

KIC 008263746

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263746-01 | OBS | 3581.01 | 10.993758 | 138.807029 | 426655.2 | 3.000 | 2751.4 | -1.0 | 0.74 | 4856 | 40.54 | 36.52 |
| 008263746-02 | OBS | No | 10.993828 | 133.253266 | 200498.1 | 4.067 | 1434.3 | 658.9 | 0.74 | 4856 | 34.31 | 36.52 |
| 008263746-03 | OBS | No | 7.329189 | 138.789479 | 721.6 | 2.070 | 179.7 | 4.6 | 0.74 | 4856 | 1.94 | 62.70 |
| 008263746-04 | OBS | No | 4.397437 | 132.450938 | 29998.8 | 15.000 | 146.0 | -1.0 | 0.74 | 4856 | 12.44 | 123.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263746-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 008263746-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_KIC_POS |
| 008263746-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 008263746-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

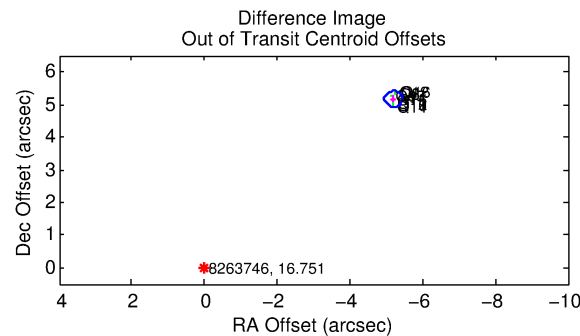
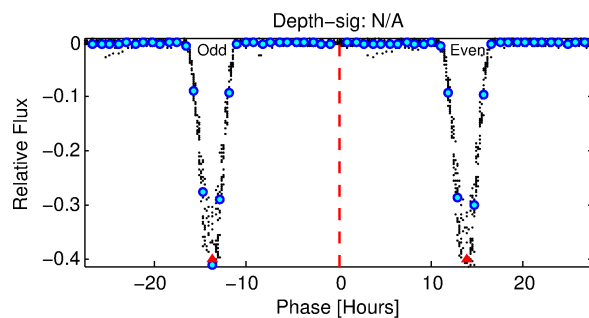
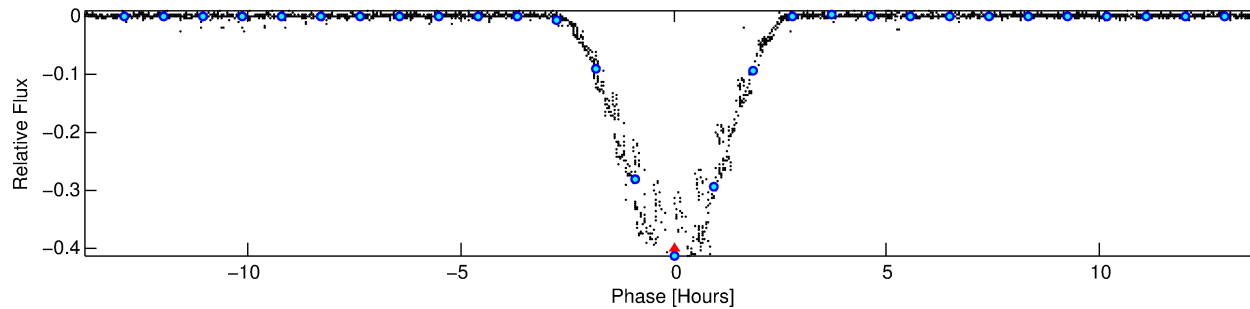
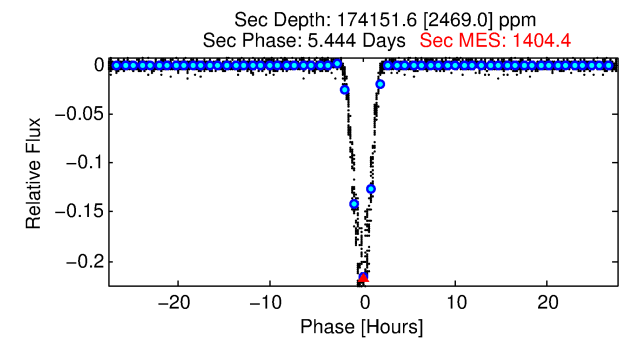
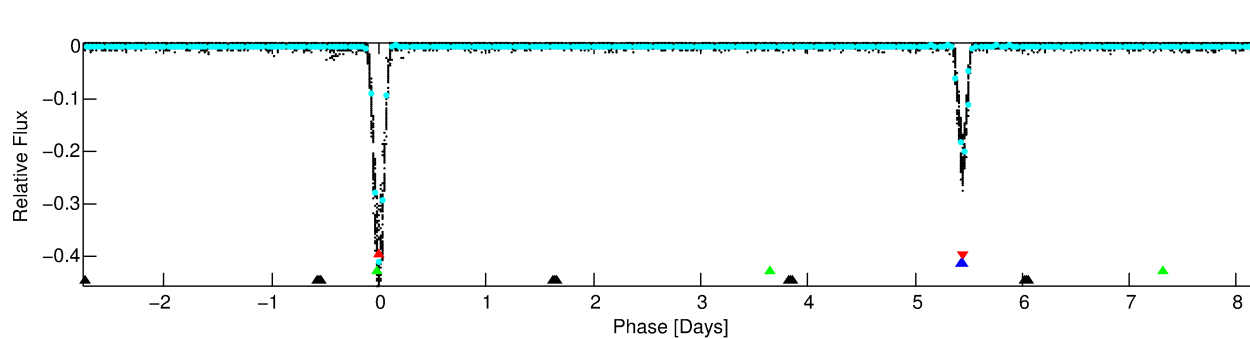
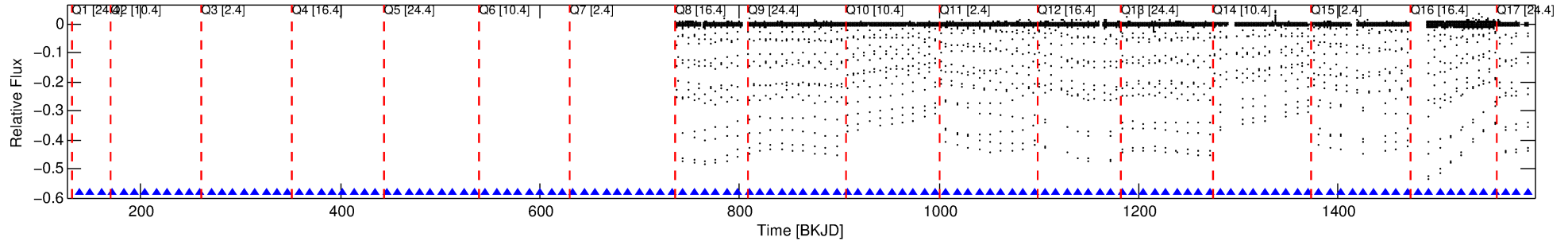
Ephemeris Match Information For 008263746-01

No Significant Match Found

DV One-Page Summary

KIC: 8263746 Candidate: 1 of 4 Period: 10.994 d
KOI: K03581.01 Corr: 0.754

Kp: 16.75 R*: 0.74 Rs Teff: 4856.0 K Logg: 4.55 Fe/H: -0.080



TPS TCE Results:

Period = 10.99376 d
Epoch = 138.8070 BKJD

DV fit results are unavailable

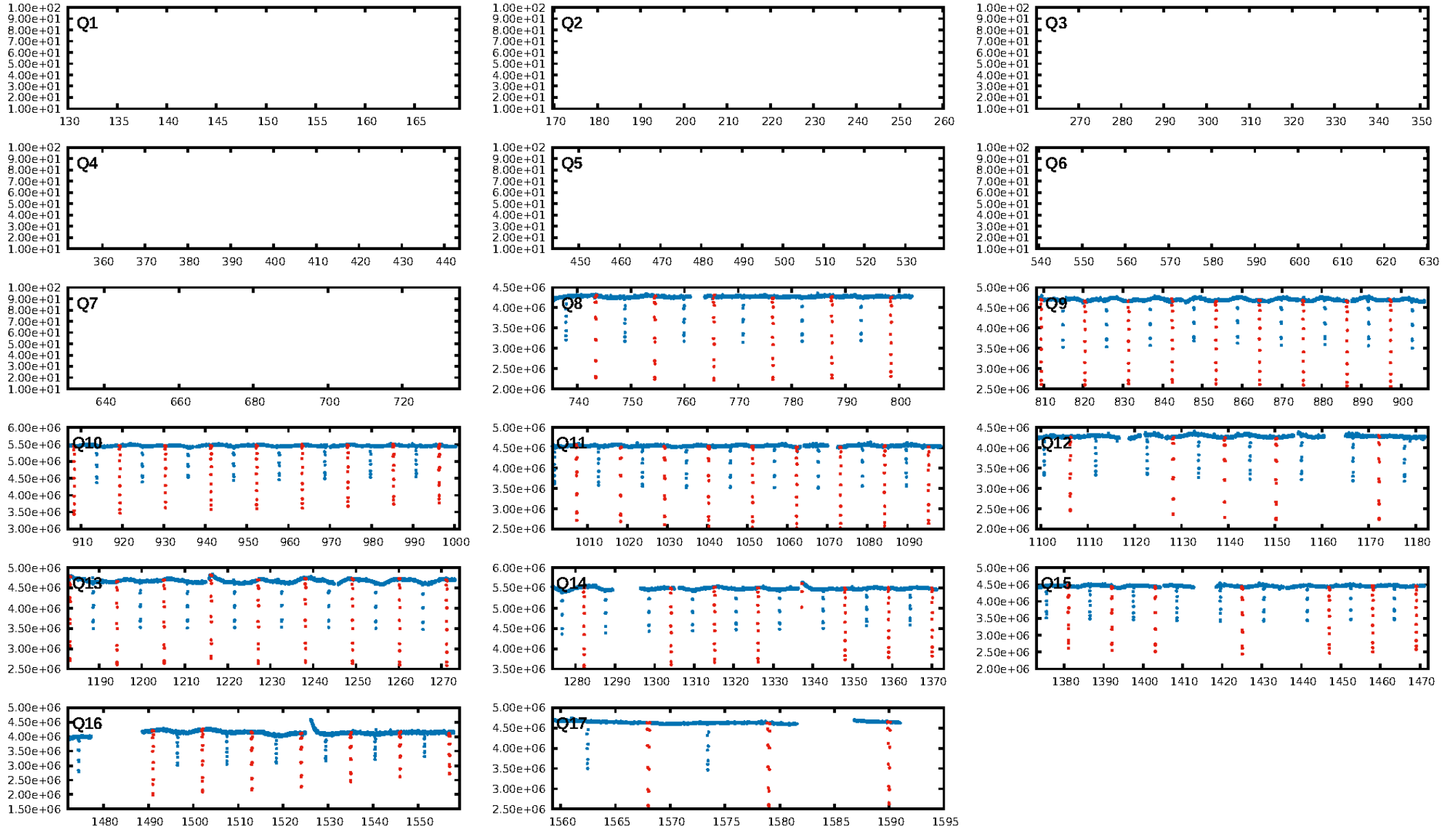
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.13 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [69/69]
GhostDiagnostic-chr: 2.577
Centroid-sig: N/A
Centroid-so: 3.677 arcsec [5183.63 σ]
OotOffset-rm: 7.328 arcsec [91.19 σ]
KicOffset-rm: 0.098 arcsec [1.24 σ]
OotOffset-st: 2/2/3/3 [10]
KicOffset-st: 2/2/3/3 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

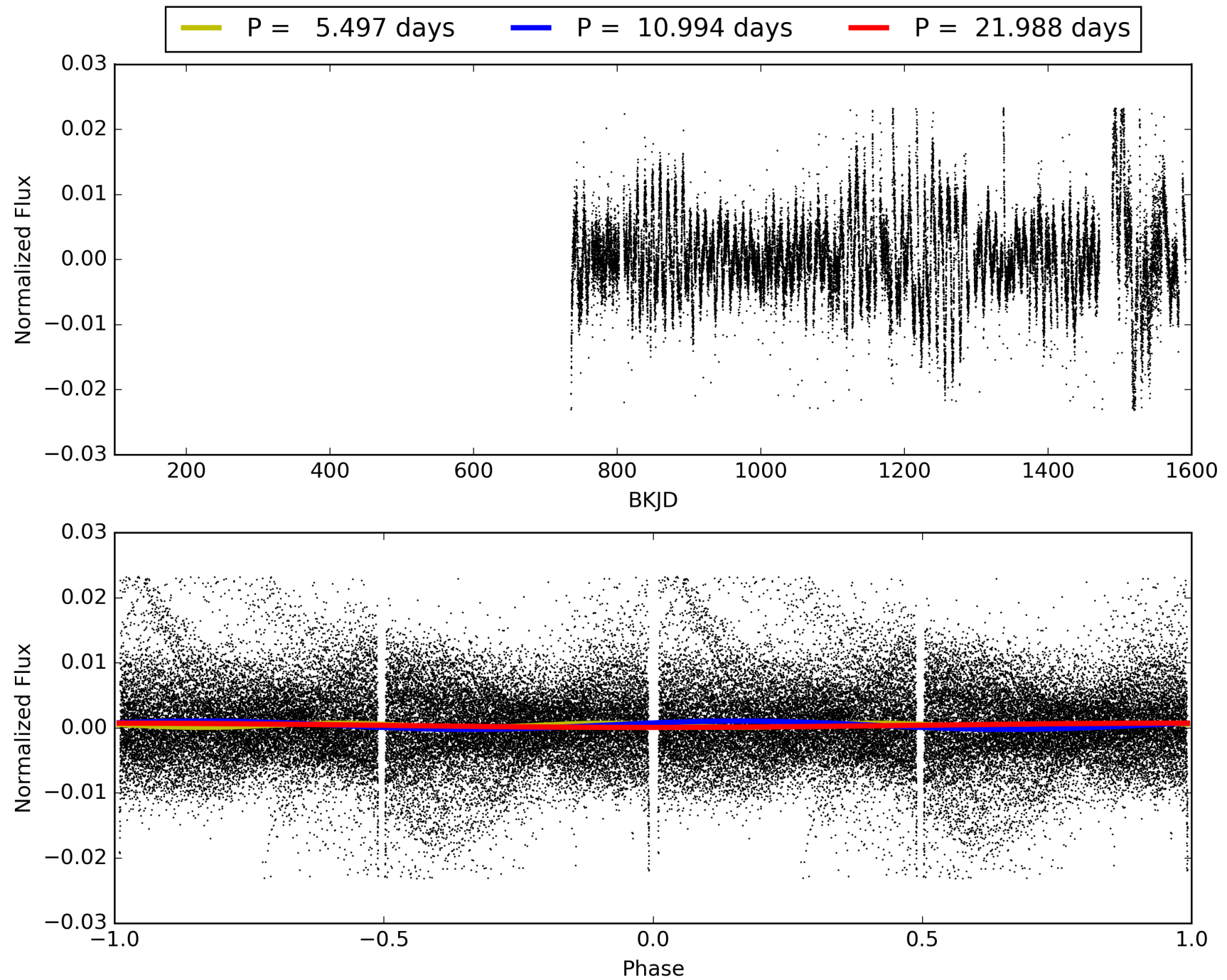
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:46:21 Z

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

TCE 008263746-01, PDC Light Curves

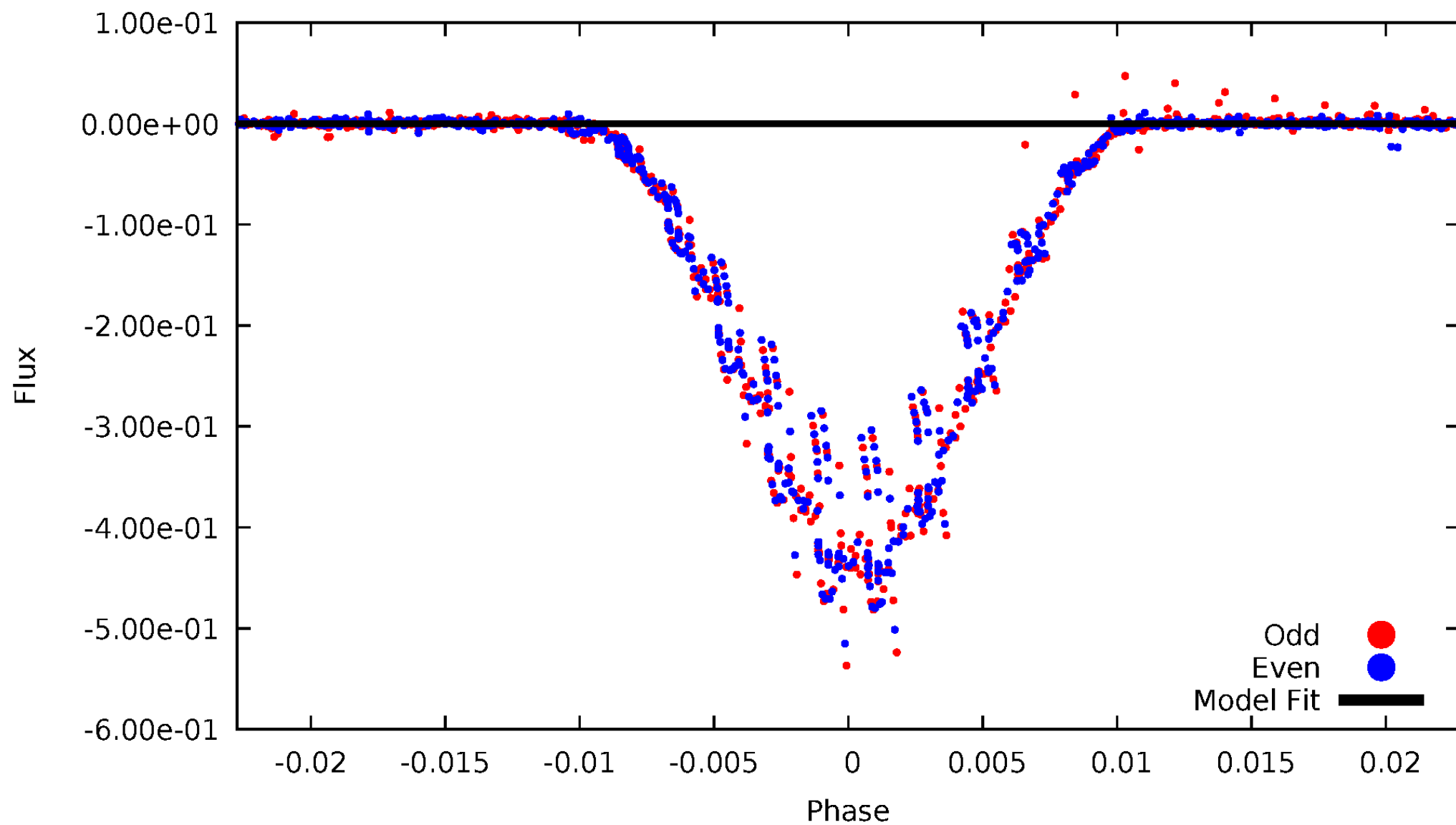


TCE 008263746-01



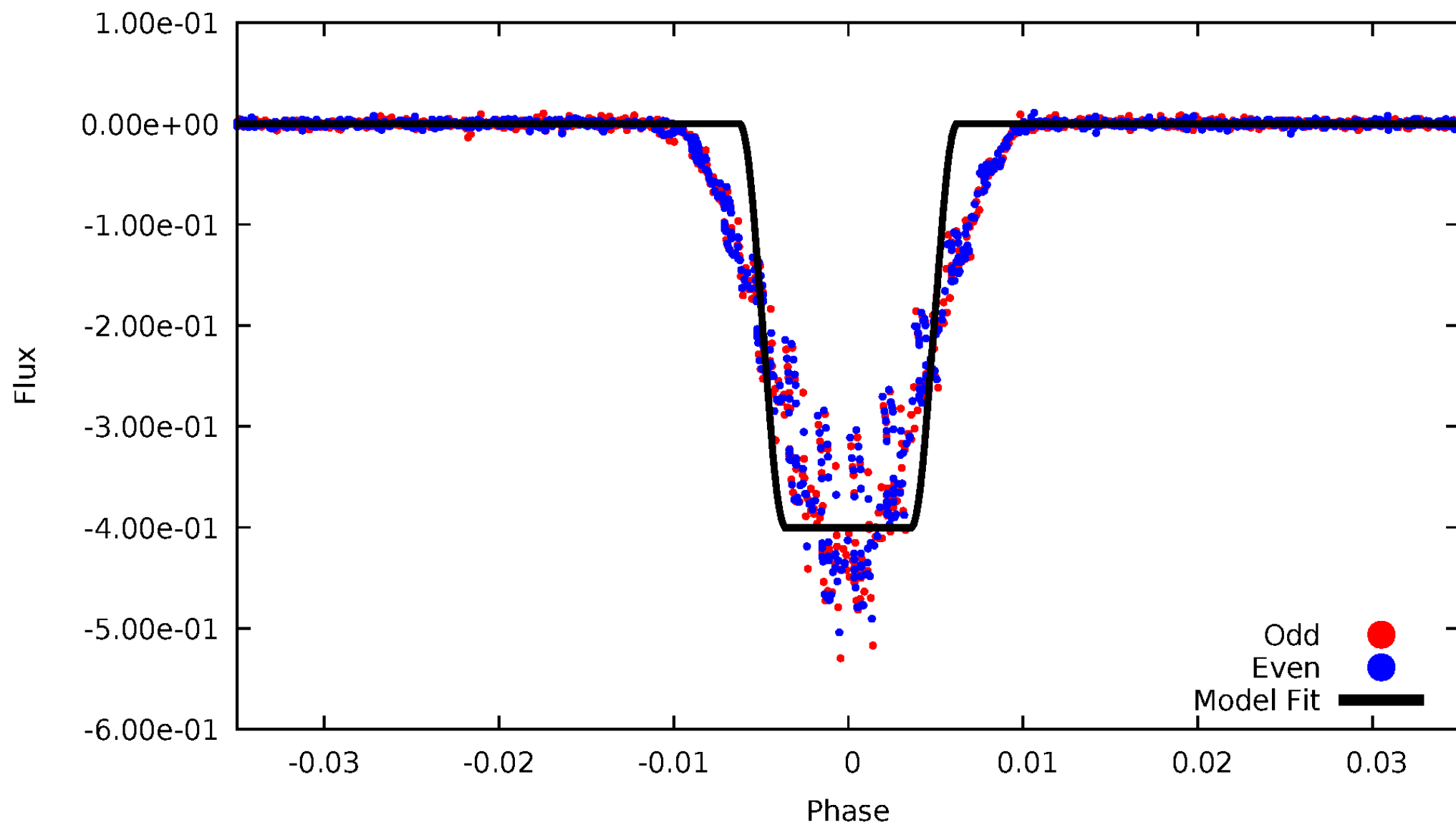
DV Odd/Even

TCE 008263746-01



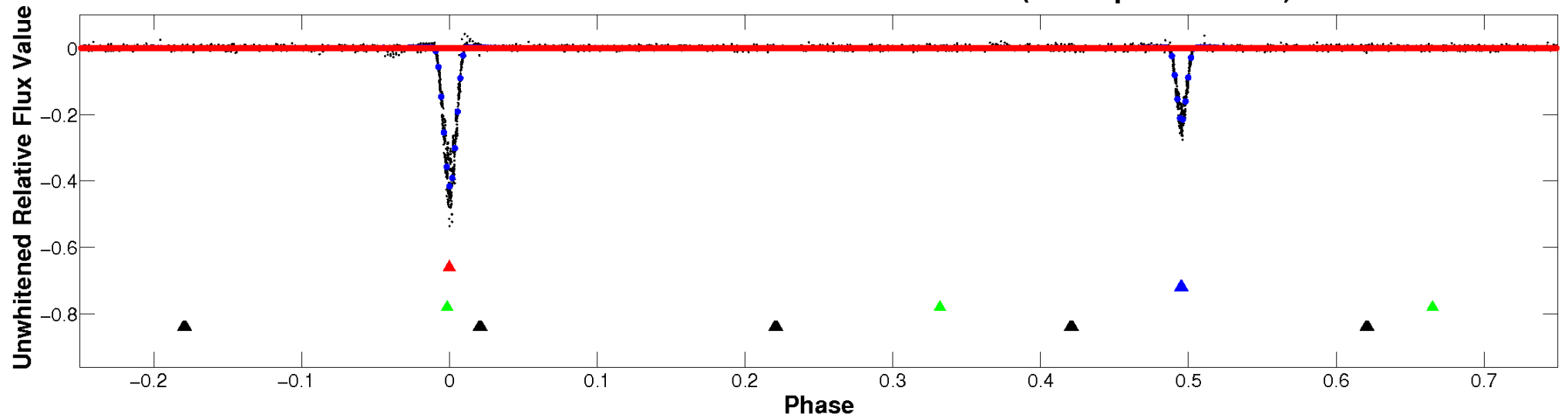
ALT Odd/Even

TCE 008263746-01



Non-Whitened Vs. Whitened Light Curve

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

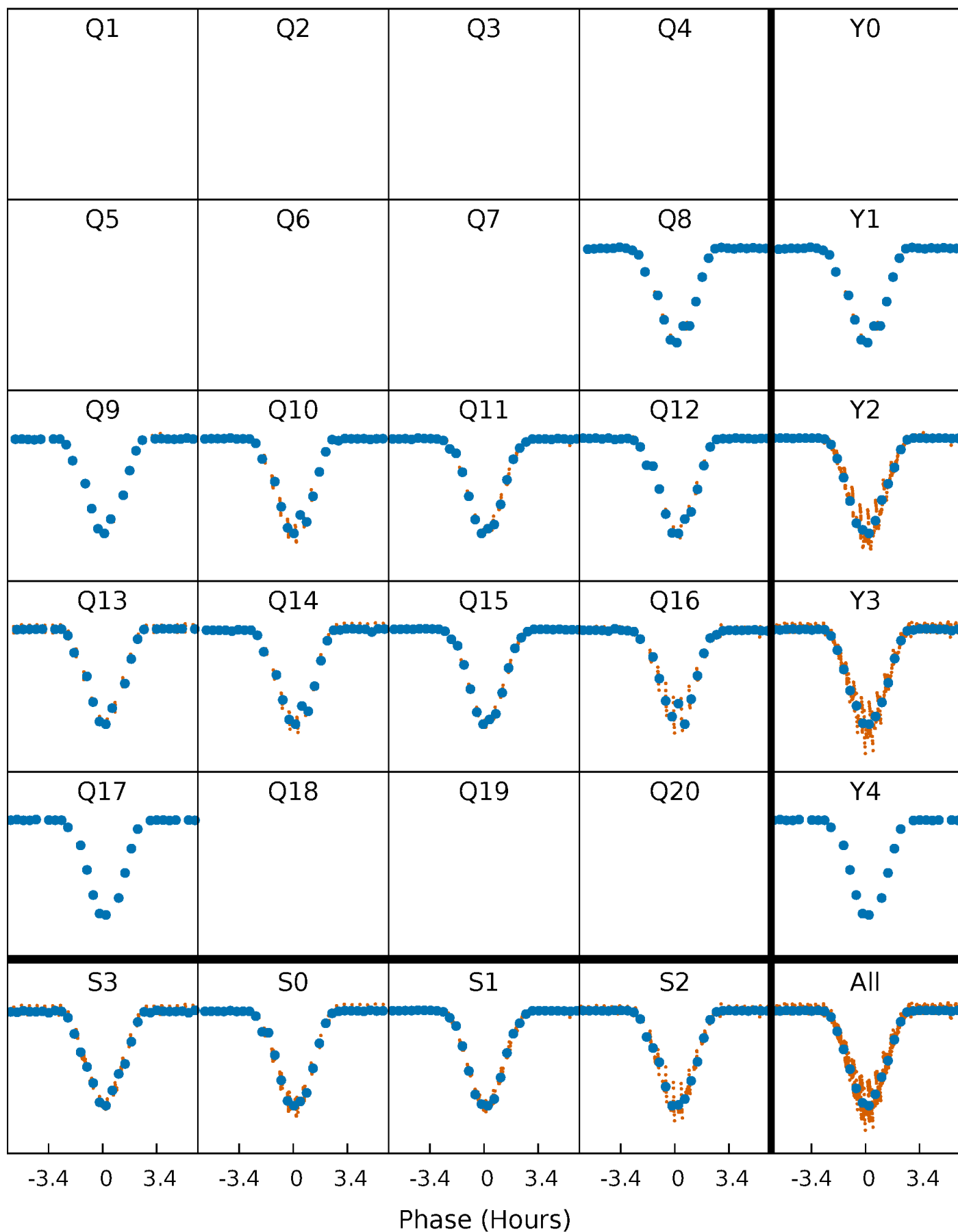


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



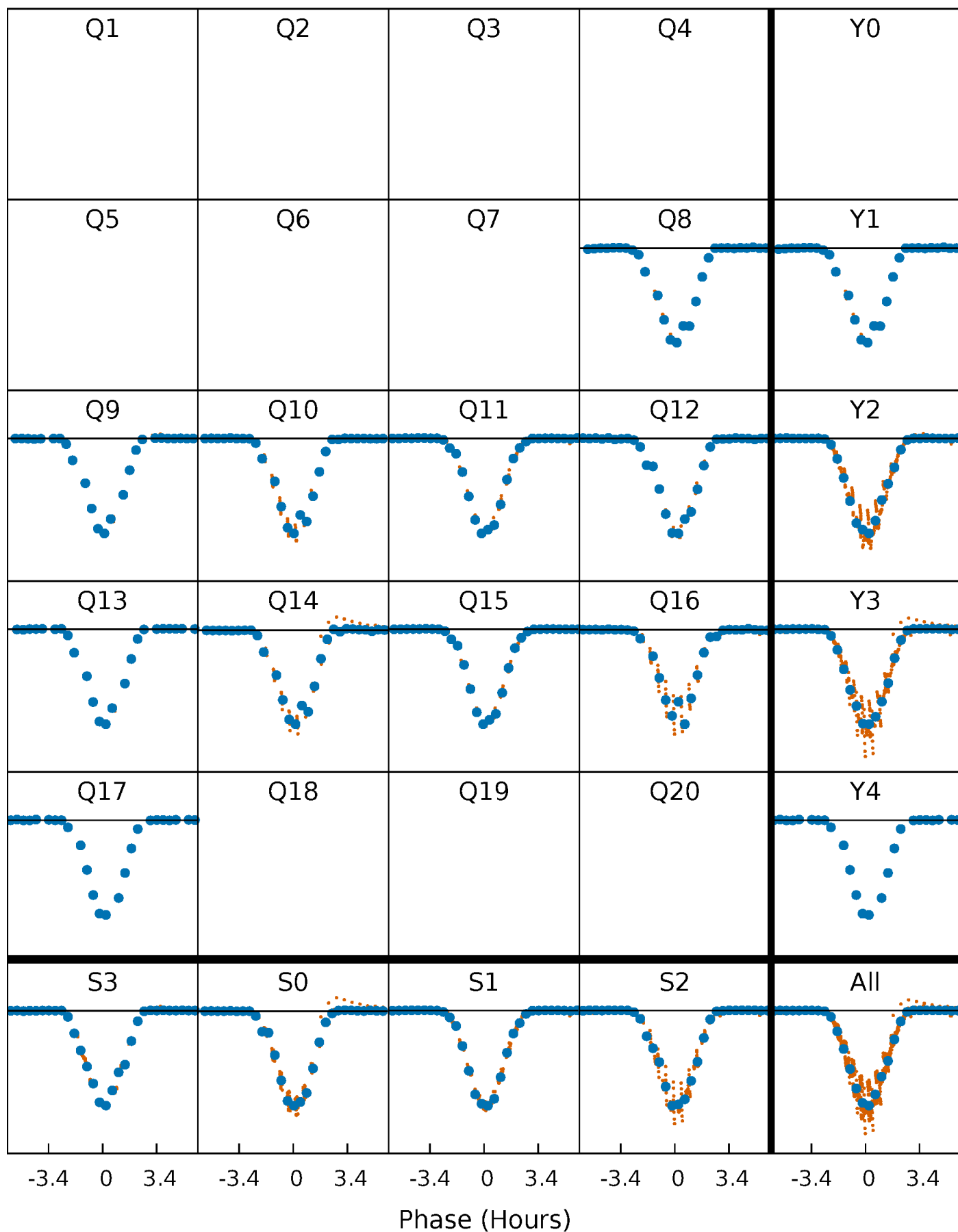
PDC Quarter-Phased Transit Curves

TCE 008263746-01 P= 10.993758 Days $T_0=138.807029$ (BKJD)



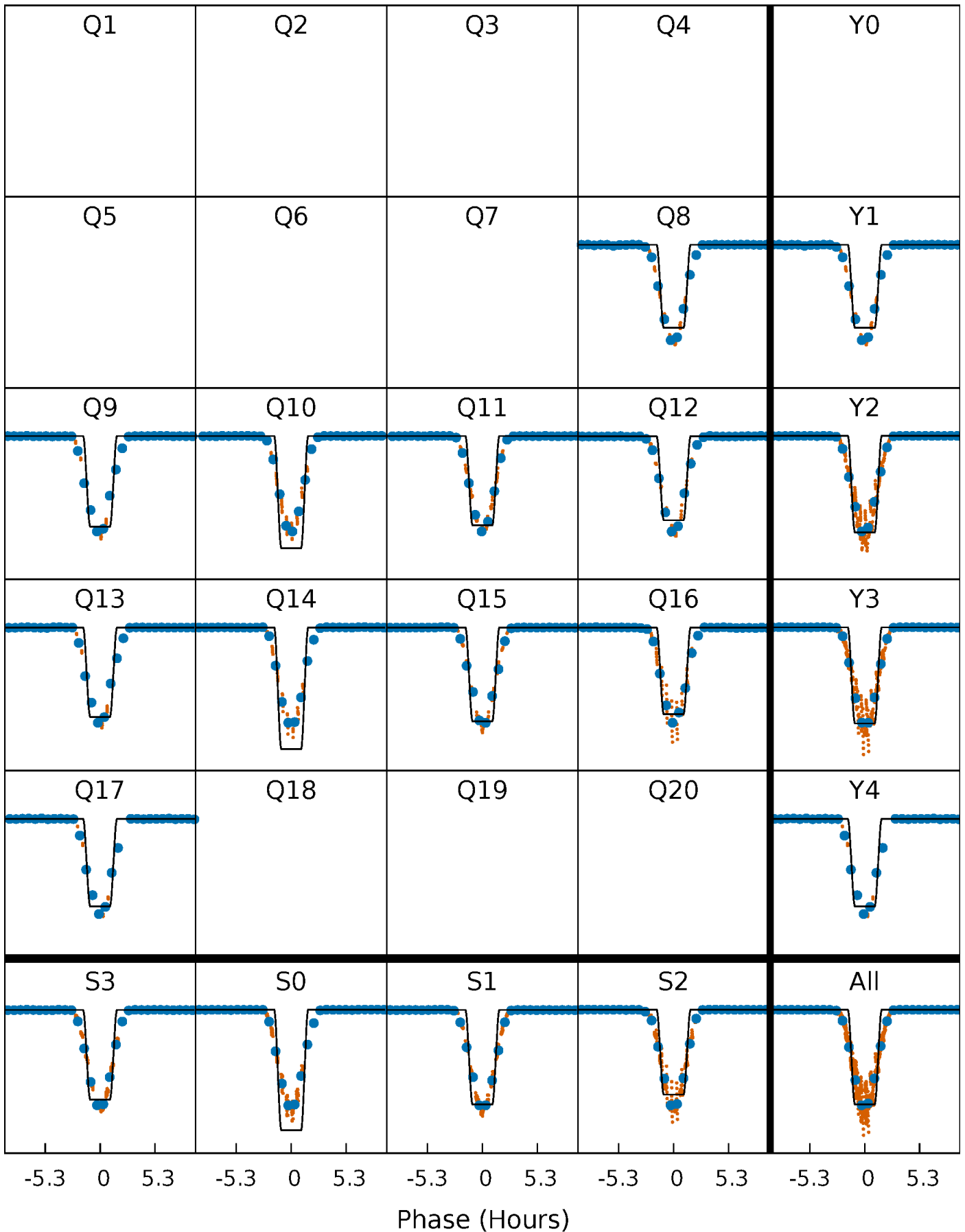
DV Quarter-Phased Transit Curves

TCE 008263746-01 P= 10.993758 Days $T_0=138.807029$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

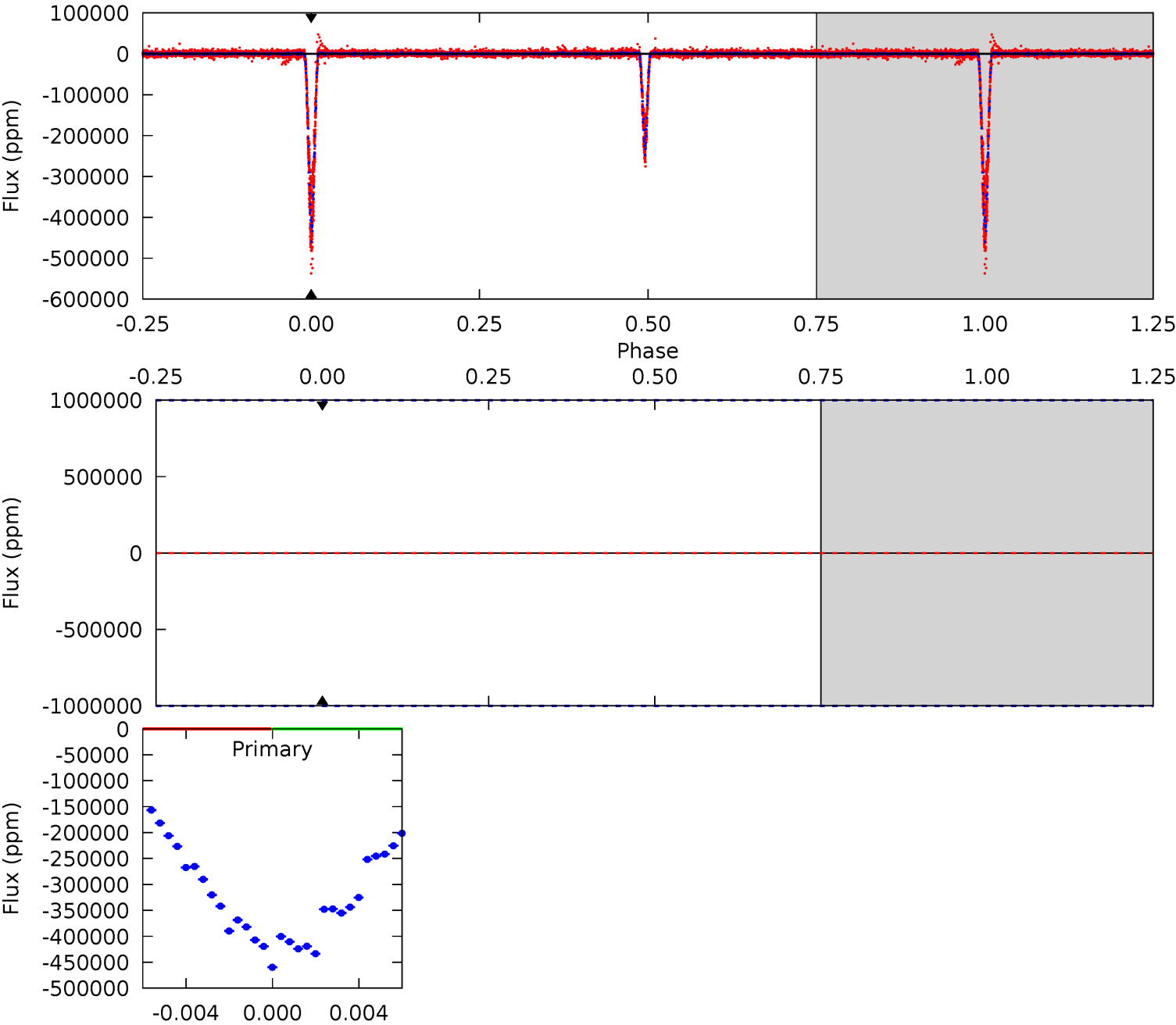
TCE 008263746-01 P= 10.993758 Days $T_0=138.811290$ (BKJD)



