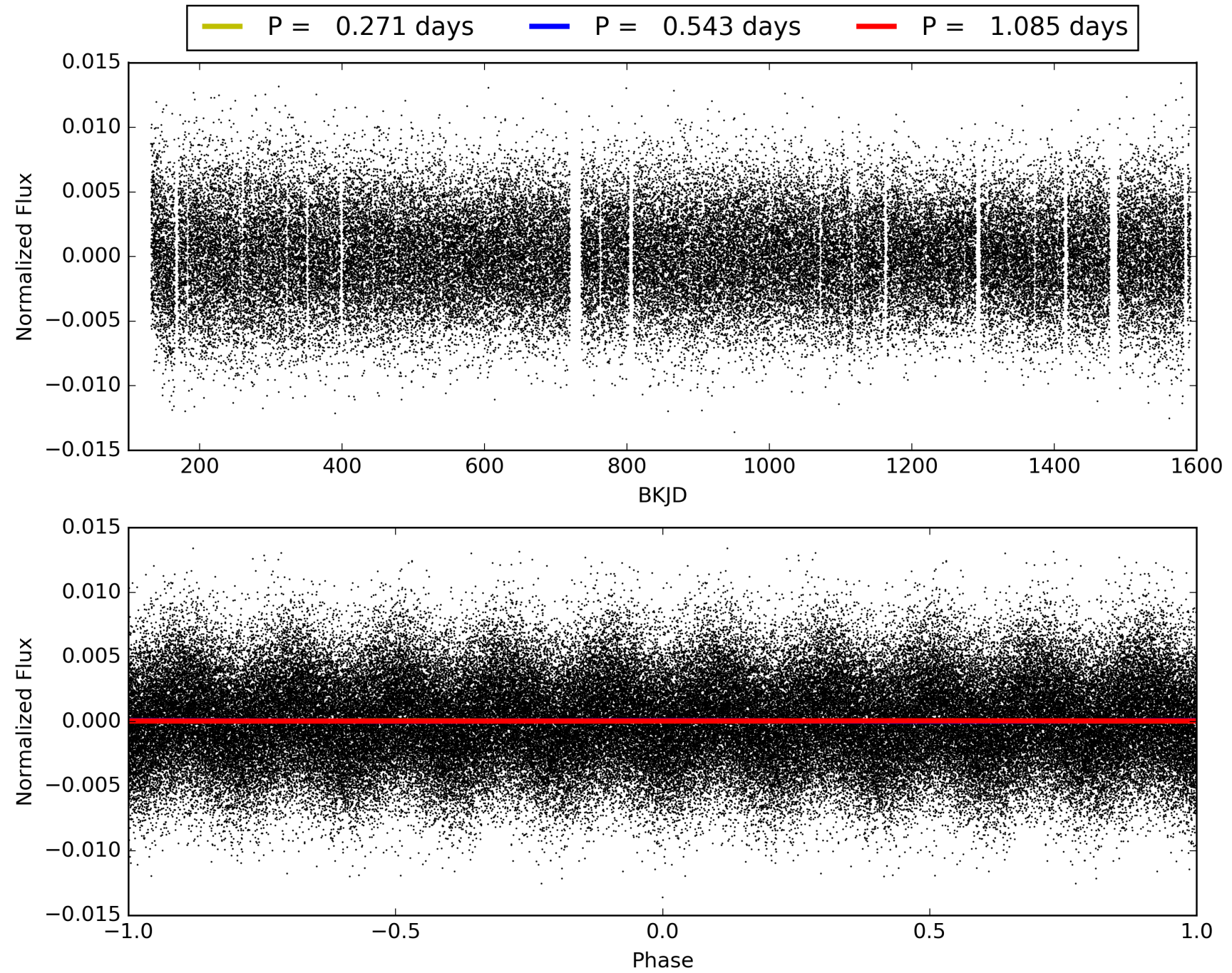
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]**  
LongPeriod-sig: 92.5% [1.78 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1262/1262]  
**GhostDiagnostic-chr: -1.809**  
Centroid-sig: N/A  
Centroid-so: 0.179 arcsec [1.64 $\sigma$ ]  
OotOffset-rm: 0.023 arcsec [0.29 $\sigma$ ]  
KicOffset-rm: 0.044 arcsec [0.55 $\sigma$ ]  
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 005727773-03, PDC Light Curves



