

KIC 007287995

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007287995-01 | OBS | 0877.01 | 5.954889 | 135.227746 | 1407.5 | 2.647 | 83.3 | 86.5 | 0.63 | 4261 | 2.86 | 38.55 |
| 007287995-02 | OBS | 0877.02 | 12.039884 | 133.065972 | 1234.0 | 3.314 | 51.1 | 55.2 | 0.63 | 4261 | 2.89 | 15.08 |
| 007287995-03 | OBS | 0877.03 | 20.837438 | 132.094124 | 384.0 | 2.490 | 12.1 | 13.5 | 0.63 | 4261 | 1.50 | 7.26 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007287995-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-02 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-03 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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 for comment definitions.

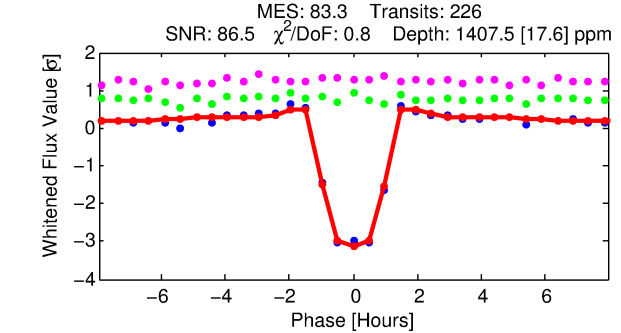
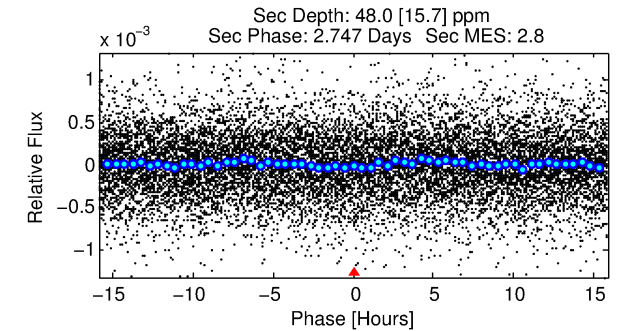
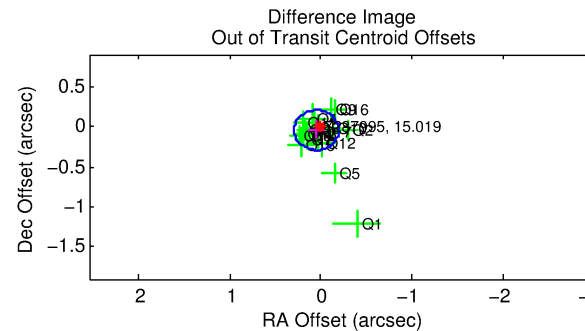
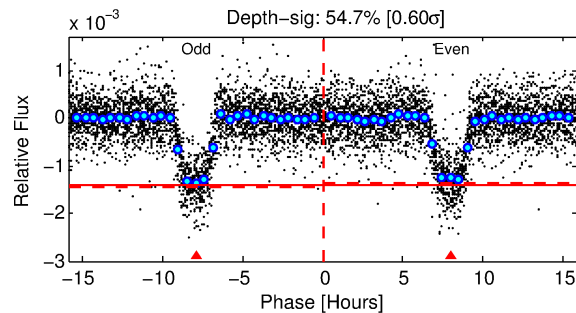
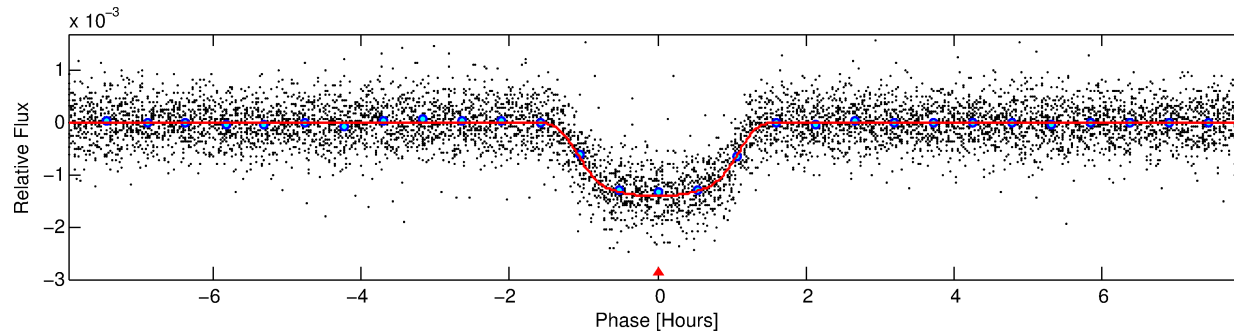
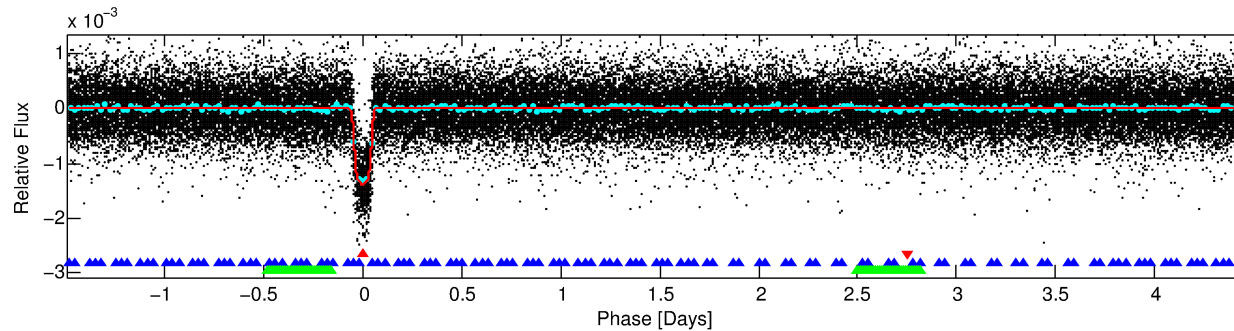
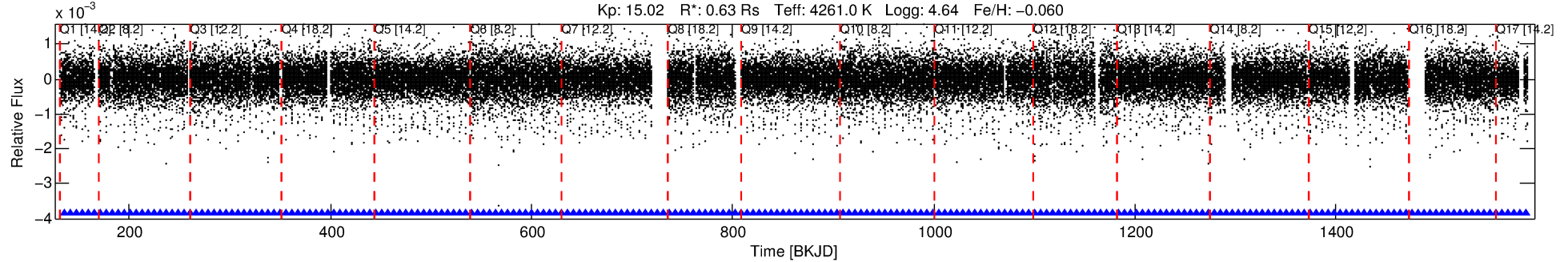
Ephemeris Match Information For 007287995-01

No Significant Match Found

DV One-Page Summary

KIC: 7287995 Candidate: 1 of 3 Period: 5.955 d
KOI: K00877.01 Name: Kepler-81b Corr: 0.946

Kp: 15.02 R*: 0.63 Rs Teff: 4261.0 K Logg: 4.64 Fe/H: -0.060



DV Fit Results:

Period = 5.95489 [0.00000] d
Epoch = 135.2277 [0.0006] BKJD
Rp/R* = 0.0414 [0.0014]
a/R* = 9.58 [1.05]
b = 0.88 [0.03]
Seff = 38.55 [3.66]
Teq = 635 [15] K
Rp = 2.86 [0.16] Re
a = 0.0554 [0.0020] AU
Ag = 9.90 [3.34] [2.66σ]
Teffp = 1743 [149] K [7.37σ]

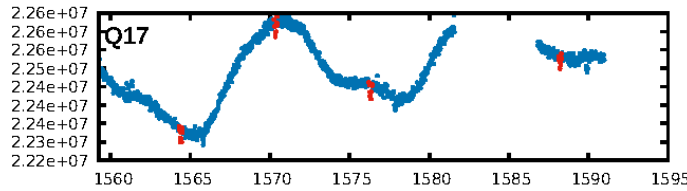
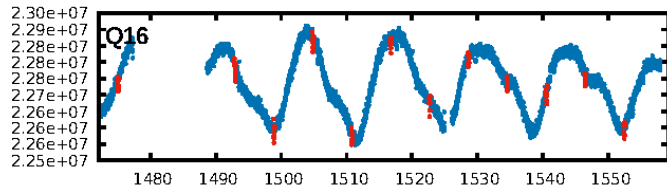
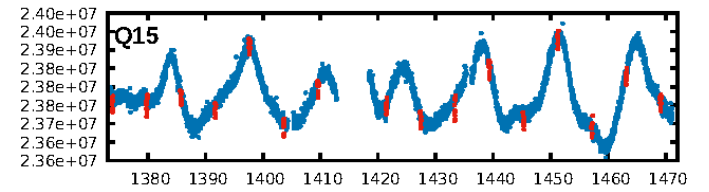
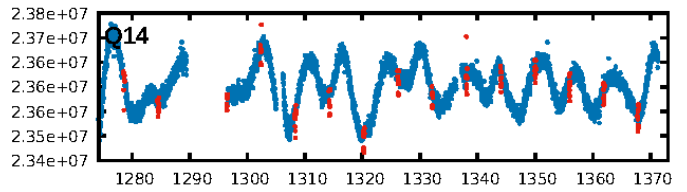
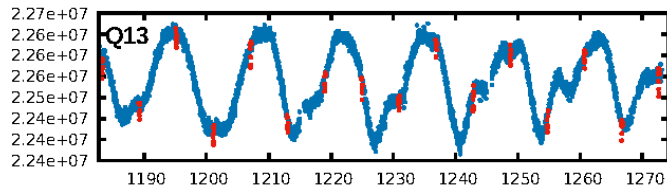
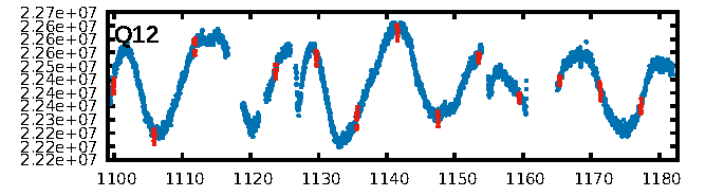
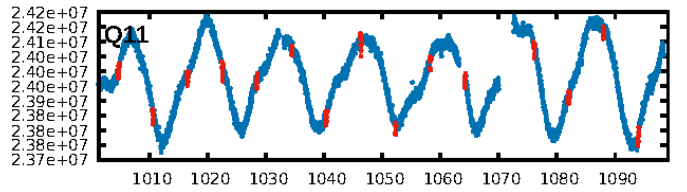
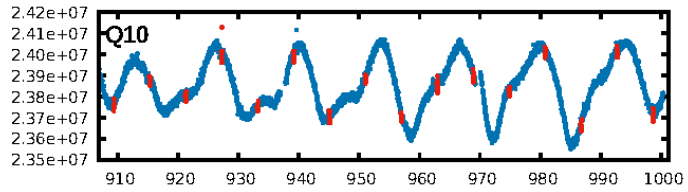
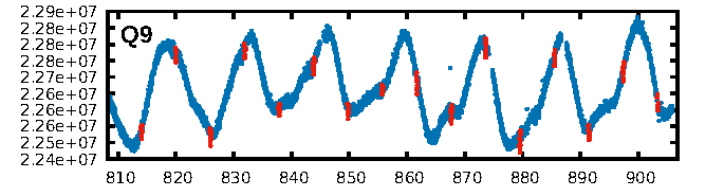
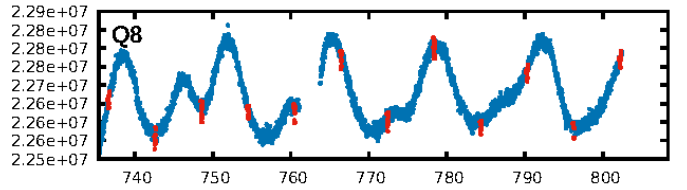
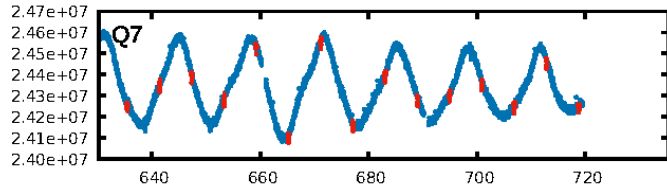
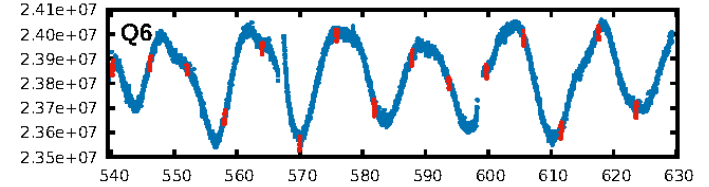
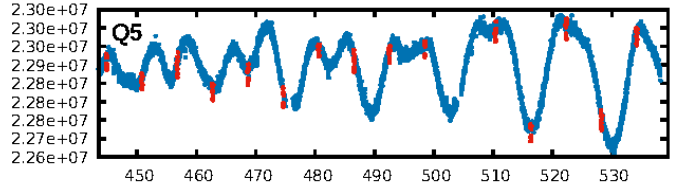
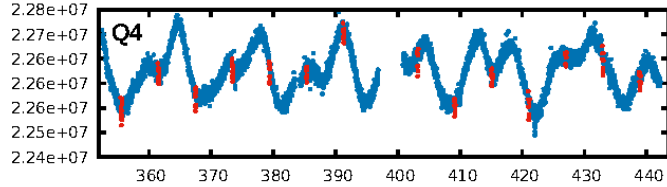
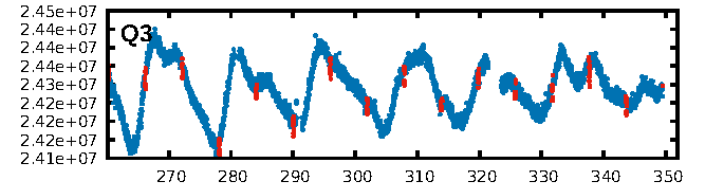
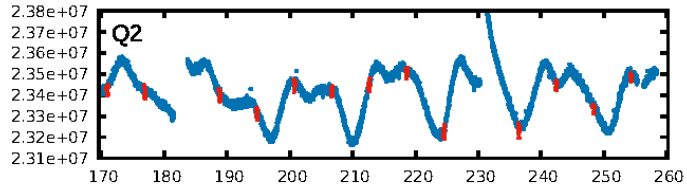
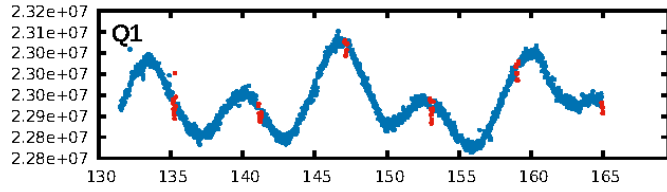
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [34.43σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [216/216]
GhostDiagnostic-chr: 3.207
Centroid-sig: 12.9%
Centroid-so: 0.397 arcsec [3.23σ]
OotOffset-rm: 0.066 arcsec [0.80σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.331 arcsec [3.23σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

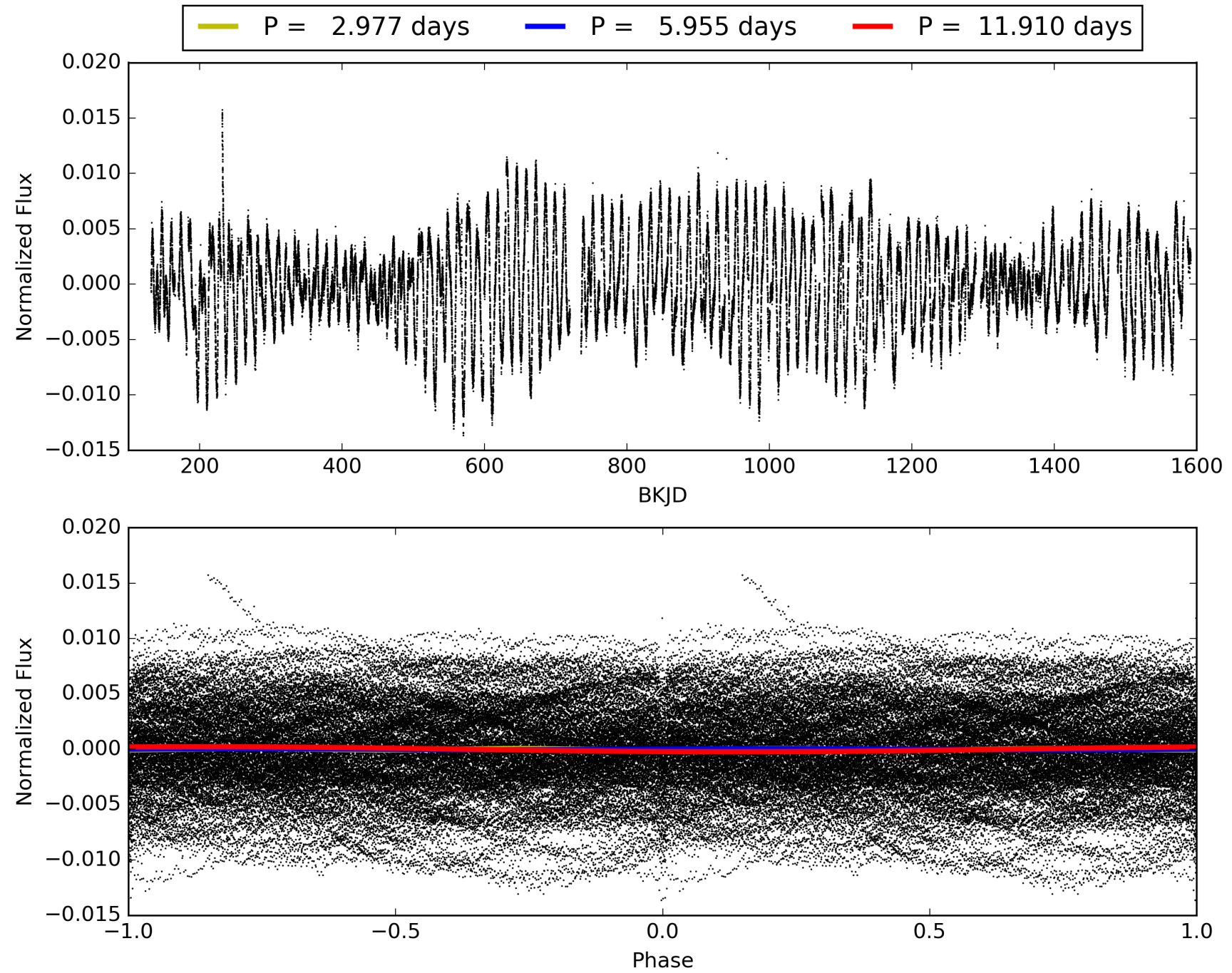
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:30:41 Z