DV Model-Shift Uniqueness Test

008263746-01, P = 10.993758 Days, E = 138.807029 Days

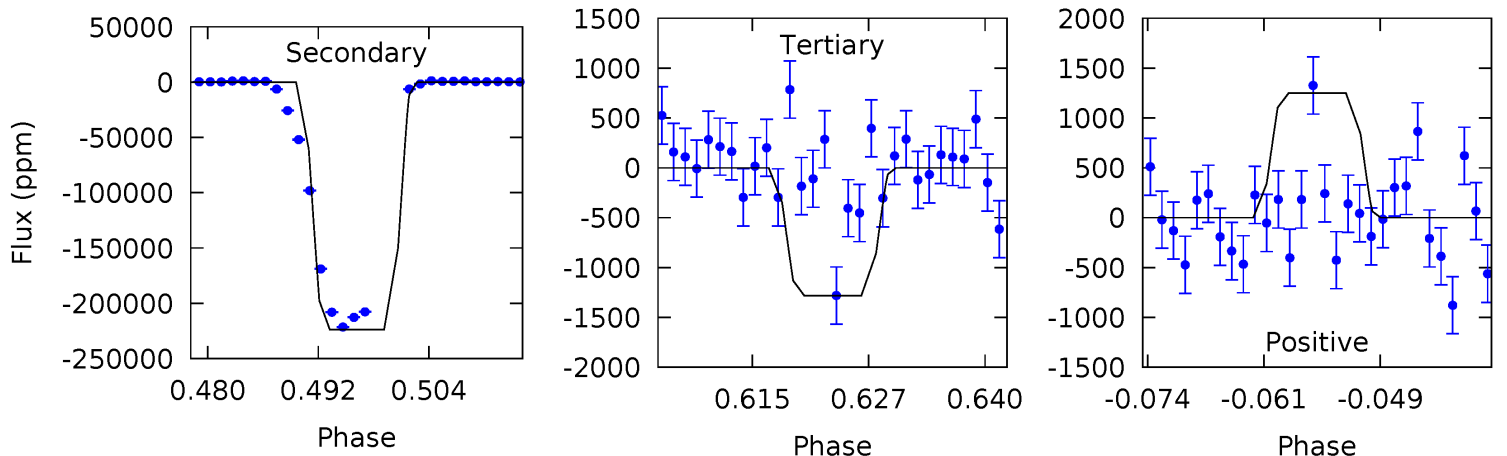
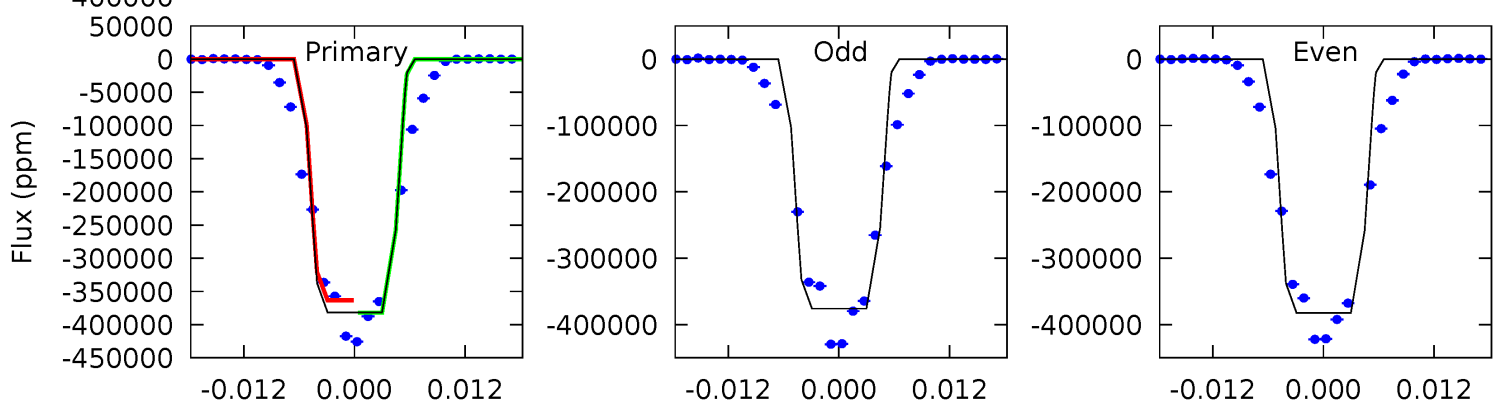
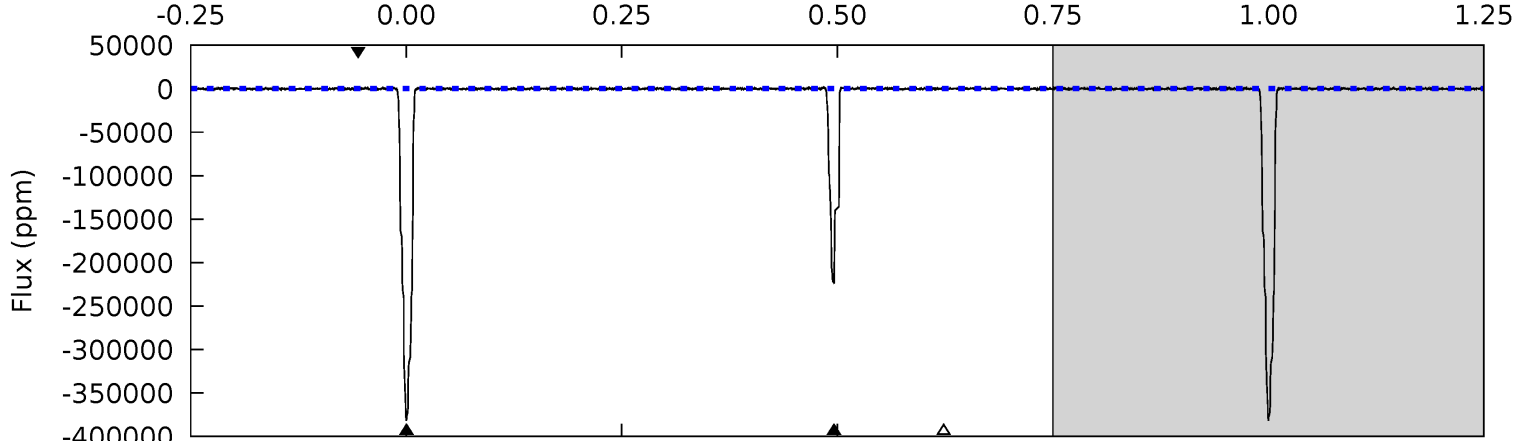
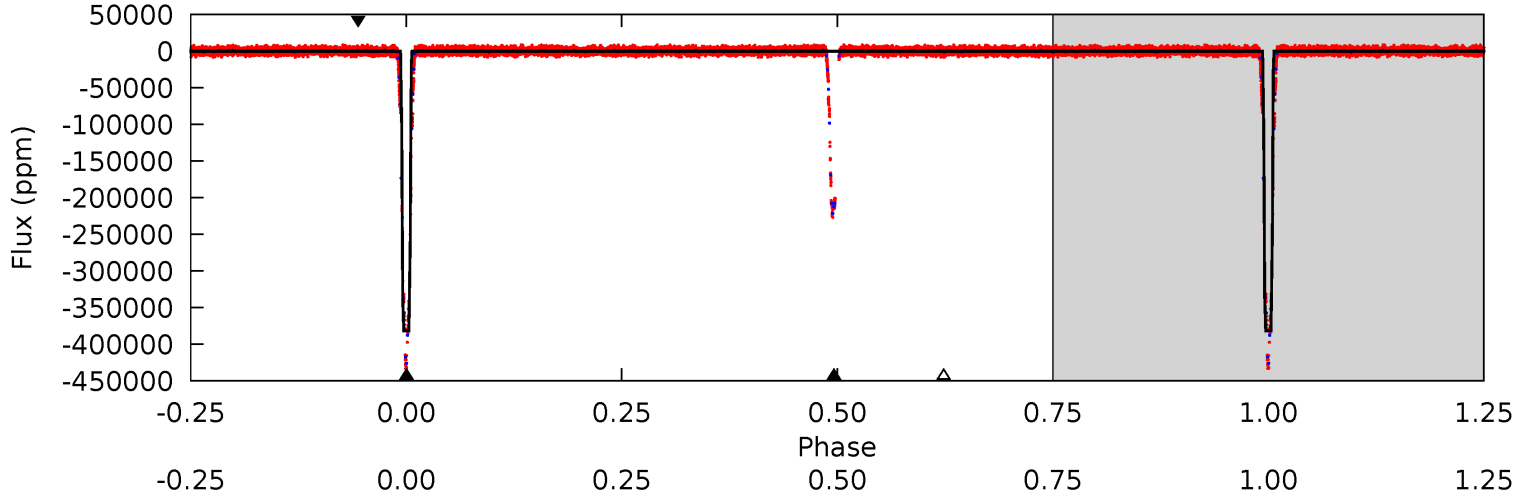
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

008263746-01, P = 10.993758 Days, E = 138.811290 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 1376 | 806.1 | 4.62 | 4.51 | 4.99 | 2.50 | 1.24 | 1372 | 1372 | 801.5 | 801.6 | 10.7 | 0.96 | 0.00 | 0 |



Stellar Parameters For KIC 008263746

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4856^{+175}_{-175} | $4.554^{+0.072}_{-0.048}$ | $-0.080^{+0.300}_{-0.300}$ | $0.743^{+0.062}_{-0.075}$ | $0.721^{+0.090}_{-0.053}$ | $2.476^{+0.745}_{-0.398}$ |
| | +4%/-4% | +2%/-1% | +375%/-375% | +8%/-10% | +12%/-7% | +30%/-16% |
| 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 008263746-01 / KOI 3581.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------------|-------------------------|----------------------|-------------------------|--------------------------------|
| DV | 0 ± 1000000 | $40.71^{+7.99}_{-8.96}$ | 872^{+37}_{-35} | -2466^{+6618}_{-1550} | $-9.027^{+286.071}_{-233.393}$ |
| Alt. | -223590 ± 277 | $51.17^{+9.01}_{-8.40}$ | 873^{+37}_{-37} | 4553^{+331}_{-293} | 464^{+179}_{-132} |

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 $A_{\text{obs}} \gg 1.0$

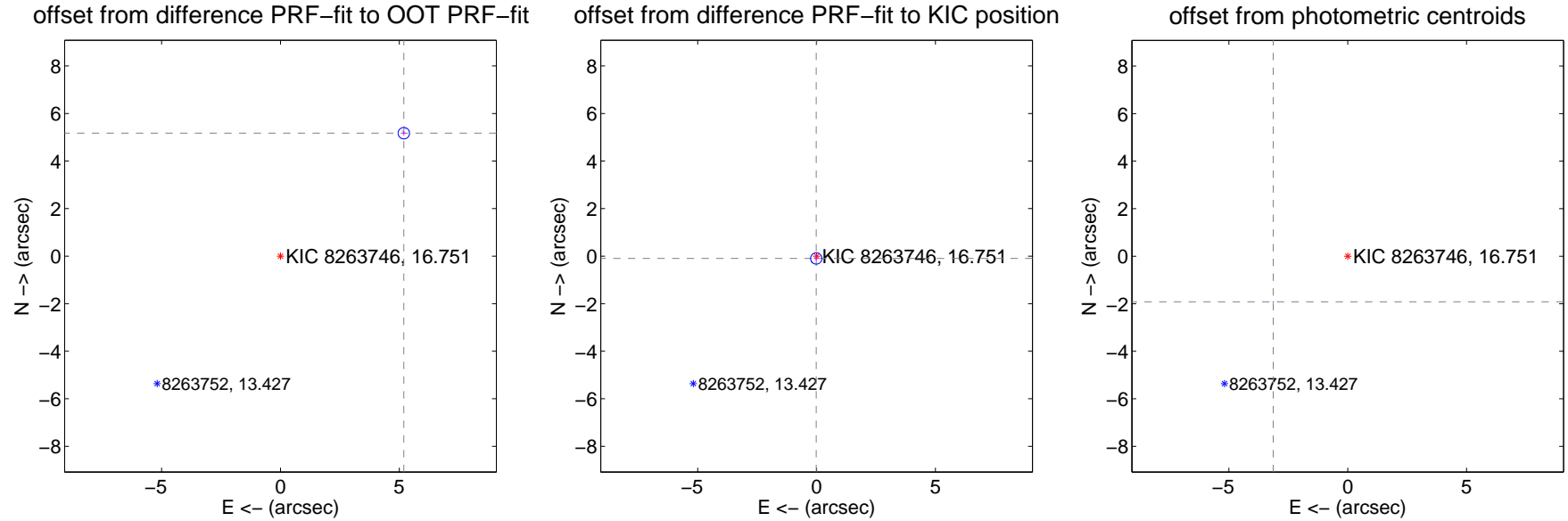
DV Centroid Data

Supplemental centroid analysis for 008263746-01. Kepler magnitude: 16.75. Transit SNR -1.00

There are 10 quarters with good PRF difference image offsets

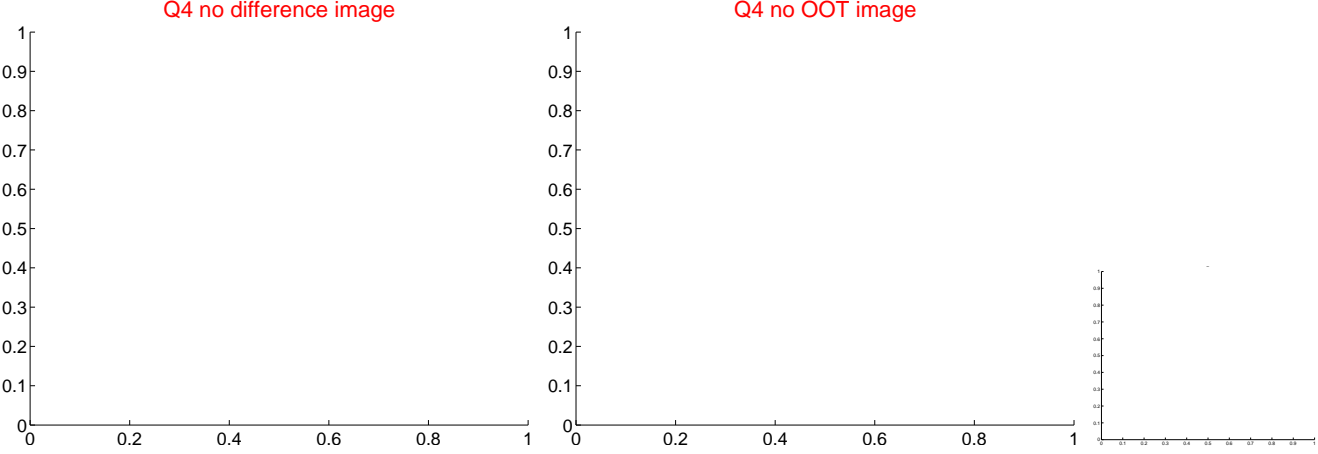
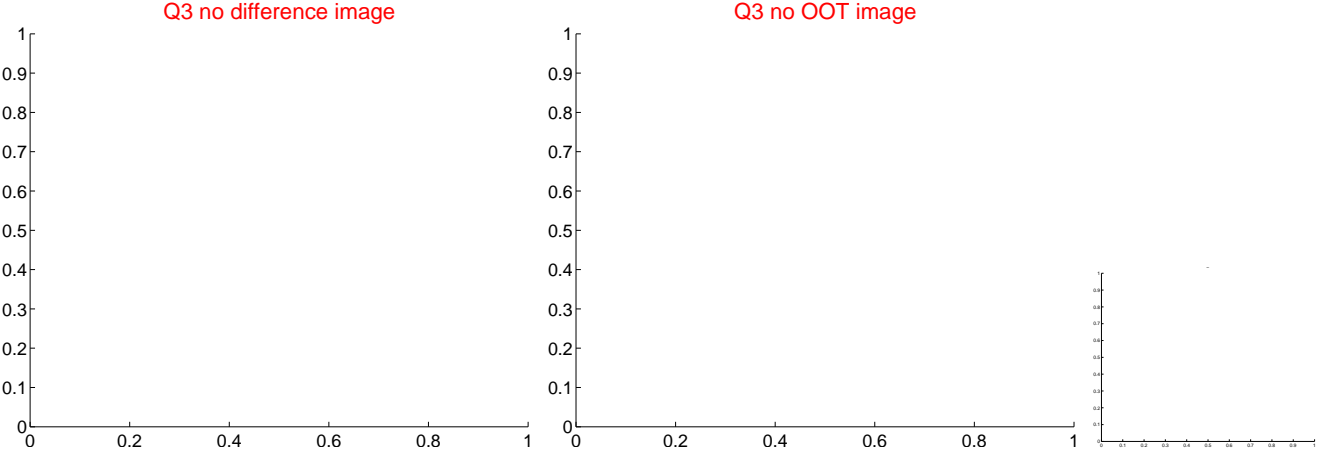
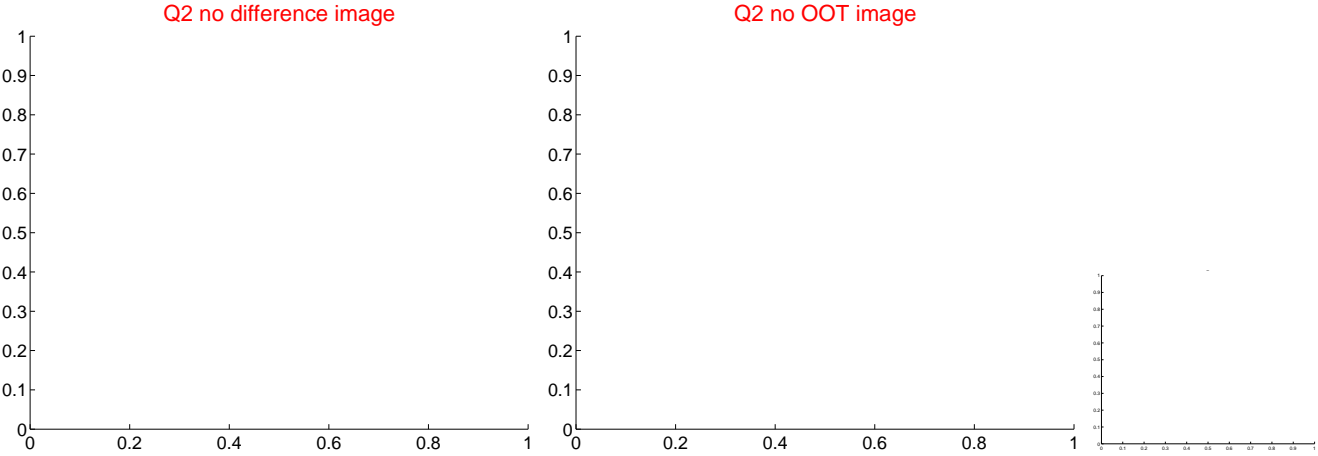
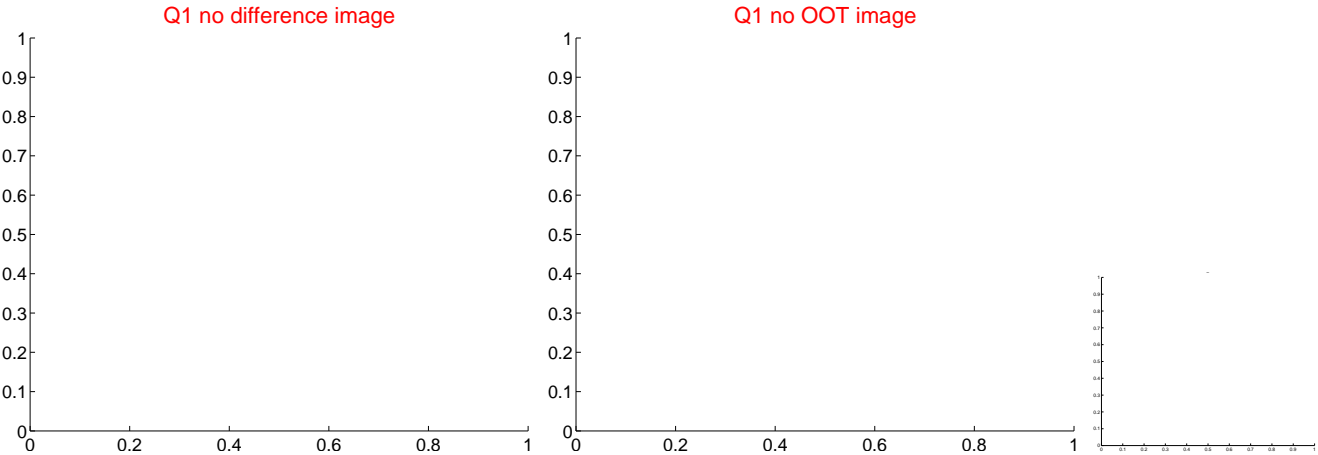
The OOT PRF centroid is offset from the target star catalog position by about 7.43 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 7.328 ± 0.080 | 91.19 | -5.191 ± 0.068 | 5.172 ± 0.091 |
| PRF-fit source offset from KIC position | 0.098 ± 0.079 | 1.24 | 0.013 ± 0.069 | -0.097 ± 0.080 |
| photometric centroid source offset | 3.68 ± 0.00 | 5183.63 | 3.14 ± 0.00 | -1.92 ± 0.00 |

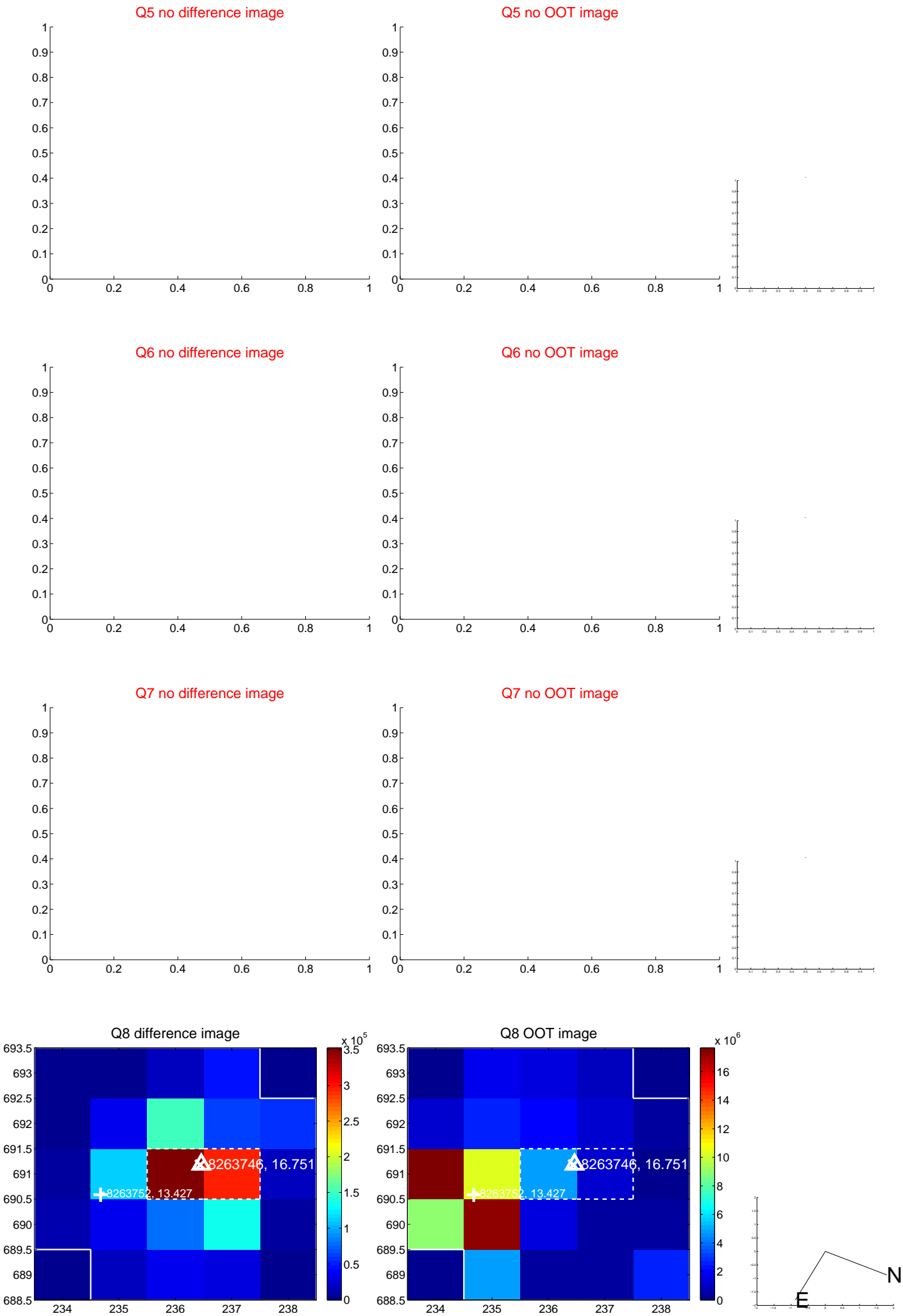


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

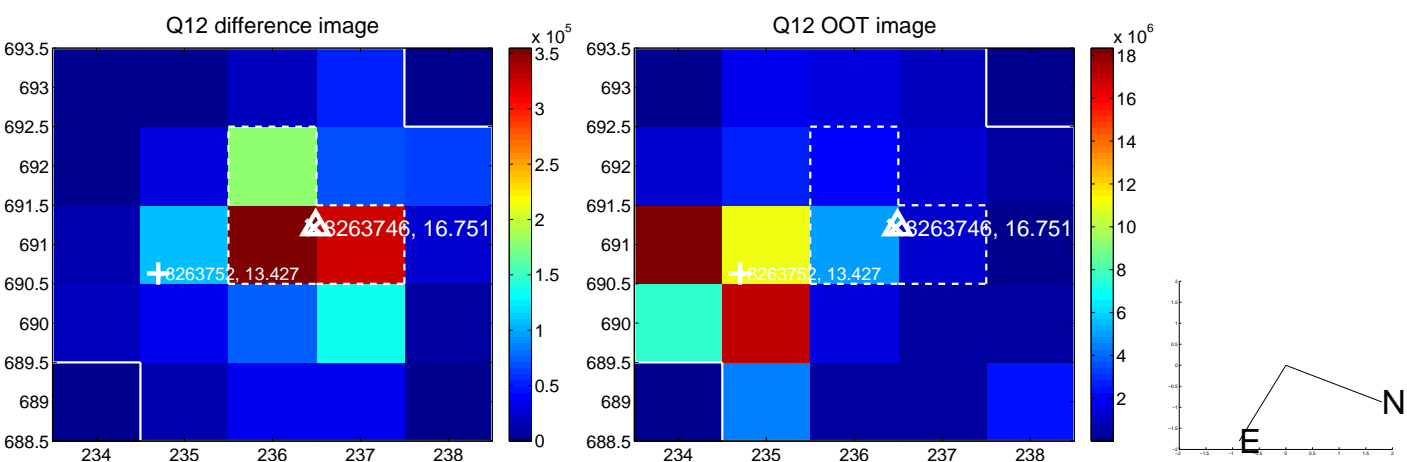
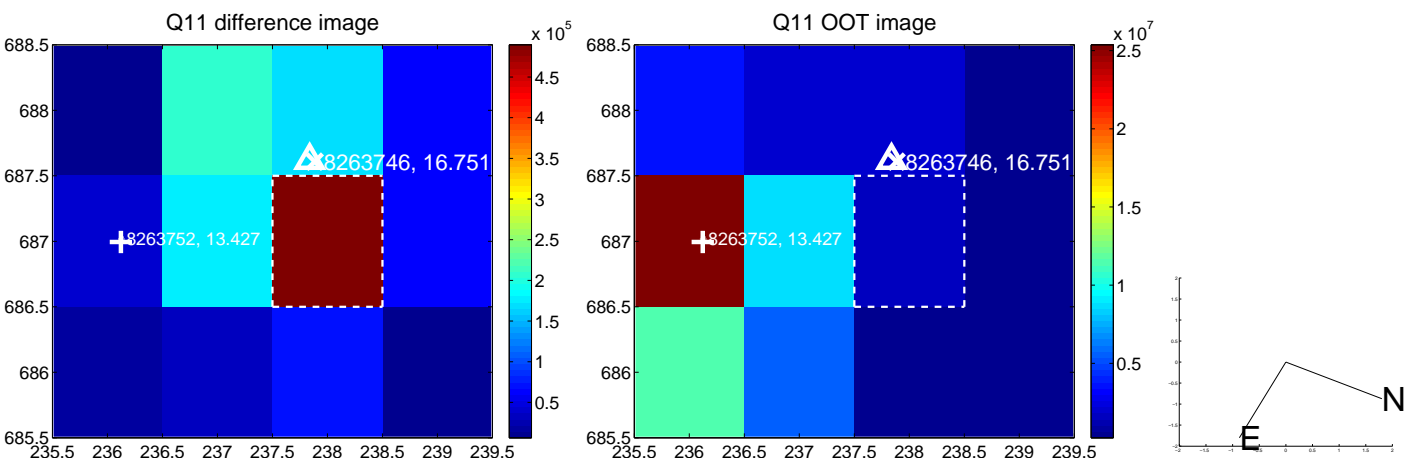
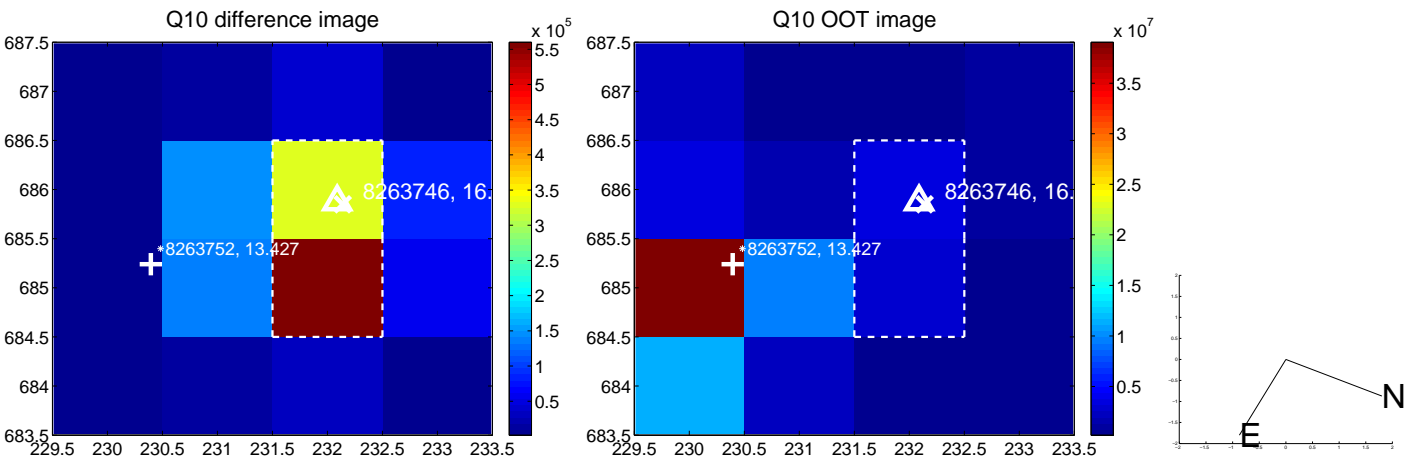
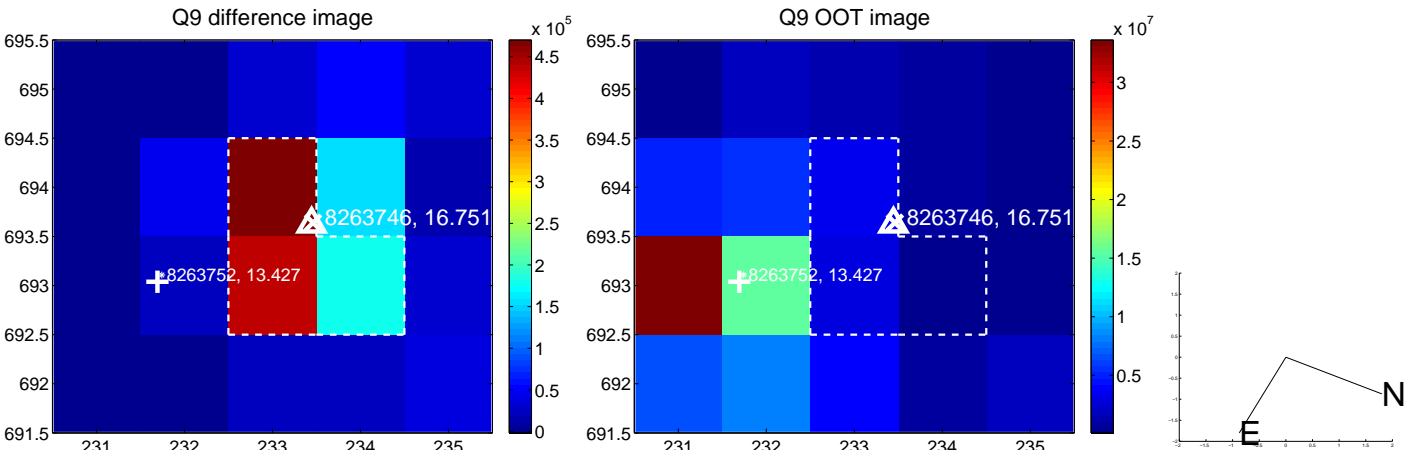
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



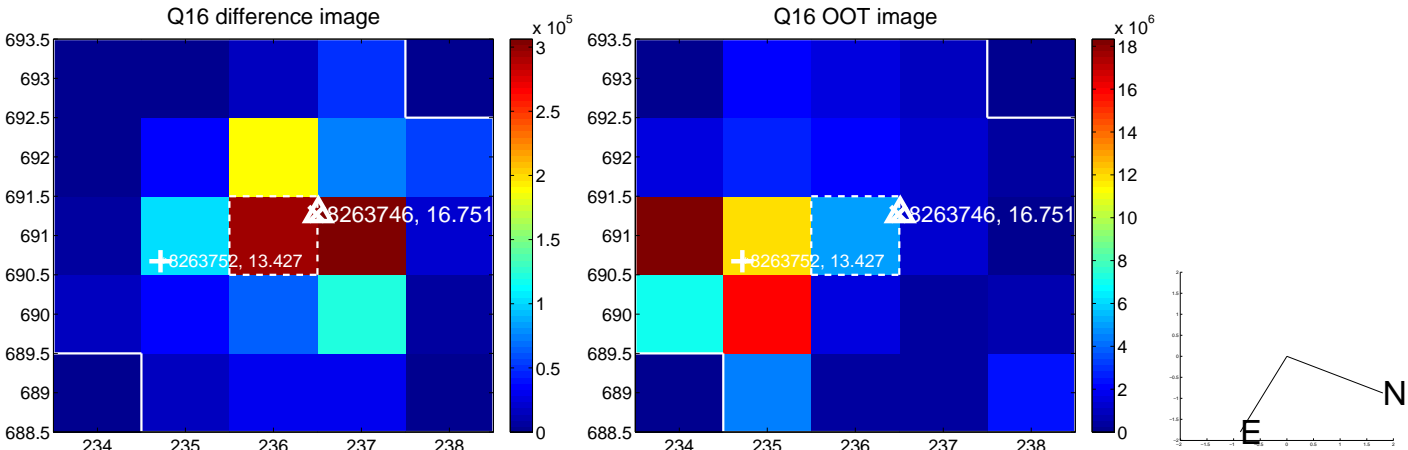
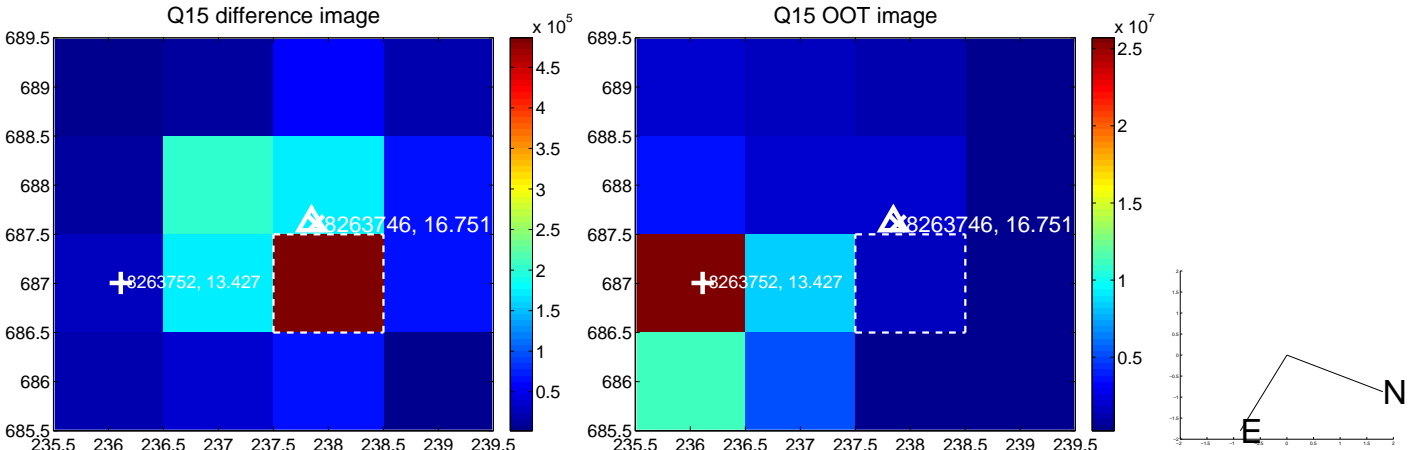
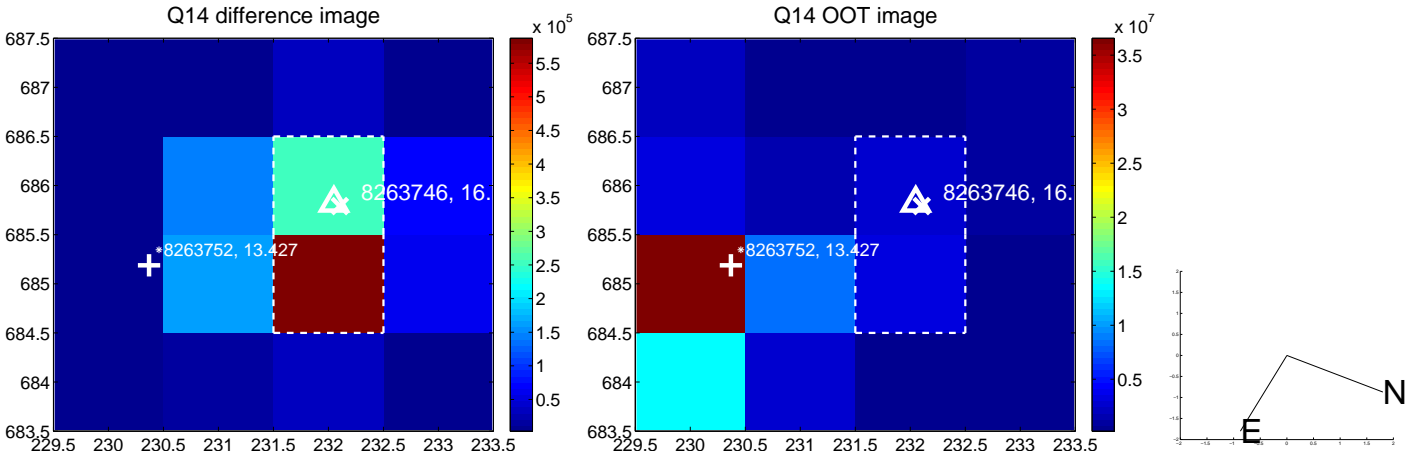
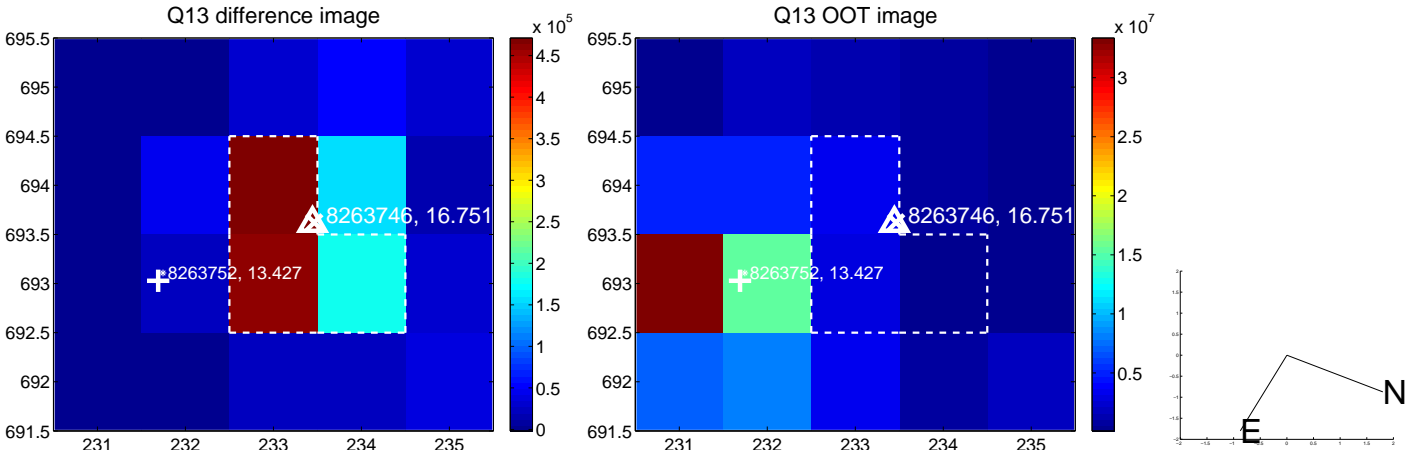
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