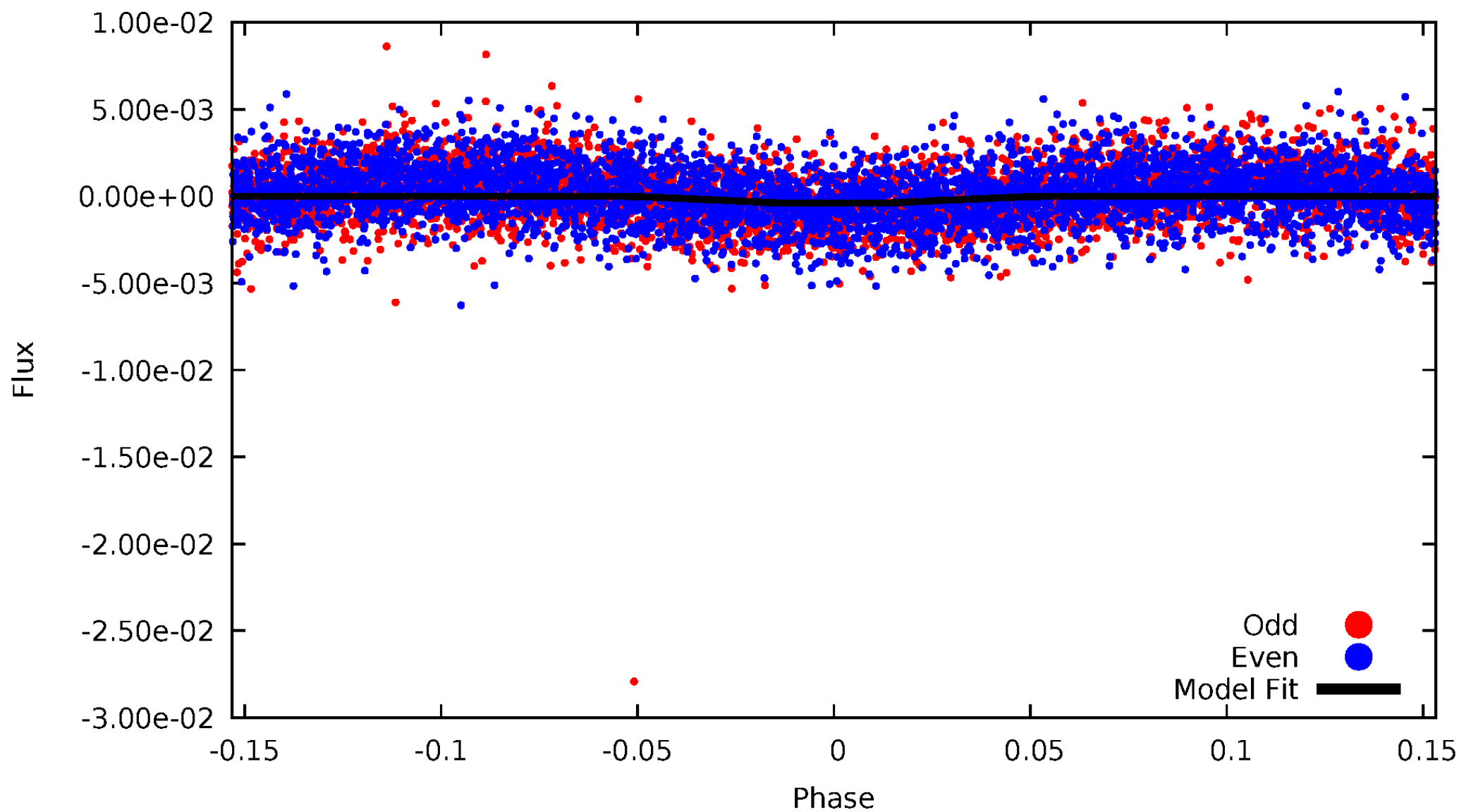
TCE 005727773-03





DV Odd/Even

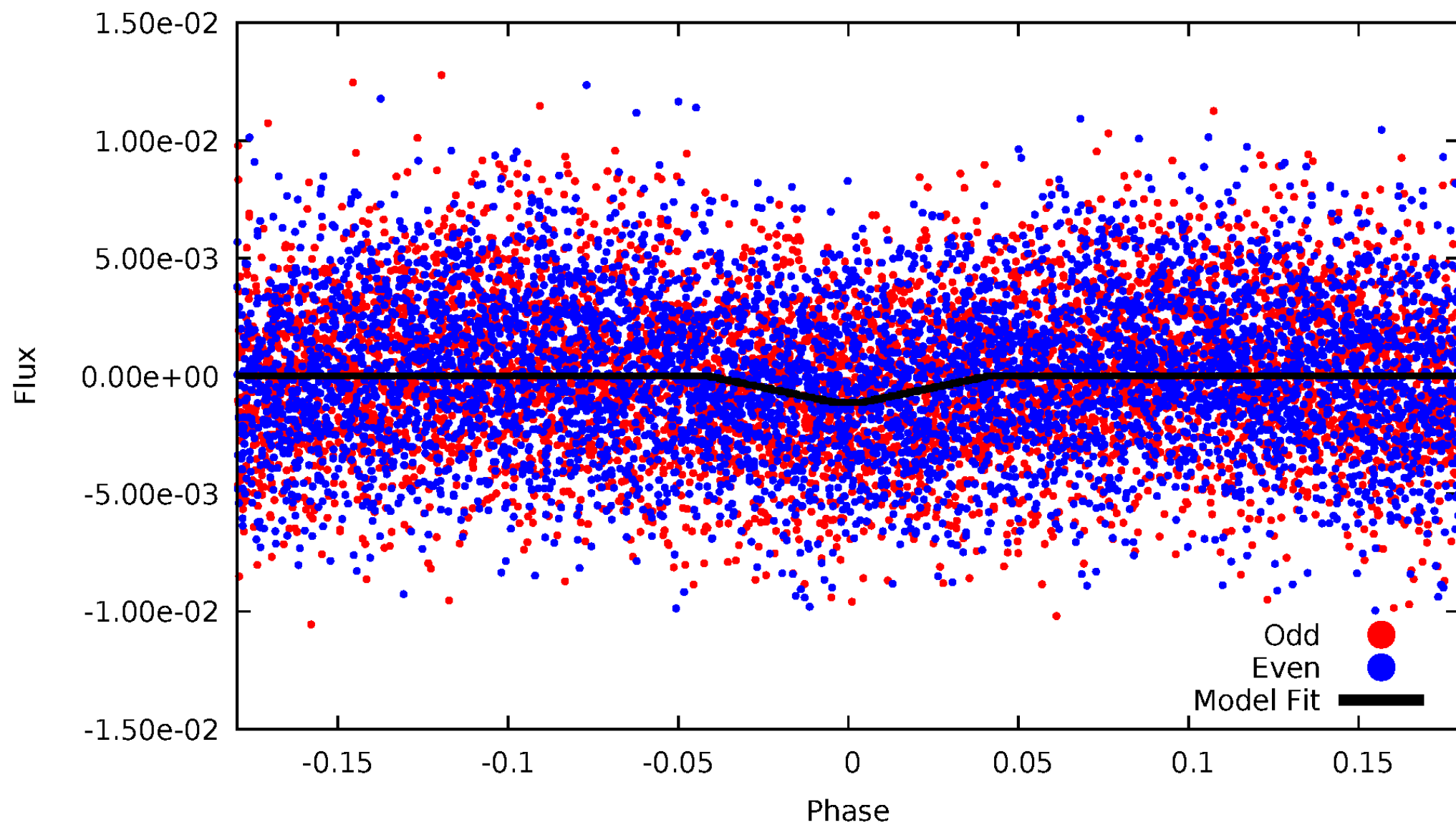
TCE 005727773-03





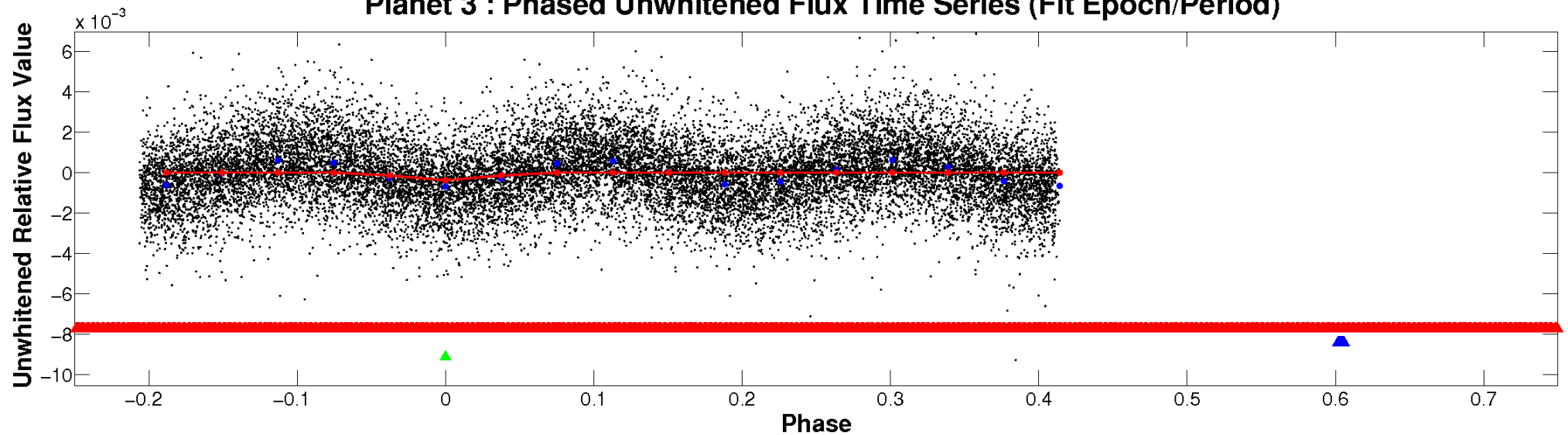
ALT Odd/Even

TCE 005727773-03

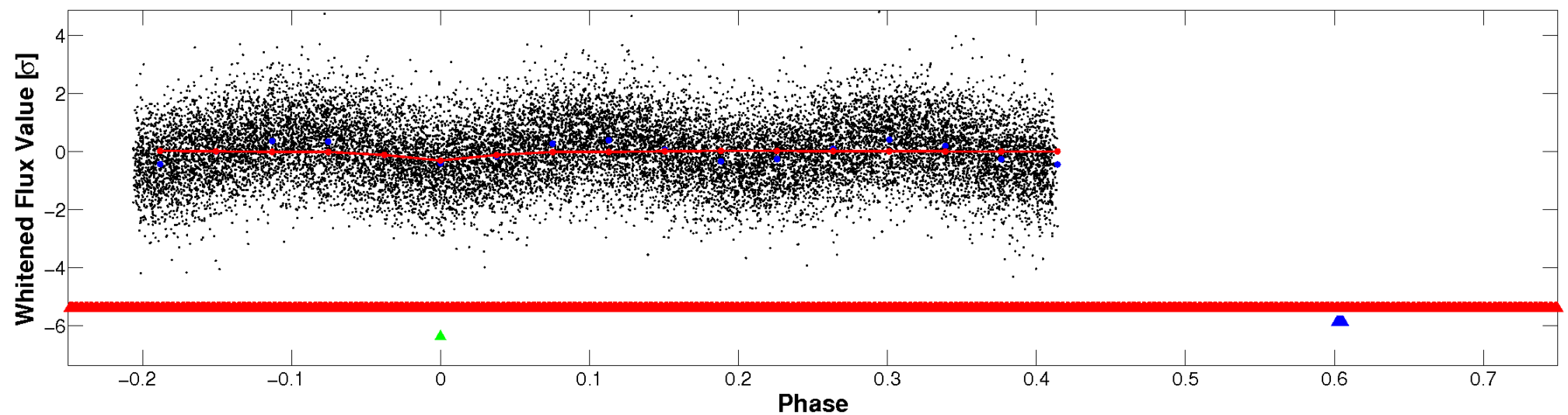


