

# KIC 008506388

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008506388-01 | OBS      | No   | 0.717566      | 131.751800   | 193.4       | 1.904            | 11.9 | 9.9  | 3.74                        | 7334            | 6.04                   | 89424.65               |
| 008506388-02 | OBS      | No   | 0.717569      | 131.524547   | 192.2       | 2.238            | 11.1 | 10.6 | 3.74                        | 7334            | 6.02                   | 89424.29               |
| 008506388-03 | OBS      | No   | 0.717581      | 131.984352   | 158.2       | 2.021            | 10.9 | 8.7  | 3.74                        | 7334            | 4.76                   | 89422.27               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                       |
|--------------|----------|------|-------|---|---|---|---|--|
| 008506388-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 008506388-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 008506388-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—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.

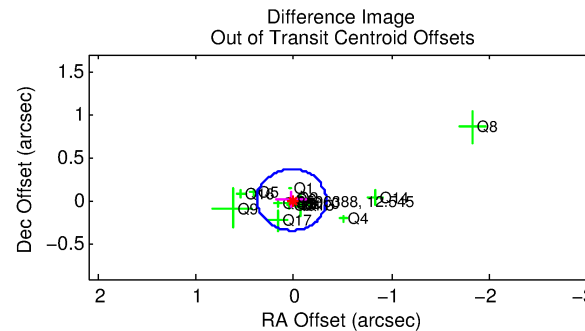
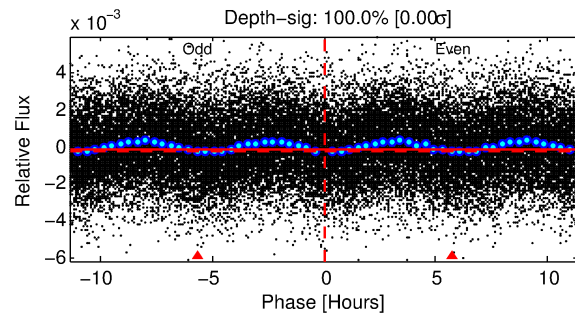
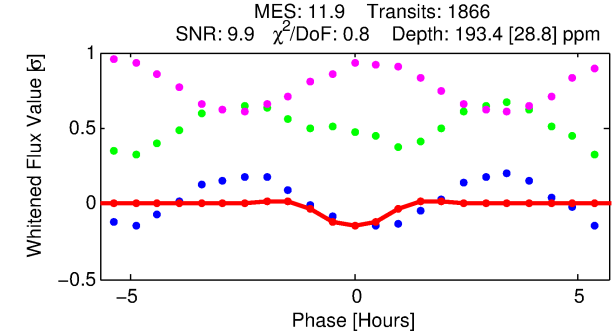
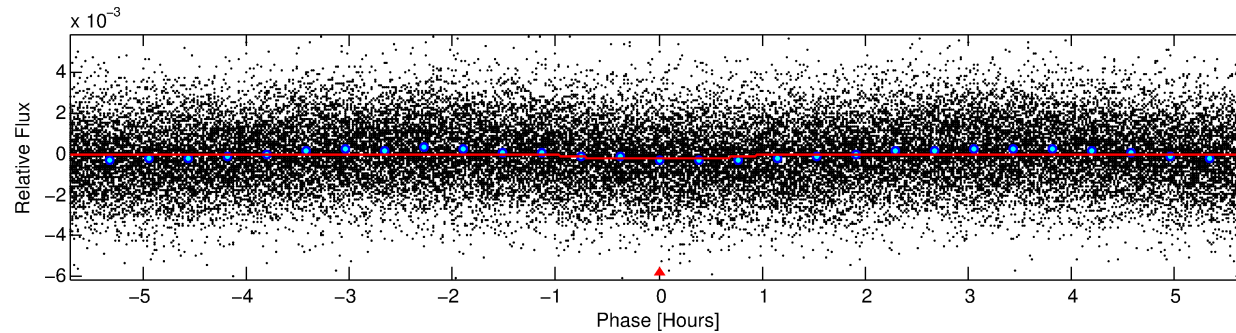
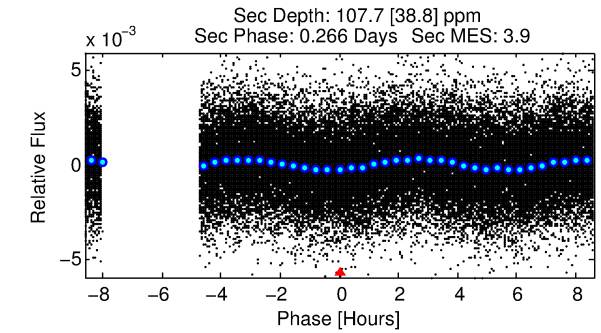
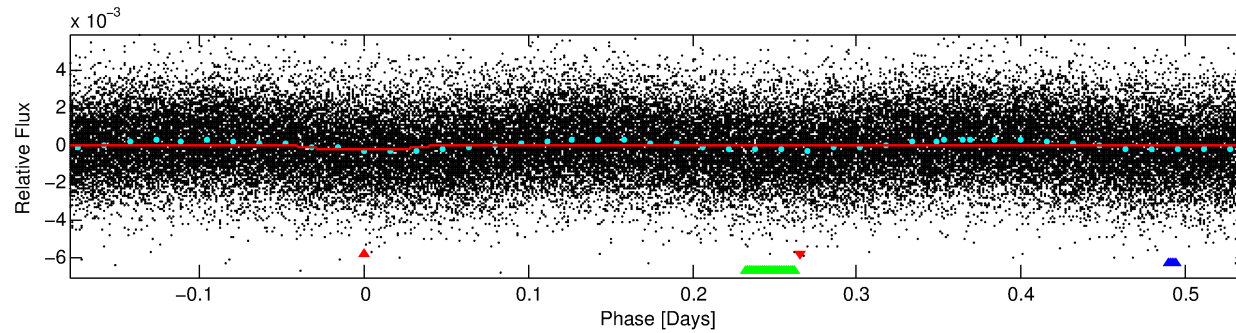
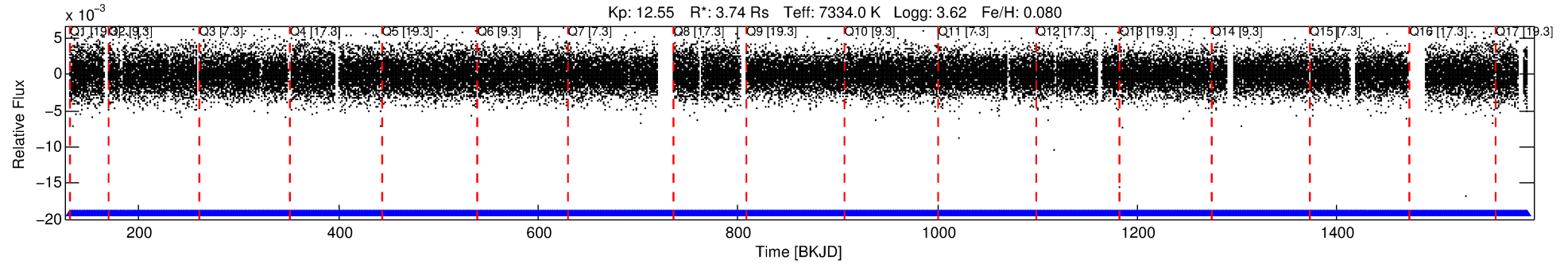
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008506388-01

No Significant Match Found

# DV One-Page Summary

KIC: 8506388 Candidate: 1 of 3 Period: 0.718 d



## DV Fit Results:

Period = 0.71757 [0.00001] d  
Epoch = 131.7518 [0.0028] BKJD  
Rp/R\* = 0.0148 [0.0099]  
a/R\* = 1.65 [4.30]  
b = 0.90 [0.89]  
Seff = 89424.65 [75182.28]  
Teq = 4410 [927] K  
Rp = 6.04 [5.09] Re  
a = 0.0201 [0.0102] AU  
Ag = 0.66 [1.06] [-0.33σ]  
Teffp = 6137 [2138] K [0.74σ]

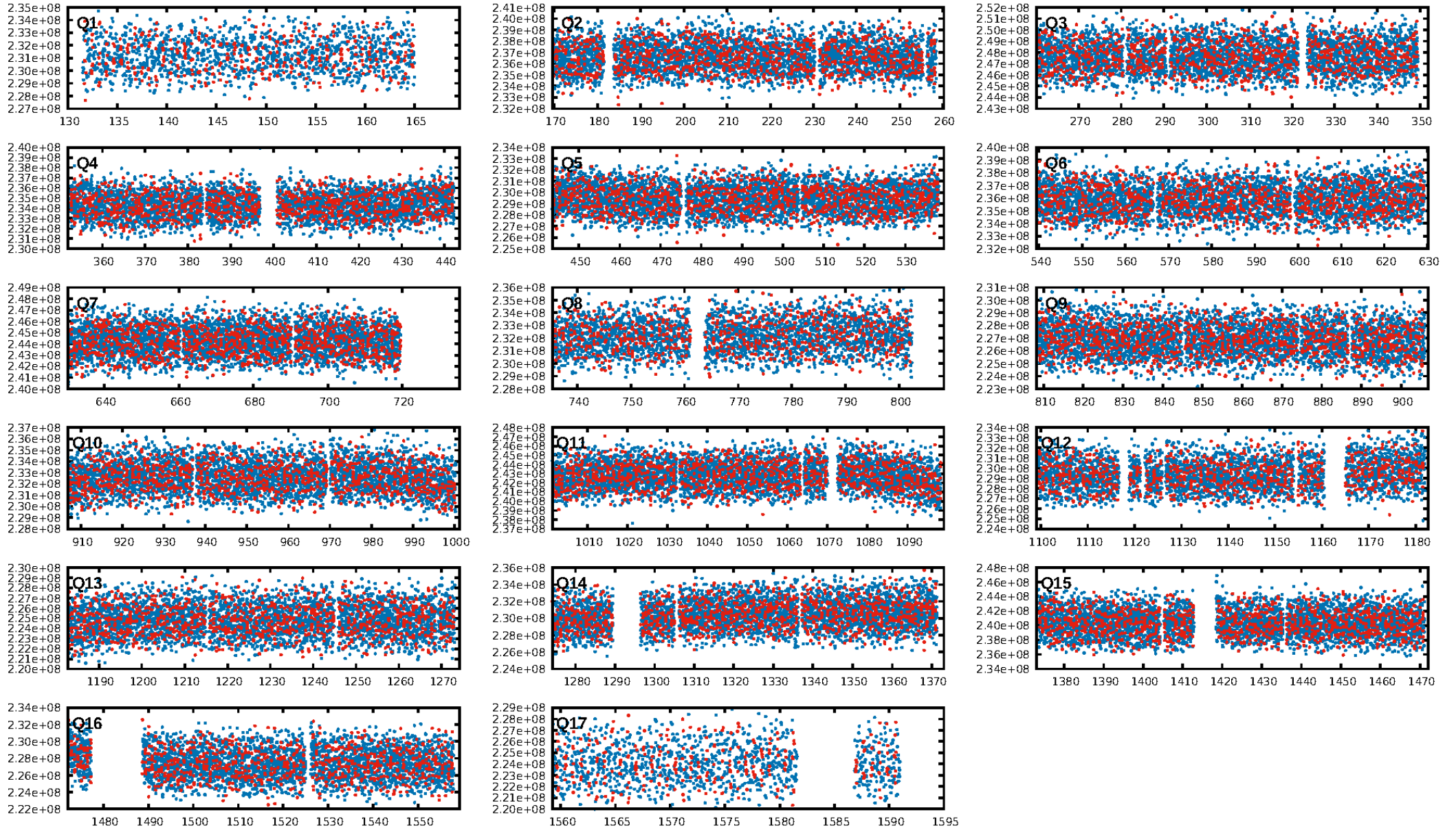
## DV Diagnostic Results:

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 [1782/1782]  
GhostDiagnostic-chr: 1.573  
Centroid-sig: 61.5%  
Centroid-so: 0.068 arcsec [0.99σ]  
OotOffset-rm: 0.027 arcsec [0.23σ]  
KicOffset-rm: 0.022 arcsec [0.19σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.88 [15/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:39:45 Z

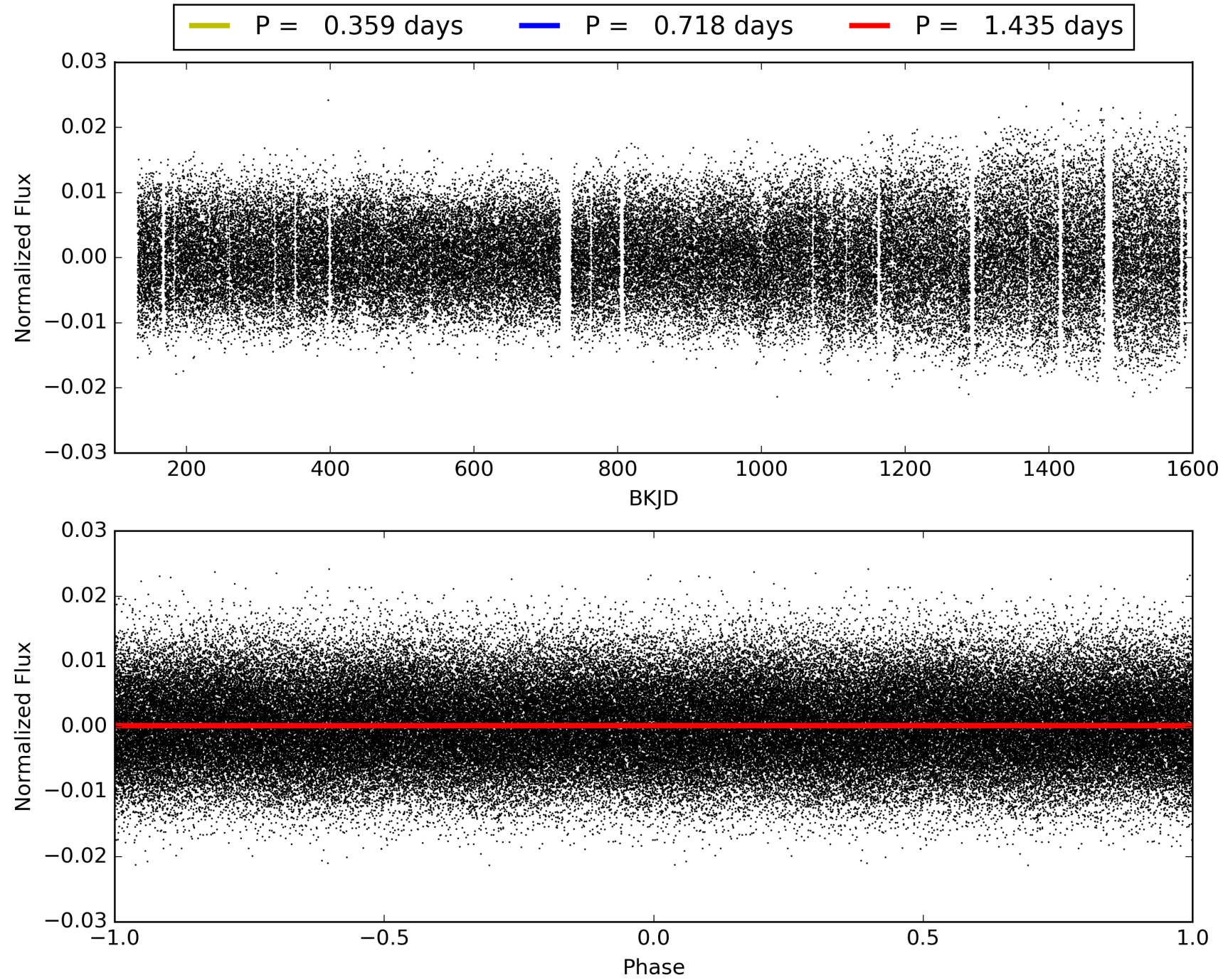
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008506388-01, PDC Light Curves





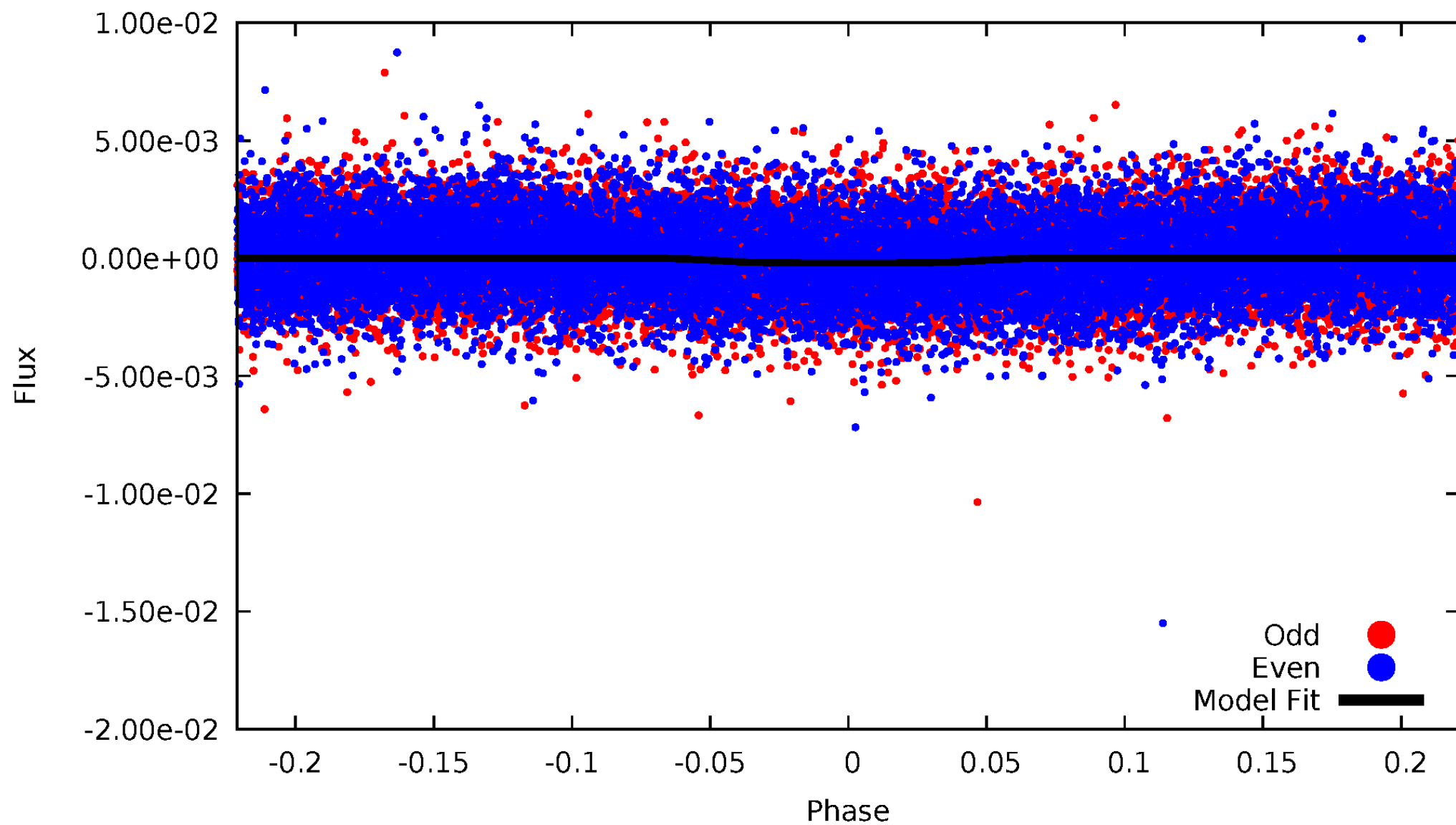
TCE 008506388-01





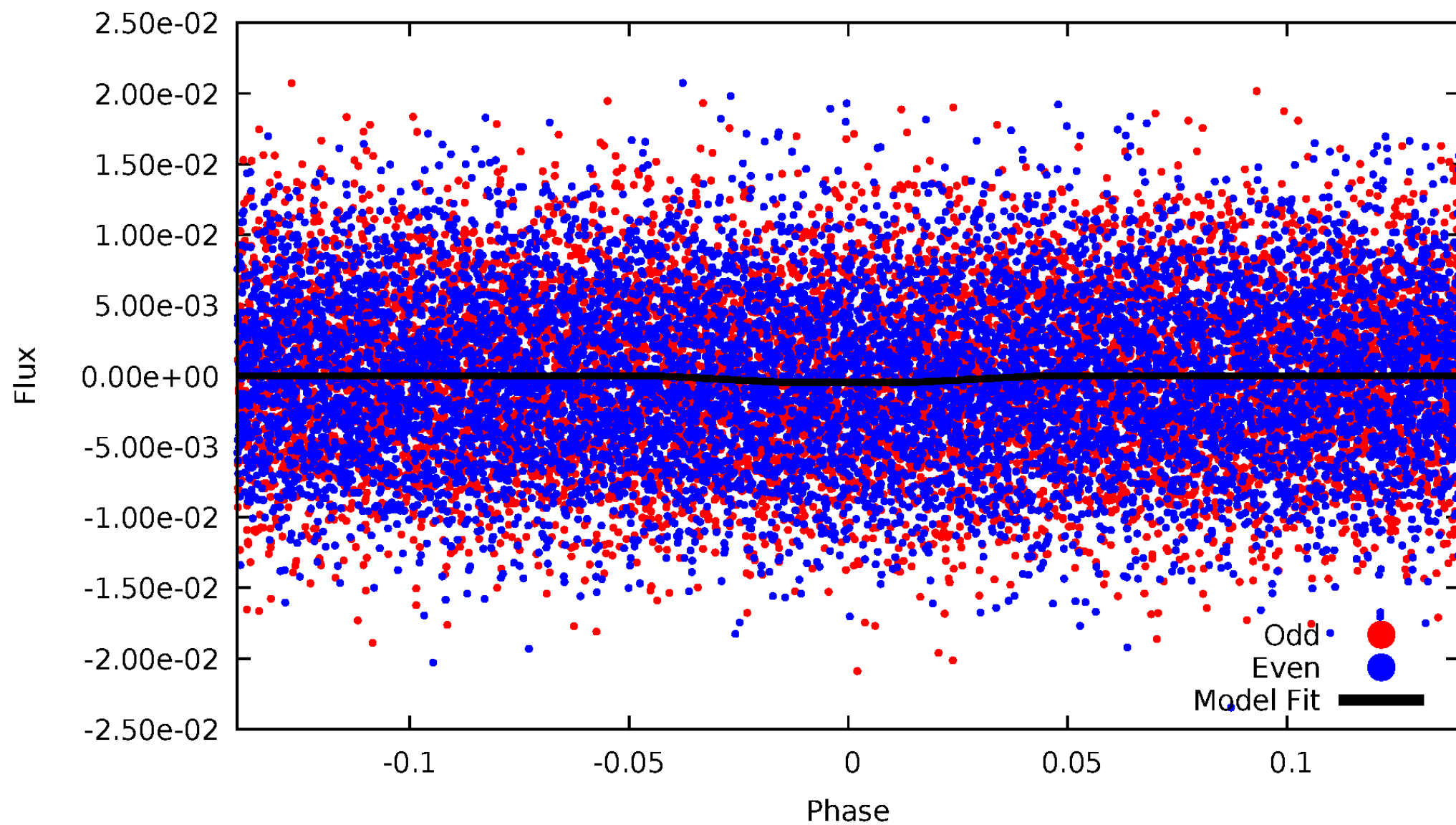
# DV Odd/Even

TCE 008506388-01

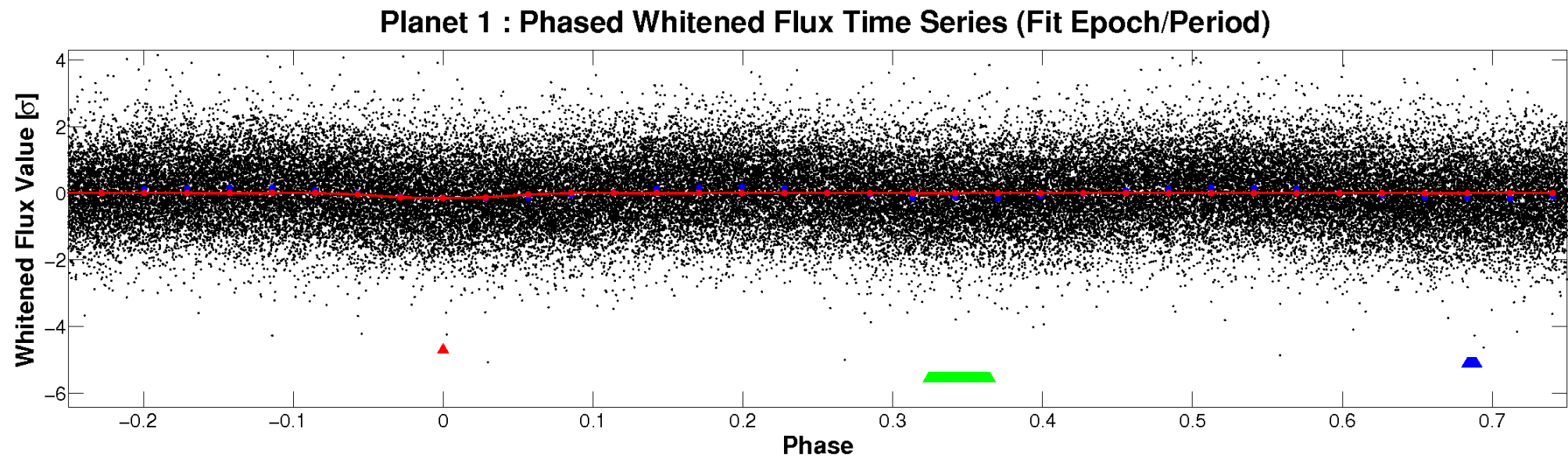
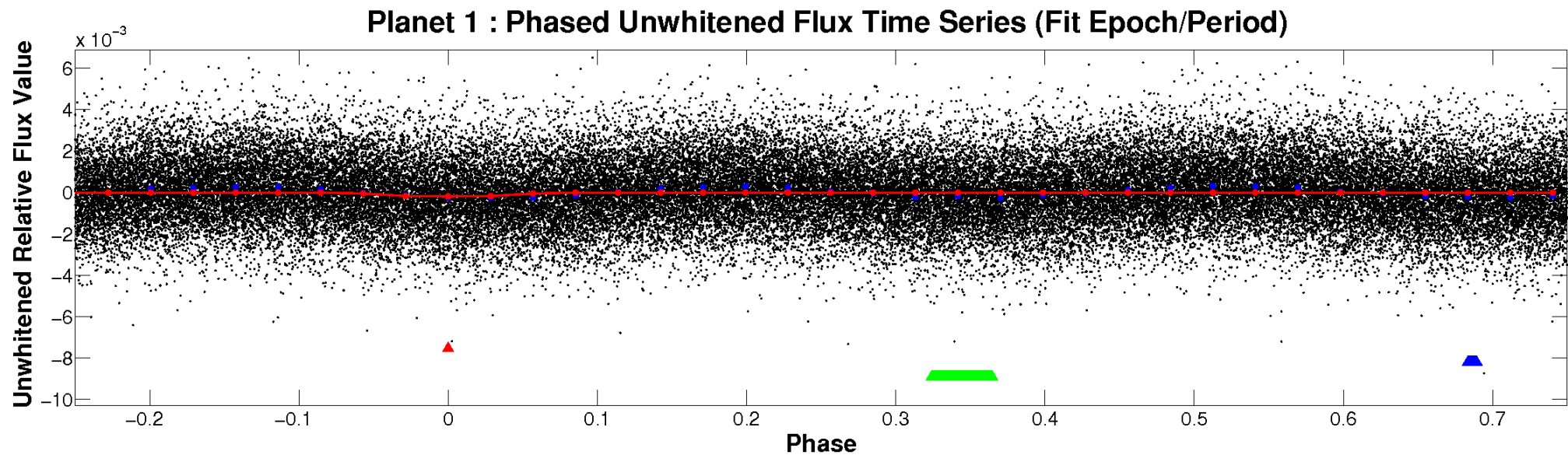


# ALT Odd/Even

TCE 008506388-01



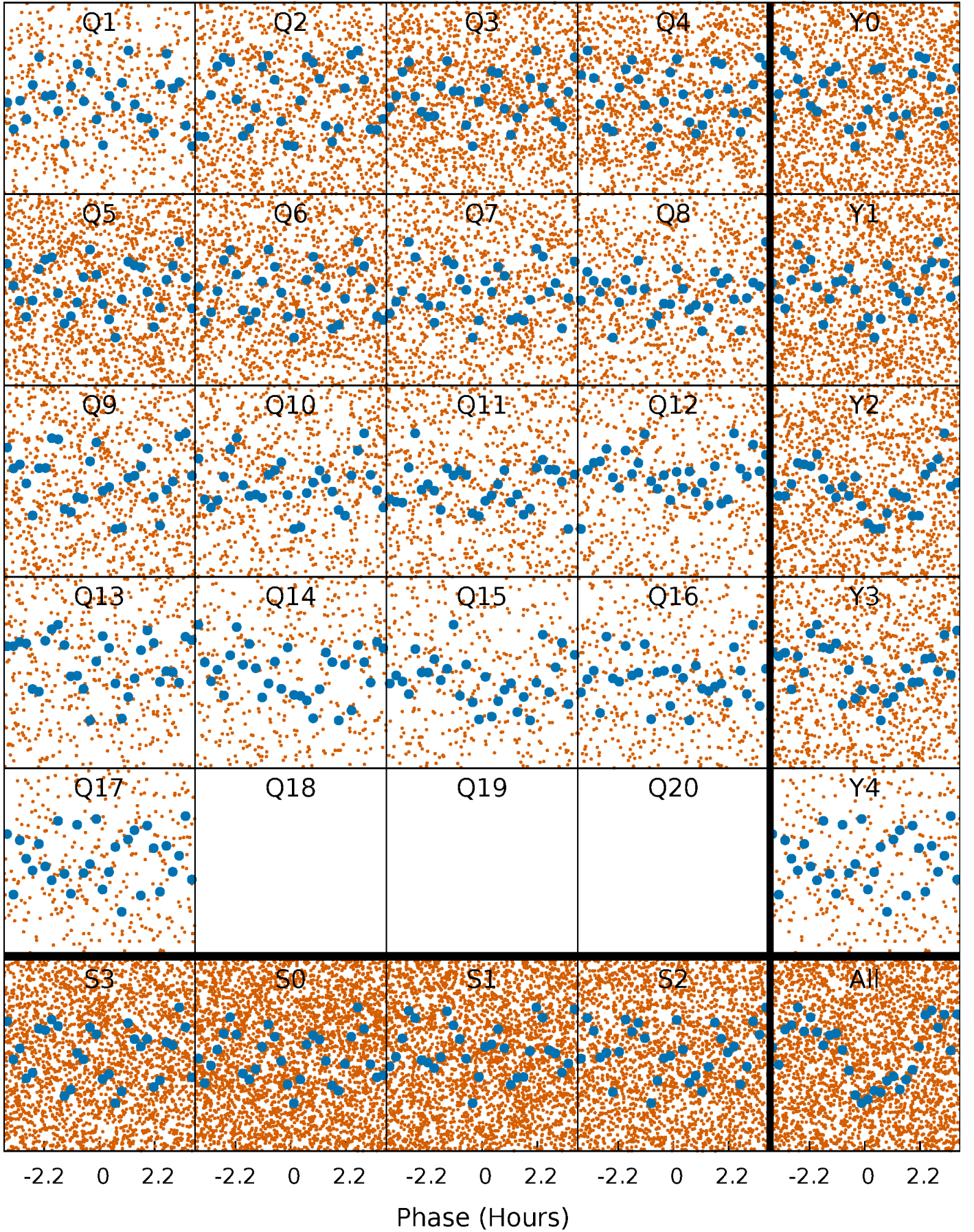
# Non-Whitened Vs. Whitened Light Curve





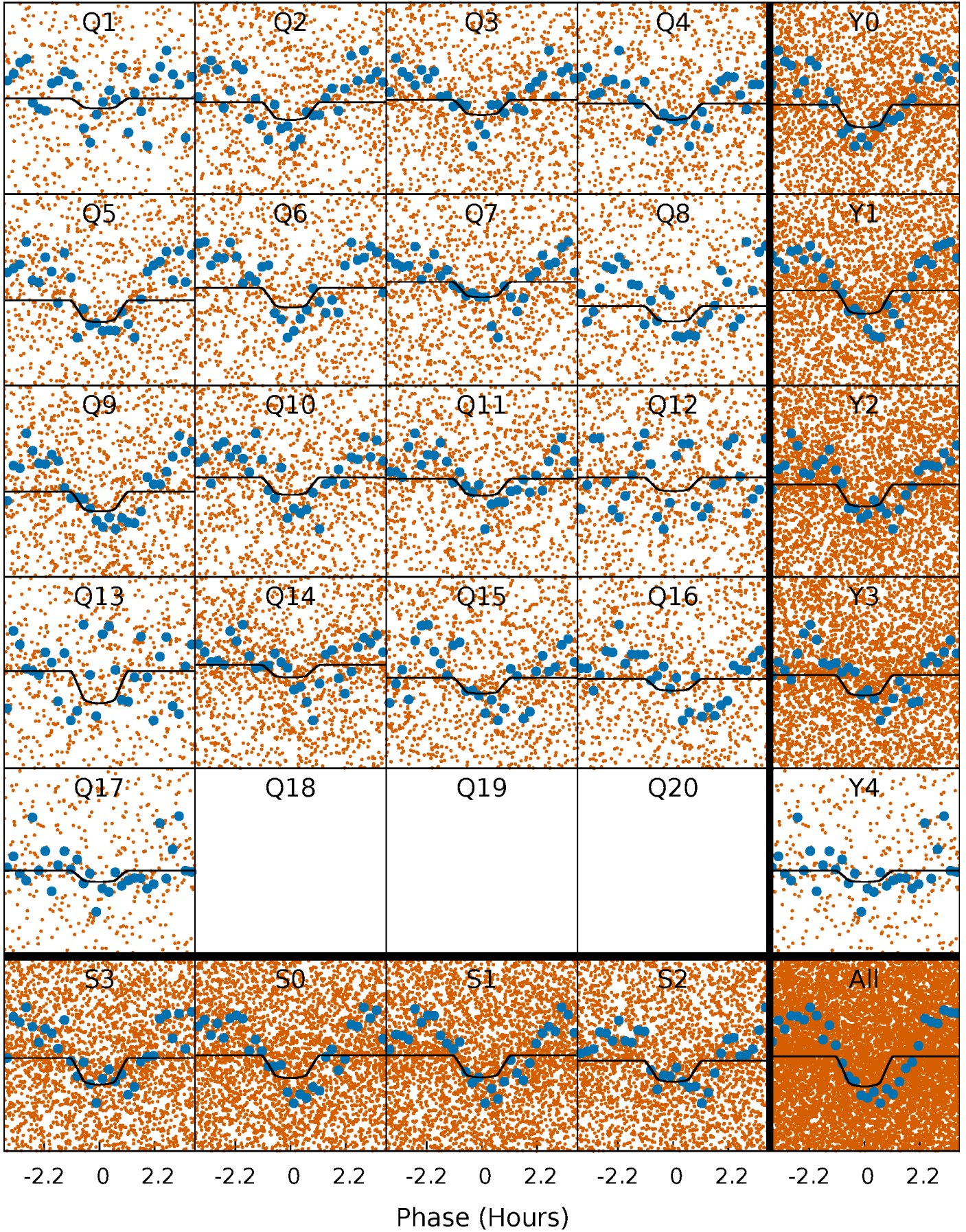
# PDC Quarter-Phased Transit Curves

TCE 008506388-01   P= 0.717566 Days    $T_0=131.751800$  (BKJD)