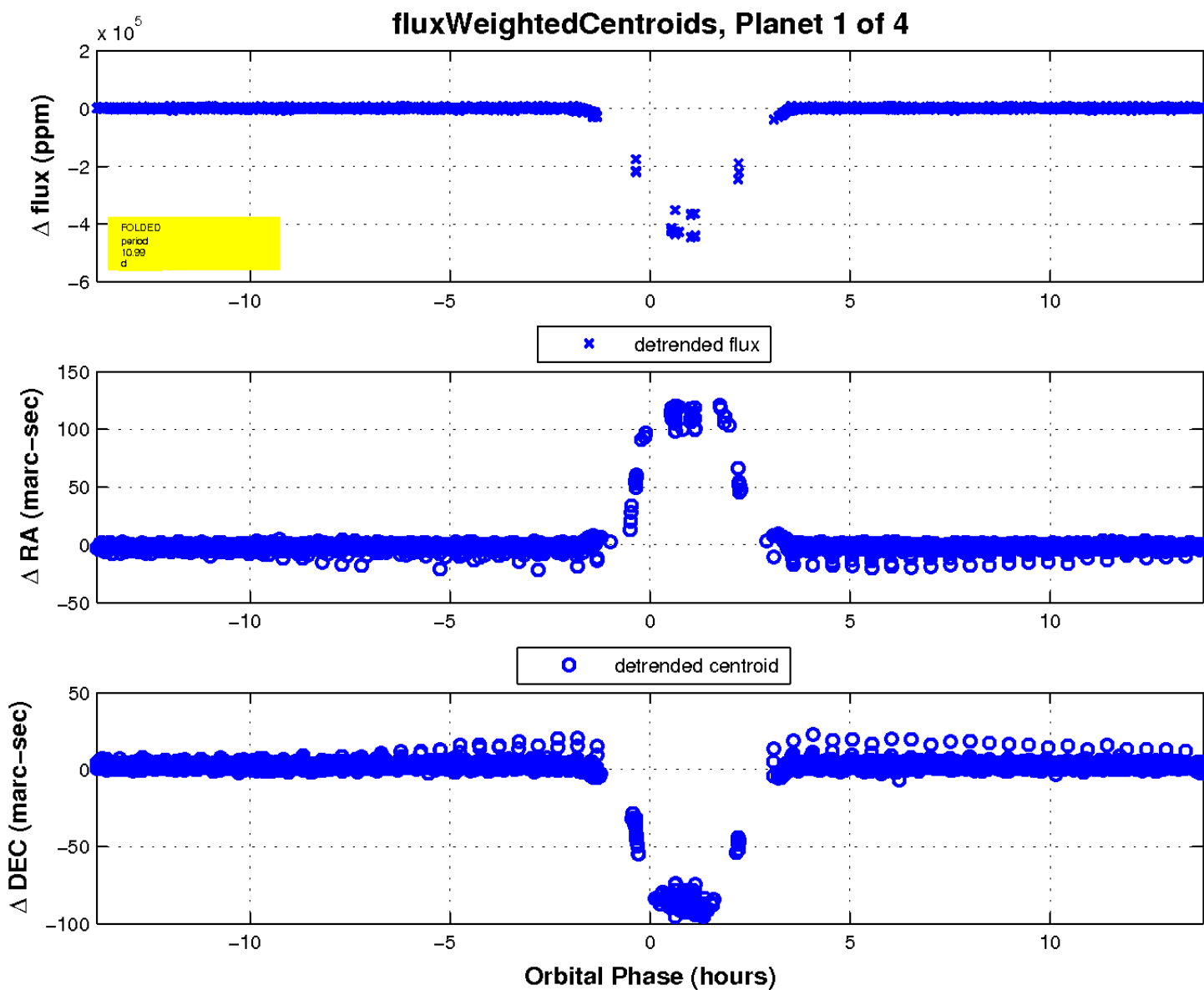
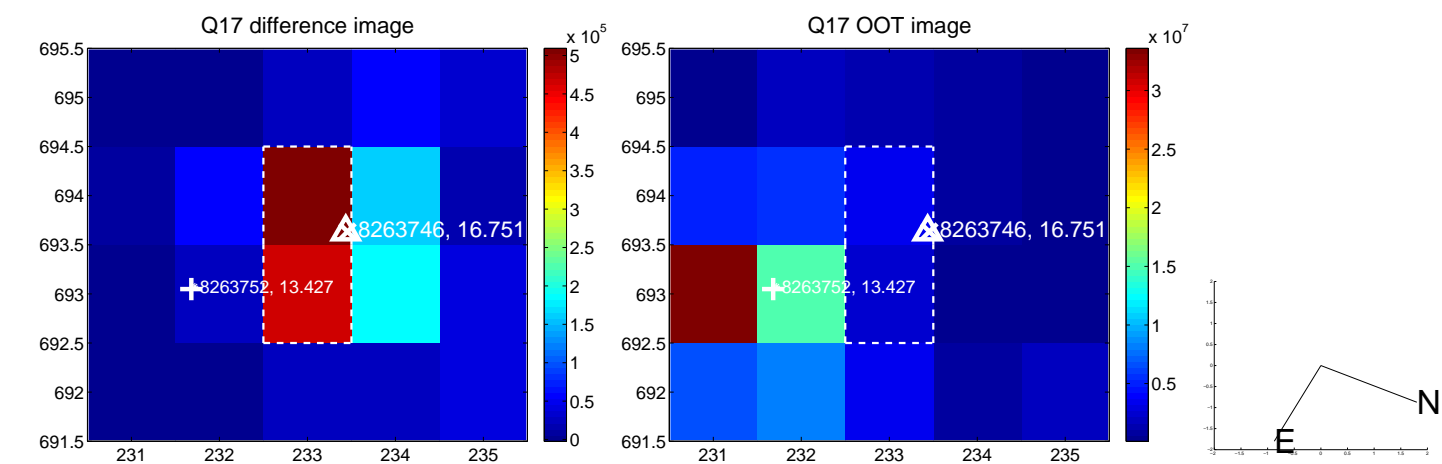
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



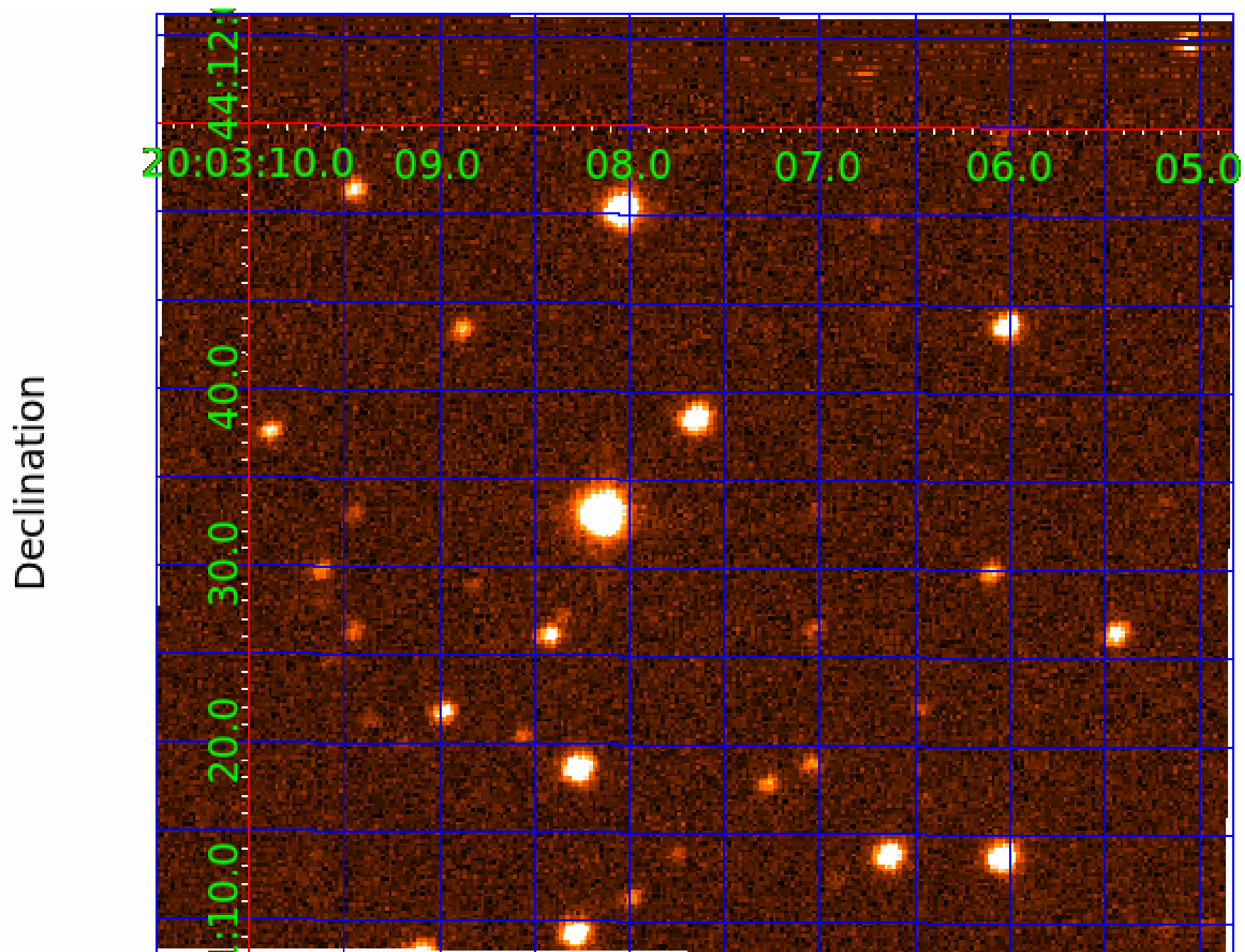
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008263746

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263746-01 | OBS | 3581.01 | 10.993758 | 138.807029 | 426655.2 | 3.000 | 2751.4 | -1.0 | 0.74 | 4856 | 40.54 | 36.52 |
| 008263746-02 | OBS | No | 10.993828 | 133.253266 | 200498.1 | 4.067 | 1434.3 | 658.9 | 0.74 | 4856 | 34.31 | 36.52 |
| 008263746-03 | OBS | No | 7.329189 | 138.789479 | 721.6 | 2.070 | 179.7 | 4.6 | 0.74 | 4856 | 1.94 | 62.70 |
| 008263746-04 | OBS | No | 4.397437 | 132.450938 | 29998.8 | 15.000 | 146.0 | -1.0 | 0.74 | 4856 | 12.44 | 123.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263746-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 008263746-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_KIC_POS |
| 008263746-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 008263746-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

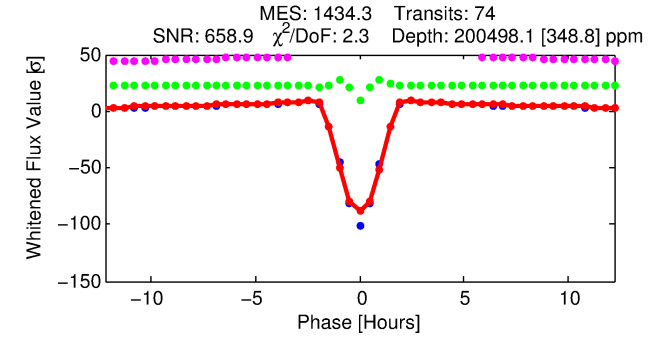
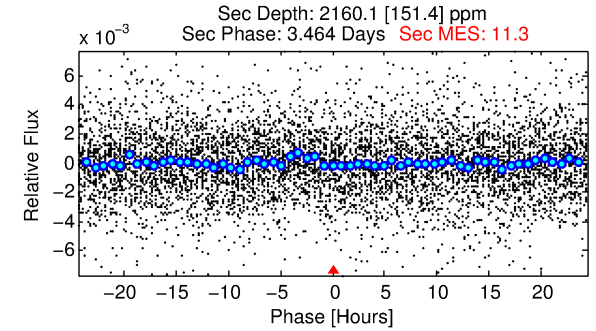
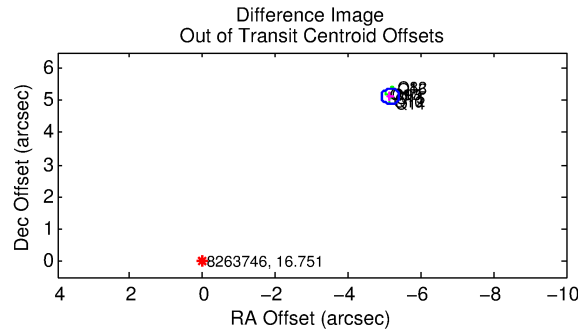
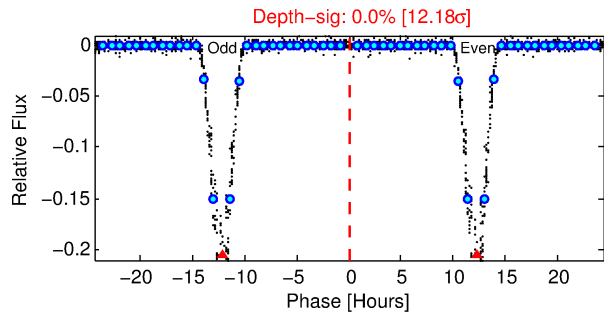
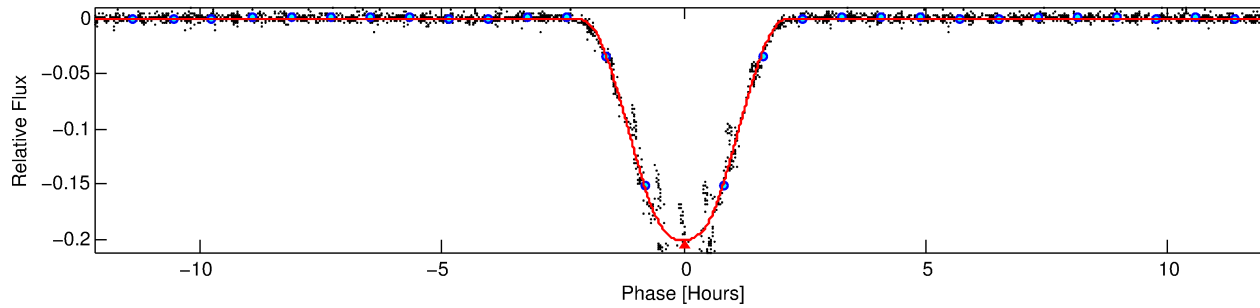
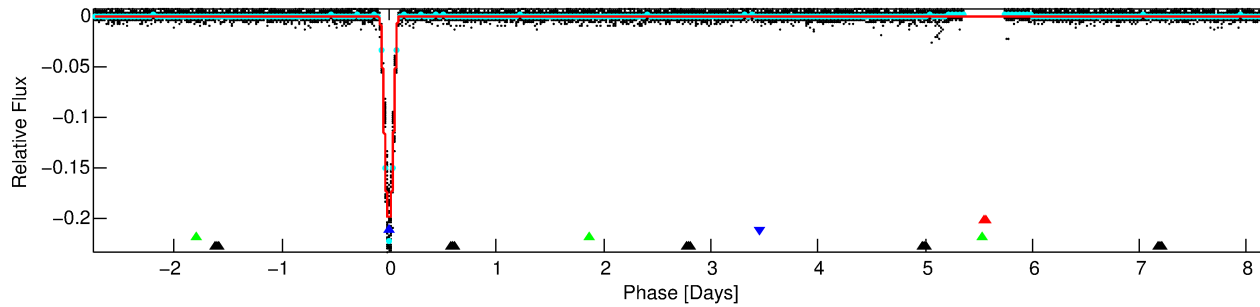
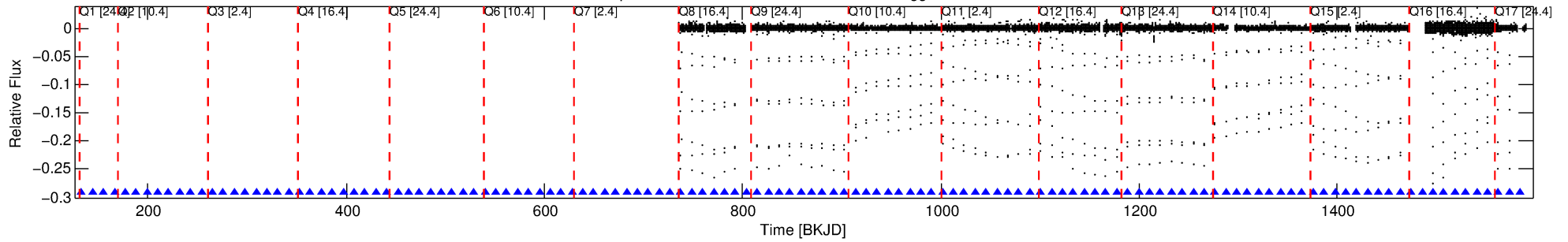
Ephemeris Match Information For 008263746-02

No Significant Match Found

DV One-Page Summary

KIC: 8263746 Candidate: 2 of 4 Period: 10.994 d
KOI: K03581 Corr: No Ephemeris Match

Kp: 16.75 R*: 0.74 Rs Teff: 4856.0 K Logg: 4.55 Fe/H: -0.080



DV Fit Results:

Period = 10.99383 [0.00000] d
Epoch = 133.2533 [0.0002] BKJD
Rp/R* = 0.4231 [0.0008]
a/R* = 27.61 [0.07]
b = 0.49 [0.00]
Seff = 36.51 [7.07]
Teq = 627 [30] K
Rp = 34.31 [3.46] Re
a = 0.0868 [0.0076] AU
Ag = 7.61 [1.12] [5.90σ]
Teffp = 1609 [65] K [13.78σ]

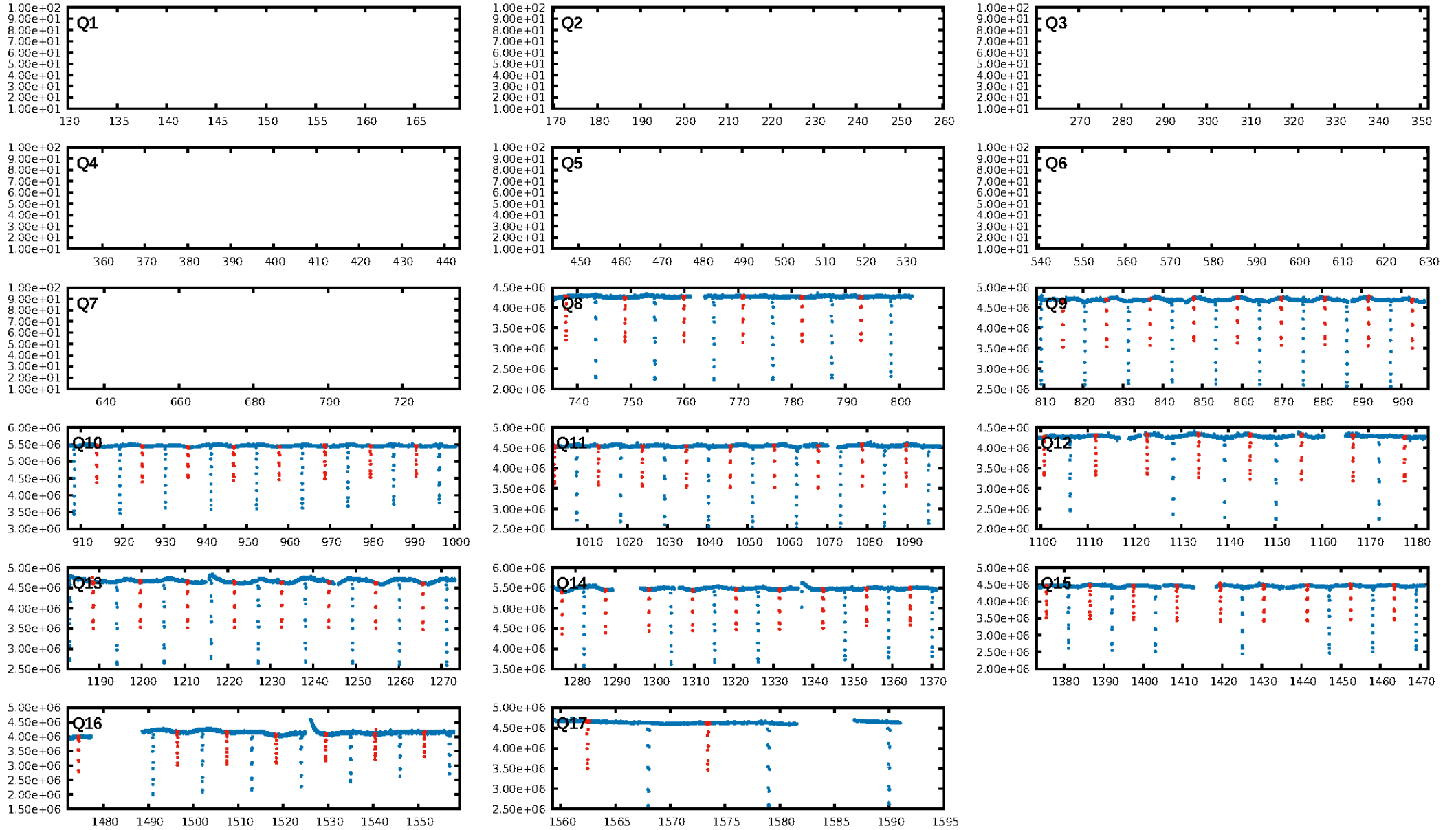
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [72/72]
GhostDiagnostic-chr: 2.943
Centroid-sig: N/A
Centroid-so: 3.679 arcsec [2717.60σ]
OotOffset-rm: 7.275 arcsec [87.15σ]
KicOffset-rm: 0.141 arcsec [1.71σ]
OotOffset-st: 2/2/3/3 [10]
KicOffset-st: 2/2/3/3 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

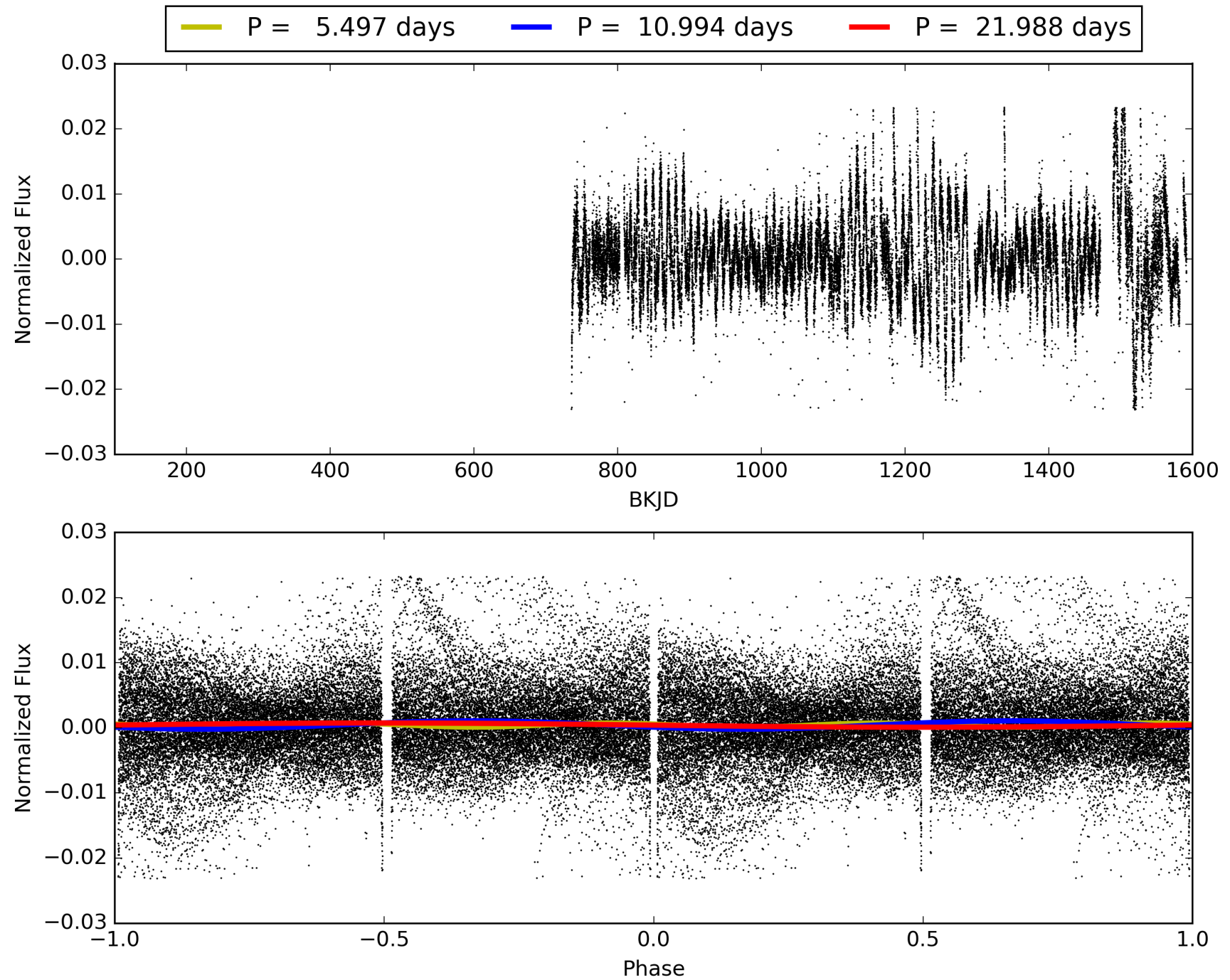
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:46:25 Z