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

TCE 007287995-01, PDC Light Curves

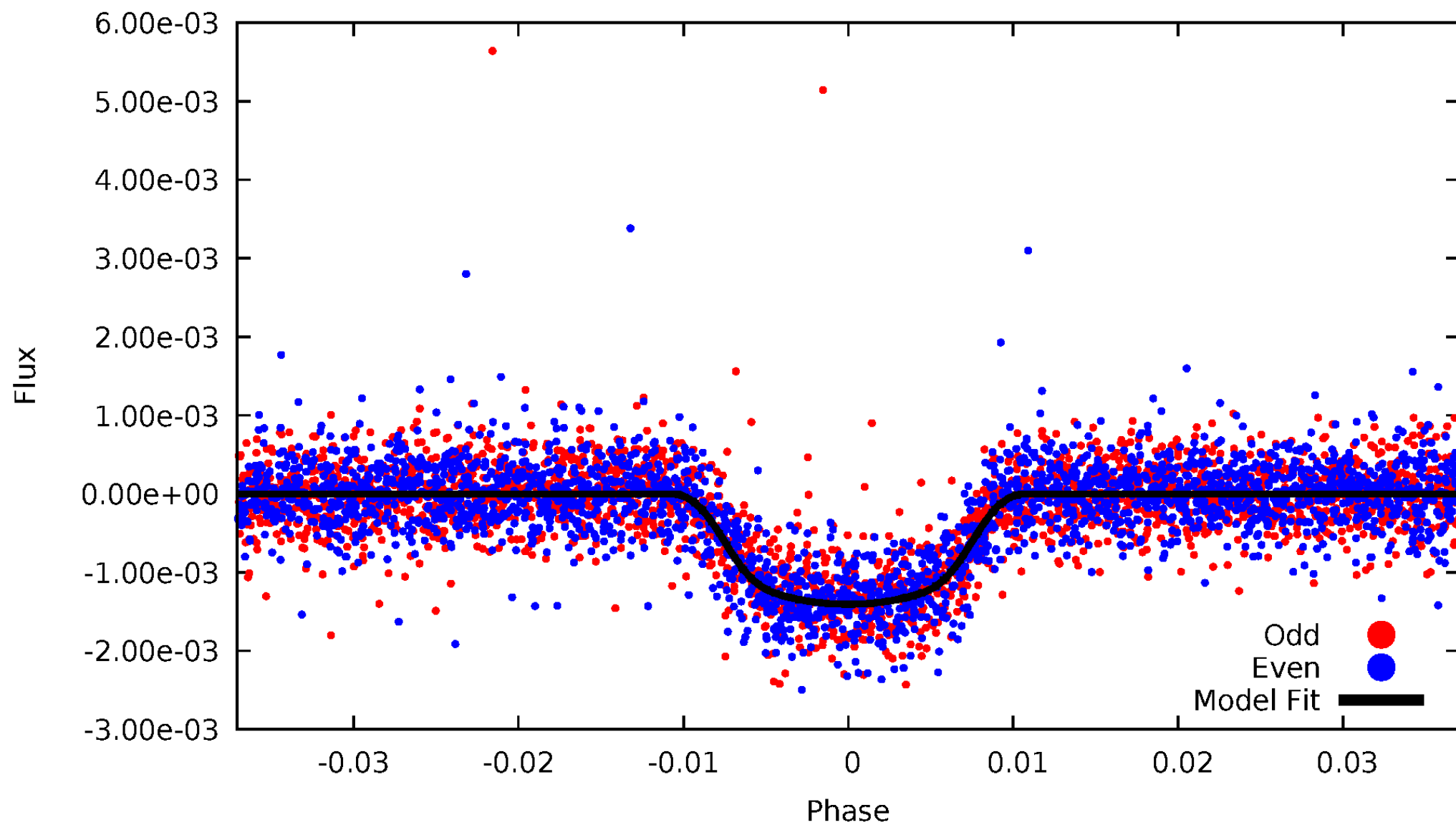


TCE 007287995-01



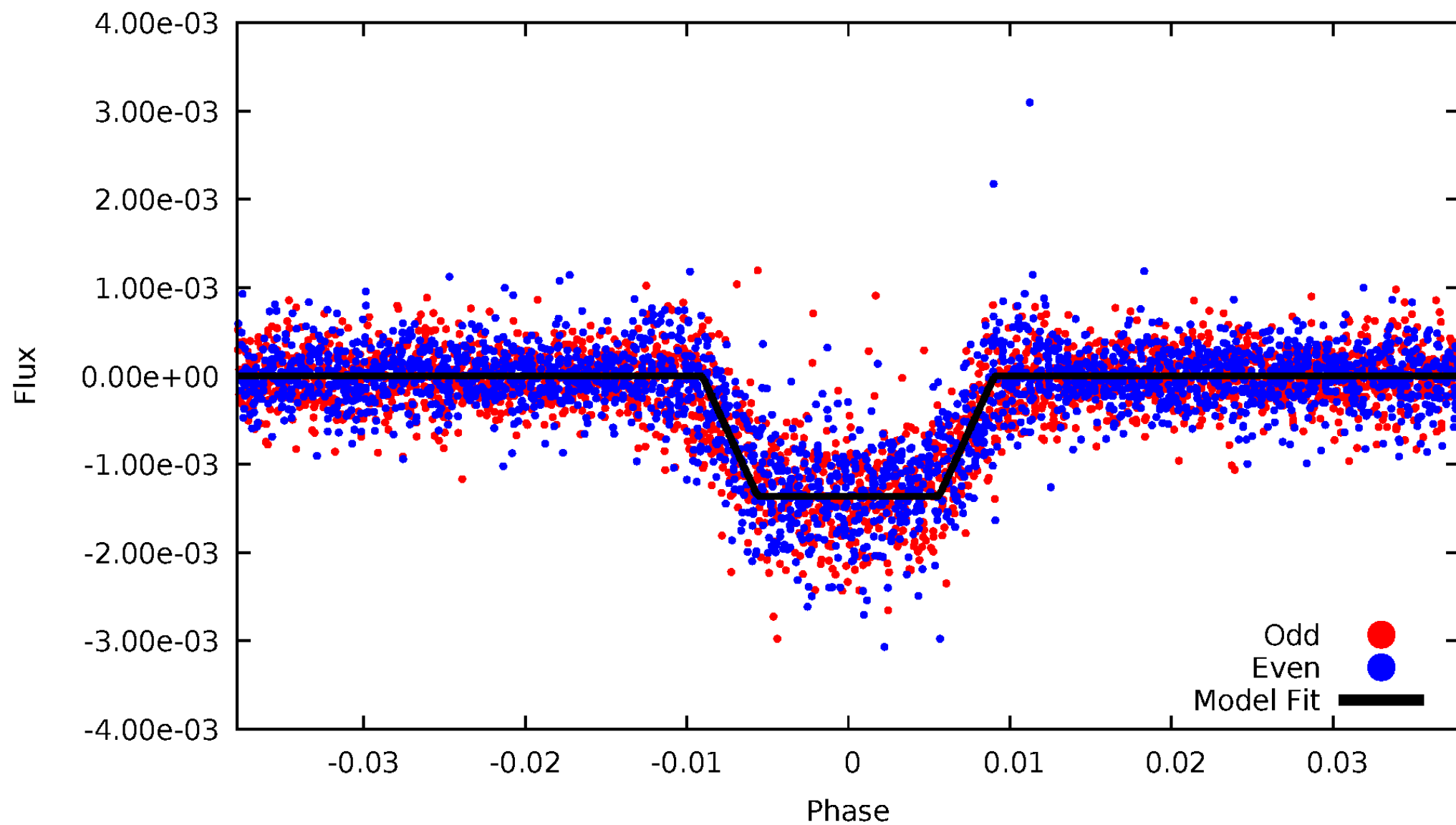
DV Odd/Even

TCE 007287995-01



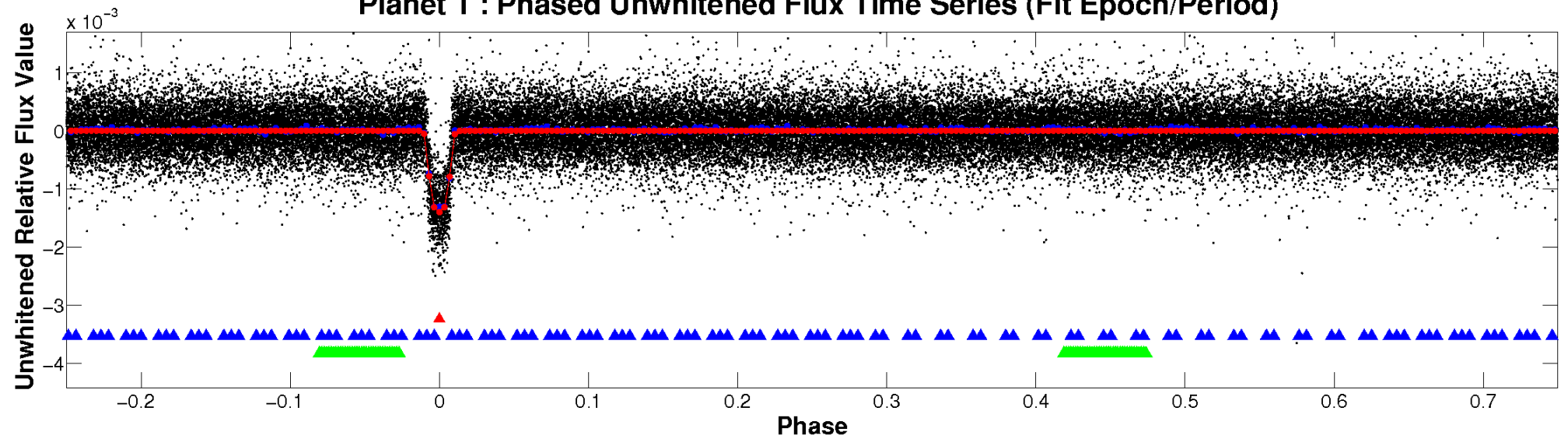
ALT Odd/Even

TCE 007287995-01

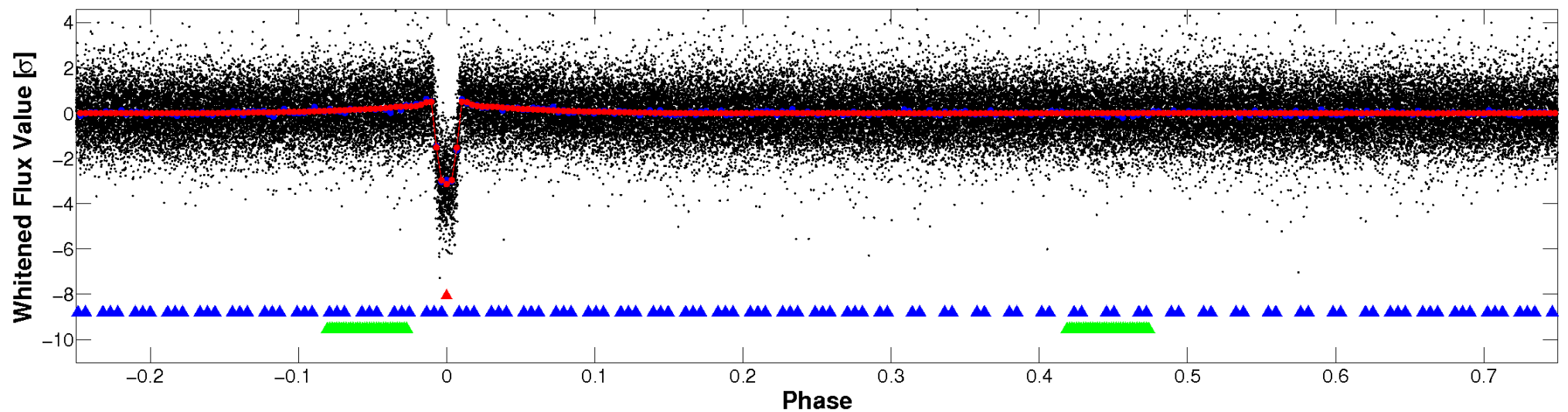


Non-Whitened Vs. Whitened Light Curve

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

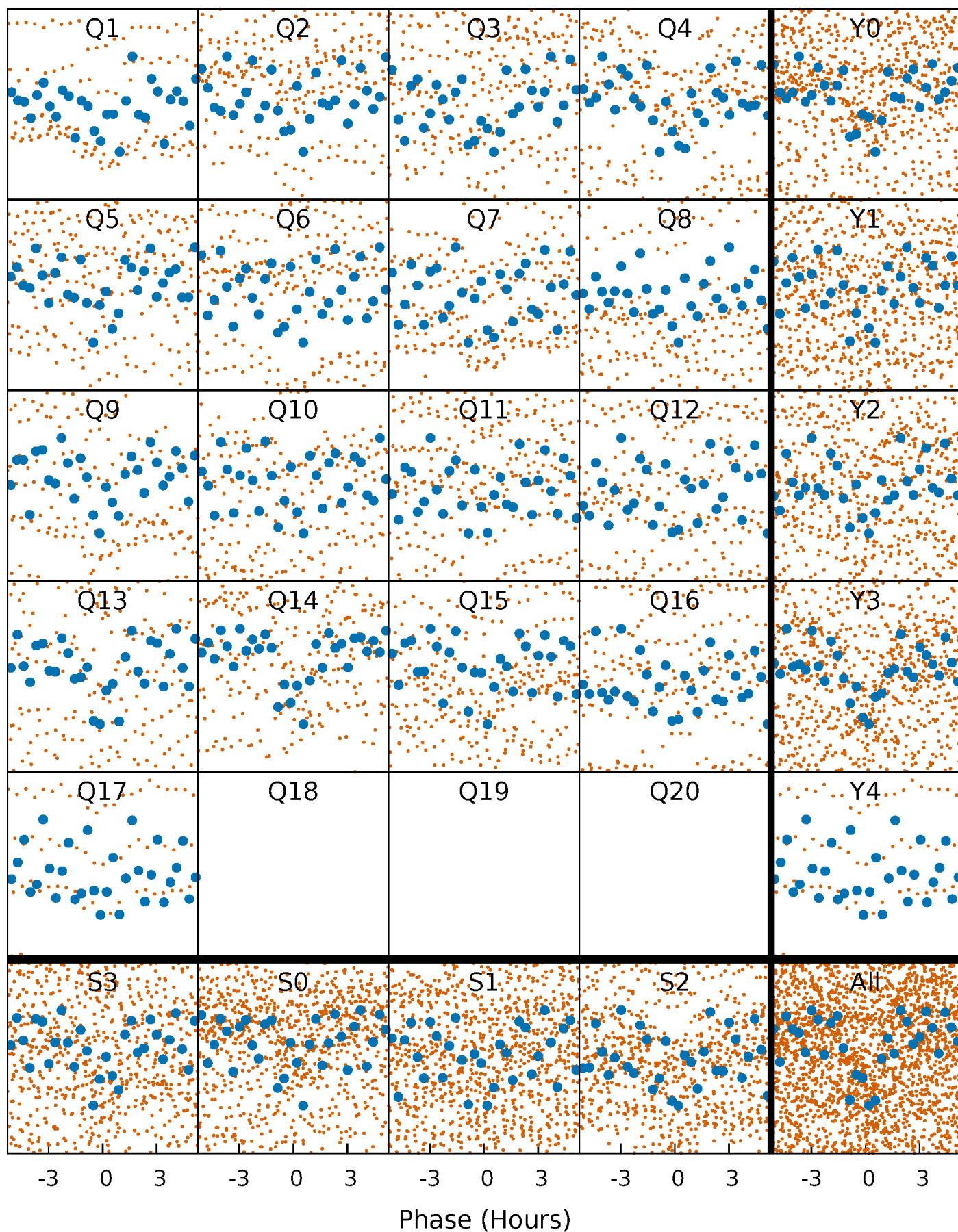


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



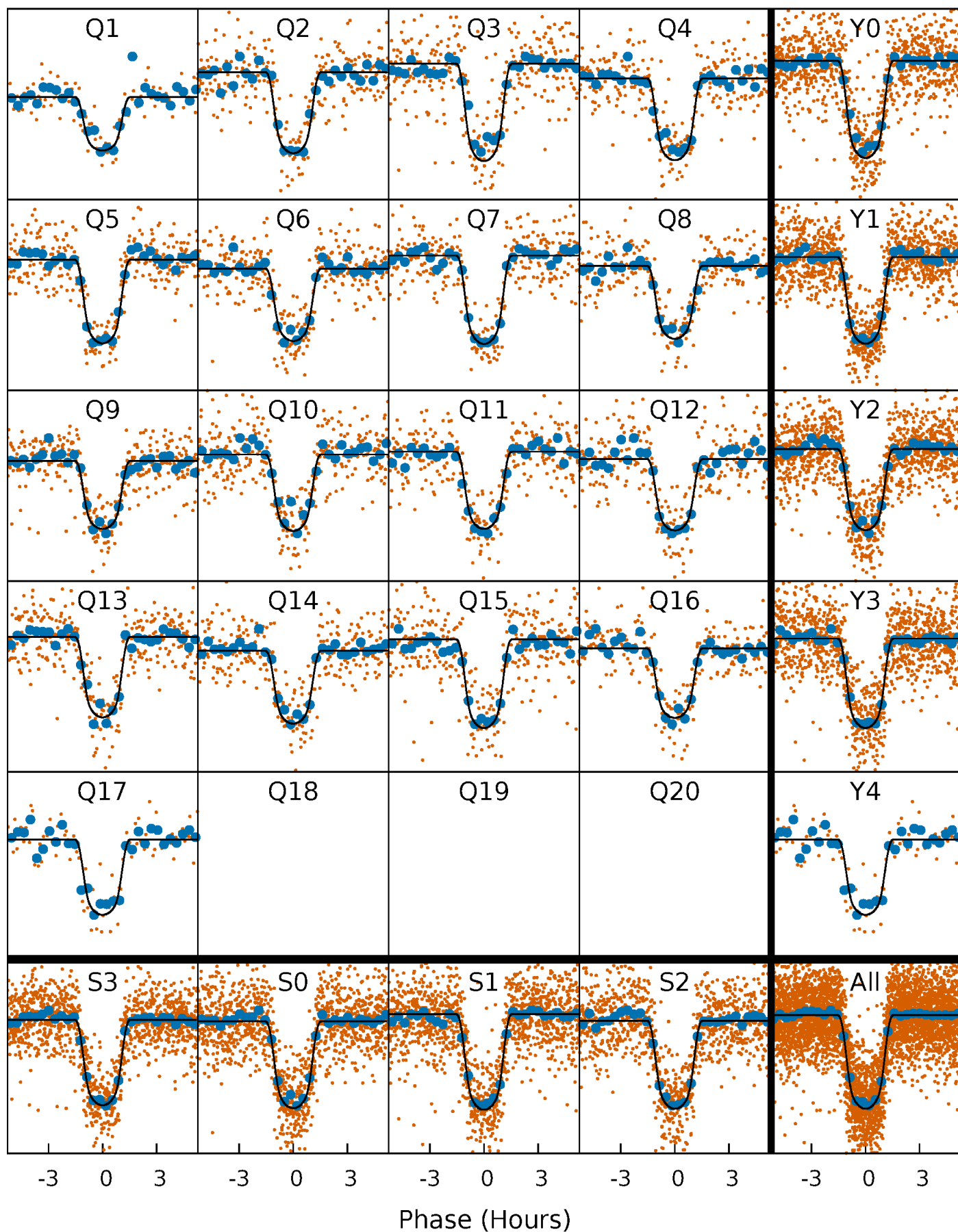
PDC Quarter-Phased Transit Curves

TCE 007287995-01 P= 5.954889 Days $T_0=135.227746$ (BKJD)



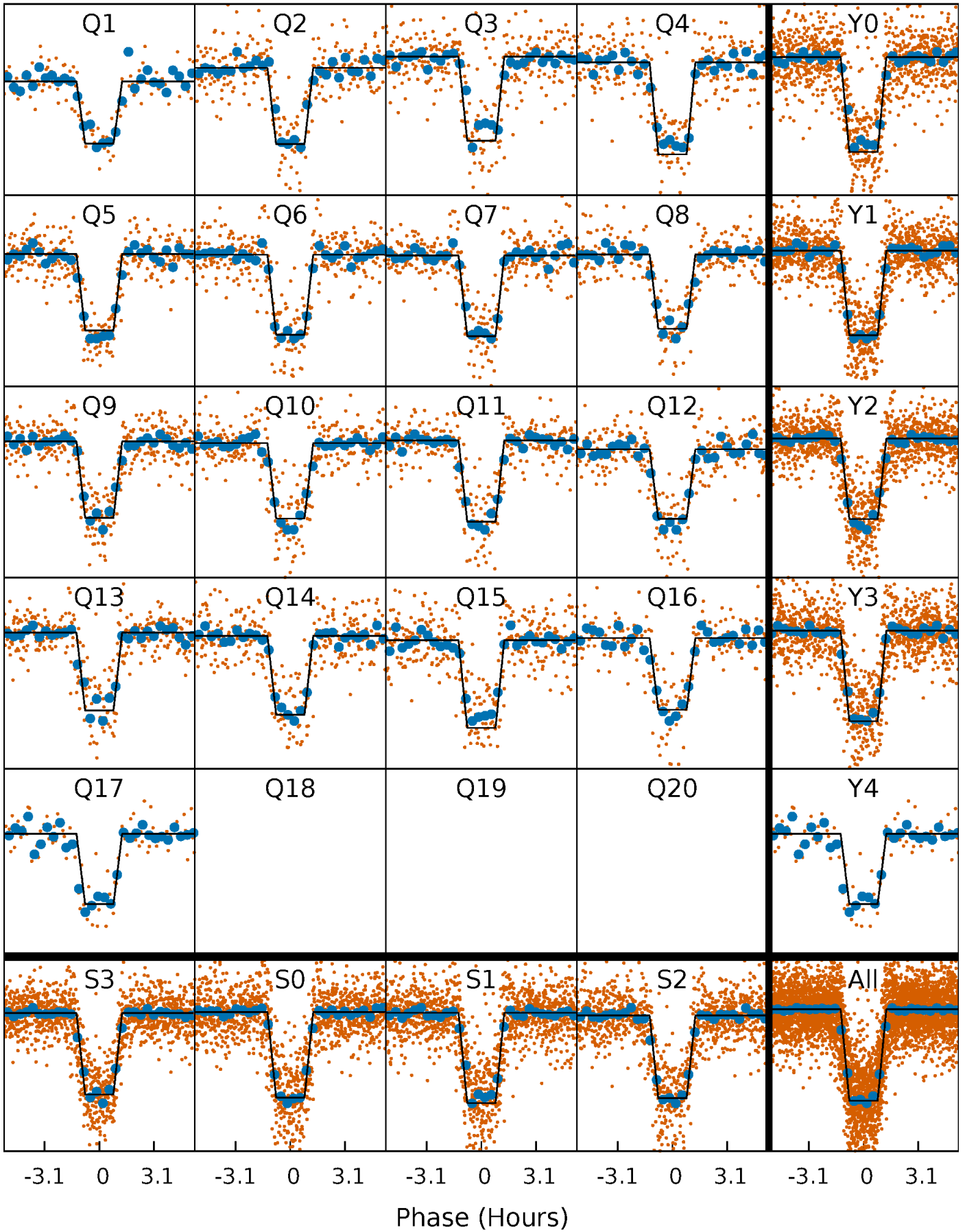
DV Quarter-Phased Transit Curves

TCE 007287995-01 P= 5.954889 Days $T_0=135.227746$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

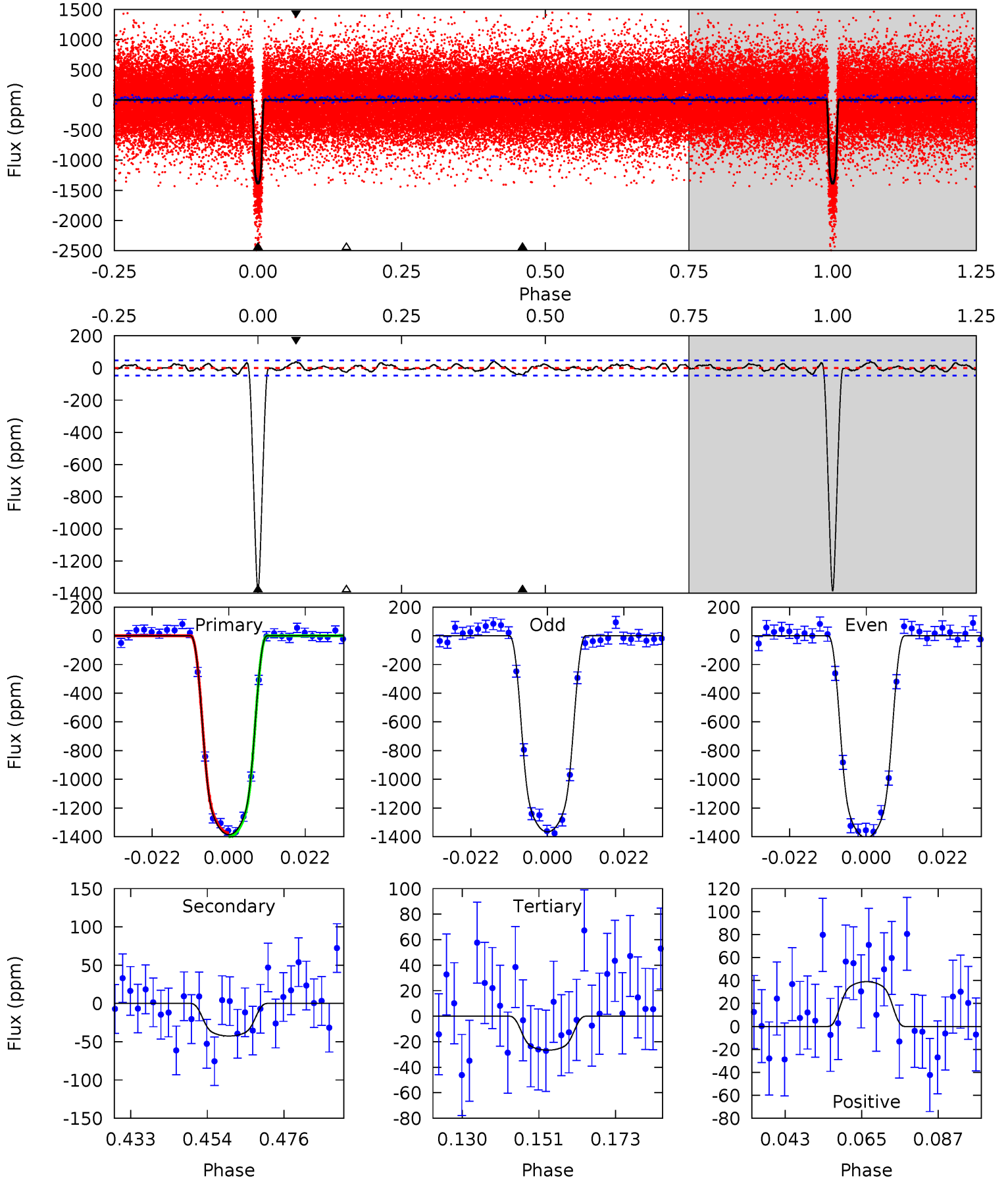
TCE 007287995-01 P= 5.954907 Days $T_0=135.225763$ (BKJD)



DV Model-Shift Uniqueness Test

007287995-01, P = 5.954889 Days, E = 129.272857 Days

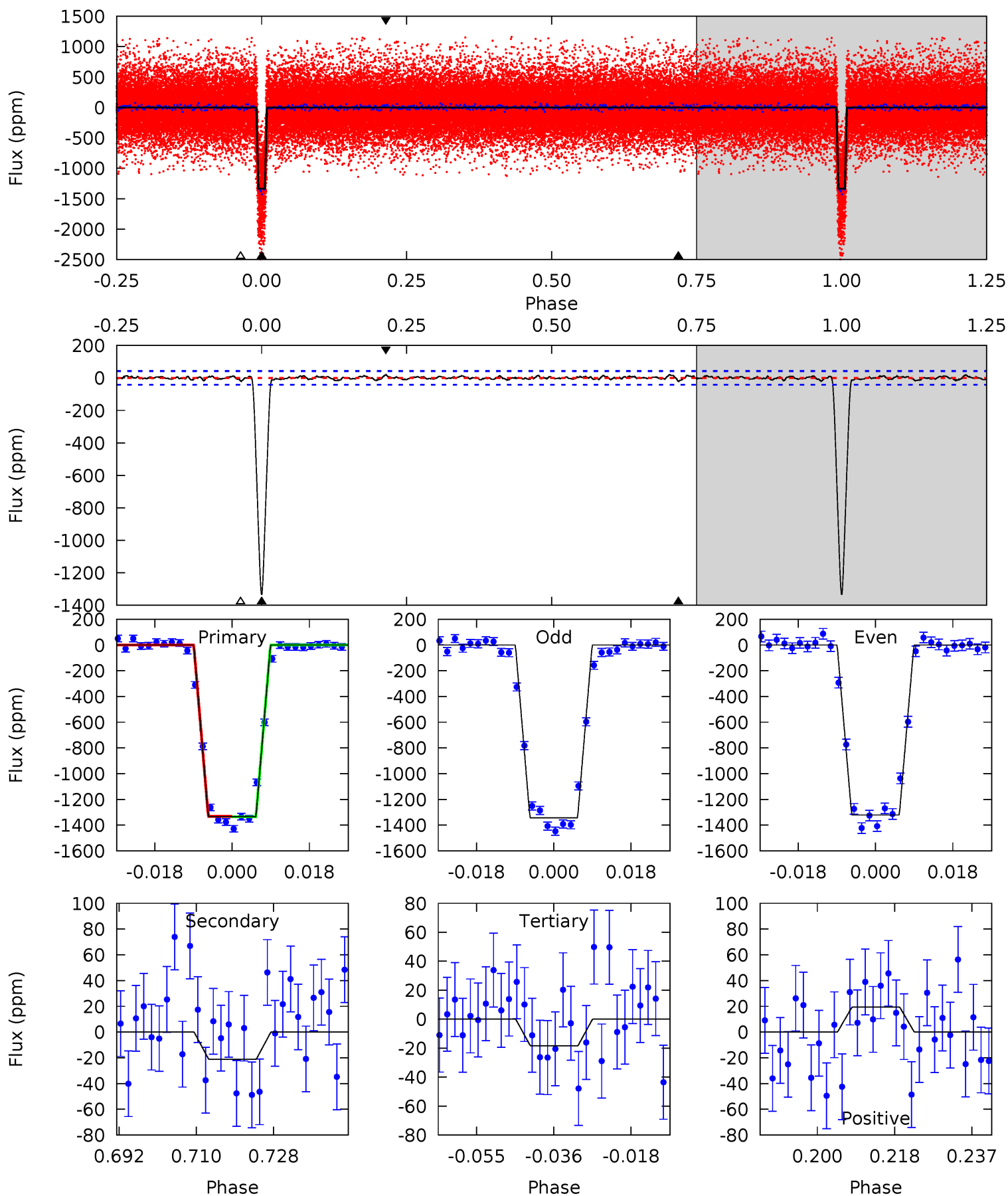
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 143.2 | 4.40 | 2.75 | 4.03 | 4.88 | 2.30 | 1.47 | 140.5 | 139.2 | 1.65 | 0.37 | 2.09 | 1.00 | 0.03 | 1.28 |



Alt Model-Shift Uniqueness Test

007287995-01, P = 5.954907 Days, E = 129.270856 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 155.2 | 2.46 | 2.14 | 2.26 | 4.91 | 2.36 | 0.74 | 153.1 | 153.0 | 0.32 | 0.19 | 1.32 | 1.00 | 0.02 | 0.18 |



Stellar Parameters For KIC 007287995

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4261^{+85}_{-85} | $4.641^{+0.027}_{-0.020}$ | $-0.060^{+0.150}_{-0.150}$ | $0.633^{+0.026}_{-0.029}$ | $0.640^{+0.035}_{-0.029}$ | $3.551^{+0.389}_{-0.284}$ |
| | +2%/-2% | +1%/-0% | +250%/-250% | +4%/-5% | +5%/-5% | +11%/-8% |
| Source | SPE60 | SPE60 | SPE60 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 007287995-01 / KOI 0877.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -43 ± 10 | $2.86^{+0.13}_{-0.12}$ | 887^{+20}_{-20} | 2451^{+73}_{-86} | $8.802^{+2.055}_{-2.104}$ |
| Alt. | -21 ± 9 | $2.55^{+0.11}_{-0.12}$ | 886^{+21}_{-20} | 2307^{+115}_{-144} | $5.456^{+2.482}_{-2.248}$ |

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

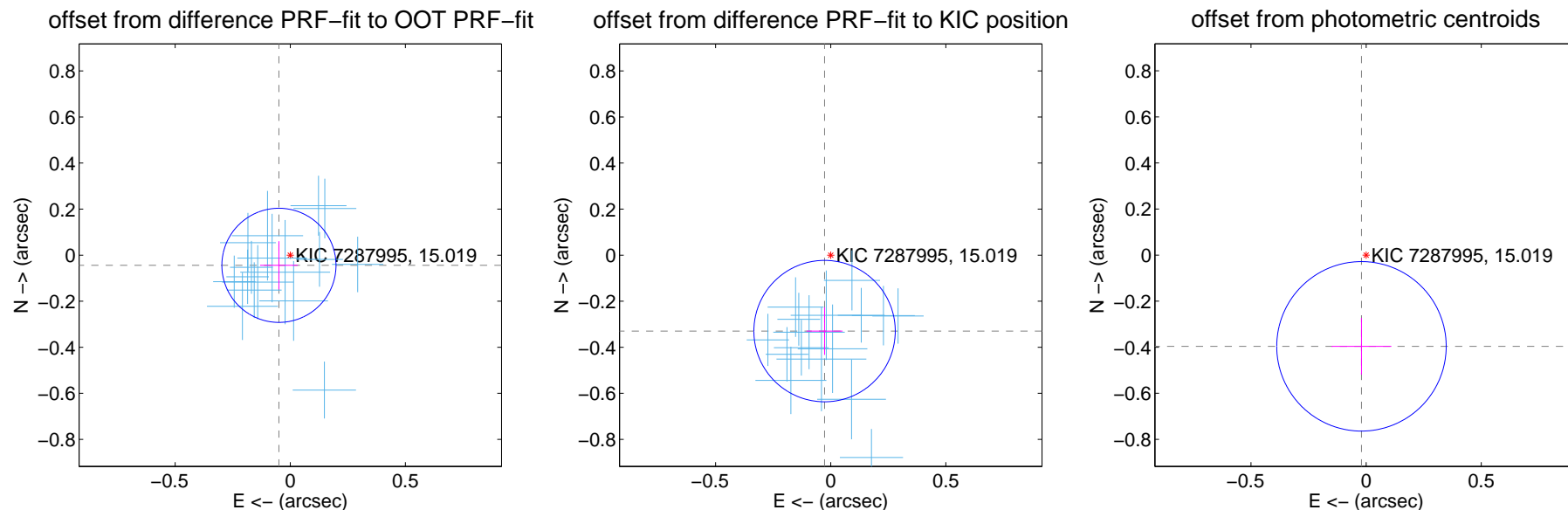
DV Centroid Data

Supplemental centroid analysis for 007287995-01. Kepler magnitude: 15.02. Transit SNR 86.48

There are 17 quarters with good PRF difference image offsets

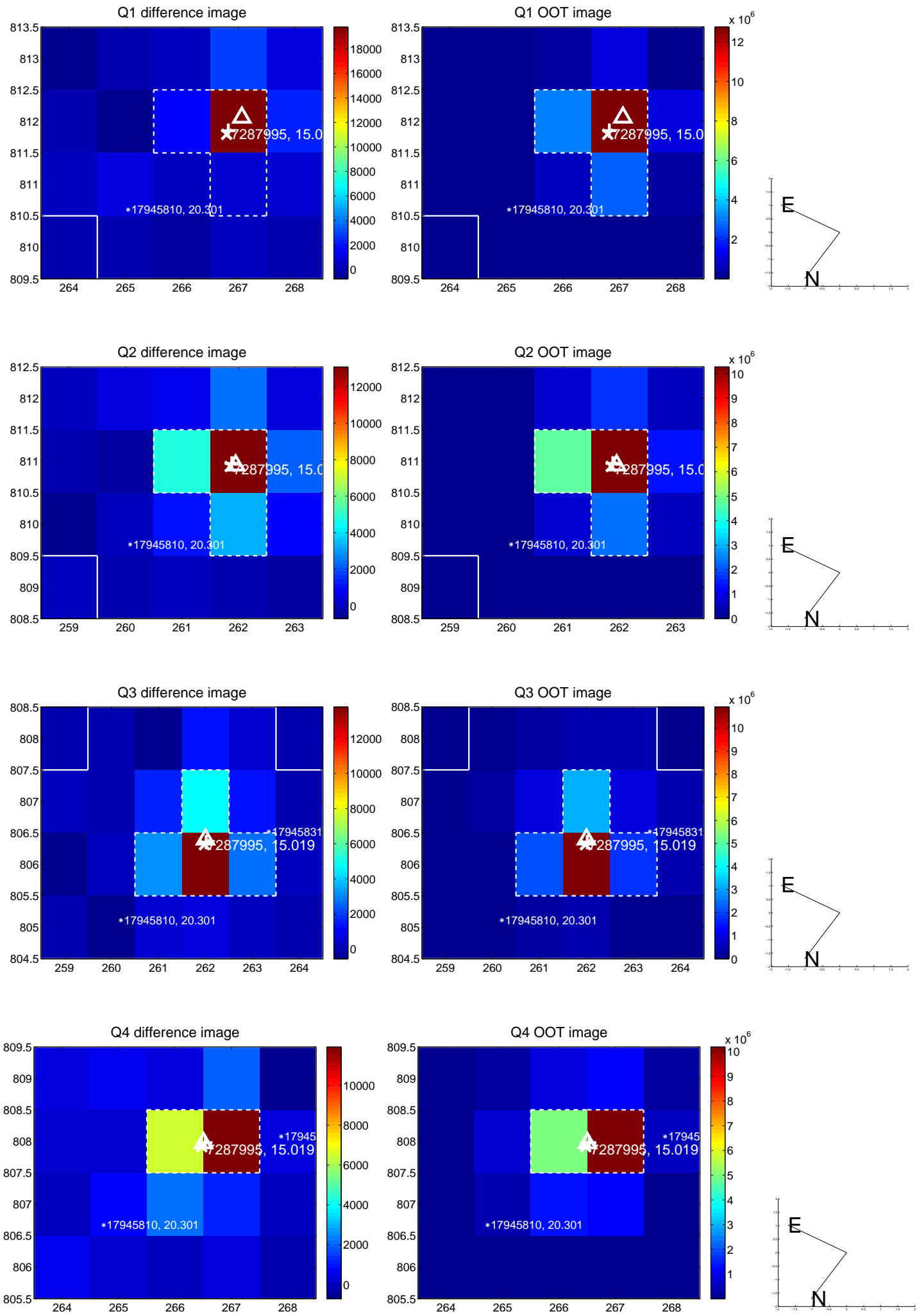
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.066 ± 0.083 | 0.80 | 0.049 ± 0.082 | -0.044 ± 0.105 |
| PRF-fit source offset from KIC position | 0.331 ± 0.102 | 3.23 | 0.027 ± 0.078 | -0.330 ± 0.104 |
| photometric centroid source offset | 0.40 ± 0.12 | 3.23 | 0.02 ± 0.13 | -0.40 ± 0.12 |