# DV Quarter-Phased Transit Curves

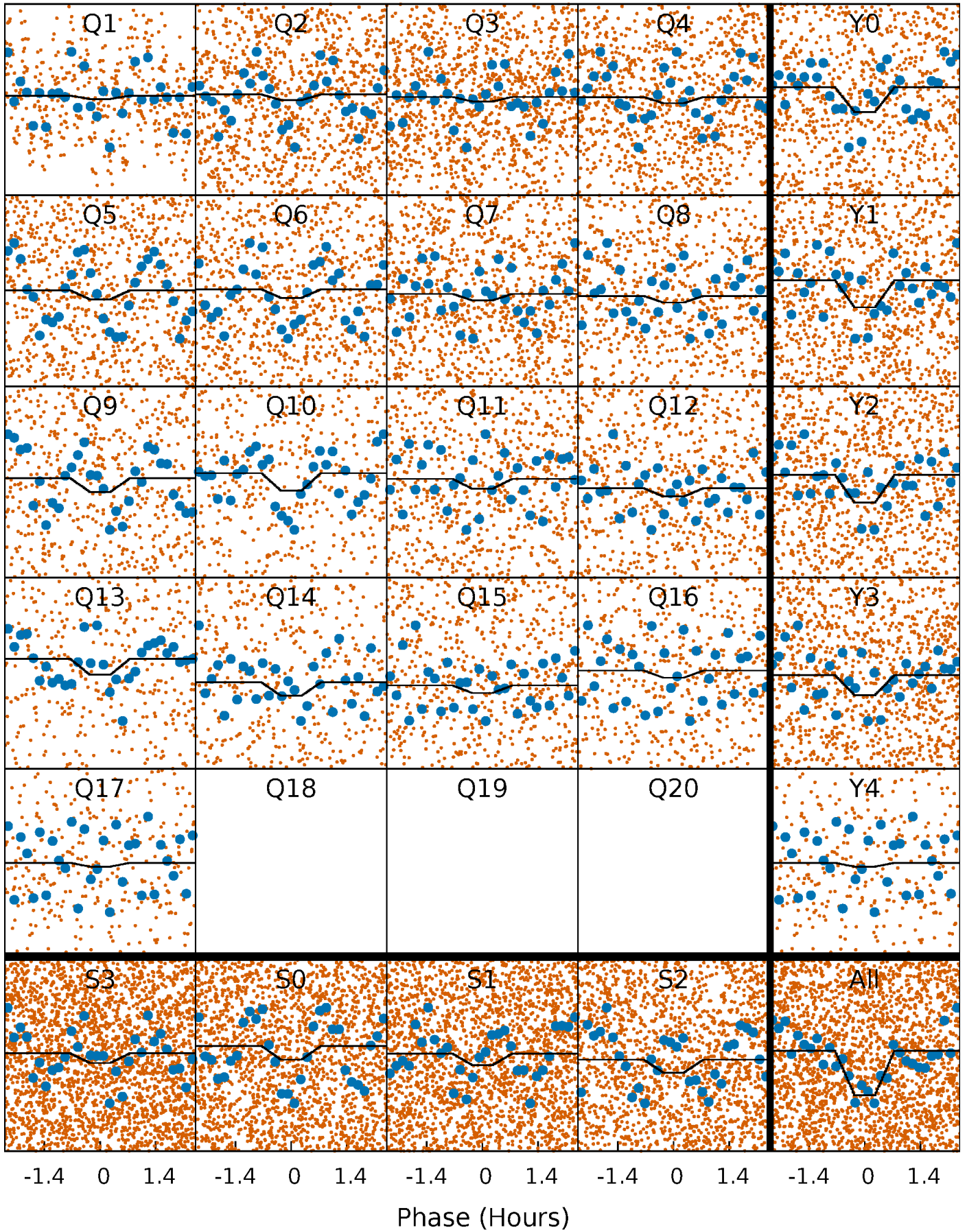
TCE 008506388-01   P= 0.717566 Days    $T_0=131.751800$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008506388-01 P= 0.717581 Days  $T_0=131.749259$  (BKJD)

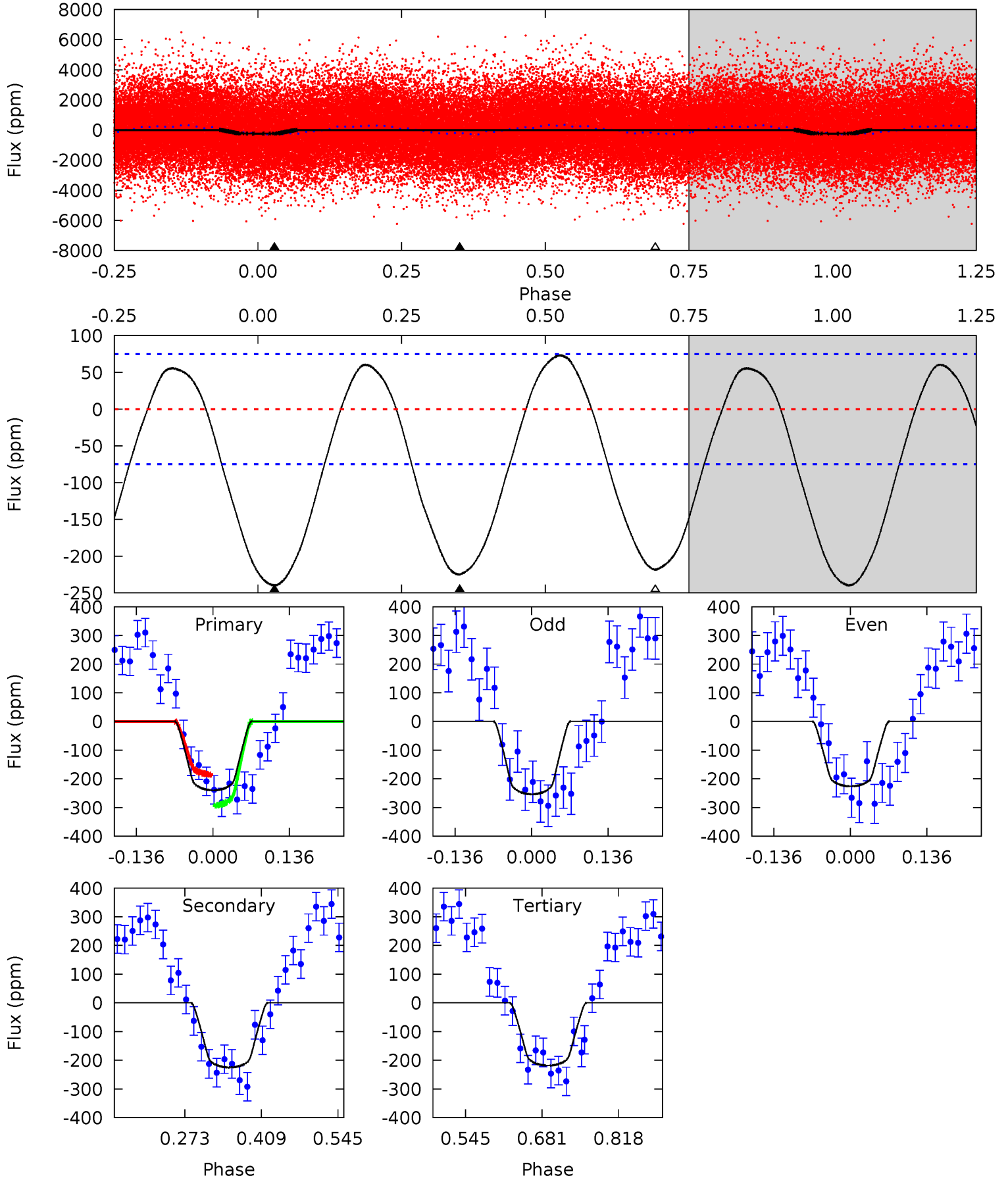




# DV Model-Shift Uniqueness Test

008506388-01, P = 0.717566 Days, E = 131.034234 Days

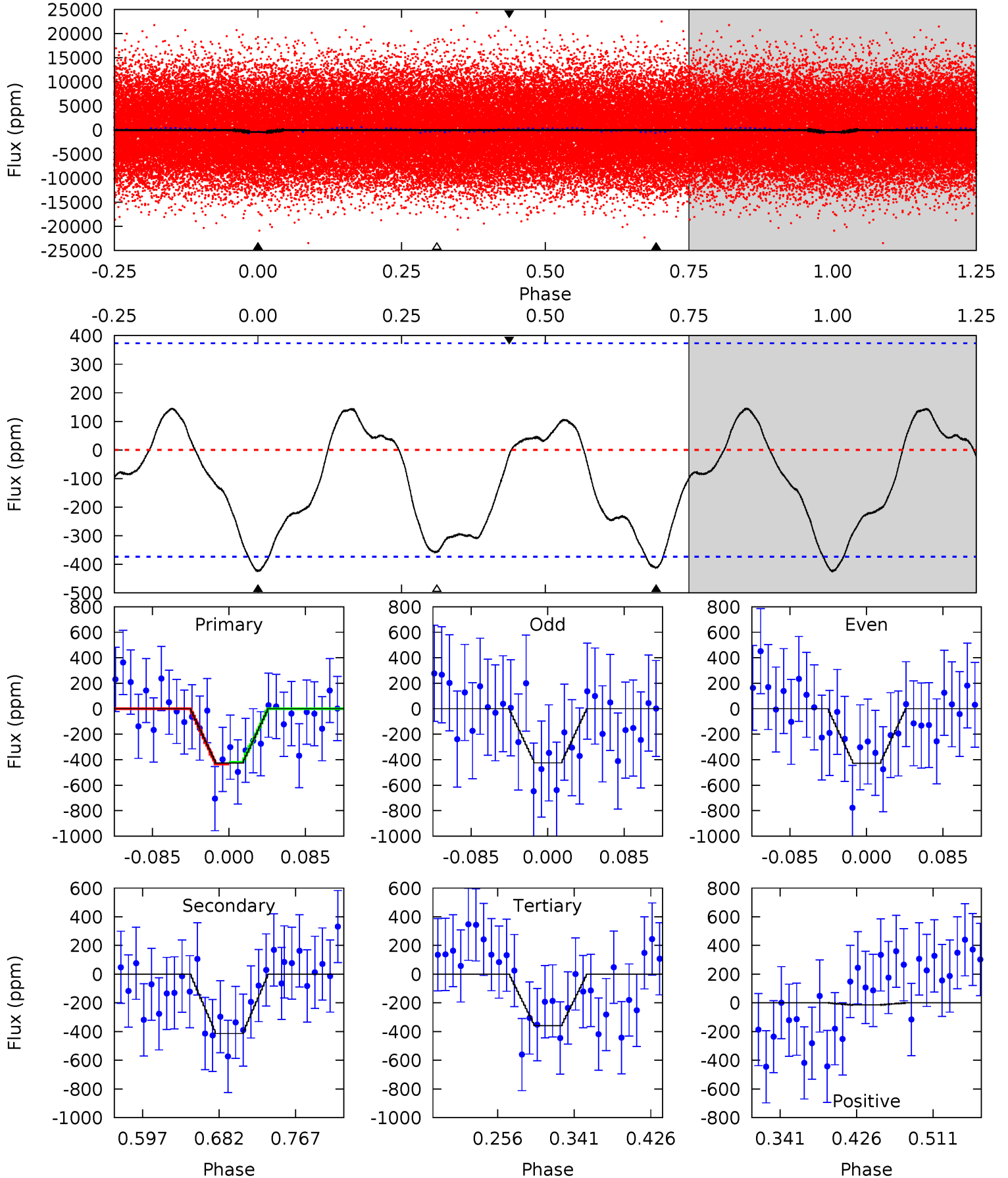
| Pri  | Sec  | Ter  | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.4 | 13.5 | 13.1 | 0   | 4.50            | 1.49            | 6.26             | 1.29    | 14.4    | 0.40    | 13.5    | 0.83    | 0.98 | 0.23  | 3.25 |



# Alt Model-Shift Uniqueness Test

008506388-01, P = 0.717581 Days, E = 131.031678 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  |
|------|------|------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.25 | 5.10 | 4.43 | -0.18 | 4.60            | 1.72            | 1.87             | 0.82    | 5.43    | 0.67    | 5.28    | 0.02    | 0.94 | 0.26  | 0.08 |



### Stellar Parameters For KIC 008506388

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $7334^{+205}_{-334}$ | $3.617^{+0.486}_{-0.054}$ | $0.080^{+0.200}_{-0.300}$ | $3.737^{+0.480}_{-1.918}$ | $2.106^{+0.233}_{-0.583}$ | $0.057^{+0.301}_{-0.015}$                     |
|        | +3%/-5%              | +13%/-1%                  | +250%/-375%               | +13%/-51%                 | +11%/-28%                 | +530%/-26%                                    |
| Source | KIC0                 | 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 008506388-01 / KOI

| Detrend | Depth (ppm)   | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)   | $A_{\text{obs}}$          |
|---------|---------------|------------------------|----------------------|------------------------|---------------------------|
| DV      | $-225 \pm 17$ | $5.49^{+3.89}_{-3.05}$ | $5892^{+382}_{-732}$ | $6655^{+5773}_{-1910}$ | $1.609^{+7.170}_{-1.037}$ |
| Alt.    | $-414 \pm 81$ | $7.10^{+4.33}_{-3.58}$ | $5880^{+402}_{-734}$ | $6884^{+4007}_{-1823}$ | $1.764^{+5.038}_{-1.095}$ |

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



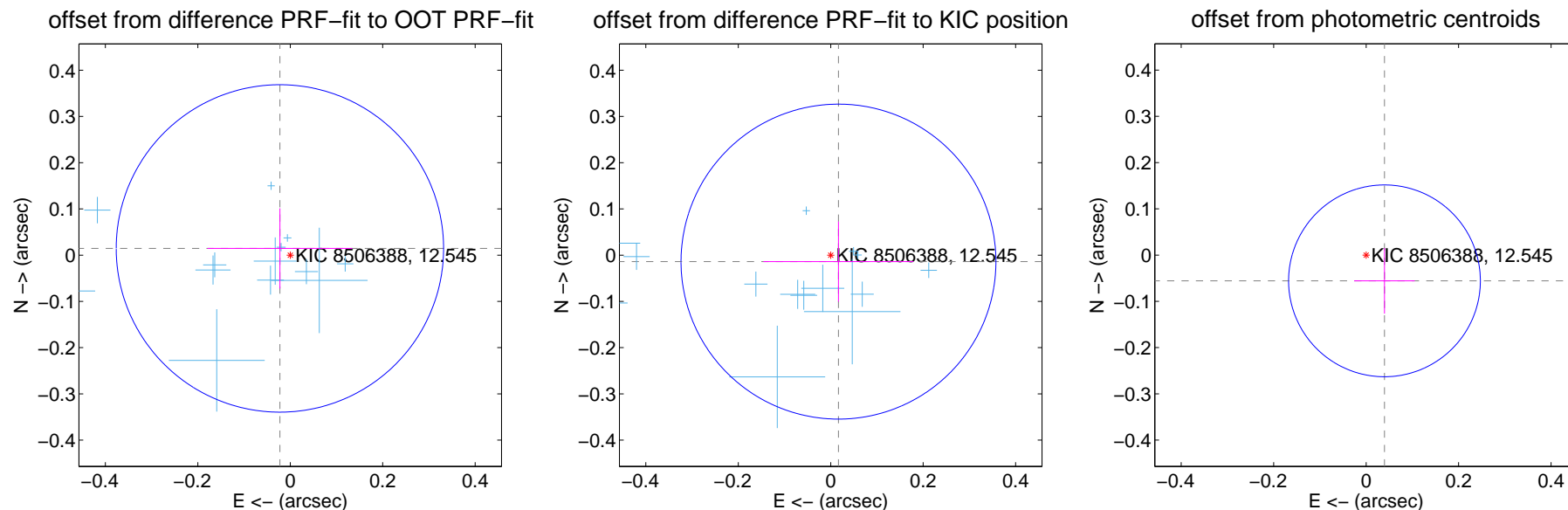
## DV Centroid Data

Supplemental centroid analysis for 008506388-01. Kepler magnitude: 12.54. Transit SNR 9.87

There are 15 quarters with good PRF difference image offsets

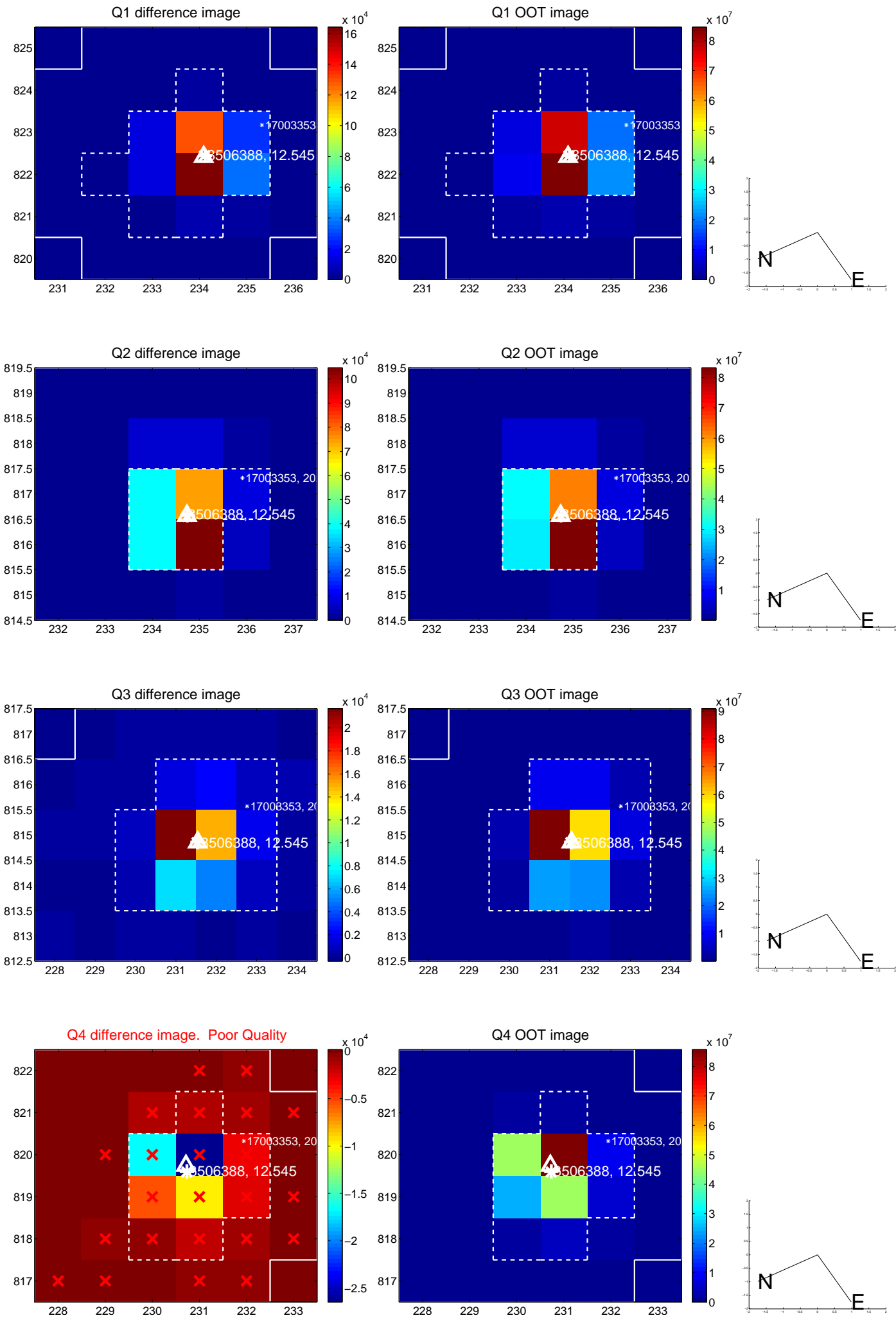
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.027 \pm 0.118$  | 0.23                | $0.022 \pm 0.156$  | $0.015 \pm 0.087$  |
| PRF-fit source offset from KIC position | $0.022 \pm 0.114$  | 0.19                | $-0.017 \pm 0.162$ | $-0.014 \pm 0.087$ |
| photometric centroid source offset      | $0.07 \pm 0.07$    | 0.99                | $-0.04 \pm 0.07$   | $-0.06 \pm 0.07$   |

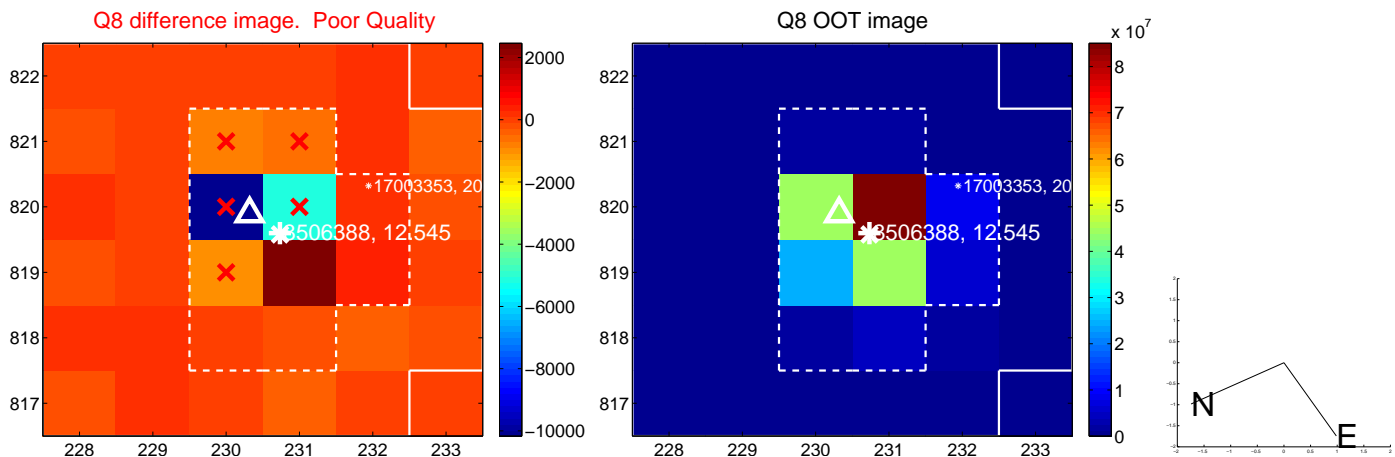
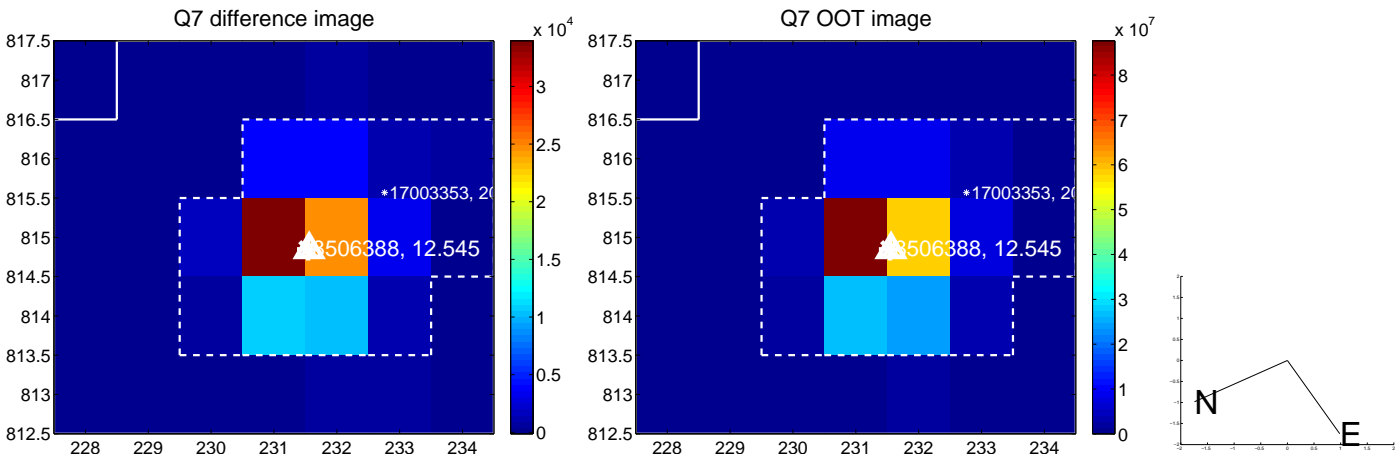
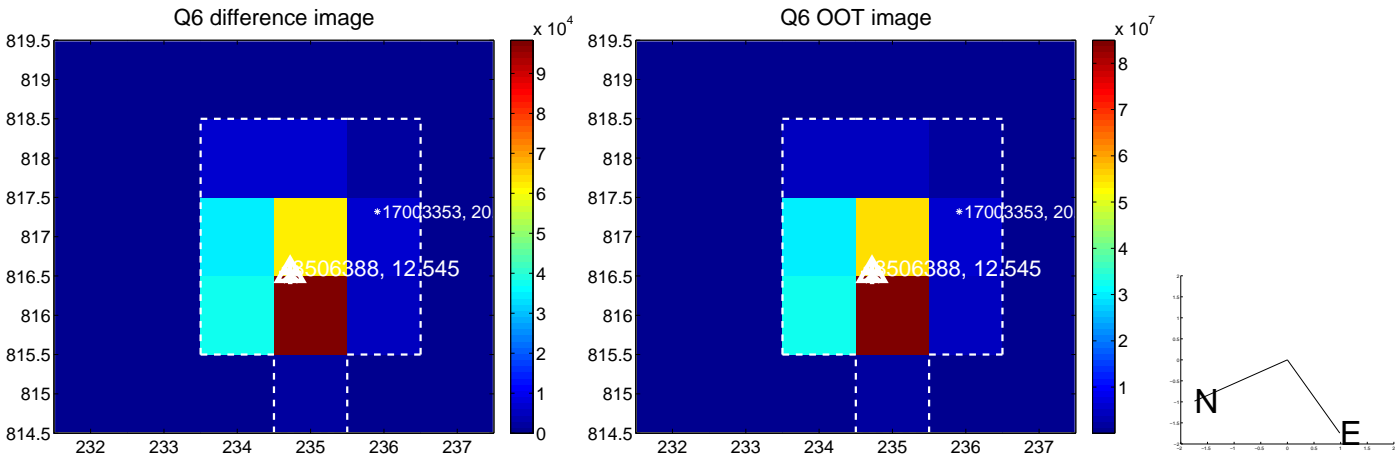
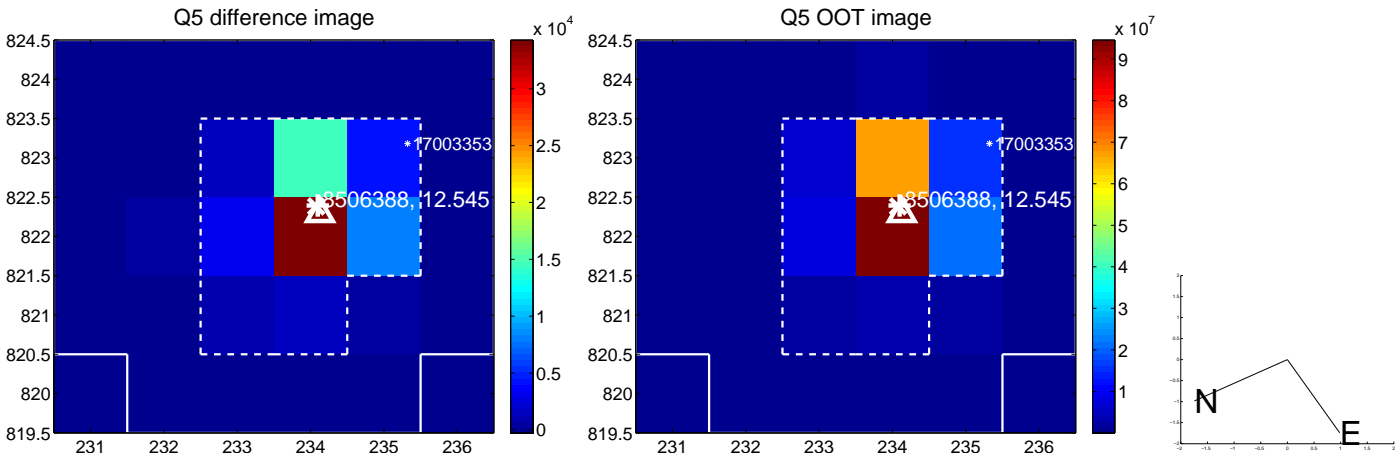