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

TCE 008263746-02, PDC Light Curves

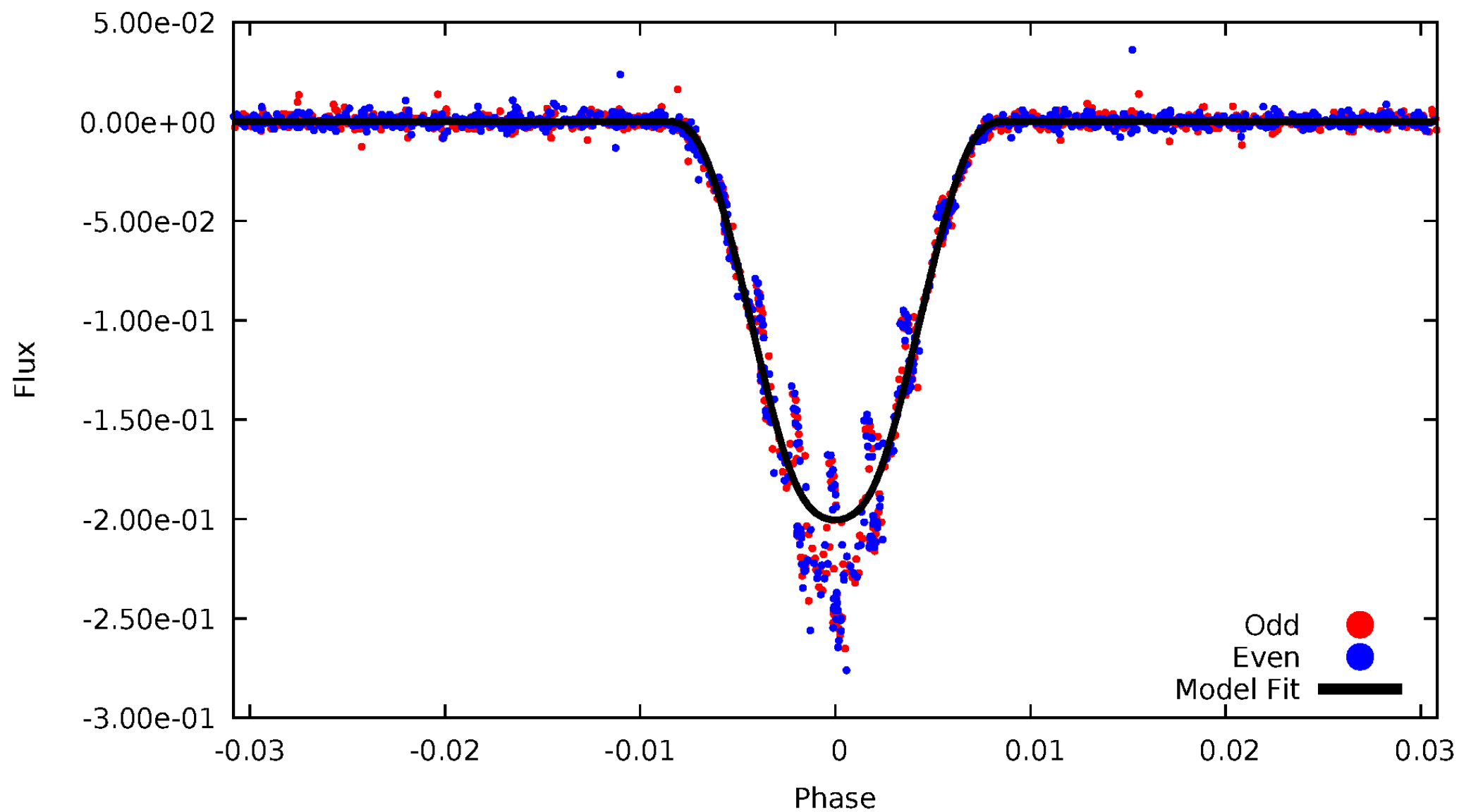


TCE 008263746-02



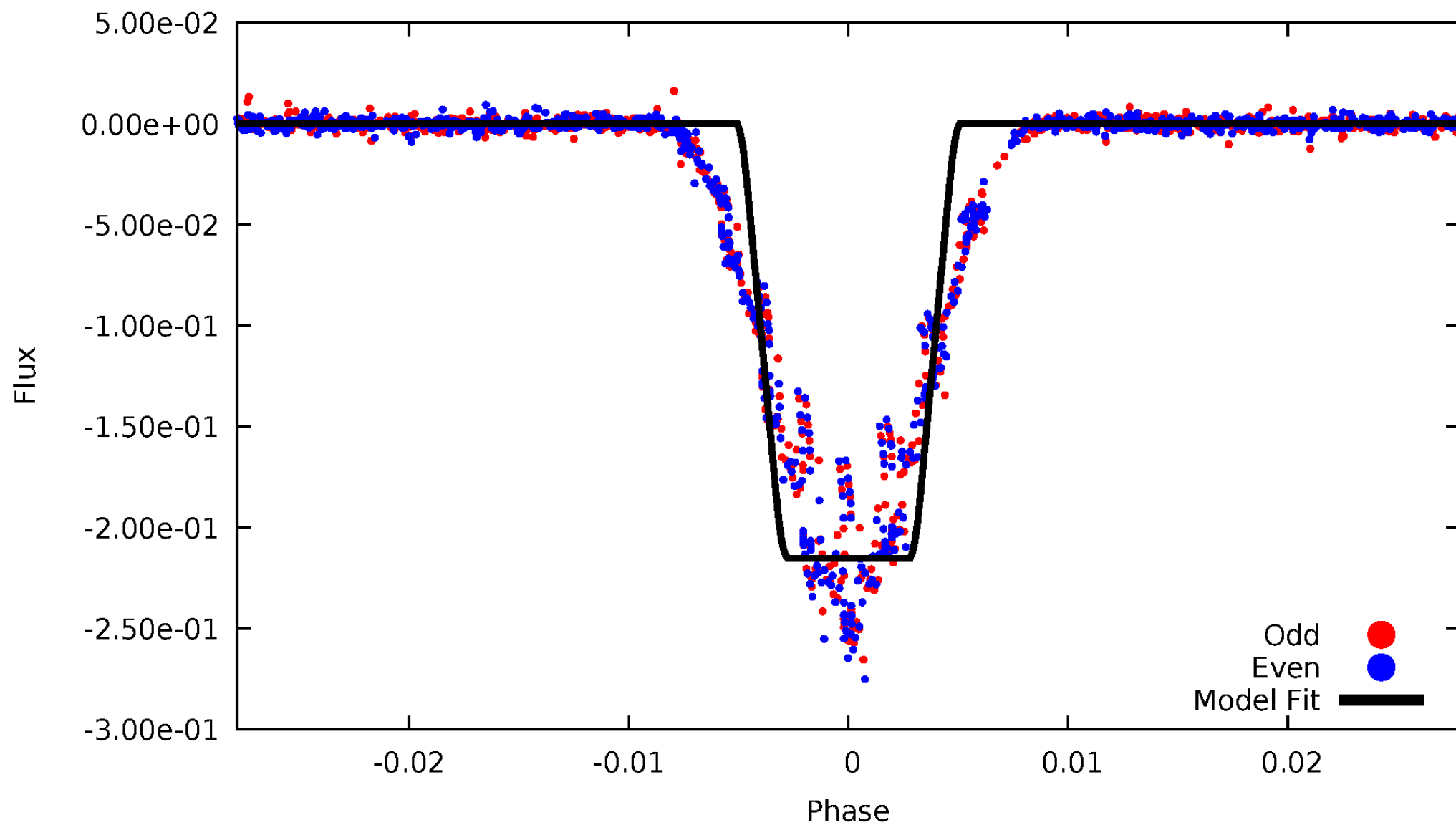
DV Odd/Even

TCE 008263746-02



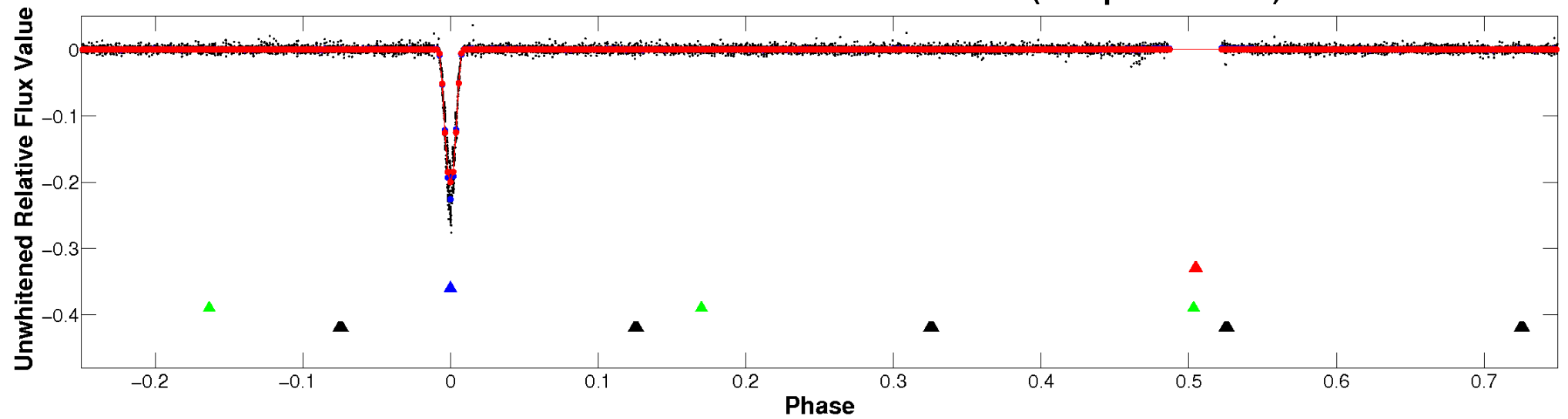
ALT Odd/Even

TCE 008263746-02

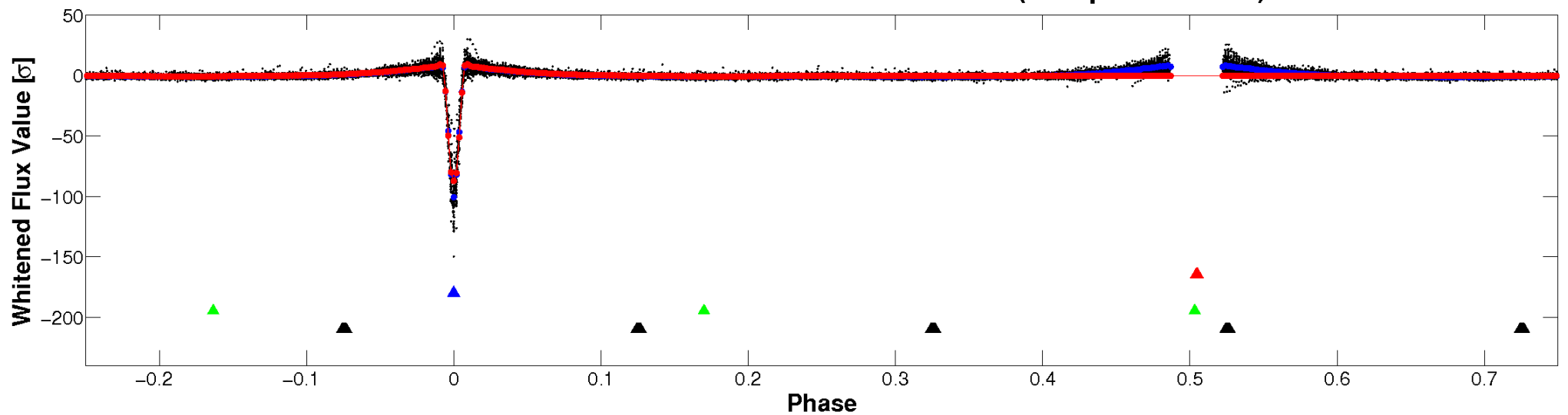


Non-Whitened Vs. Whitened Light Curve

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

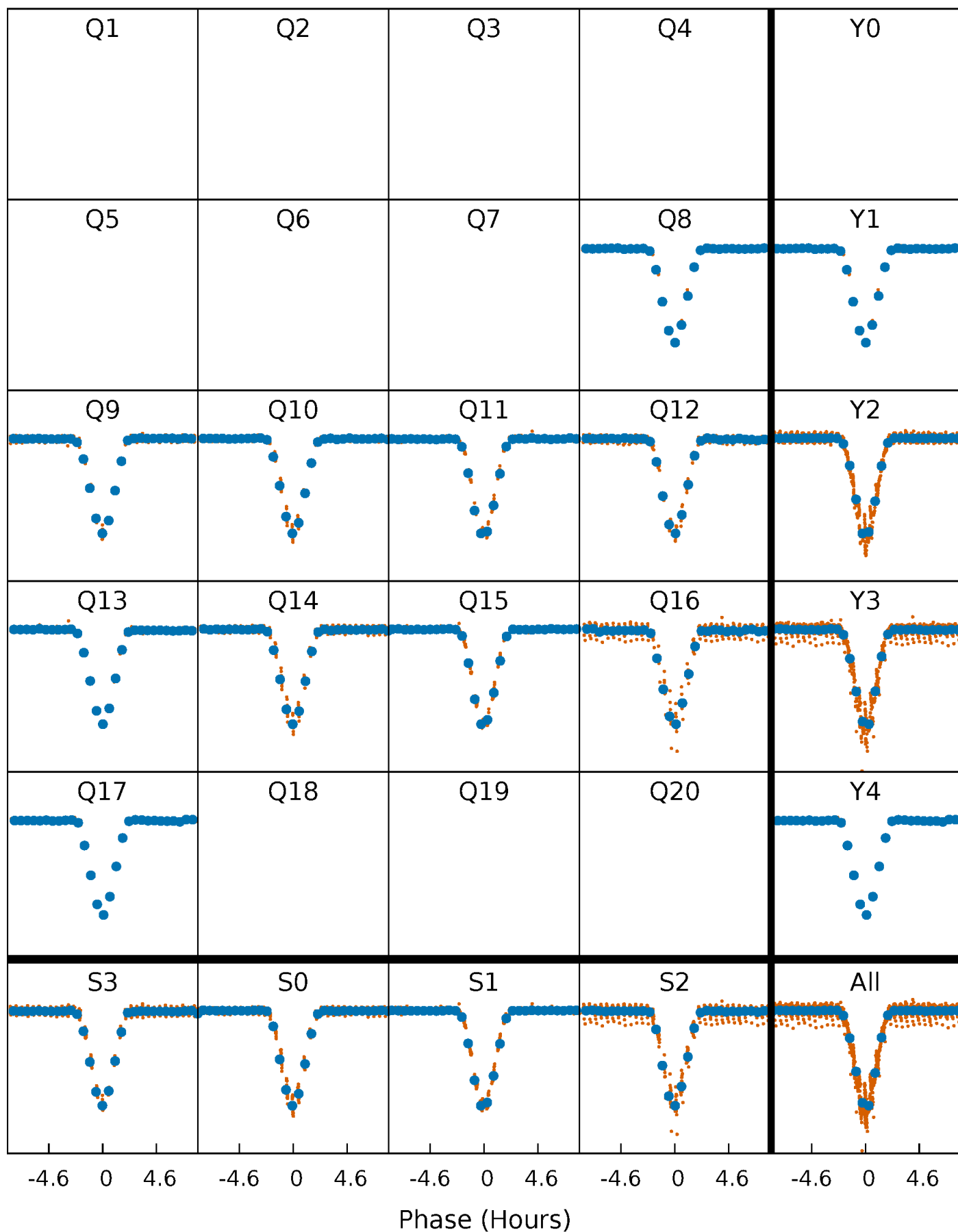


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



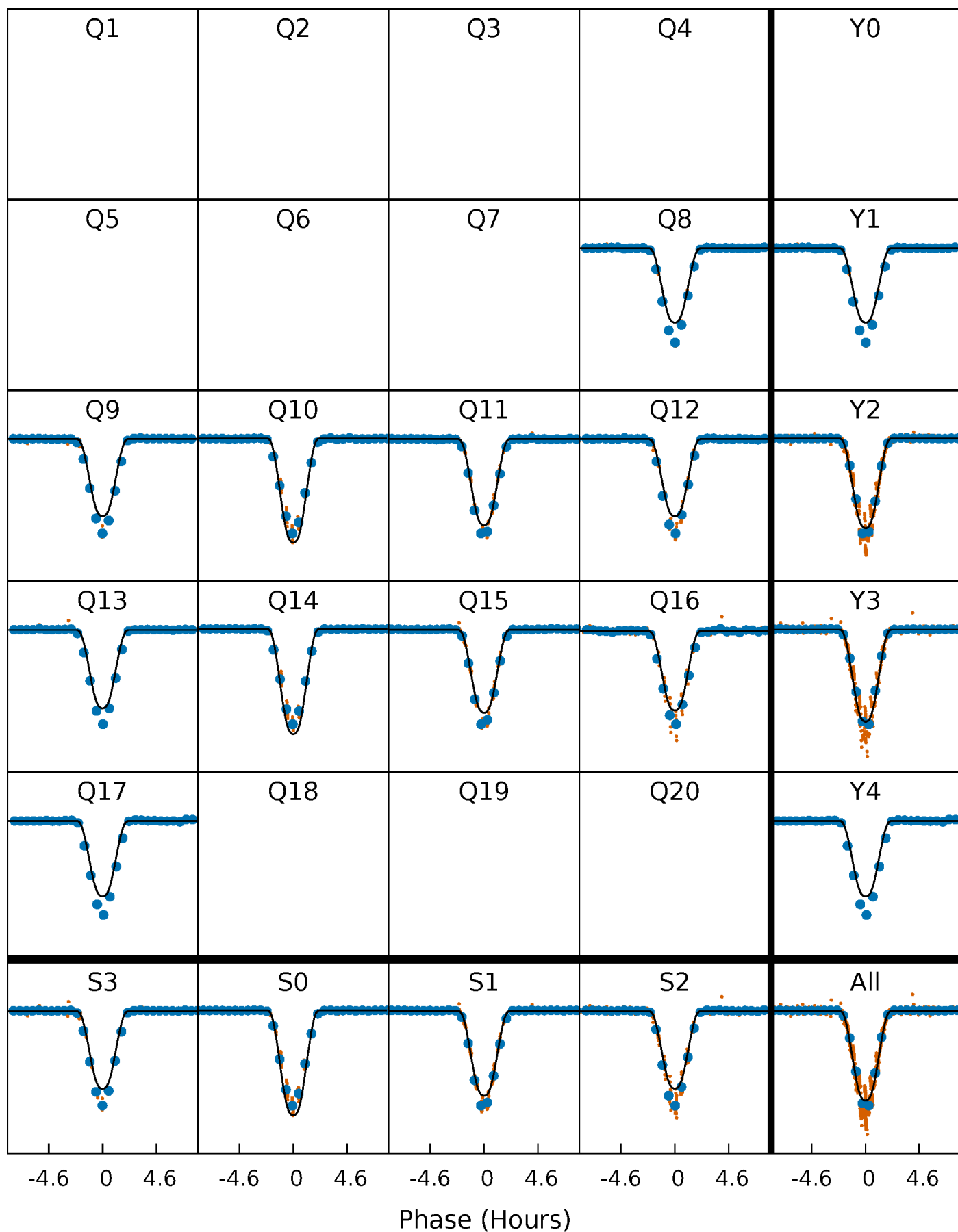
PDC Quarter-Phased Transit Curves

TCE 008263746-02 P= 10.993828 Days $T_0=133.253266$ (BKJD)



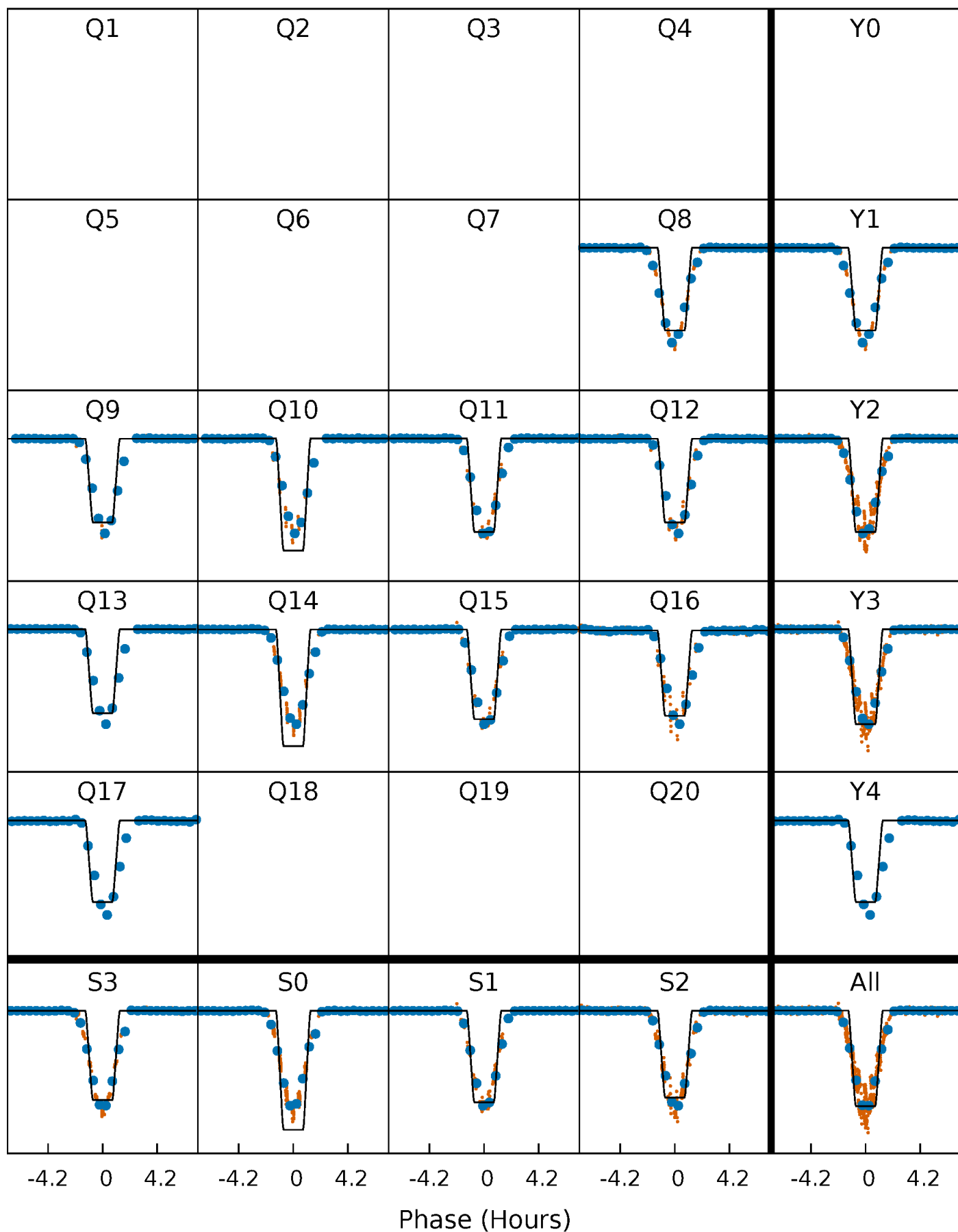
DV Quarter-Phased Transit Curves

TCE 008263746-02 P= 10.993828 Days $T_0=133.253266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

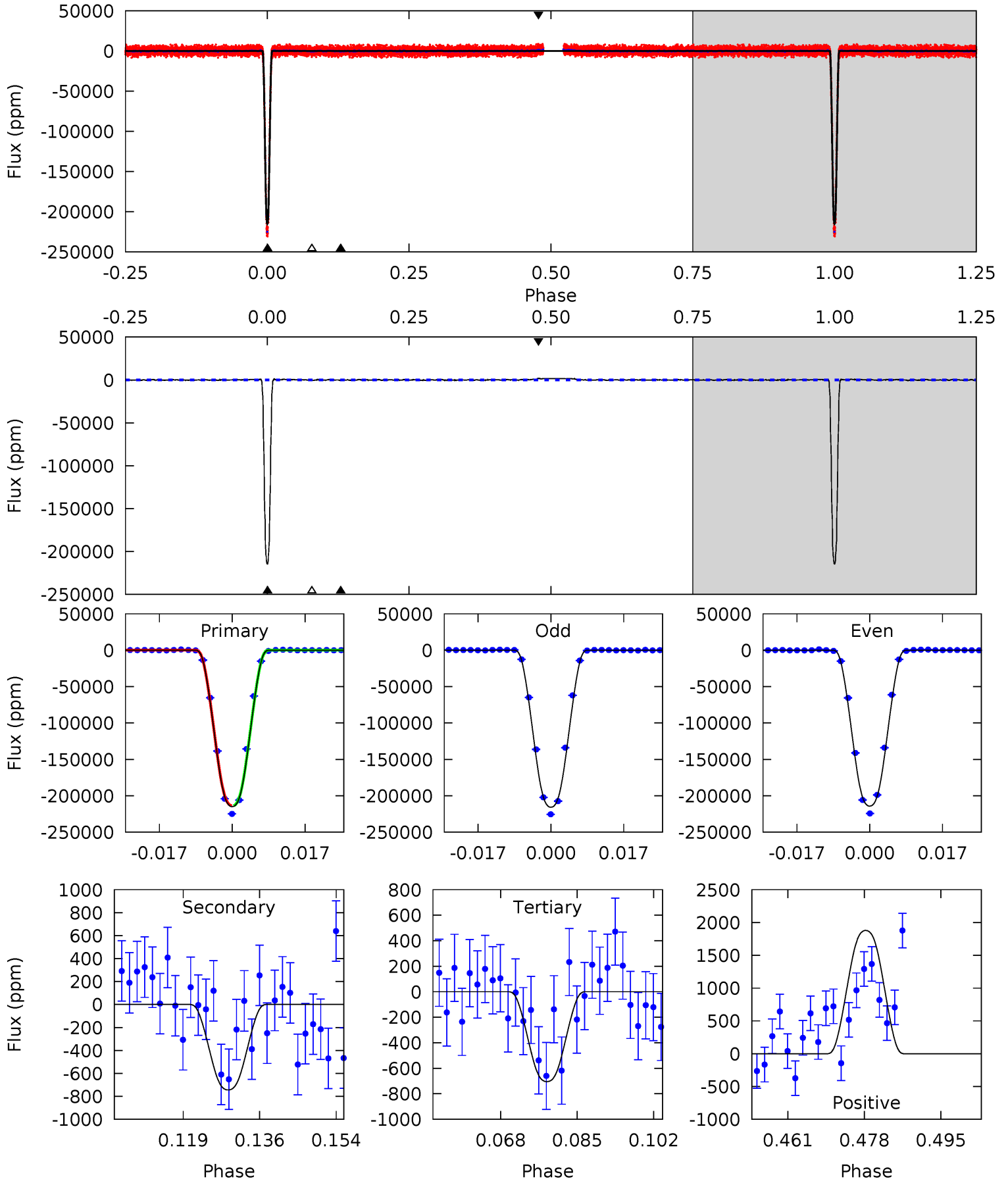
TCE 008263746-02 P= 10.993772 Days $T_0=133.258174$ (BKJD)



DV Model-Shift Uniqueness Test

008263746-02, P = 10.993828 Days, E = 133.253266 Days

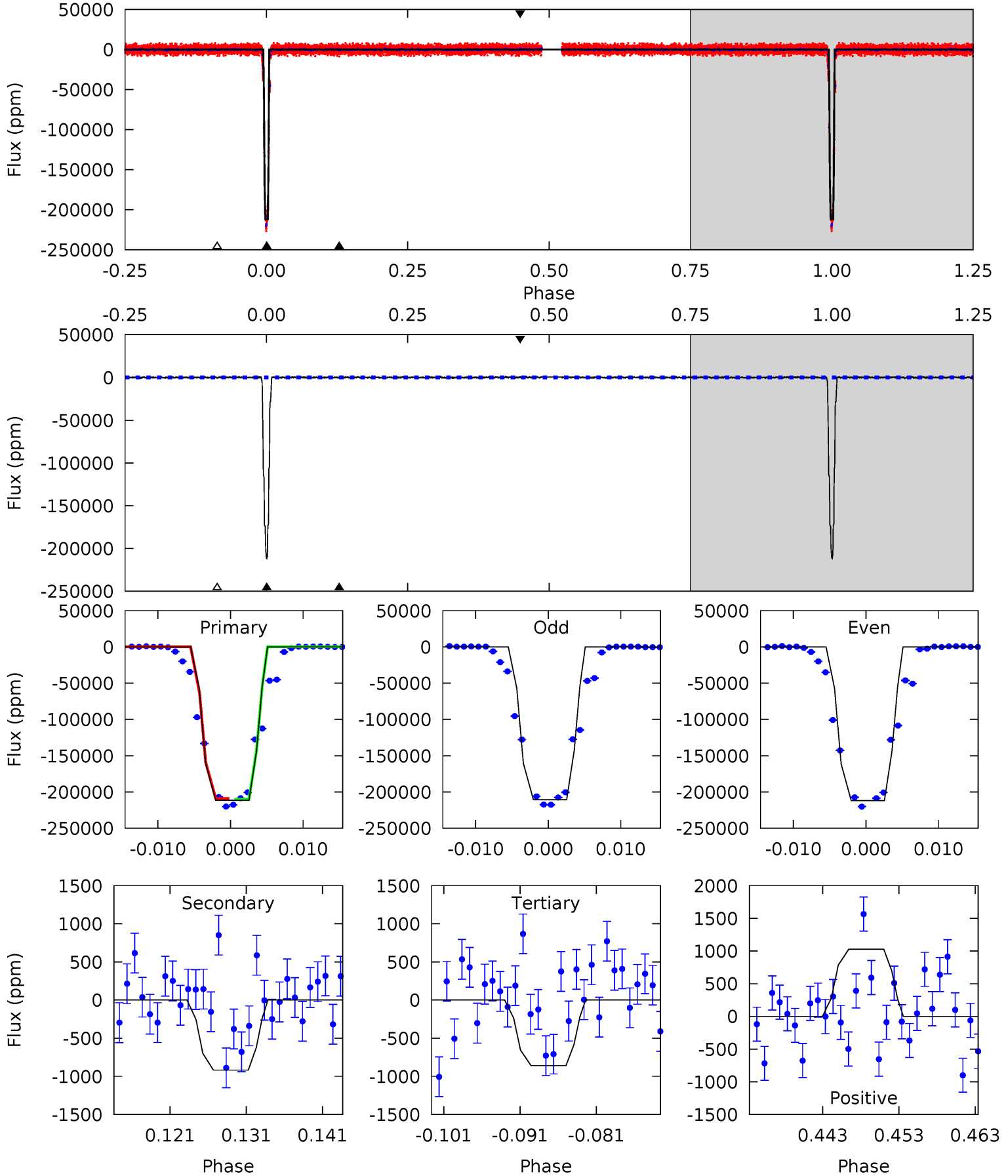
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 2010 | 6.96 | 6.59 | 17.6 | 4.92 | 2.39 | 3.37 | 2003 | 1992 | 0.37 | -10.6 | 7.07 | 0.96 | 0.01 | 0 |



Alt Model-Shift Uniqueness Test

008263746-02, P = 10.993772 Days, E = 133.258174 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 975.7 | 4.23 | 3.97 | 4.74 | 5.02 | 2.57 | 1.25 | 971.7 | 970.9 | 0.27 | -0.51 | 2.23 | 0.96 | 0.00 | 0 |



Stellar Parameters For KIC 008263746

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4856^{+175}_{-175} | $4.554^{+0.072}_{-0.048}$ | $-0.080^{+0.300}_{-0.300}$ | $0.743^{+0.062}_{-0.075}$ | $0.721^{+0.090}_{-0.053}$ | $2.476^{+0.745}_{-0.398}$ |
| | +4%/-4% | +2%/-1% | +375%/-375% | +8%/-10% | +12%/-7% | +30%/-16% |
| 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 008263746-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|----------------|-------------------------|-------------------|--------------------|---------------------------|
| DV | -743 ± 107 | $34.27^{+1.76}_{-1.89}$ | 874^{+37}_{-40} | 2140^{+51}_{-59} | $2.638^{+0.494}_{-0.387}$ |
| Alt. | -918 ± 217 | $37.79^{+2.11}_{-2.15}$ | 874^{+38}_{-38} | 2143^{+78}_{-81} | $2.690^{+0.714}_{-0.661}$ |

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

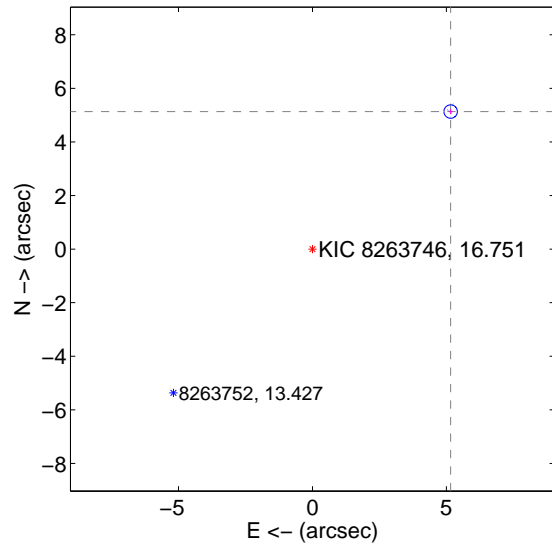
Supplemental centroid analysis for 008263746-02. Kepler magnitude: 16.75. Transit SNR 658.92

There are 10 quarters with good PRF difference image offsets

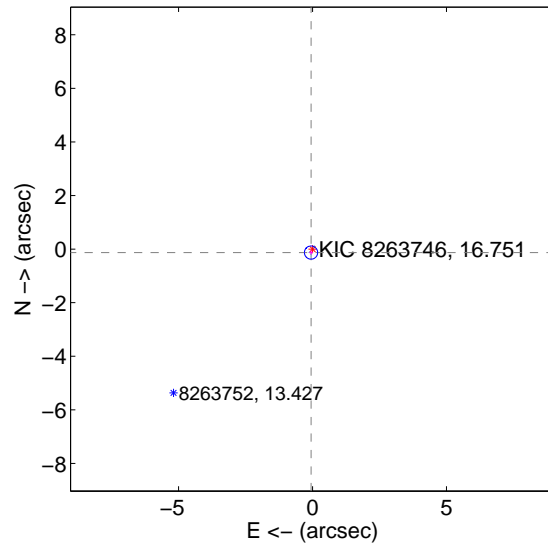
The OOT PRF centroid is offset from the target star catalog position by about 7.42 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 7.275 ± 0.083 | 87.15 | -5.156 ± 0.069 | 5.131 ± 0.096 |
| PRF-fit source offset from KIC position | 0.141 ± 0.082 | 1.71 | 0.055 ± 0.070 | -0.130 ± 0.081 |
| photometric centroid source offset | 3.68 ± 0.00 | 2717.60 | 3.14 ± 0.00 | -1.91 ± 0.00 |

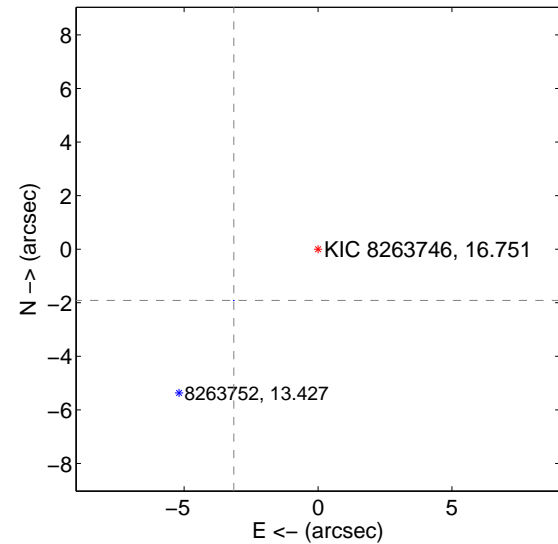
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

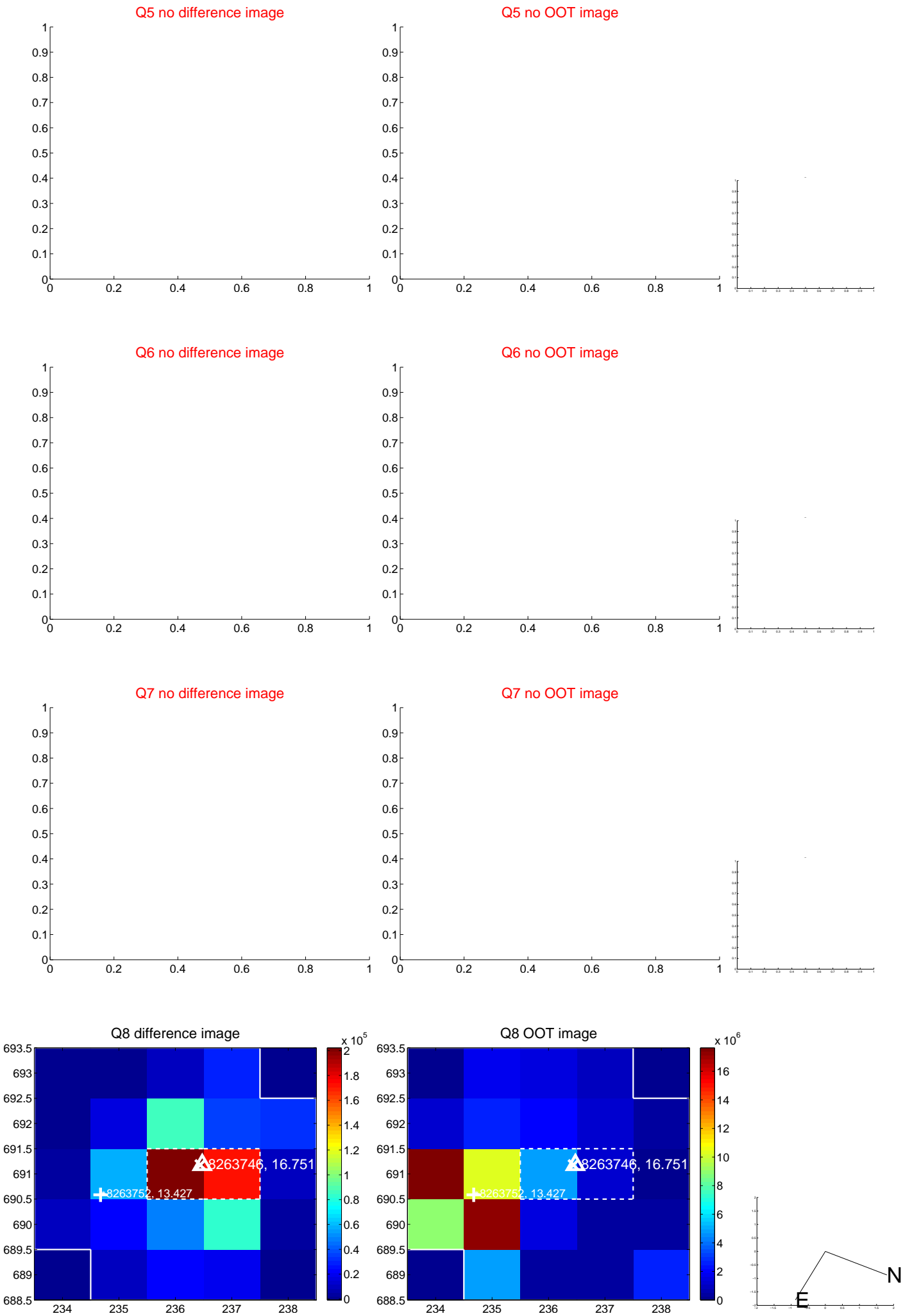


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

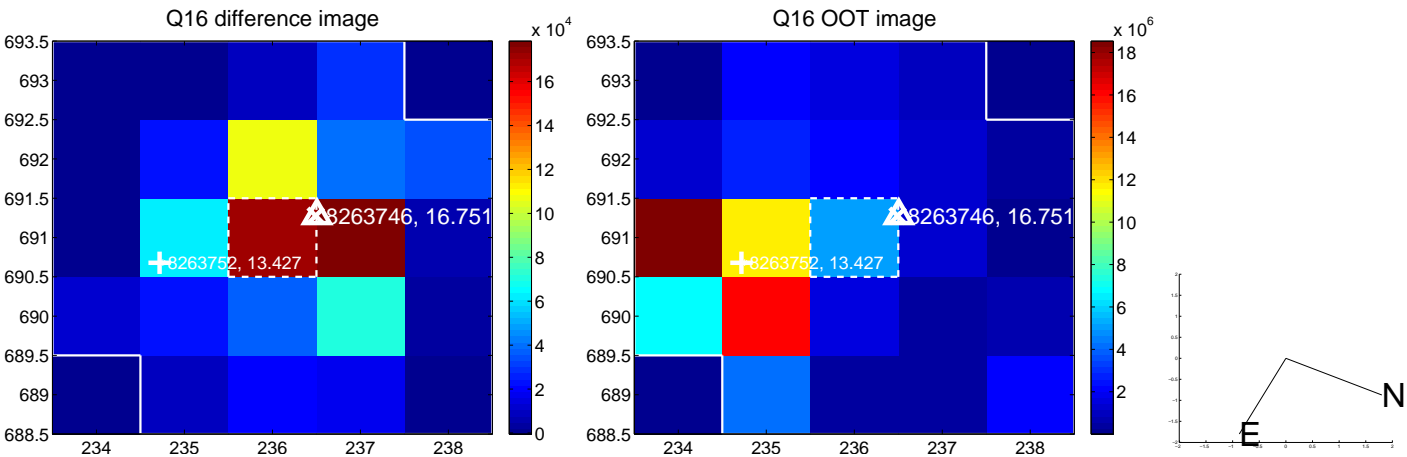
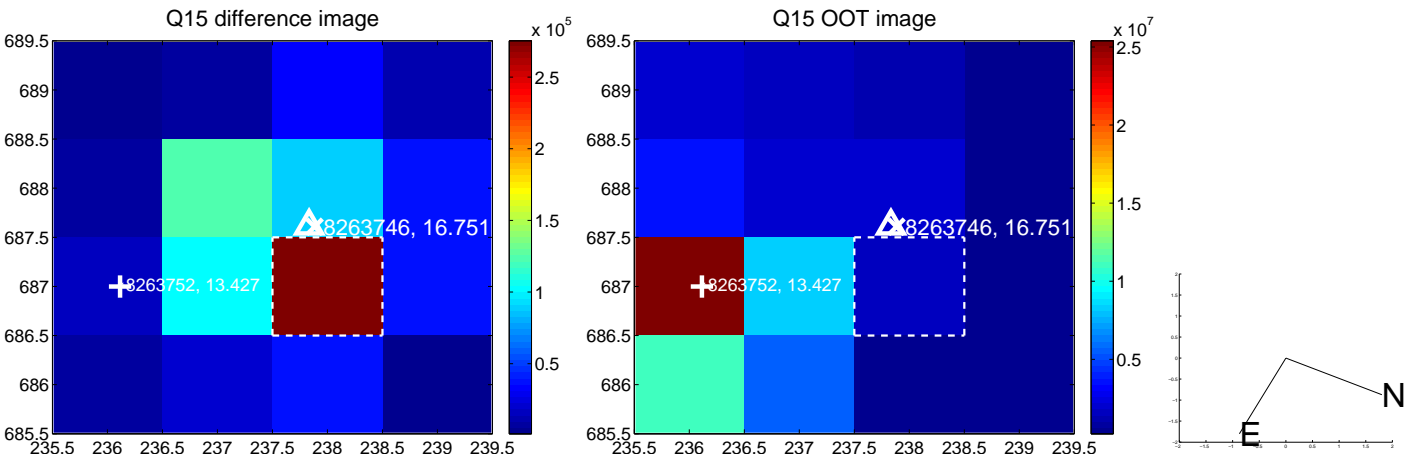
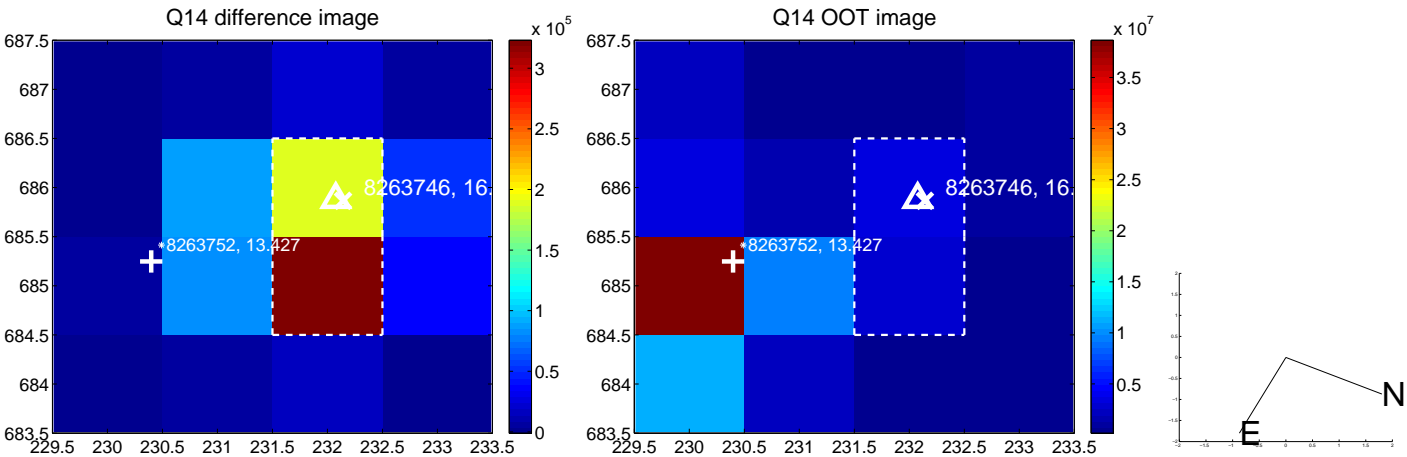
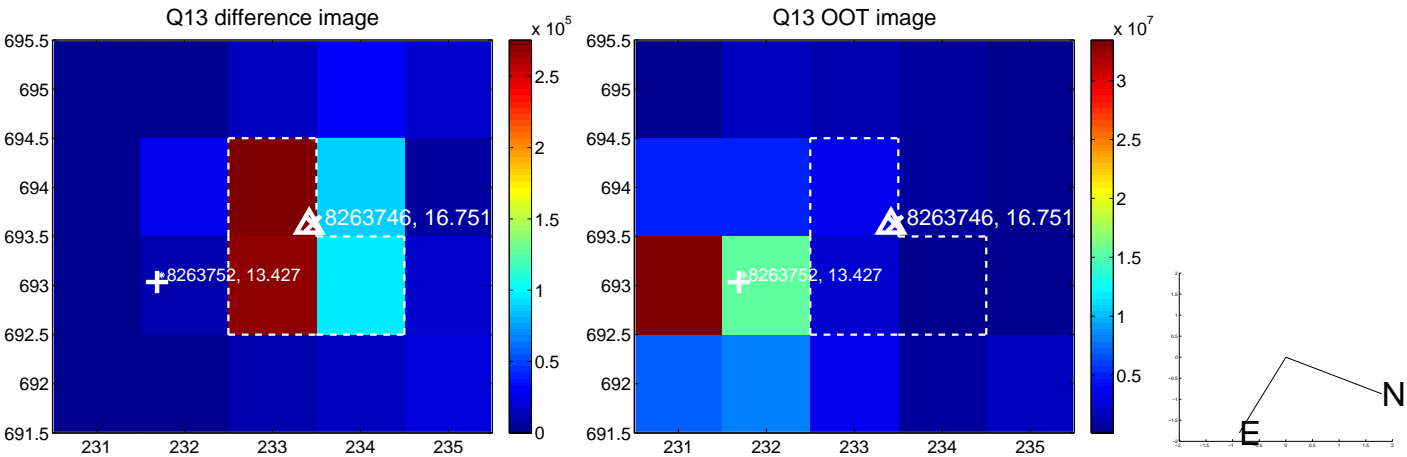
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



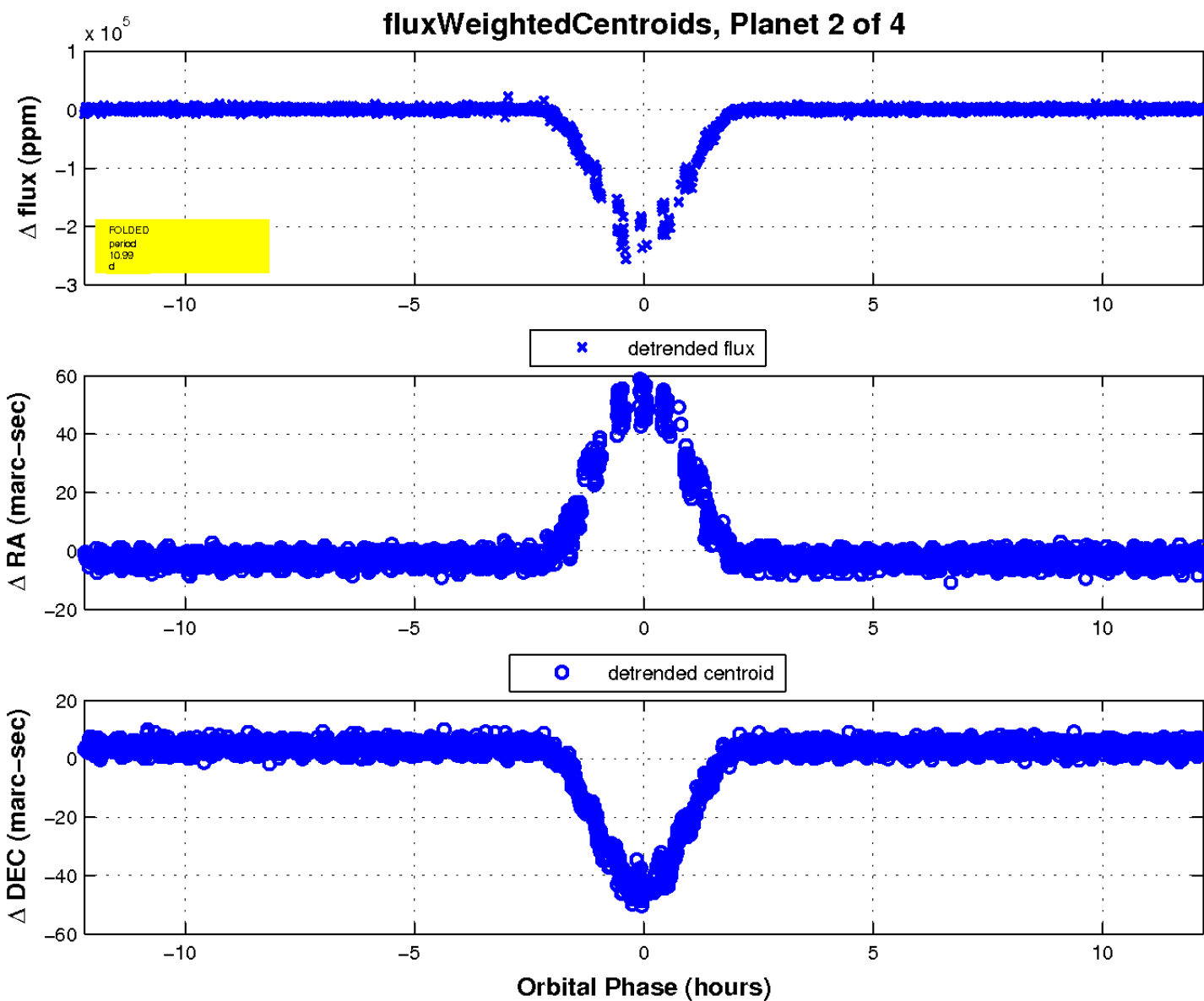
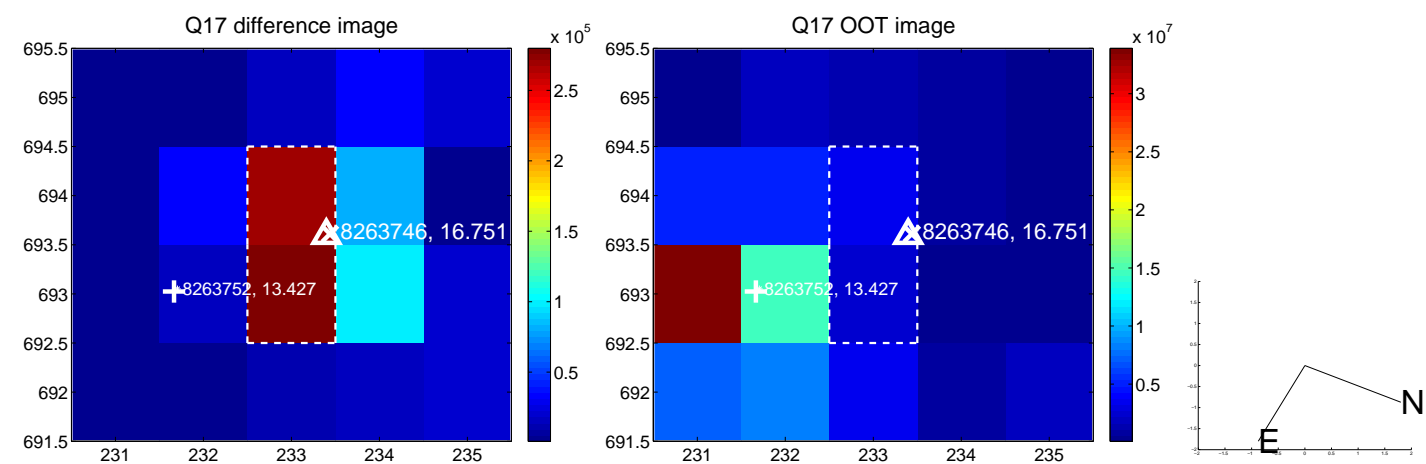
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