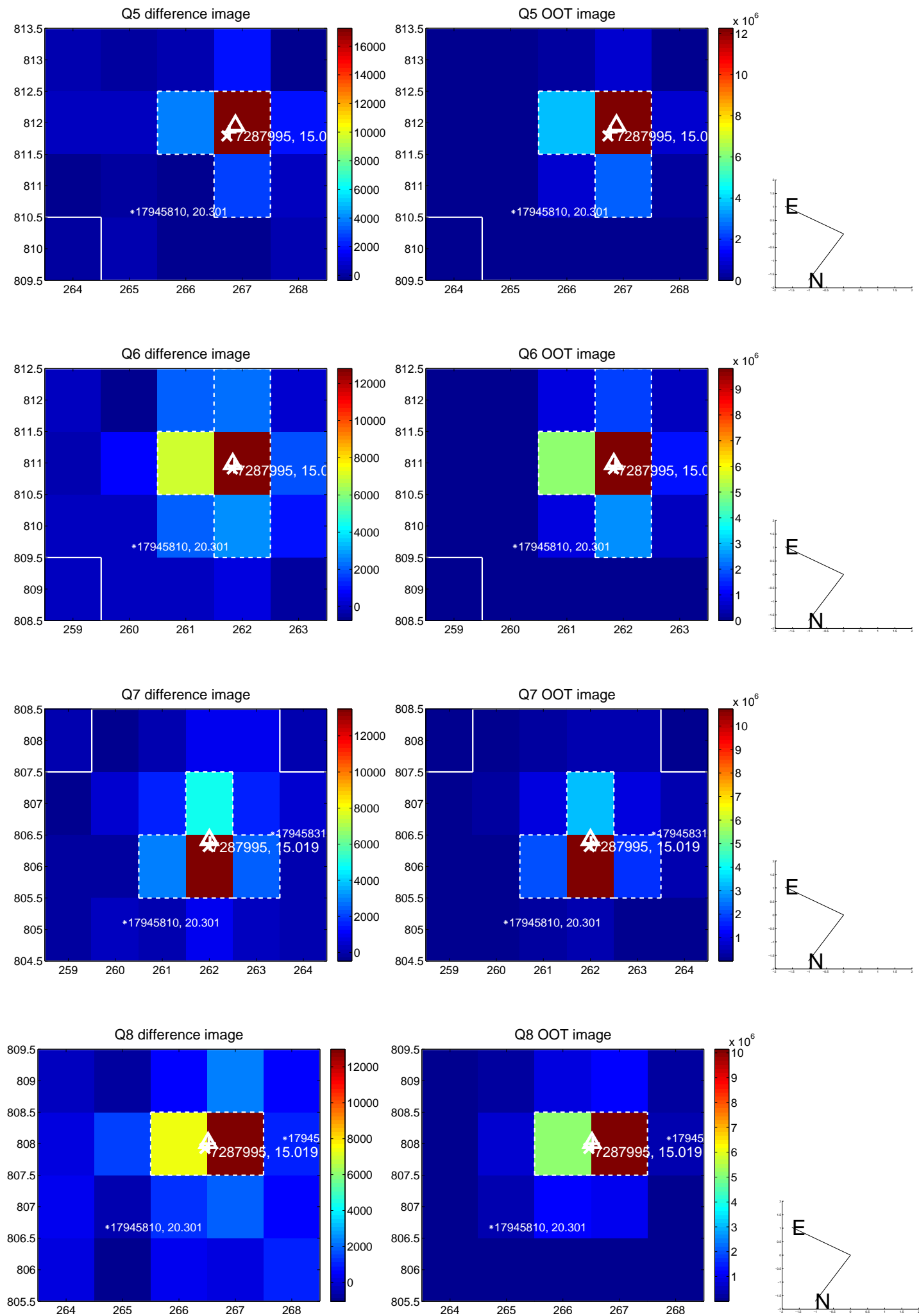


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

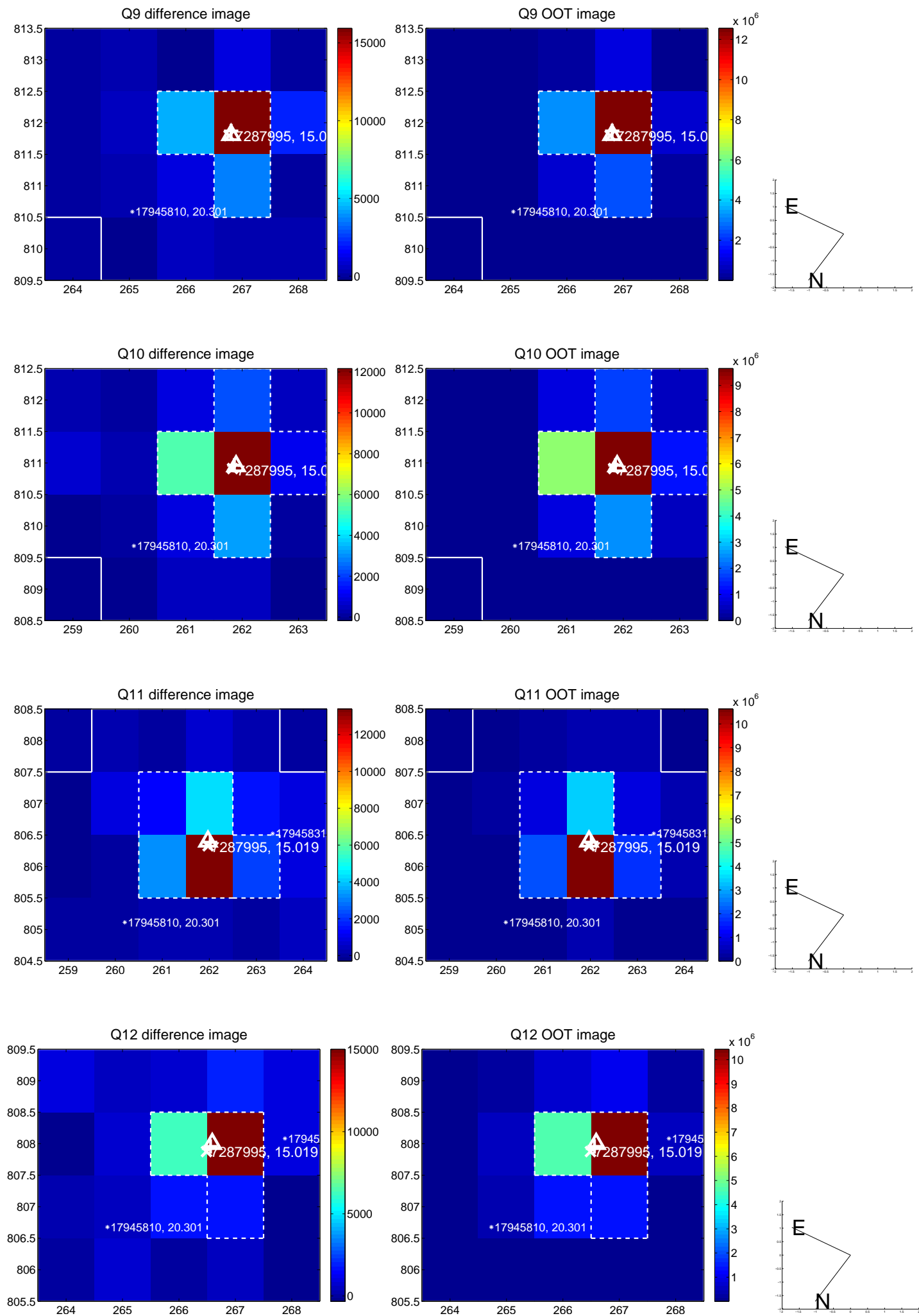
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



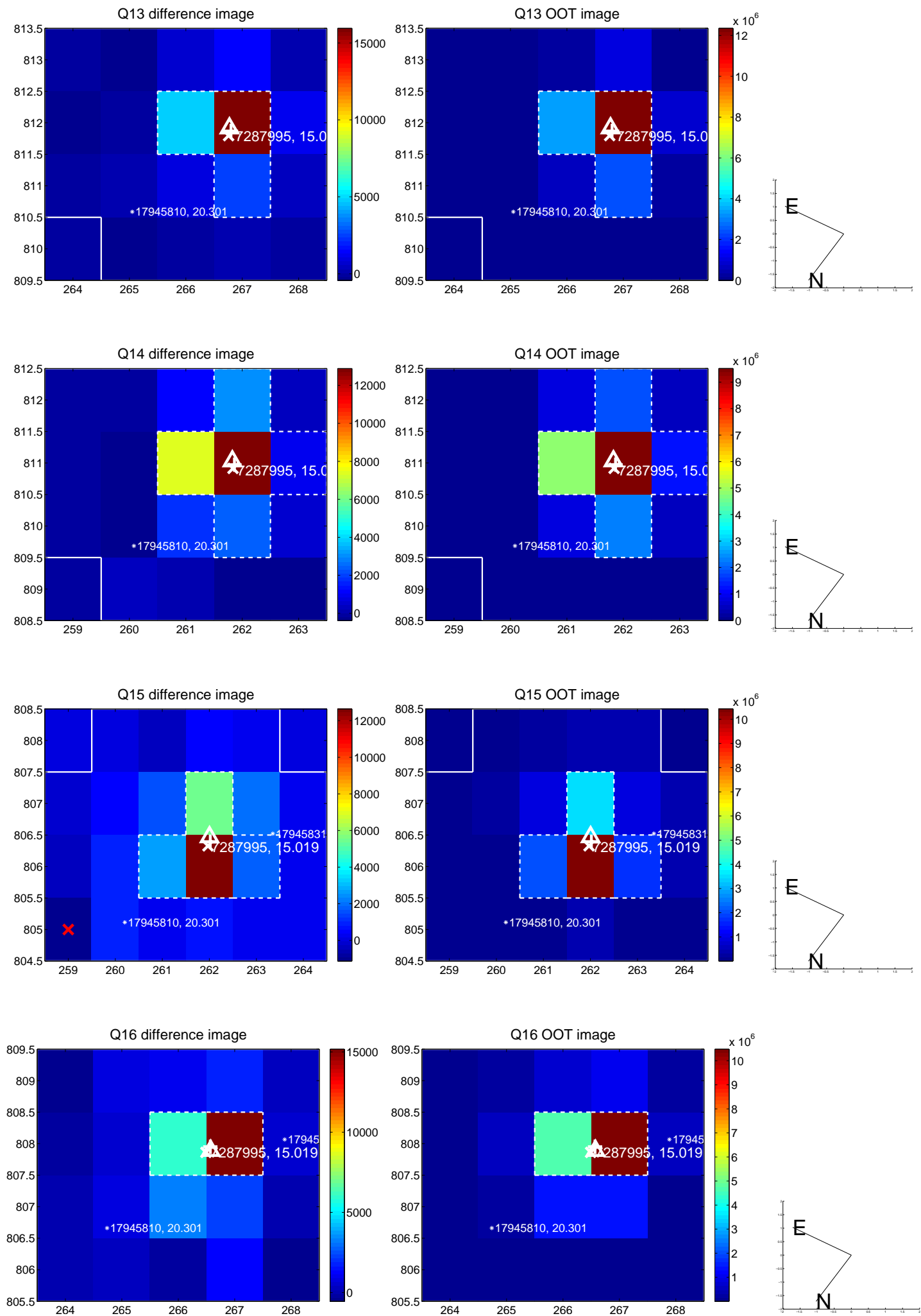
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



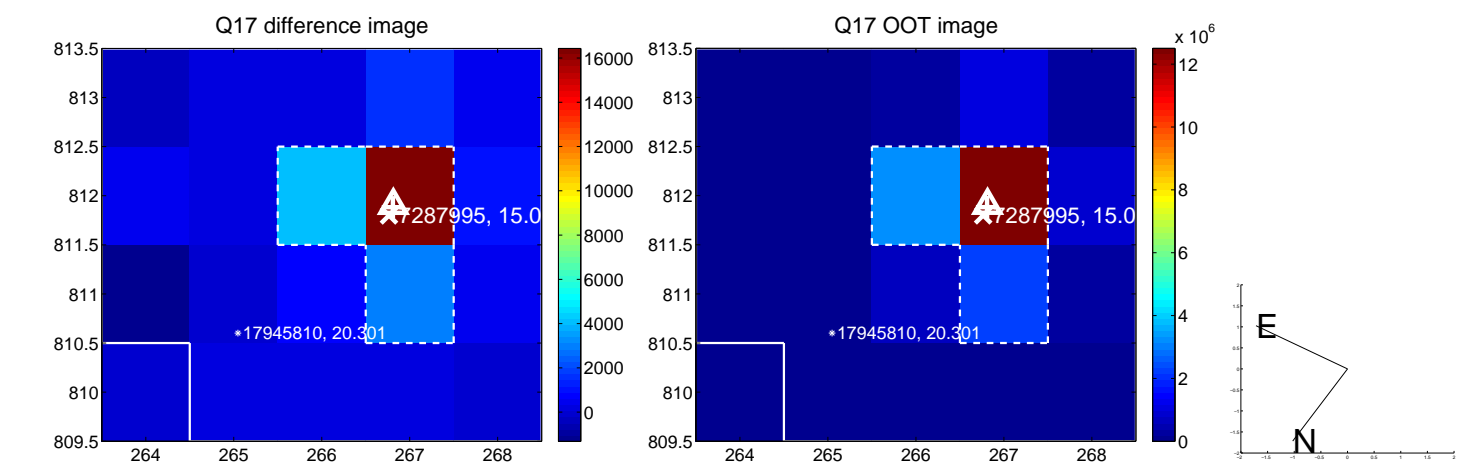
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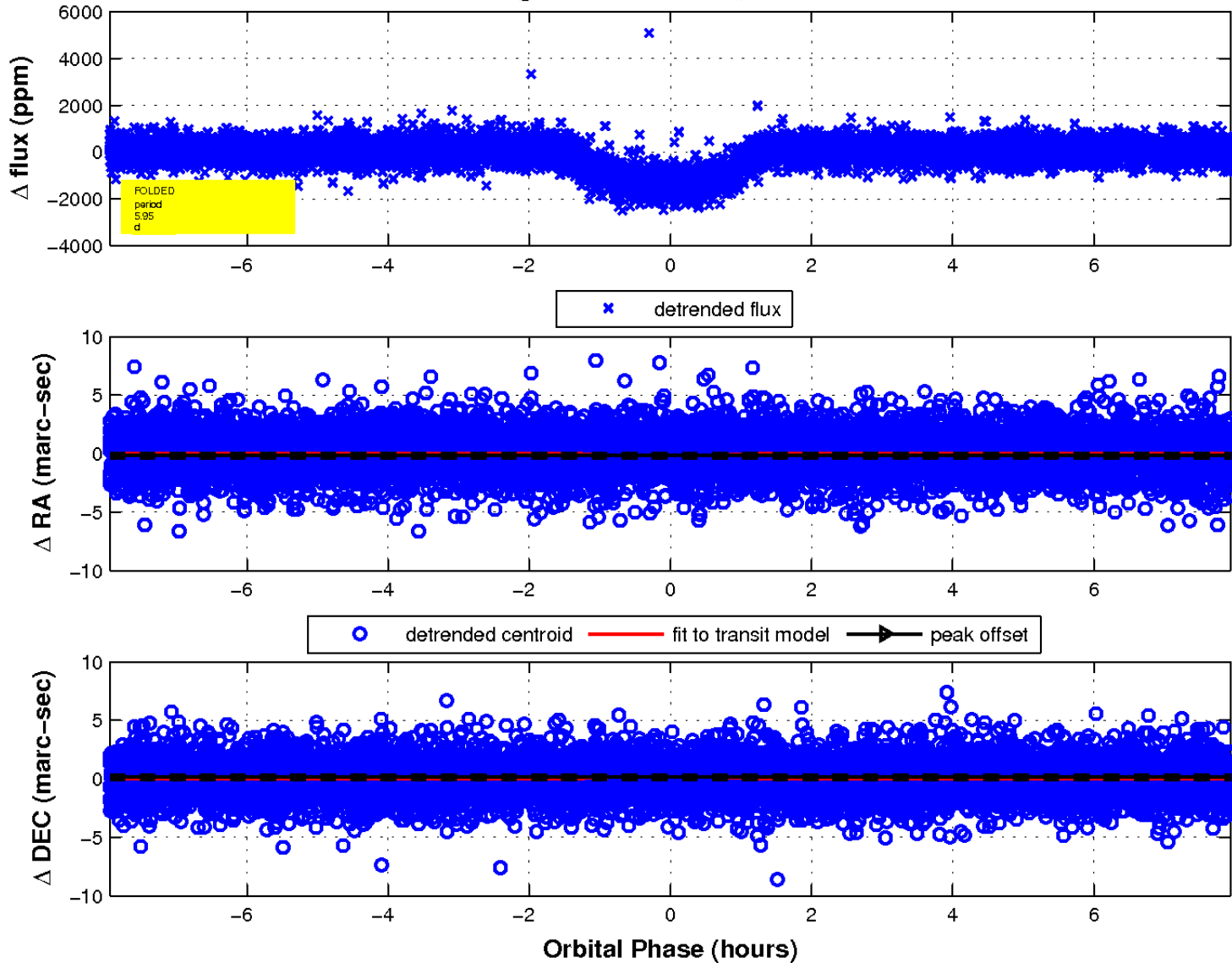
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

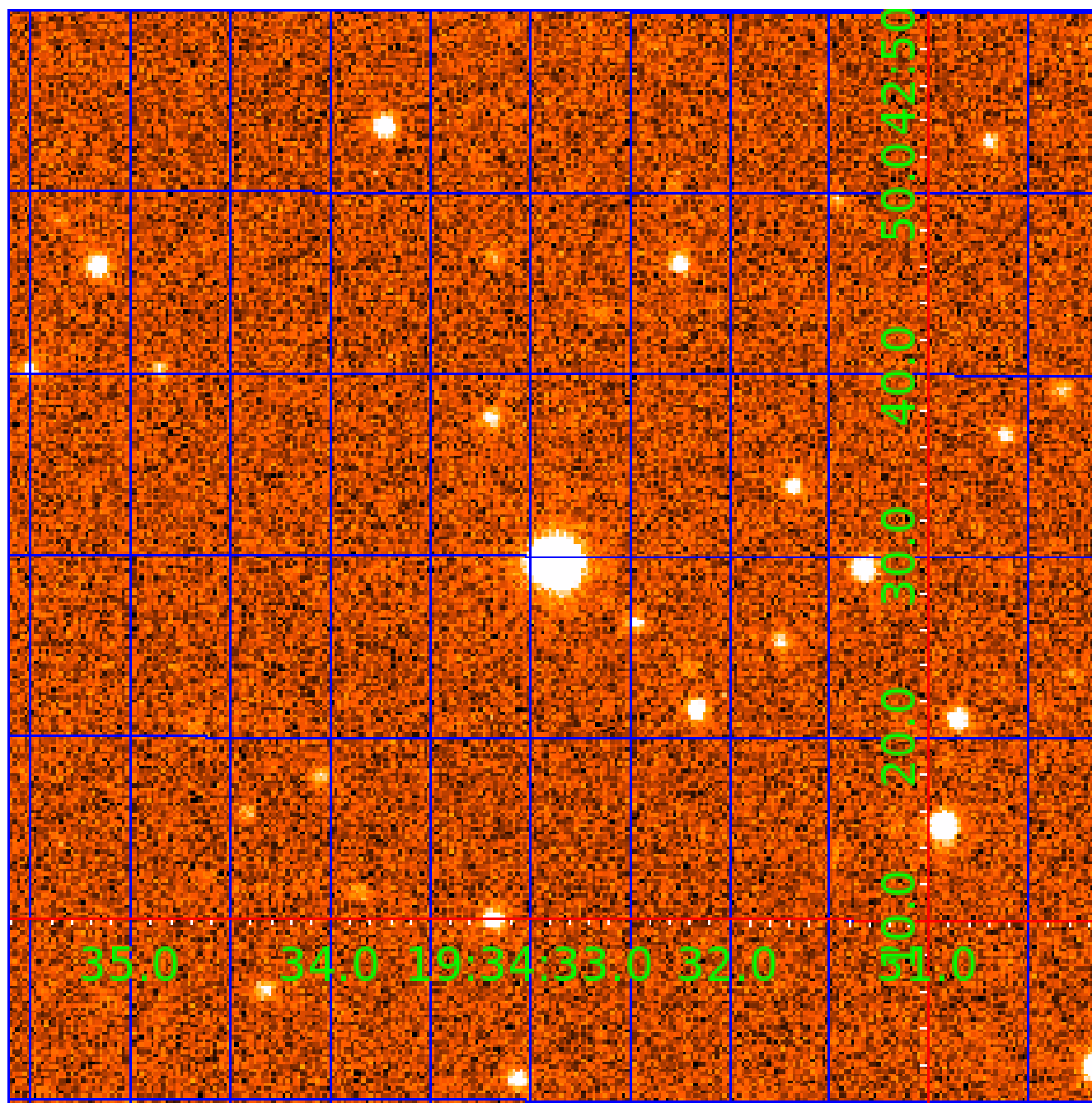


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 007287995

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}) |
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| 007287995-03 | OBS | 0877.03 | 20.837438 | 132.094124 | 384.0 | 2.490 | 12.1 | 13.5 | 0.63 | 4261 | 1.50 | 7.26 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007287995-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-02 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-03 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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 for comment definitions.

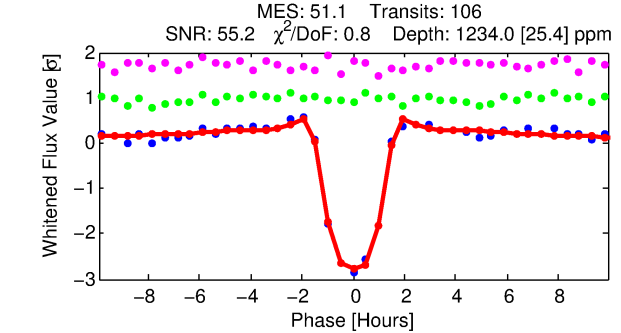
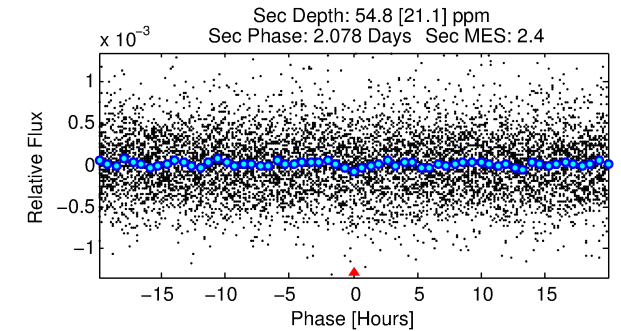
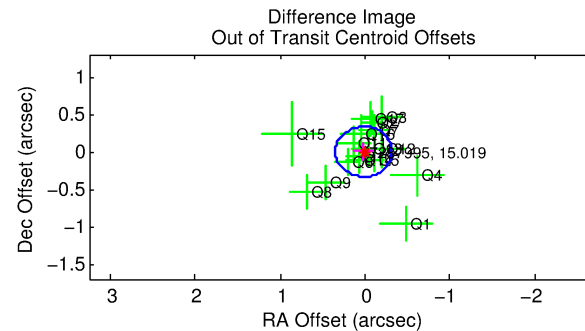
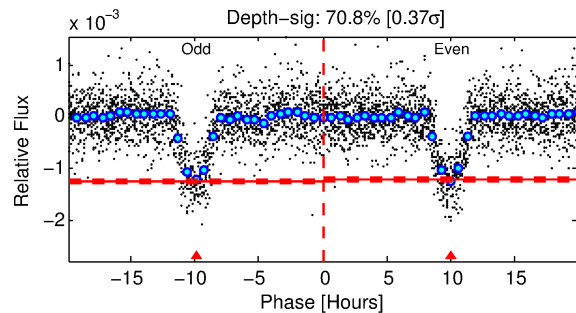
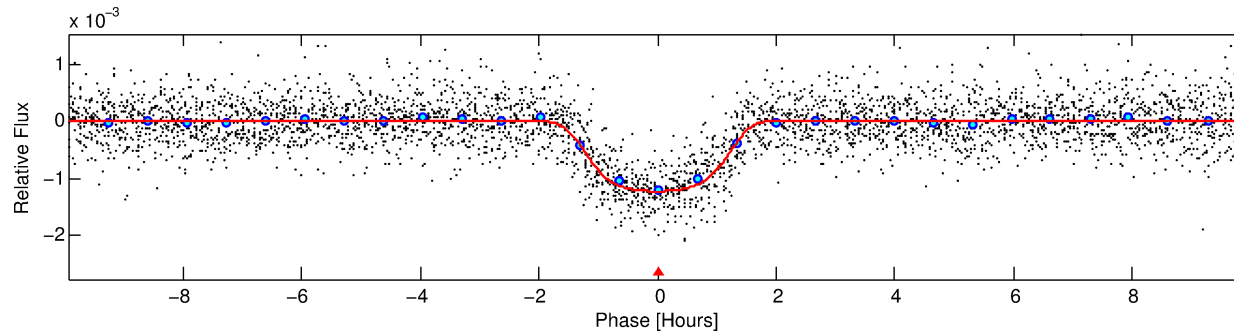
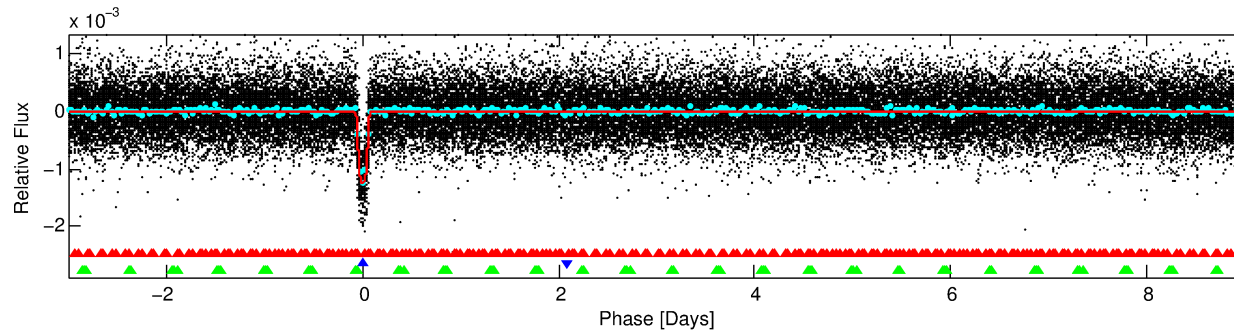
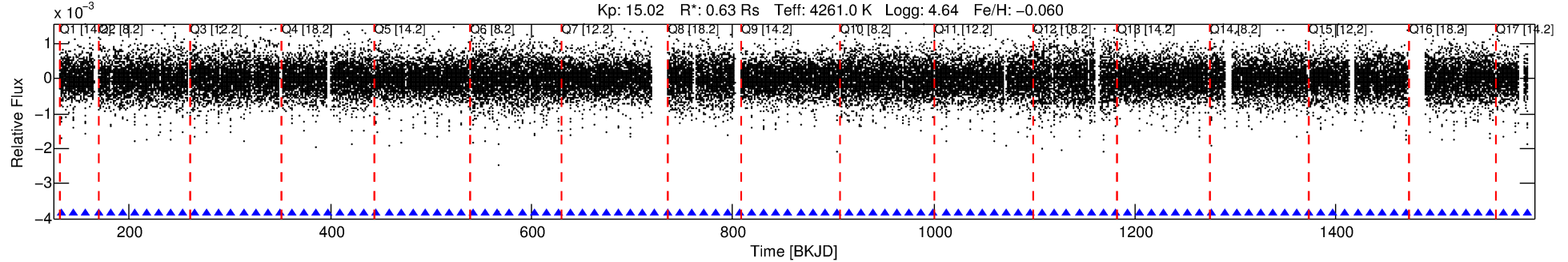
Ephemeris Match Information For 007287995-02