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

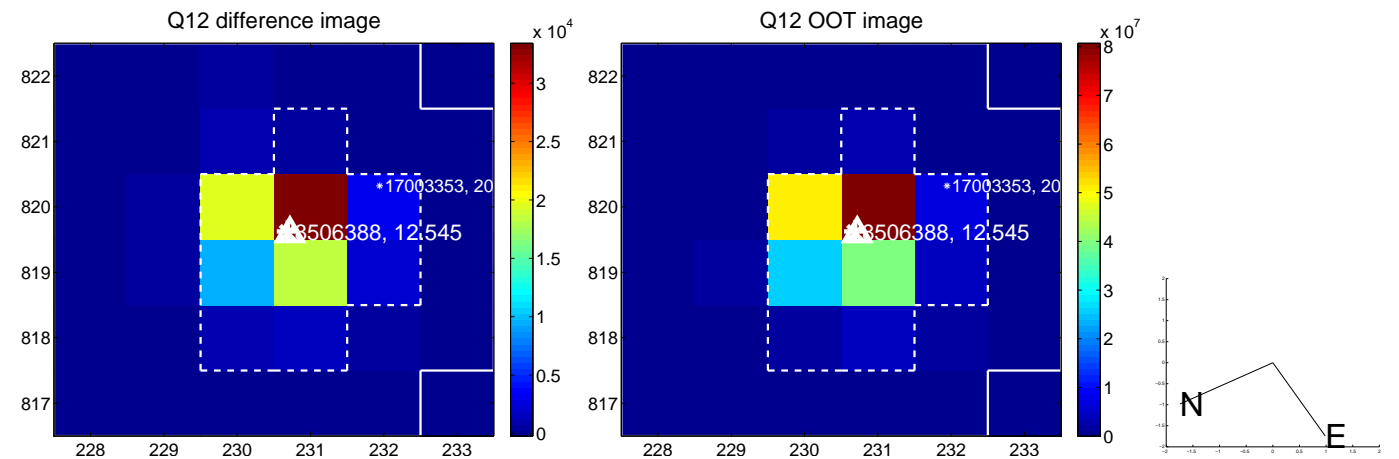
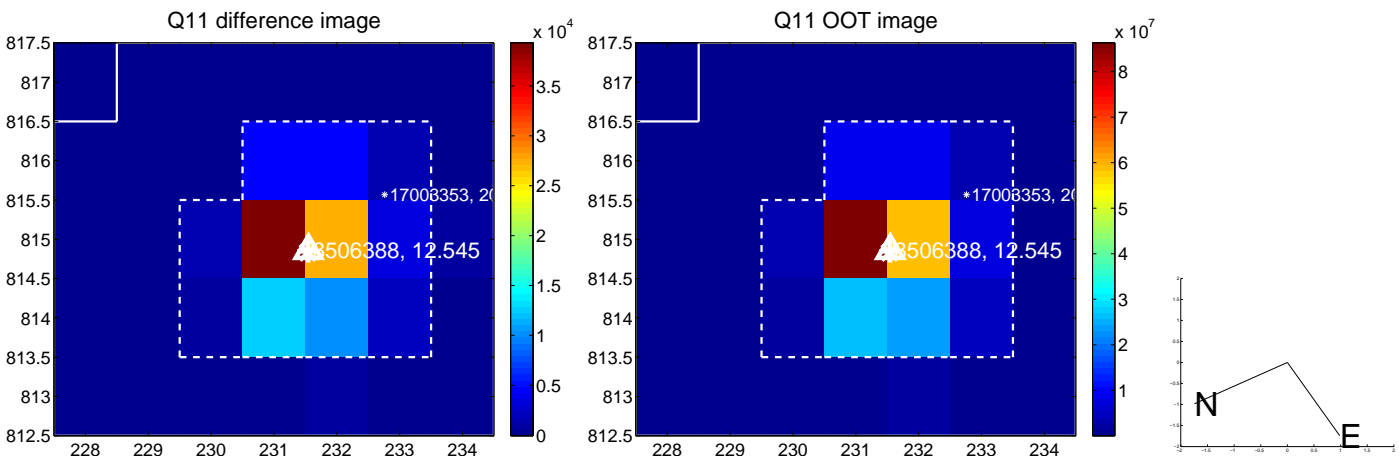
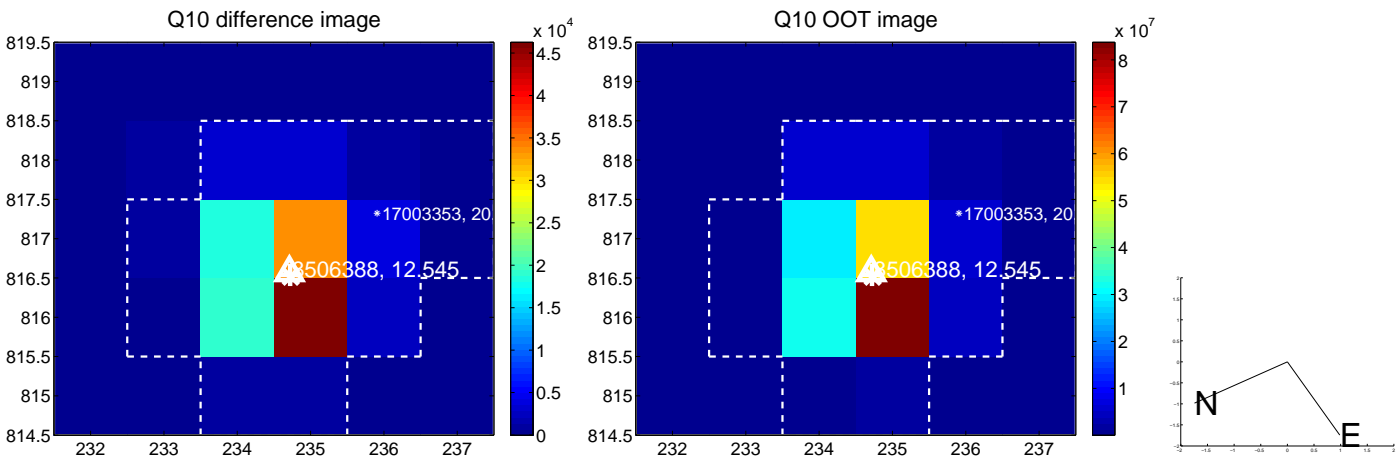
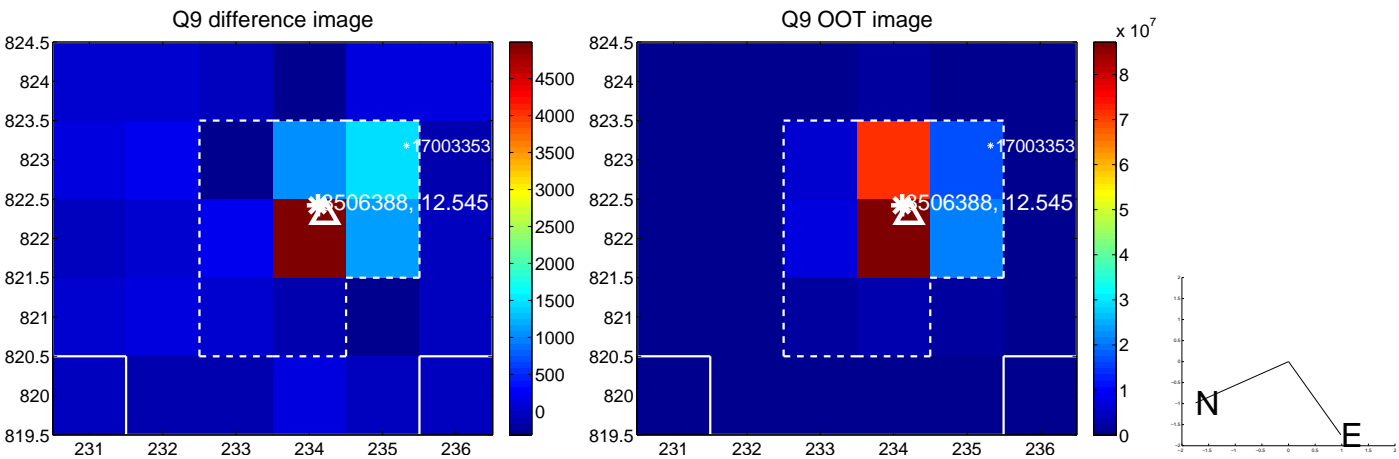


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

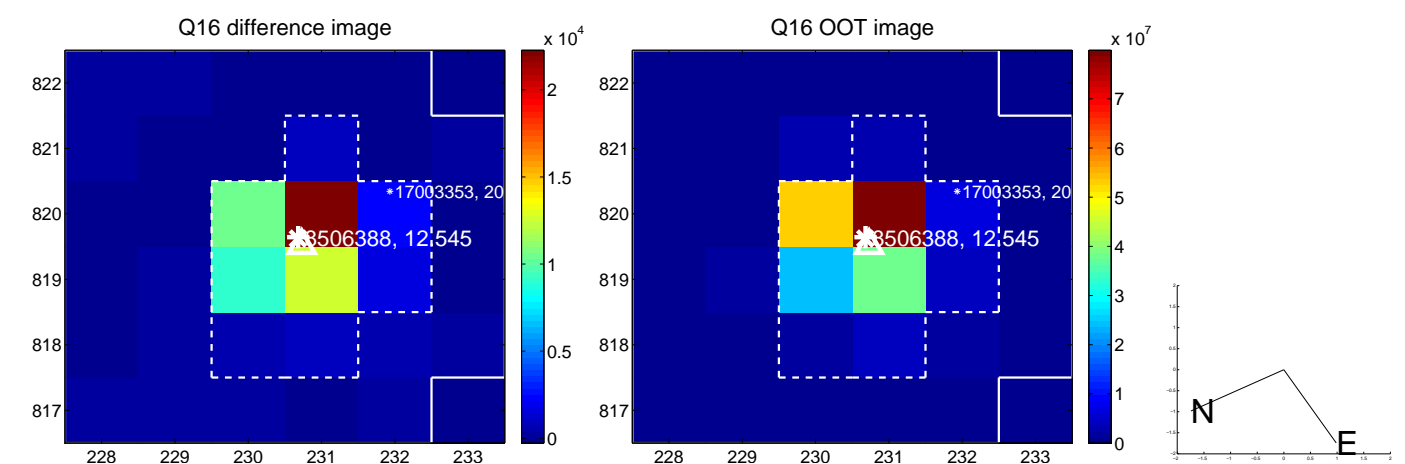
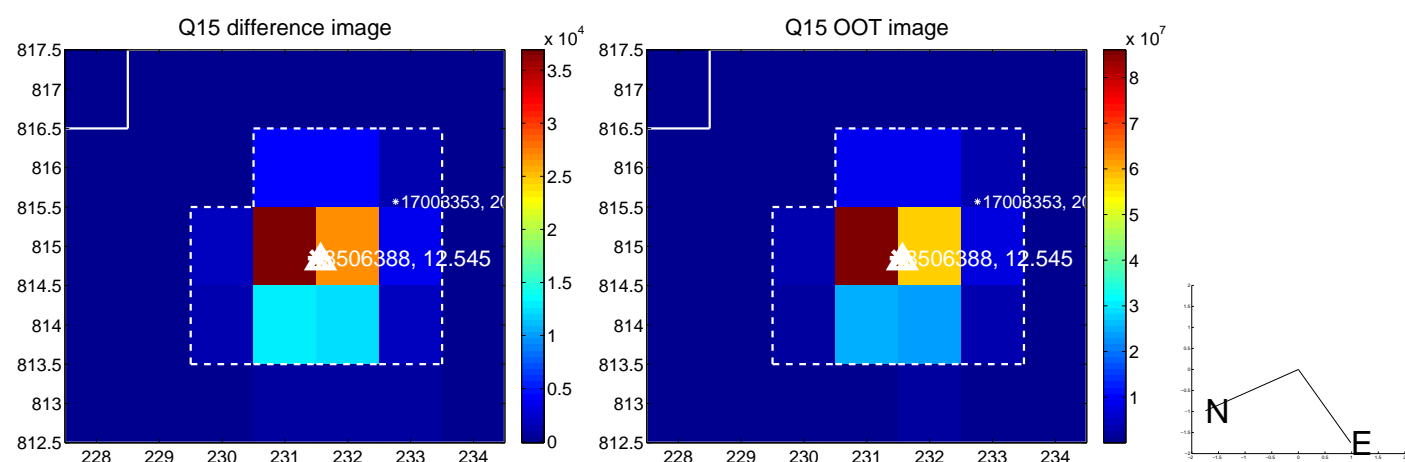
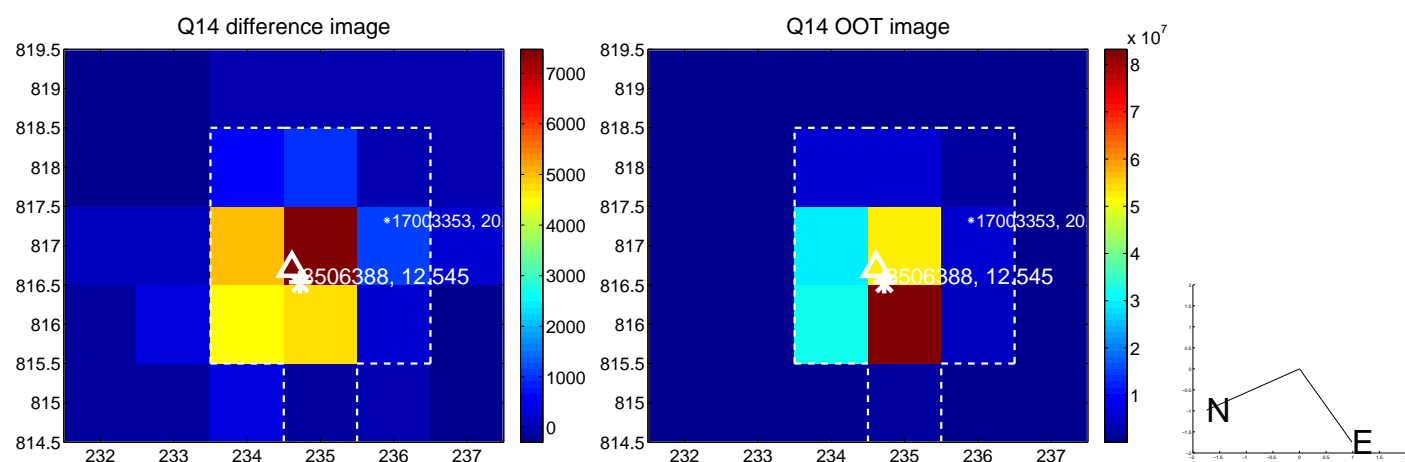
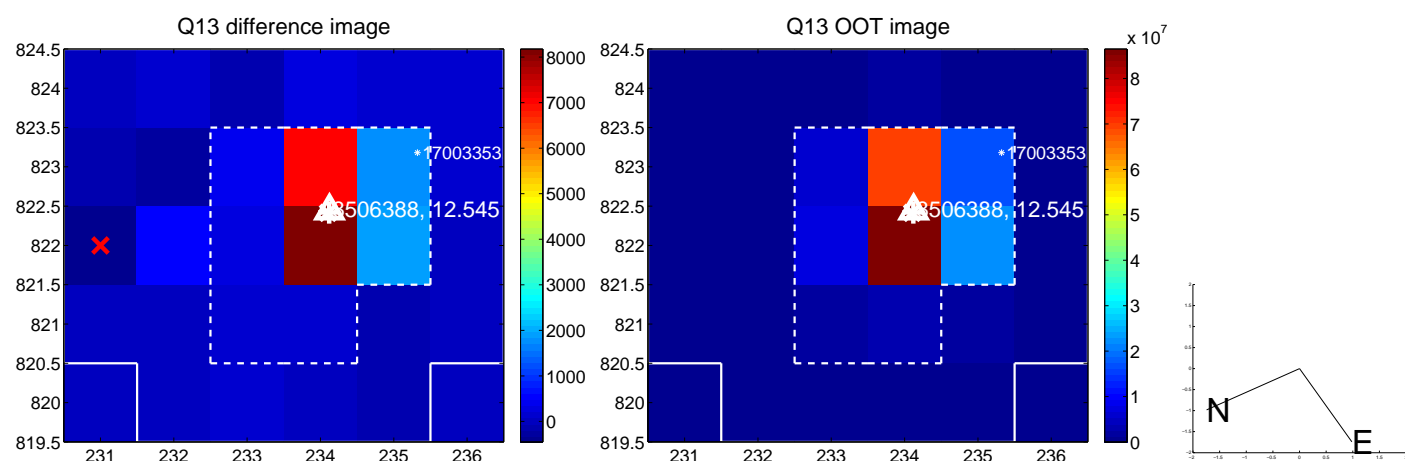




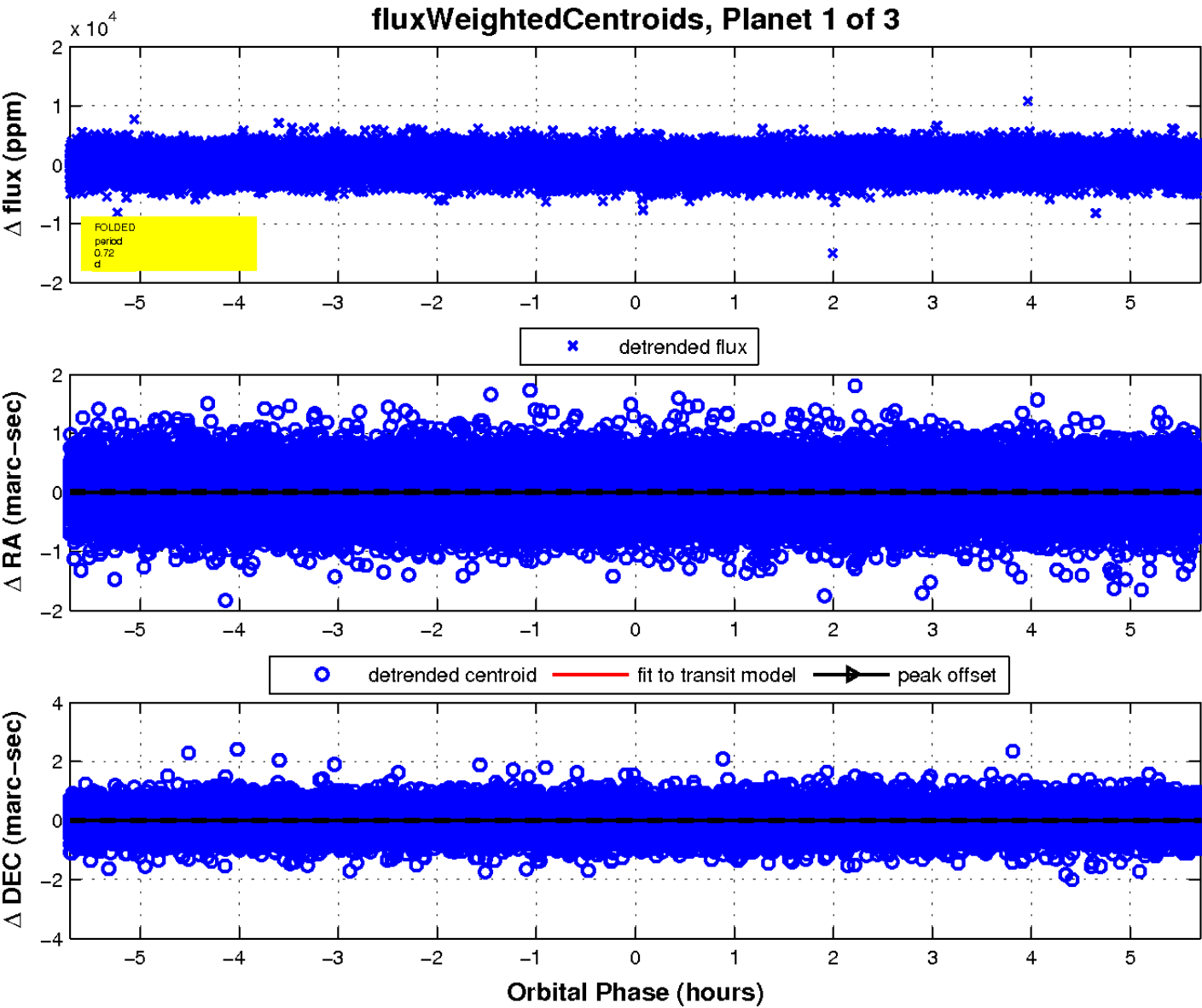
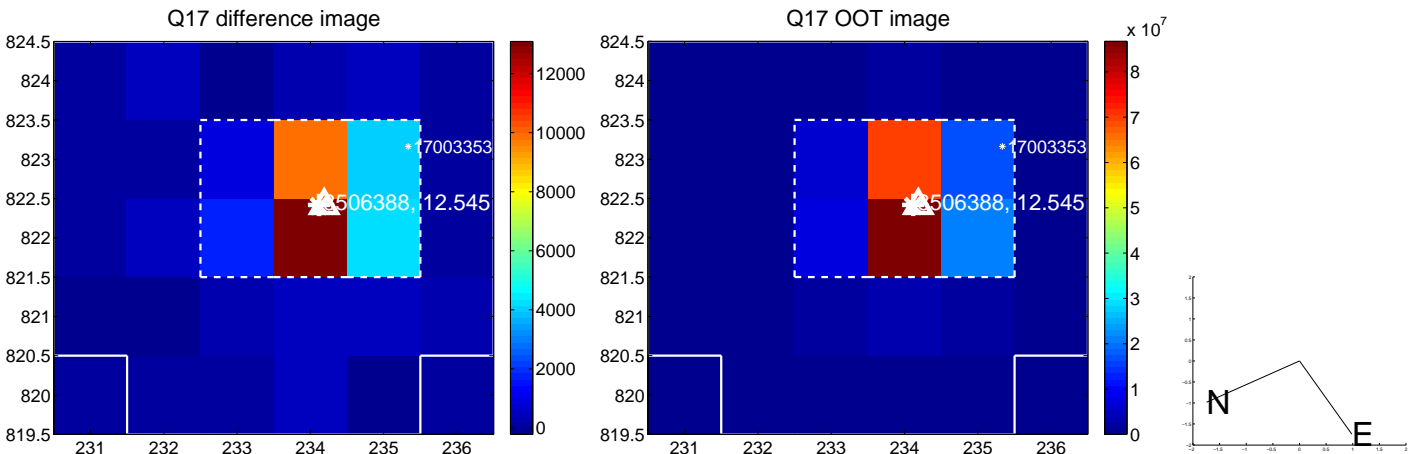
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



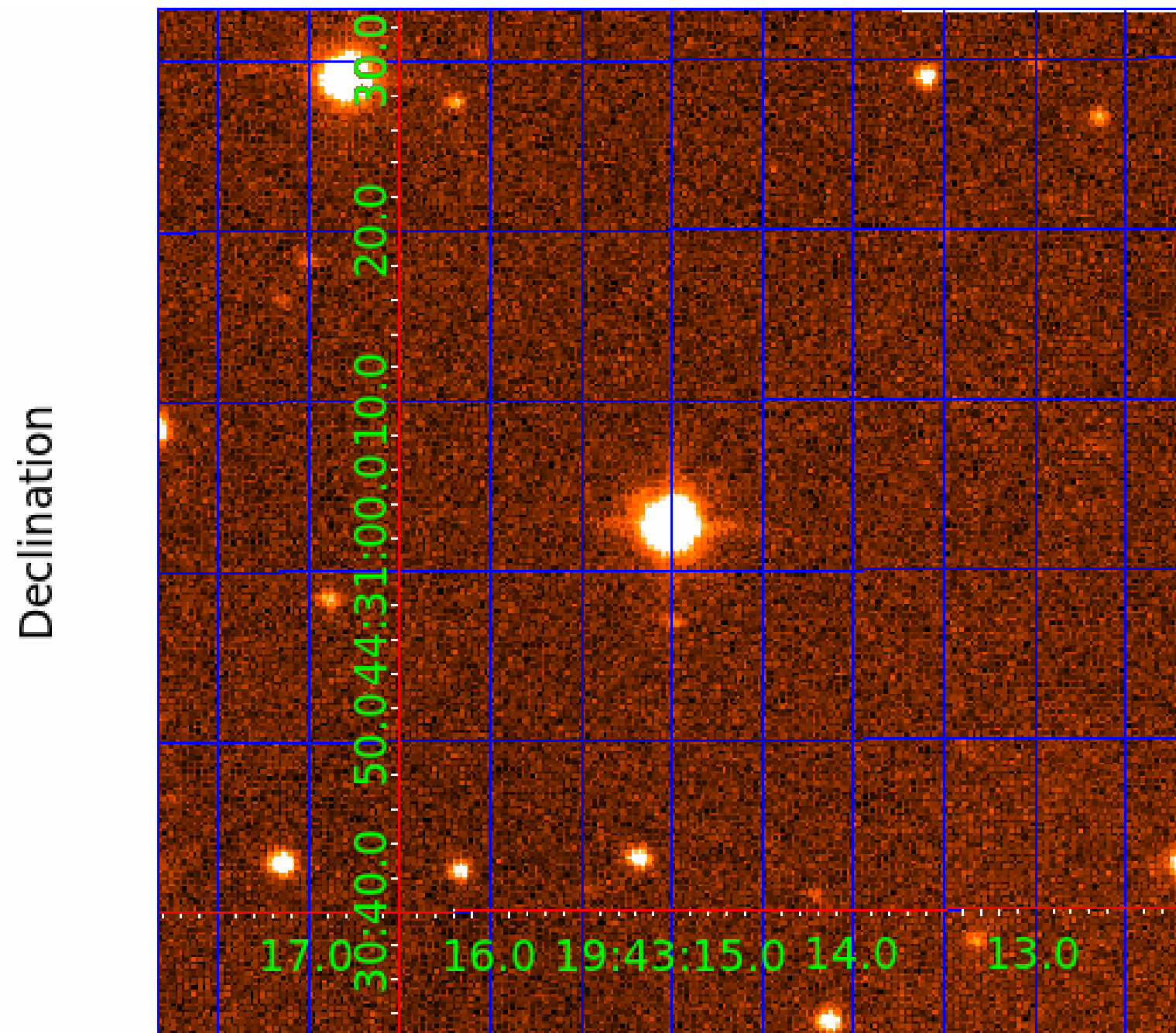
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 008506388

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008506388-01 | OBS      | No   | 0.717566      | 131.751800   | 193.4       | 1.904            | 11.9 | 9.9  | 3.74                        | 7334            | 6.04                   | 89424.65               |
| 008506388-02 | OBS      | No   | 0.717569      | 131.524547   | 192.2       | 2.238            | 11.1 | 10.6 | 3.74                        | 7334            | 6.02                   | 89424.29               |
| 008506388-03 | OBS      | No   | 0.717581      | 131.984352   | 158.2       | 2.021            | 10.9 | 8.7  | 3.74                        | 7334            | 4.76                   | 89422.27               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                       |
|--------------|----------|------|-------|---|---|---|---|--|
| 008506388-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 008506388-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 008506388-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—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.

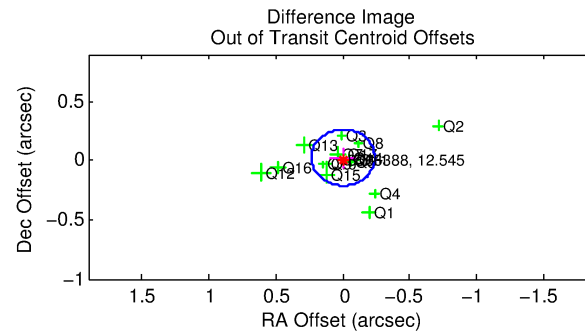
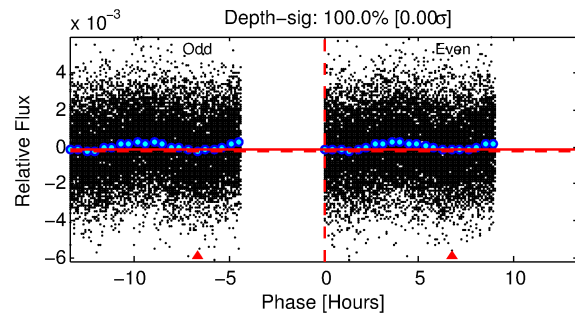
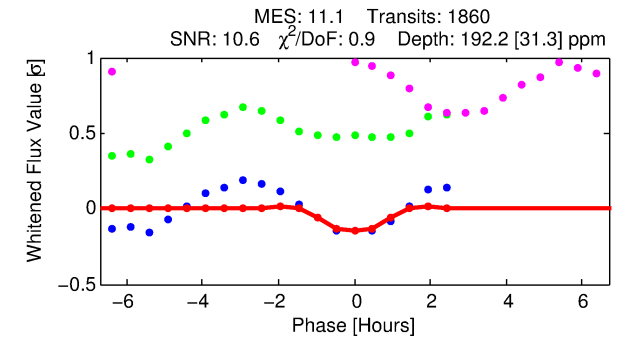
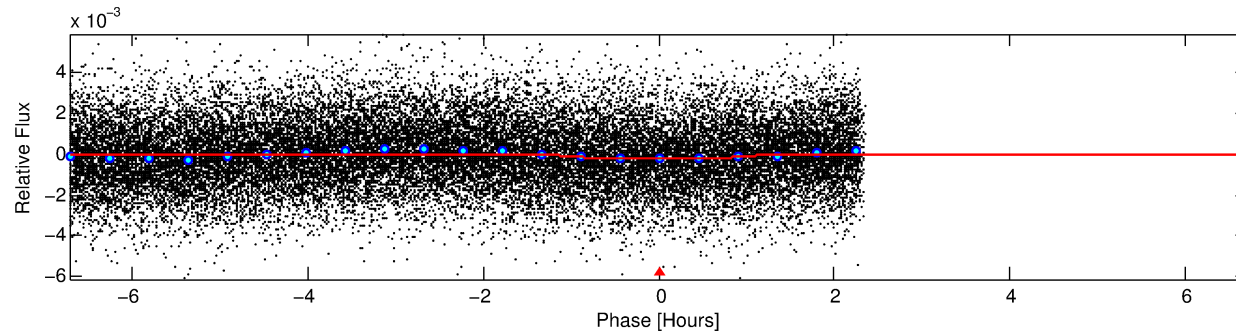
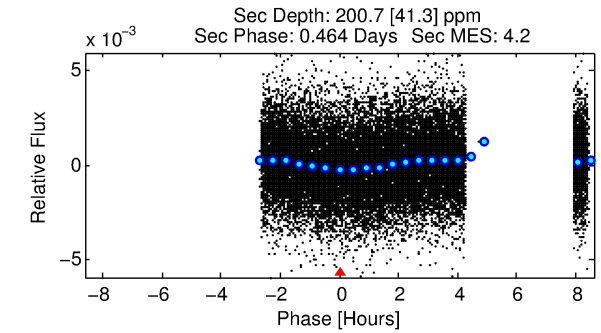
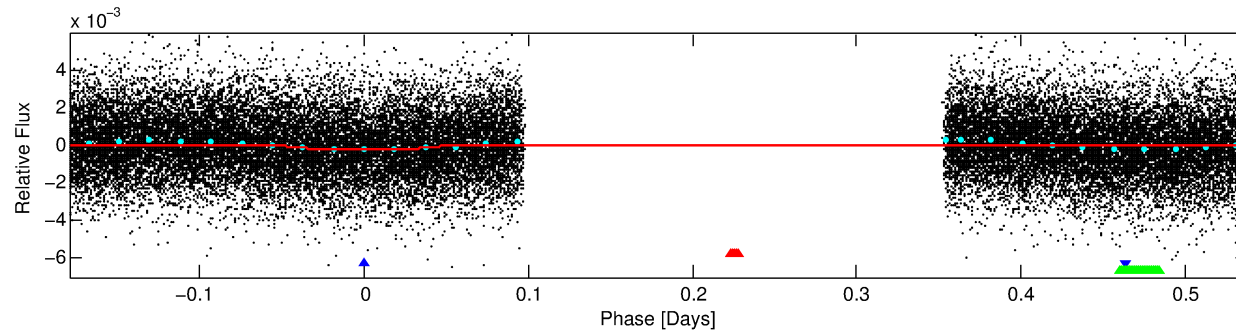
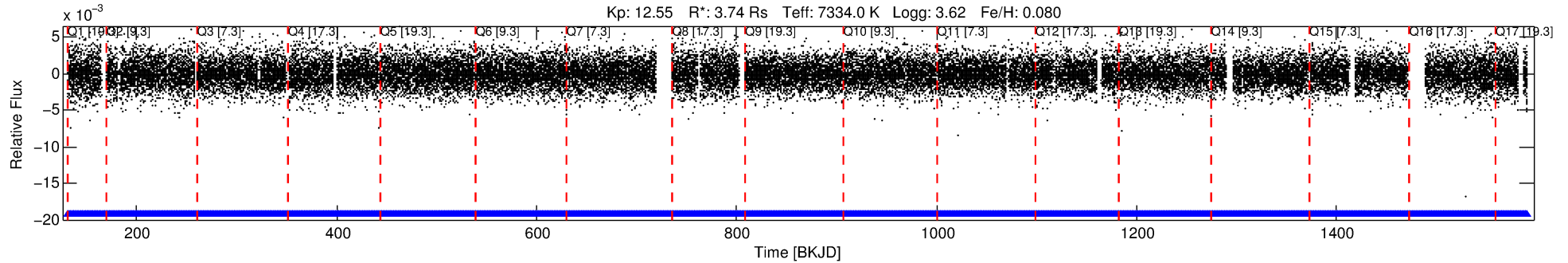
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008506388-02