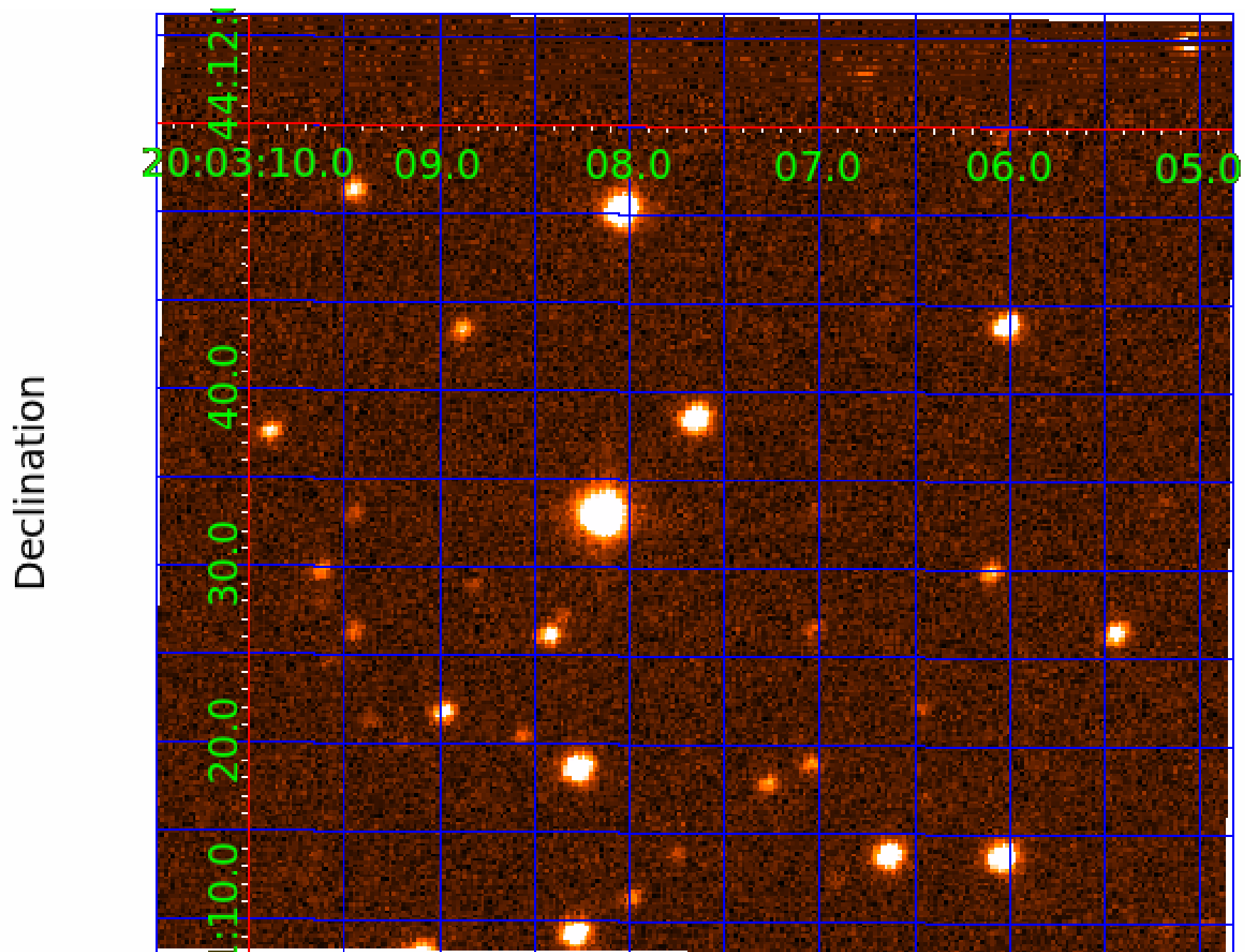
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008263746

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263746-01 | OBS | 3581.01 | 10.993758 | 138.807029 | 426655.2 | 3.000 | 2751.4 | -1.0 | 0.74 | 4856 | 40.54 | 36.52 |
| 008263746-02 | OBS | No | 10.993828 | 133.253266 | 200498.1 | 4.067 | 1434.3 | 658.9 | 0.74 | 4856 | 34.31 | 36.52 |
| 008263746-03 | OBS | No | 7.329189 | 138.789479 | 721.6 | 2.070 | 179.7 | 4.6 | 0.74 | 4856 | 1.94 | 62.70 |
| 008263746-04 | OBS | No | 4.397437 | 132.450938 | 29998.8 | 15.000 | 146.0 | -1.0 | 0.74 | 4856 | 12.44 | 123.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263746-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 008263746-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_KIC_POS |
| 008263746-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 008263746-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

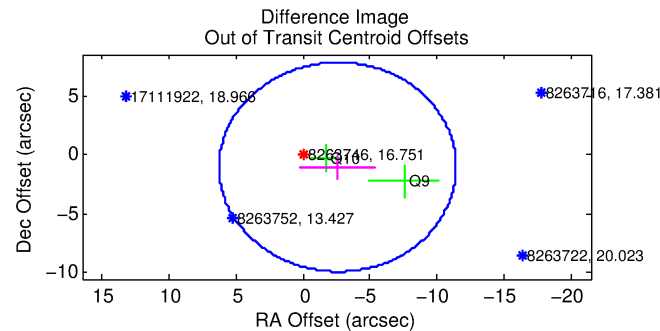
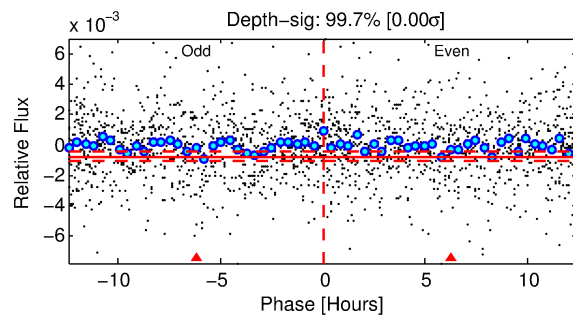
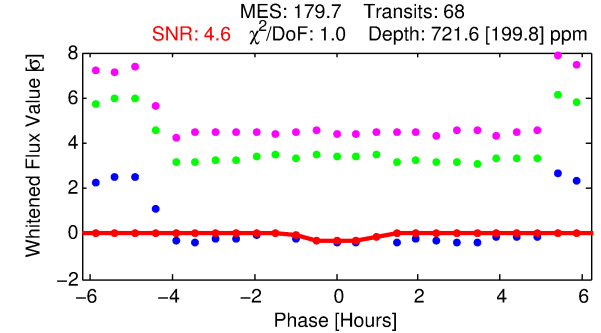
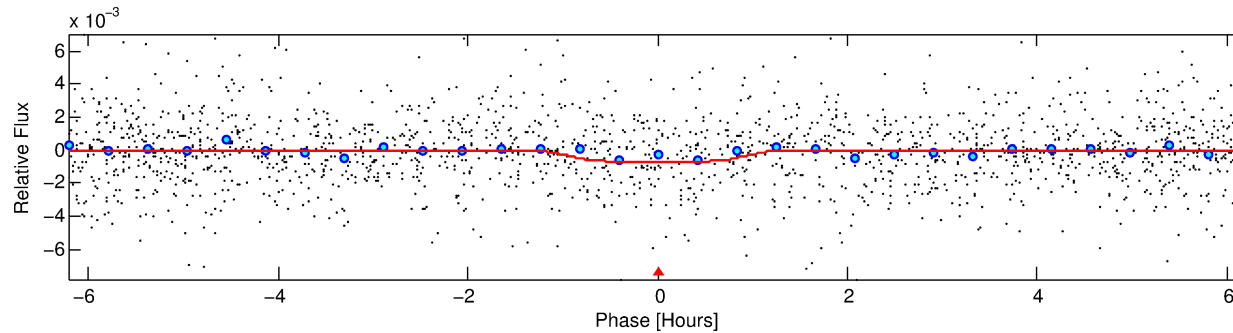
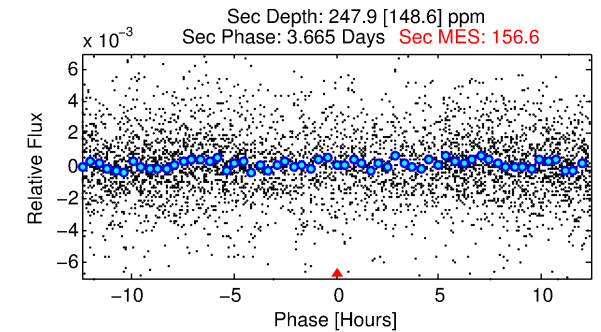
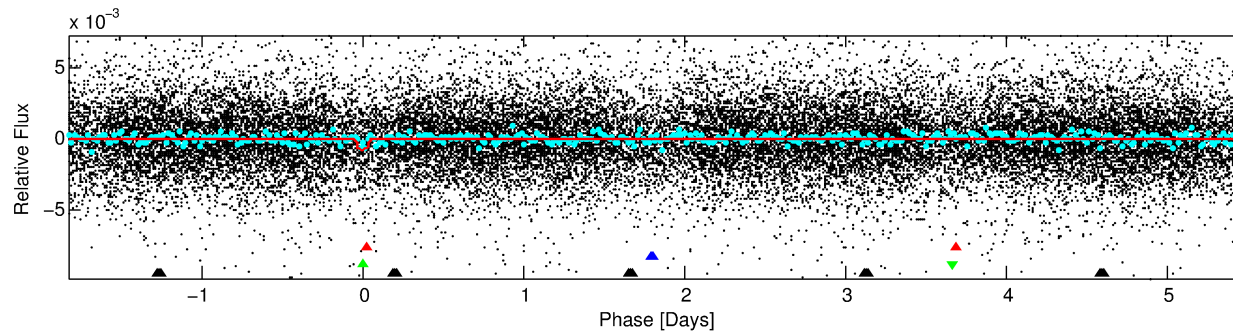
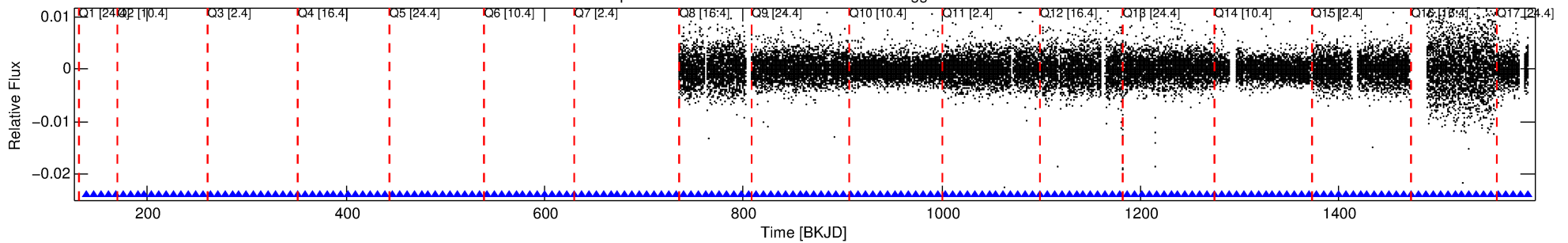
Ephemeris Match Information For 008263746-03

No Significant Match Found

DV One-Page Summary

KIC: 8263746 Candidate: 3 of 4 Period: 7.329 d
KOI: K03581 Corr: No Ephemeris Match

Kp: 16.75 R*: 0.74 Rs Teff: 4856.0 K Logg: 4.55 Fe/H: -0.080



DV Fit Results:

Period = 7.32919 [0.00012] d
Epoch = 138.7895 [0.0148] BKJD
Rp/R* = 0.0239 [0.1047]
a/R* = 27.32 [385.57]
b = 0.17 [82.59]
Seff = 62.70 [12.15]
Teff = 718 [35] K
Rp = 1.94 [8.50] Re
a = 0.0662 [0.0058] AU
Ag = 159.51 [1402.58] [0.11σ]
Teffp = 3943 [8667] K [0.37σ]

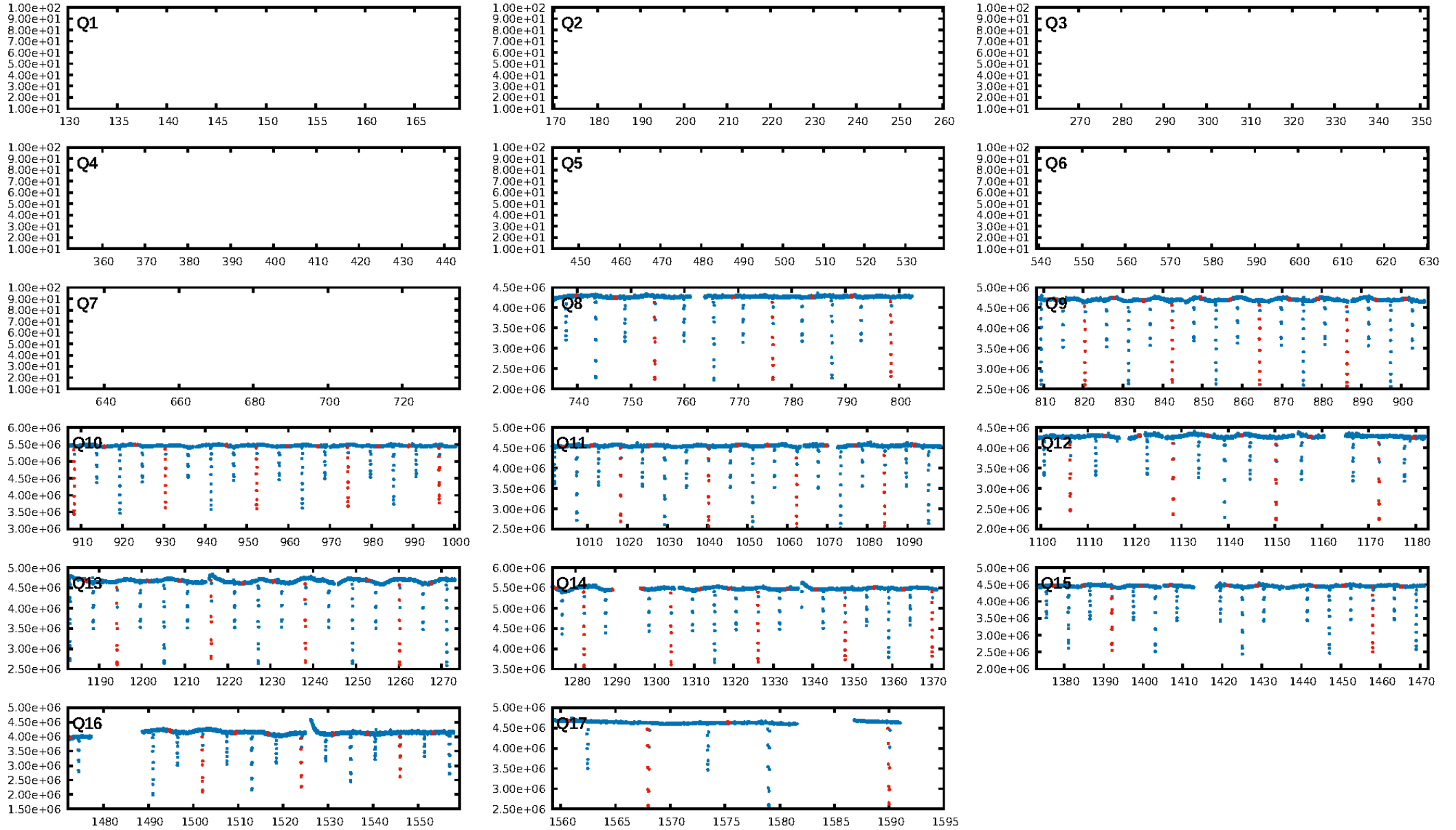
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.65σ]
LongPeriod-sig: 100.0% [24.13σ]
ModelChiSquare2-sig: 35.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [66/66]
GhostDiagnostic-chr: 0.2066
Centroid-sig: N/A
Centroid-so: 4.126 arcsec [12.23σ]
OotOffset-rm: 2.786 arcsec [0.94σ]
KicOffset-rm: 6.810 arcsec [4.66σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [10/10]

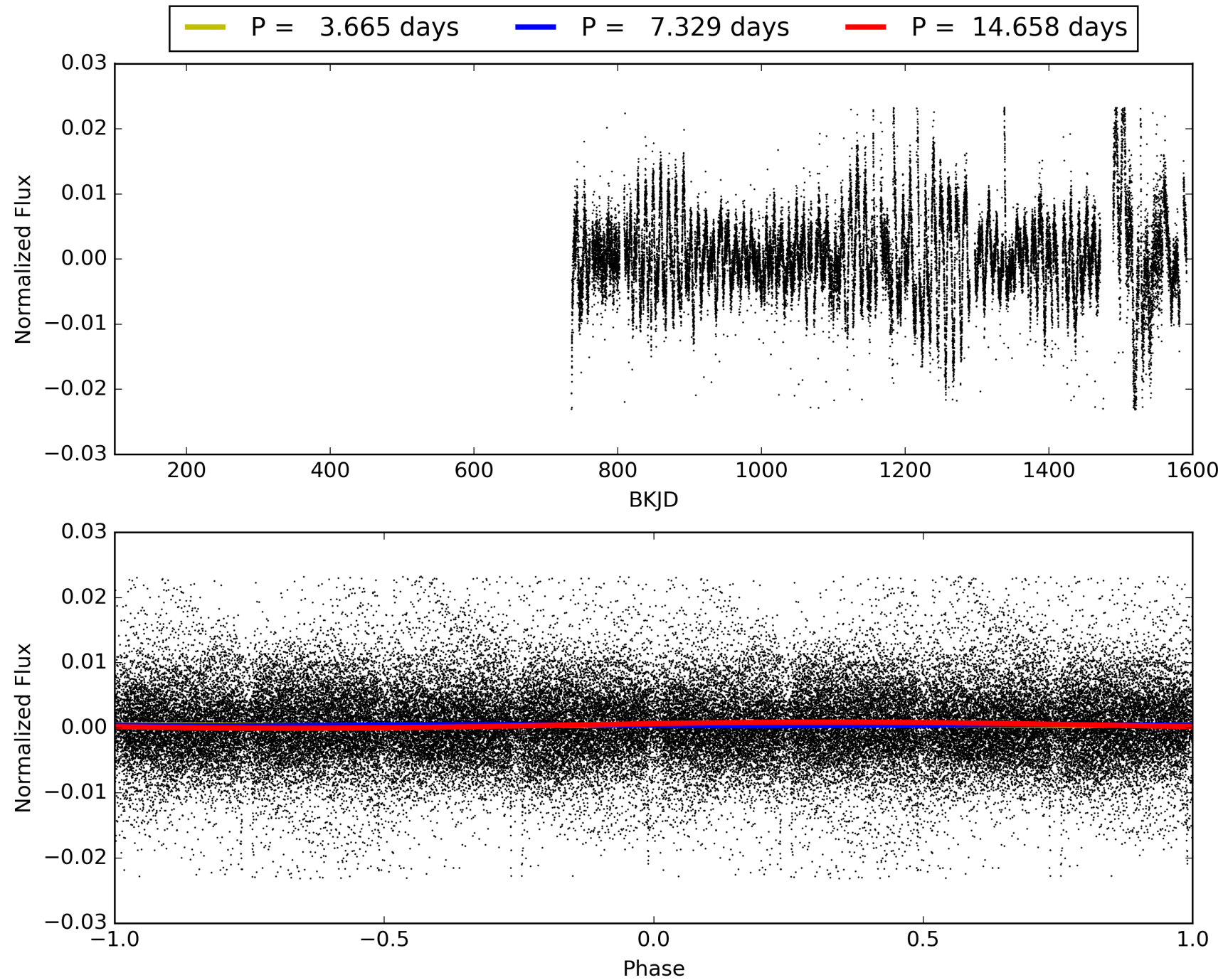
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:46:30 Z

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

TCE 008263746-03, PDC Light Curves

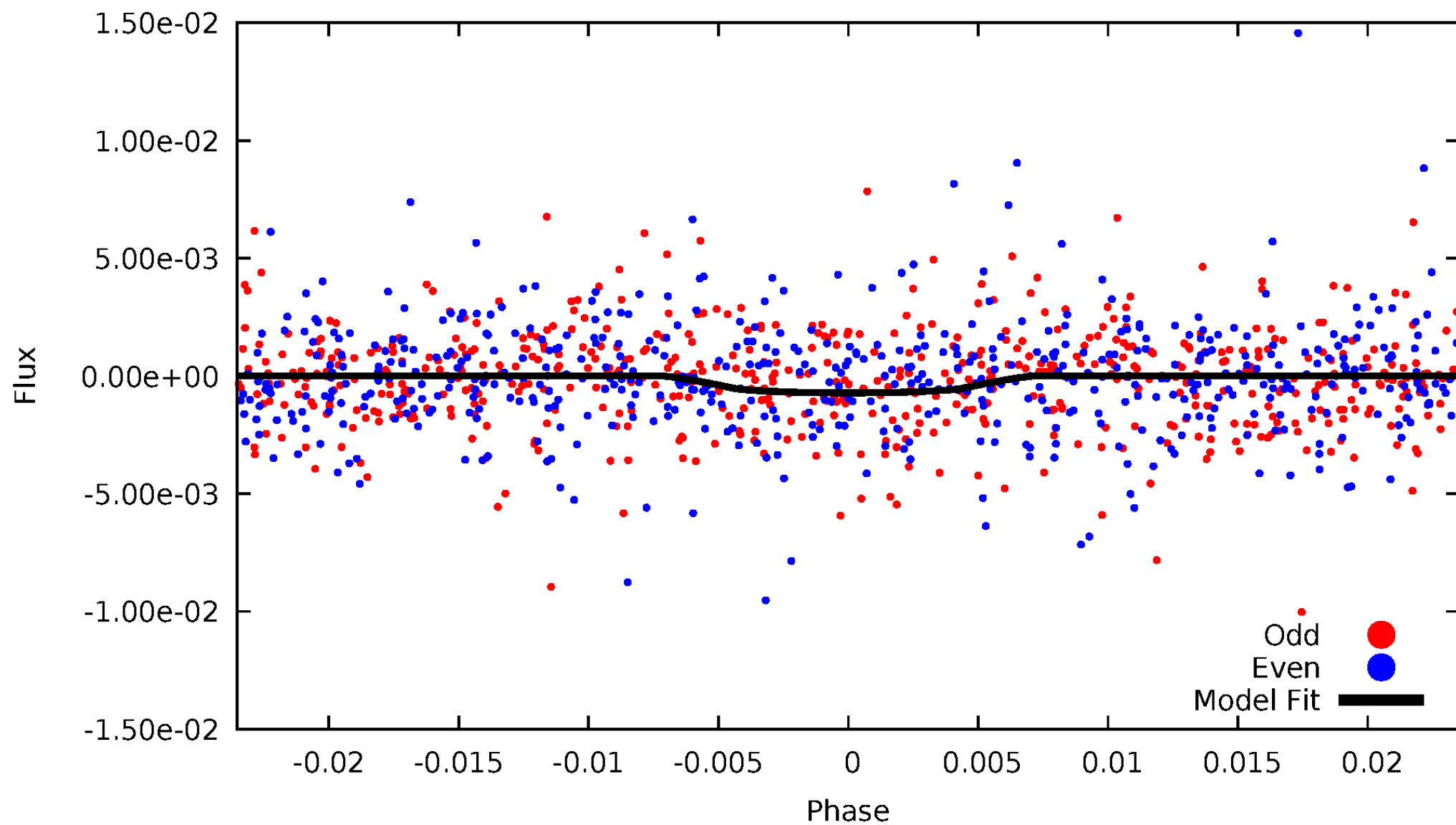


TCE 008263746-03



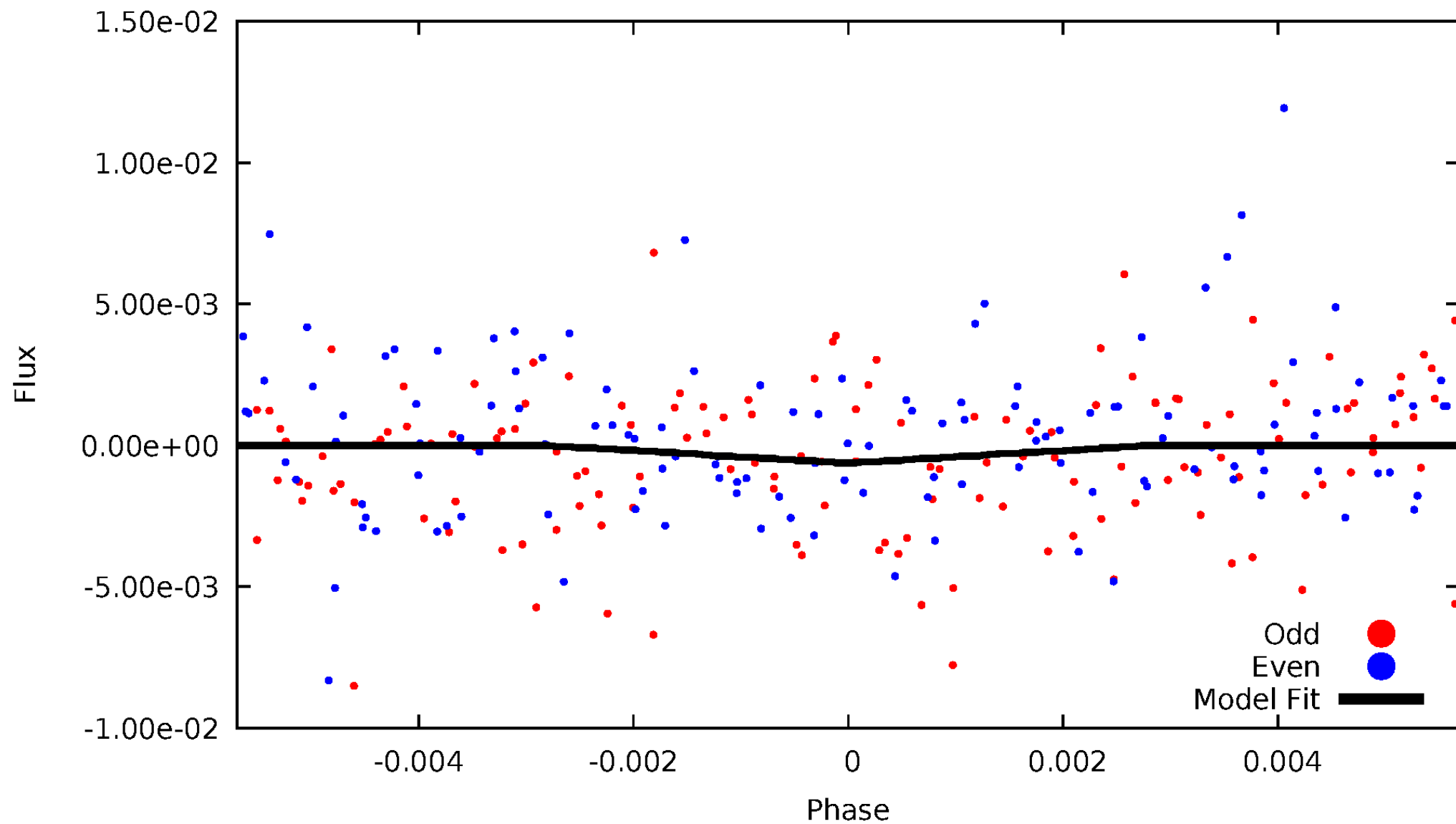
DV Odd/Even

TCE 008263746-03



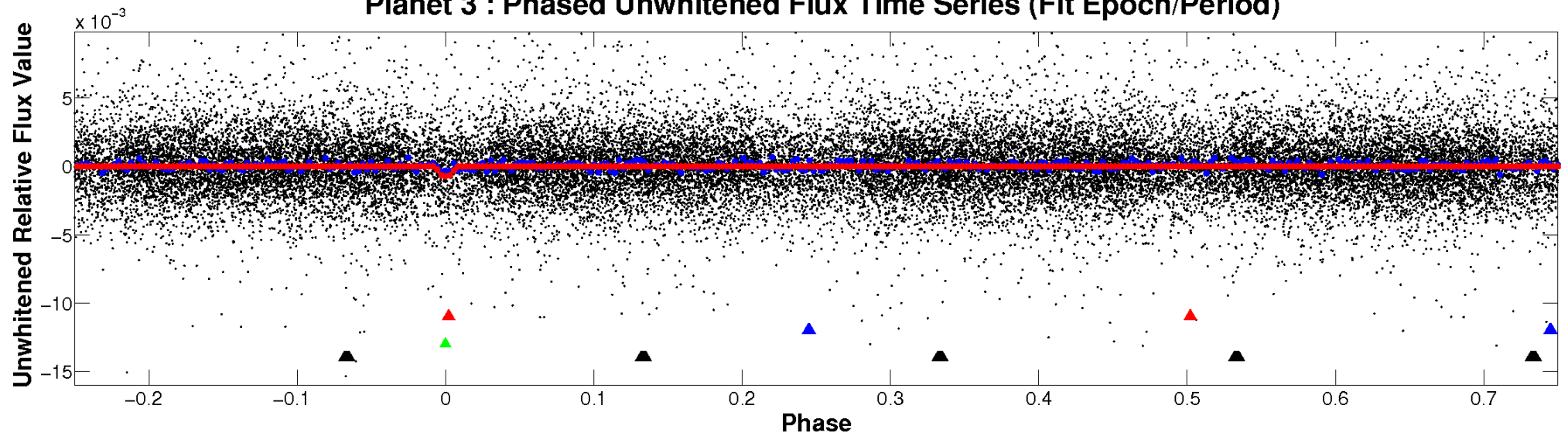
ALT Odd/Even

TCE 008263746-03

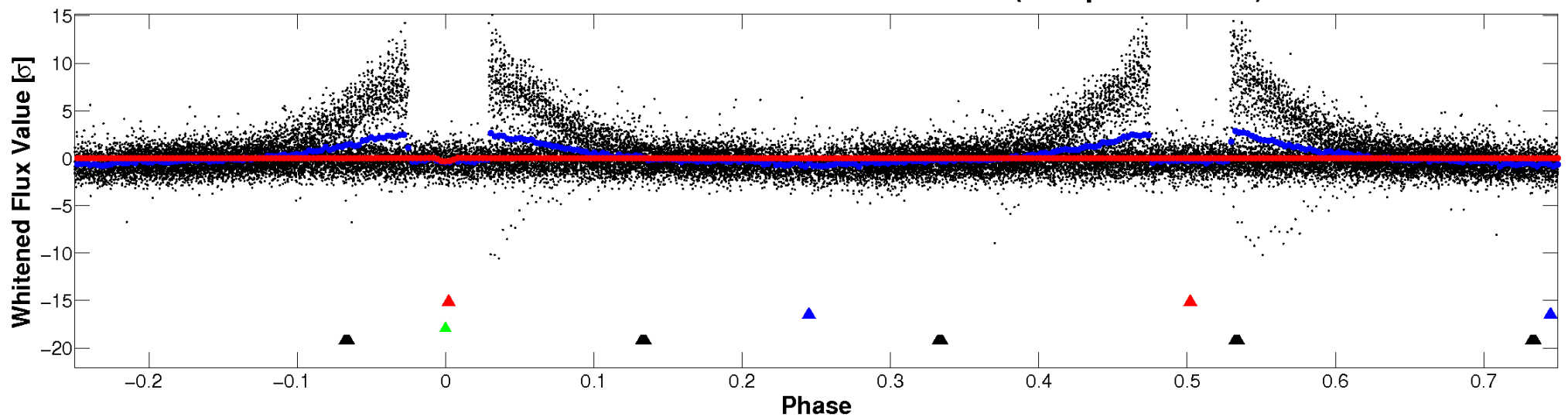


Non-Whitened Vs. Whitened Light Curve

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

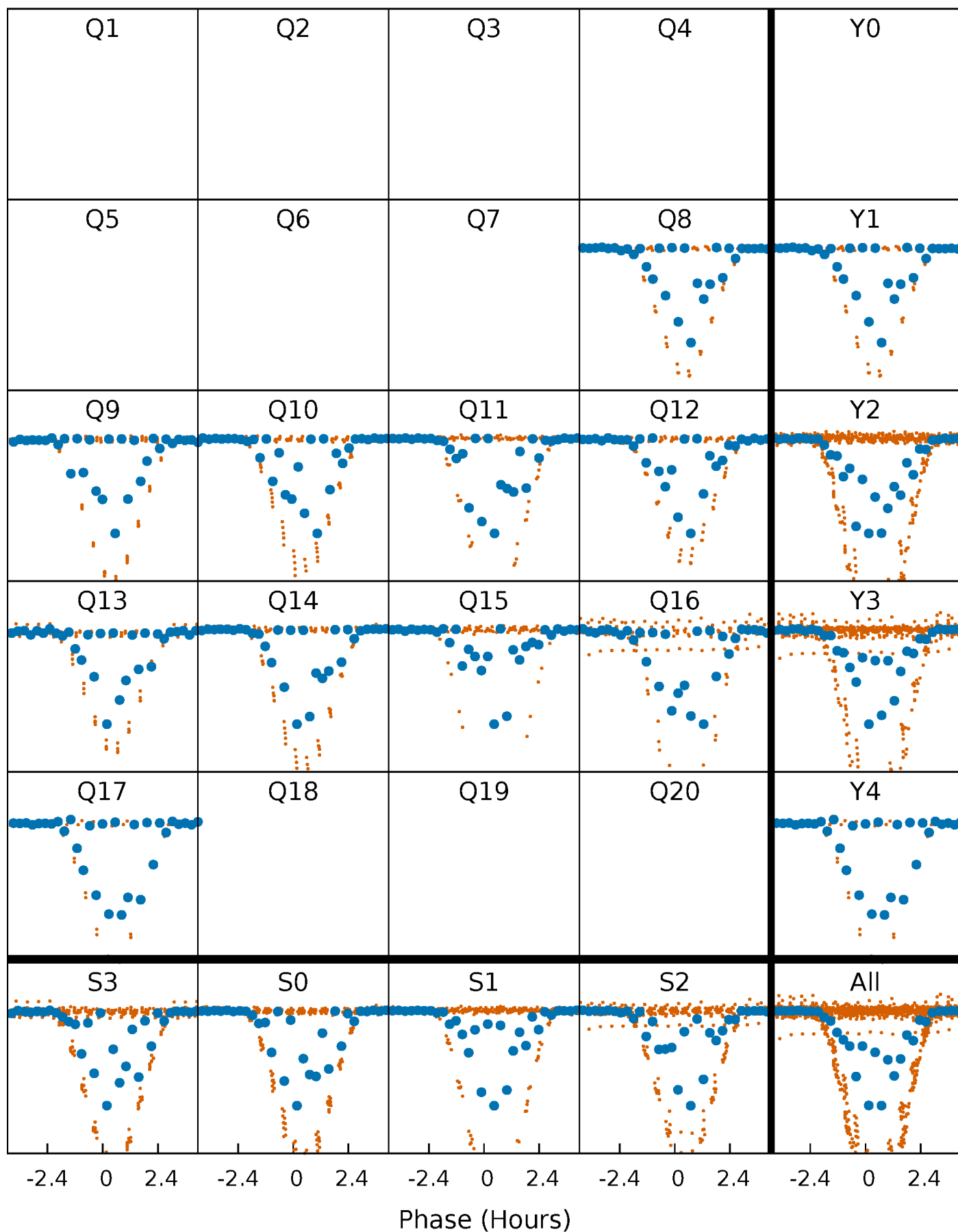


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



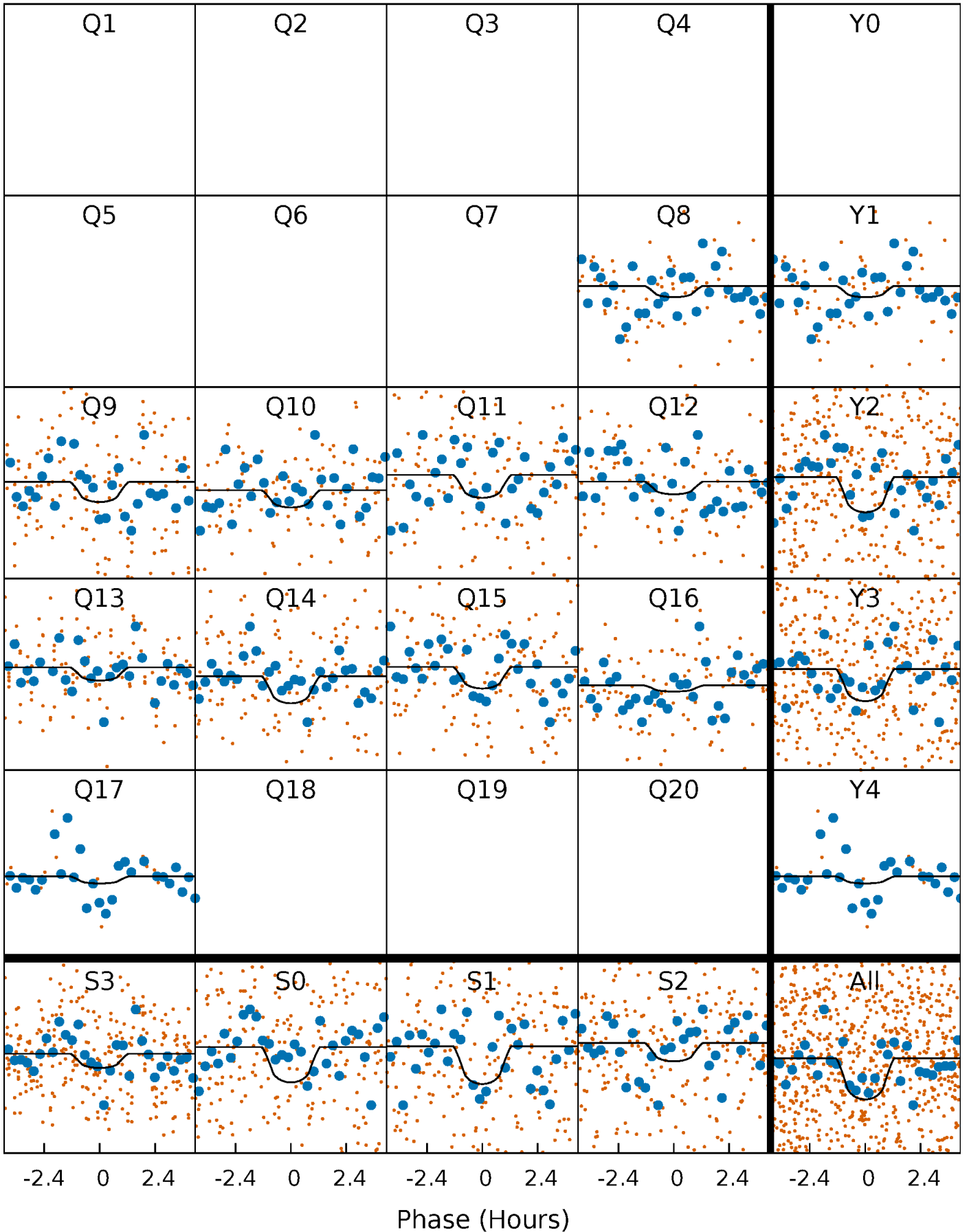
PDC Quarter-Phased Transit Curves

TCE 008263746-03 P= 7.329189 Days $T_0=138.789479$ (BKJD)