No Significant Match Found

DV One-Page Summary

KIC: 7287995 Candidate: 2 of 3 Period: 12.040 d
KOI: K00877.02 Name: Kepler-81c Corr: 0.895

Kp: 15.02 R*: 0.63 Rs Teff: 4261.0 K Logg: 4.64 Fe/H: -0.060



DV Fit Results:

Period = 12.03988 [0.00002] d
Epoch = 133.0660 [0.0012] BKJD
Rp/R* = 0.0418 [0.0009]
a/R* = 12.77 [0.70]
b = 0.94 [0.01]
Seff = 15.08 [1.43]
Teq = 502 [12] K
Rp = 2.89 [0.15] Re
a = 0.0886 [0.0033] AU
Ag = 28.37 [11.06] [2.47σ]
Teffp = 1793 [177] K [7.28σ]

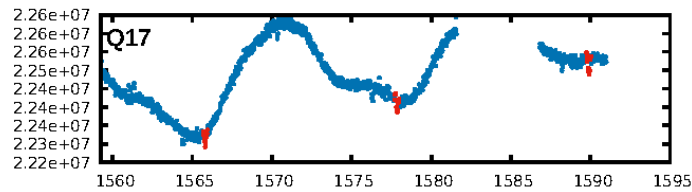
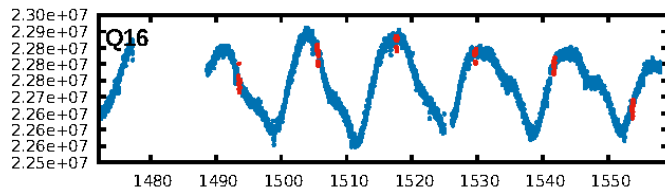
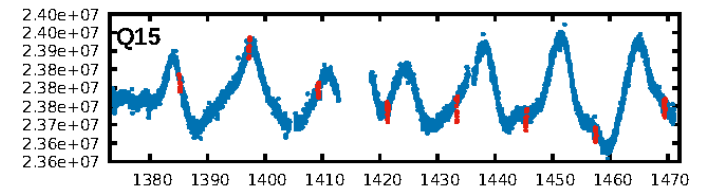
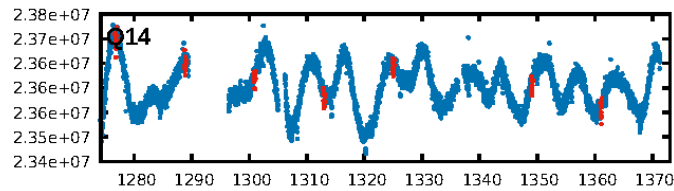
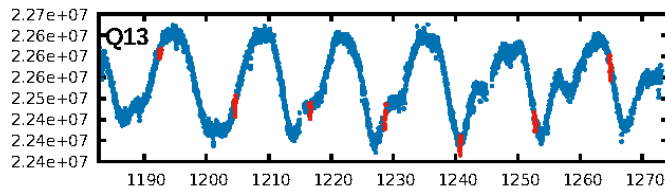
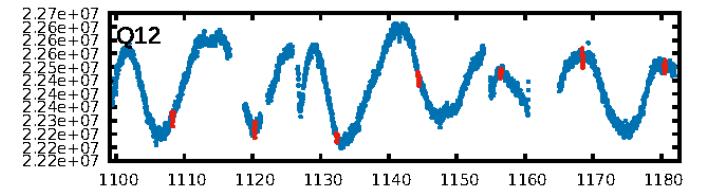
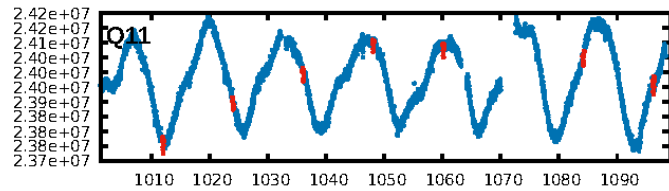
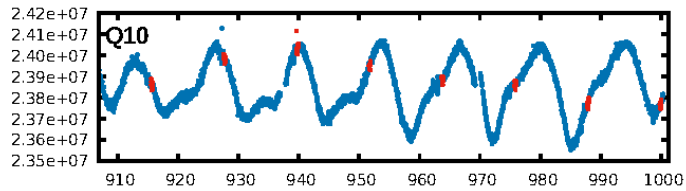
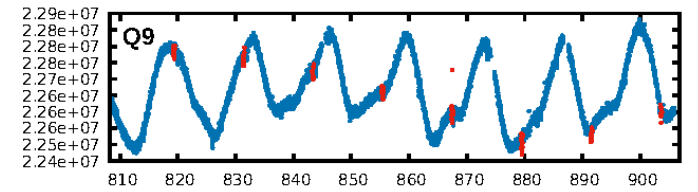
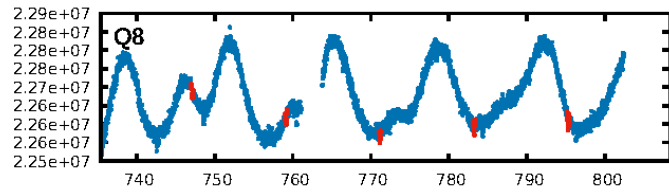
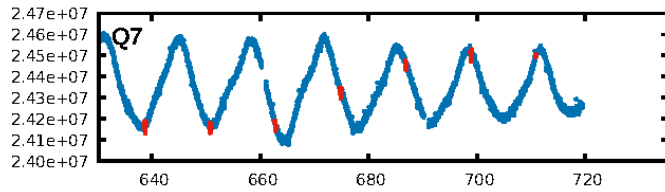
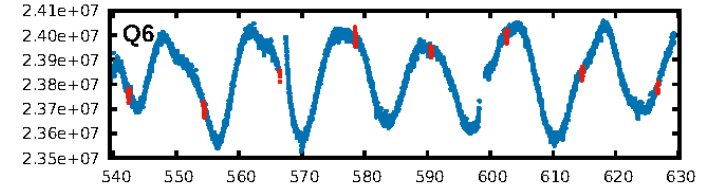
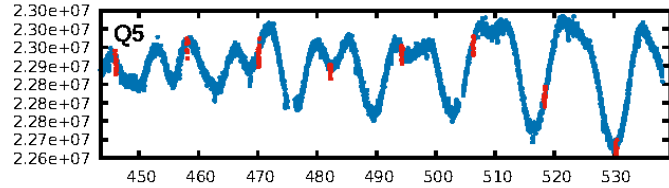
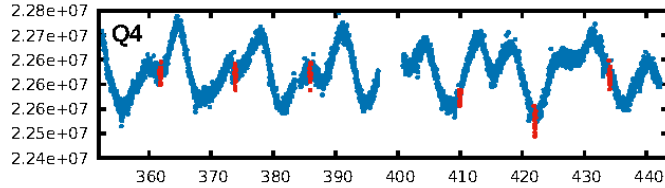
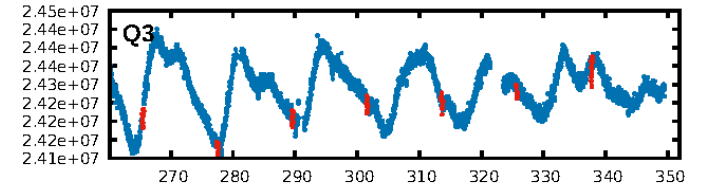
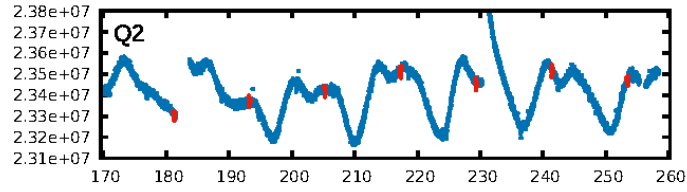
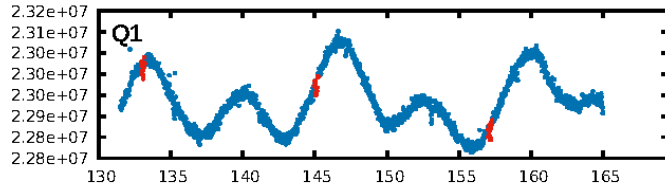
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.43σ]
LongPeriod-sig: 100.0% [50.94σ]
ModelChiSquare2-sig: 99.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [100/100]
GhostDiagnostic-chr: 2.988
Centroid-sig: 3.7%
Centroid-so: 0.507 arcsec [2.56σ]
OotOffset-rm: 0.014 arcsec [0.13σ]
KicOffset-rm: 0.292 arcsec [2.50σ]
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]

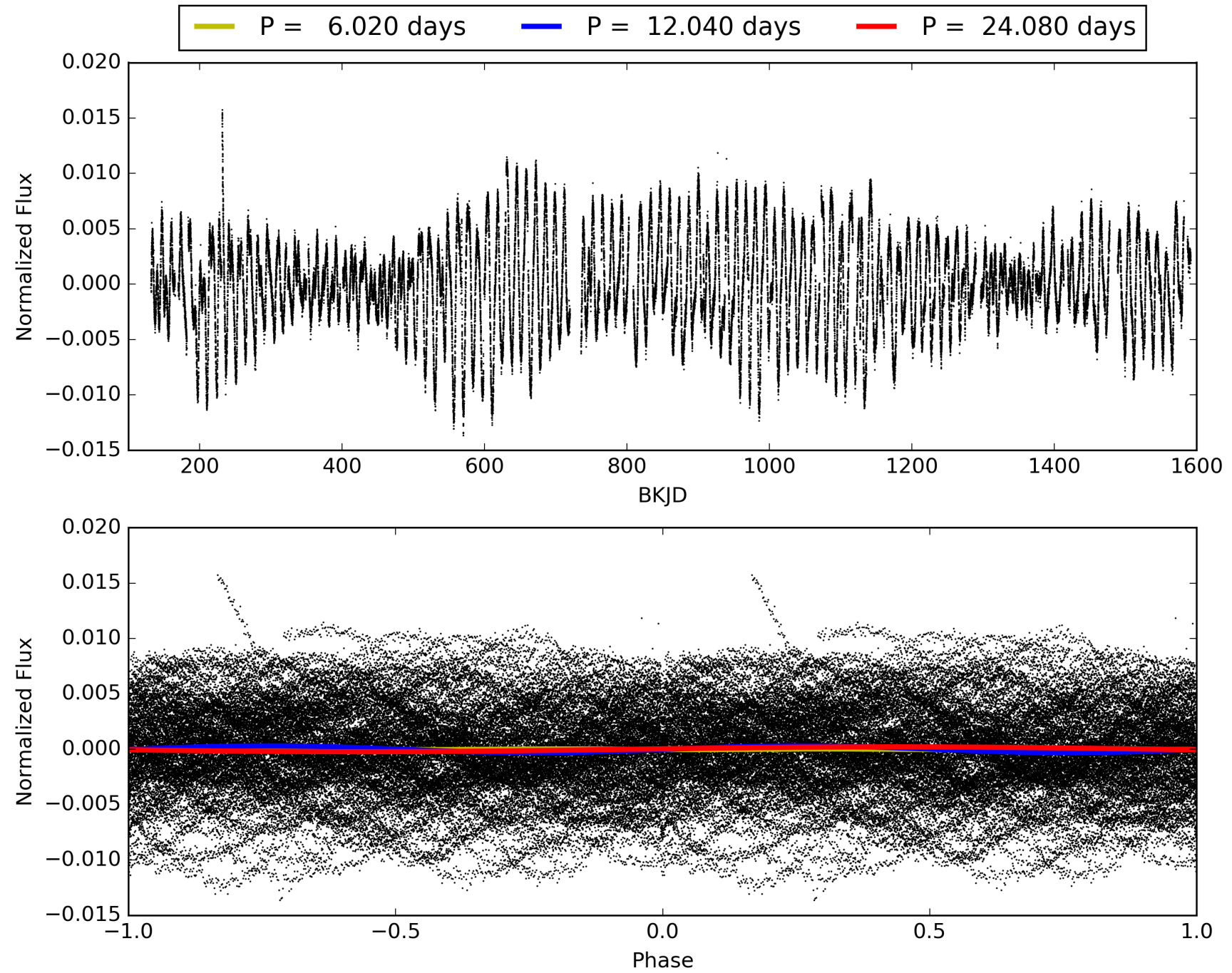
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:30:48 Z

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

TCE 007287995-02, PDC Light Curves

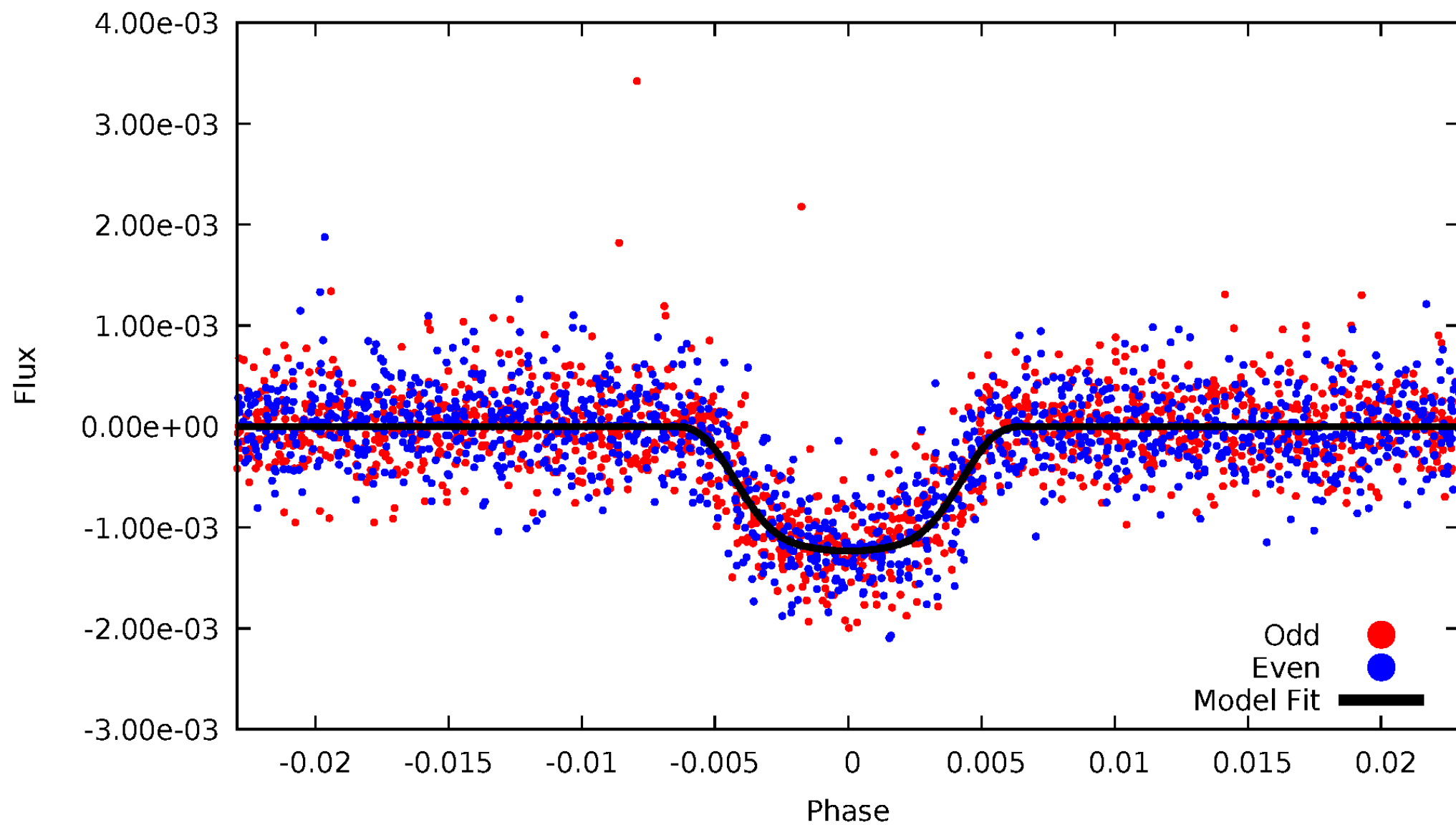


TCE 007287995-02



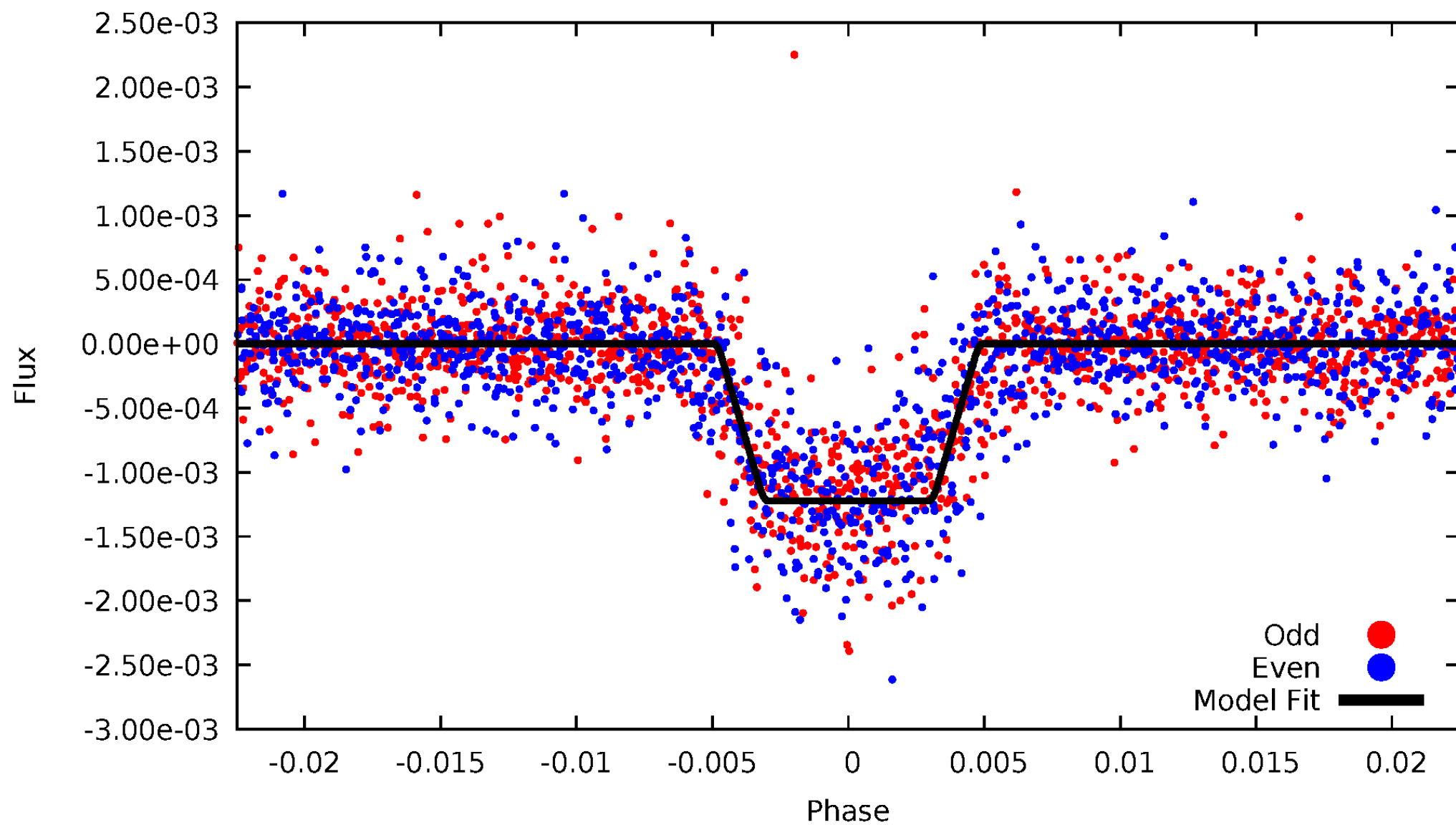
DV Odd/Even

TCE 007287995-02



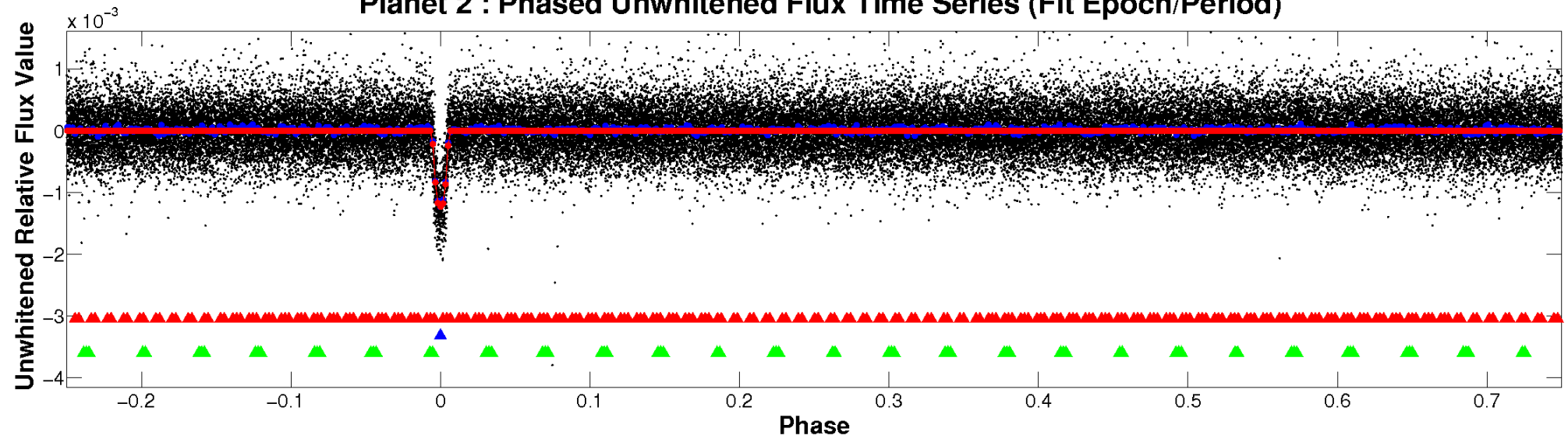
ALT Odd/Even

TCE 007287995-02

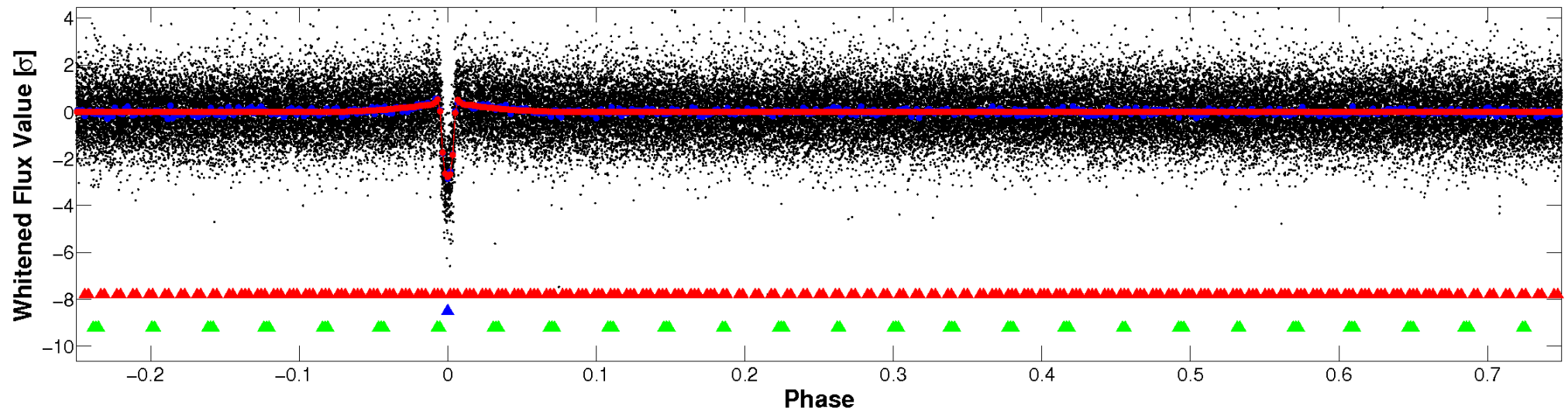


Non-Whitened Vs. Whitened Light Curve

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

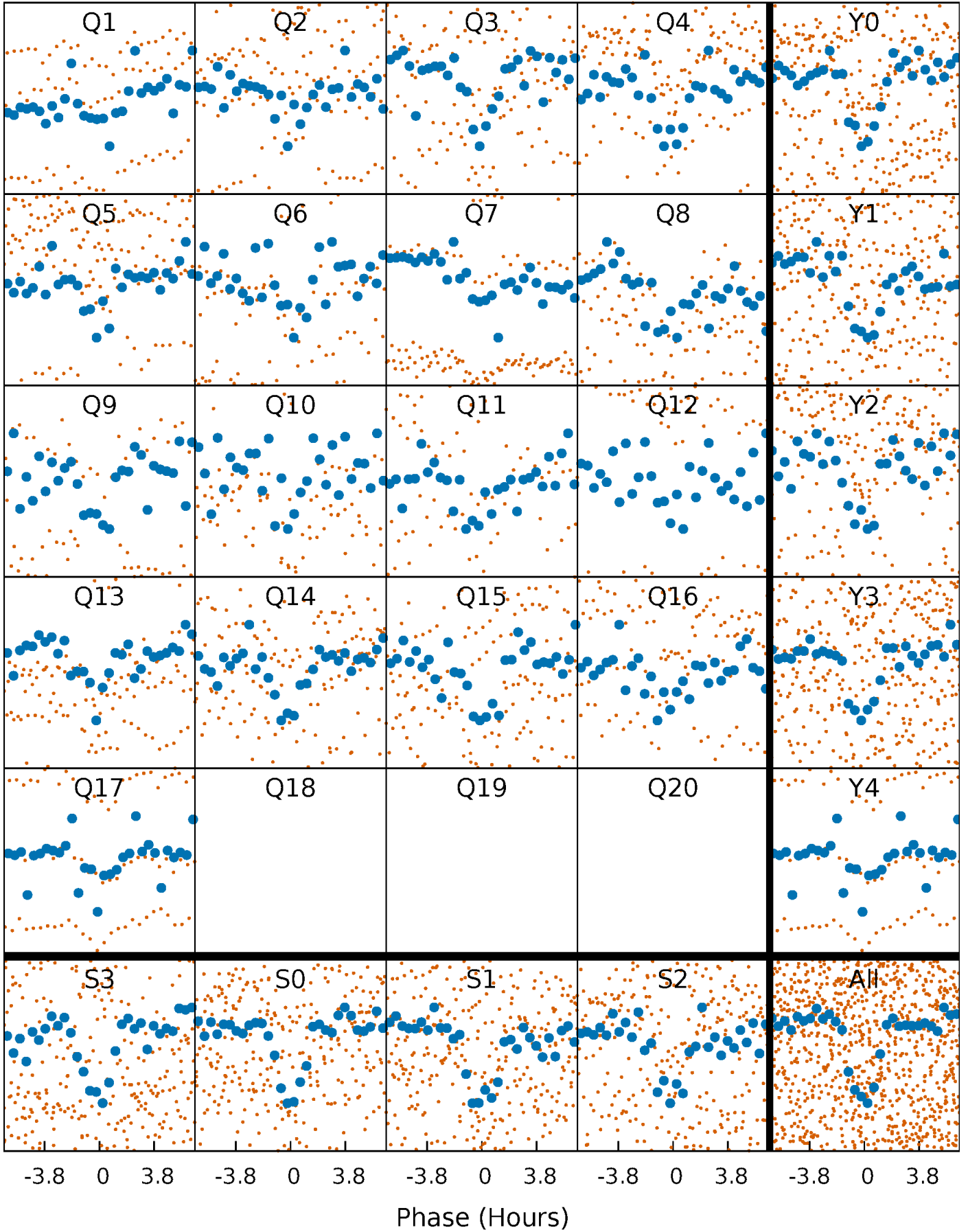


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



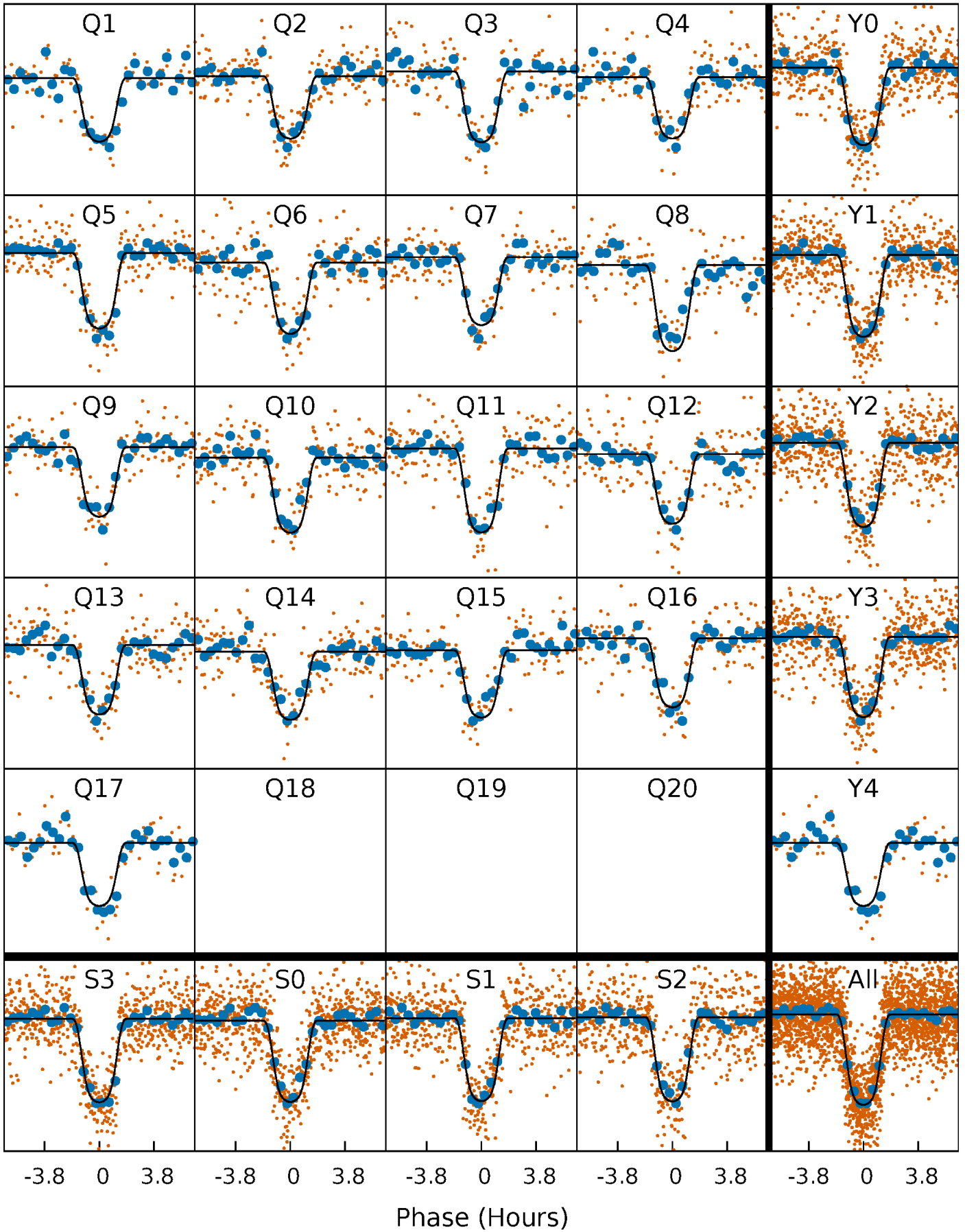
PDC Quarter-Phased Transit Curves

TCE 007287995-02 P= 12.039884 Days $T_0=133.065972$ (BKJD)