No Significant Match Found

# DV One-Page Summary

KIC: 8506388 Candidate: 2 of 3 Period: 0.718 d



## DV Fit Results:

Period = 0.71757 [0.00001] d  
Epoch = 131.5245 [0.0031] BKJD  
Rp/R\* = 0.0148 [0.0083]  
a/R\* = 1.48 [2.85]  
b = 0.90 [0.75]  
Seff = 89424.28 [75181.97]  
Teff = 4410 [927] K  
Rp = 6.02 [4.60] Re  
a = 0.0201 [0.0102] AU  
Ag = 1.23 [1.74] [0.13σ]  
Teffp = 7183 [2089] K [1.21σ]

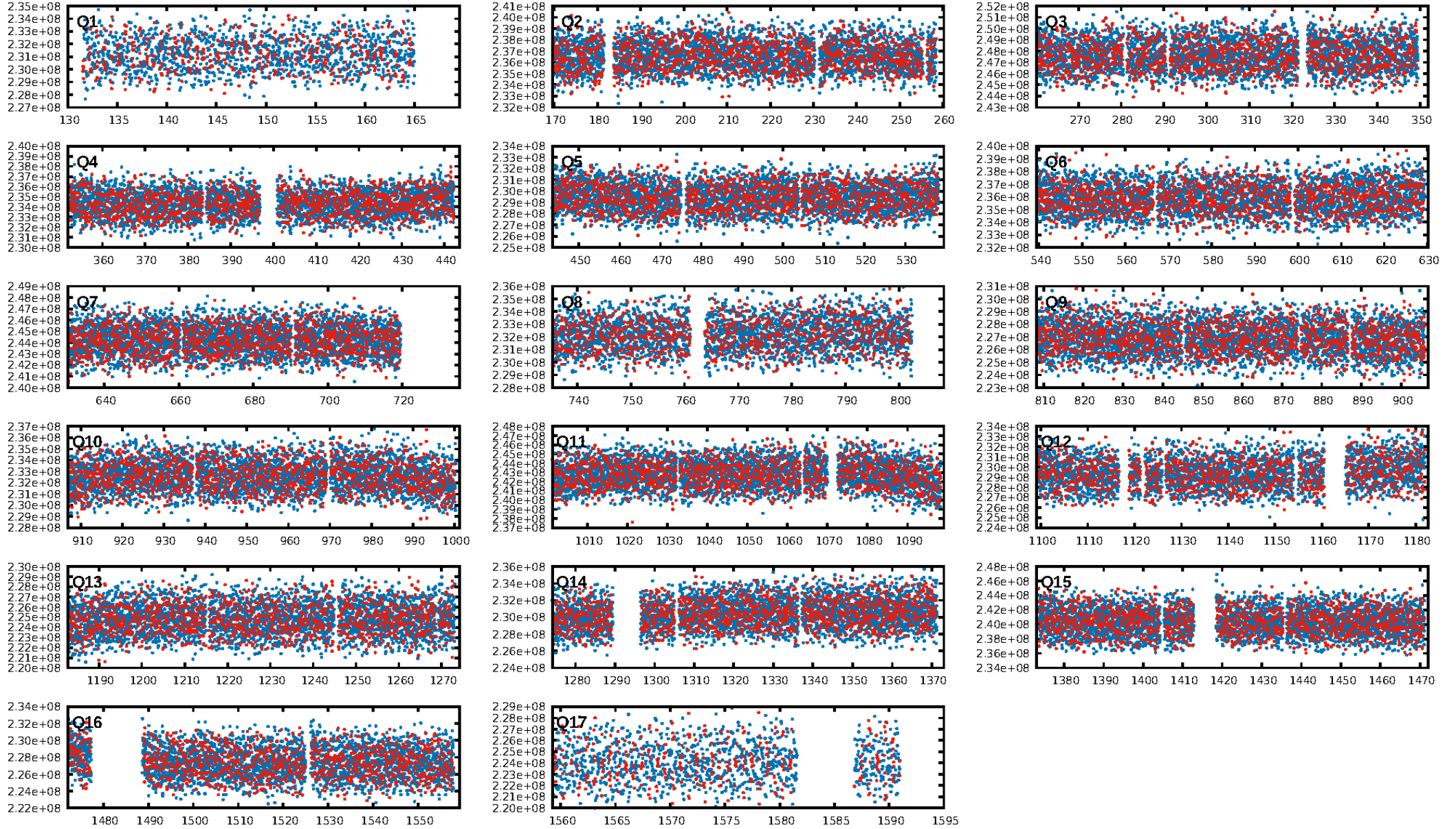
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1777/1777]  
GhostDiagnostic-chr: 1.027  
Centroid-sig: 21.0%  
Centroid-so: 0.079 arcsec [1.24σ]  
OotOffset-rm: 0.027 arcsec [0.34σ]  
KicOffset-rm: 0.034 arcsec [0.36σ]  
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: 31-Jan-2016 16:39:57 Z

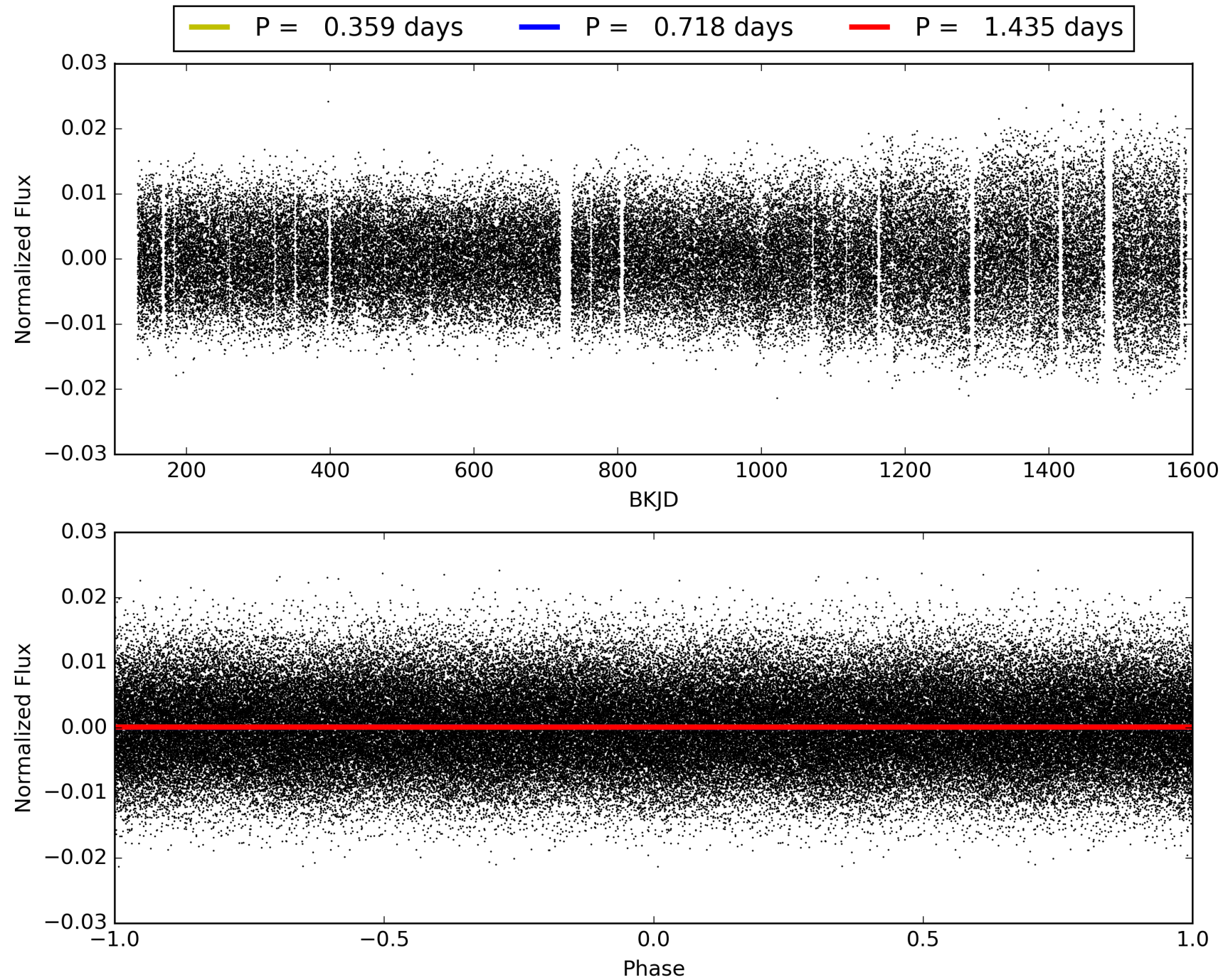
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008506388-02, PDC Light Curves





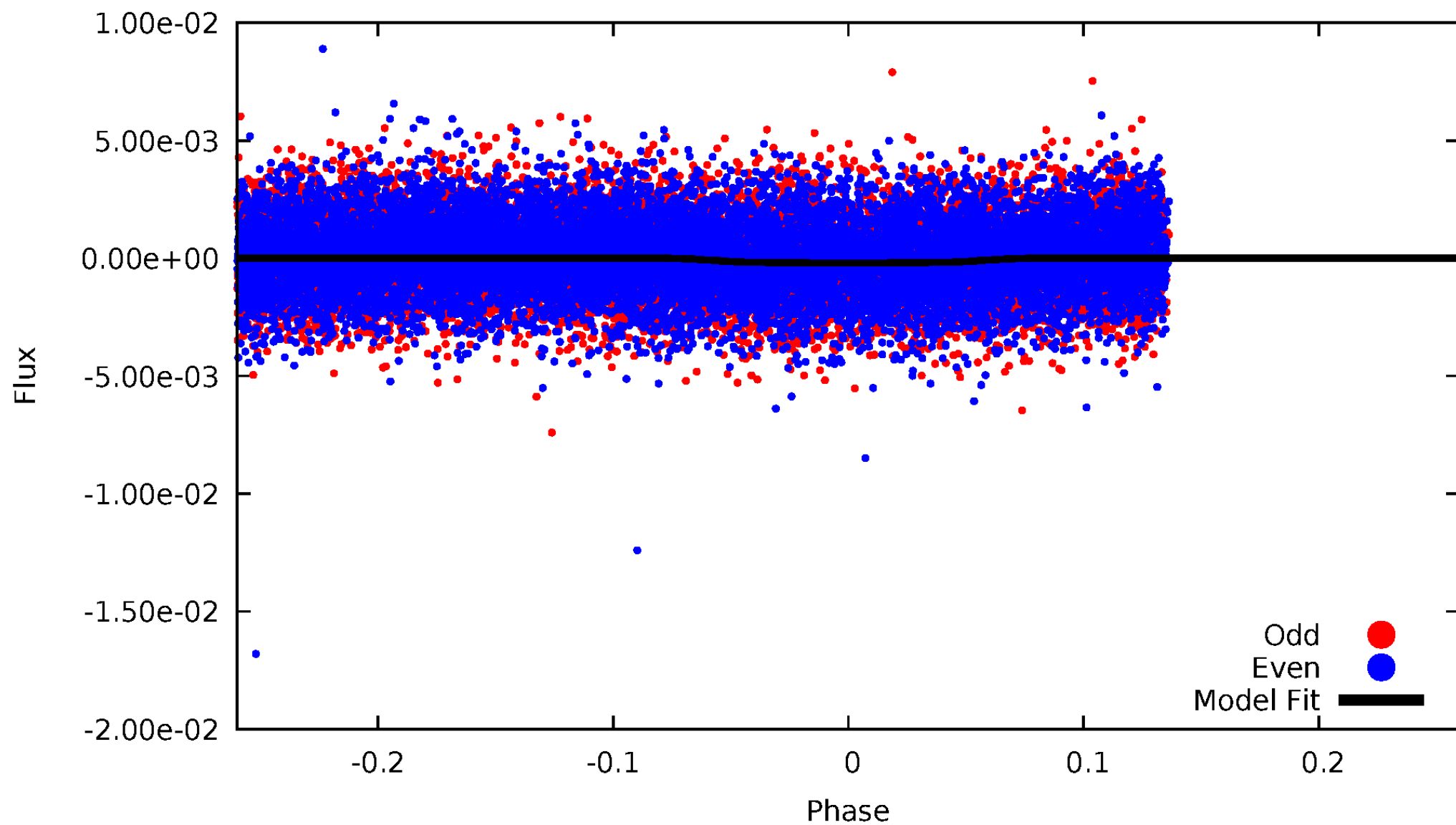
TCE 008506388-02





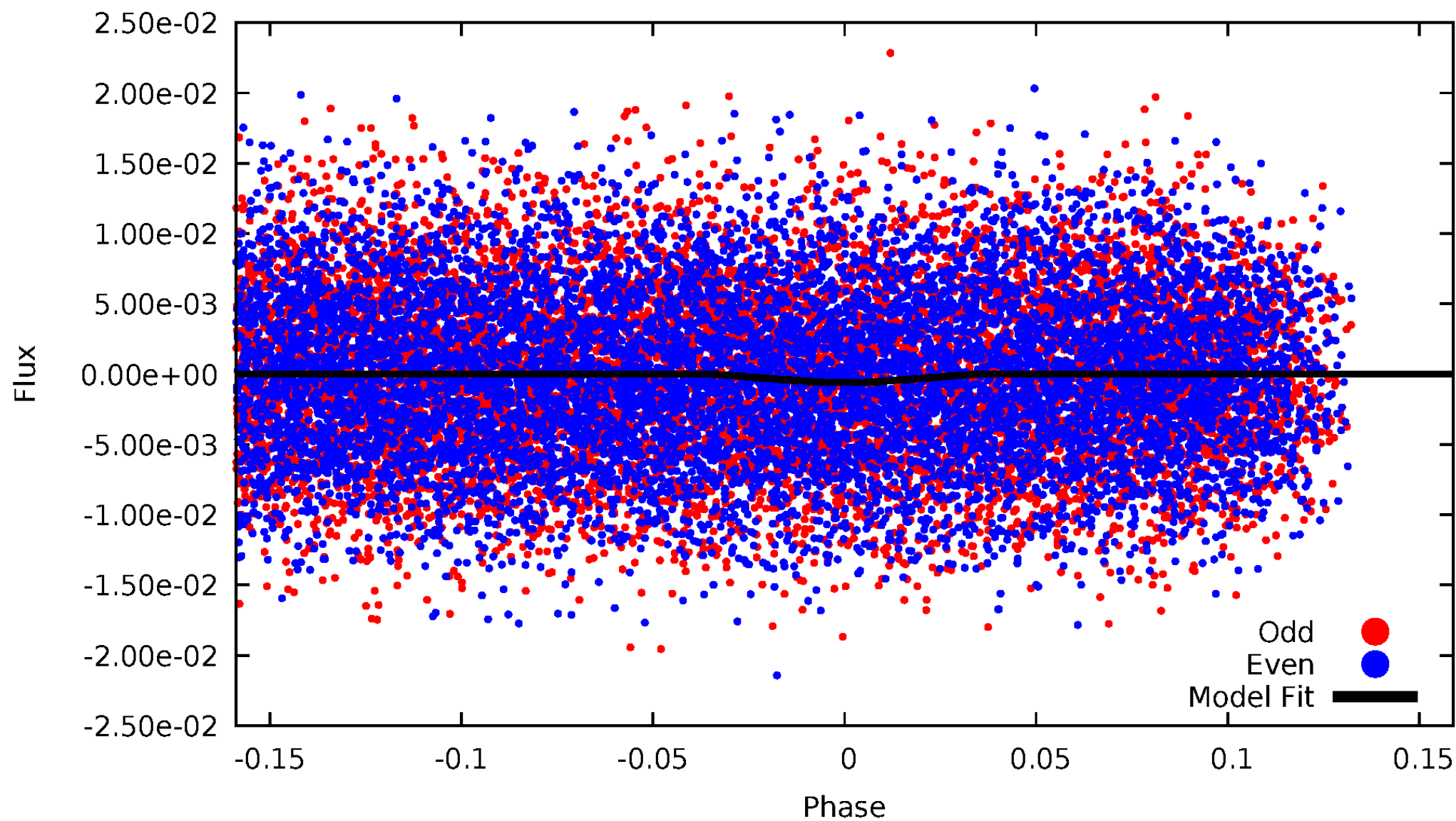
# DV Odd/Even

TCE 008506388-02



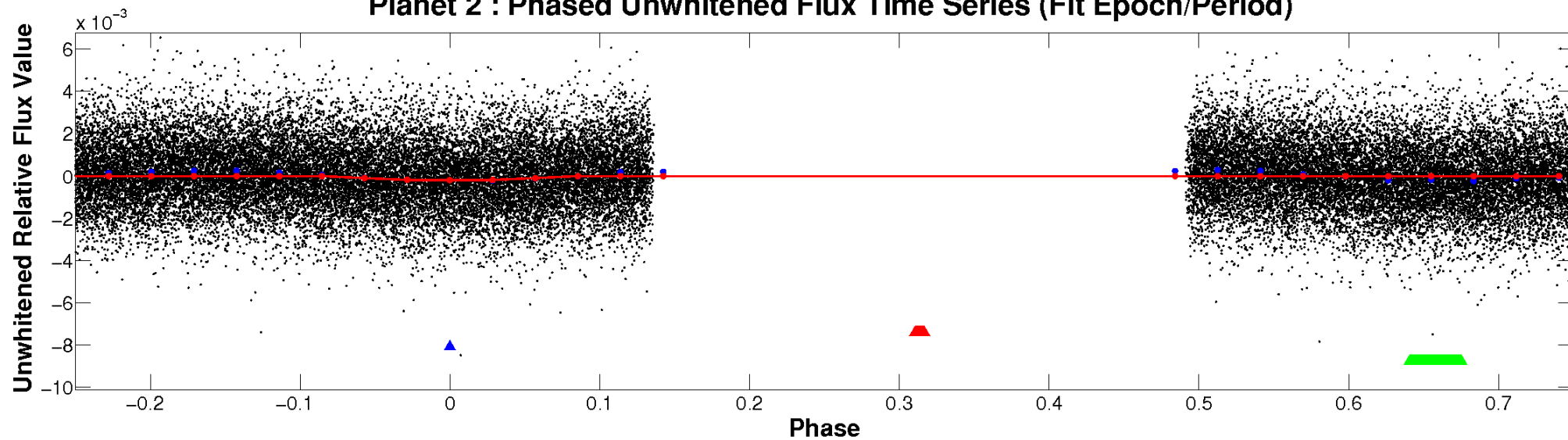
# ALT Odd/Even

TCE 008506388-02

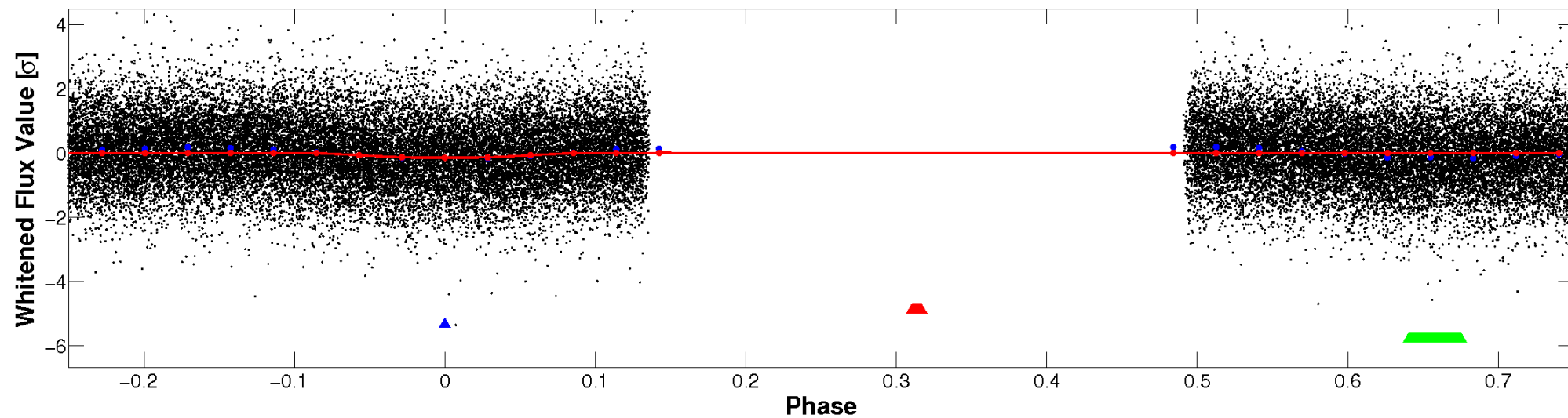


# Non-Whitened Vs. Whitened Light Curve

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

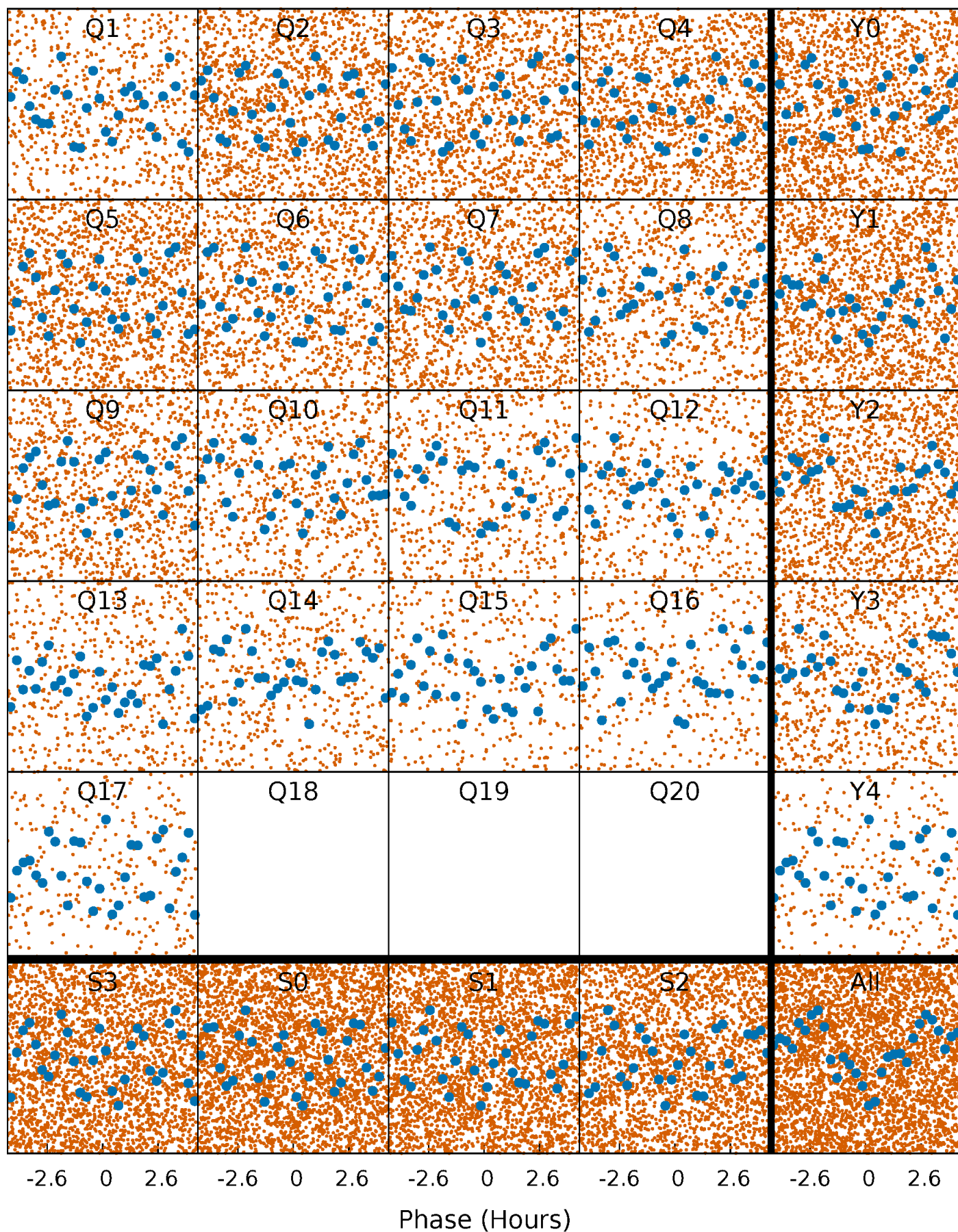


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

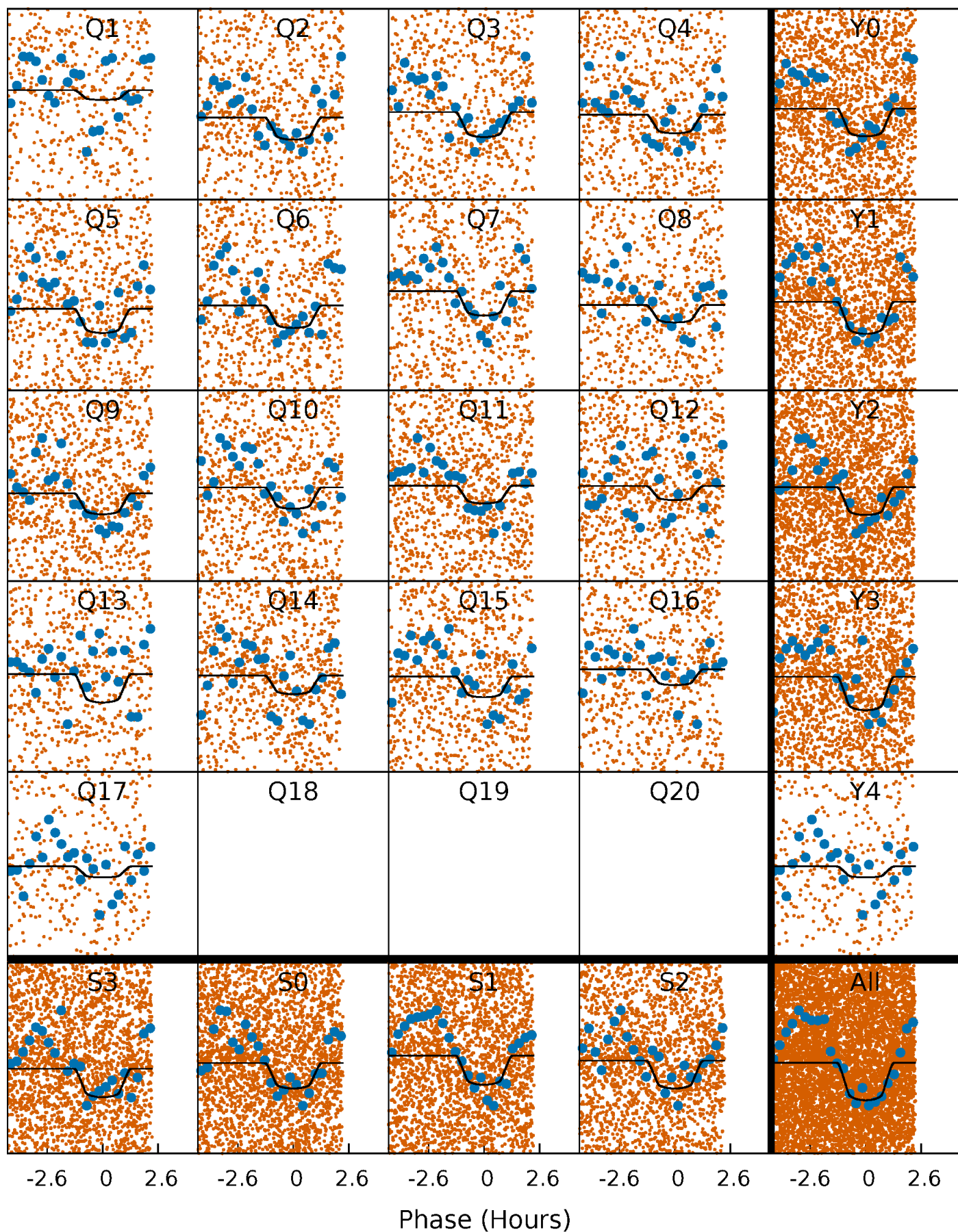
TCE 008506388-02 P= 0.717569 Days  $T_0=131.524547$  (BKJD)





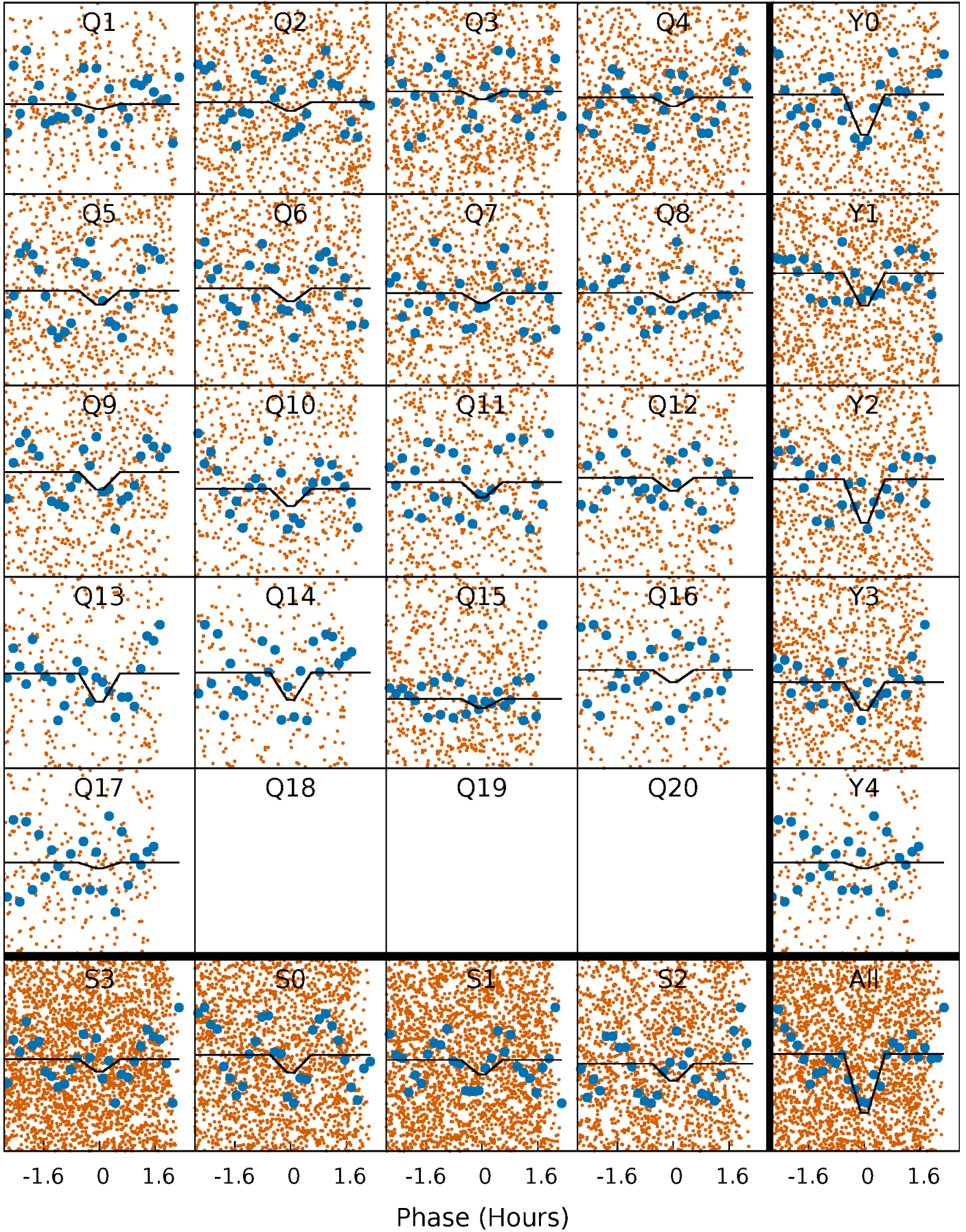
# DV Quarter-Phased Transit Curves

TCE 008506388-02   P= 0.717569 Days    $T_0=131.524547$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