# Non-Whitened Vs. Whitened Light Curve

## Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

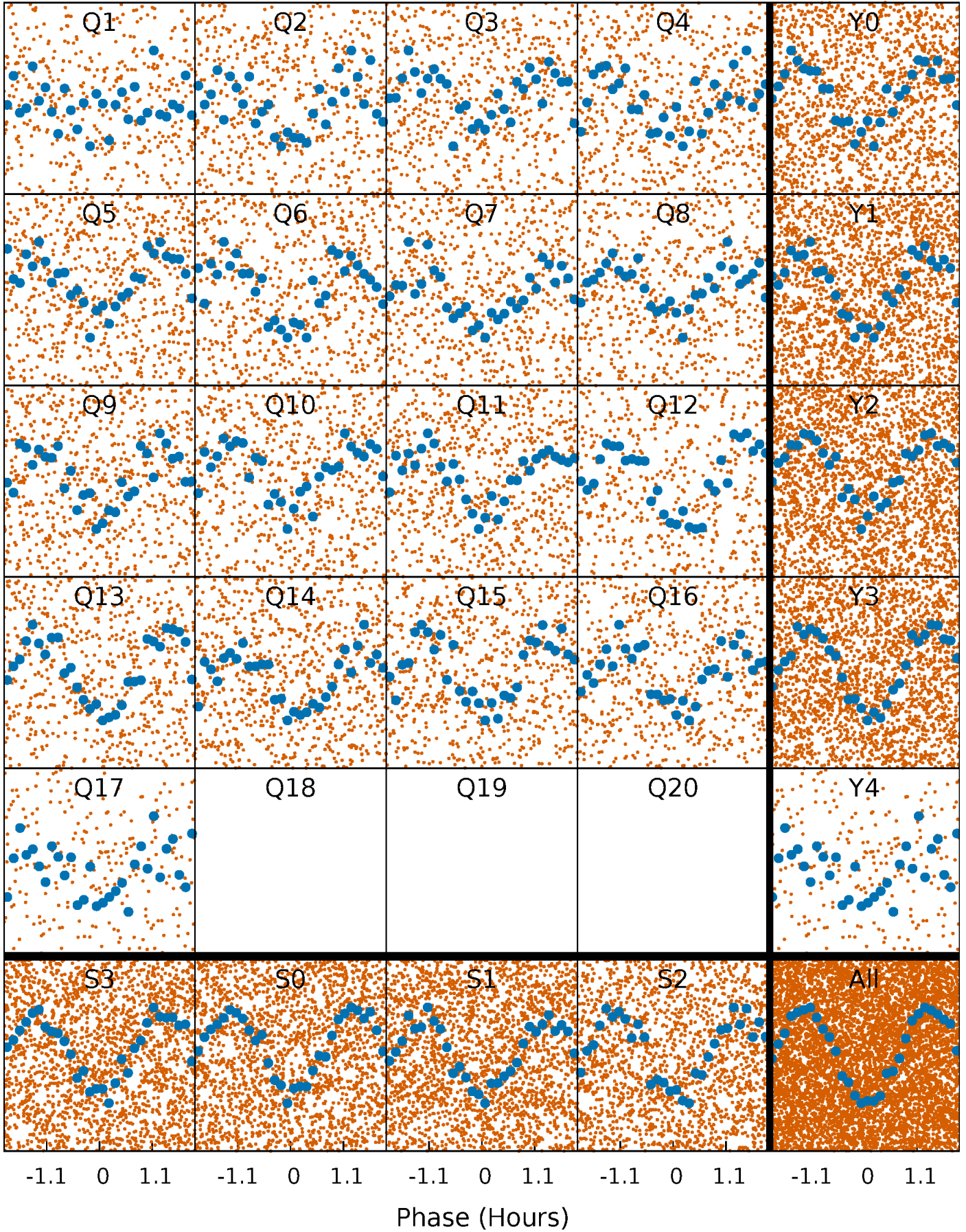


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

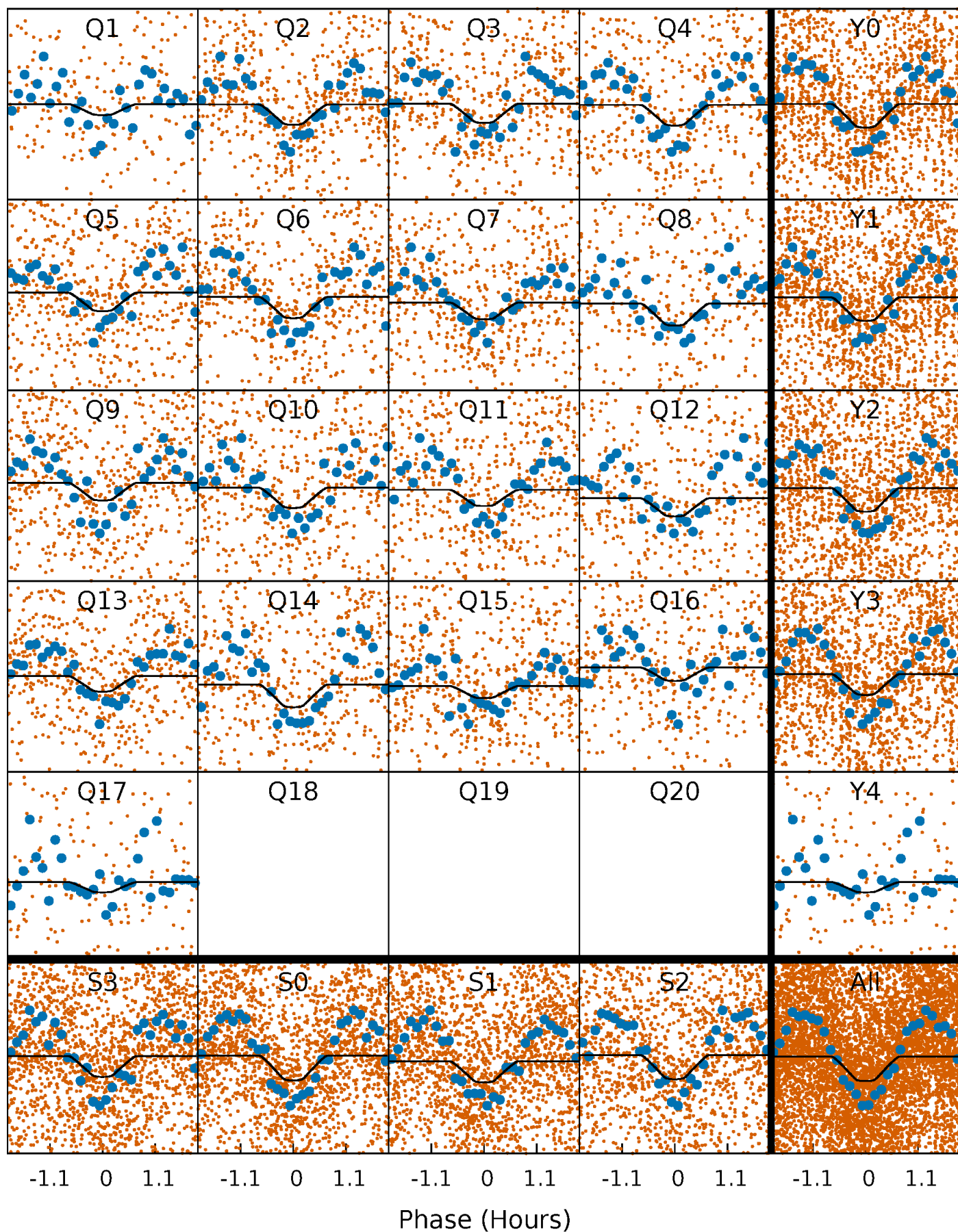
TCE 005727773-03 P= 0.542712 Days  $T_0=131.683551$  (BKJD)