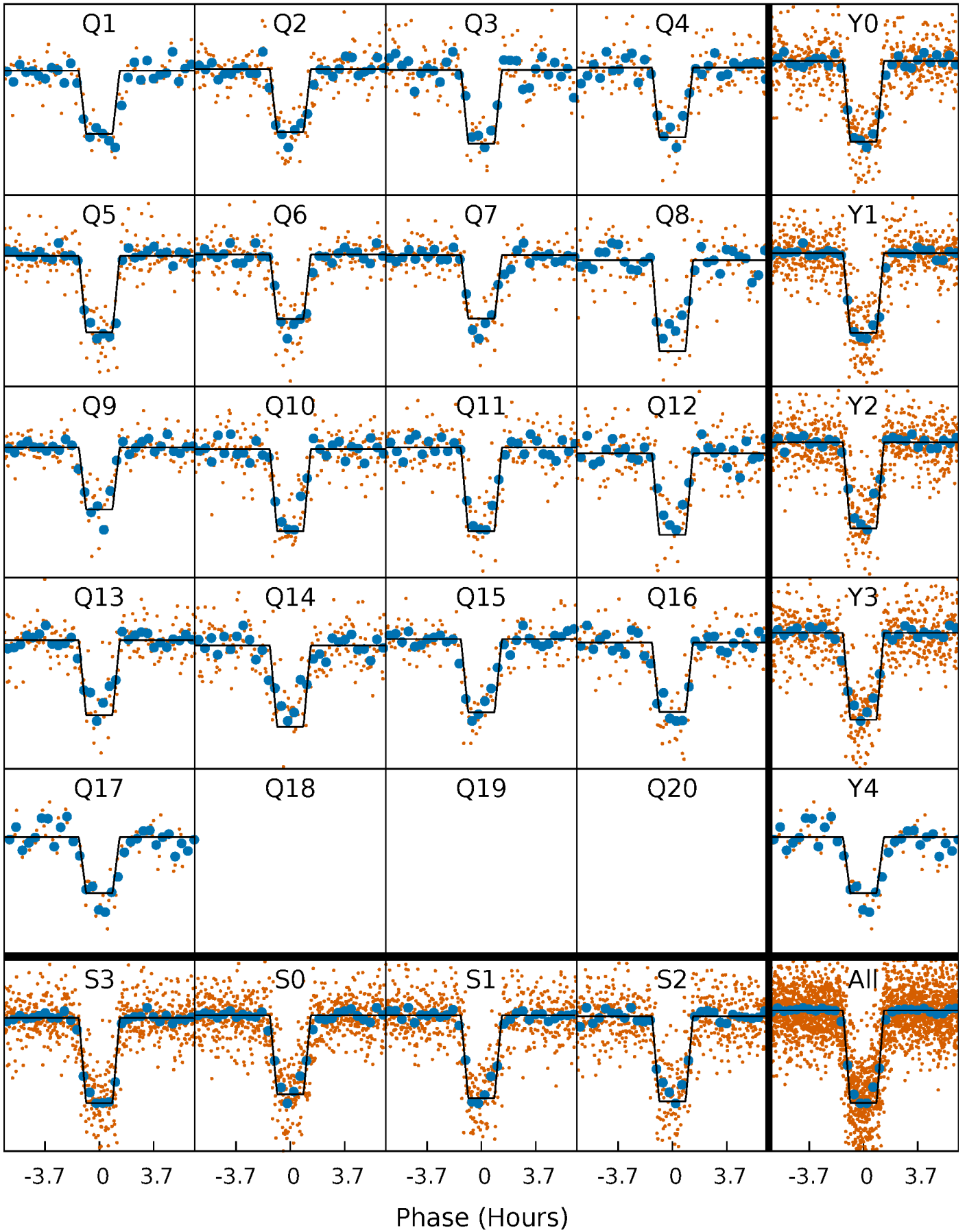
DV Quarter-Phased Transit Curves

TCE 007287995-02 P= 12.039884 Days $T_0=133.065972$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

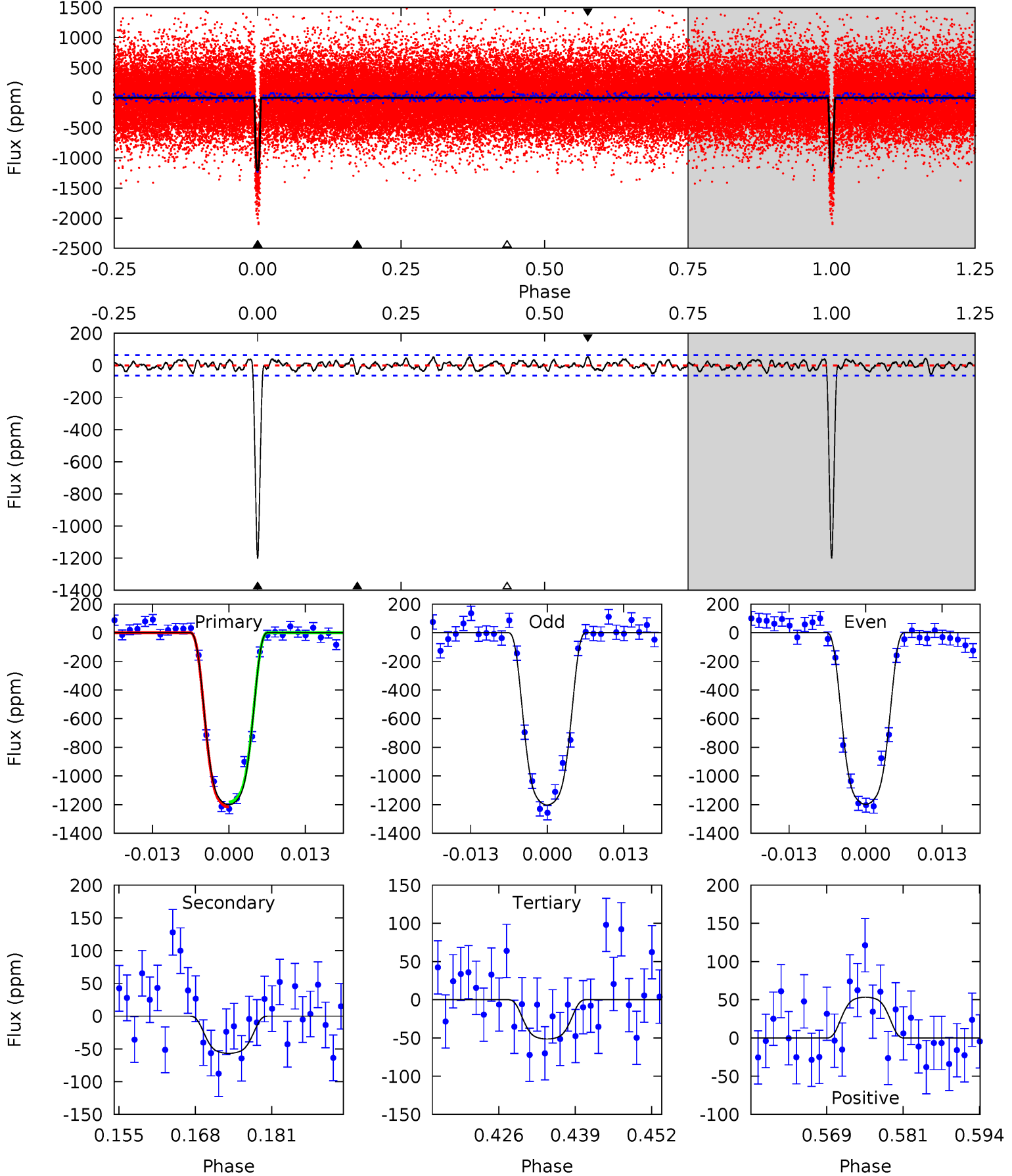
TCE 007287995-02 P= 12.039943 Days $T_0=133.062021$ (BKJD)



DV Model-Shift Uniqueness Test

007287995-02, $P = 12.039884$ Days, $E = 121.026088$ Days

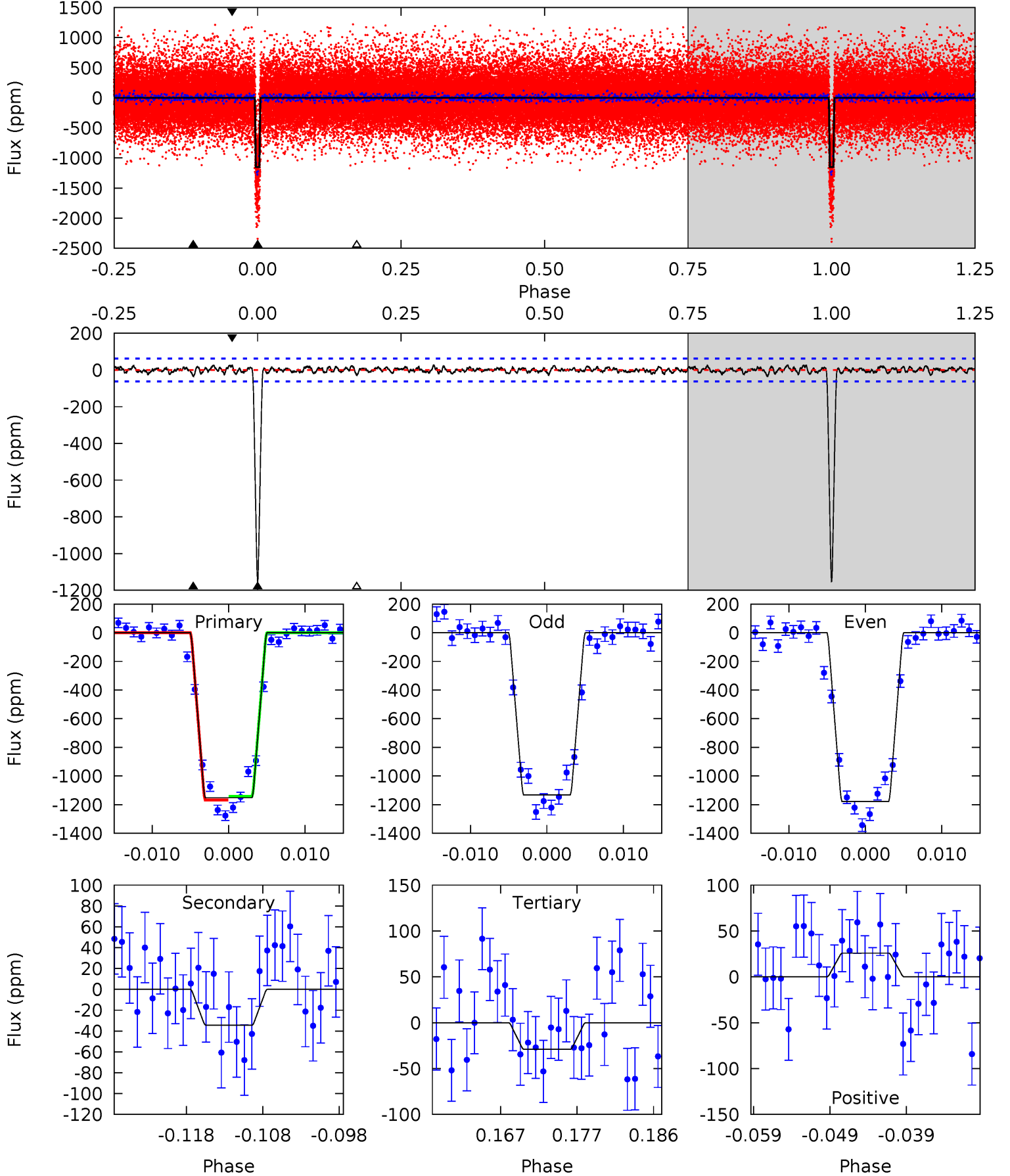
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 93.9 | 4.44 | 4.02 | 4.18 | 4.98 | 2.49 | 1.58 | 89.9 | 89.7 | 0.42 | 0.26 | 0.19 | 0.98 | 0.04 | 1.32 |



Alt Model-Shift Uniqueness Test

007287995-02, $P = 12.039943$ Days, $E = 121.022078$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 92.5 | 2.76 | 2.33 | 2.08 | 5.03 | 2.58 | 0.81 | 90.2 | 90.5 | 0.42 | 0.68 | 1.83 | 1.00 | 0.02 | 0 |



Stellar Parameters For KIC 007287995

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4261^{+85}_{-85} | $4.641^{+0.027}_{-0.020}$ | $-0.060^{+0.150}_{-0.150}$ | $0.633^{+0.026}_{-0.029}$ | $0.640^{+0.035}_{-0.029}$ | $3.551^{+0.389}_{-0.284}$ |
| | +2%/-2% | +1%/-0% | +250%/-250% | +4%/-5% | +5%/-5% | +11%/-8% |
| Source | SPE60 | SPE60 | SPE60 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 007287995-02 / KOI 0877.02

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|-------------------|---------------------|-----------------|
| DV | -57 ± 13 | $2.88^{+0.10}_{-0.09}$ | 701^{+15}_{-16} | 2541^{+72}_{-87} | 29^{+7}_{-6} |
| Alt. | -34 ± 12 | $2.41^{+0.08}_{-0.09}$ | 700^{+17}_{-14} | 2495^{+97}_{-146} | 26^{+9}_{-10} |

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 $A_{obs} \gg 1.0$

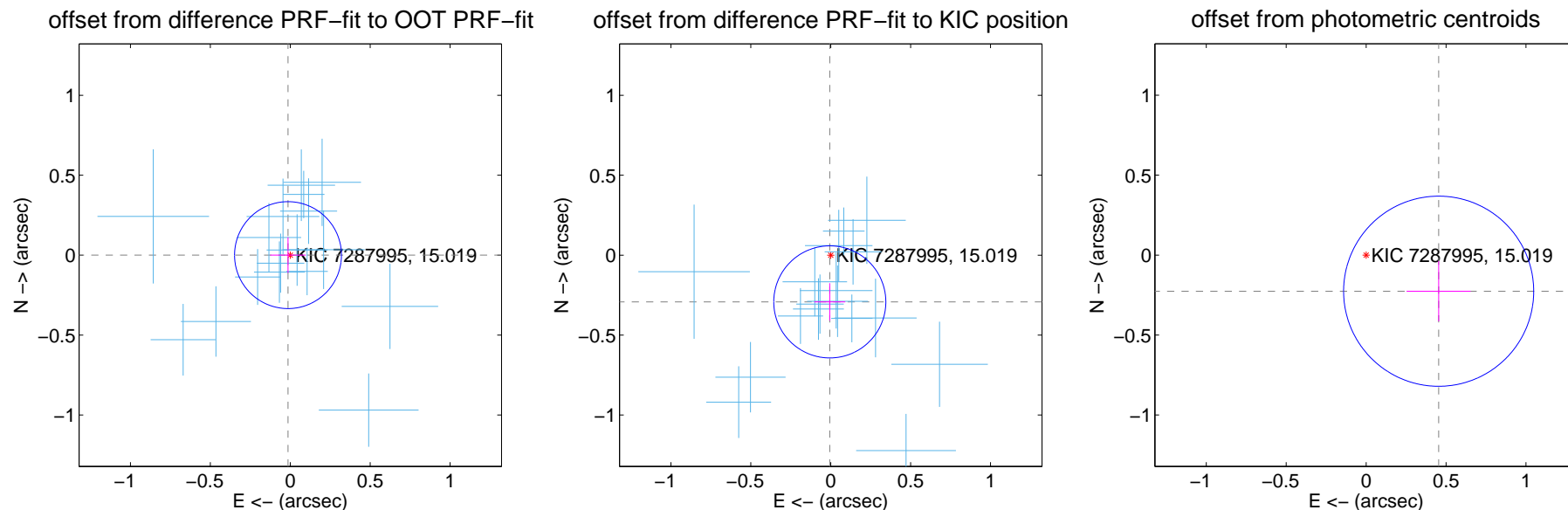
DV Centroid Data

Supplemental centroid analysis for 007287995-02. Kepler magnitude: 15.02. Transit SNR 55.21

There are 17 quarters with good PRF difference image offsets

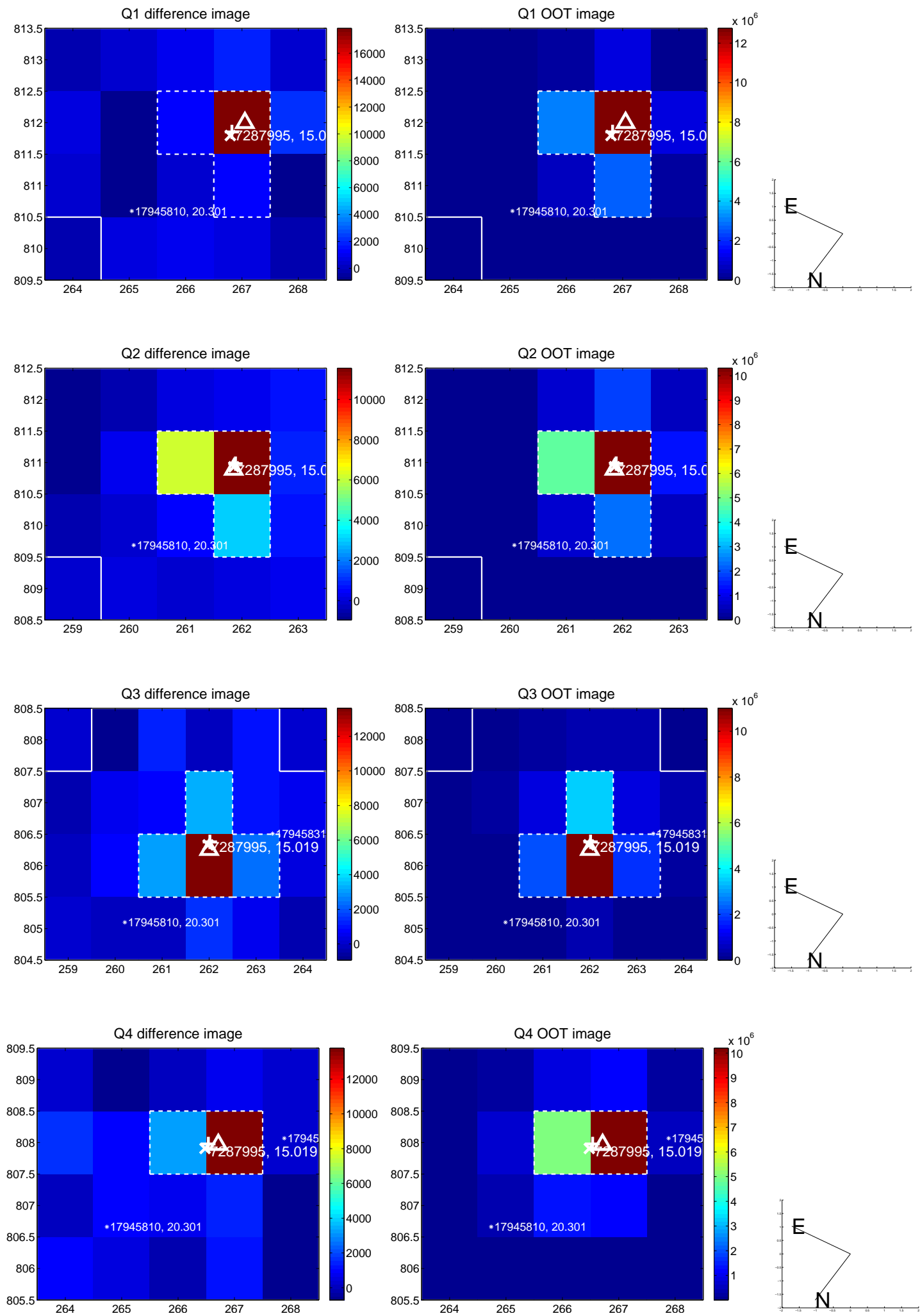
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.014 ± 0.111 | 0.13 | 0.014 ± 0.111 | 0.000 ± 0.112 |
| PRF-fit source offset from KIC position | 0.292 ± 0.117 | 2.50 | 0.006 ± 0.097 | -0.292 ± 0.117 |
| photometric centroid source offset | 0.51 ± 0.20 | 2.56 | -0.45 ± 0.20 | -0.23 ± 0.19 |

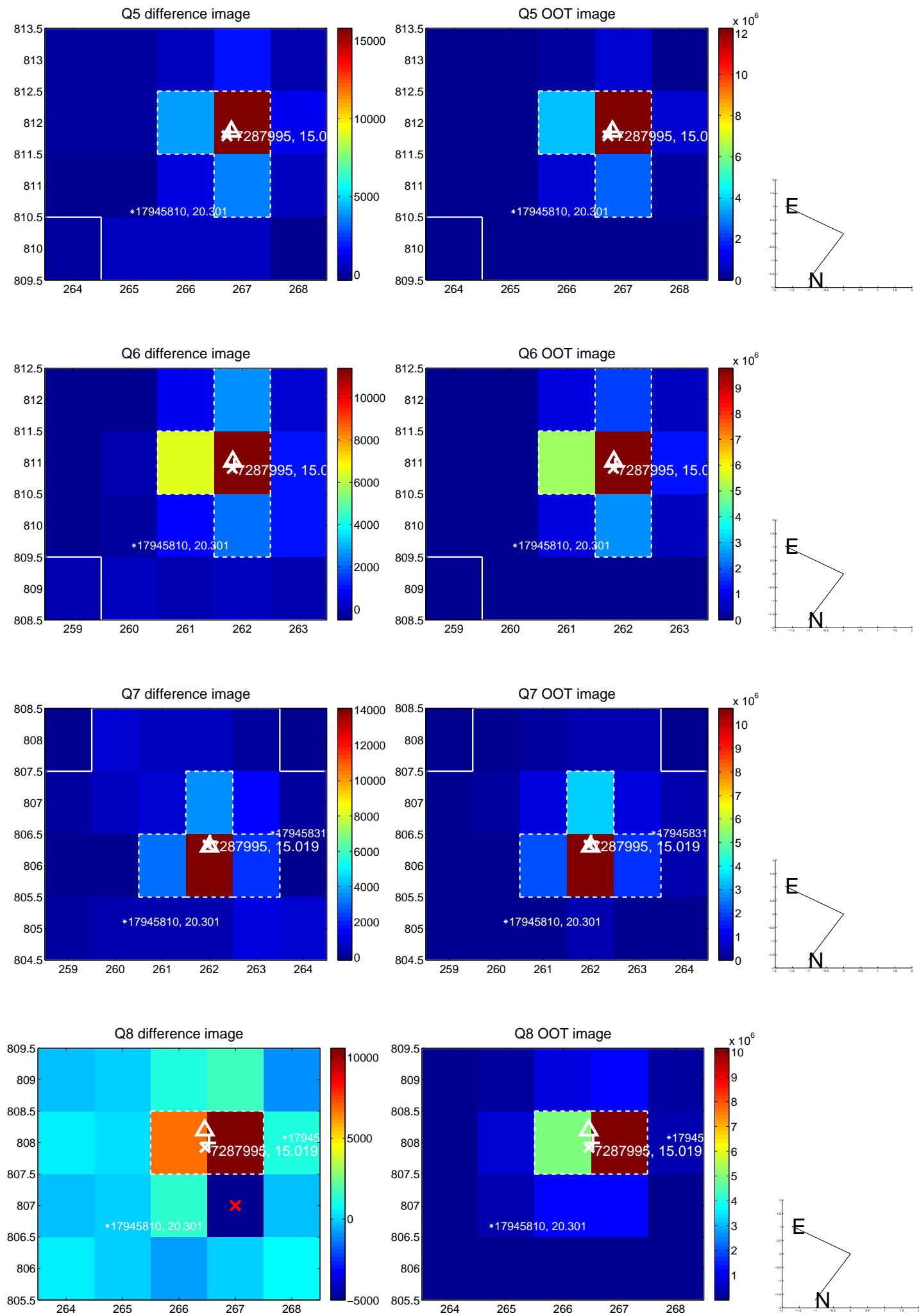


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

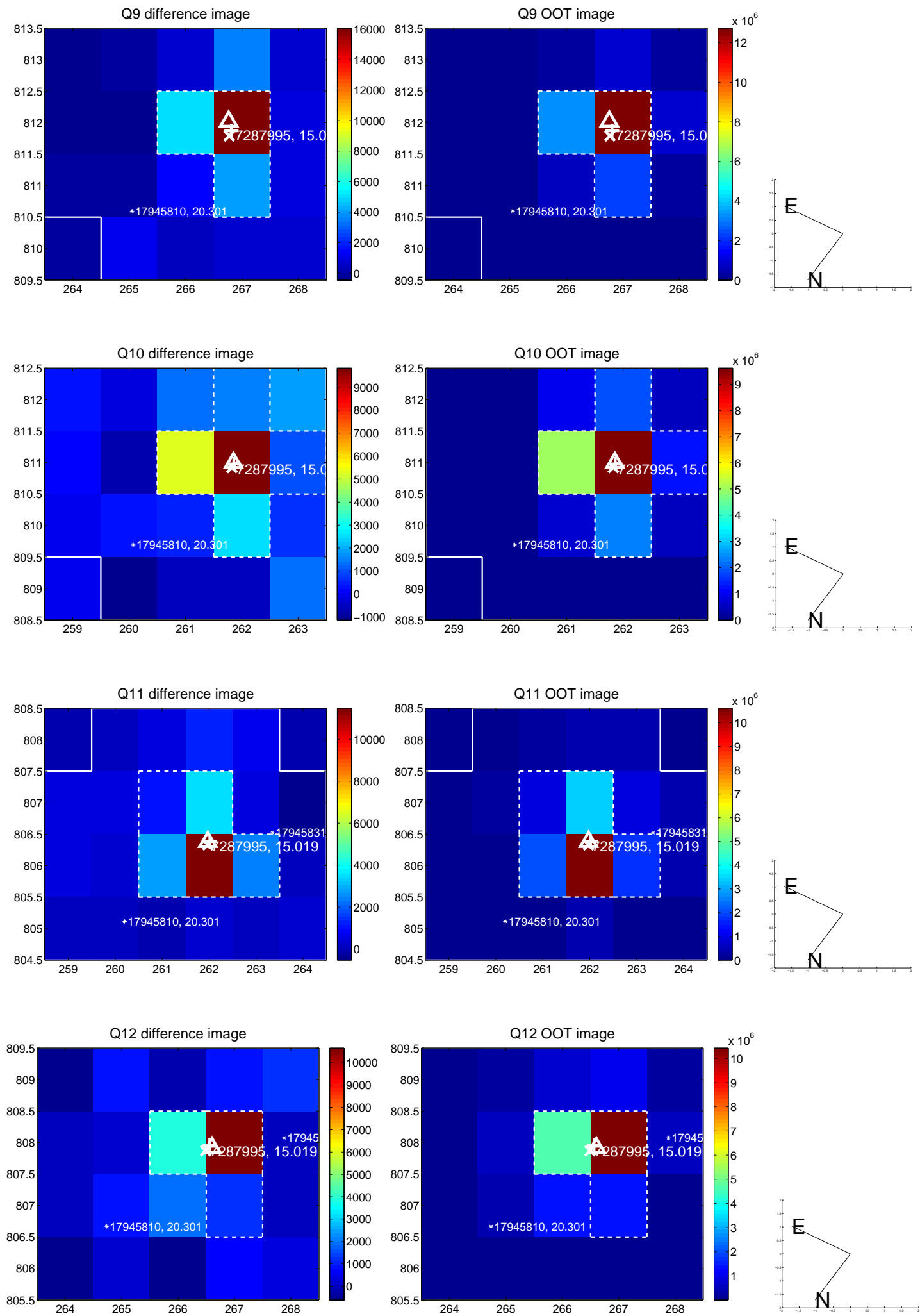
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