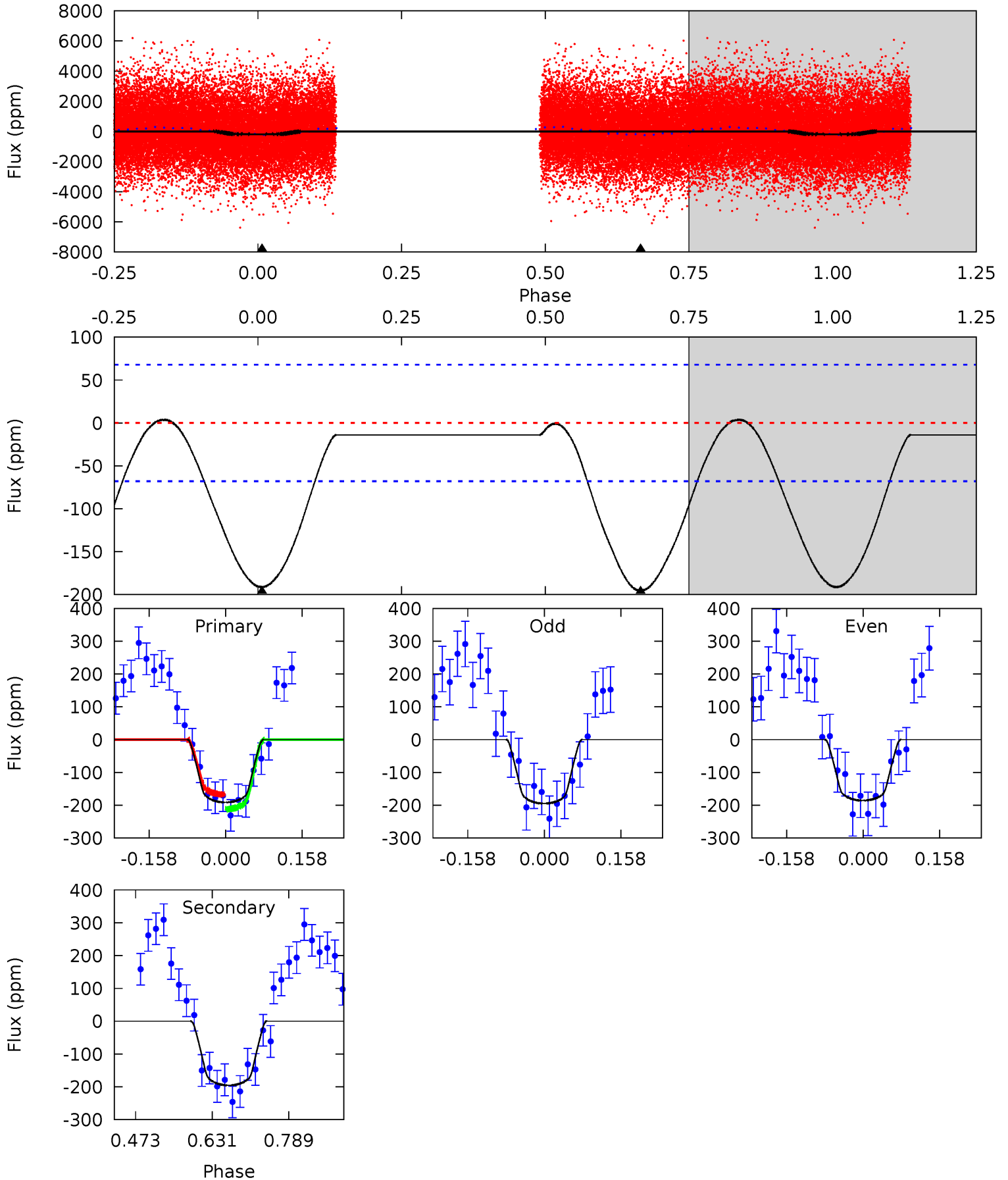
TCE 008506388-02   P= 0.717581 Days    $T_0=131.526795$  (BKJD)



# DV Model-Shift Uniqueness Test

008506388-02, P = 0.717569 Days, E = 130.806978 Days

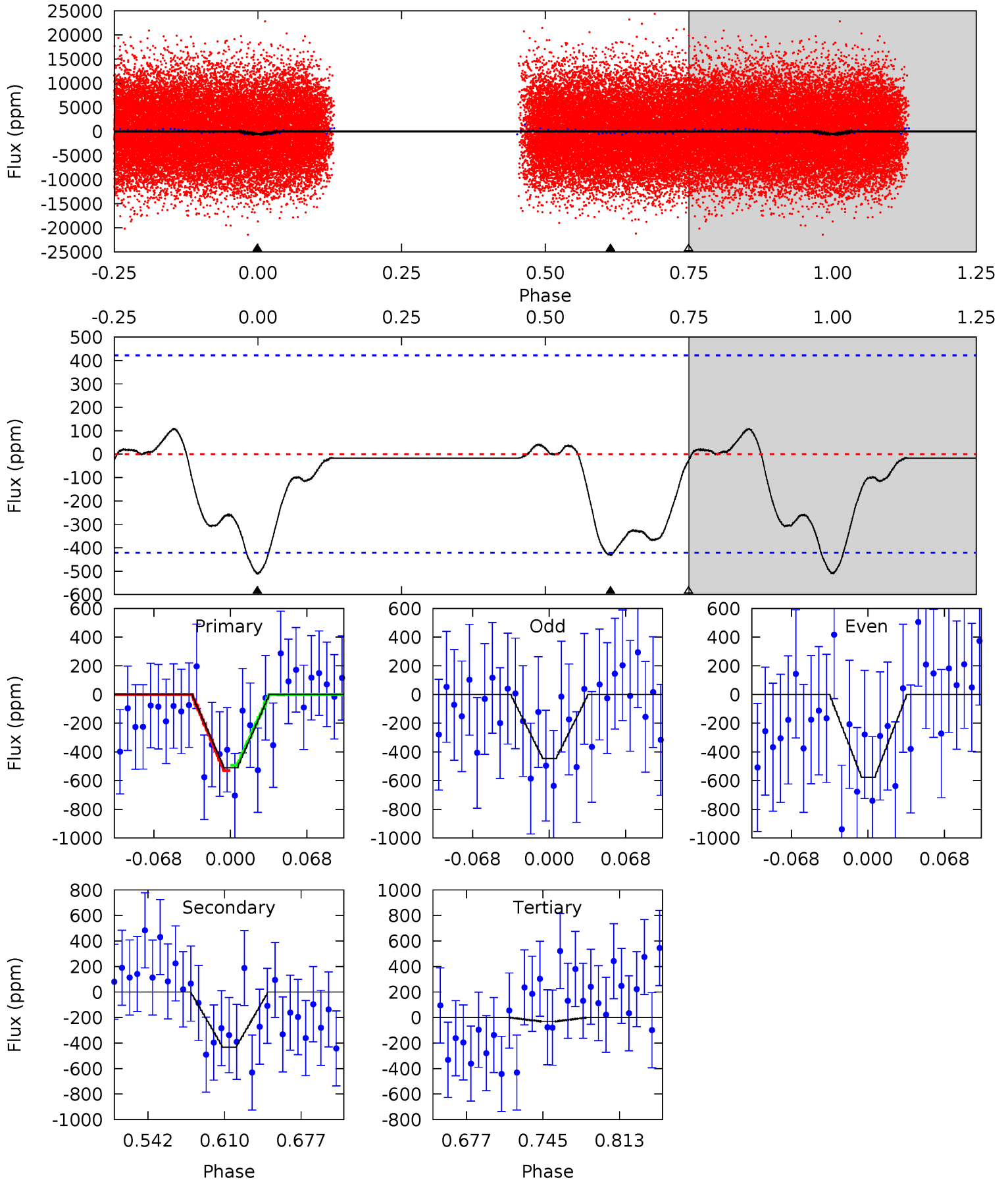
| Pri  | Sec  | Ter | Pos | FA <sub>1</sub> | FA <sub>2</sub> | F <sub>Red</sub> | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM  | Shape | TAT  |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.6 | 12.9 | 0   | 0   | 4.47            | 1.41            | 0.29             | 12.6    | 12.6    | 12.9    | 12.9    | 0.30    | 1.02 | 0.02  | 1.45 |



# Alt Model-Shift Uniqueness Test

008506388-02, P = 0.717581 Days, E = 130.809214 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  |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.63 | 4.77 | 0.34 | 0   | 4.65            | 1.83            | 1.50             | 5.29    | 5.63    | 4.43    | 4.77    | 0.72    | 0.99 | 0.18  | 0.21 |





### Stellar Parameters For KIC 008506388

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $7334^{+205}_{-334}$ | $3.617^{+0.486}_{-0.054}$ | $0.080^{+0.200}_{-0.300}$ | $3.737^{+0.480}_{-1.918}$ | $2.106^{+0.233}_{-0.583}$ | $0.057^{+0.301}_{-0.015}$                     |
|        | +3%/-5%              | +13%/-1%                  | +250%/-375%               | +13%/-51%                 | +11%/-28%                 | +530%/-26%                                    |
| Source | KIC0                 | 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 008506388-02 / KOI

| Detrend | Depth (ppm)   | $R_p$ ( $R_{\oplus}$ ) | $T_{\text{max}}$ (K) | $T_{\text{obs}}$ (K)   | $A_{\text{obs}}$          |
|---------|---------------|------------------------|----------------------|------------------------|---------------------------|
| DV      | $-196 \pm 15$ | $5.02^{+3.54}_{-2.68}$ | $5786^{+506}_{-686}$ | $6716^{+4683}_{-1922}$ | $1.729^{+5.793}_{-1.135}$ |
| Alt.    | $-433 \pm 91$ | $8.91^{+3.95}_{-3.53}$ | $5849^{+450}_{-739}$ | $6051^{+2021}_{-1238}$ | $1.212^{+2.046}_{-0.631}$ |

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

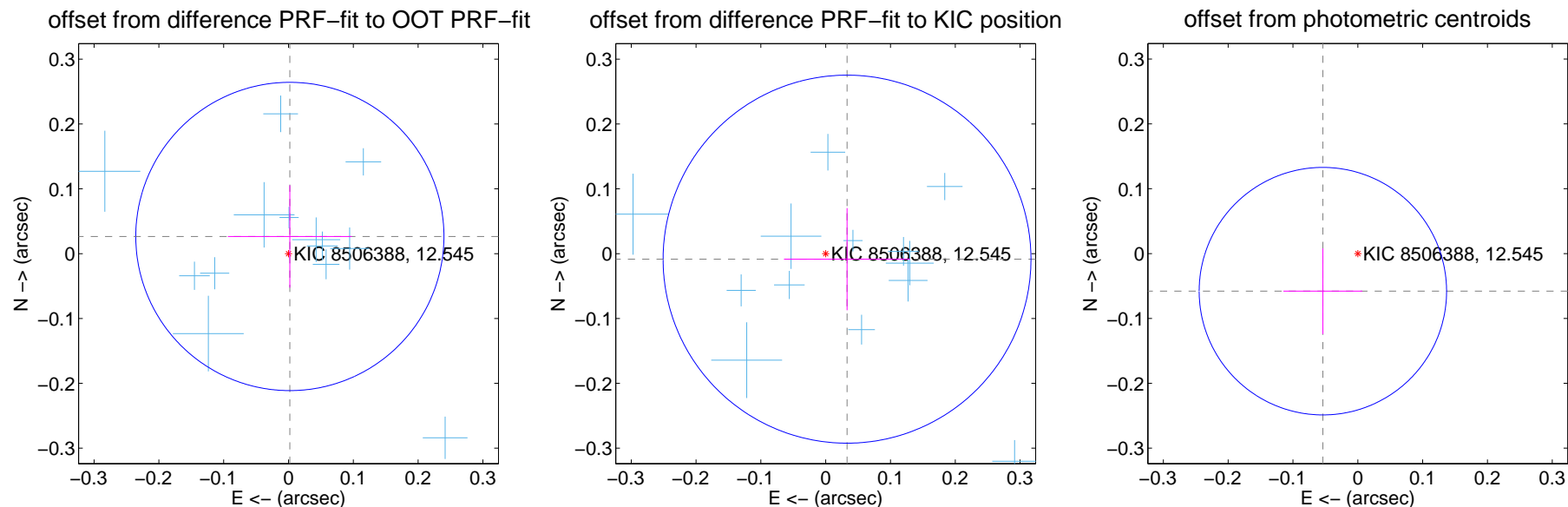
## DV Centroid Data

Supplemental centroid analysis for 008506388-02. Kepler magnitude: 12.54. Transit SNR 10.63

There are 17 quarters with good PRF difference image offsets

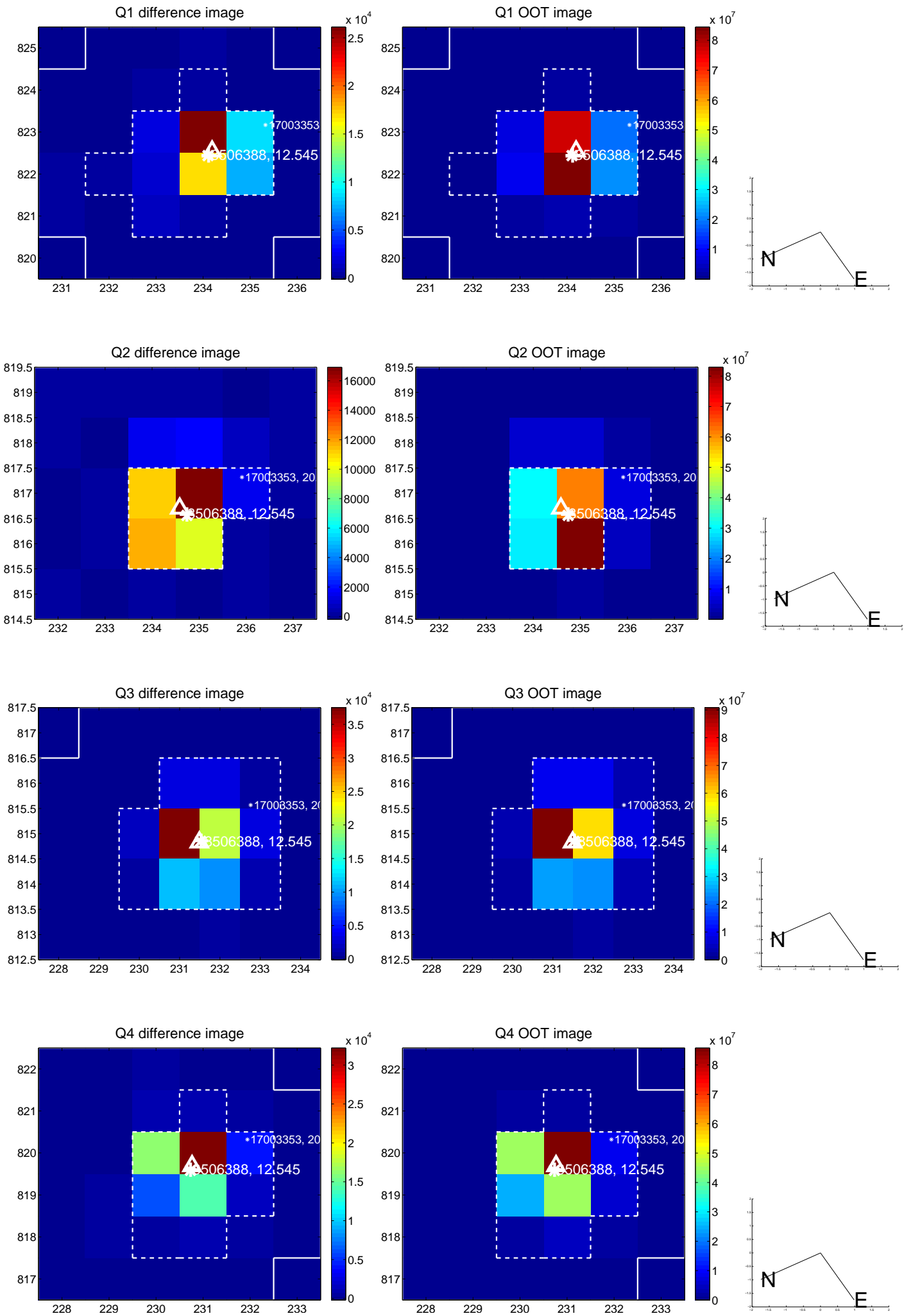
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA        | $\Delta$ Dec       |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT          | $0.027 \pm 0.079$  | 0.34                | $-0.002 \pm 0.096$ | $0.027 \pm 0.079$  |
| PRF-fit source offset from KIC position | $0.034 \pm 0.095$  | 0.36                | $-0.033 \pm 0.097$ | $-0.009 \pm 0.079$ |
| photometric centroid source offset      | $0.08 \pm 0.06$    | 1.24                | $0.05 \pm 0.06$    | $-0.06 \pm 0.07$   |

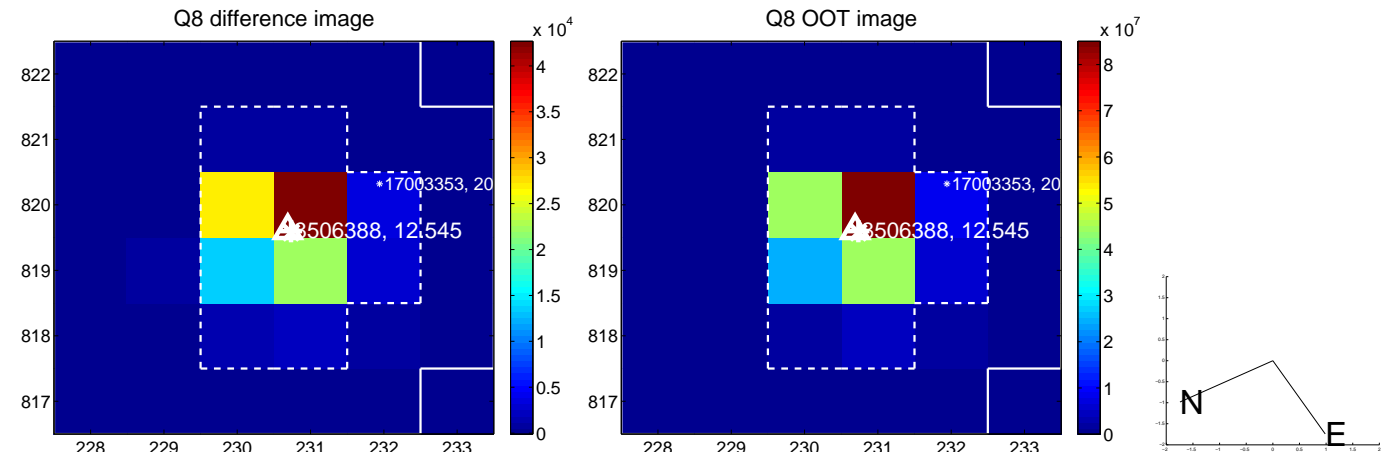
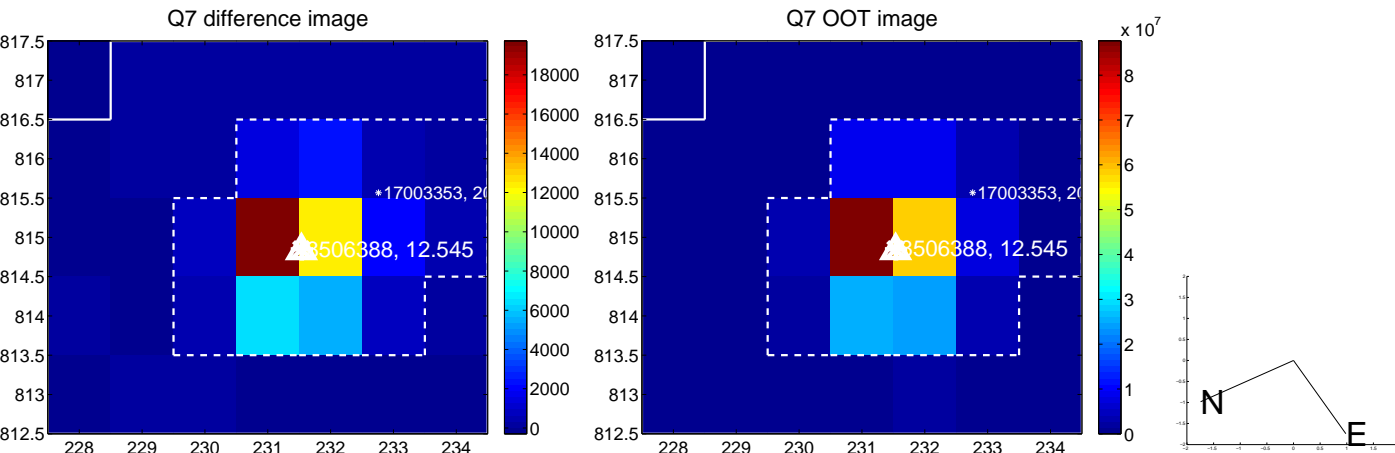
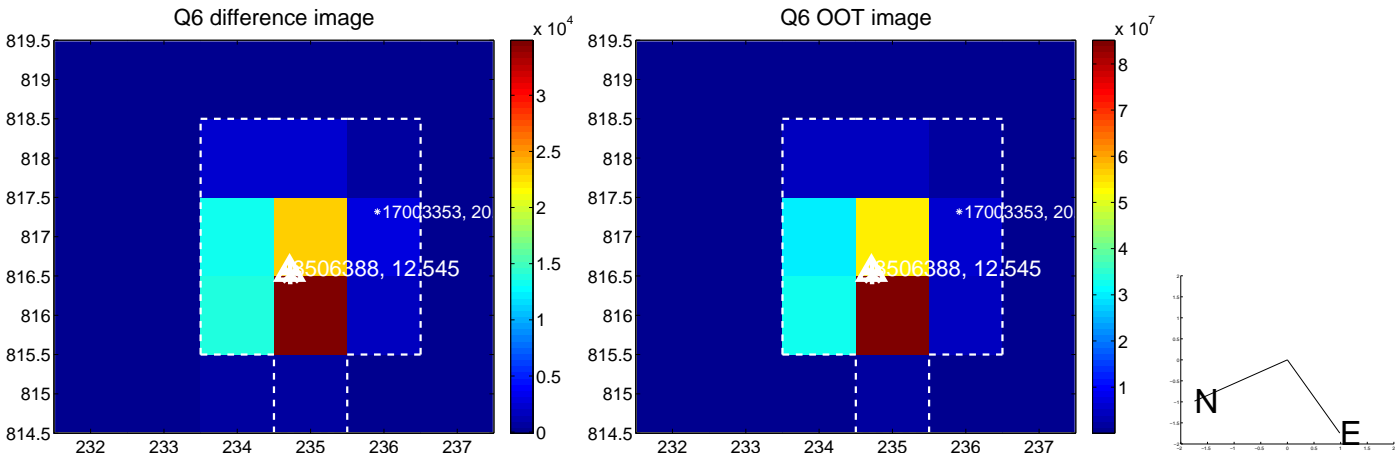
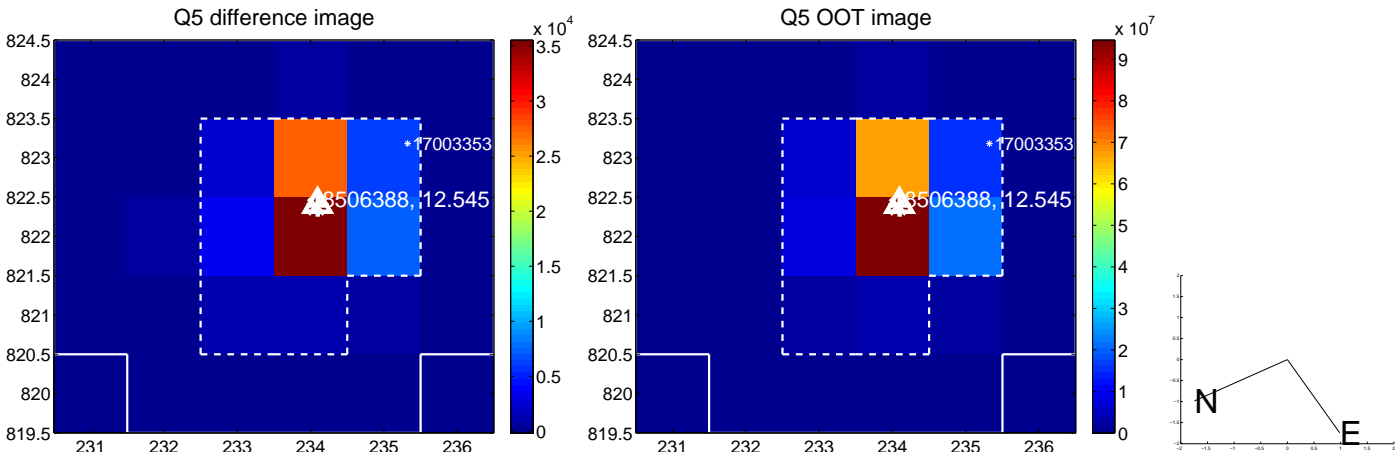


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

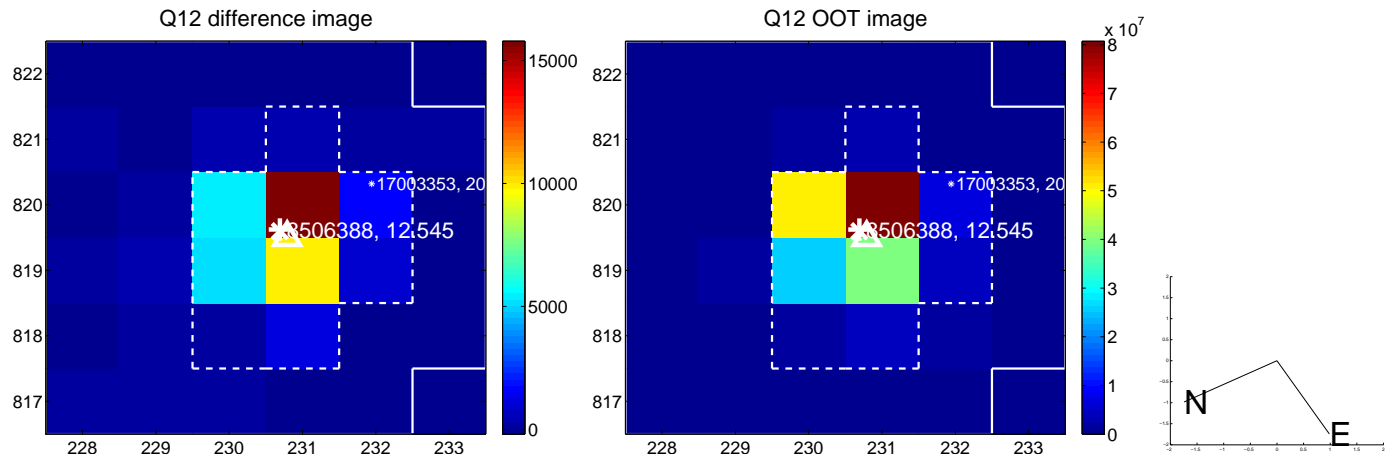
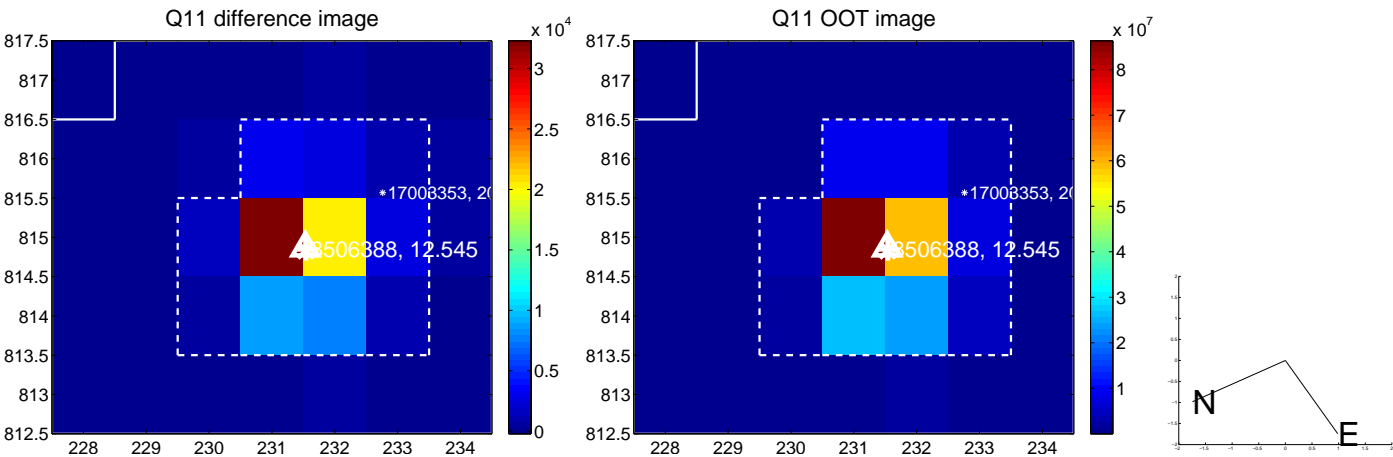
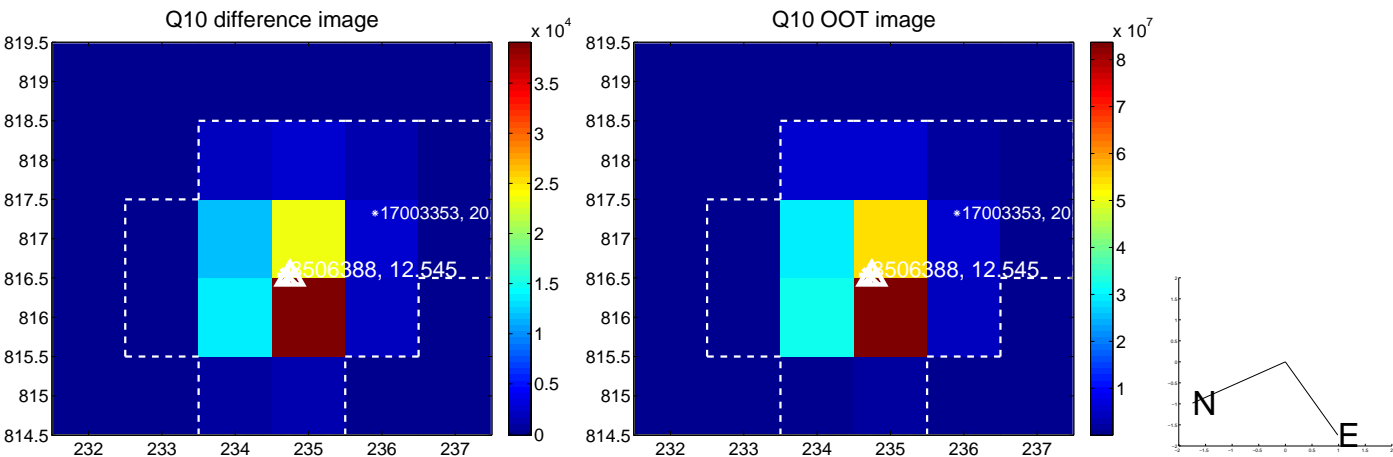
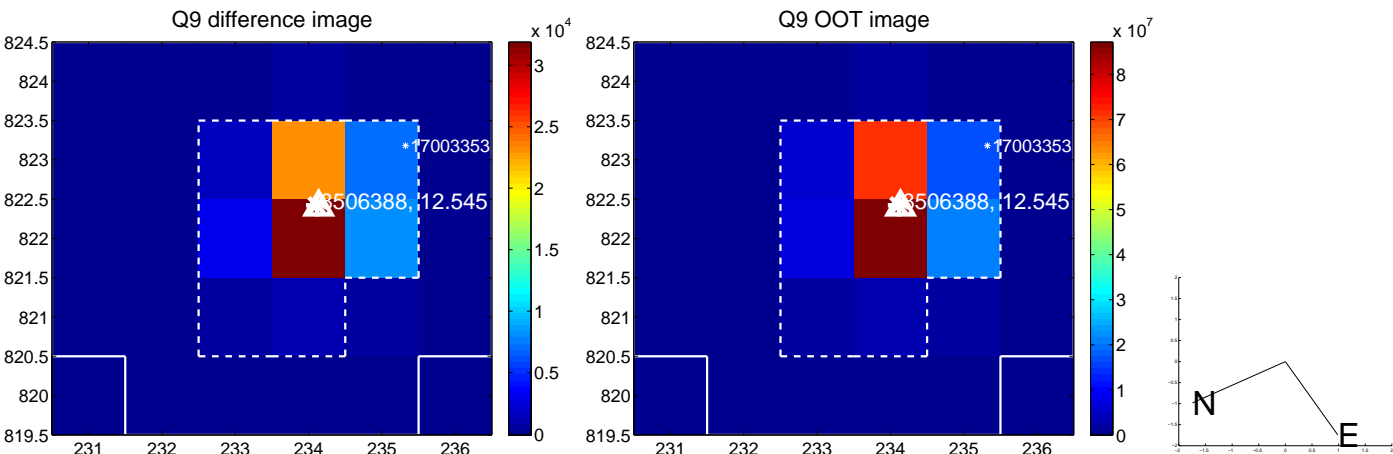
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