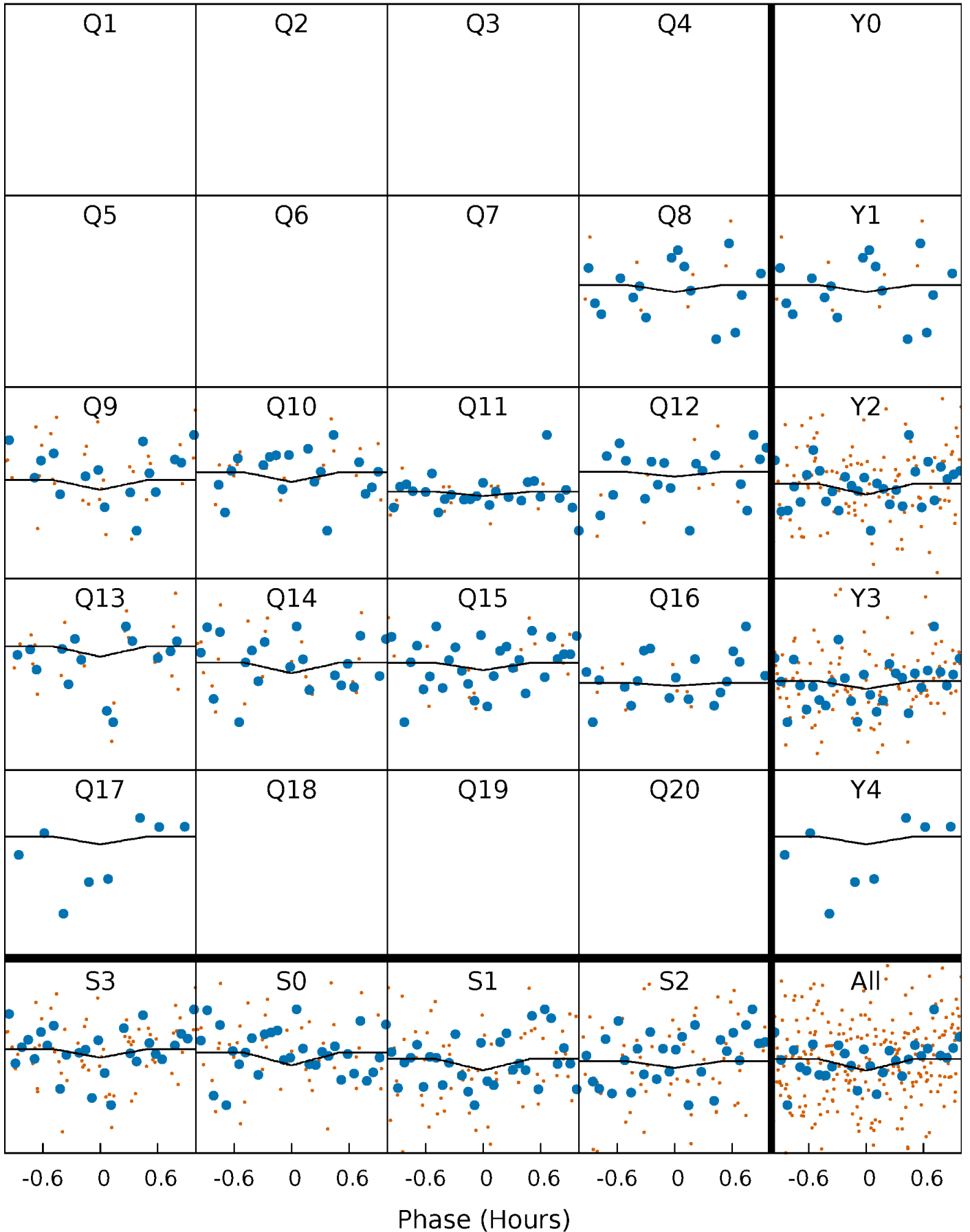
DV Quarter-Phased Transit Curves

TCE 008263746-03 P= 7.329189 Days $T_0=138.789479$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

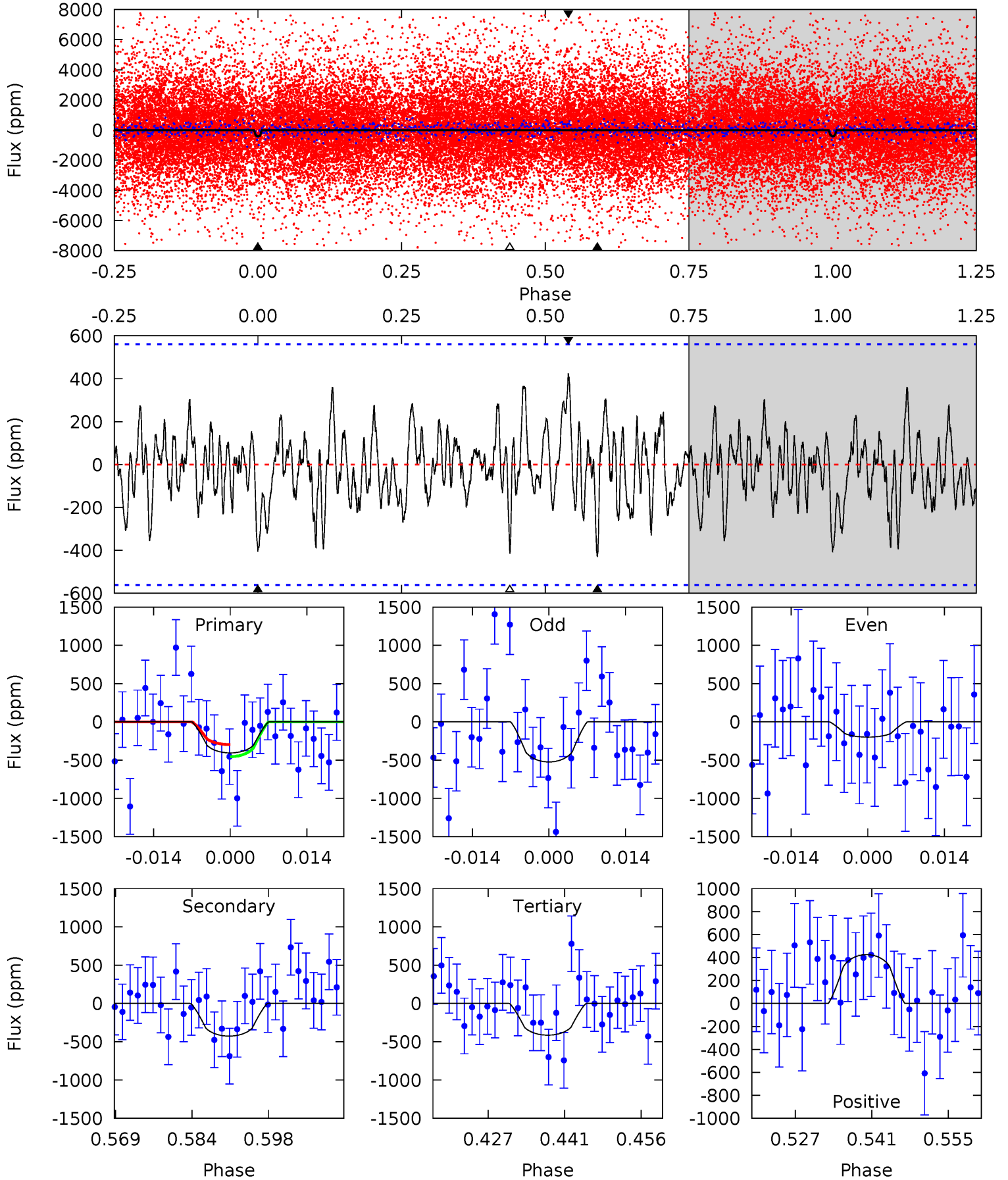
TCE 008263746-03 $P = 7.329437$ Days $T_0 = 138.761338$ (BKJD)



DV Model-Shift Uniqueness Test

008263746-03, P = 7.329189 Days, E = 138.789479 Days

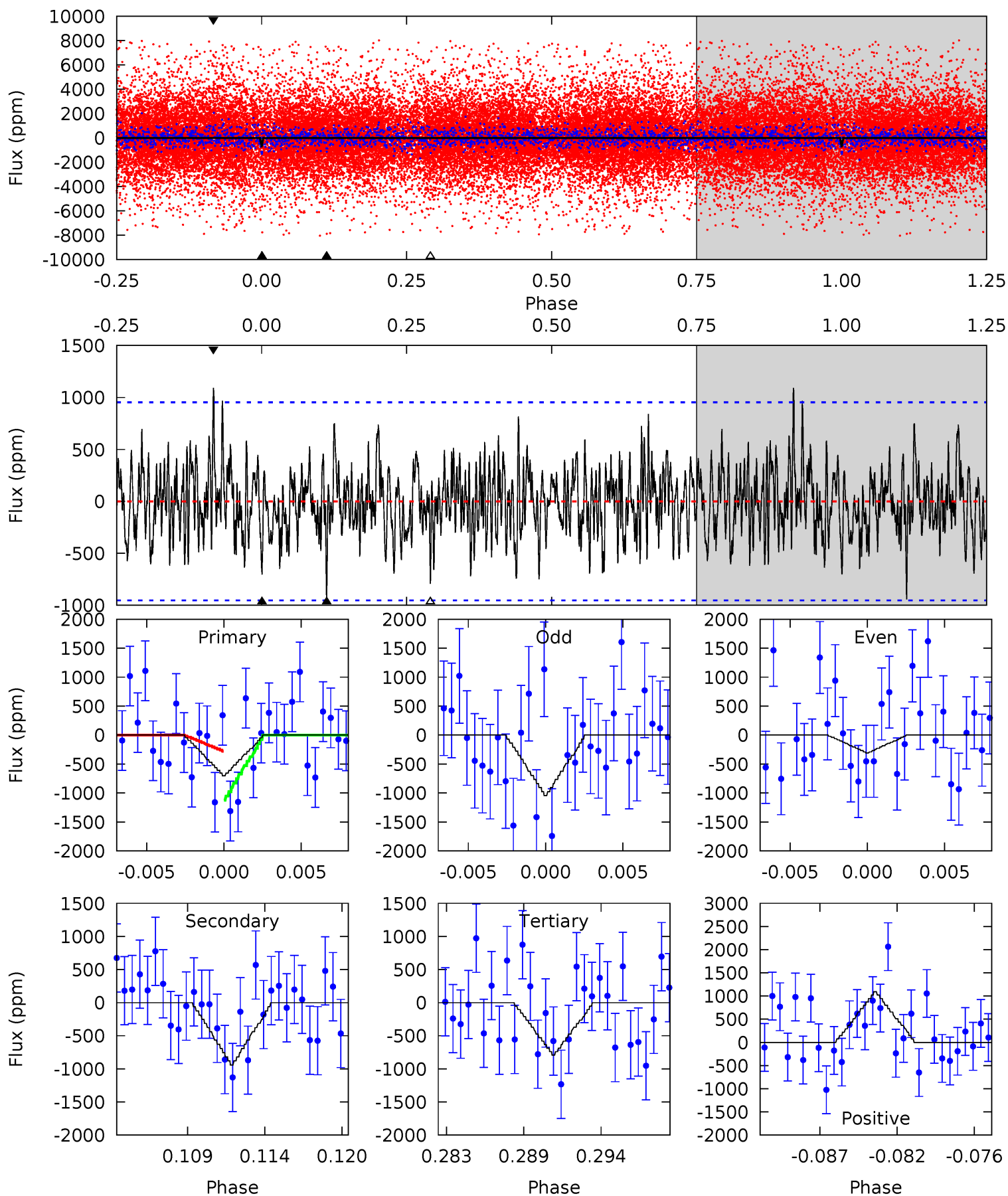
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.59 | 3.77 | 3.66 | 3.76 | 4.96 | 2.45 | 1.26 | -0.07 | -0.17 | 0.11 | 0.01 | 1.44 | 0.97 | 0.50 | 0.70 |



Alt Model-Shift Uniqueness Test

008263746-03, P = 7.329437 Days, E = 138.761338 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.80 | 5.09 | 4.27 | 5.89 | 5.14 | 2.78 | 1.54 | -0.48 | -2.10 | 0.82 | -0.81 | 2.00 | 1.37 | 0.54 | 2.32 |



Stellar Parameters For KIC 008263746

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4856^{+175}_{-175} | $4.554^{+0.072}_{-0.048}$ | $-0.080^{+0.300}_{-0.300}$ | $0.743^{+0.062}_{-0.075}$ | $0.721^{+0.090}_{-0.053}$ | $2.476^{+0.745}_{-0.398}$ |
| | +4%/-4% | +2%/-1% | +375%/-375% | +8%/-10% | +12%/-7% | +30%/-16% |
| 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 008263746-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|----------------|------------------------|----------------------|-----------------------|-------------------|
| DV | -426 ± 113 | $6.30^{+6.33}_{-4.38}$ | 1000^{+41}_{-44} | 3083^{+1385}_{-560} | 26^{+227}_{-20} |
| Alt. | -943 ± 185 | $6.02^{+7.06}_{-4.07}$ | 999^{+42}_{-46} | 3543^{+1897}_{-748} | 64^{+543}_{-51} |

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 $A_{\text{obs}} \gg 1.0$

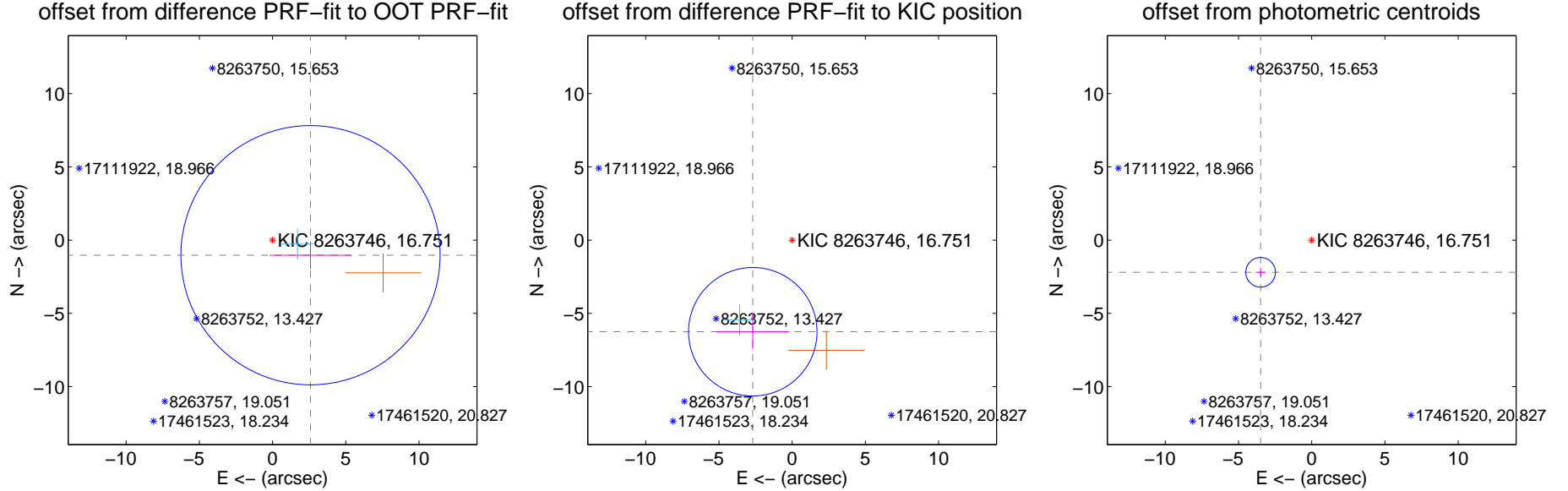
DV Centroid Data

Supplemental centroid analysis for 008263746-03. Kepler magnitude: 16.75. Transit SNR 4.60

There are 1 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 7.41 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 2.786 ± 2.949 | 0.94 | -2.588 ± 2.800 | -1.033 ± 0.944 |
| PRF-fit source offset from KIC position | 6.810 ± 1.462 | 4.66 | 2.689 ± 2.482 | -6.256 ± 1.180 |
| photometric centroid source offset | 4.13 ± 0.34 | 12.23 | 3.49 ± 0.34 | -2.20 ± 0.33 |

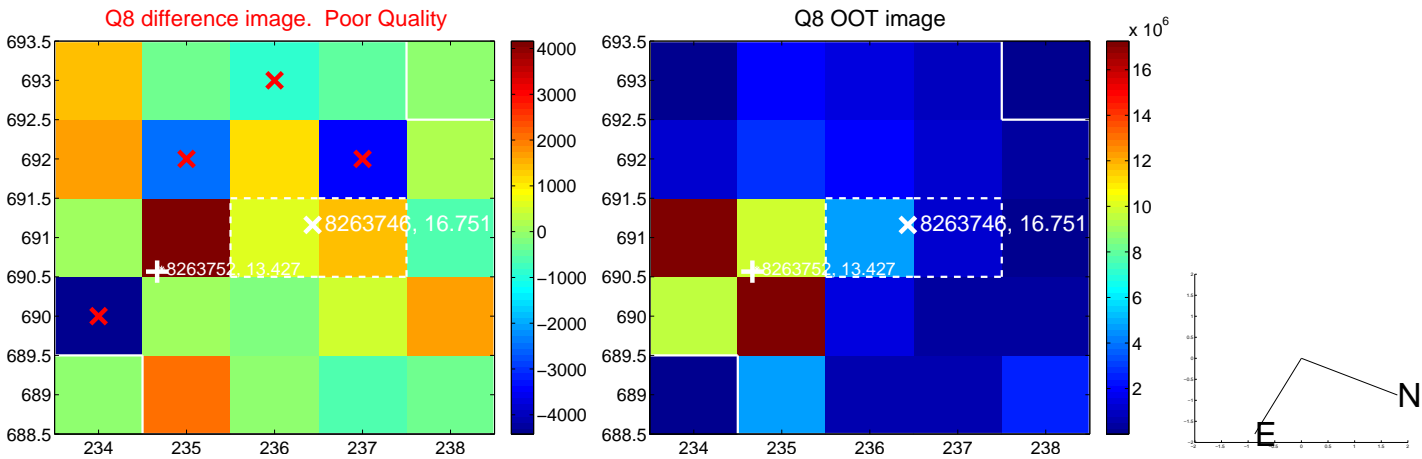


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

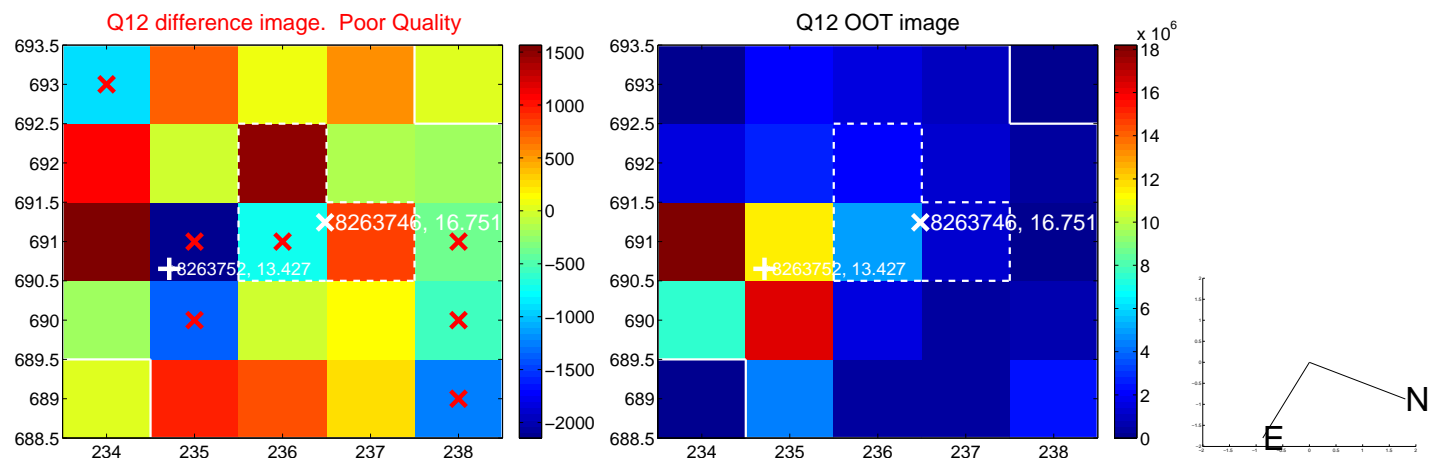
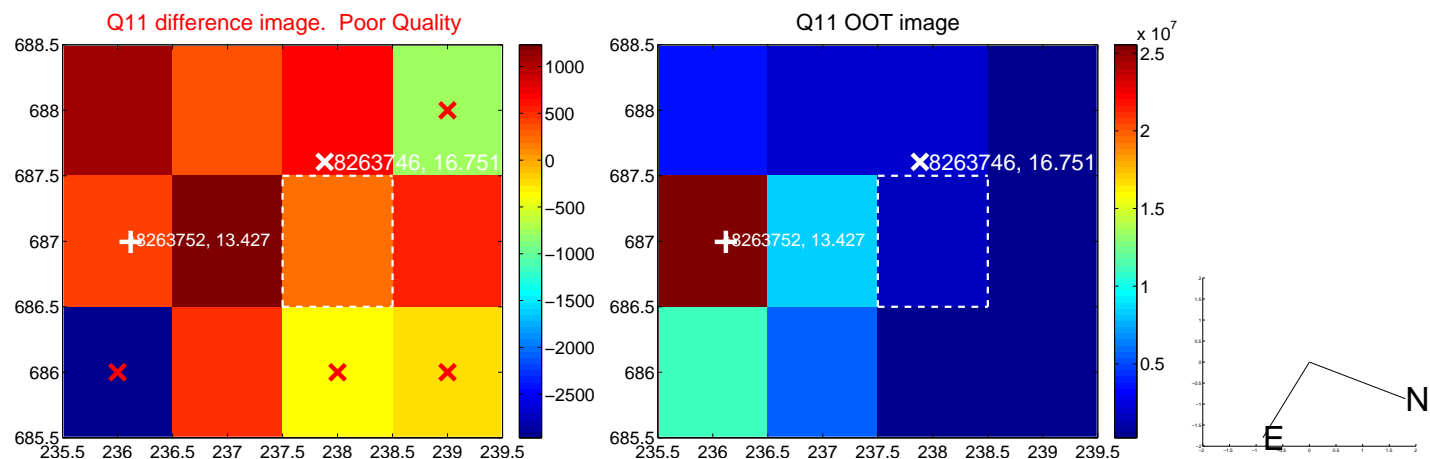
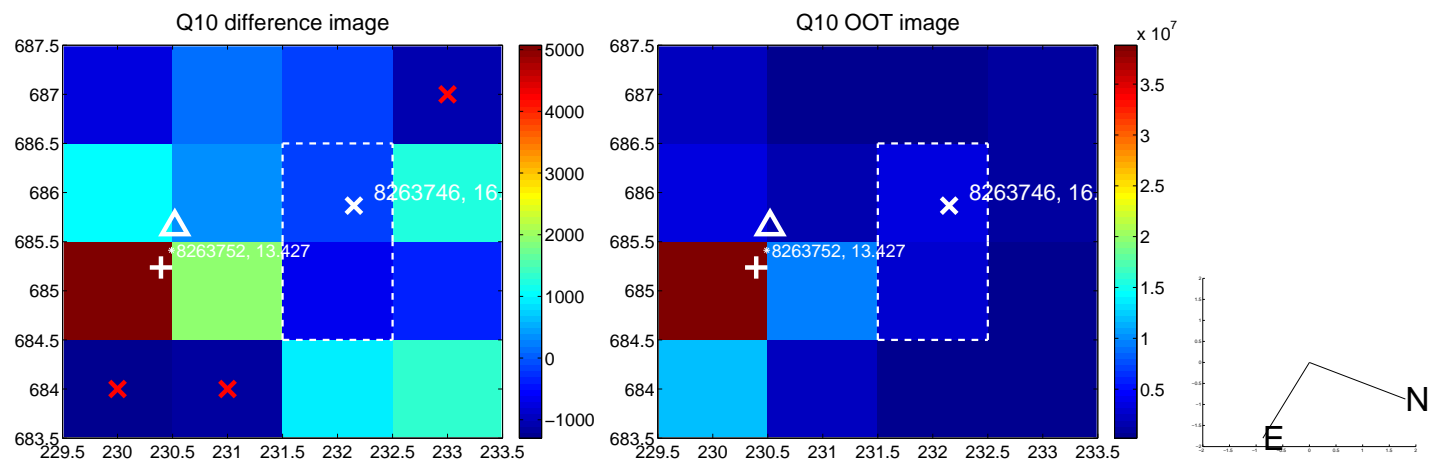
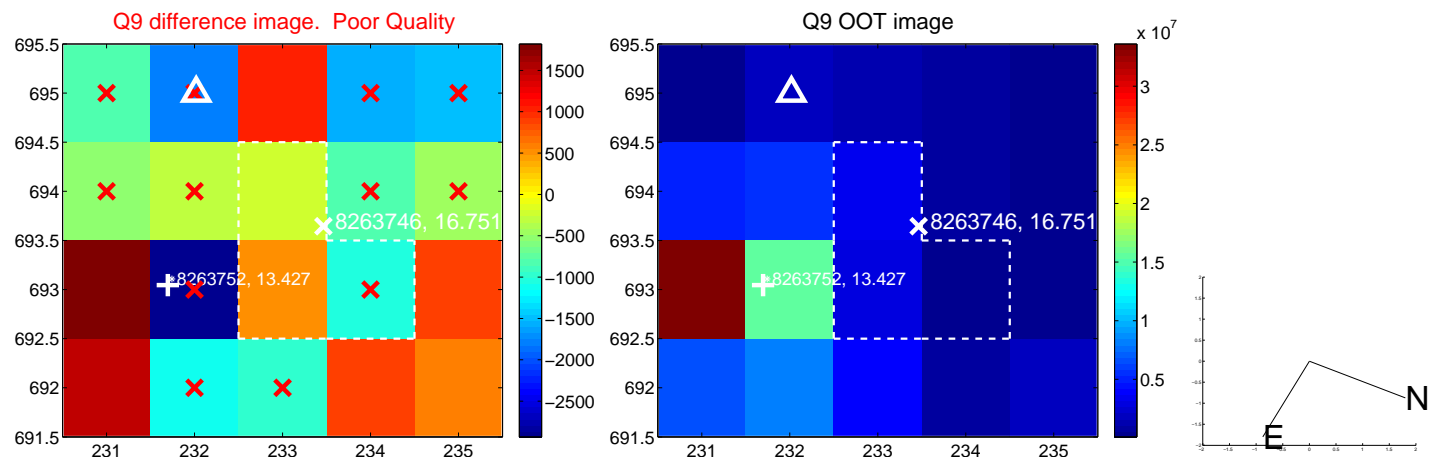
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



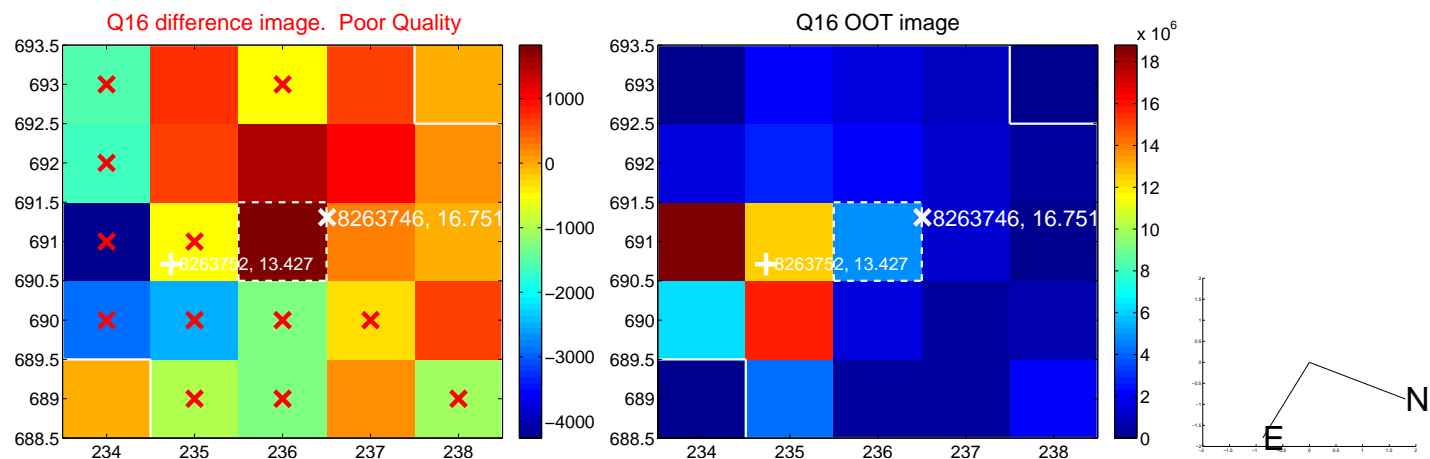
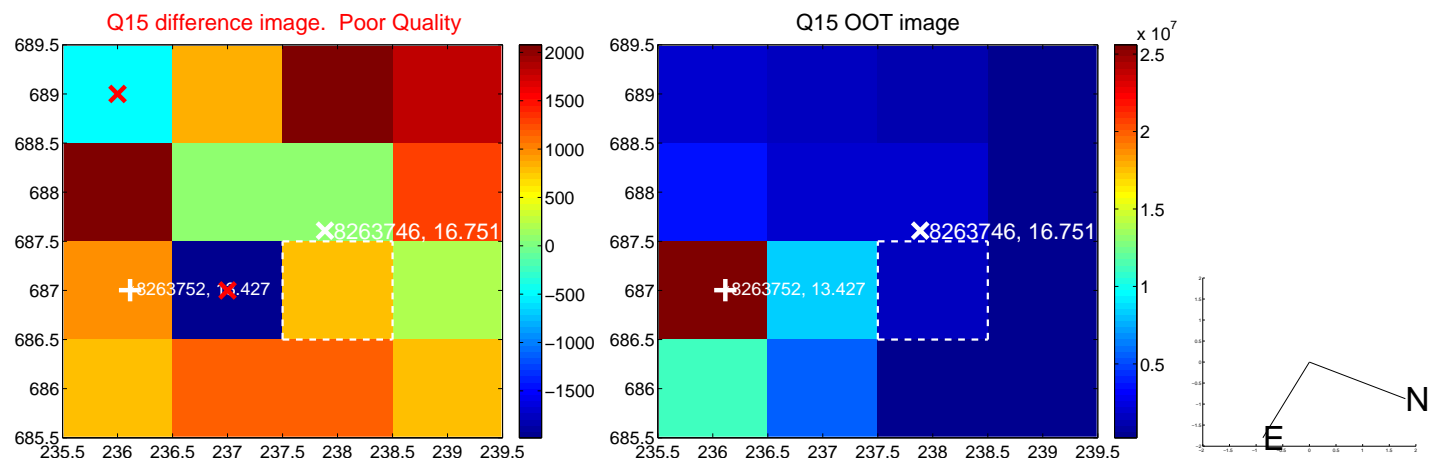
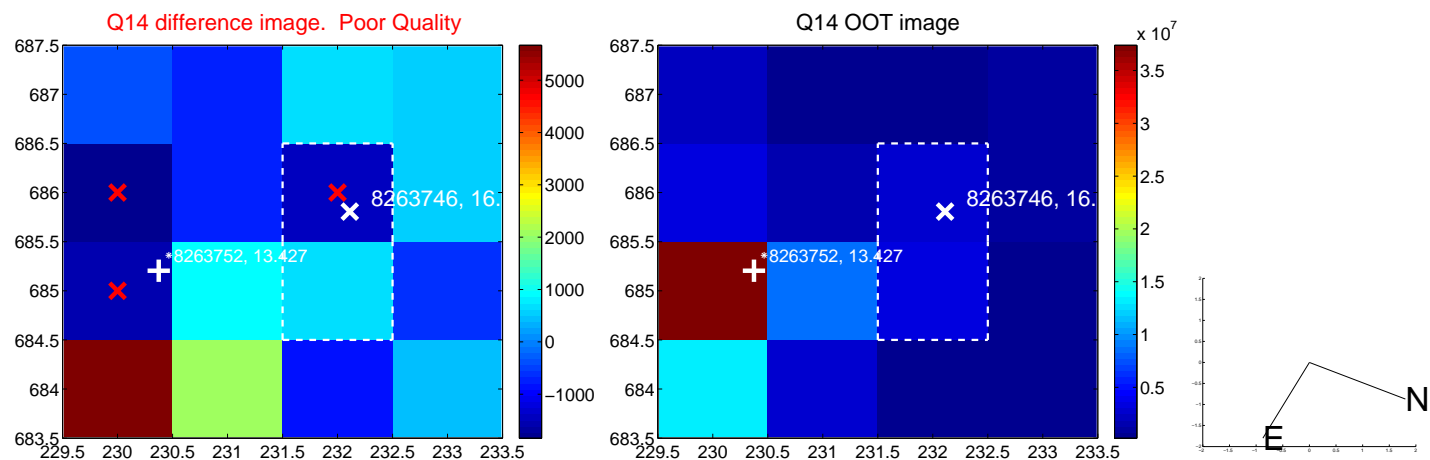
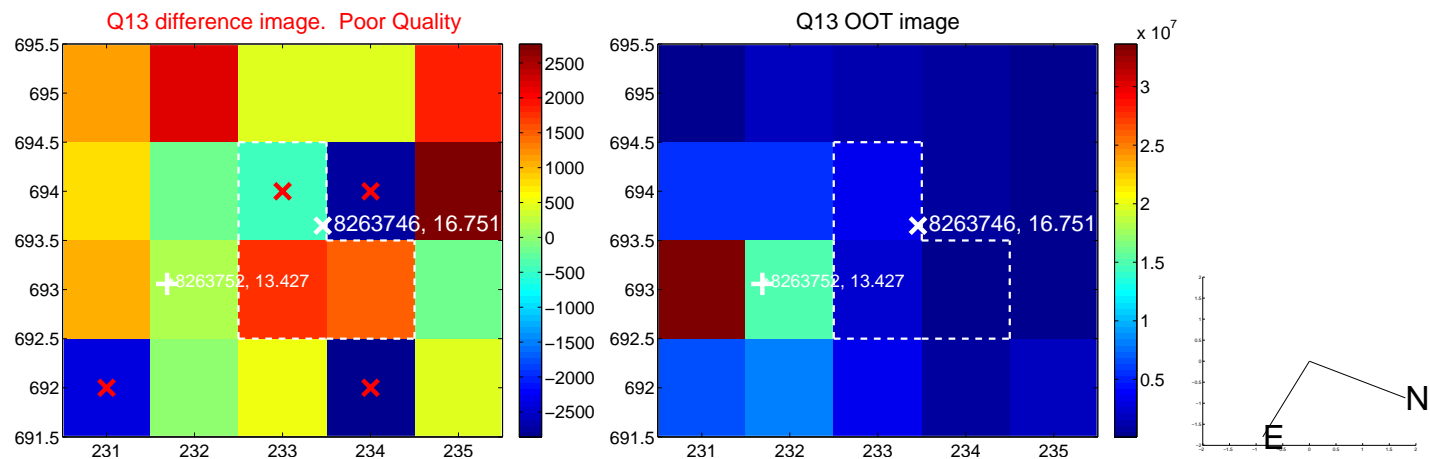
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