# DV Quarter-Phased Transit Curves

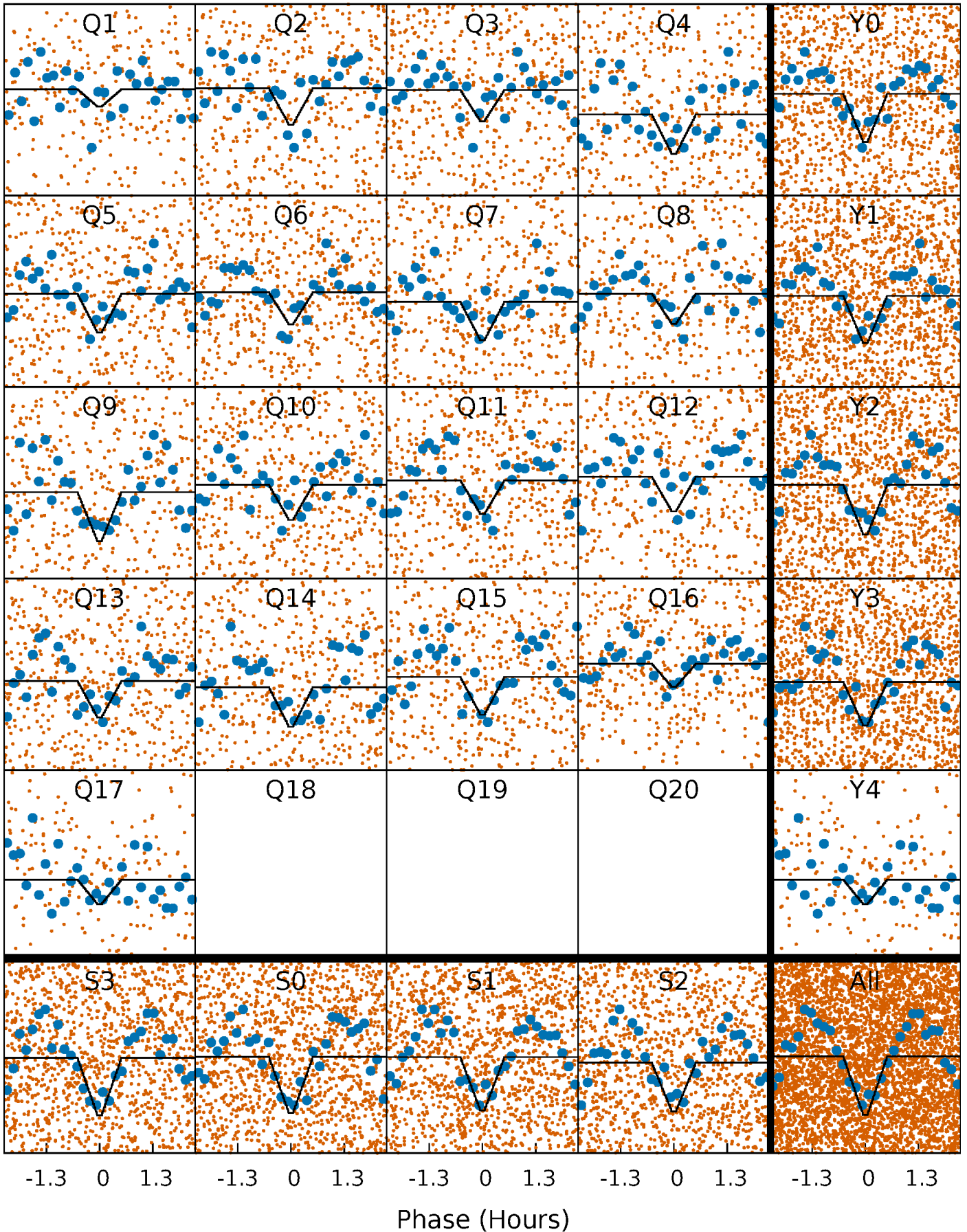
TCE 005727773-03 P= 0.542712 Days  $T_0=131.683551$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

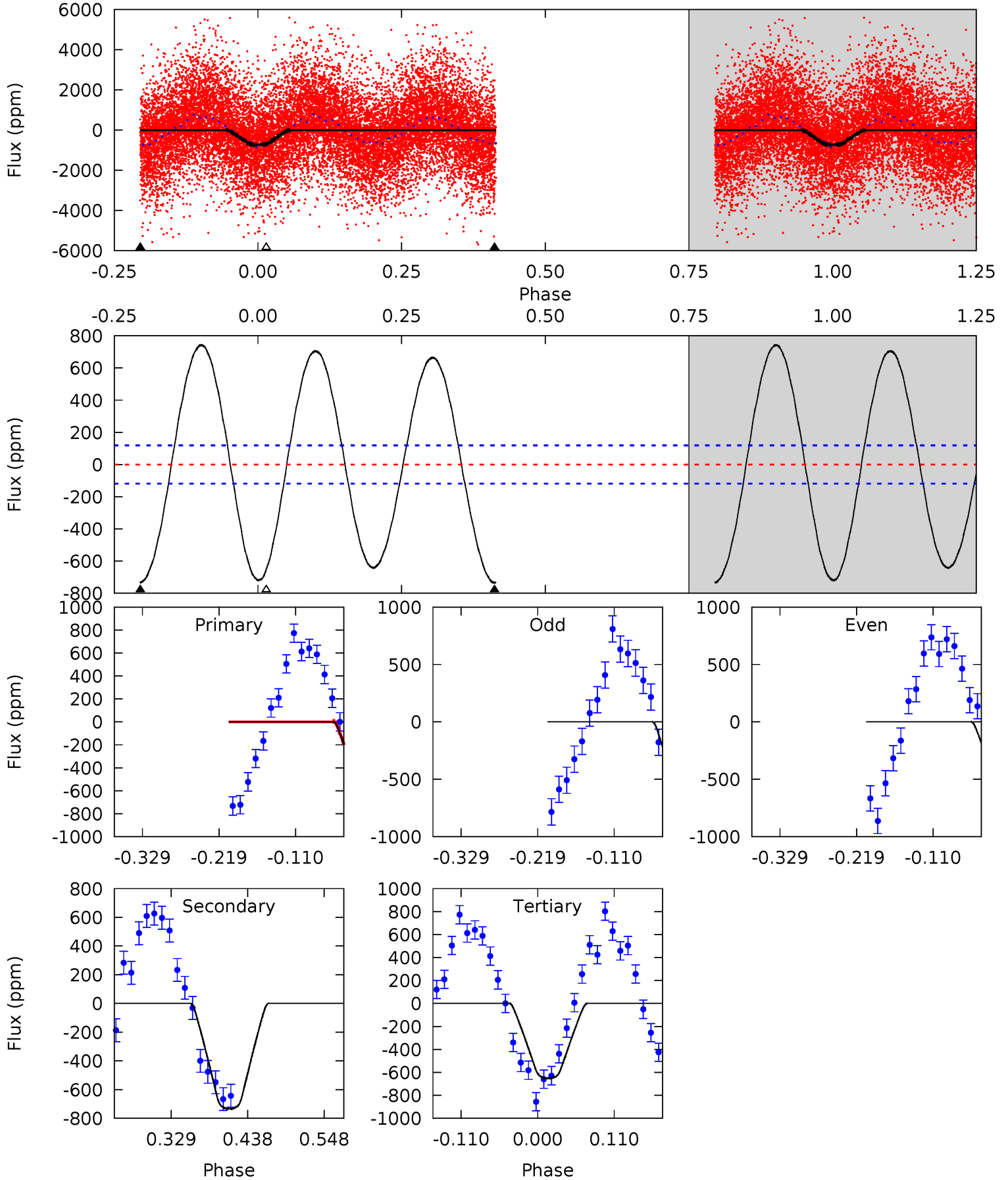
TCE 005727773-03     $P = 0.542713$  Days     $T_0 = 131.683559$  (BKJD)