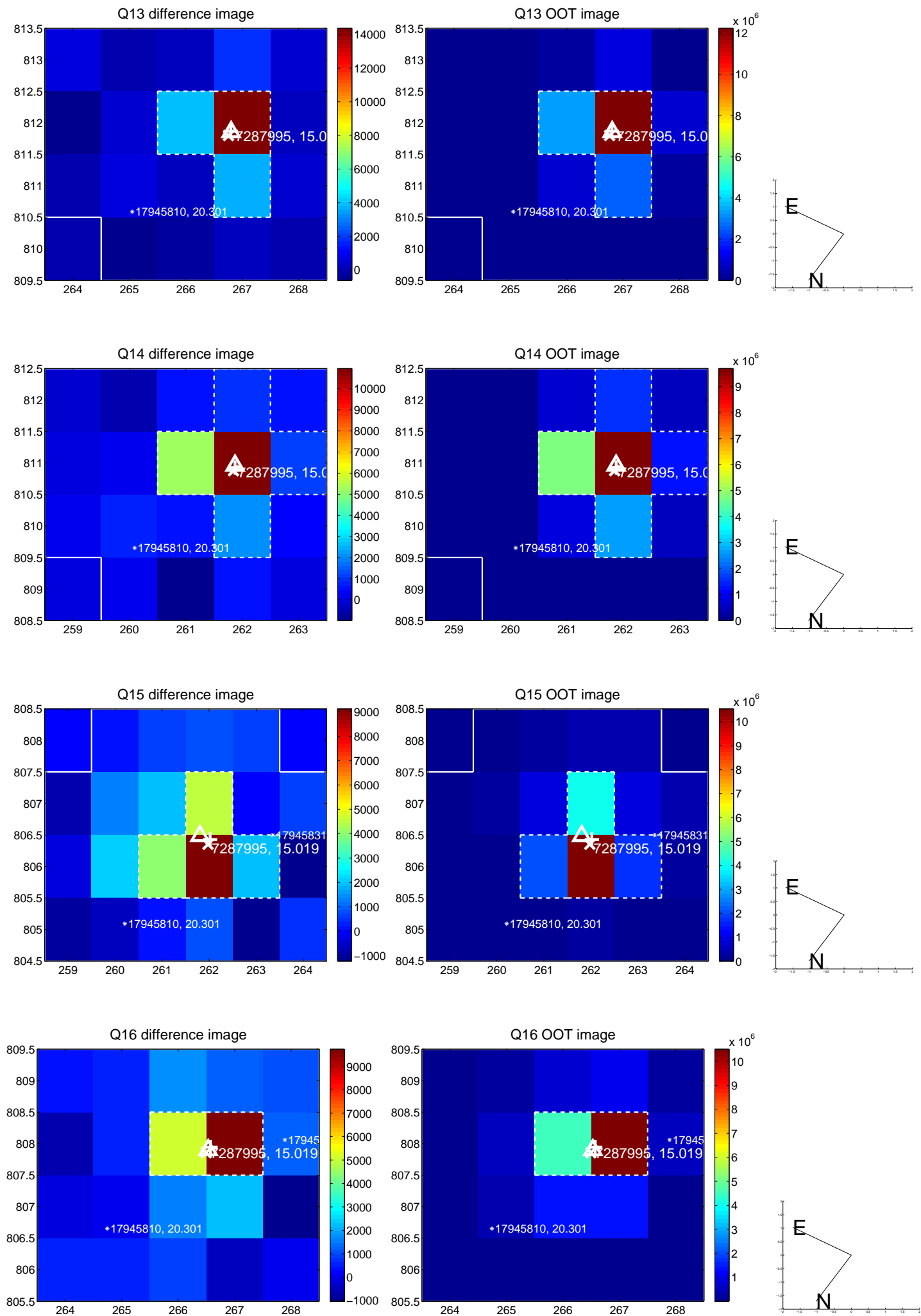
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

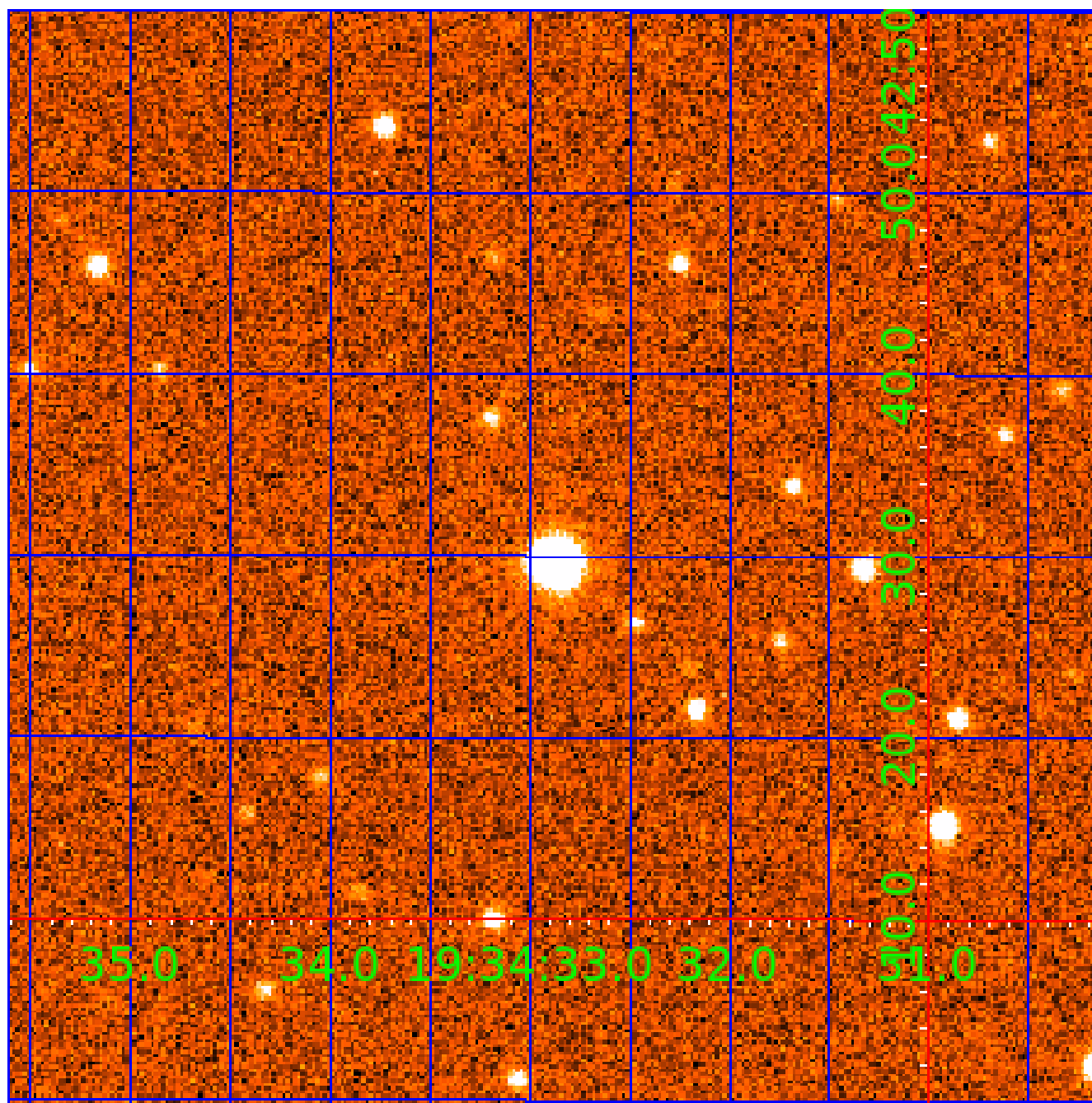


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007287995

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007287995-01 | OBS | 0877.01 | 5.954889 | 135.227746 | 1407.5 | 2.647 | 83.3 | 86.5 | 0.63 | 4261 | 2.86 | 38.55 |
| 007287995-02 | OBS | 0877.02 | 12.039884 | 133.065972 | 1234.0 | 3.314 | 51.1 | 55.2 | 0.63 | 4261 | 2.89 | 15.08 |
| 007287995-03 | OBS | 0877.03 | 20.837438 | 132.094124 | 384.0 | 2.490 | 12.1 | 13.5 | 0.63 | 4261 | 1.50 | 7.26 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007287995-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-02 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 007287995-03 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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 for comment definitions.

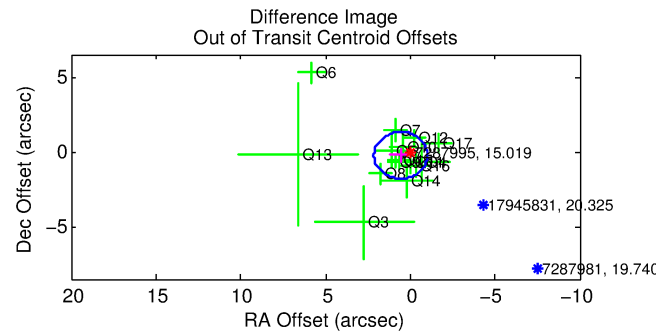
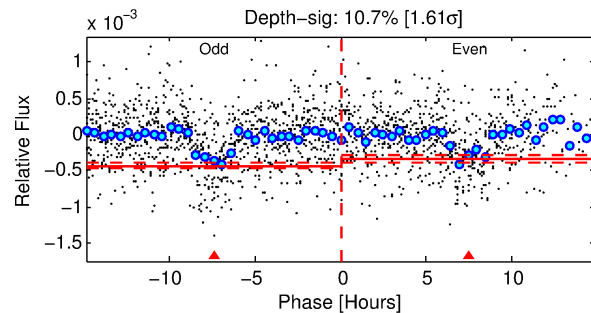
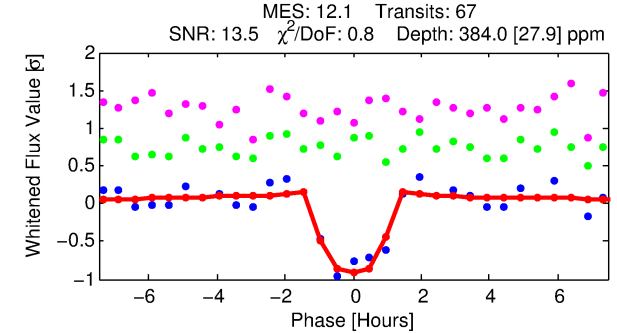
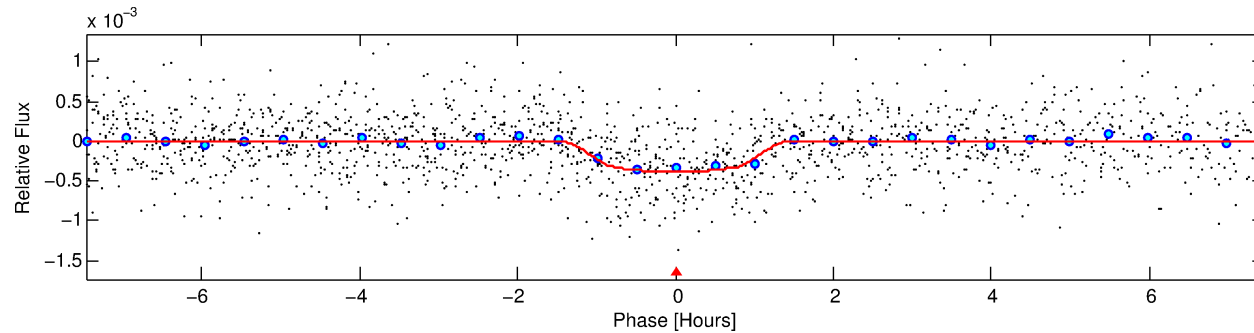
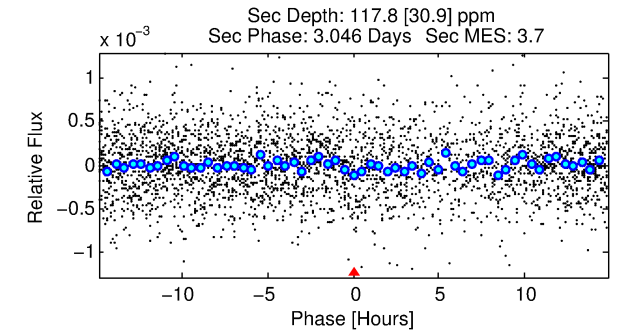
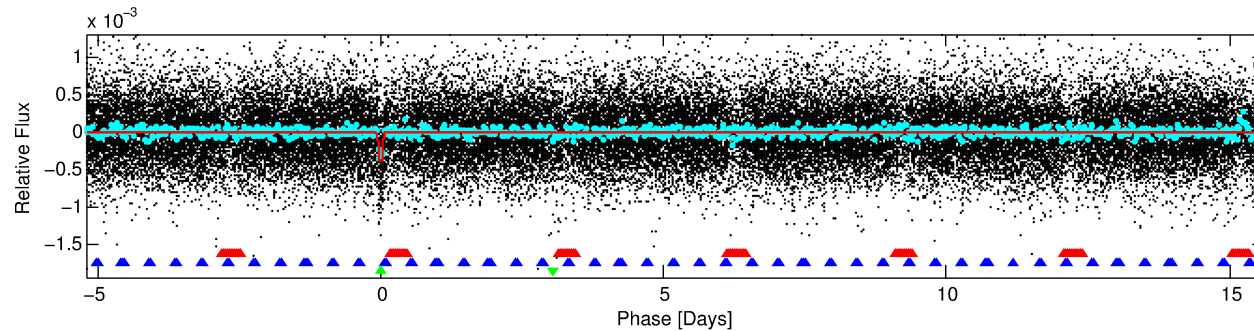
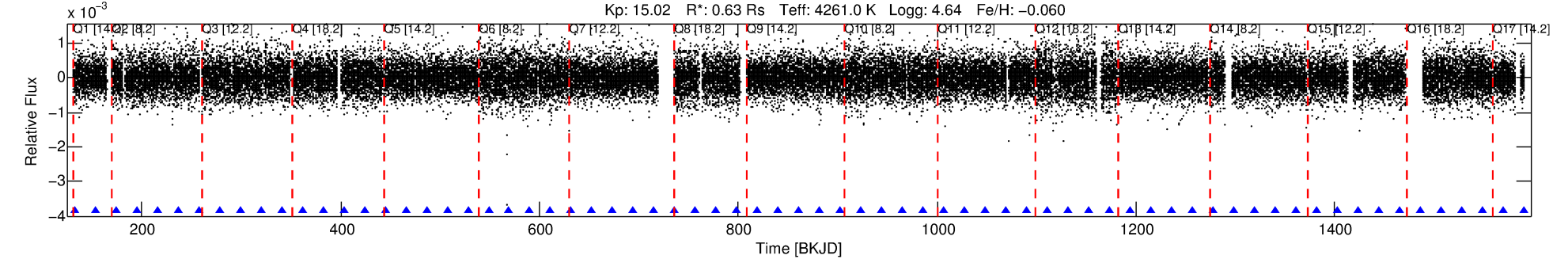
Ephemeris Match Information For 007287995-03

No Significant Match Found

DV One-Page Summary

KIC: 7287995 Candidate: 3 of 3 Period: 20.837 d
KOI: K00877.03 Name: Kepler-81d Corr: 0.961

Kp: 15.02 R*: 0.63 Rs Teff: 4261.0 K Logg: 4.64 Fe/H: -0.060



DV Fit Results:

Period = 20.83744 [0.00010] d
Epoch = 132.0941 [0.0041] BKJD
Rp/R* = 0.0217 [0.0103]
a/R* = 32.45 [57.00]
b = 0.89 [0.44]
Seff = 7.26 [0.69]
Teq = 419 [10] K
Rp = 1.50 [0.72] Re
a = 0.1277 [0.0047] AU
Ag = 468.32 [462.91] [1.01σ]
Teffp = 3010 [745] K [3.48σ]

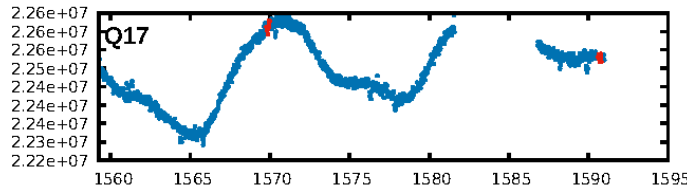
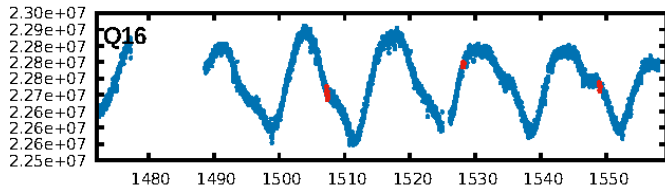
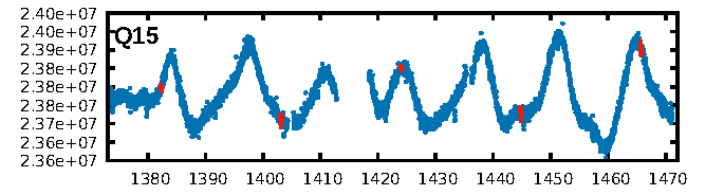
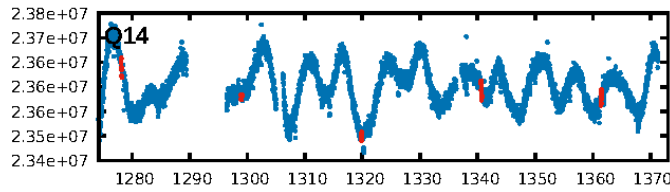
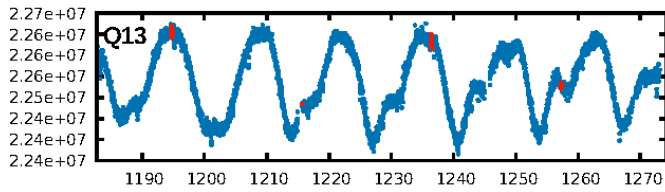
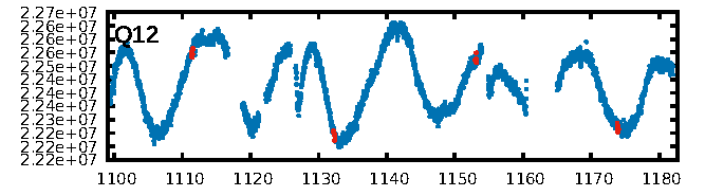
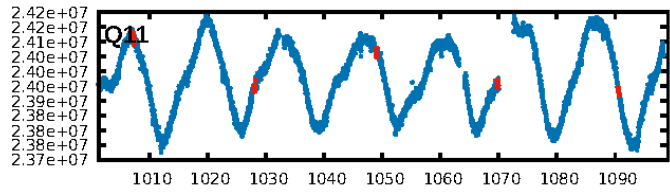
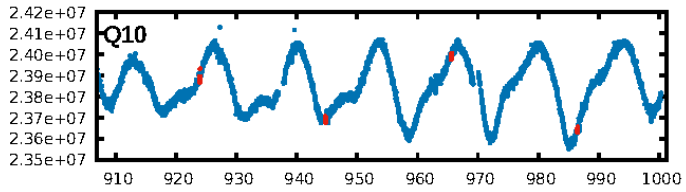
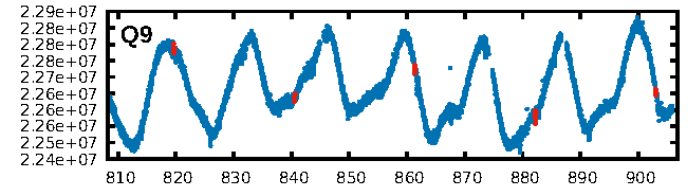
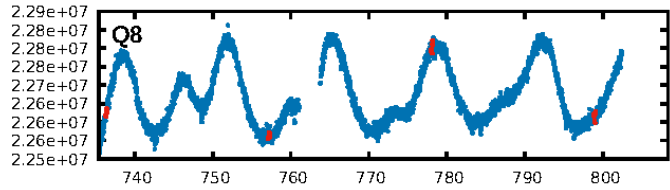
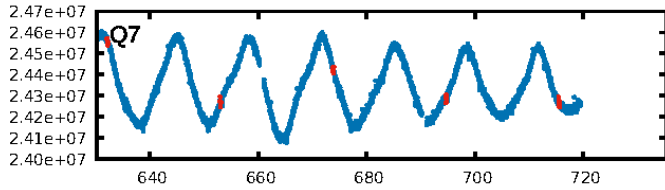
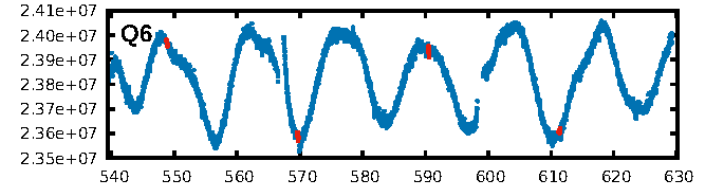
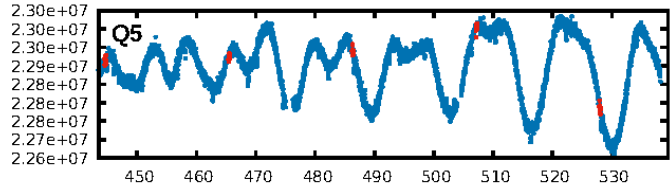
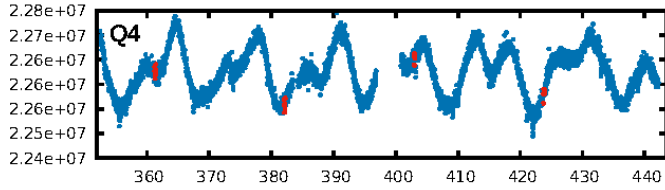
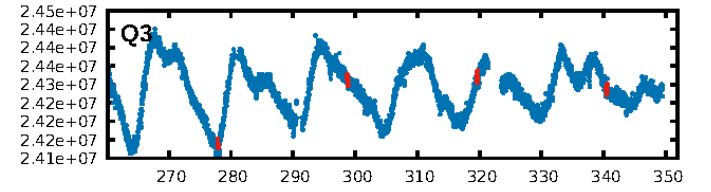
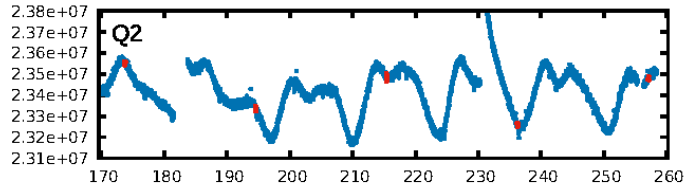
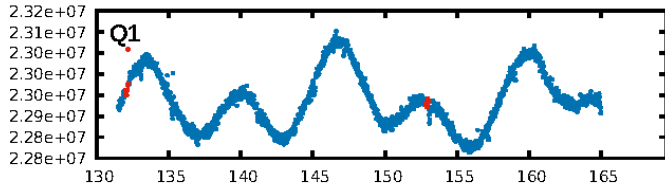
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.78e-31
RollingBand-fgt: 1.00 [63/63]
GhostDiagnostic-chr: 4.018
Centroid-sig: 1.6%
Centroid-so: 1.732 arcsec [2.06σ]
OotOffset-rm: 0.627 arcsec [1.21σ]
KicOffset-rm: 0.803 arcsec [1.66σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 1.00 [17/17]

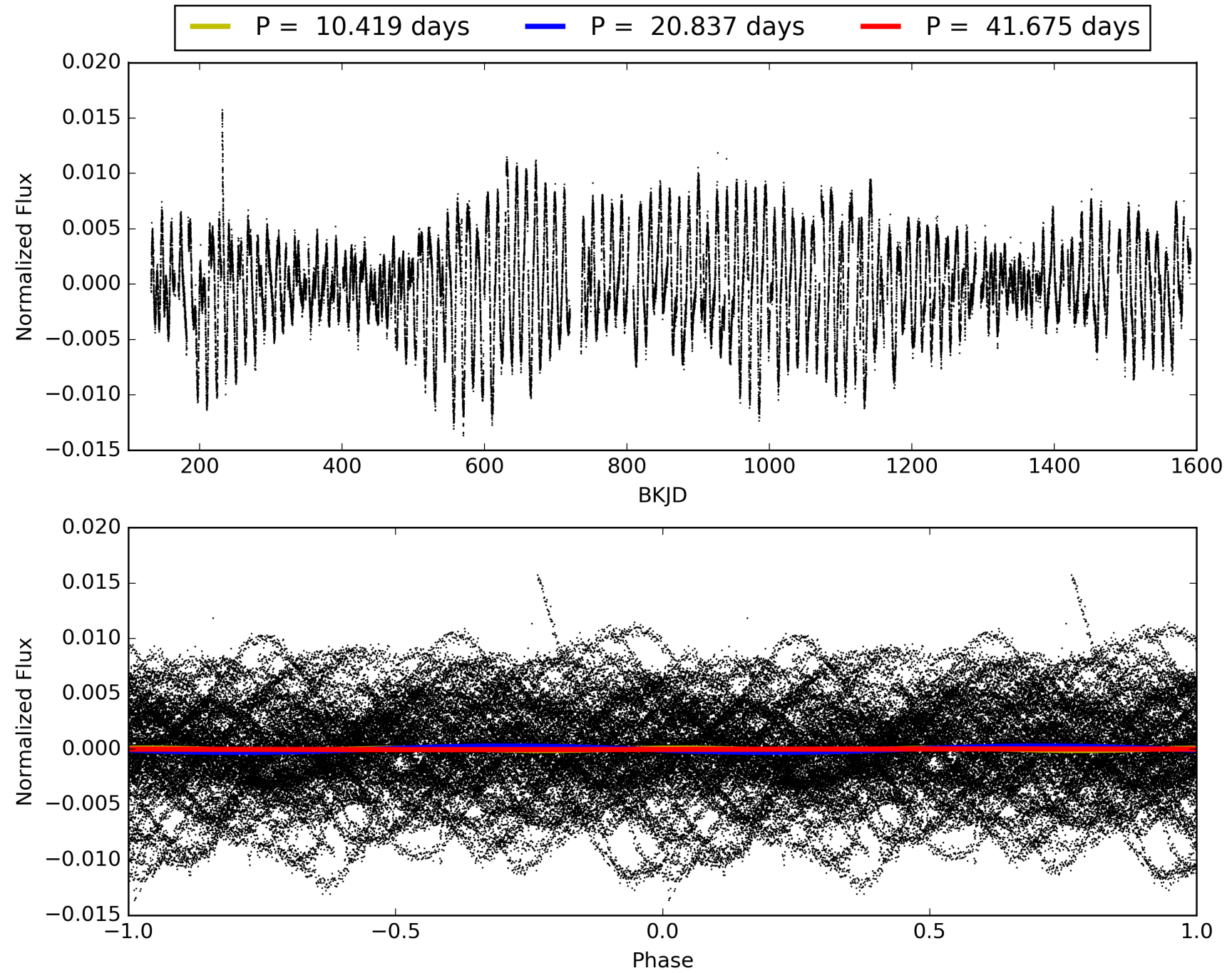
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:30:55 Z