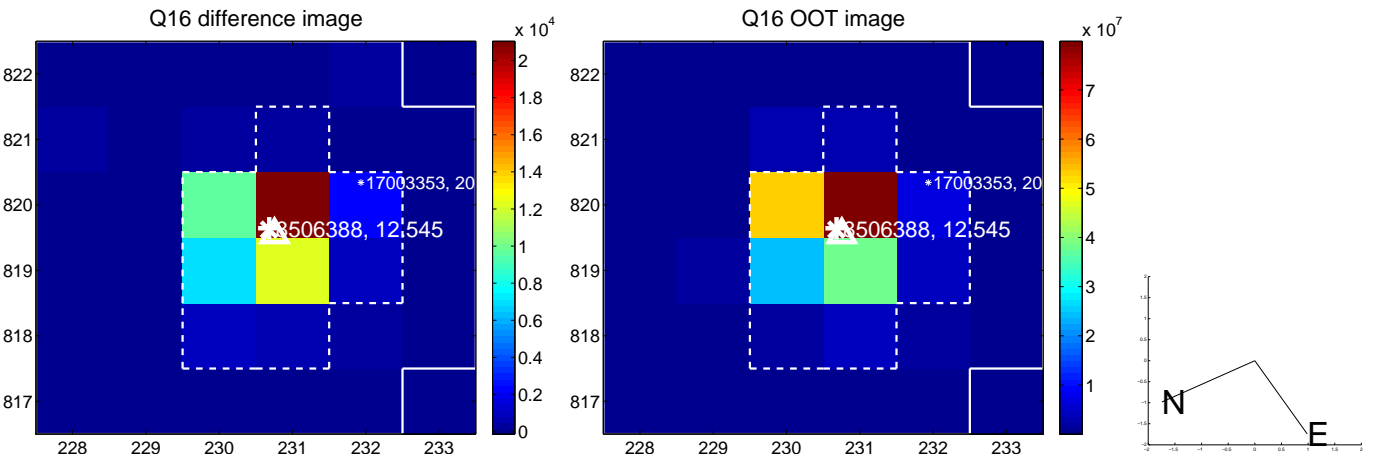
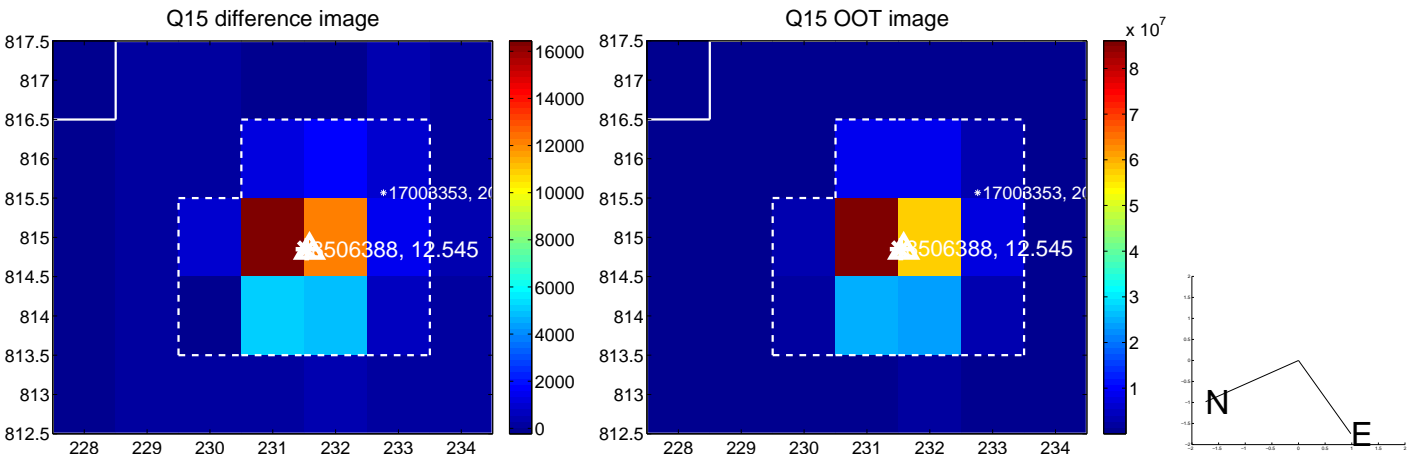
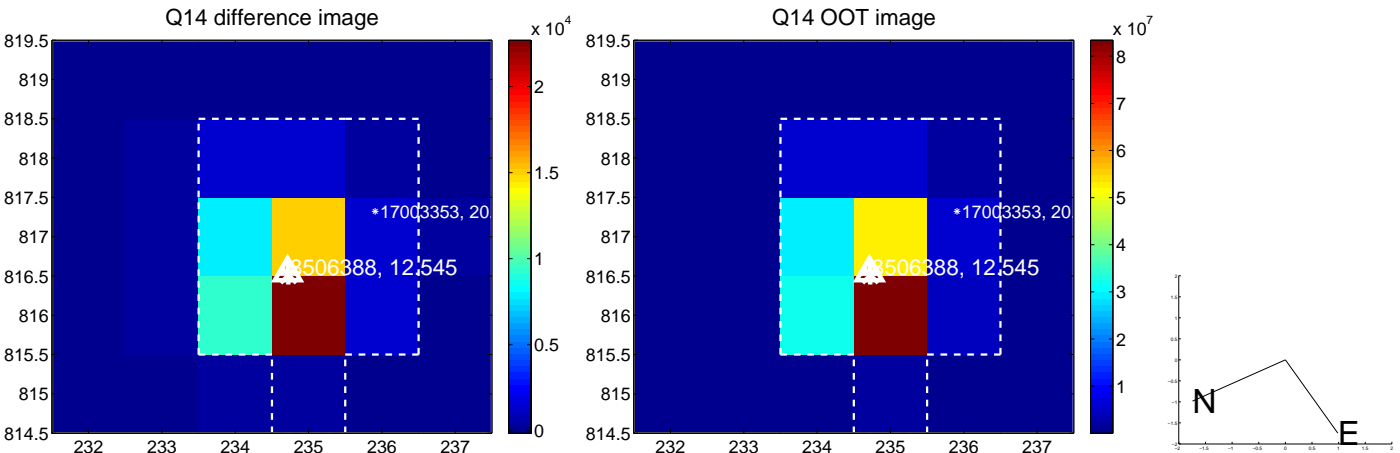
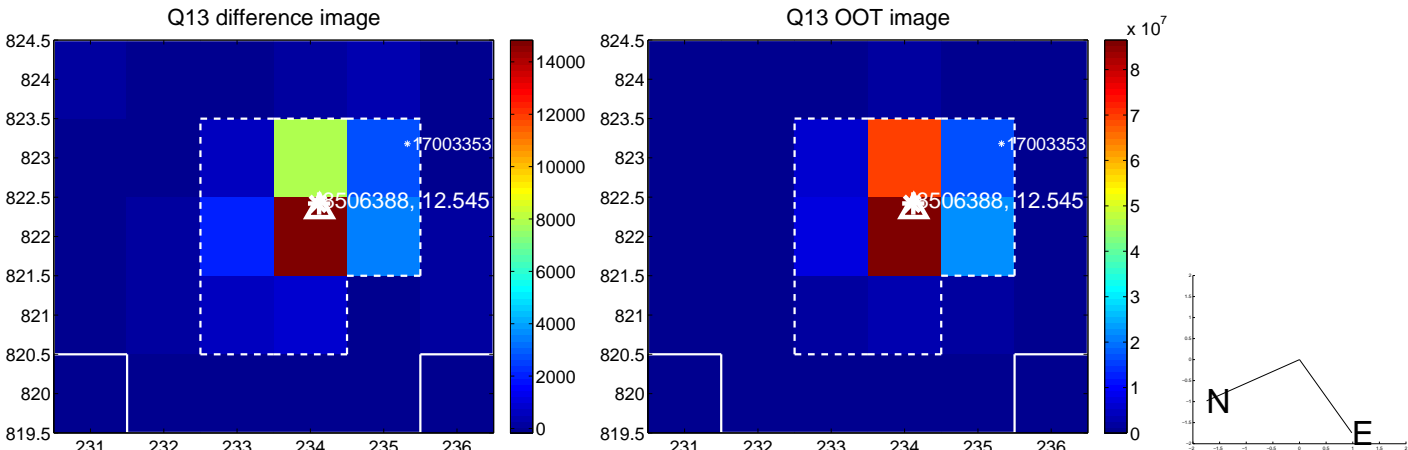


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

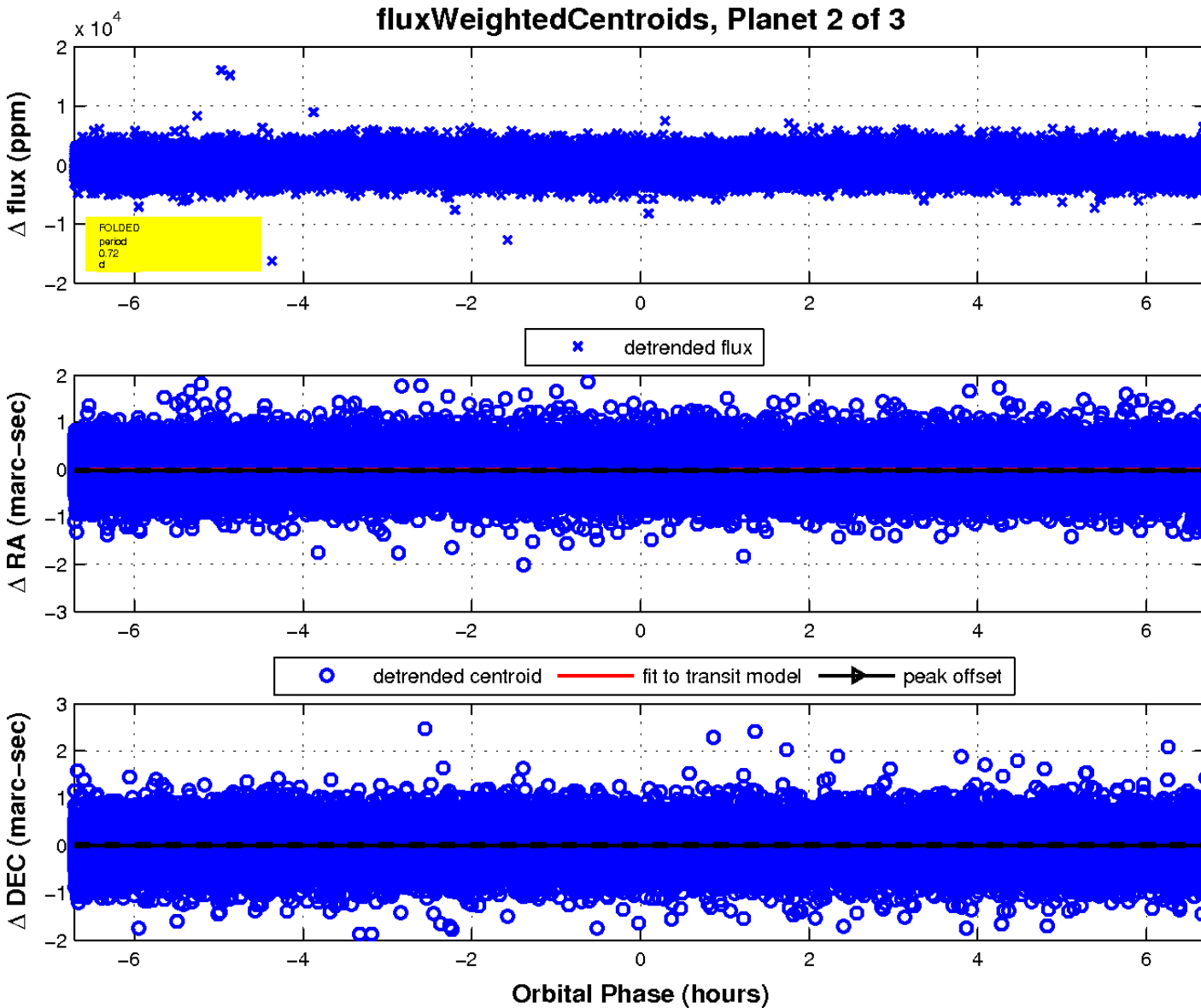
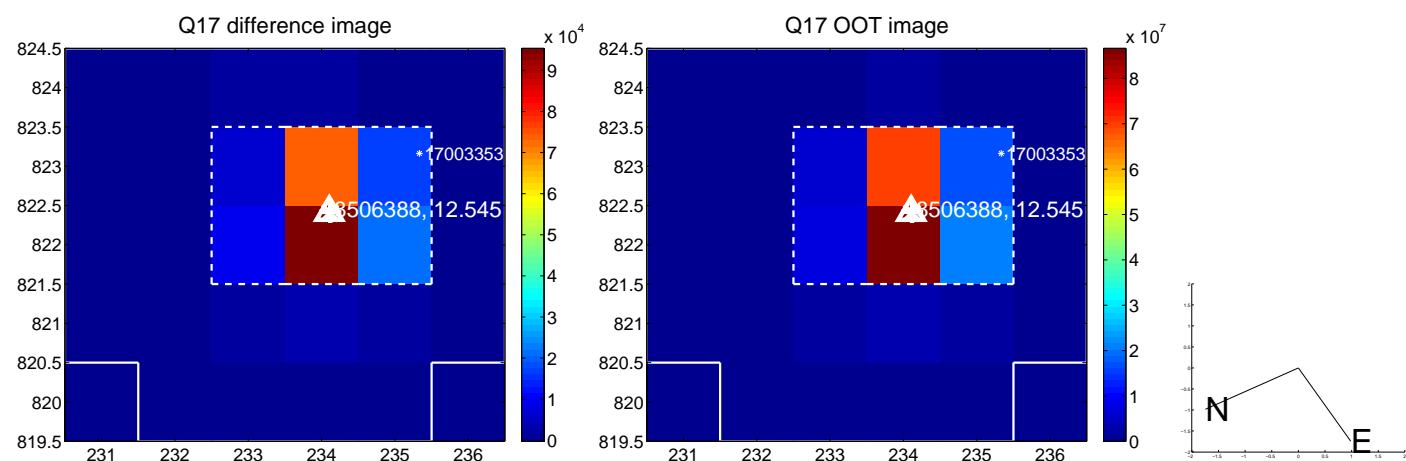




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value

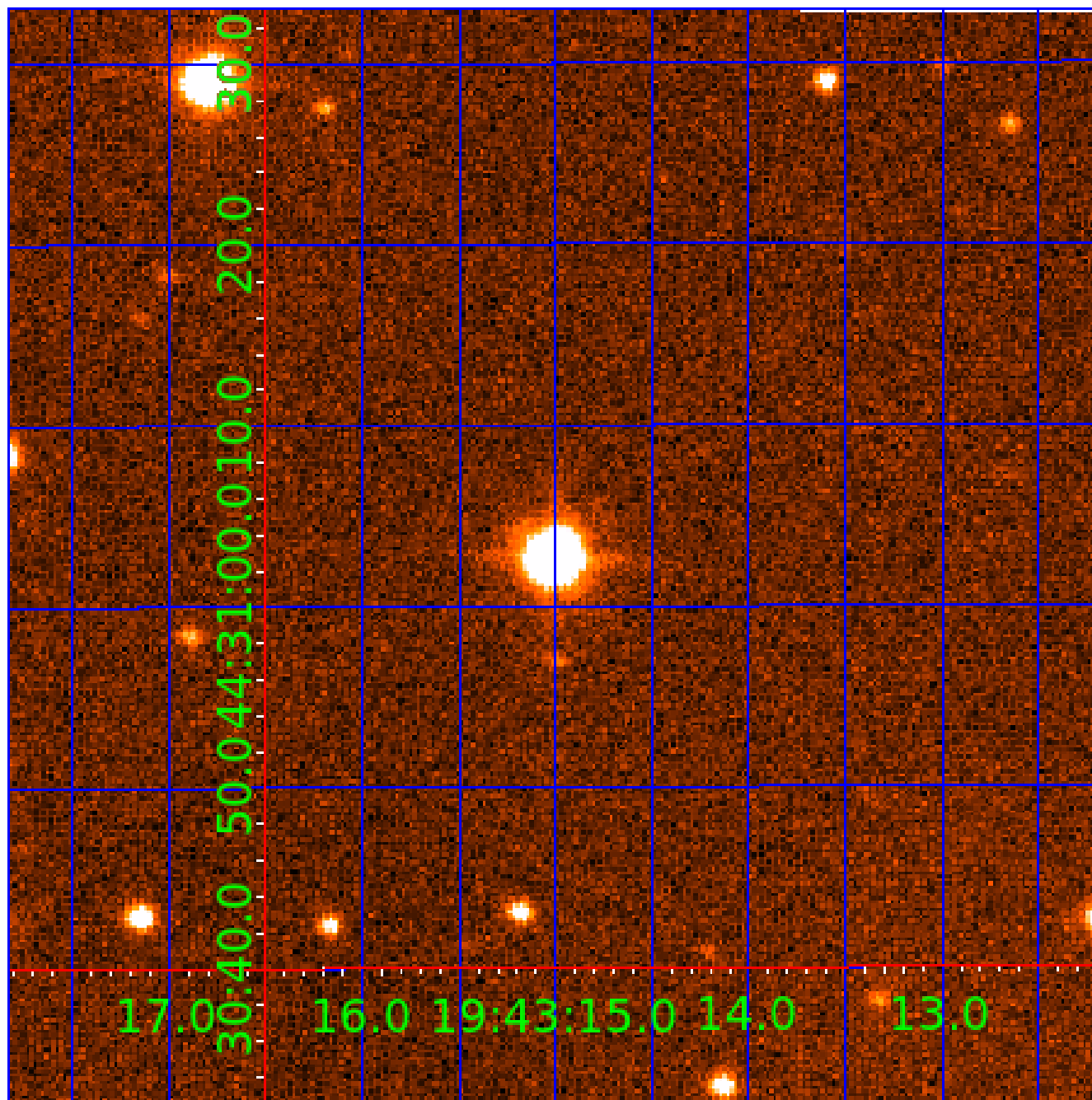


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008506388

## 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) | $R_p$ ( $R_{\oplus}$ ) | $S_p$ ( $S_{\oplus}$ ) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008506388-01 | OBS      | No   | 0.717566      | 131.751800   | 193.4       | 1.904            | 11.9 | 9.9  | 3.74                        | 7334            | 6.04                   | 89424.65               |
| 008506388-02 | OBS      | No   | 0.717569      | 131.524547   | 192.2       | 2.238            | 11.1 | 10.6 | 3.74                        | 7334            | 6.02                   | 89424.29               |
| 008506388-03 | OBS      | No   | 0.717581      | 131.984352   | 158.2       | 2.021            | 10.9 | 8.7  | 3.74                        | 7334            | 4.76                   | 89422.27               |

## Robovetter Results

| TCE          | Run Type | Disp | Score | N | S | C | E | Comments                                       |
|--------------|----------|------|-------|---|---|---|---|--|
| 008506388-01 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT  |
| 008506388-02 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 008506388-03 | OBS      | FP   | 0.00  | 1 | 0 | 0 | 0 | LPP_DV—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.

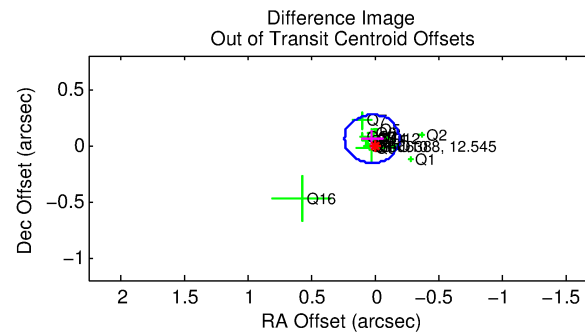
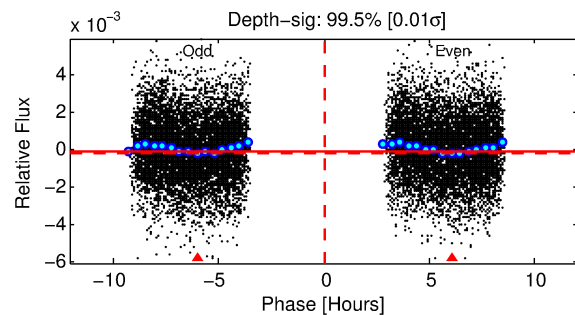
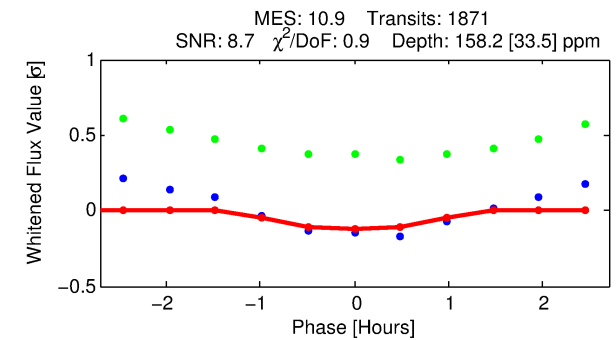
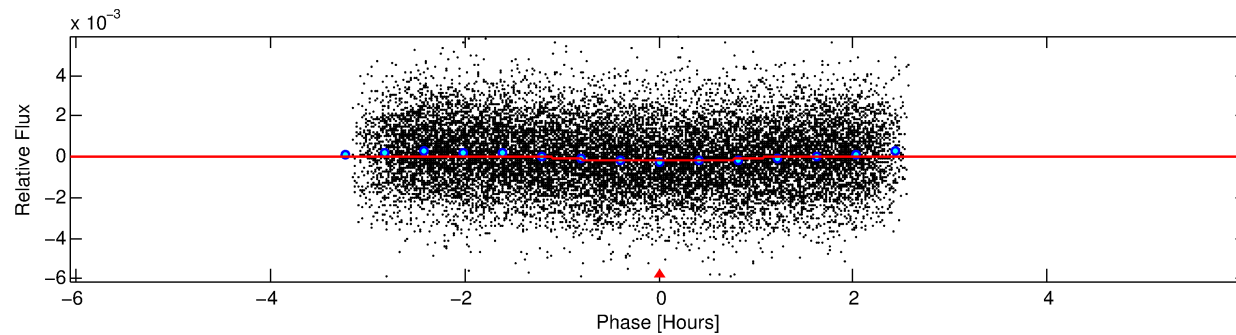
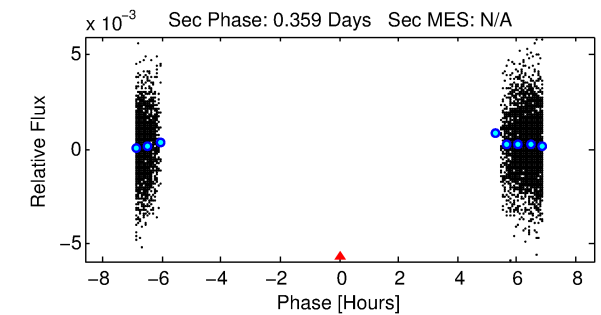
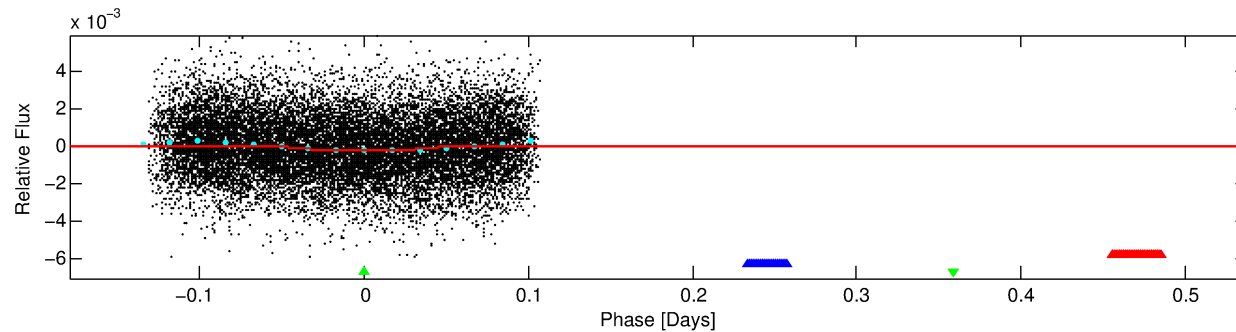
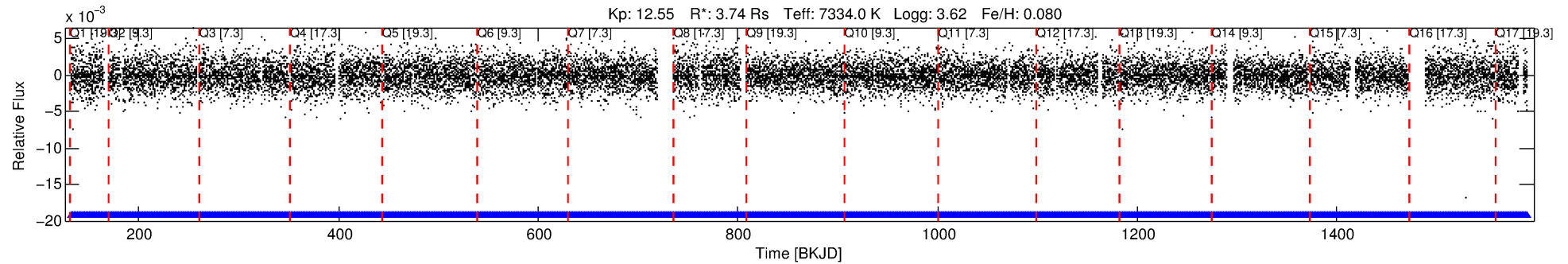
## Ephemeris Match Information For 008506388-03

No Significant Match Found



# DV One-Page Summary

KIC: 8506388 Candidate: 3 of 3 Period: 0.718 d



## DV Fit Results:

Period = 0.71758 [0.00002] d  
Epoch = 131.9844 [0.0037] BKJD  
Rp/R\* = 0.0117 [0.0158]  
a/R\* = 2.80 [18.60]  
b = 0.08 [96.19]  
Seff = 89422.27 [75180.28]  
Teq = 4409 [927] K  
Rp = 4.76 [6.87] Re  
a = 0.0201 [0.0102] AU

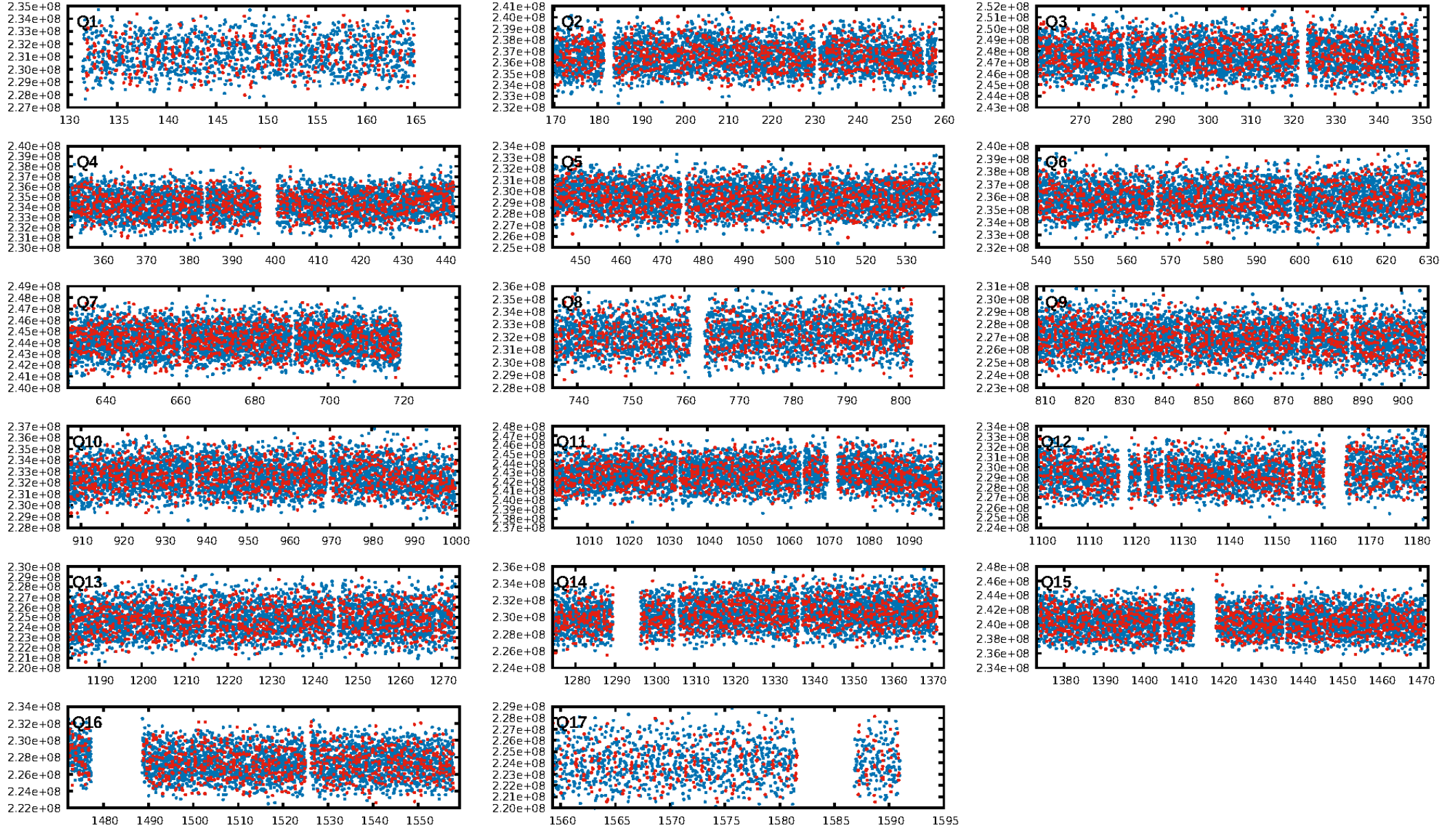
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1786/1786]  
GhostDiagnostic-chr: 1.24  
Centroid-sig: 1.8%  
Centroid-so: 0.147 arcsec [1.94σ]  
OotOffset-rm: 0.060 arcsec [0.83σ]  
KicOffset-rm: 0.016 arcsec [0.21σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 0.00 [0/17]