# DV Model-Shift Uniqueness Test

005727773-03, P = 0.542712 Days, E = 131.683551 Days

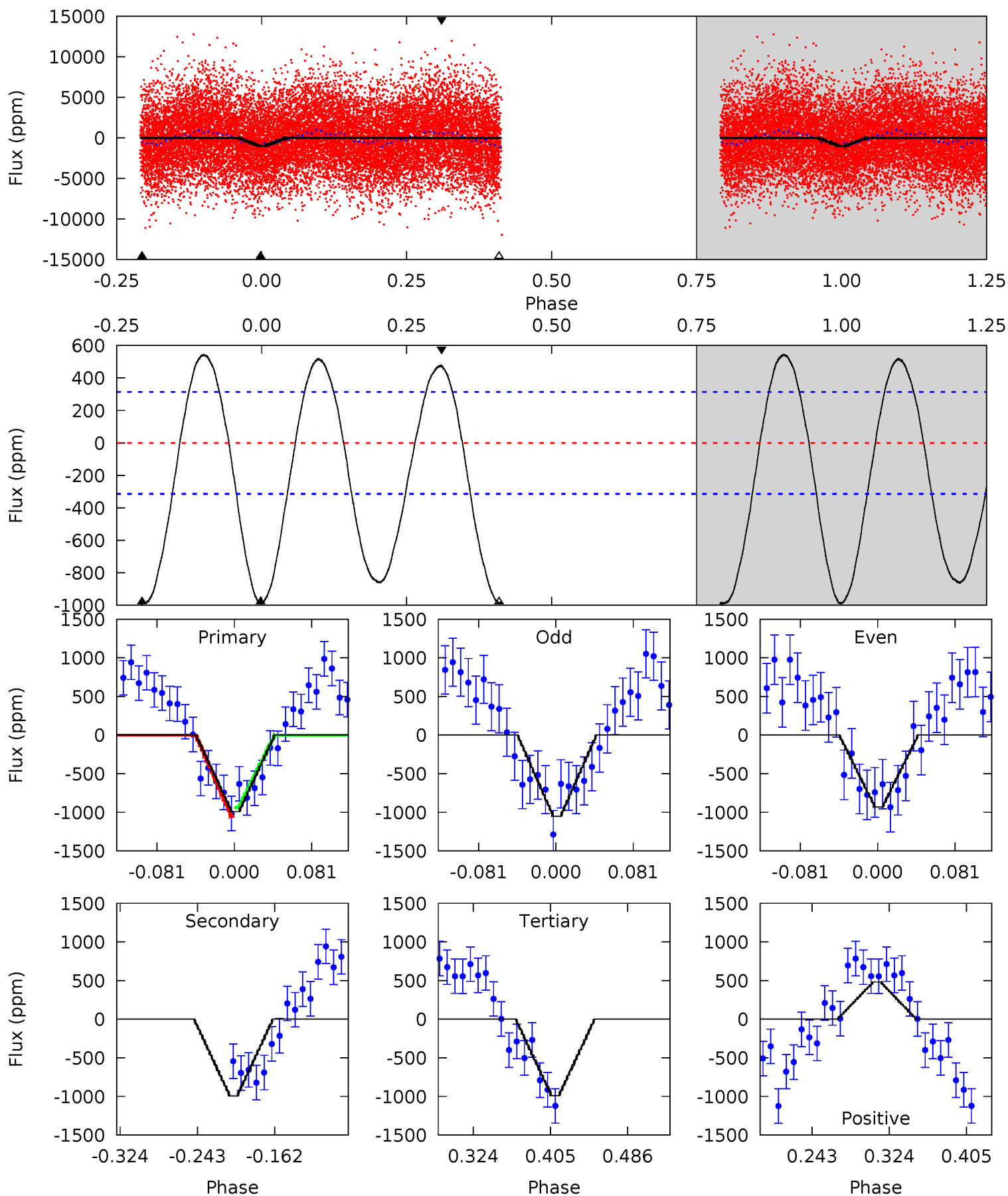
| Pri  | Sec  | Ter  | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.1 | 28.2 | 25.0 | 0   | 4.55            | 1.60            | 18.6             | 3.14    | 28.1    | 3.18    | 28.2    | 2.39    | 0.99 | 0.50  | 0.80 |



# Alt Model-Shift Uniqueness Test

005727773-03, P = 0.542713 Days, E = 131.683559 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  |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.5 | 14.6 | 14.5 | 7.05 | 4.61            | 1.74            | 7.63             | 0.03    | 7.48    | 0.06    | 7.52    | 0.87    | 0.93 | 0.36  | 0.84 |



### Stellar Parameters For KIC 005727773

|        | $T_{\text{eff}} (K)$ | $\log(g)$                 | $[\text{Fe}/\text{H}]$     | $R (R_{\odot})$           | $M (M_{\odot})$           | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
|        | $7159^{+228}_{-342}$ | $4.035^{+0.209}_{-0.171}$ | $-0.140^{+0.250}_{-0.350}$ | $1.960^{+0.560}_{-0.560}$ | $1.517^{+0.222}_{-0.271}$ | $0.284^{+0.354}_{-0.137}$                 |
|        | +3%/-5%              | +5%/-4%                   | +179%/-250%                | +29%/-29%                 | +15%/-18%                 | +125%/-48%                                |
| 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 005727773-03 / KOI

| Detrend | Depth (ppm)   | $R_p (R_{\oplus})$     | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$   | $A_{\text{obs}}$           |
|---------|---------------|------------------------|----------------------|------------------------|----------------------------|
| DV      | $-735 \pm 26$ | $4.56^{+2.47}_{-2.16}$ | $5000^{+418}_{-419}$ | $7908^{+4894}_{-1730}$ | $4.236^{+10.689}_{-2.365}$ |
| Alt.    | $-995 \pm 68$ | $7.00^{+2.73}_{-2.42}$ | $4998^{+374}_{-396}$ | $6665^{+1998}_{-1073}$ | $2.507^{+3.308}_{-1.224}$  |

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

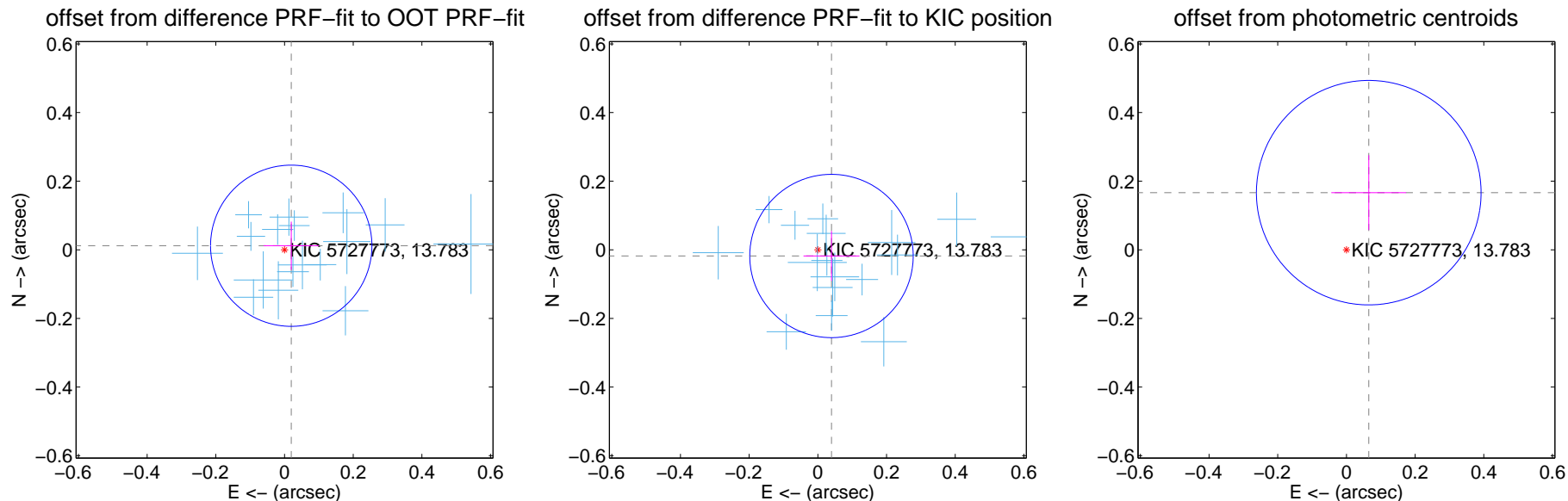
## DV Centroid Data

Supplemental centroid analysis for 005727773-03. Kepler magnitude: 13.78. Transit SNR 12.22