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

TCE 007287995-03, PDC Light Curves

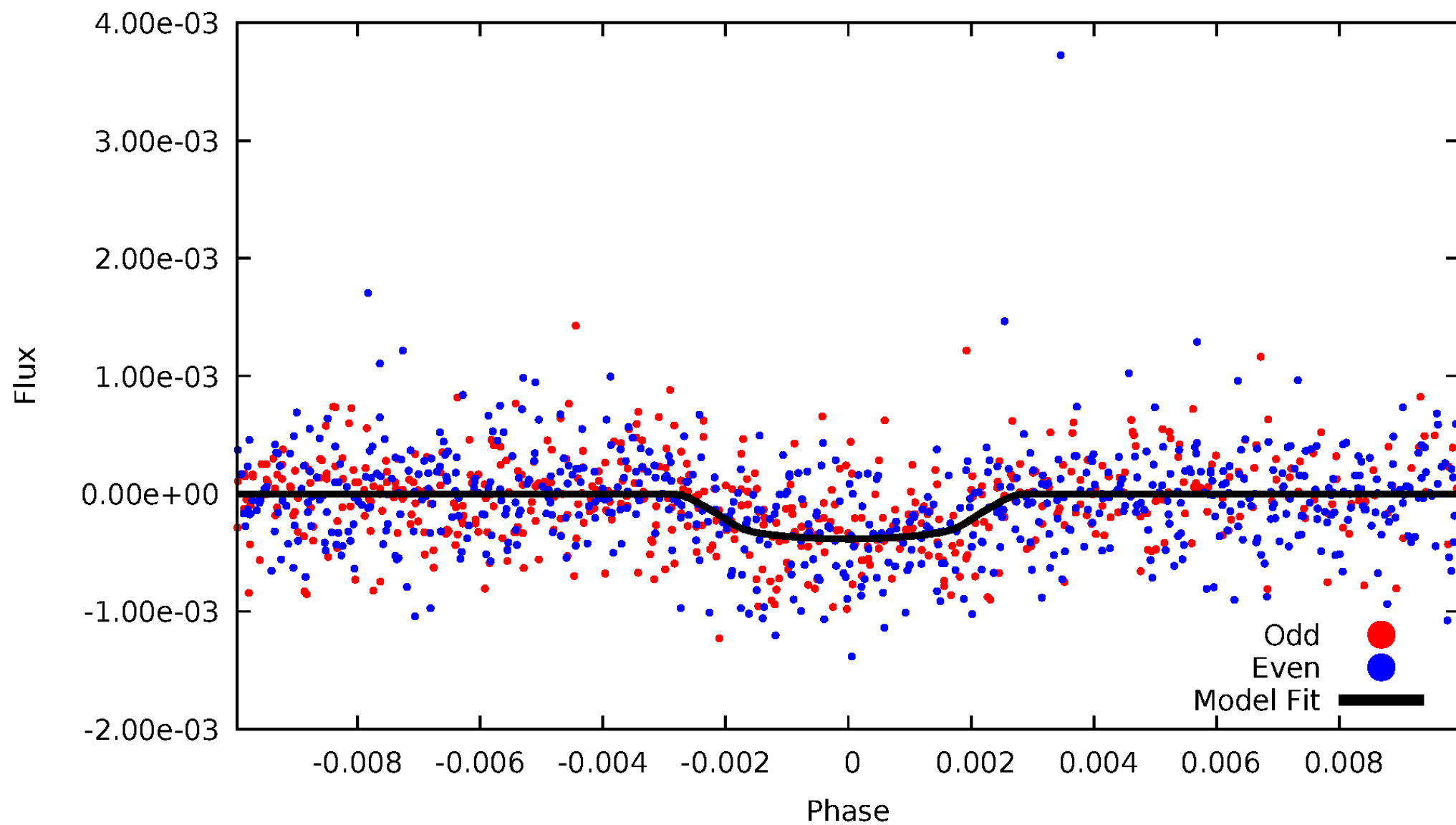


TCE 007287995-03



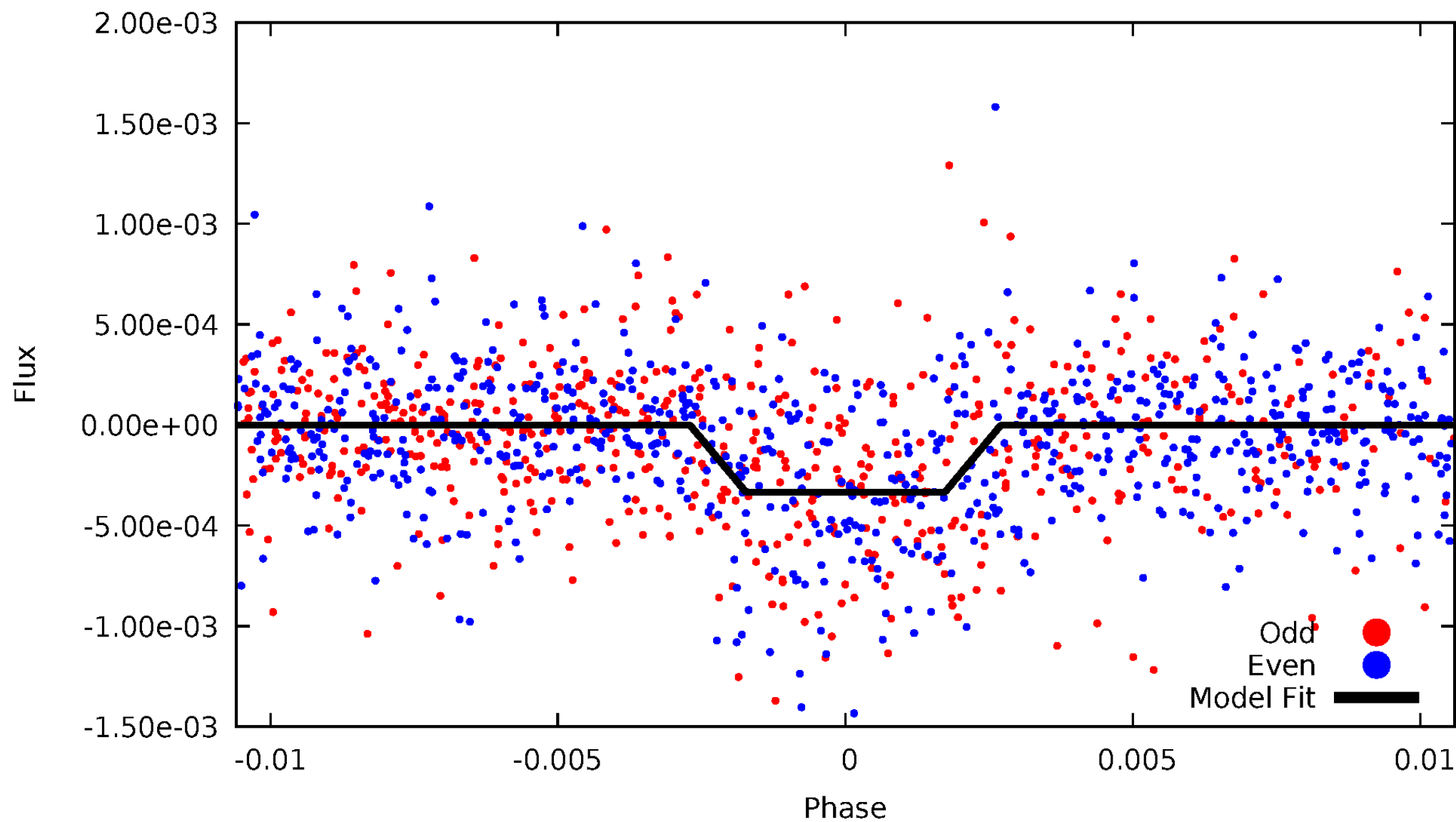
DV Odd/Even

TCE 007287995-03



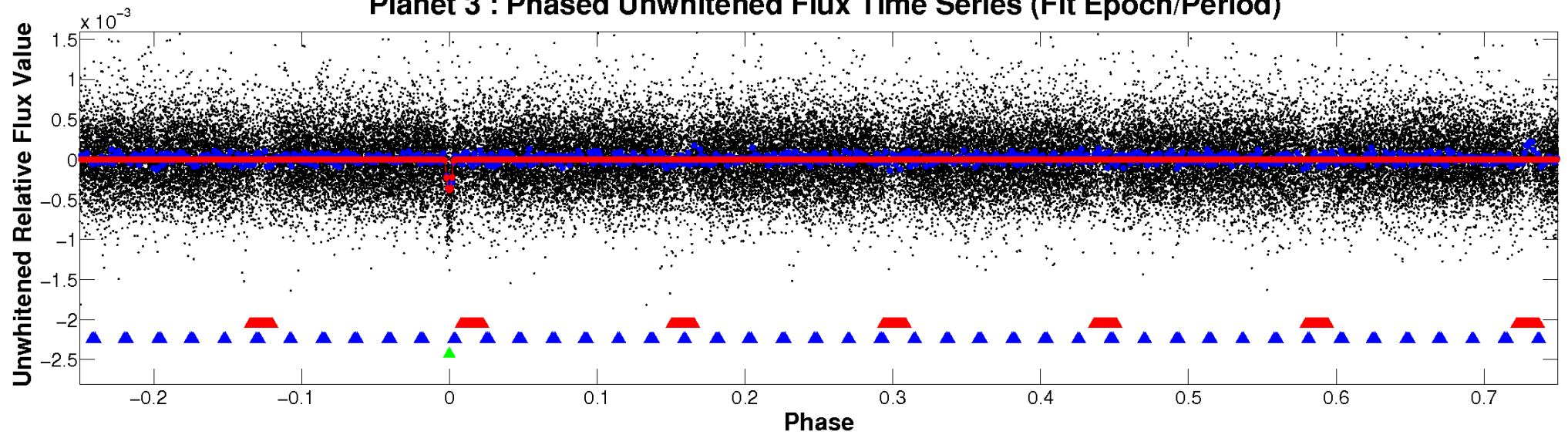
ALT Odd/Even

TCE 007287995-03

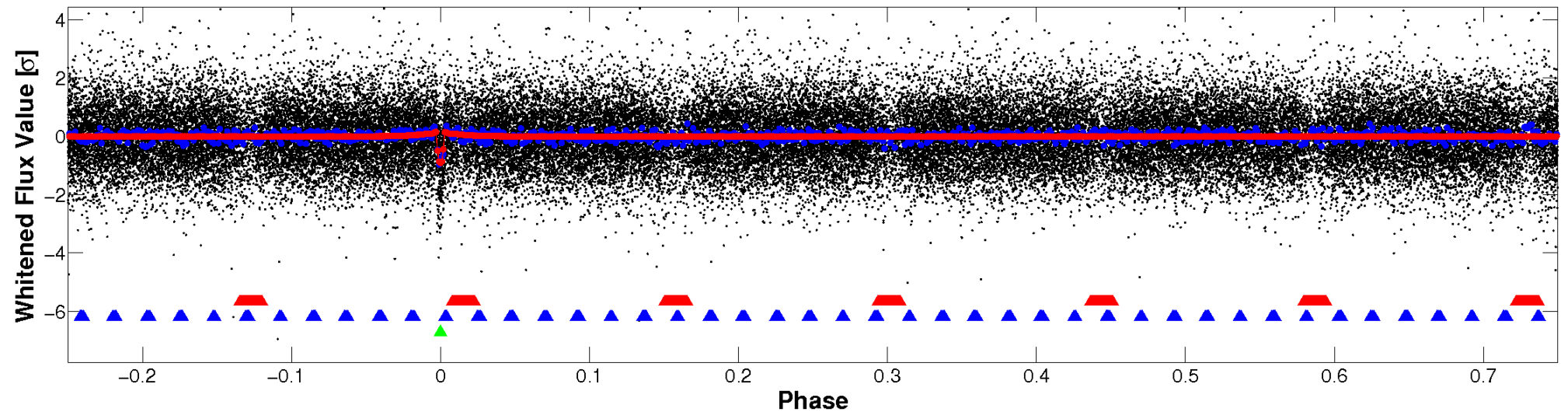


Non-Whitened Vs. Whitened Light Curve

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

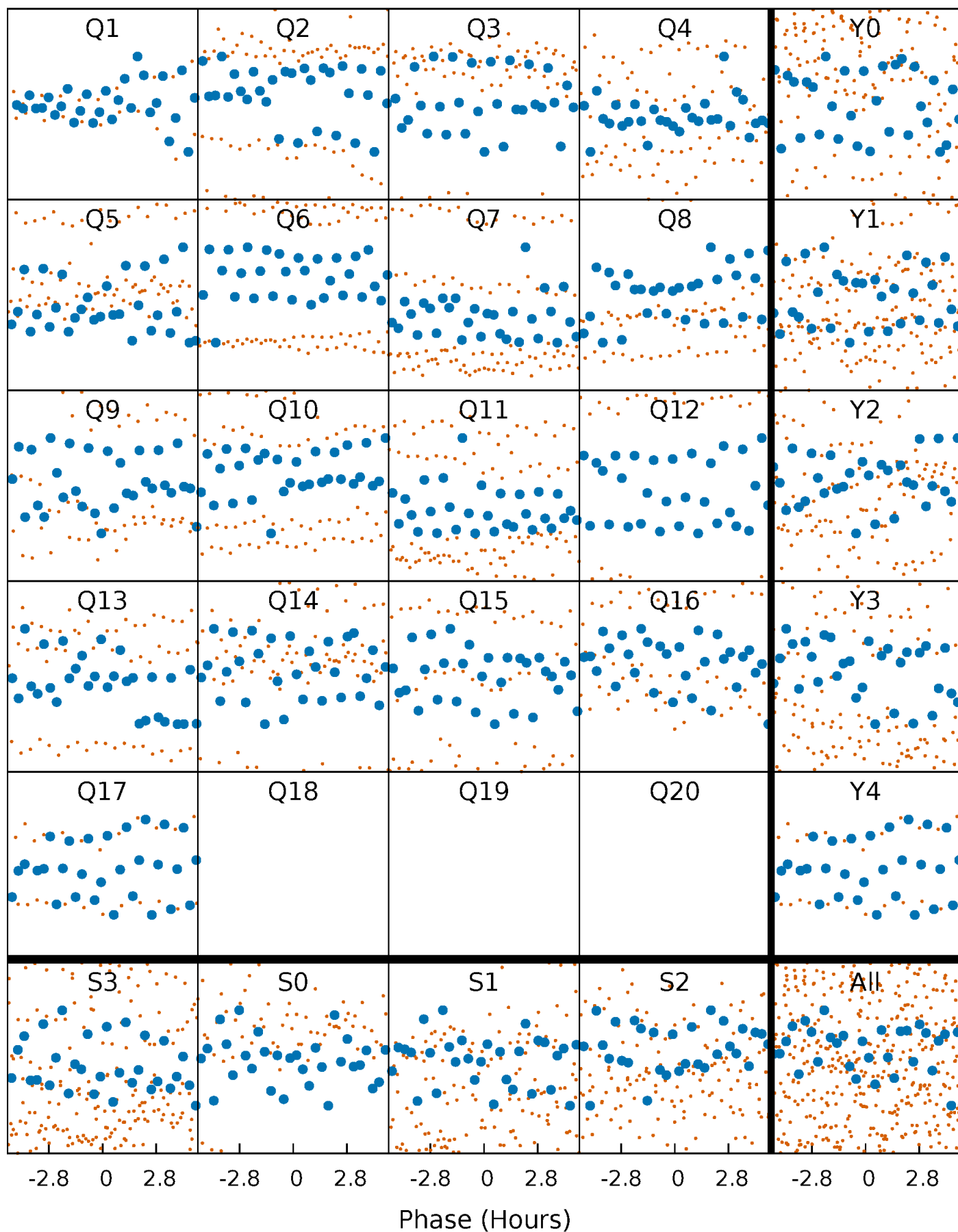


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



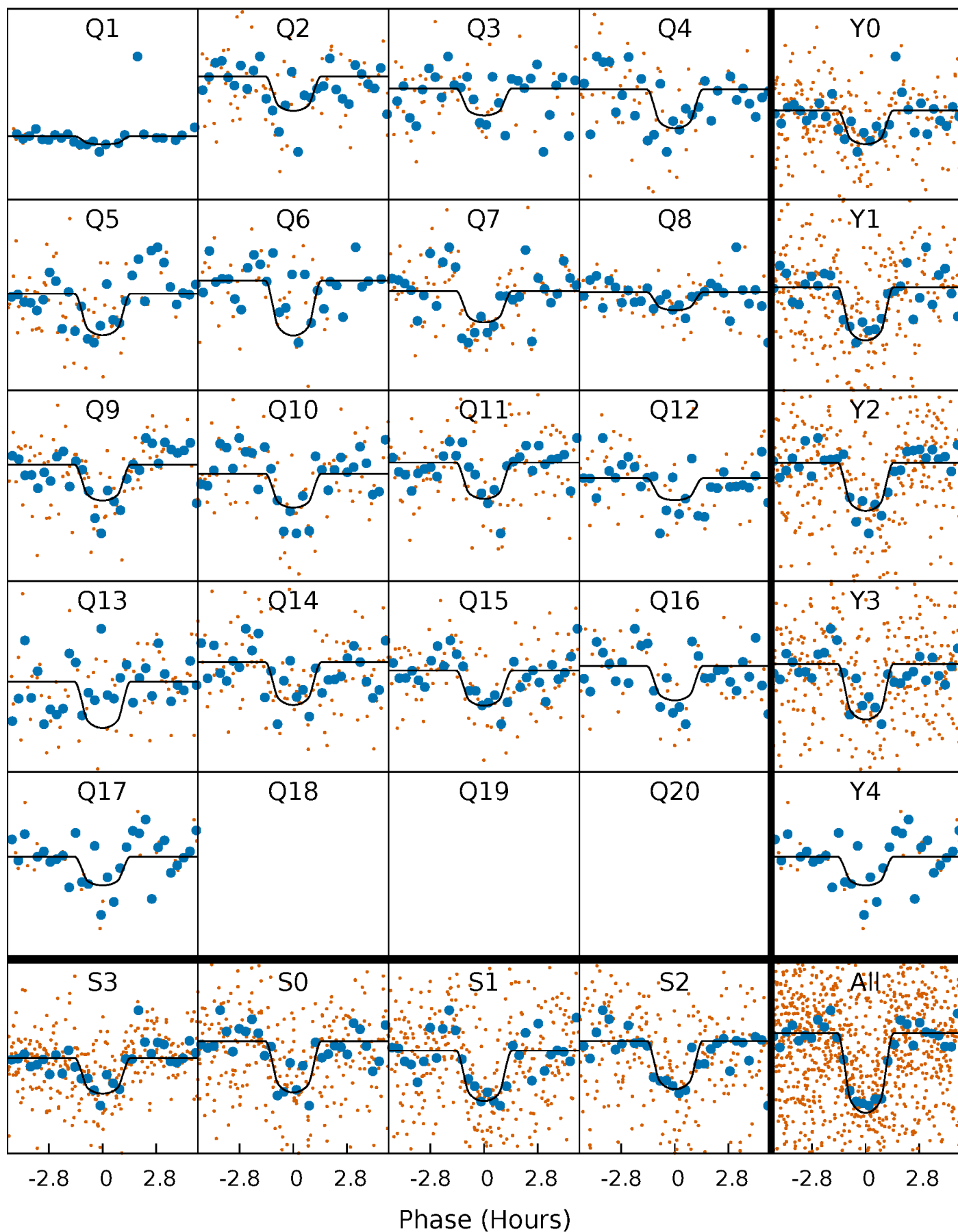
PDC Quarter-Phased Transit Curves

TCE 007287995-03 P= 20.837438 Days $T_0=132.094124$ (BKJD)



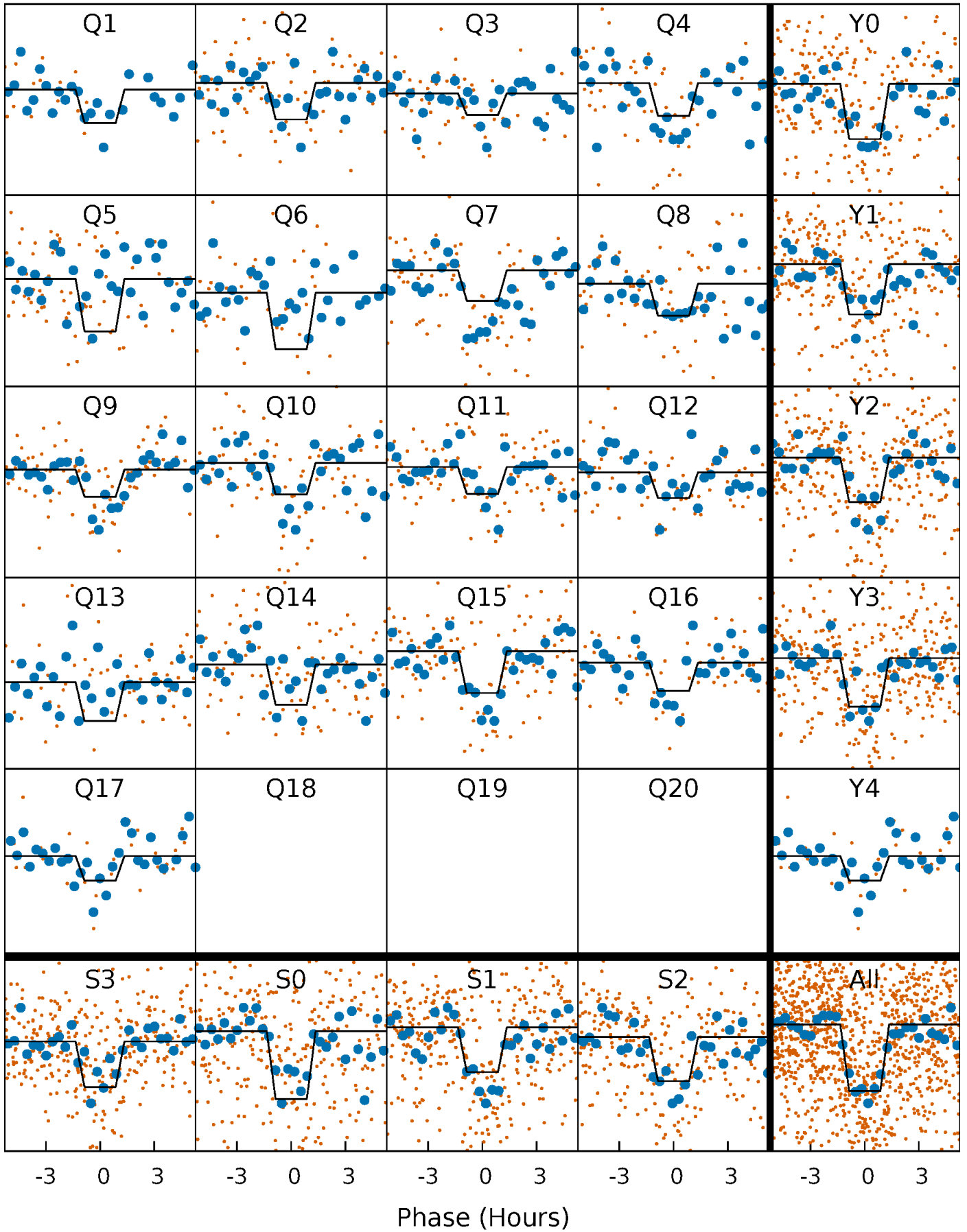
DV Quarter-Phased Transit Curves

TCE 007287995-03 P= 20.837438 Days $T_0=132.094124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

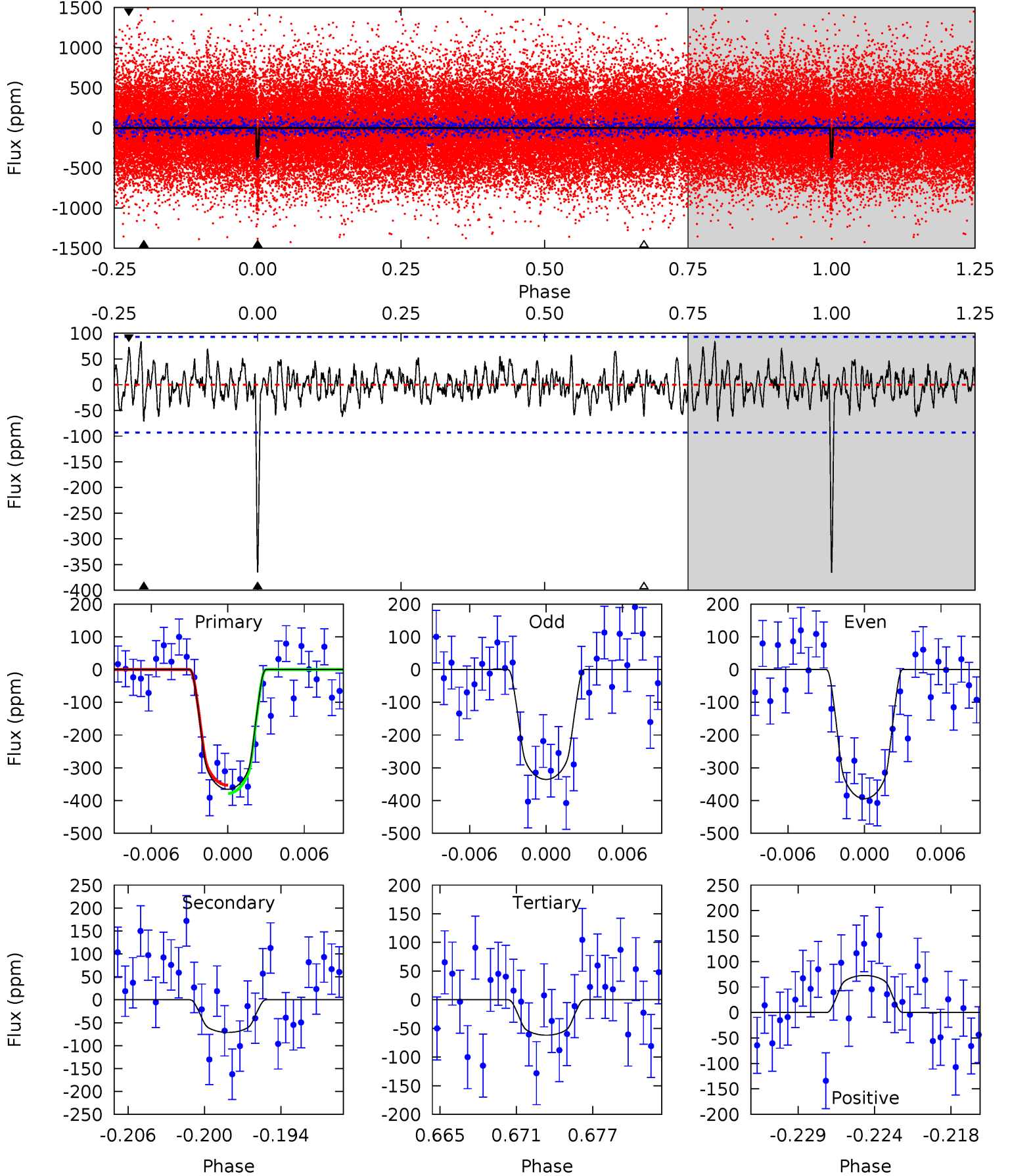
TCE 007287995-03 $P = 20.837785$ Days $T_0 = 132.079634$ (BKJD)