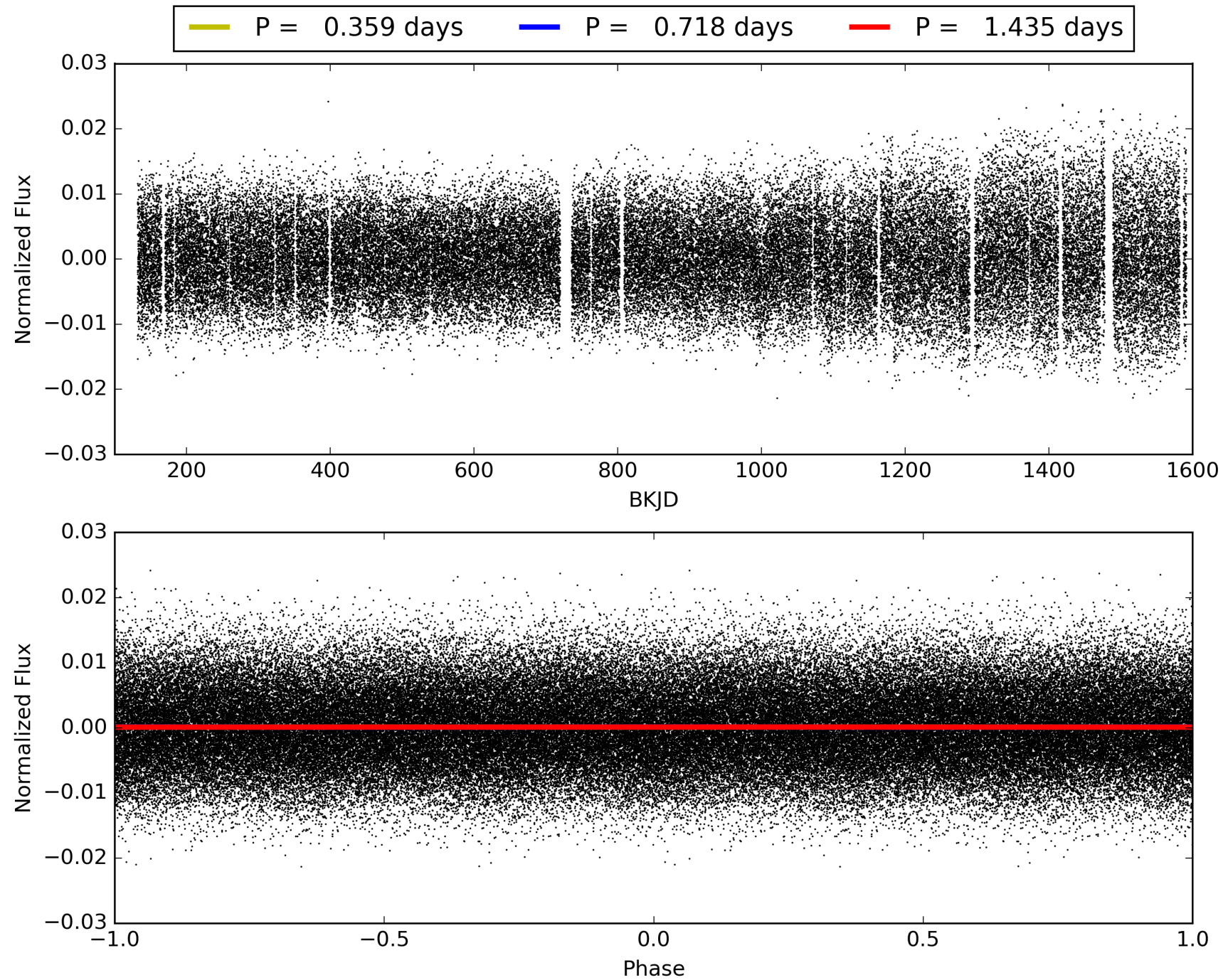
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:40:06 Z

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

# TCE 008506388-03, PDC Light Curves



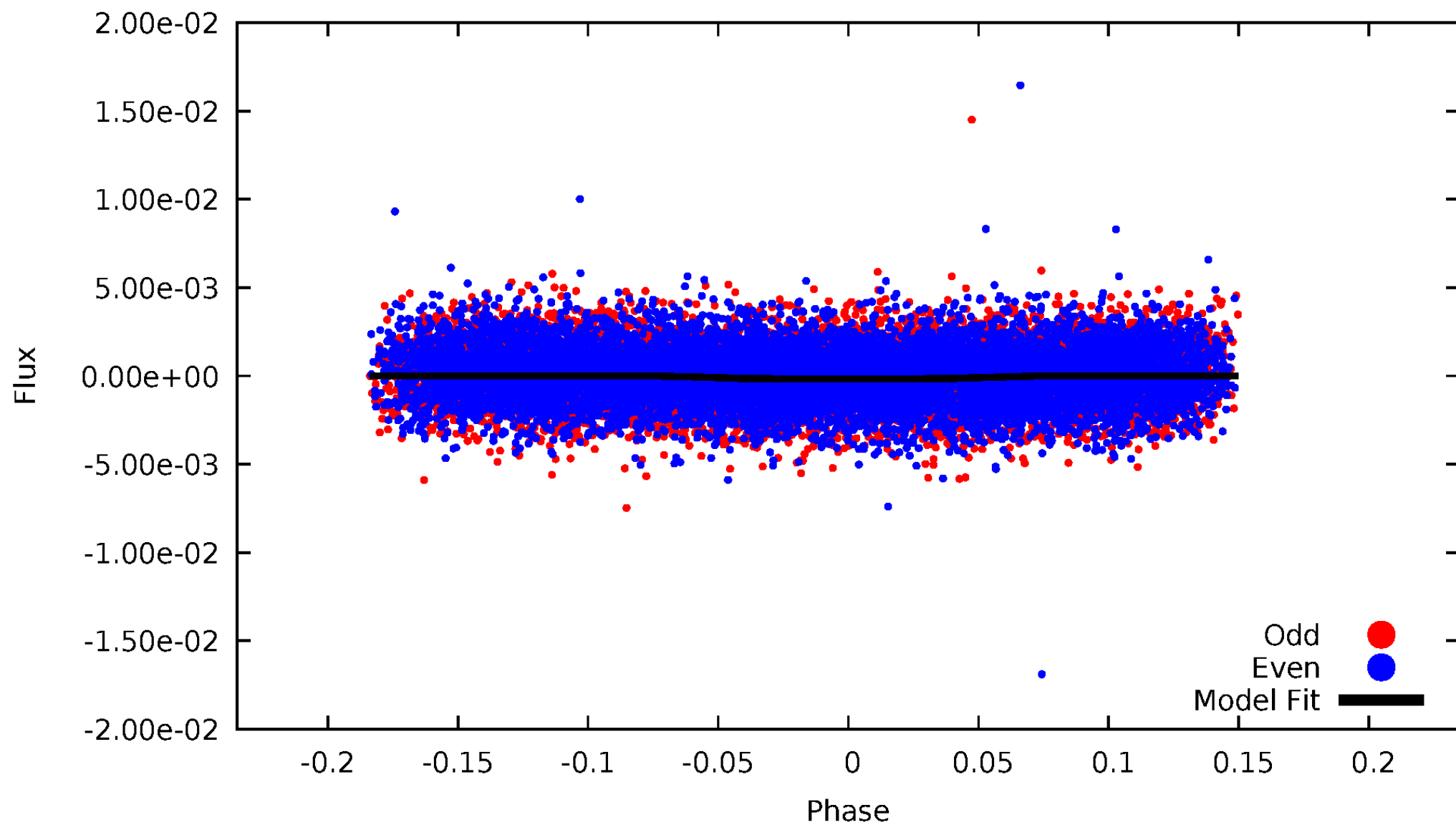
TCE 008506388-03





# DV Odd/Even

TCE 008506388-03



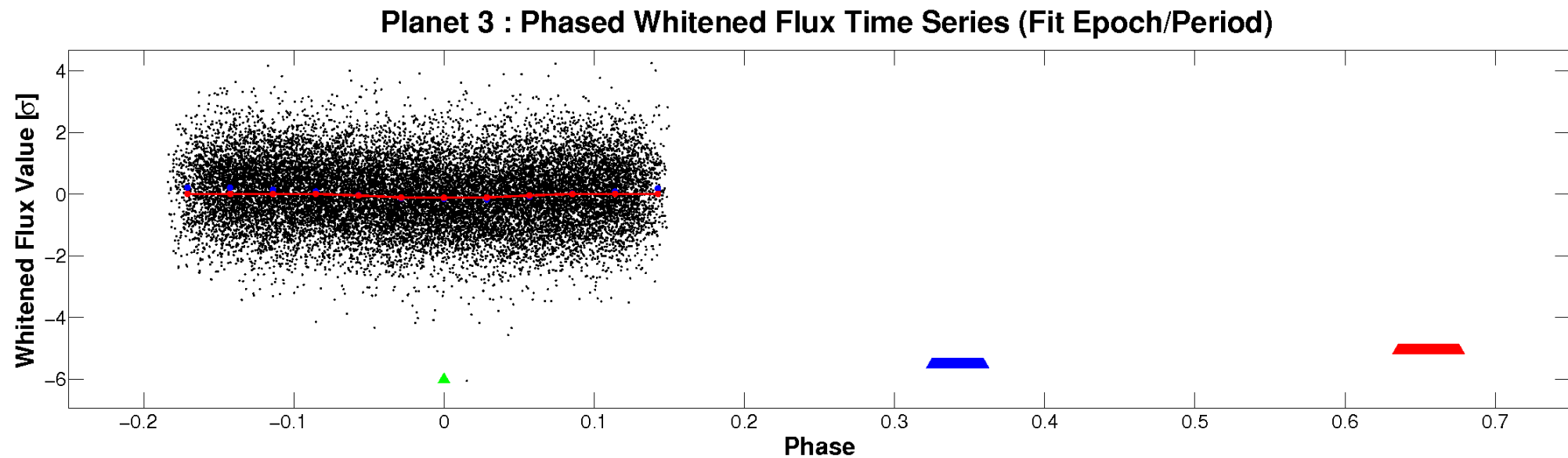
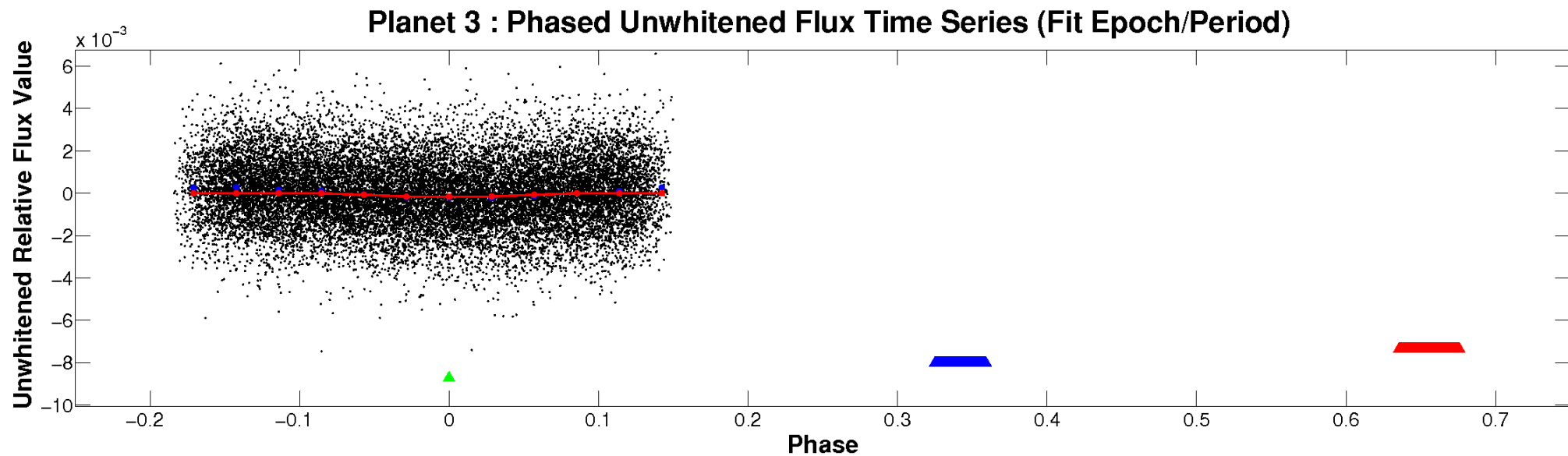




ALT Odd/Even

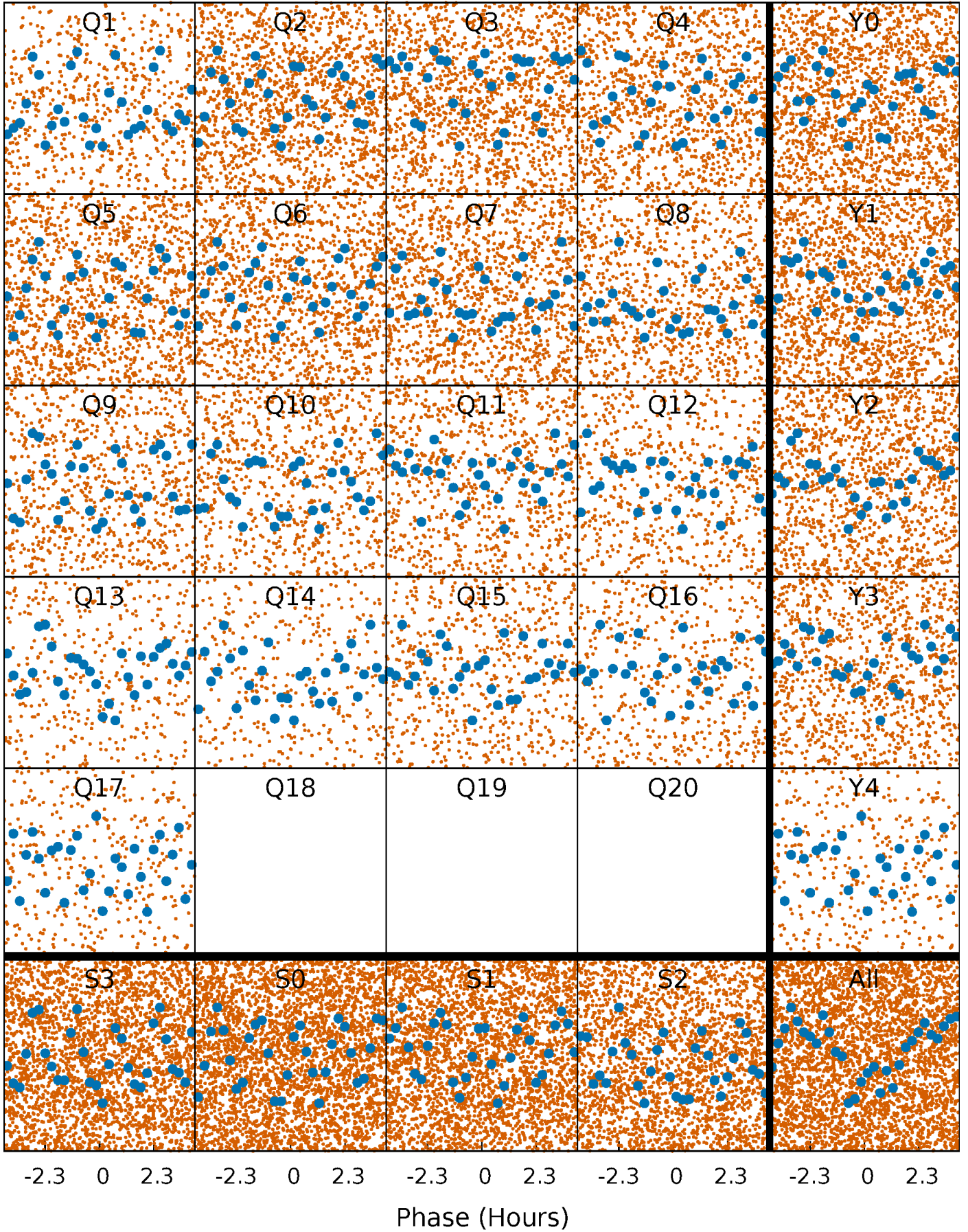
This plot does not exist for this TCE.

# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

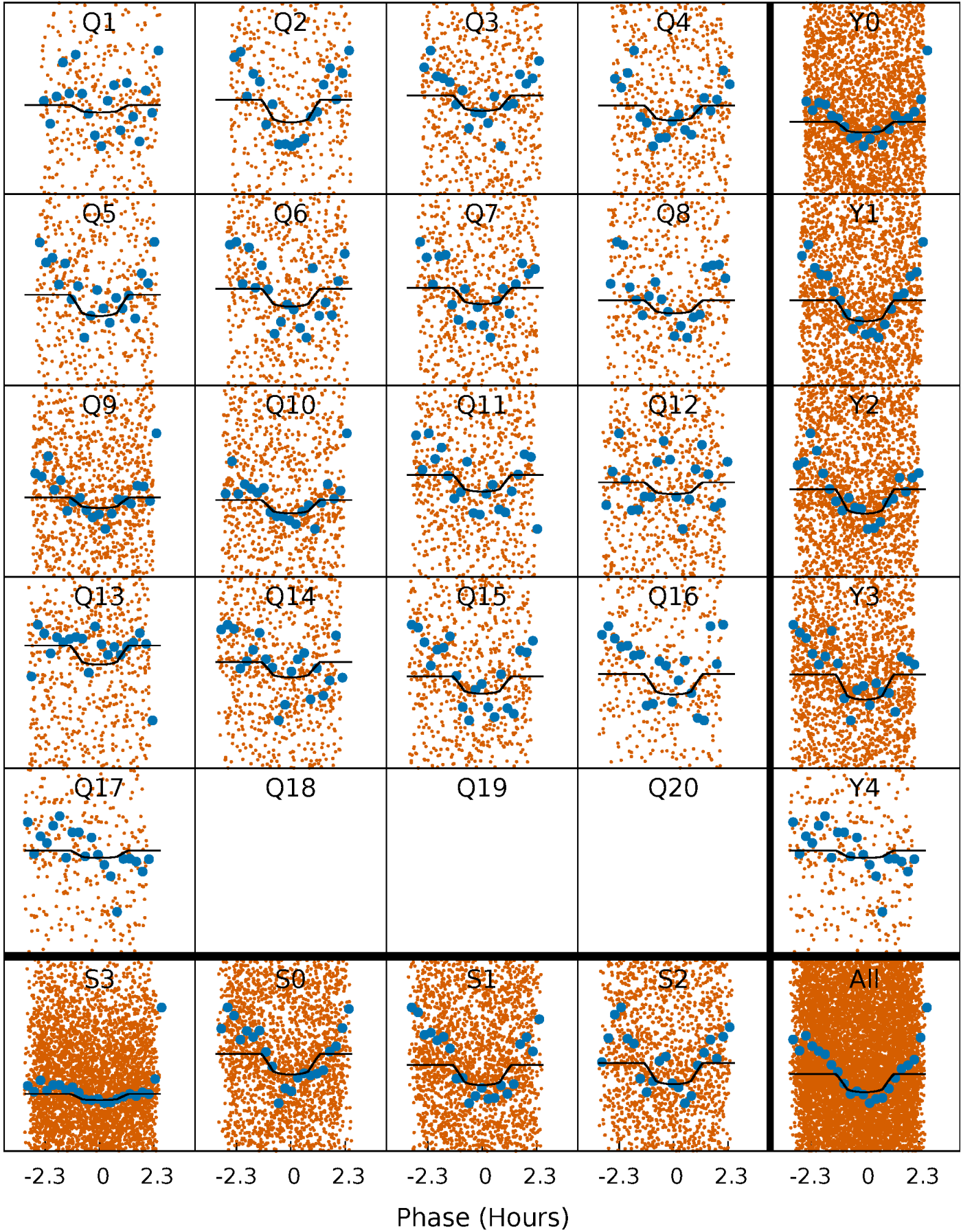
TCE 008506388-03   P= 0.717581 Days    $T_0=131.984352$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008506388-03     $P = 0.717581$  Days     $T_0 = 131.984352$  (BKJD)

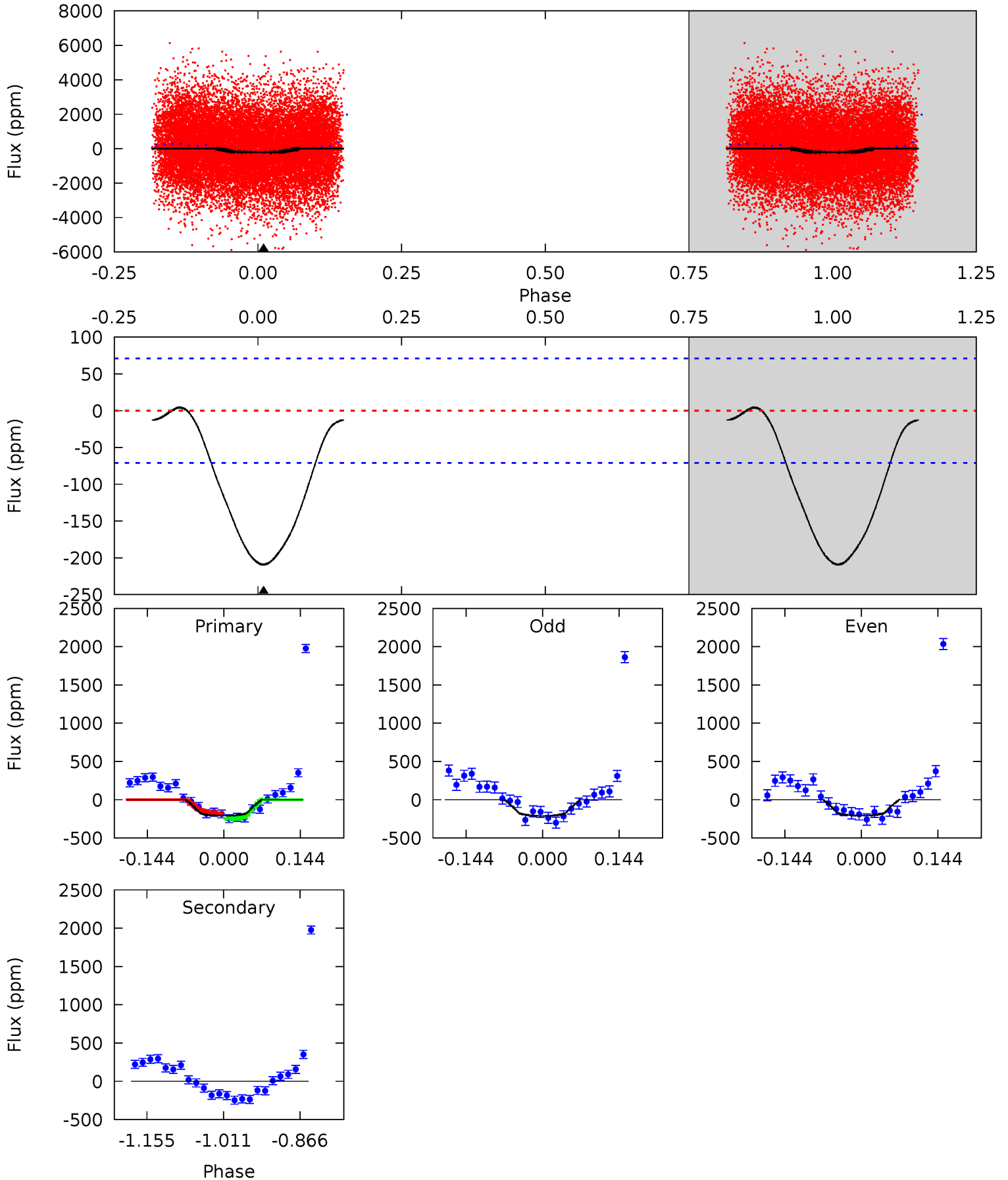


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008506388-03, P = 0.717581 Days, E = 131.266771 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  |
|------|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.2 | 0   | 0   | 0   | 4.49            | 1.46            | 0.32             | 13.2    | 13.2    | 0       | 0       | 0.07    | 0.93 | 0.02  | 2.29 |



## Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008506388

|        | $T_{\text{eff}}(K)$  | $\log(g)$                 | [Fe/H]                    | $R$ ( $R_{\odot}$ )       | $M(M_{\odot})$            | $p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ ) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
|        | $7334^{+205}_{-334}$ | $3.617^{+0.486}_{-0.054}$ | $0.080^{+0.200}_{-0.300}$ | $3.737^{+0.480}_{-1.918}$ | $2.106^{+0.233}_{-0.583}$ | $0.057^{+0.301}_{-0.015}$                     |
|        | +3%/-5%              | +13%/-1%                  | +250%/-375%               | +13%/-51%                 | +11%/-28%                 | +530%/-26%                                    |
| Source | KIC0                 | 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 008506388-03 / KOI

| Detrend | Depth (ppm) | $R_p$ ( $R_{\oplus}$ ) | $T_{max}$ (K)        | $T_{obs}$ (K)         | $A_{obs}$                 |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV      | $0 \pm 16$  | $5.82^{+5.12}_{-3.90}$ | $5830^{+460}_{-669}$ | $-4807^{+968}_{-594}$ | $0.002^{+0.157}_{-0.204}$ |
| Alt.    | N/A         | N/A                    | N/A                  | N/A                   | N/A                       |

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



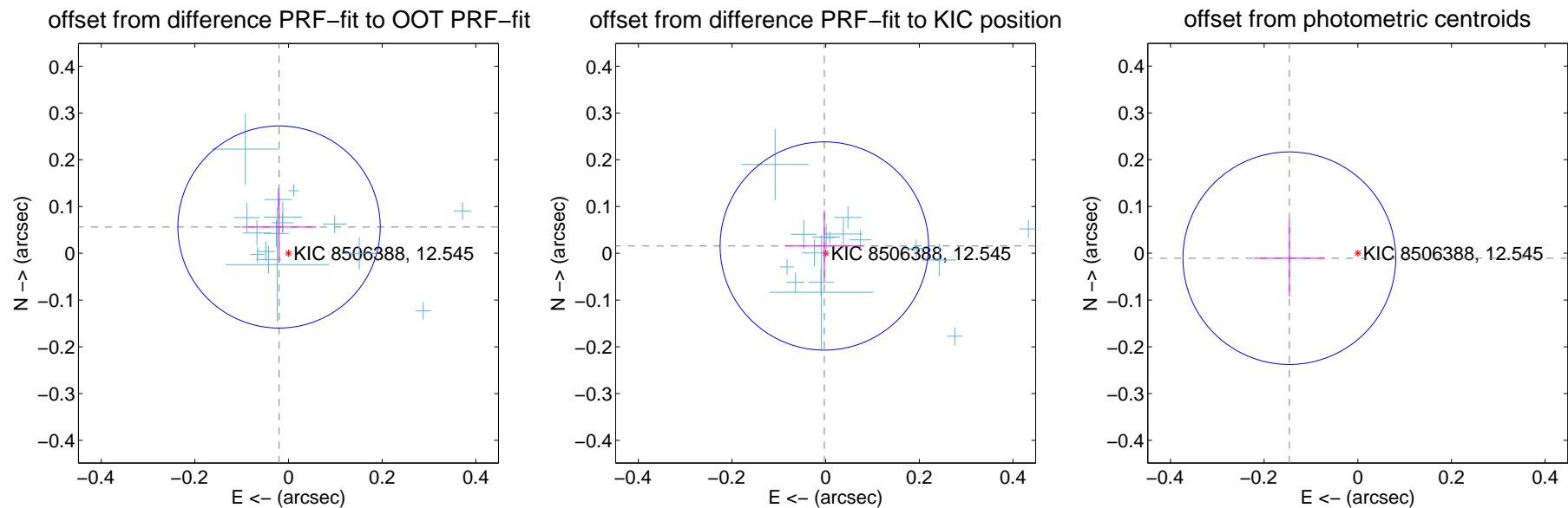
## DV Centroid Data

Supplemental centroid analysis for 008506388-03. Kepler magnitude: 12.54. Transit SNR 8.69

There are 16 quarters with good PRF difference image offsets

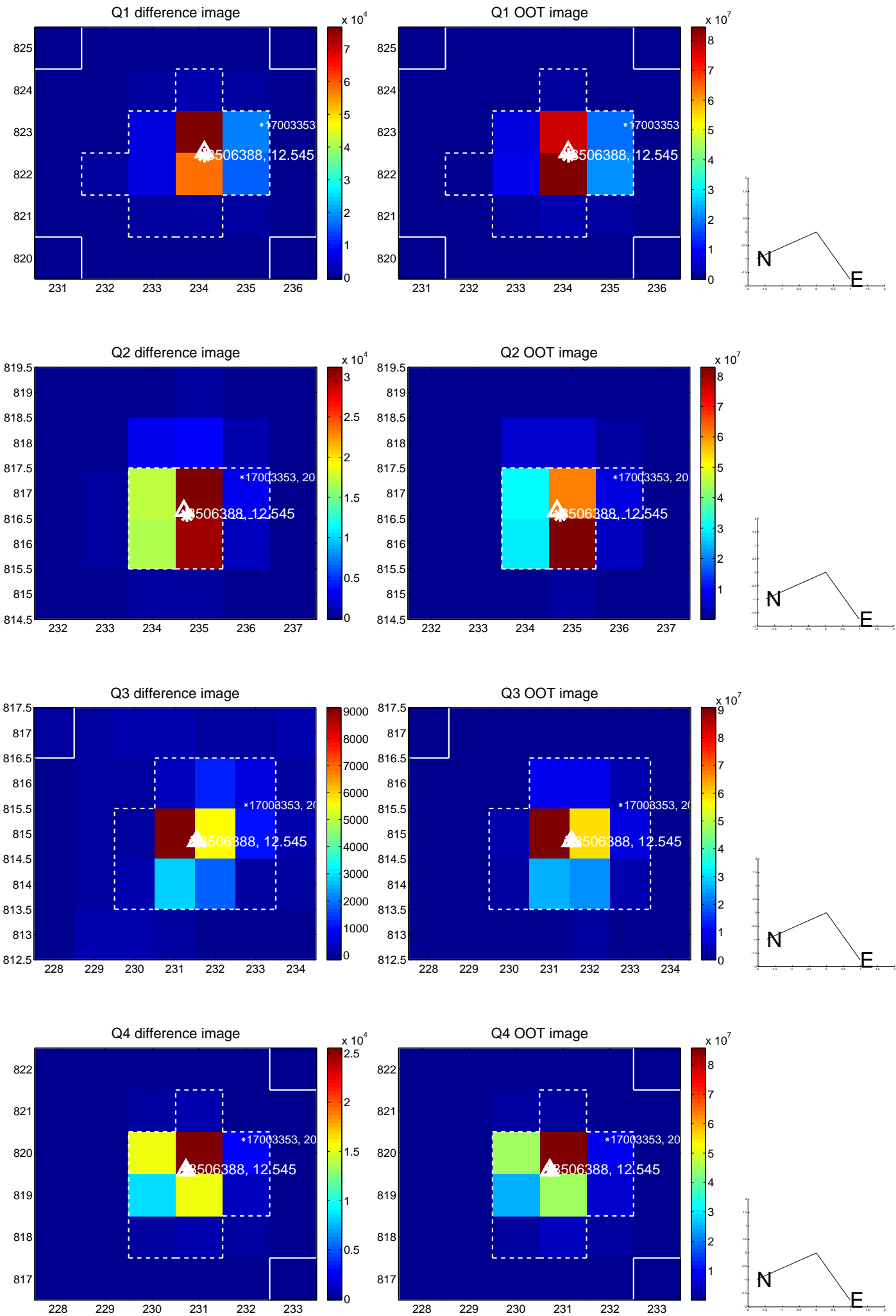
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

|   | Distance in arcsec | Distance / $\sigma$ | $\Delta$ RA       | $\Delta$ Dec      |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT          | $0.060 \pm 0.072$  | 0.83                | $0.020 \pm 0.080$ | $0.056 \pm 0.075$ |
| PRF-fit source offset from KIC position | $0.016 \pm 0.074$  | 0.21                | $0.003 \pm 0.084$ | $0.016 \pm 0.076$ |
| photometric centroid source offset      | $0.15 \pm 0.08$    | 1.94                | $0.15 \pm 0.08$   | $-0.01 \pm 0.08$  |