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

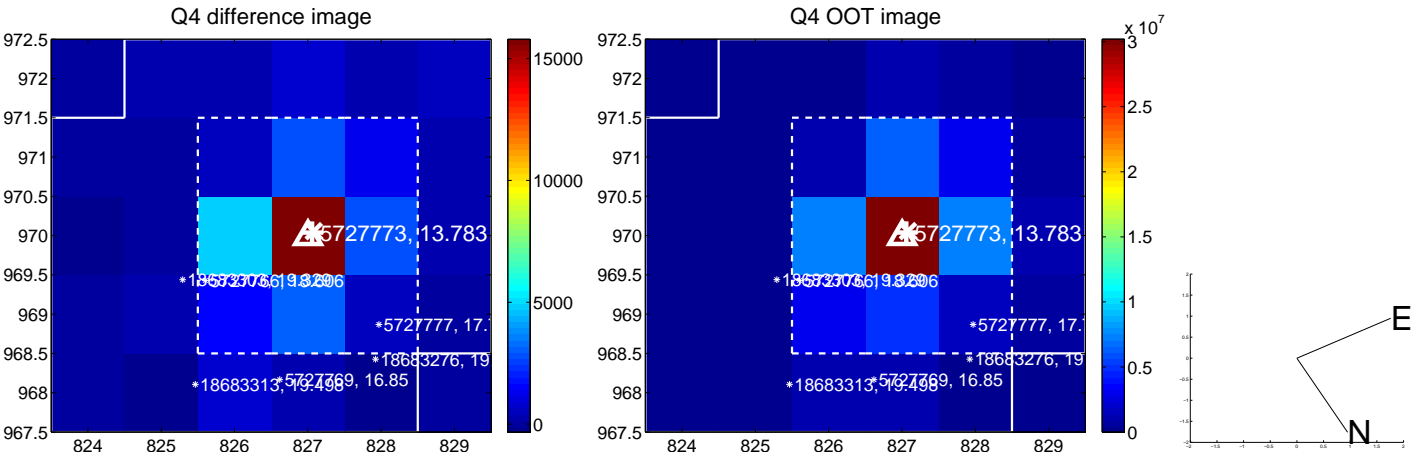
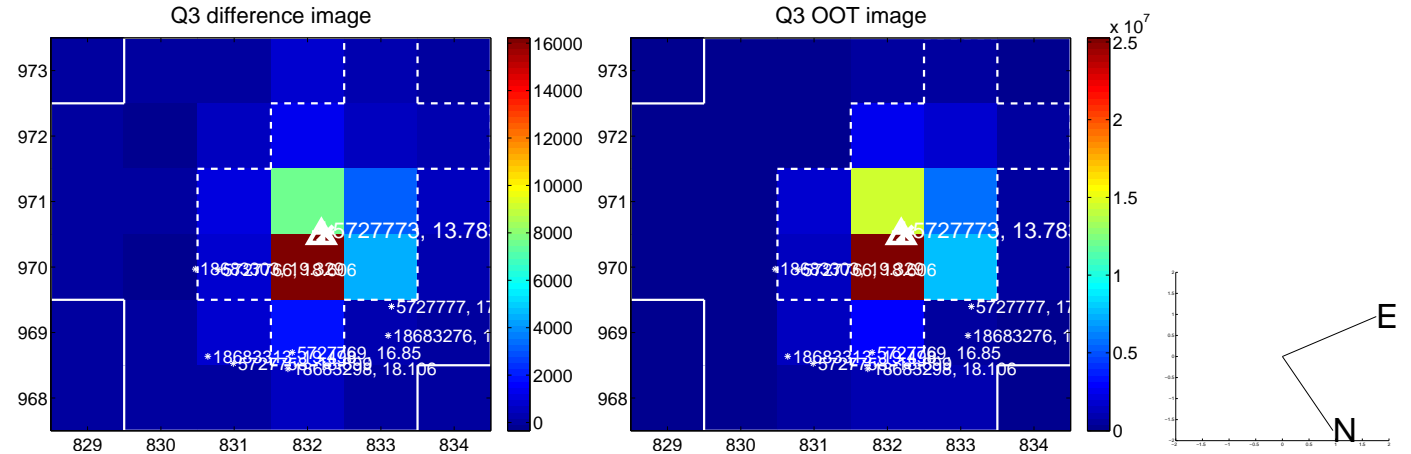
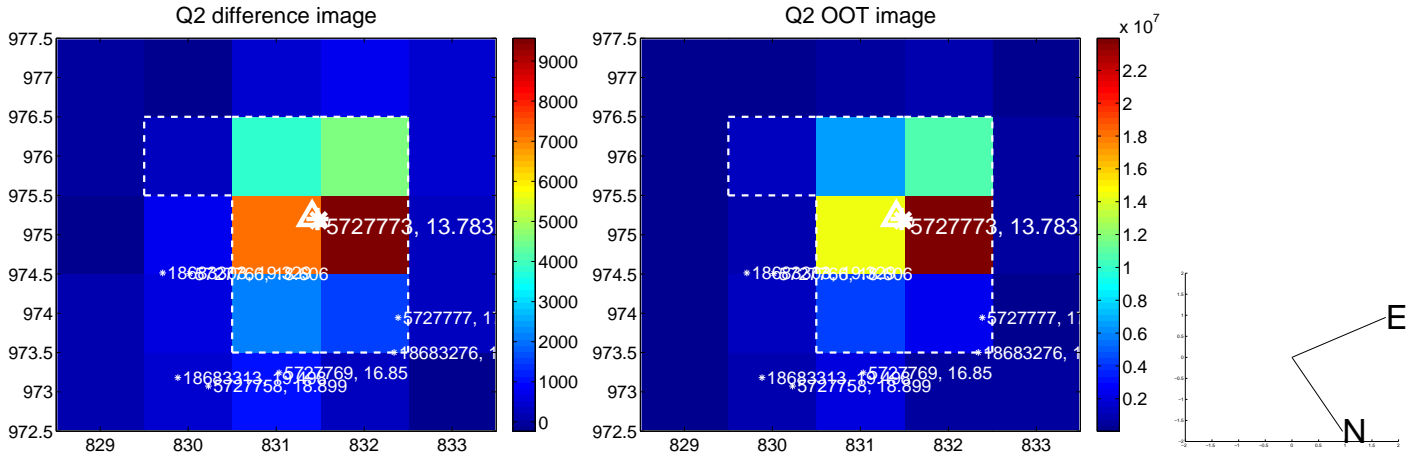
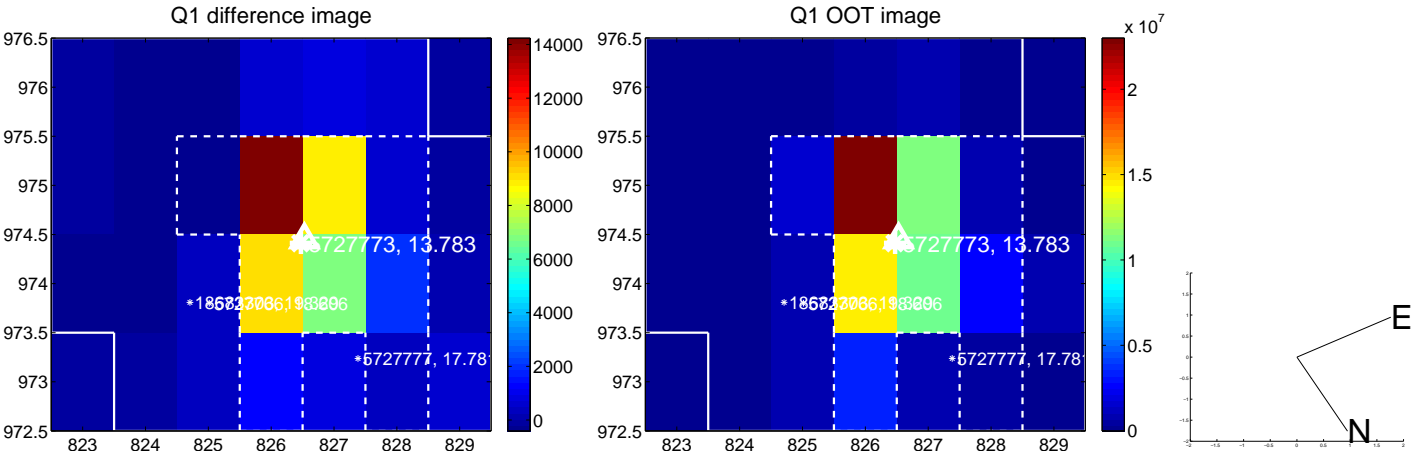
|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.023 \pm 0.078$  | 0.29                | $-0.020 \pm 0.080$ | $0.012 \pm 0.070$  |
| PRF-fit source offset from KIC position | $0.044 \pm 0.079$  | 0.55                | $-0.040 \pm 0.082$ | $-0.018 \pm 0.073$ |
| photometric centroid source offset      | $0.18 \pm 0.11$    | 1.64                | $-0.06 \pm 0.11$   | $0.17 \pm 0.11$    |