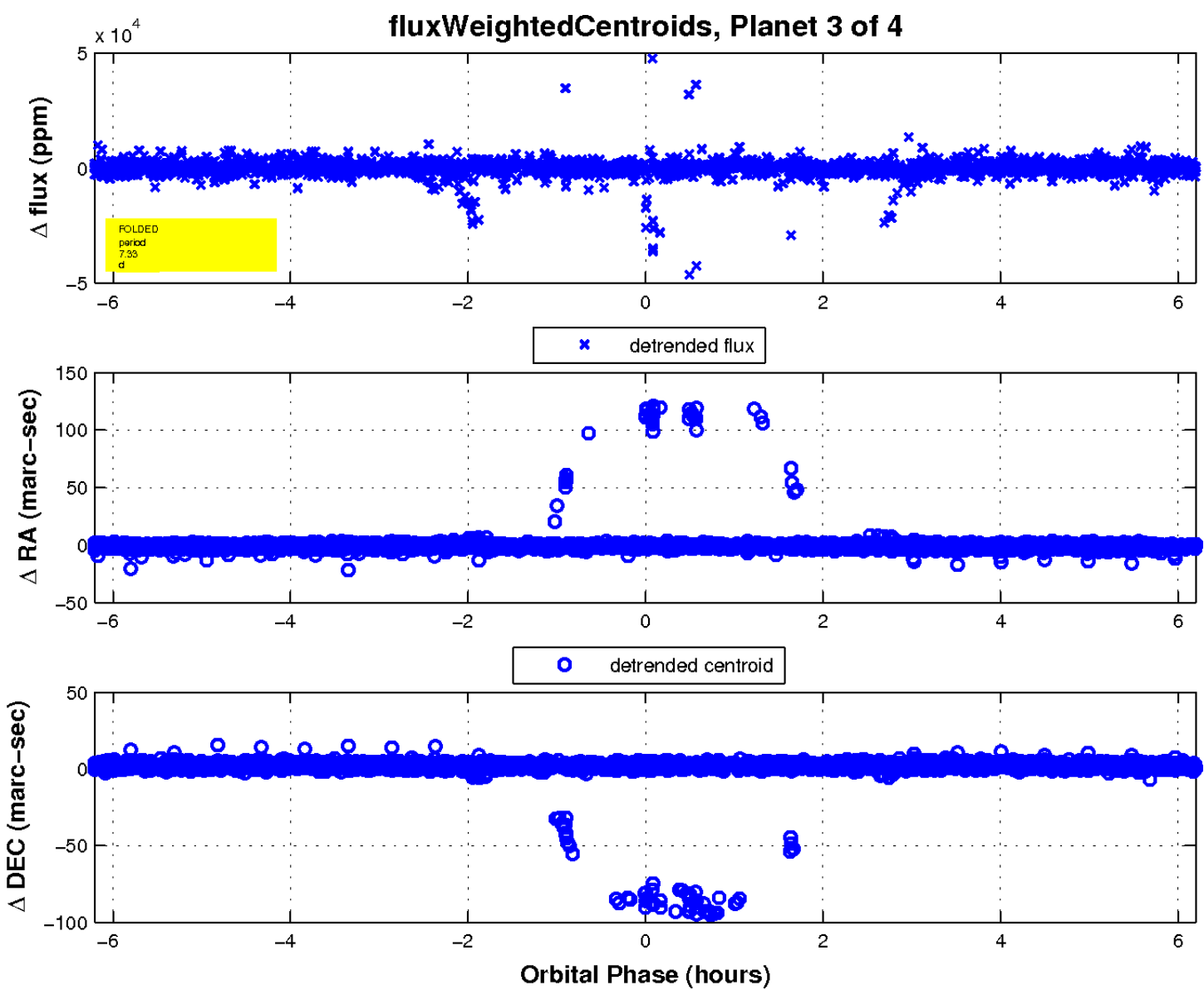
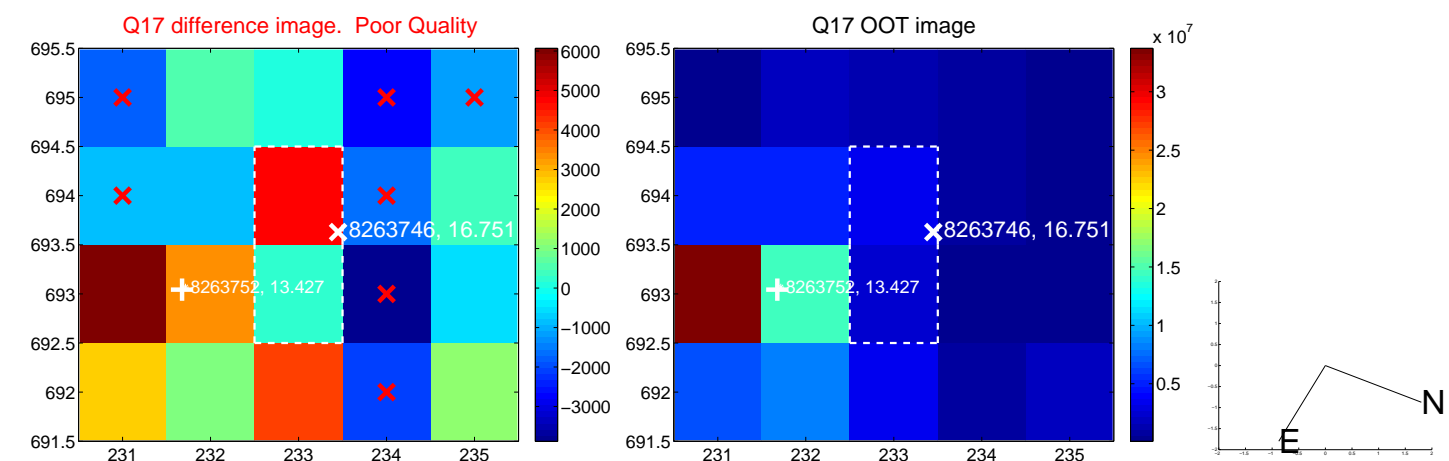
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



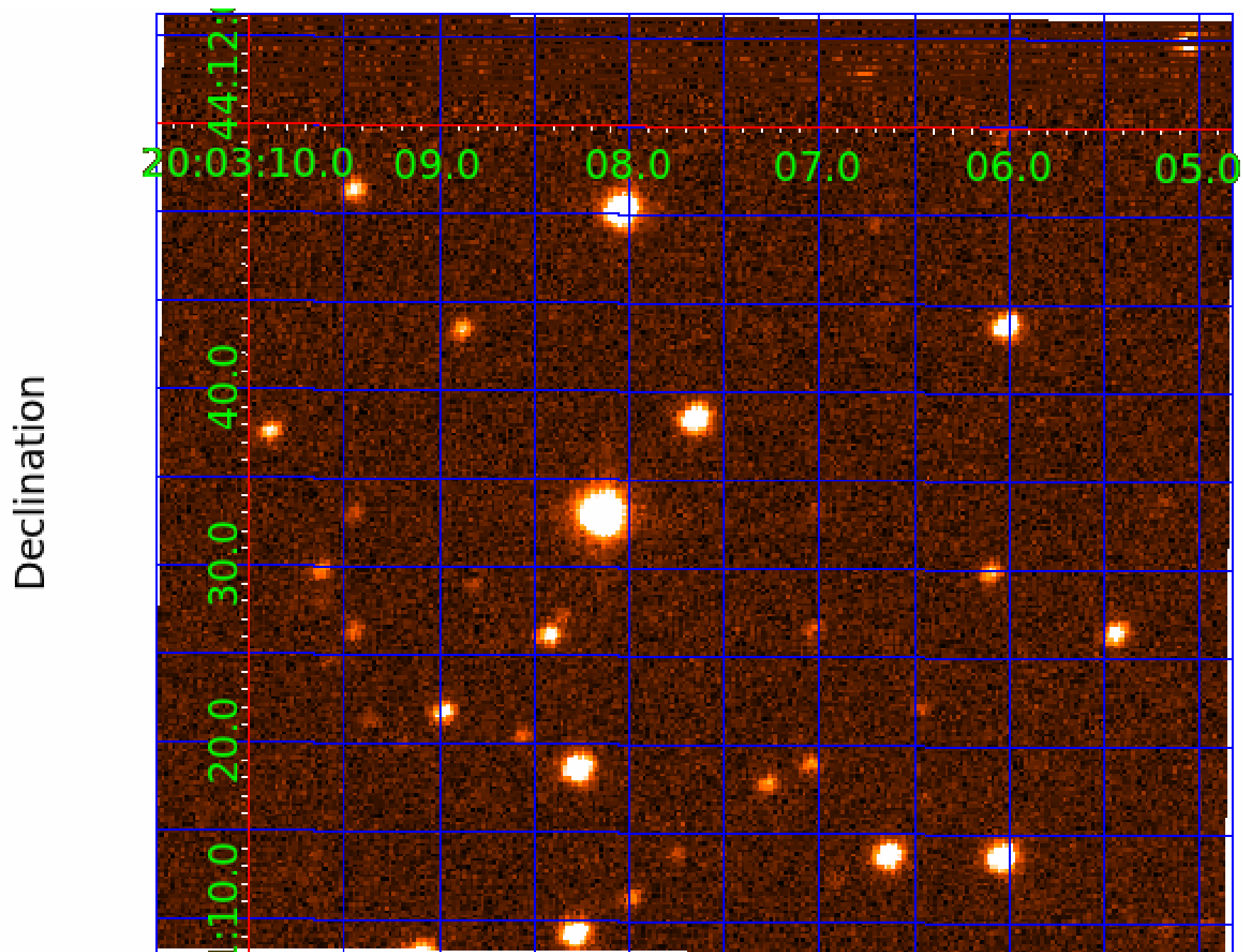
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008263746

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|-------|-----------------------------|-----------------|------------------------|------------------------|
| 008263746-01 | OBS | 3581.01 | 10.993758 | 138.807029 | 426655.2 | 3.000 | 2751.4 | -1.0 | 0.74 | 4856 | 40.54 | 36.52 |
| 008263746-02 | OBS | No | 10.993828 | 133.253266 | 200498.1 | 4.067 | 1434.3 | 658.9 | 0.74 | 4856 | 34.31 | 36.52 |
| 008263746-03 | OBS | No | 7.329189 | 138.789479 | 721.6 | 2.070 | 179.7 | 4.6 | 0.74 | 4856 | 1.94 | 62.70 |
| 008263746-04 | OBS | No | 4.397437 | 132.450938 | 29998.8 | 15.000 | 146.0 | -1.0 | 0.74 | 4856 | 12.44 | 123.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008263746-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 008263746-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE—CENT_KIC_POS |
| 008263746-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 008263746-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |

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

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

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

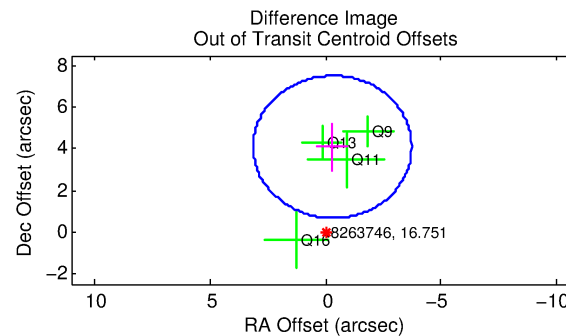
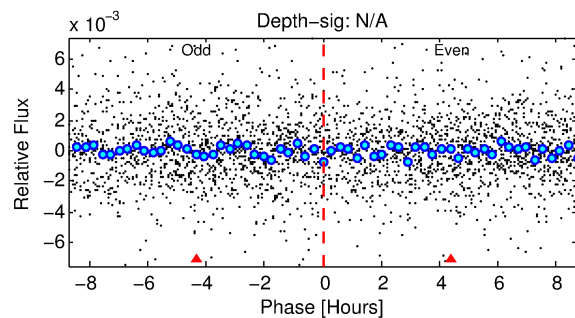
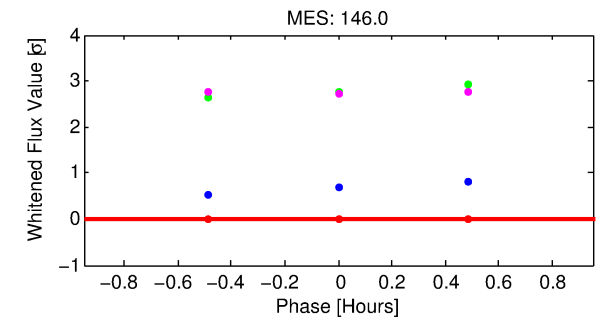
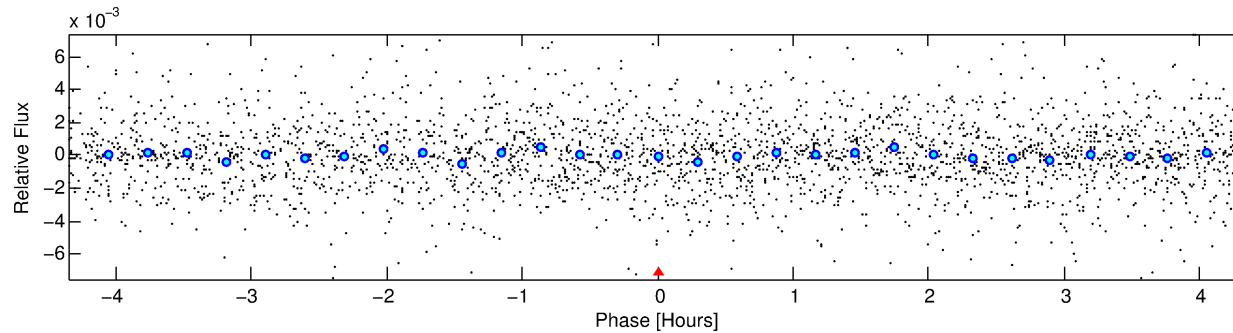
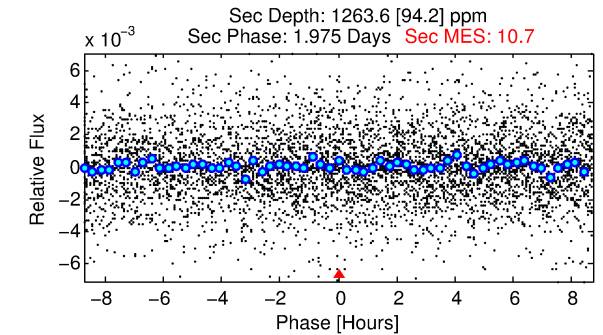
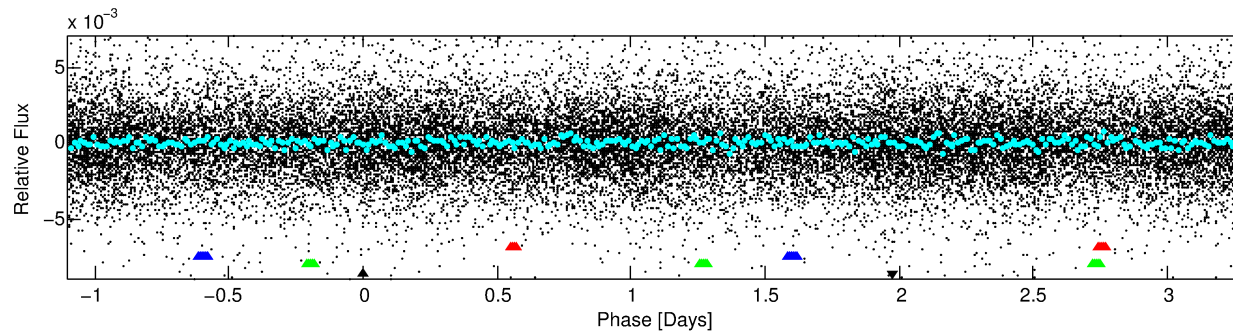
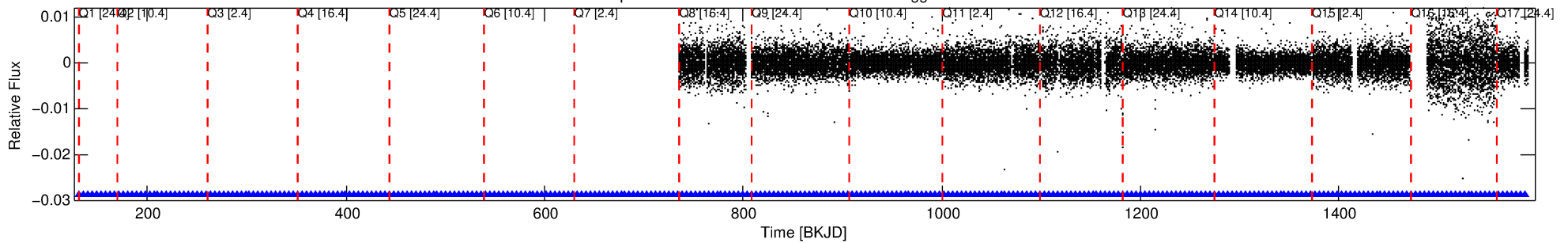
Ephemeris Match Information For 008263746-04

No Significant Match Found

DV One-Page Summary

KIC: 8263746 Candidate: 4 of 4 Period: 4.397 d
KOI: K03581 Corr: No Ephemeris Match

Kp: 16.75 R*: 0.74 Rs Teff: 4856.0 K Logg: 4.55 Fe/H: -0.080



TPS TCE Results:

Period = 4.39744 d
Epoch = 132.4509 BKJD

DV fit results are unavailable

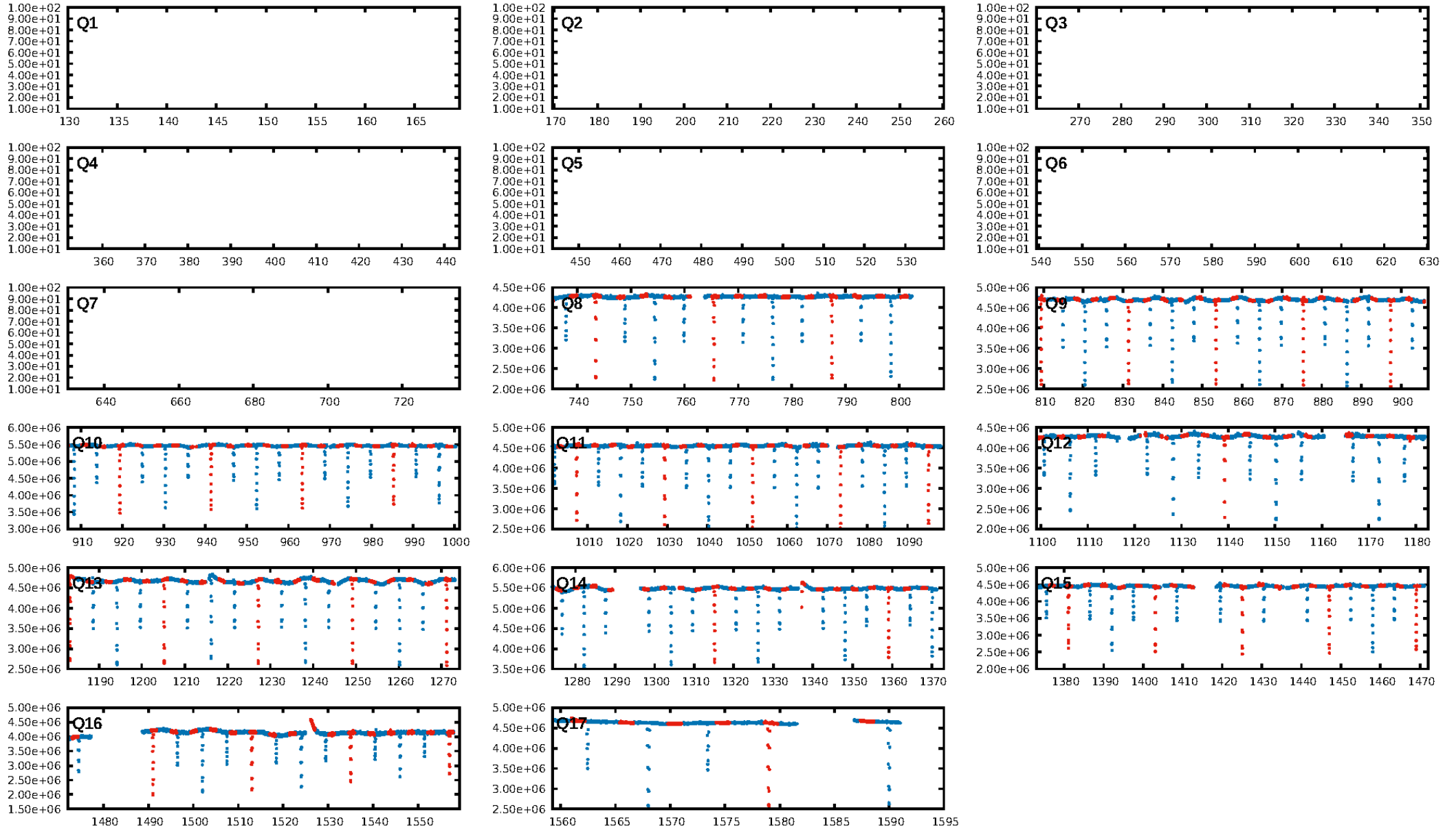
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.65σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [172/172]
GhostDiagnostic-chr: -5.351
Centroid-sig: N/A
Centroid-so: 3.520 arcsec [1.52σ]
OotOffset-rm: 4.111 arcsec [3.60σ]
KicOffset-rm: 5.052 arcsec [5.86σ]
OotOffset-st: 0/1/1/2 [4]
KicOffset-st: 0/1/1/2 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 1.00 [10/10]

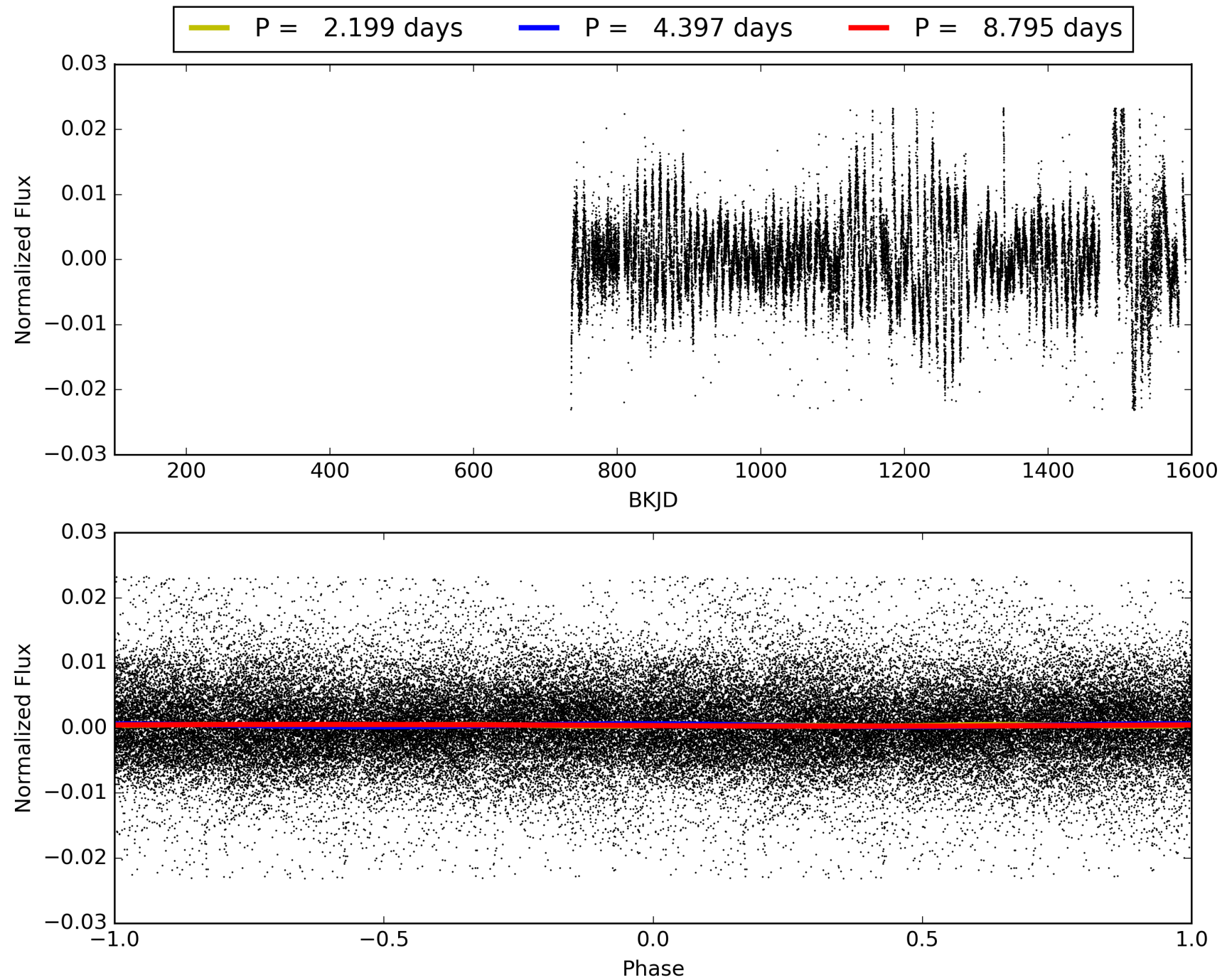
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:46:34 Z

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

TCE 008263746-04, PDC Light Curves

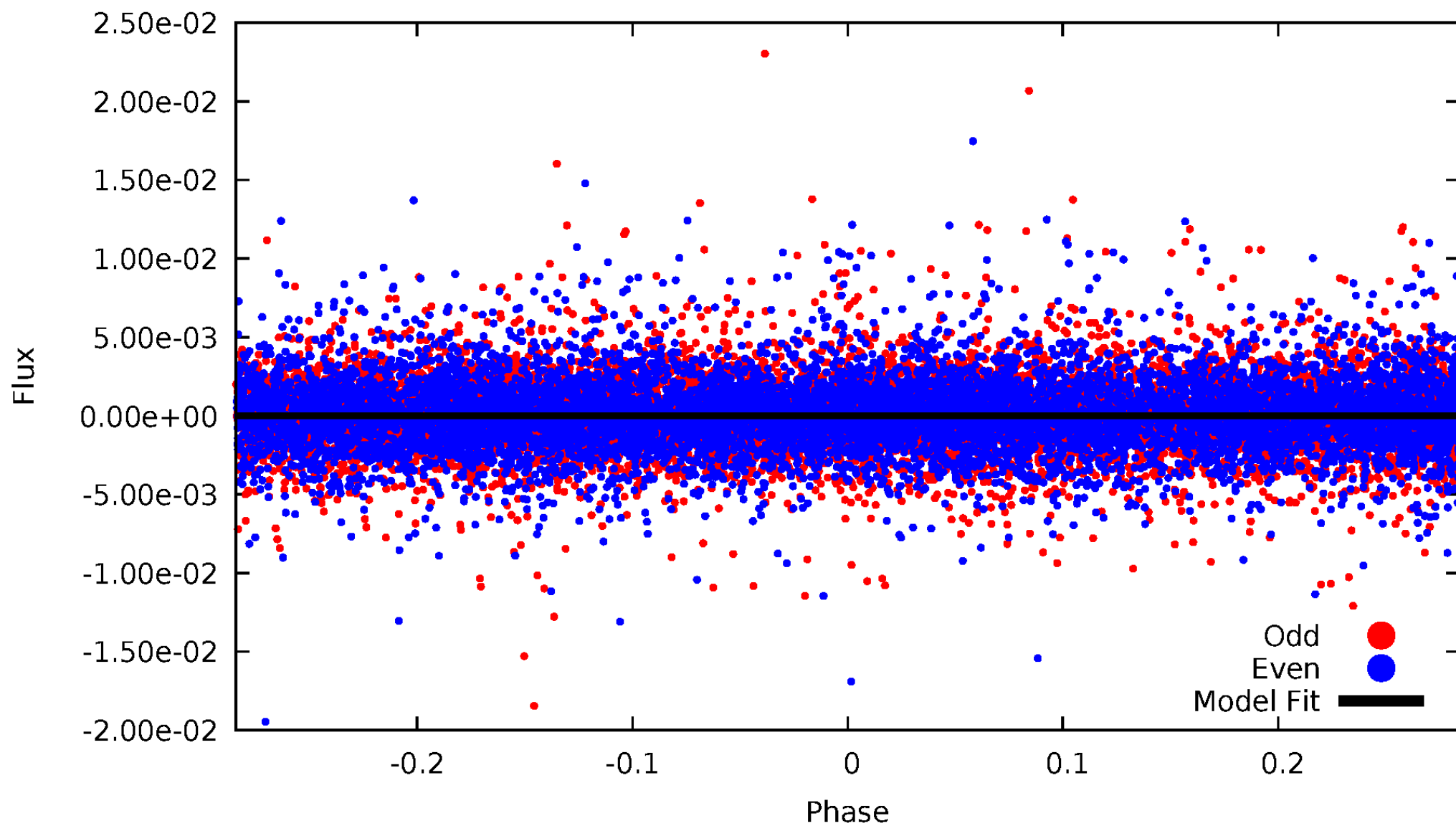


TCE 008263746-04



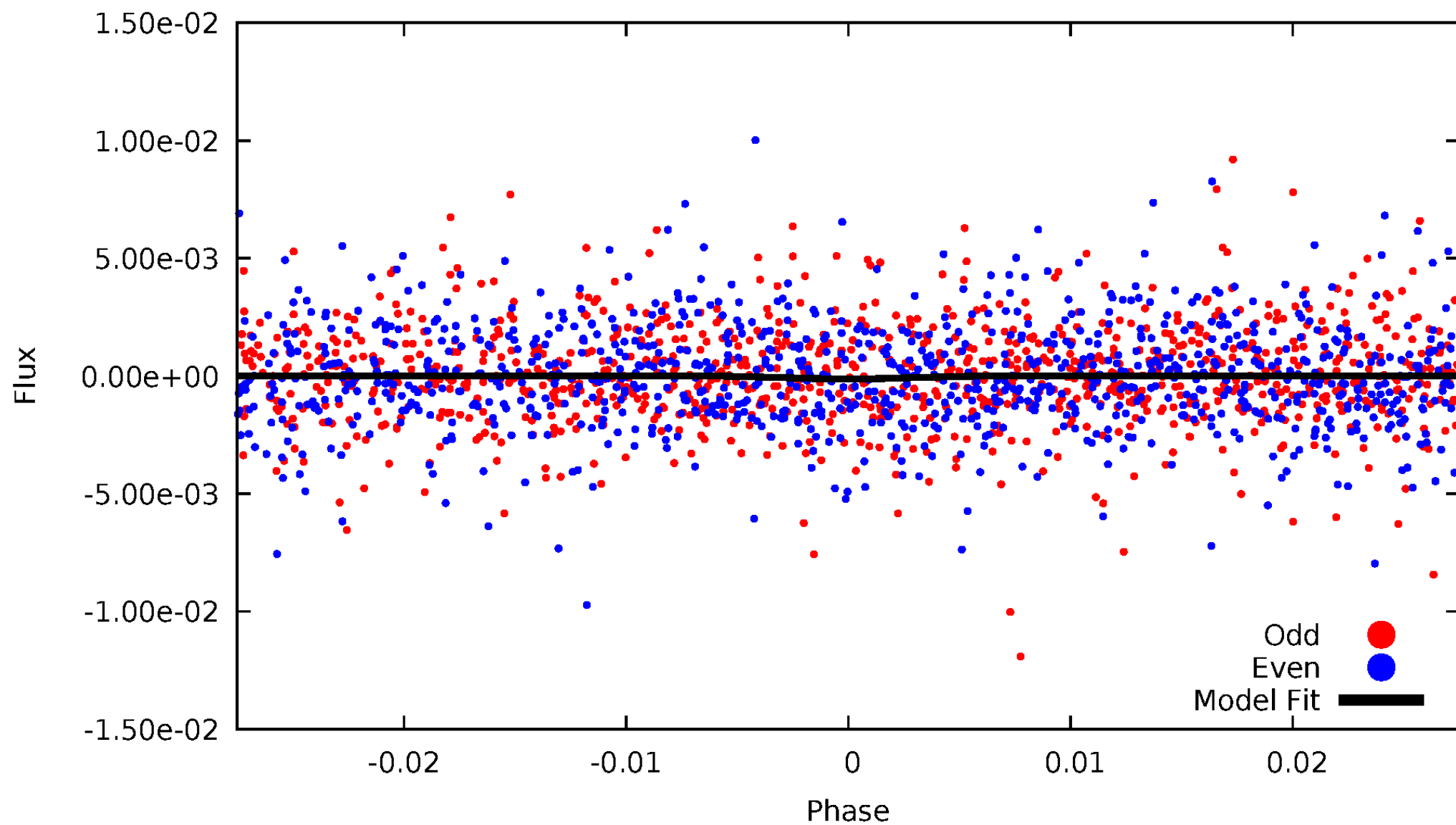
DV Odd/Even

TCE 008263746-04



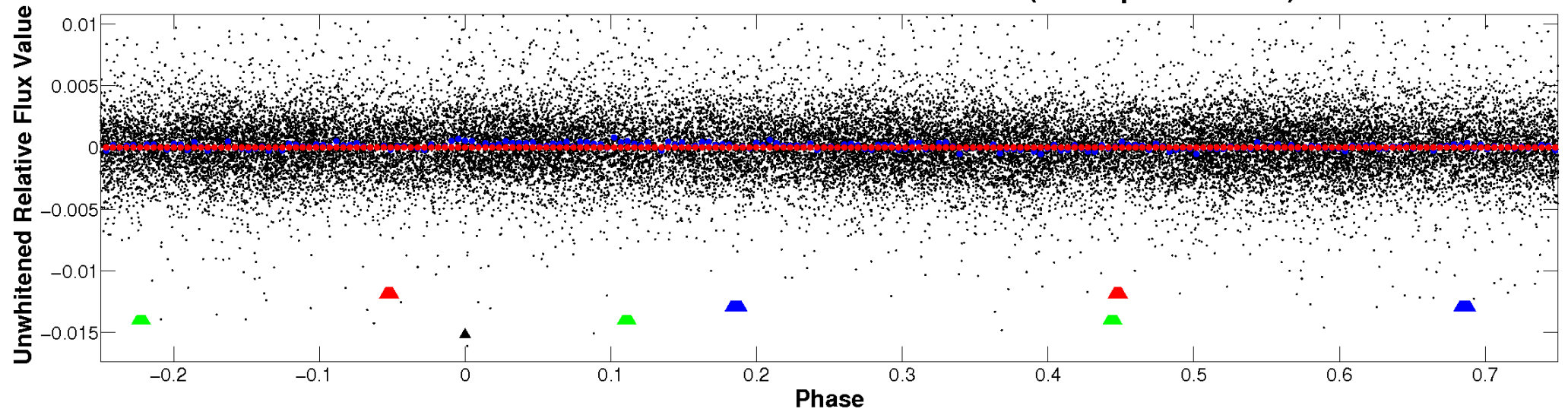
ALT Odd/Even

TCE 008263746-04



Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

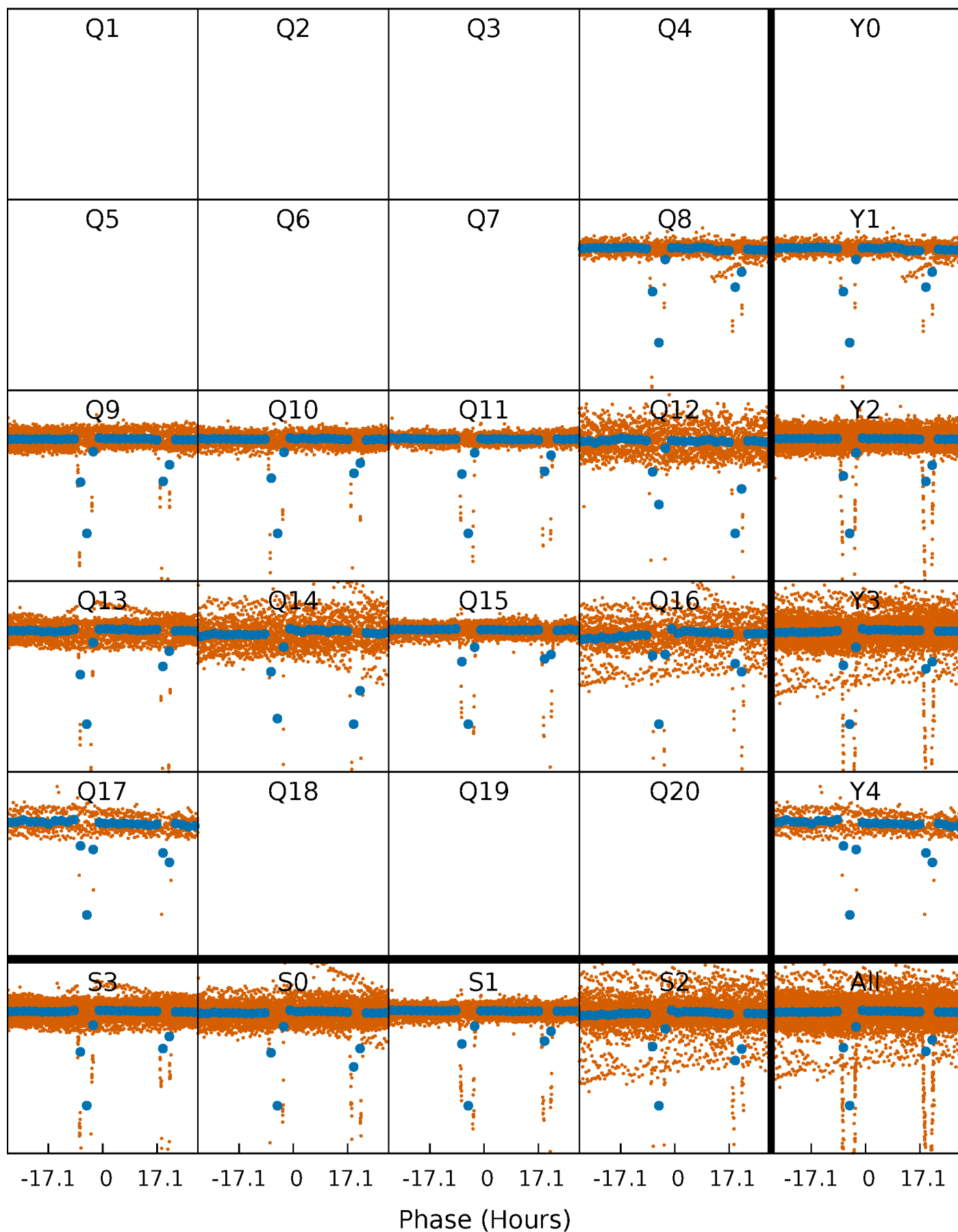


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



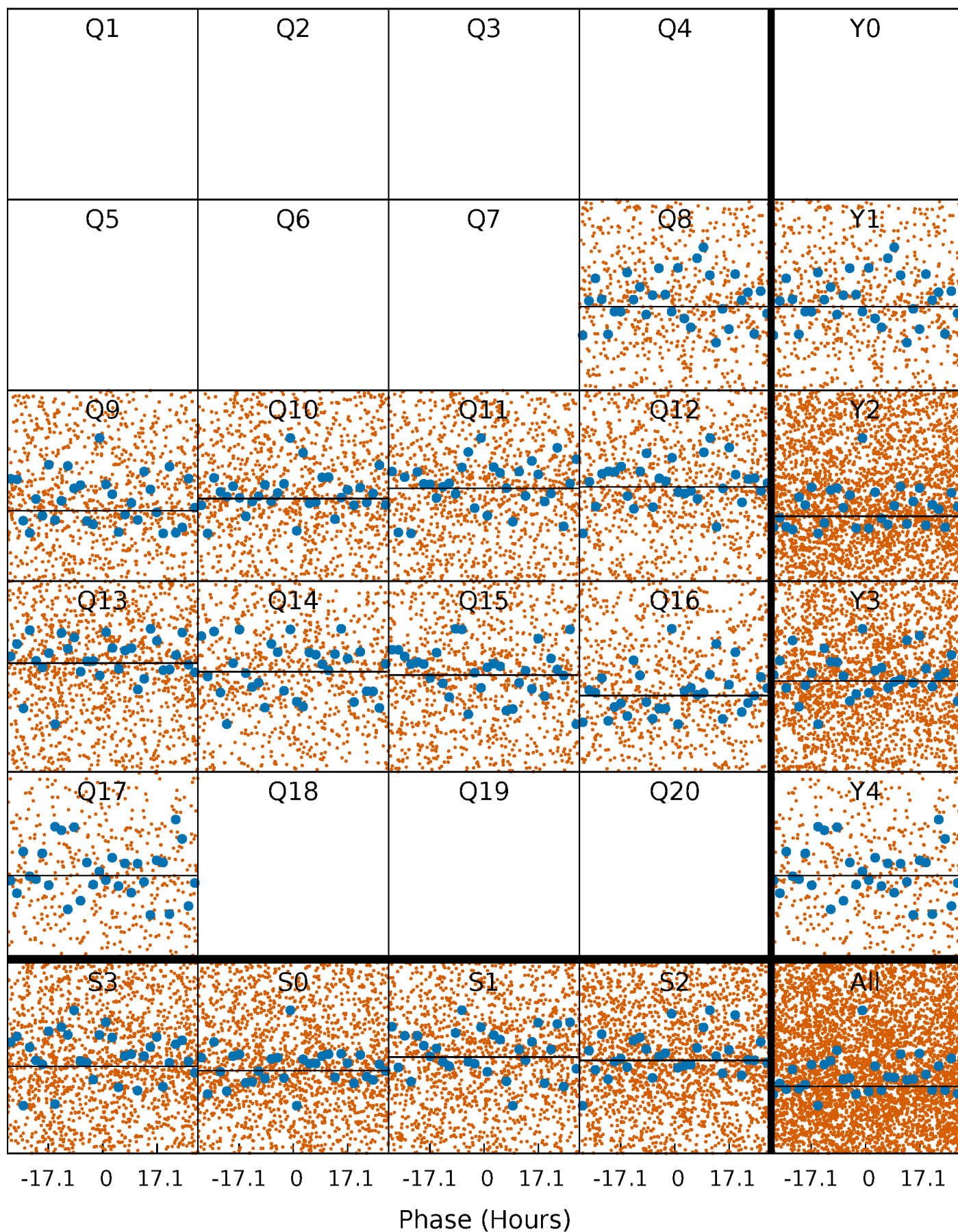
PDC Quarter-Phased Transit Curves

TCE 008263746-04 P= 4.397437 Days $T_0=132.450938$ (BKJD)