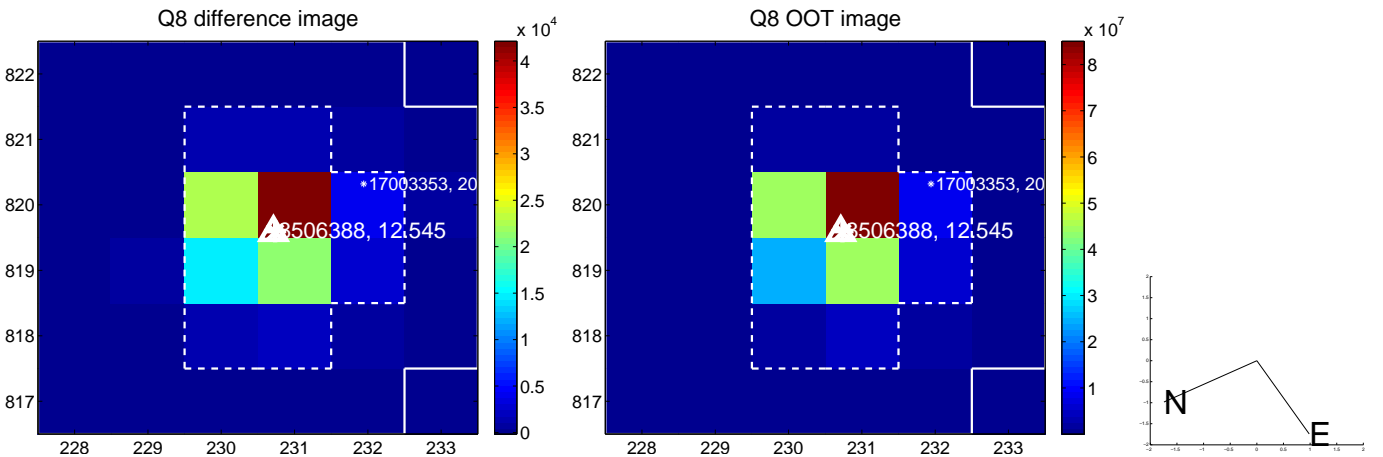
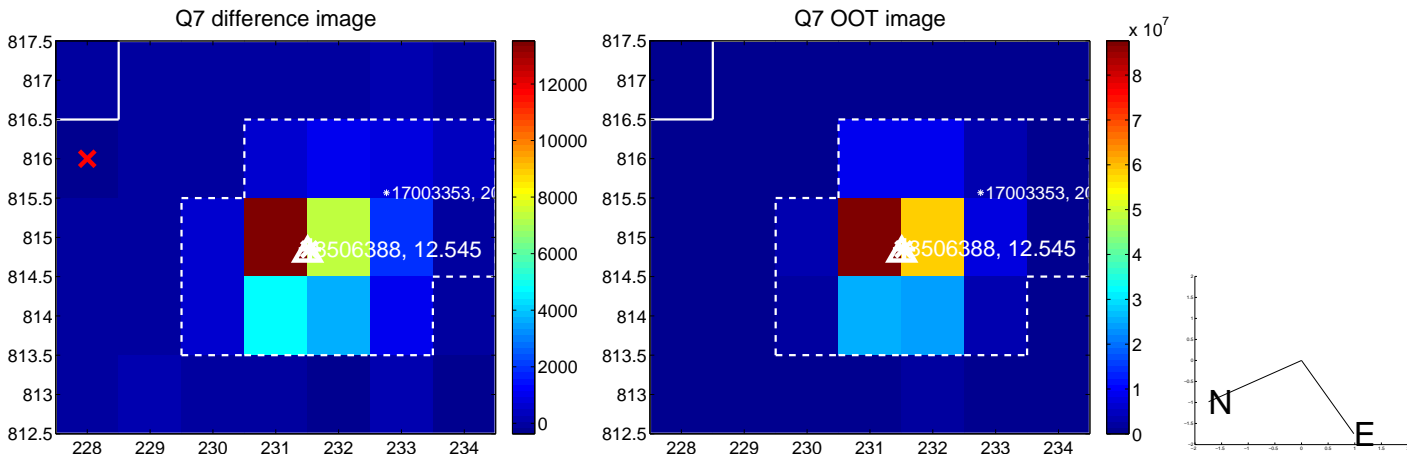
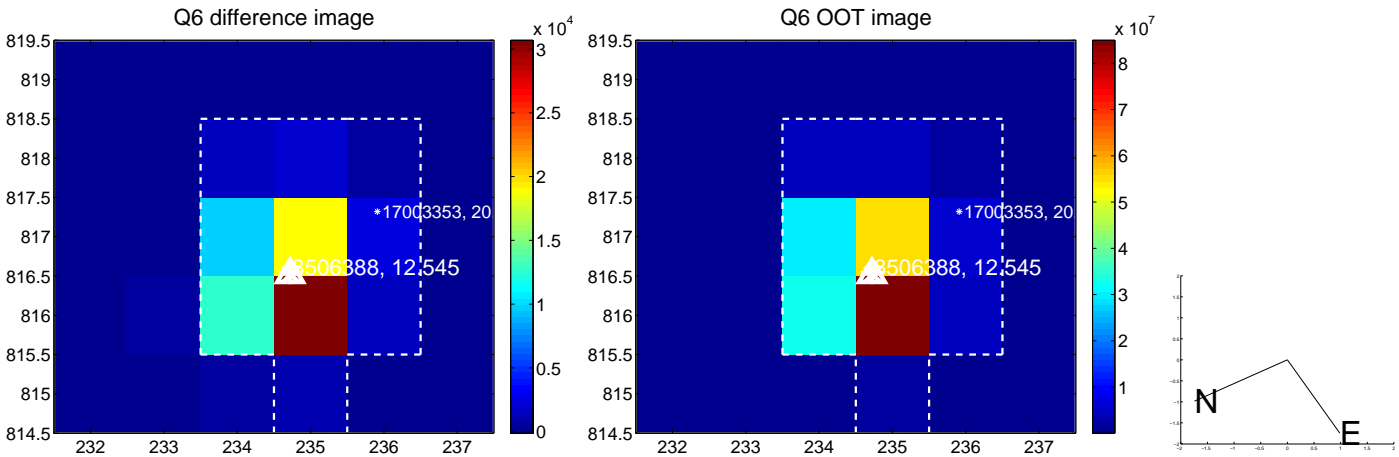
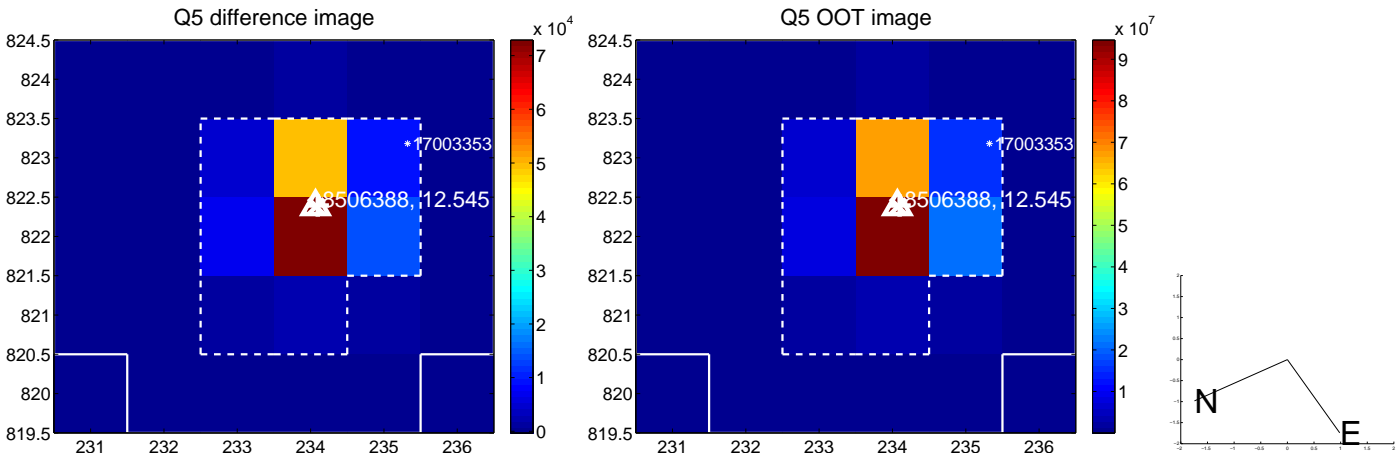


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

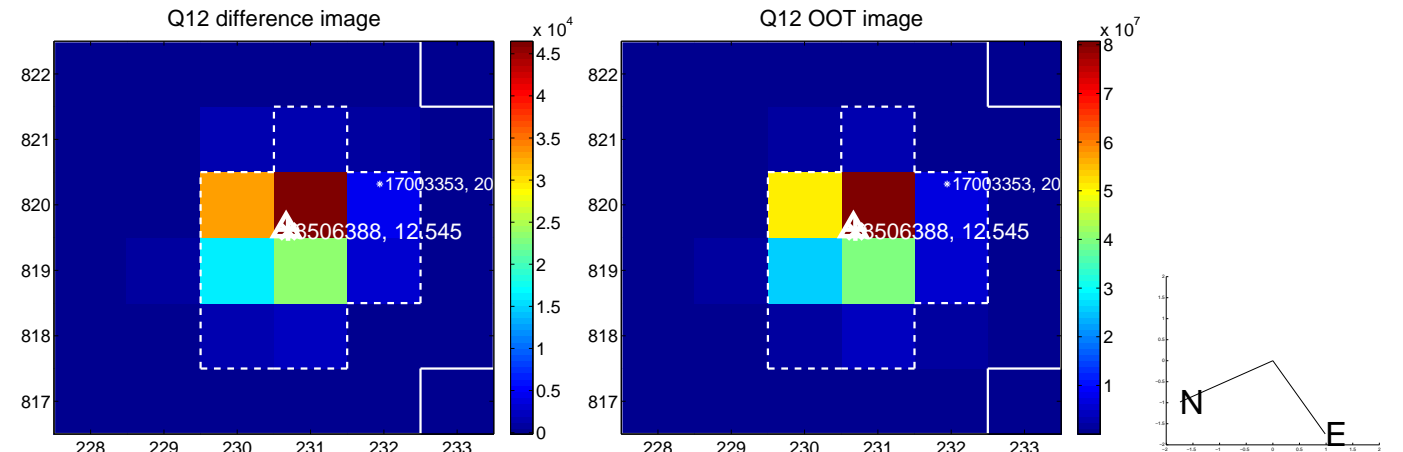
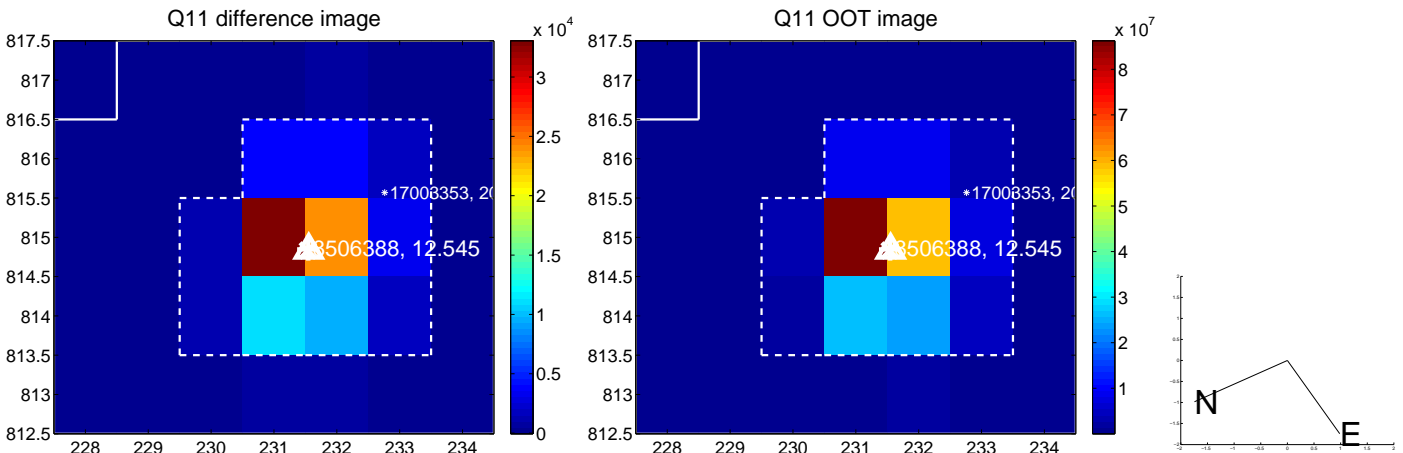
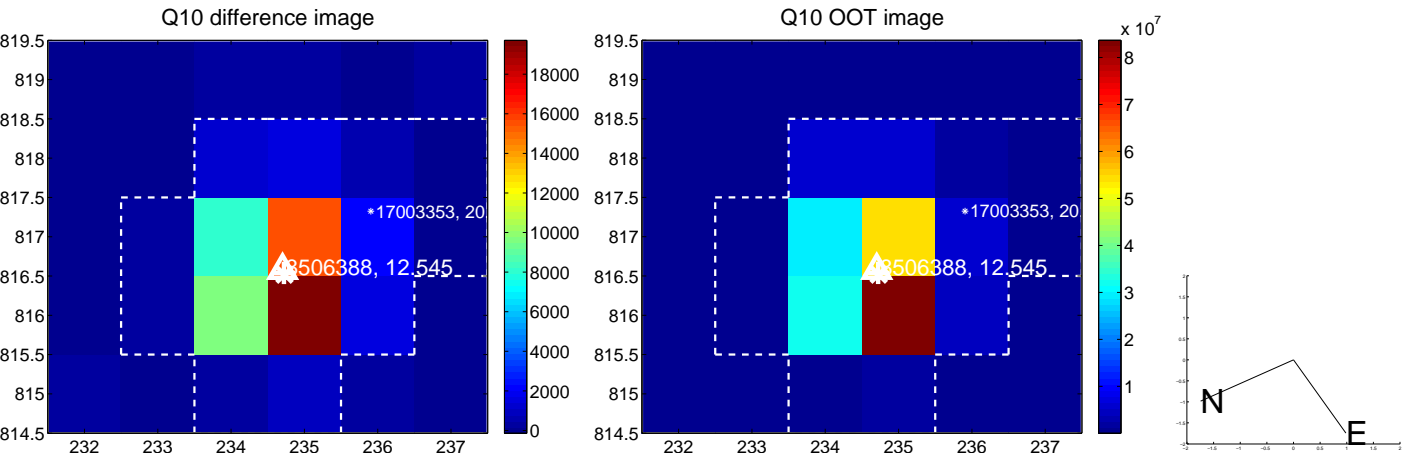
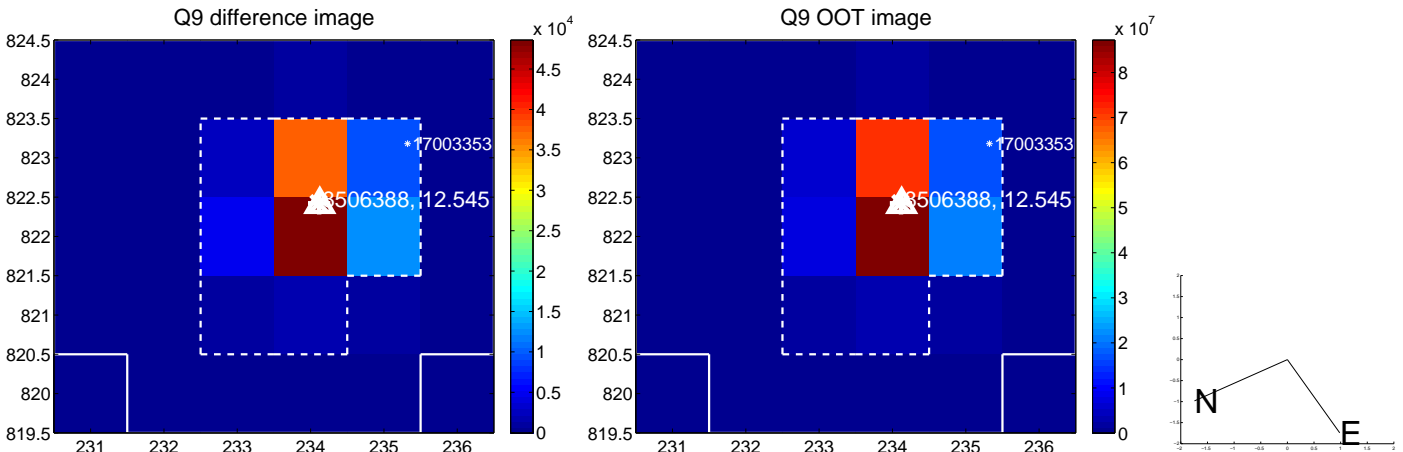
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



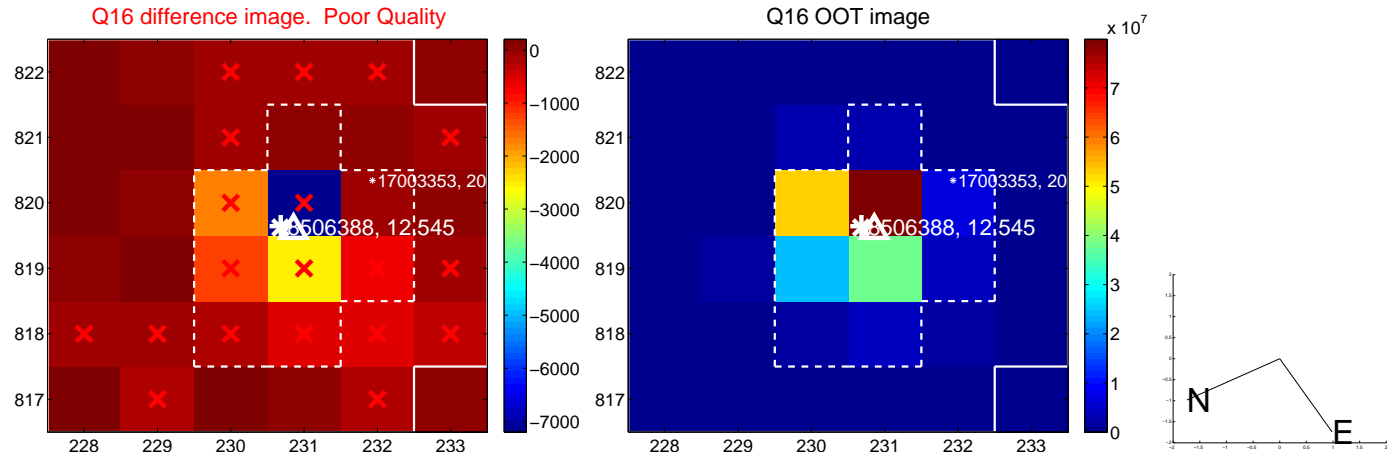
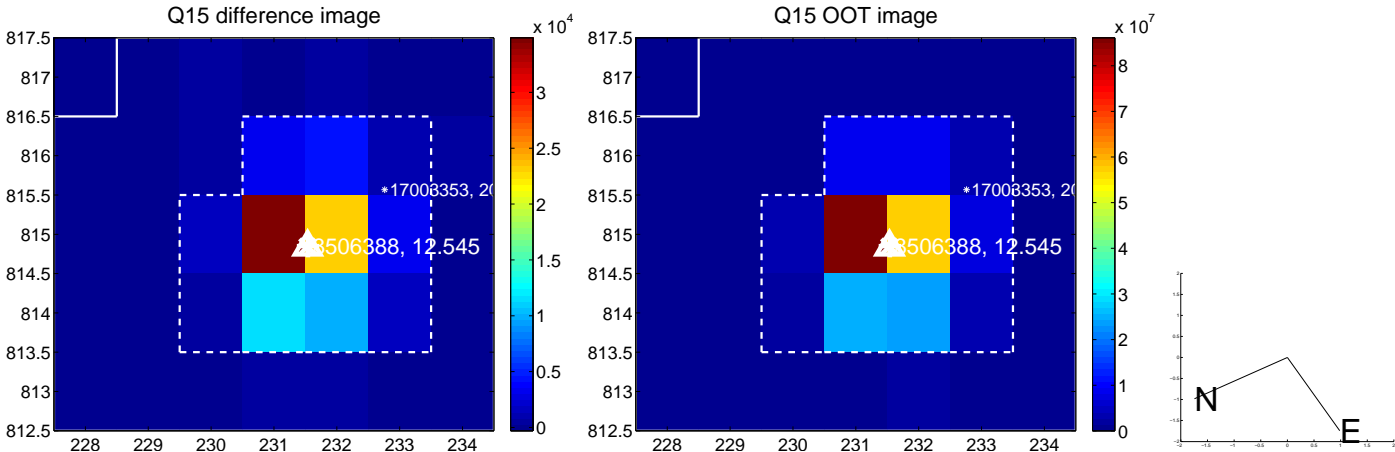
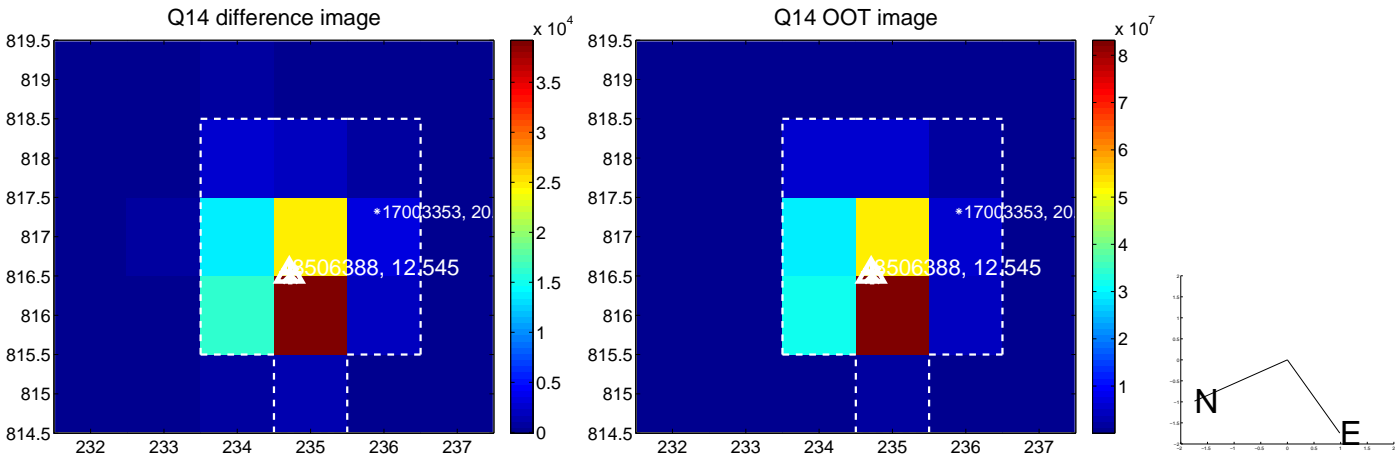
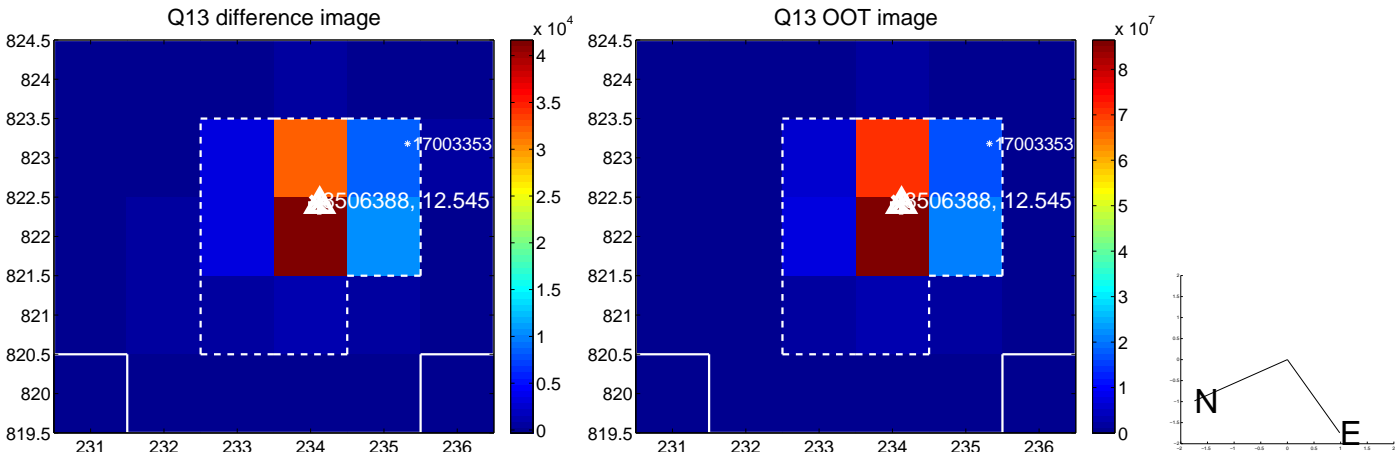
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

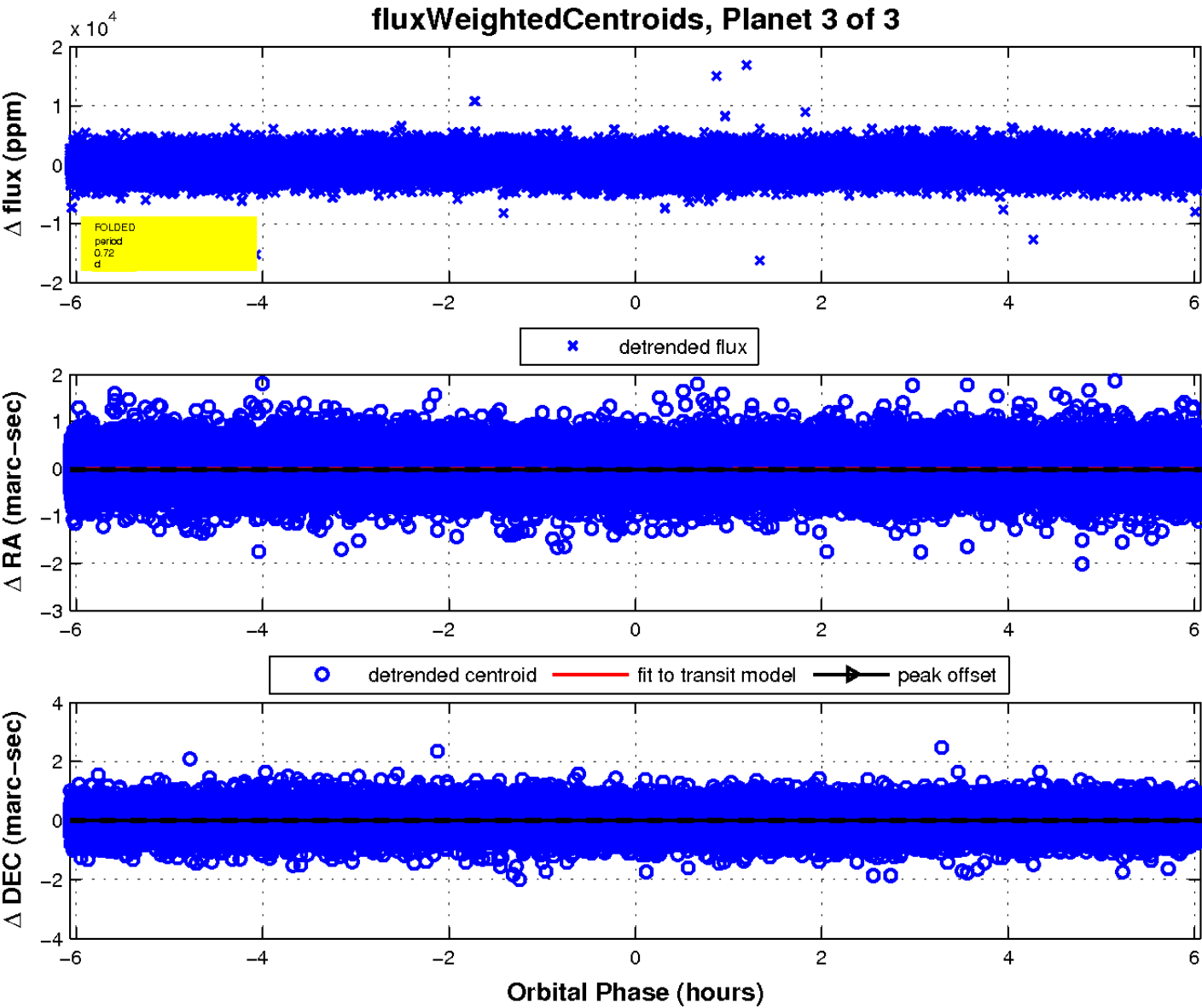
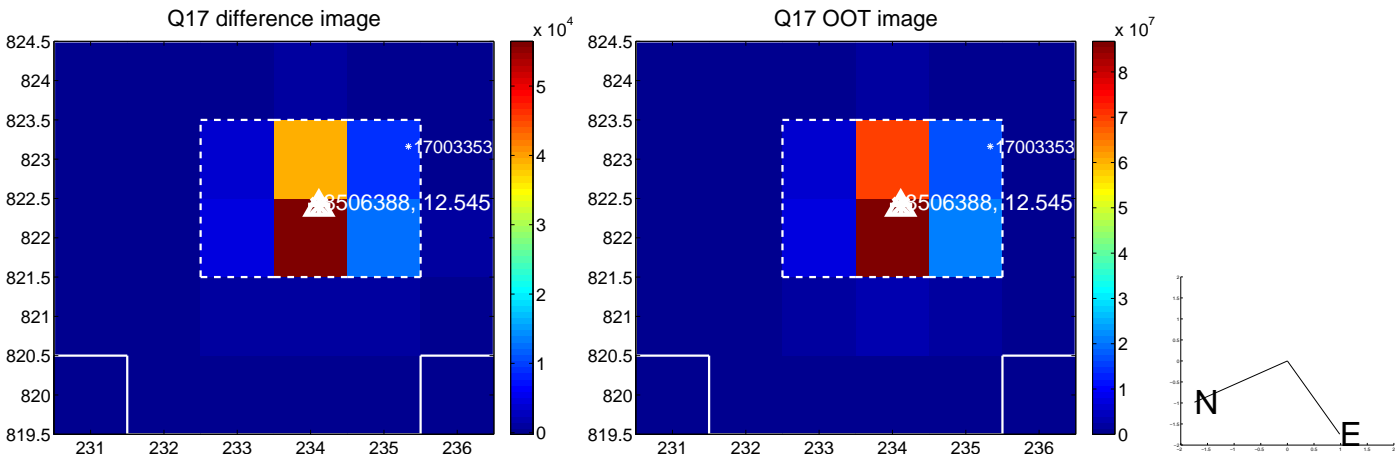


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