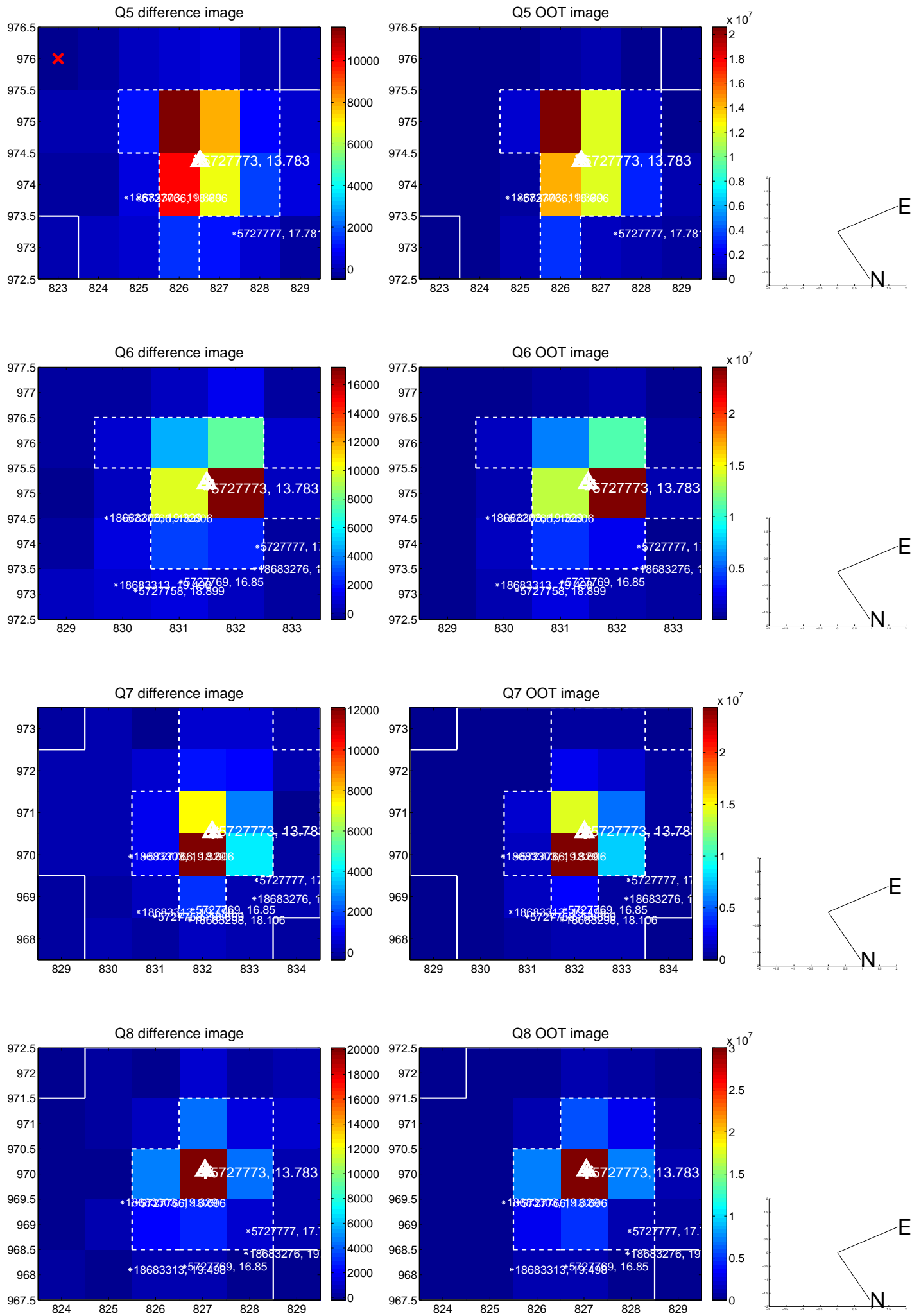
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



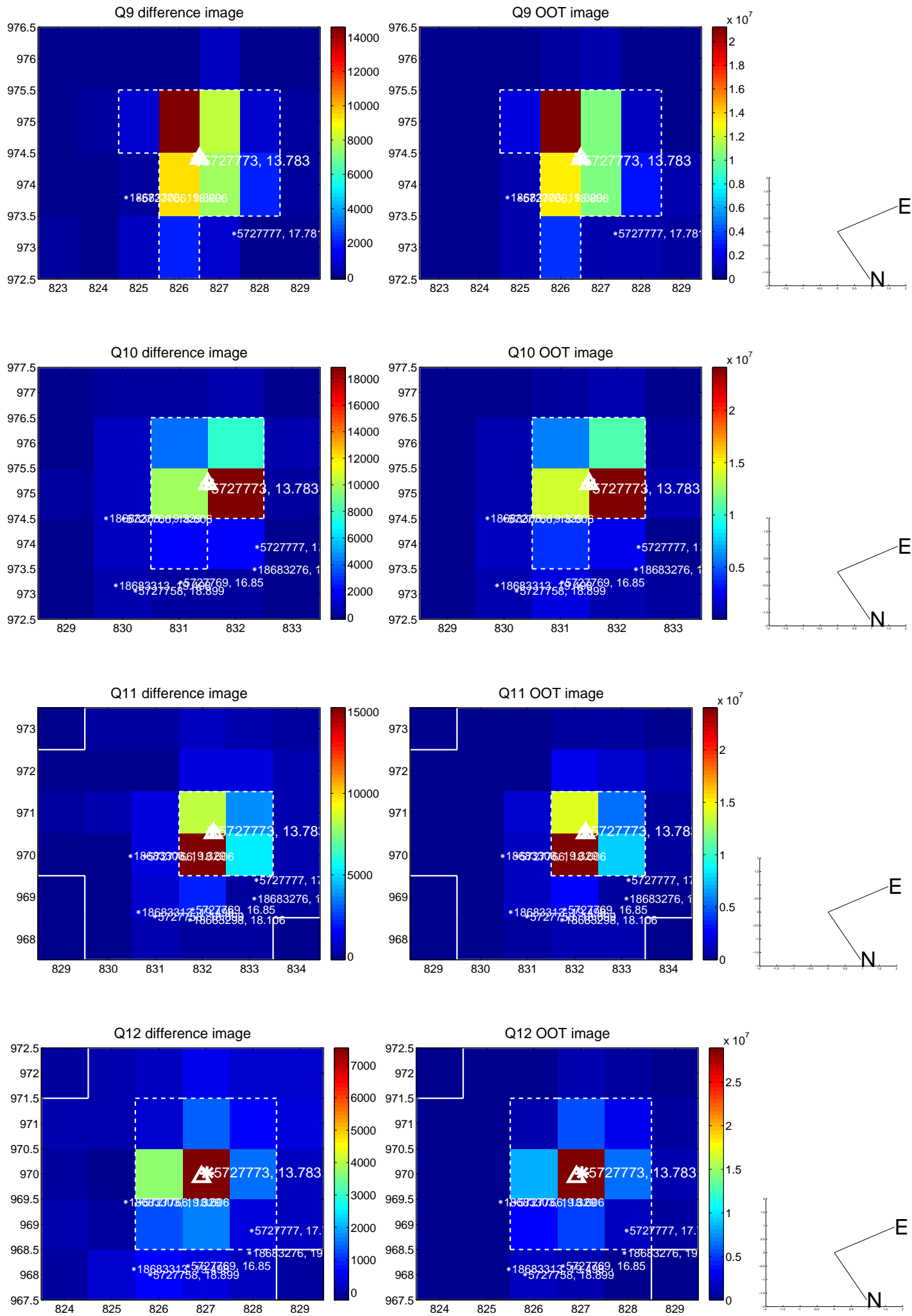
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