DV Model-Shift Uniqueness Test

007287995-03, P = 20.837438 Days, E = 111.256686 Days

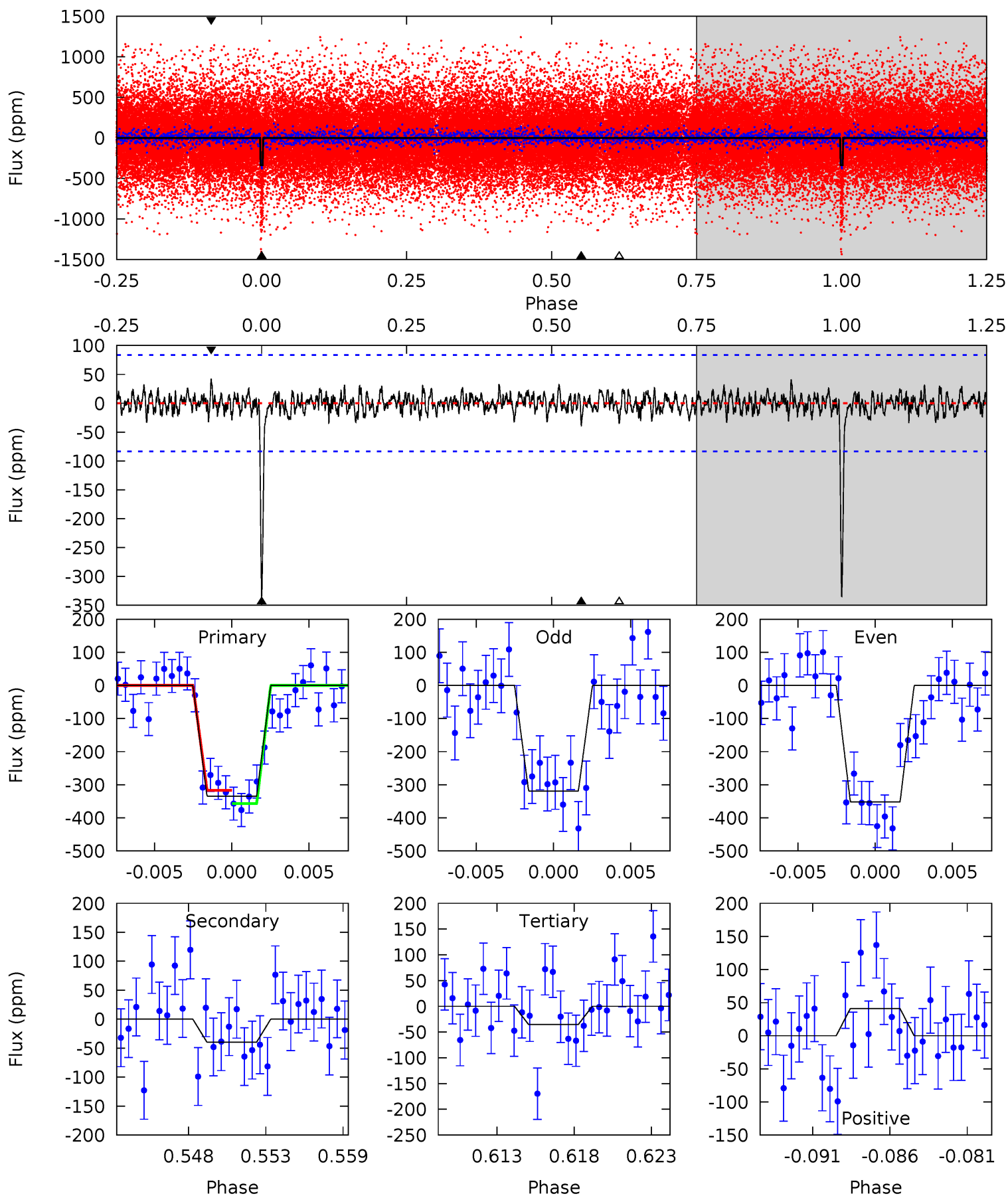
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.2 | 3.93 | 3.41 | 4.01 | 5.13 | 2.75 | 1.28 | 16.8 | 16.2 | 0.52 | -0.08 | 1.63 | 0.97 | 0.19 | 0.70 |



Alt Model-Shift Uniqueness Test

007287995-03, P = 20.837785 Days, E = 111.241849 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.6 | 2.44 | 2.18 | 2.53 | 5.14 | 2.78 | 0.76 | 18.4 | 18.1 | 0.27 | -0.09 | 1.01 | 1.06 | 0.11 | 1.22 |



Stellar Parameters For KIC 007287995

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4261^{+85}_{-85} | $4.641^{+0.027}_{-0.020}$ | $-0.060^{+0.150}_{-0.150}$ | $0.633^{+0.026}_{-0.029}$ | $0.640^{+0.035}_{-0.029}$ | $3.551^{+0.389}_{-0.284}$ |
| | +2%/-2% | +1%/-0% | +250%/-250% | +4%/-5% | +5%/-5% | +11%/-8% |
| Source | SPE60 | SPE60 | SPE60 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 007287995-03 / KOI 0877.03

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|-------------------|----------------------|---------------------|
| DV | -71 ± 18 | $1.52^{+0.71}_{-0.71}$ | 584^{+13}_{-13} | 3094^{+672}_{-333} | 269^{+658}_{-148} |
| Alt. | -40 ± 16 | $1.30^{+0.68}_{-0.65}$ | 584^{+12}_{-12} | 2956^{+723}_{-356} | 196^{+640}_{-122} |

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

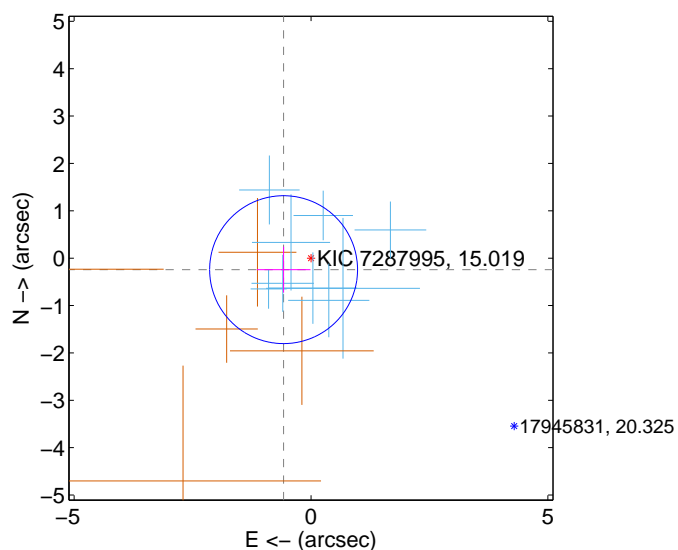
Supplemental centroid analysis for 007287995-03. Kepler magnitude: 15.02. Transit SNR 13.45

There are 9 quarters with good PRF difference image offsets

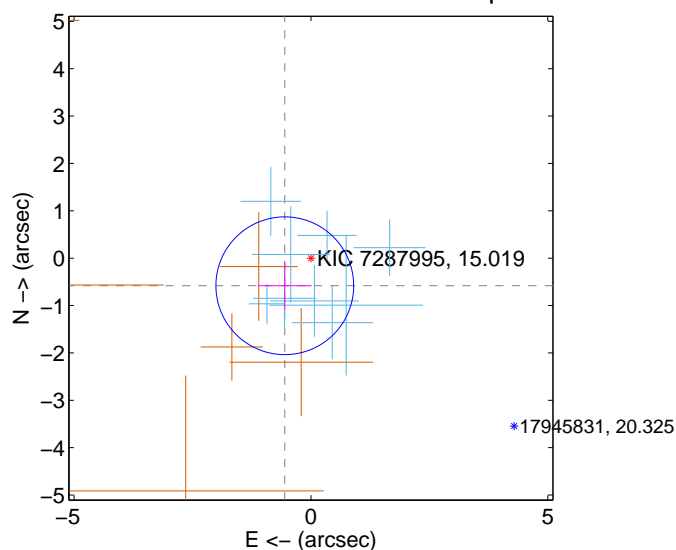
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.627 ± 0.520 | 1.21 | 0.579 ± 0.568 | -0.243 ± 0.486 |
| PRF-fit source offset from KIC position | 0.803 ± 0.485 | 1.66 | 0.552 ± 0.569 | -0.582 ± 0.506 |
| photometric centroid source offset | 1.73 ± 0.84 | 2.06 | 1.38 ± 0.86 | -1.05 ± 0.81 |

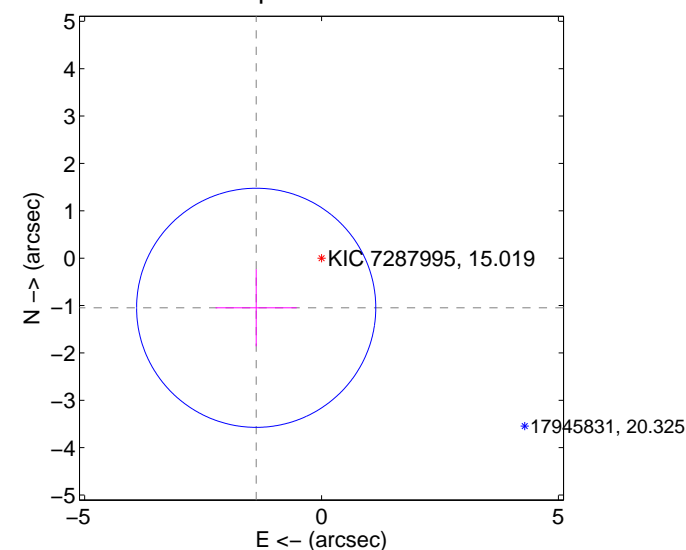
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

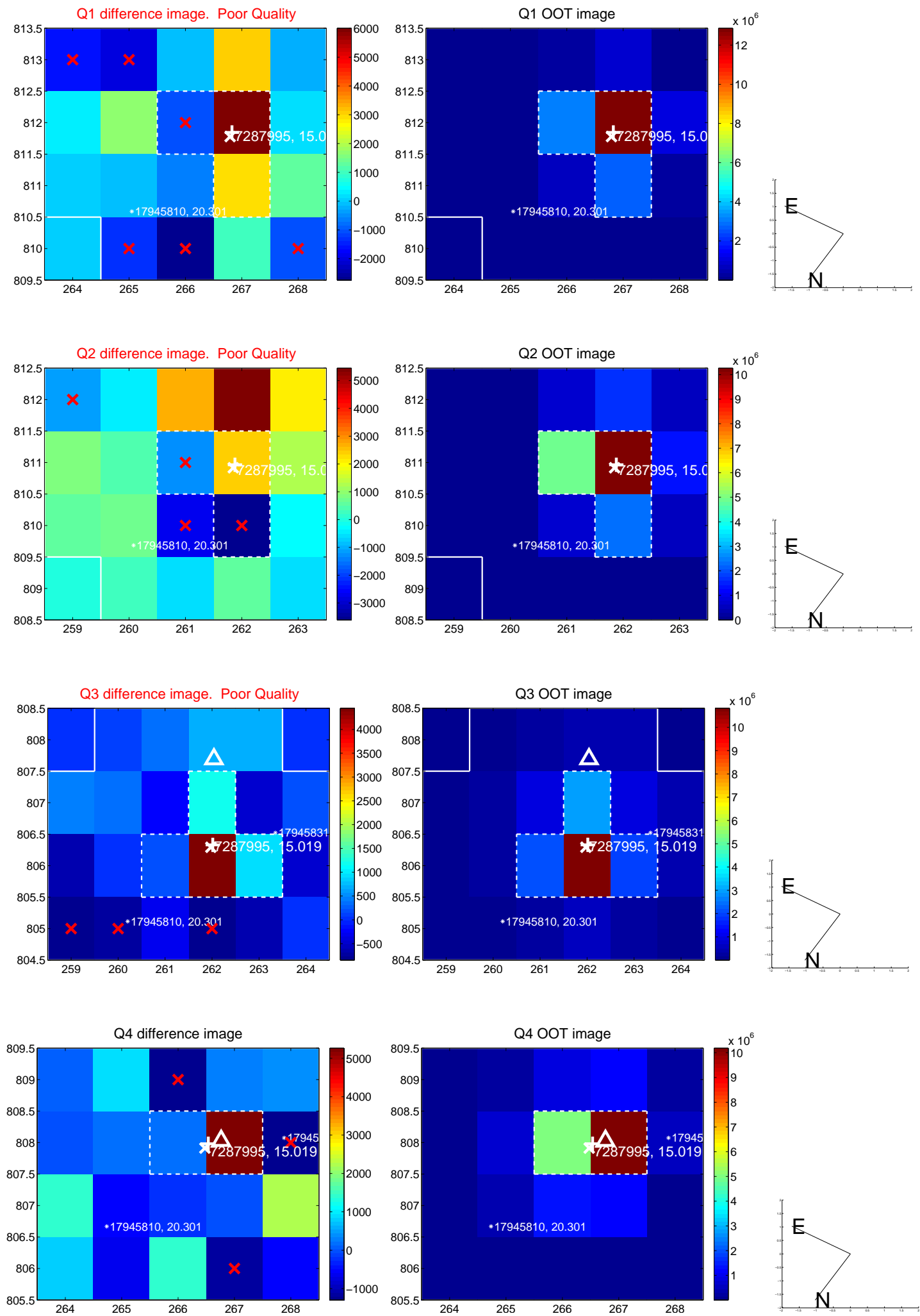


offset from photometric centroids

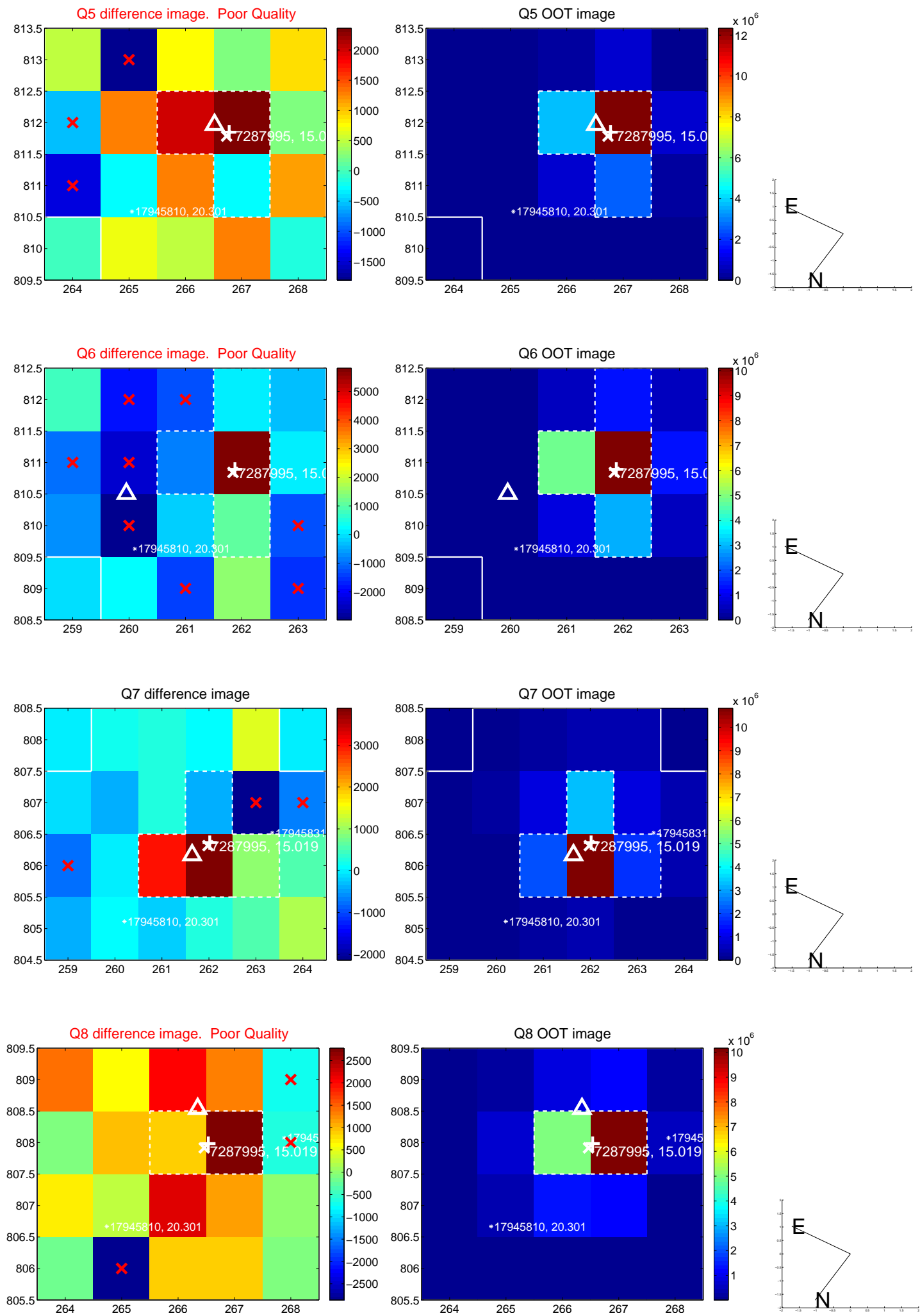


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

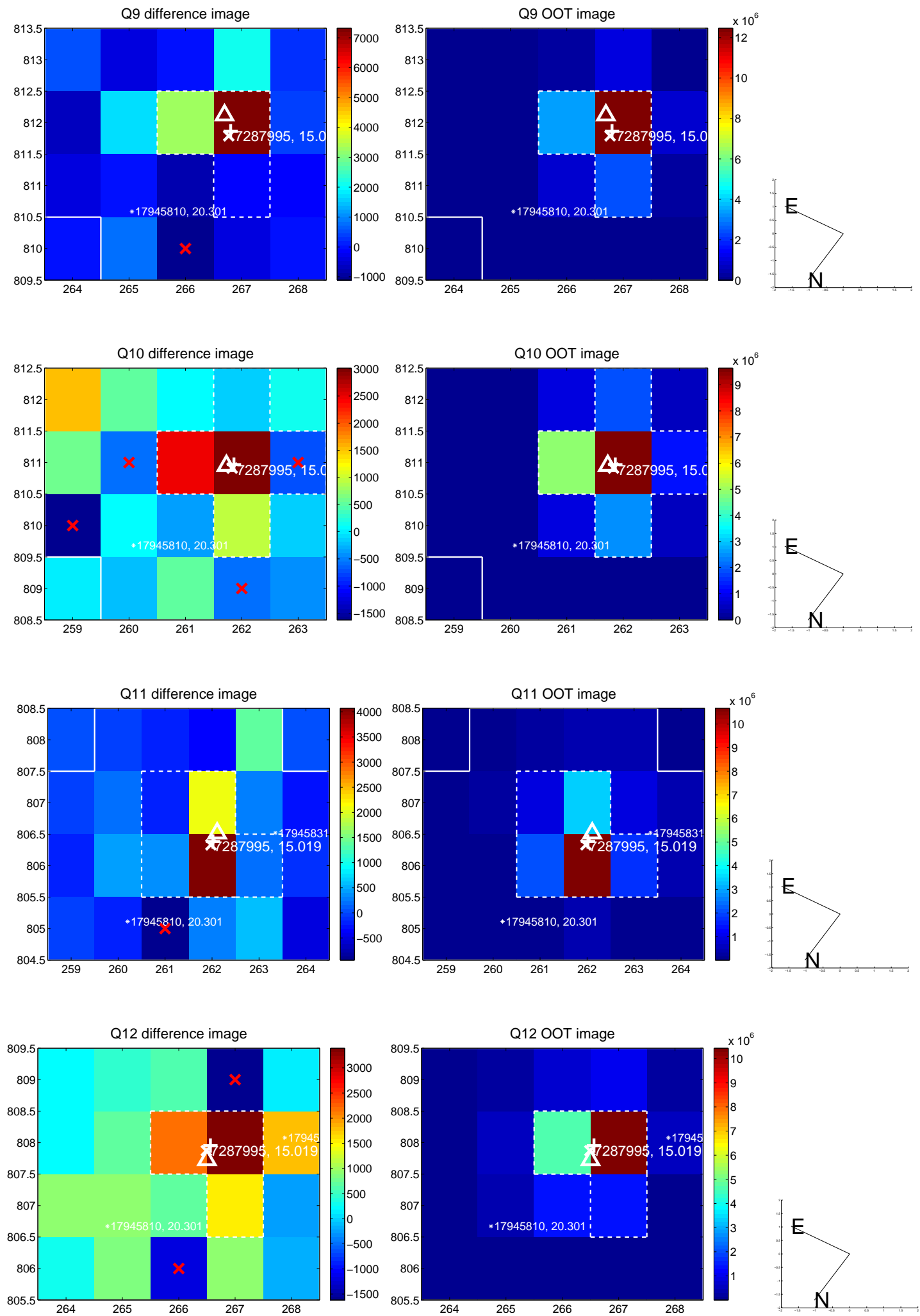
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



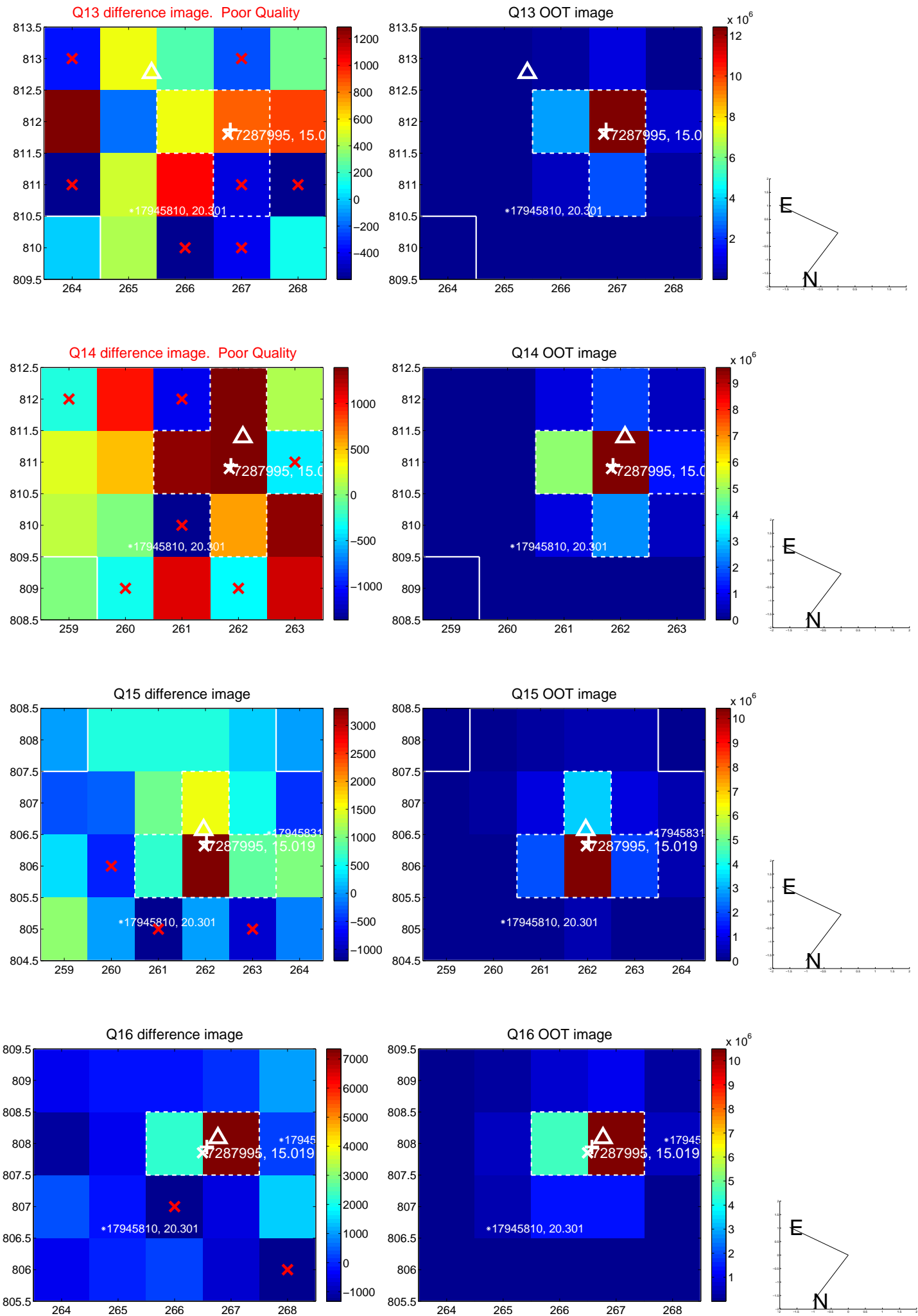
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



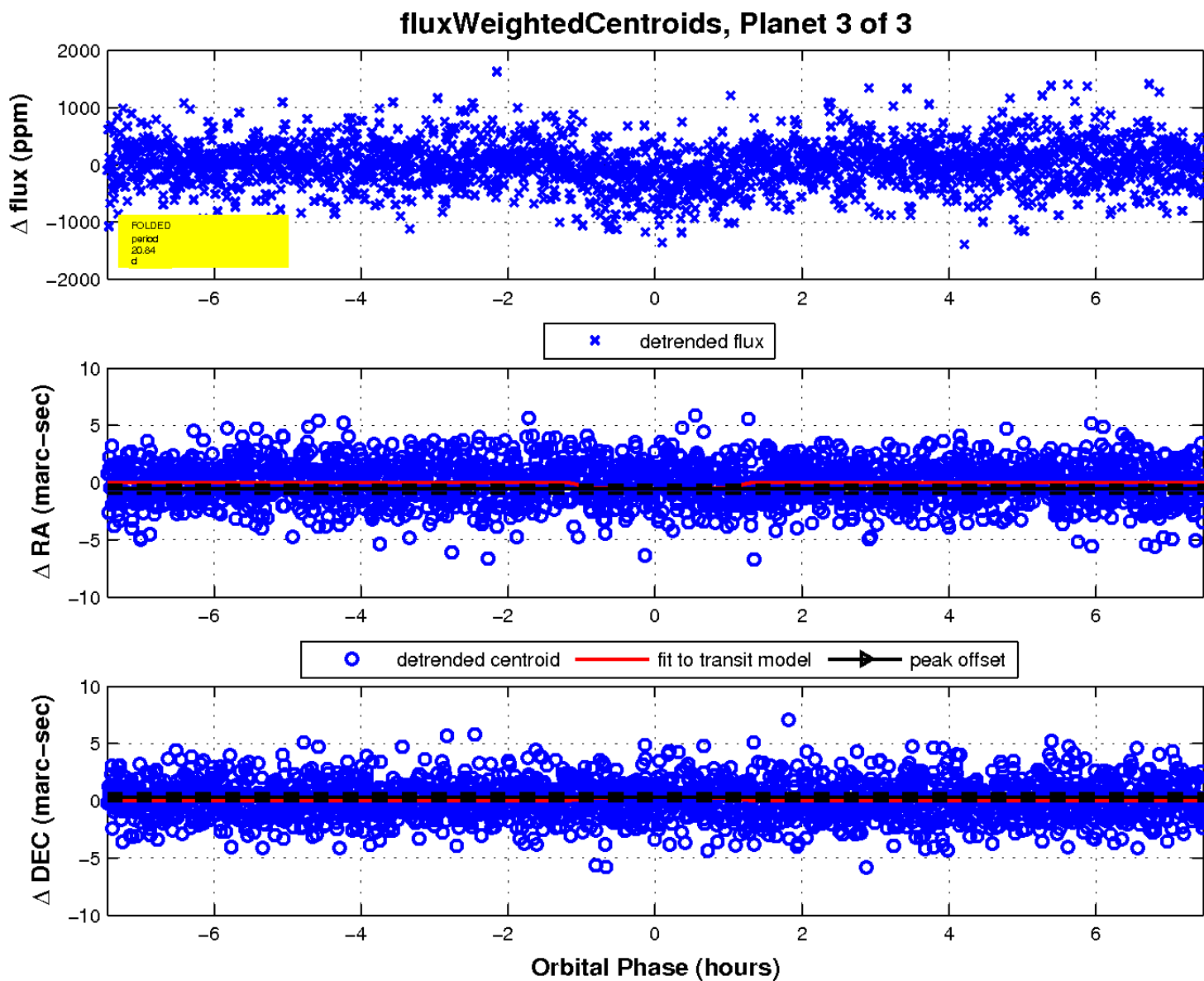
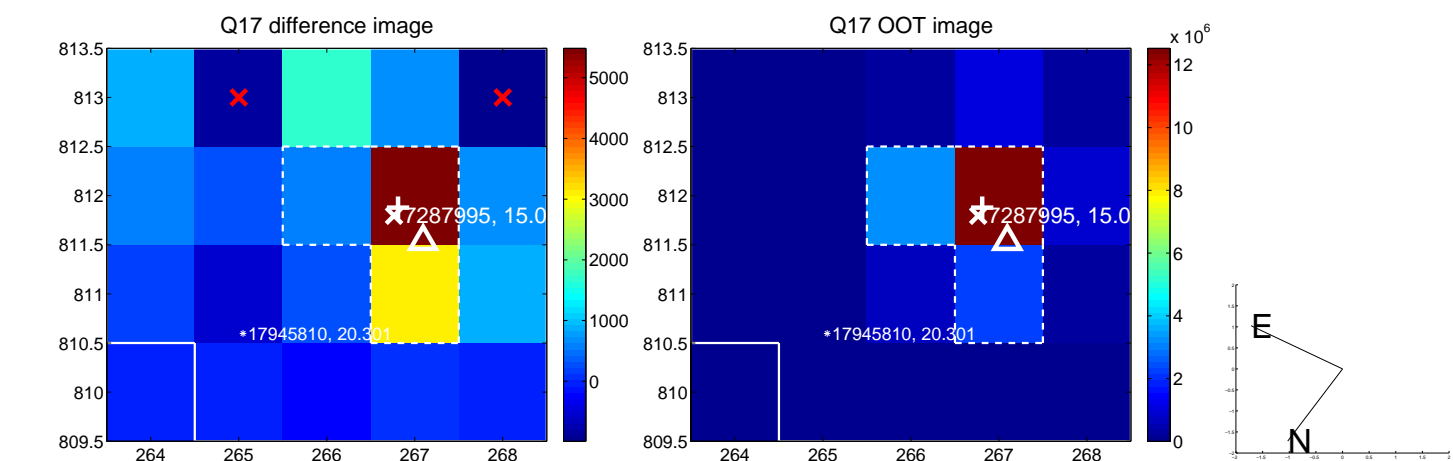
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