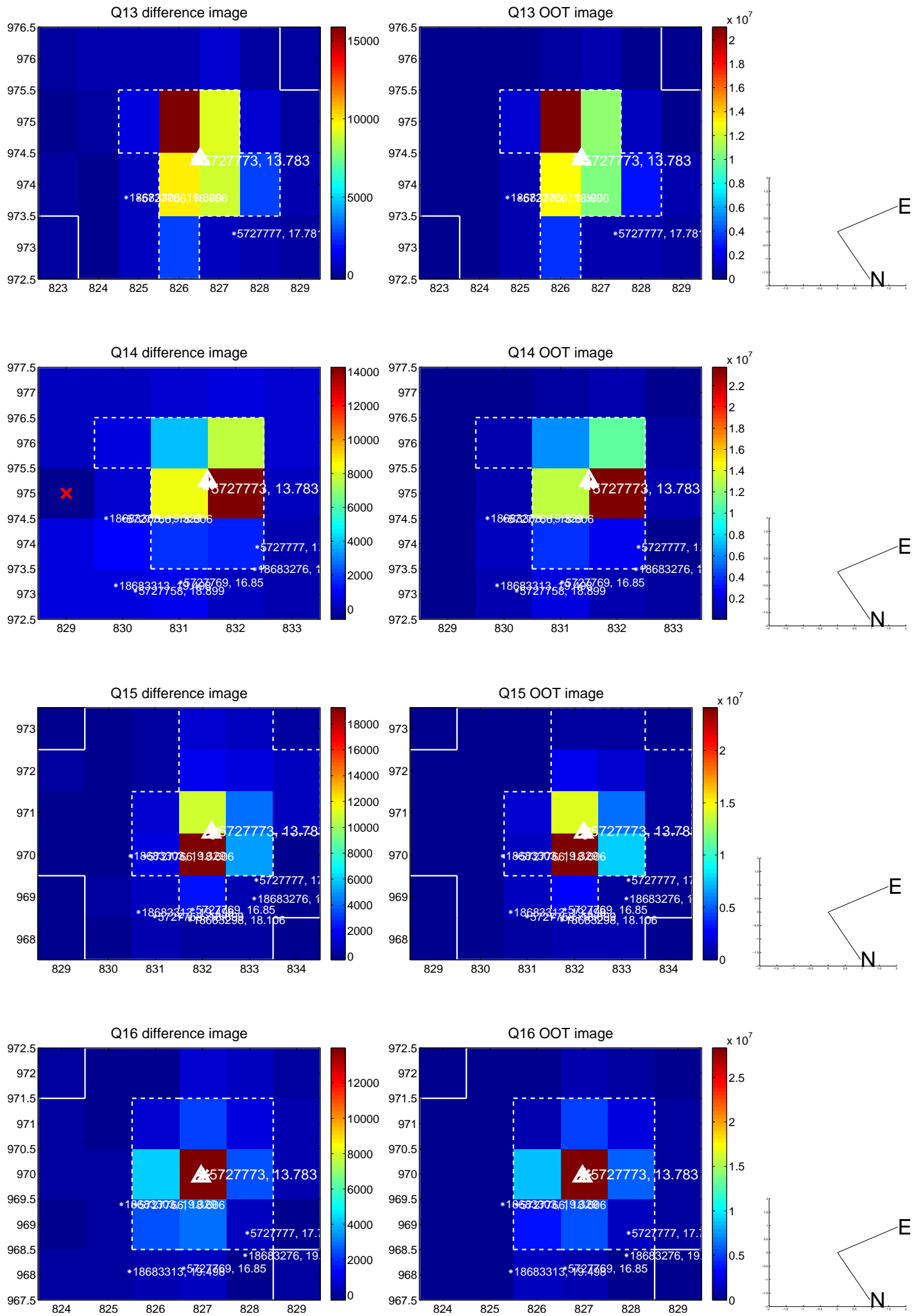
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



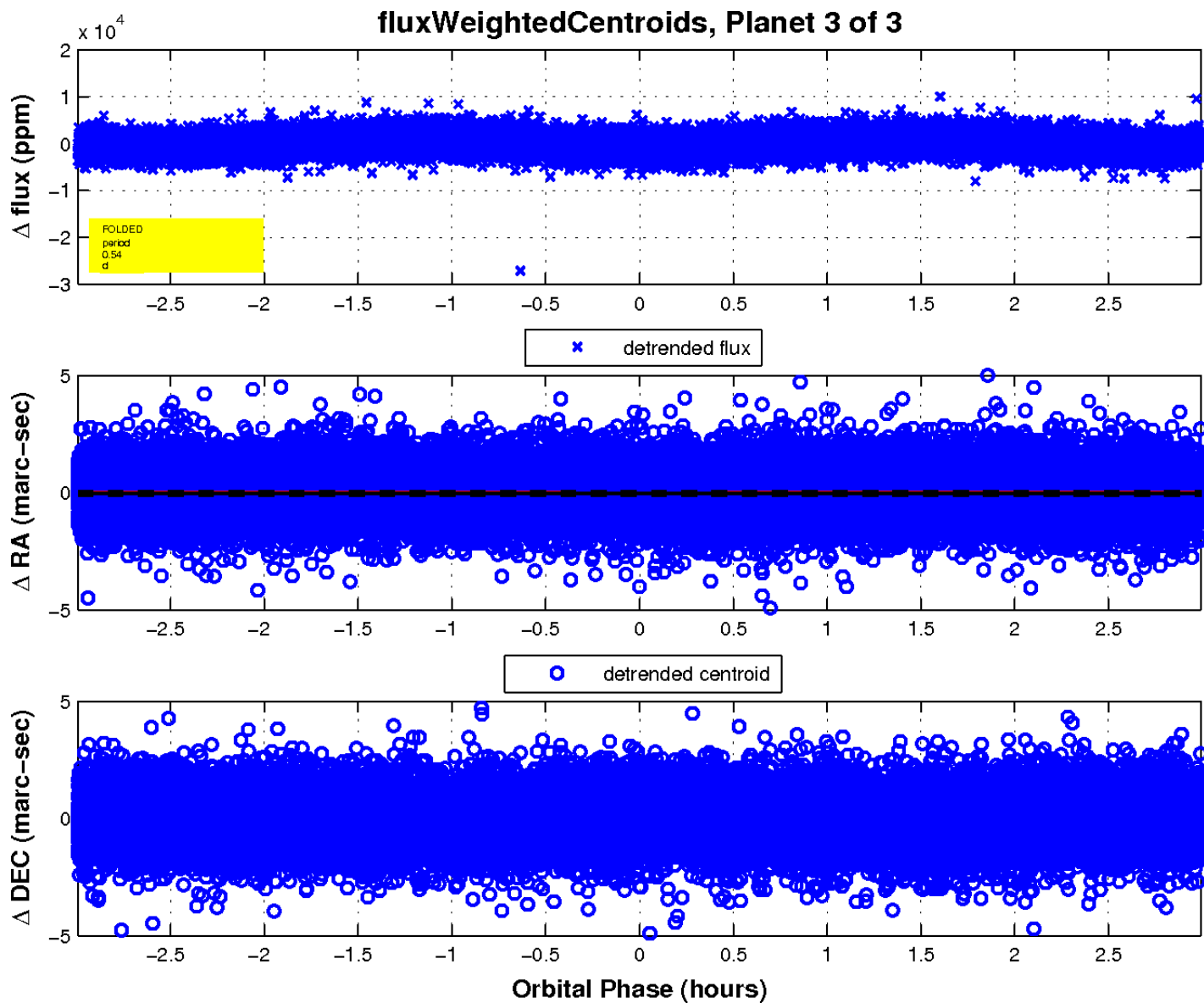
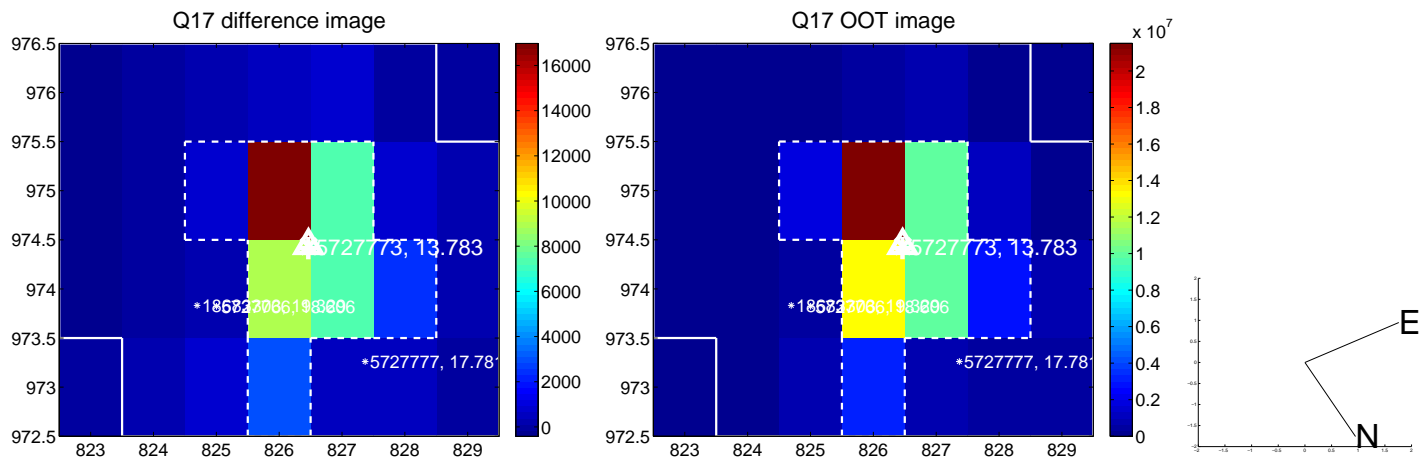
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