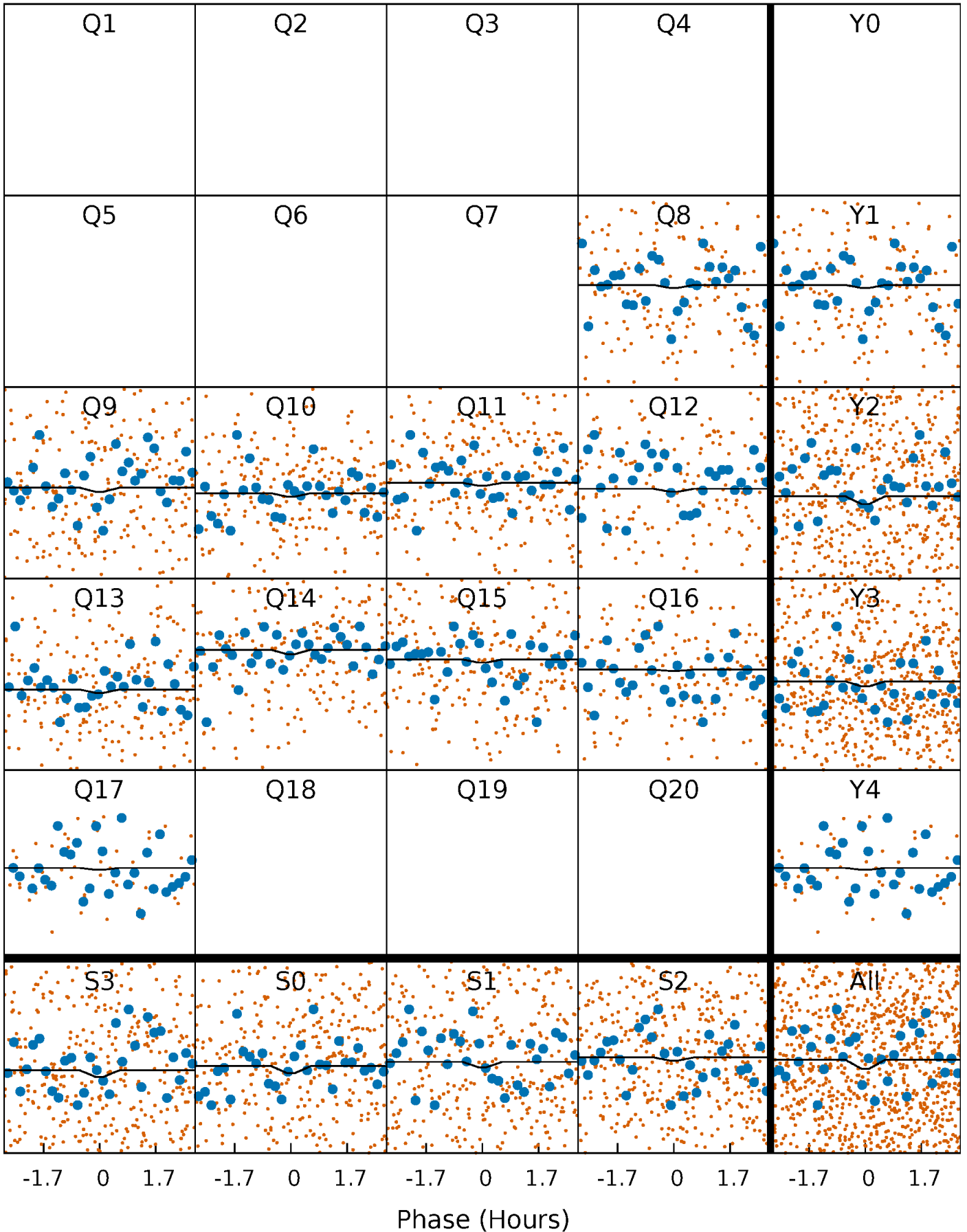
DV Quarter-Phased Transit Curves

TCE 008263746-04 P= 4.397437 Days $T_0=132.450938$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

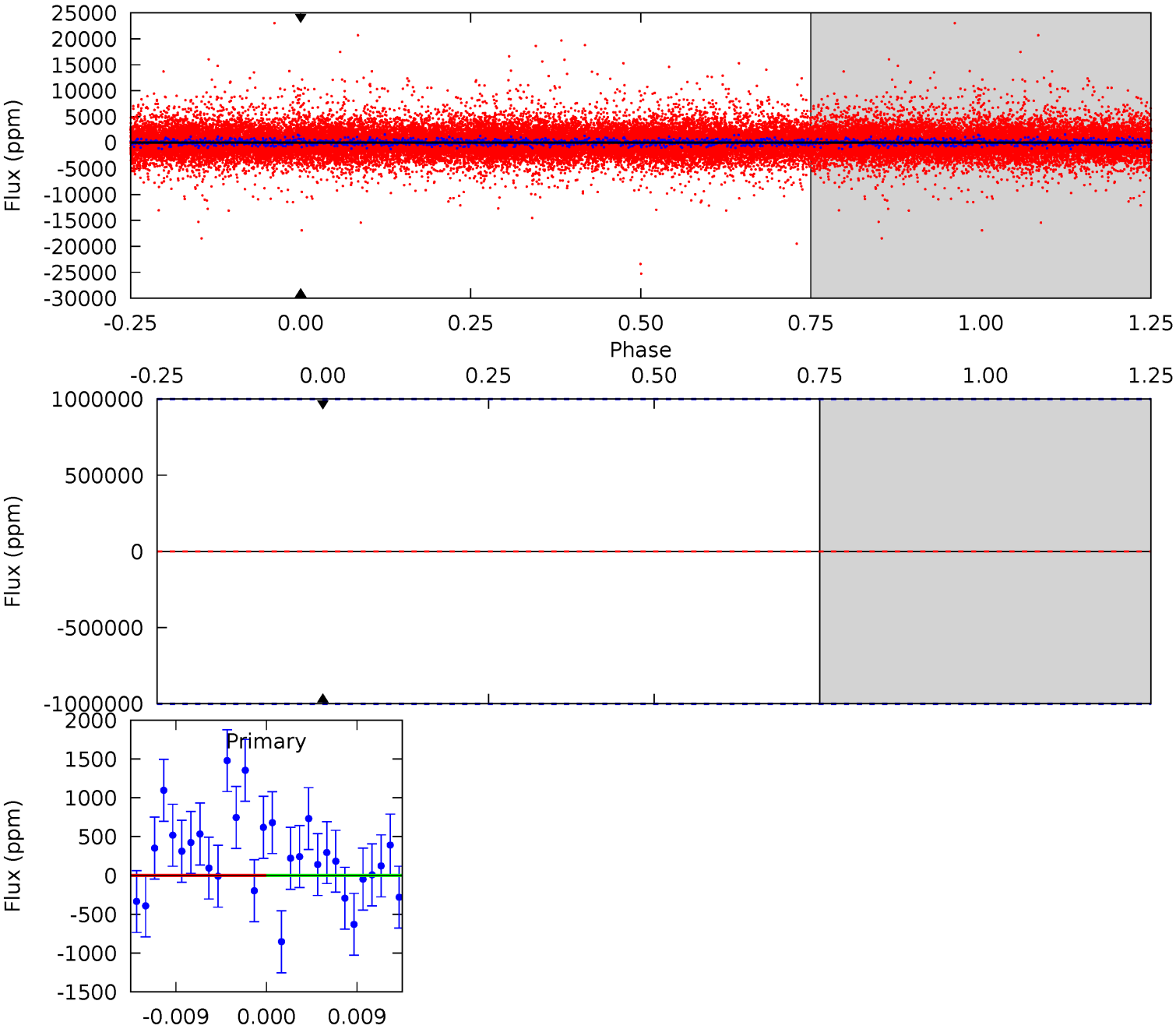
TCE 008263746-04 P= 4.397437 Days $T_0=131.667240$ (BKJD)



DV Model-Shift Uniqueness Test

008263746-04, P = 4.397437 Days, E = 132.450938 Days

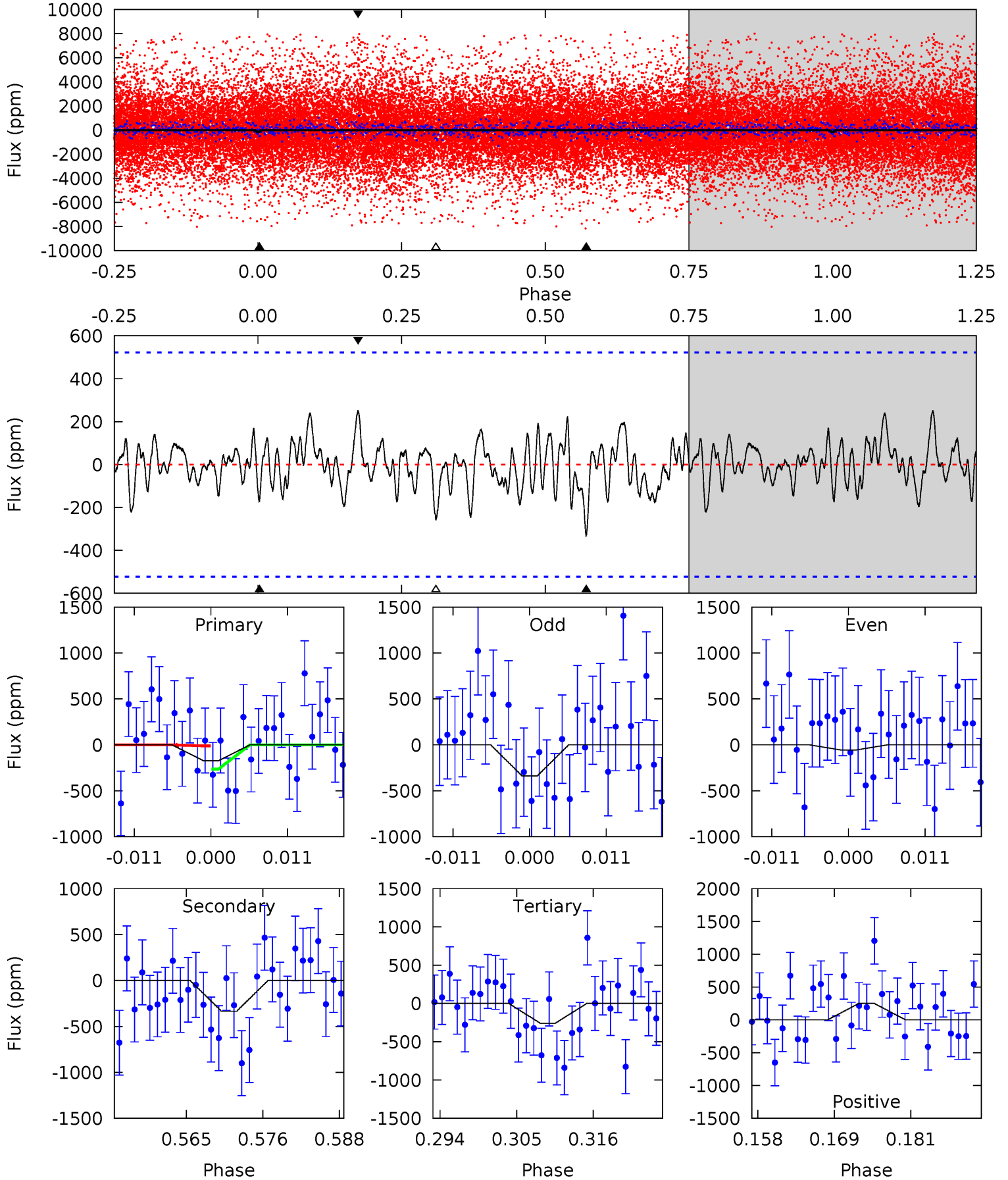
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

008263746-04, P = 4.397437 Days, E = 131.667240 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.65 | 3.21 | 2.47 | 2.41 | 5.00 | 2.53 | 0.88 | -0.82 | -0.75 | 0.74 | 0.80 | 1.37 | 1.73 | 0.43 | 1.22 |



Stellar Parameters For KIC 008263746

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4856^{+175}_{-175} | $4.554^{+0.072}_{-0.048}$ | $-0.080^{+0.300}_{-0.300}$ | $0.743^{+0.062}_{-0.075}$ | $0.721^{+0.090}_{-0.053}$ | $2.476^{+0.745}_{-0.398}$ |
| | +4%/-4% | +2%/-1% | +375%/-375% | +8%/-10% | +12%/-7% | +30%/-16% |
| 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 008263746-04 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|----------------------|-------------------------|--------------------------------|
| DV | 0 ± 1000000 | $13.32^{+8.11}_{-7.08}$ | 1183^{+52}_{-46} | -2825^{+9984}_{-4422} | $-6.871^{+945.266}_{-946.520}$ |
| Alt. | -335 ± 104 | $5.76^{+6.11}_{-3.97}$ | 1185^{+49}_{-52} | 3012^{+1504}_{-572} | 12^{+111}_{-9} |

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 $A_{\text{obs}} \gg 1.0$

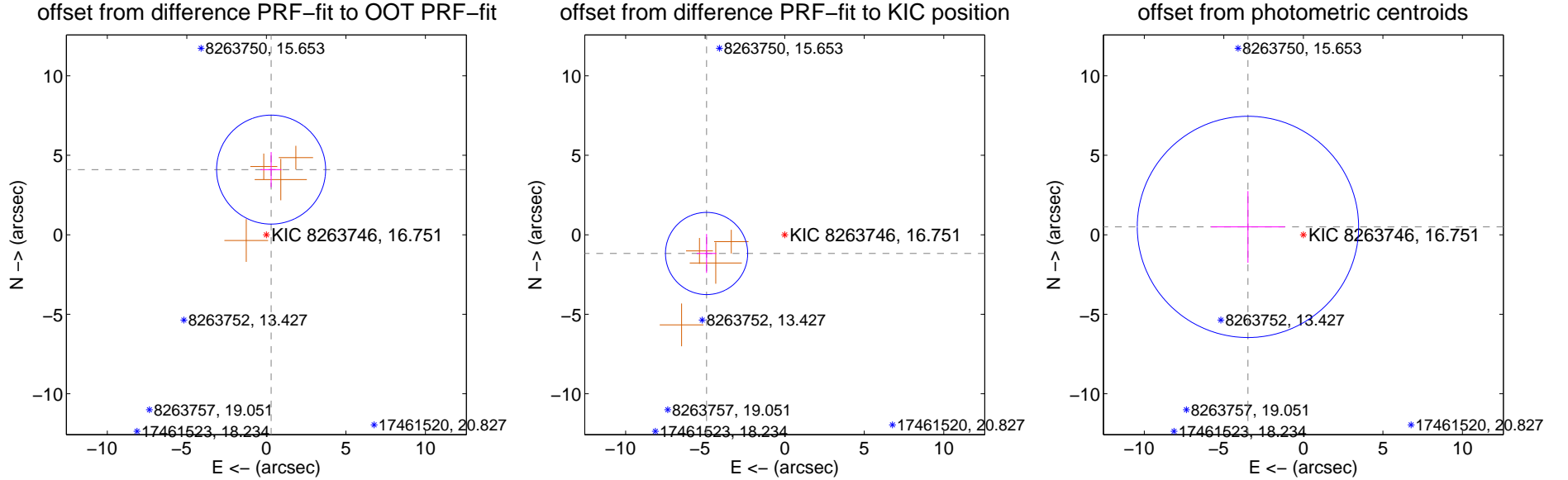
DV Centroid Data

Supplemental centroid analysis for 008263746-04. Kepler magnitude: 16.75. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 7.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 4.111 ± 1.143 | 3.60 | -0.299 ± 0.659 | 4.100 ± 1.104 |
| PRF-fit source offset from KIC position | 5.052 ± 0.862 | 5.86 | 4.913 ± 0.616 | -1.177 ± 1.226 |
| photometric centroid source offset | 3.52 ± 2.32 | 1.52 | 3.49 ± 2.32 | 0.50 ± 2.25 |

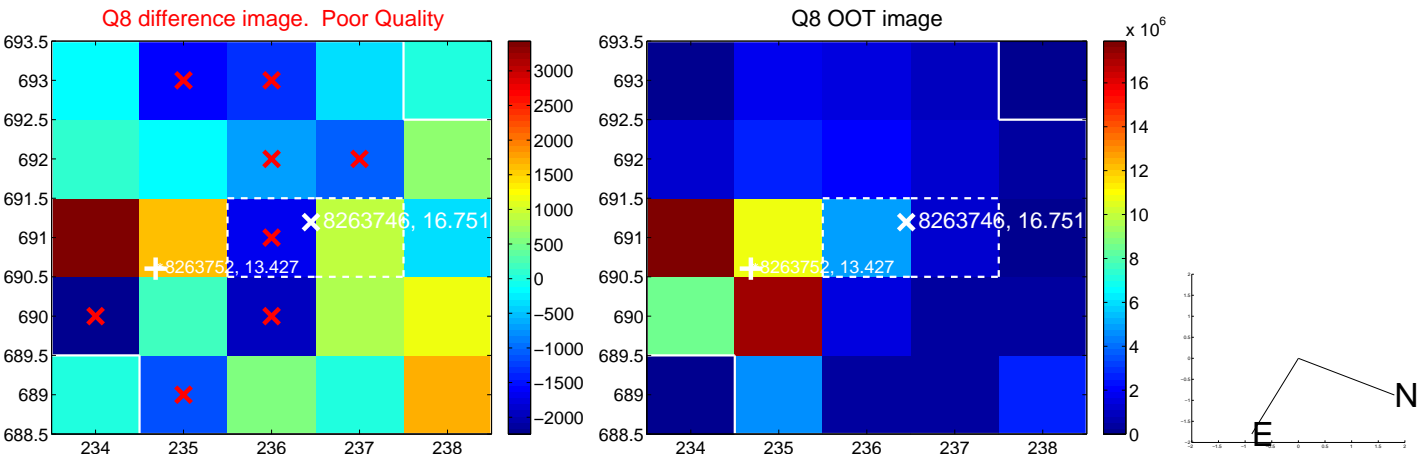


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

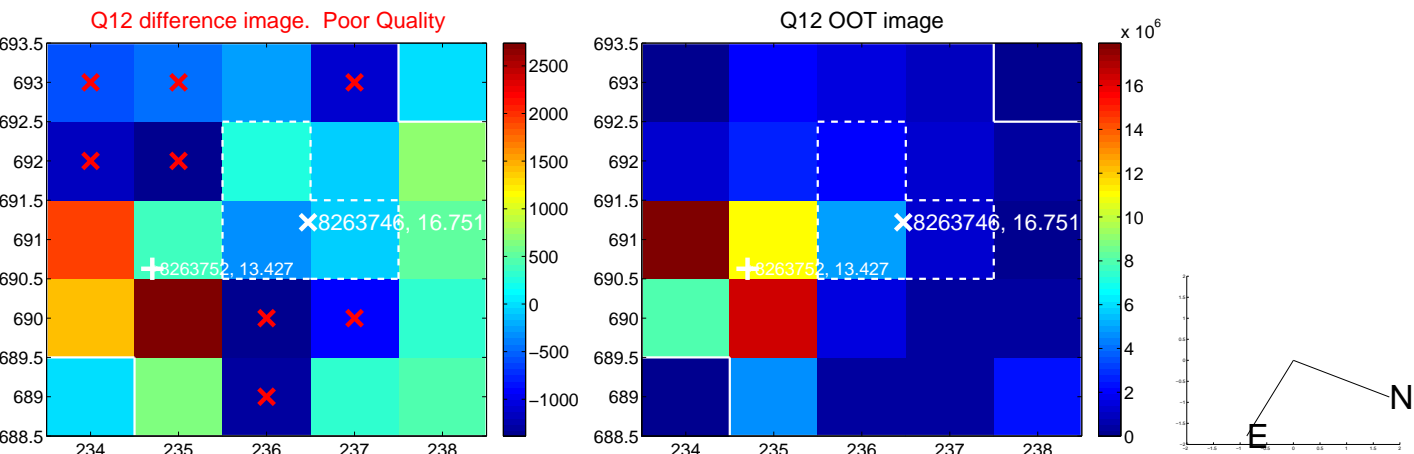
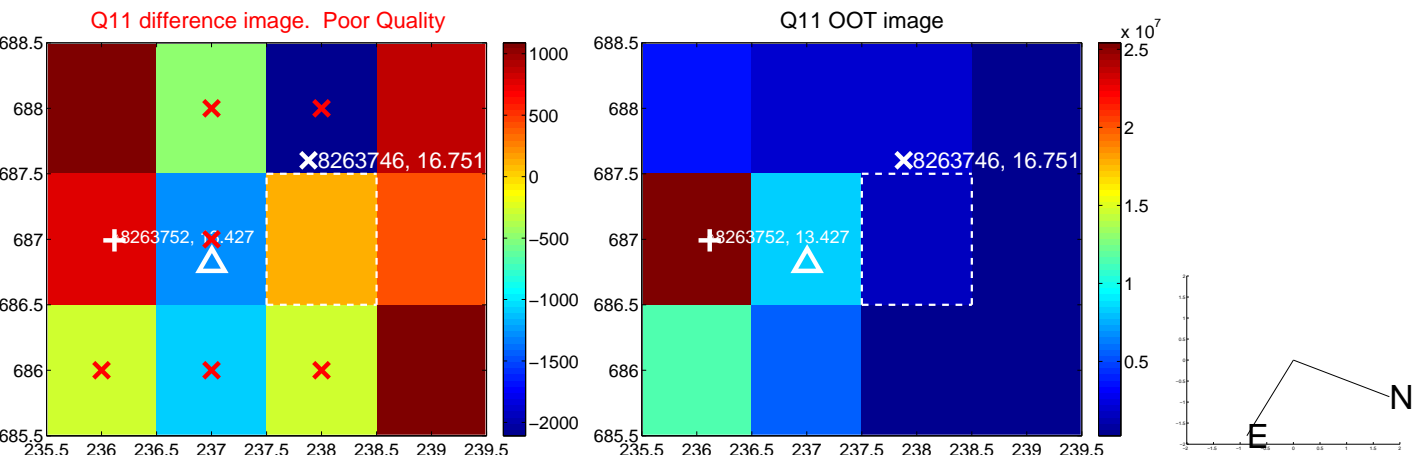
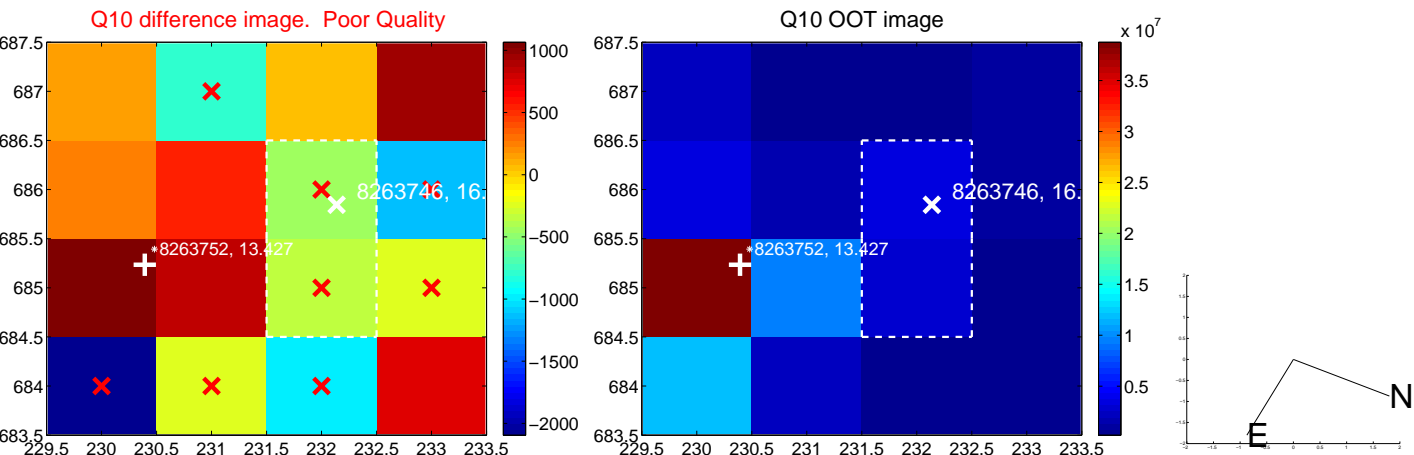
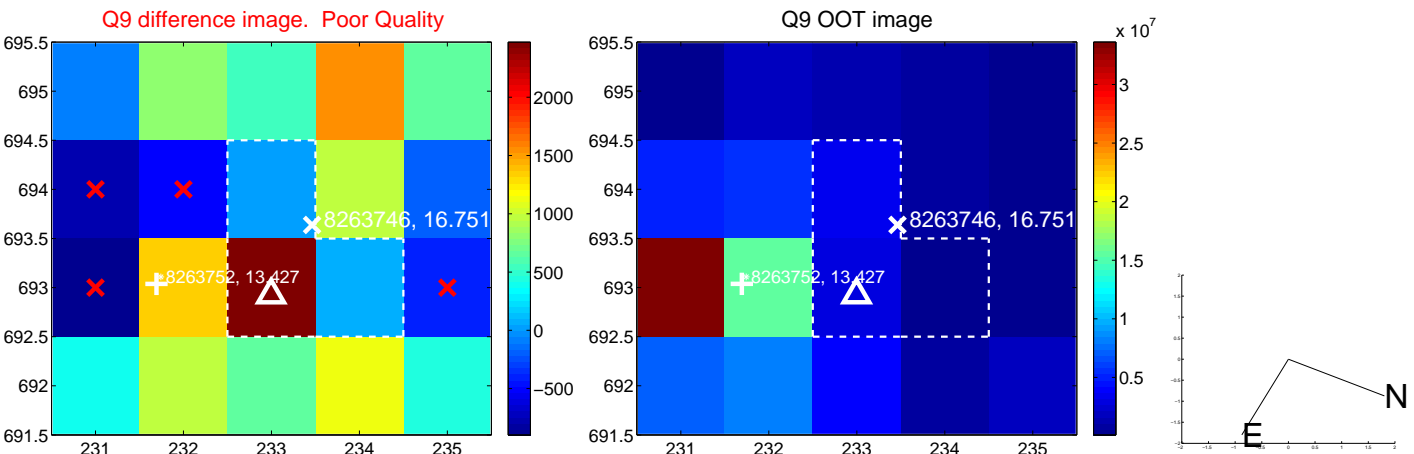
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



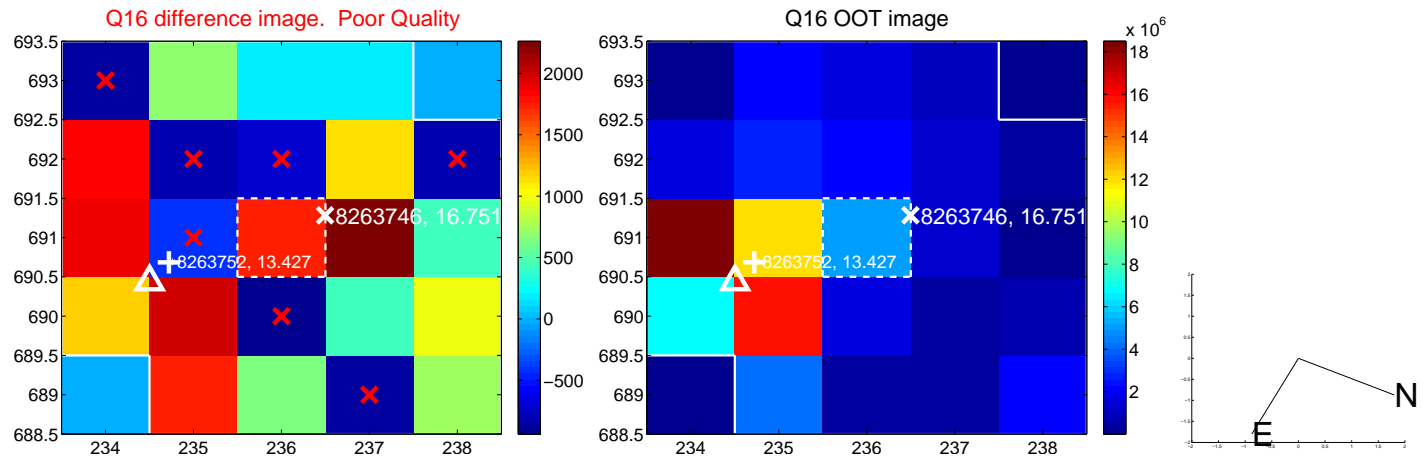
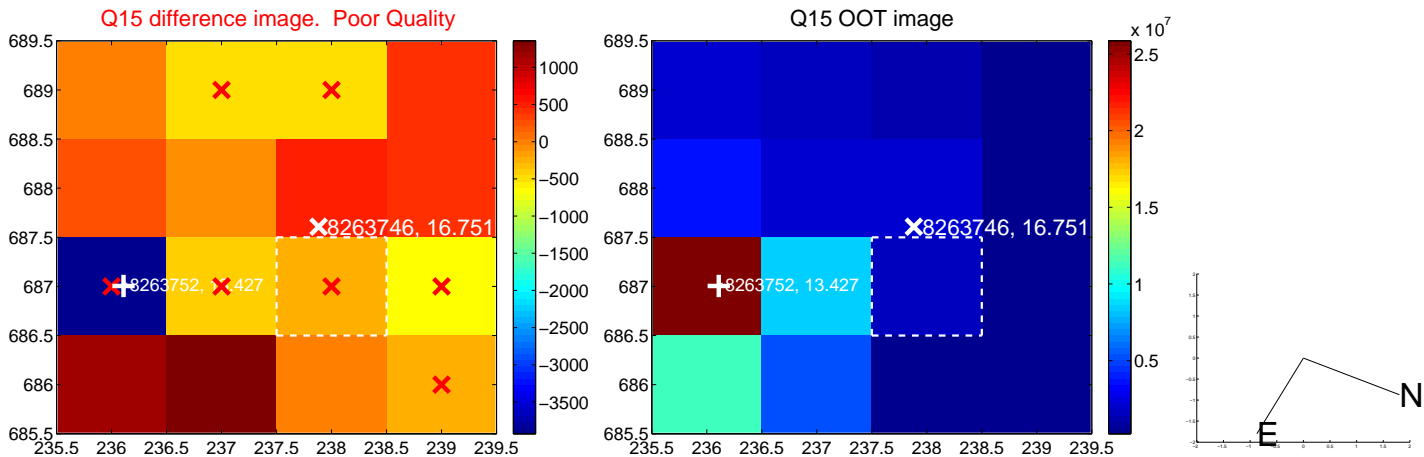
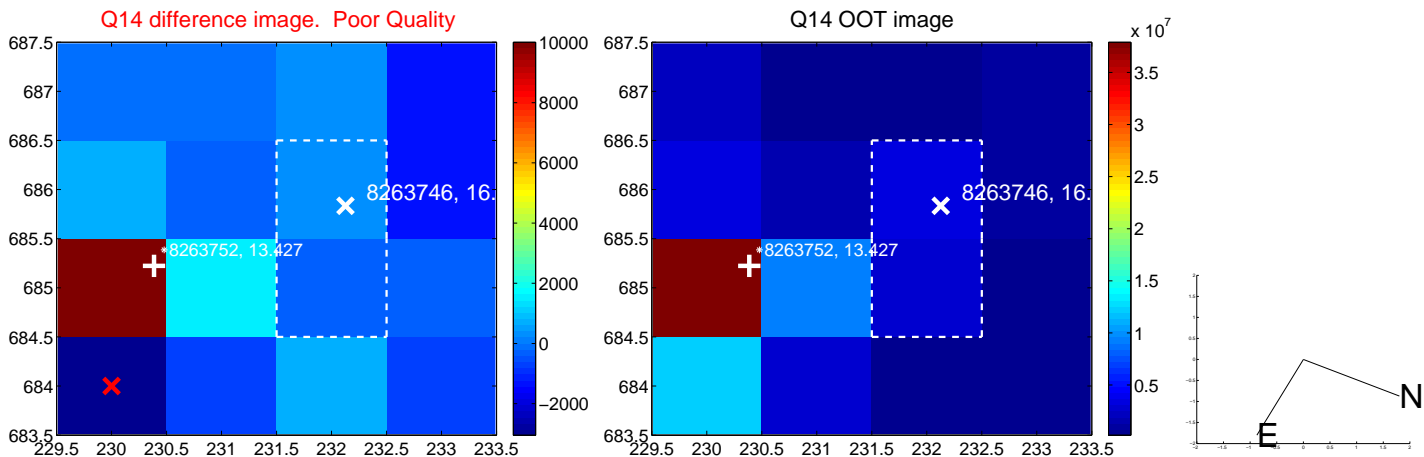
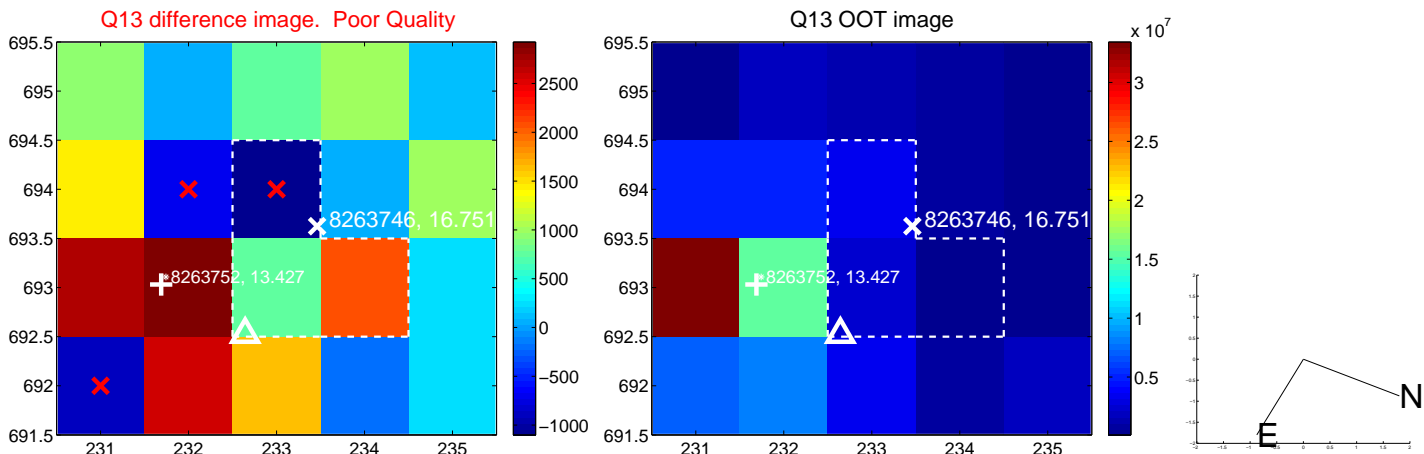
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



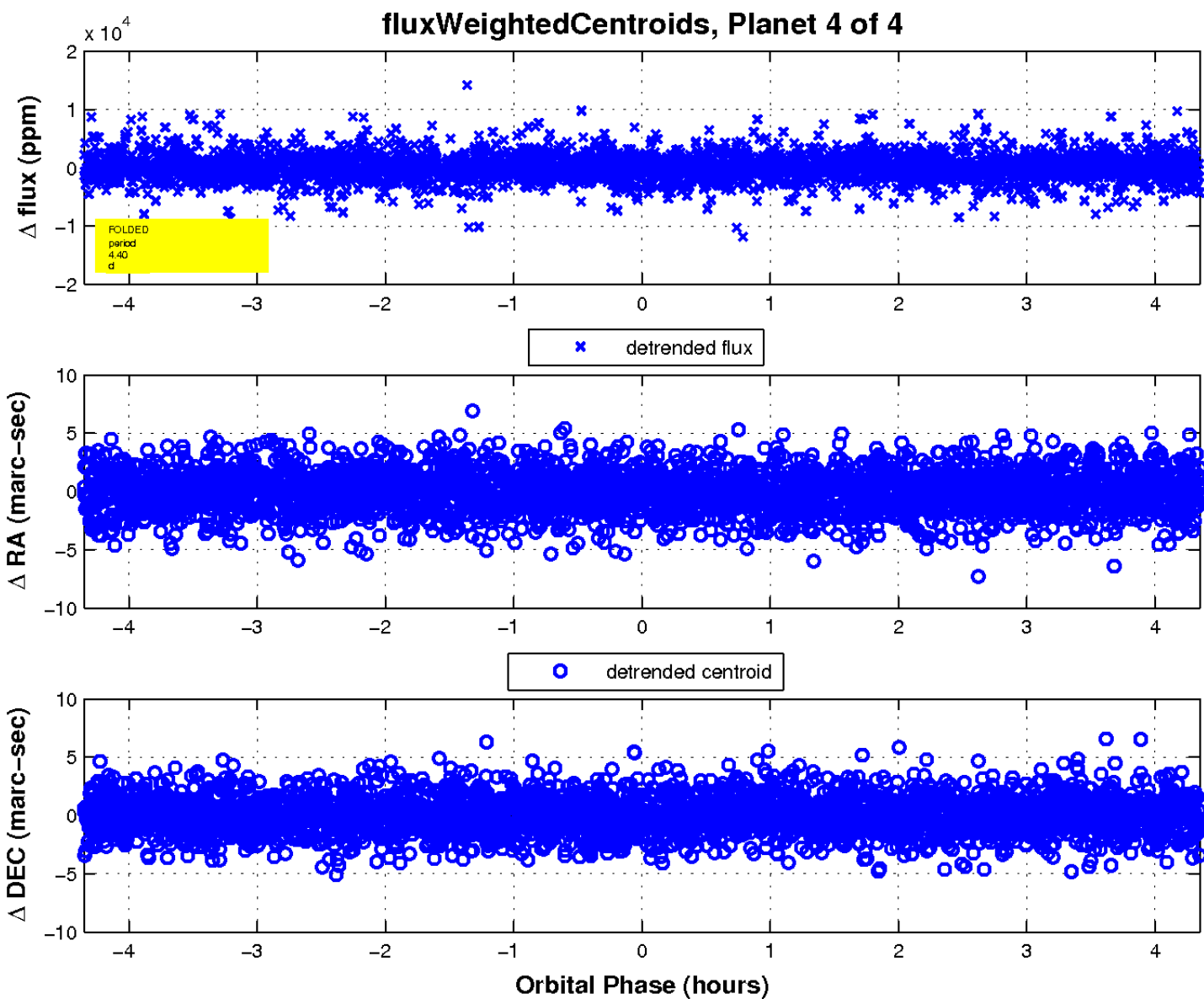
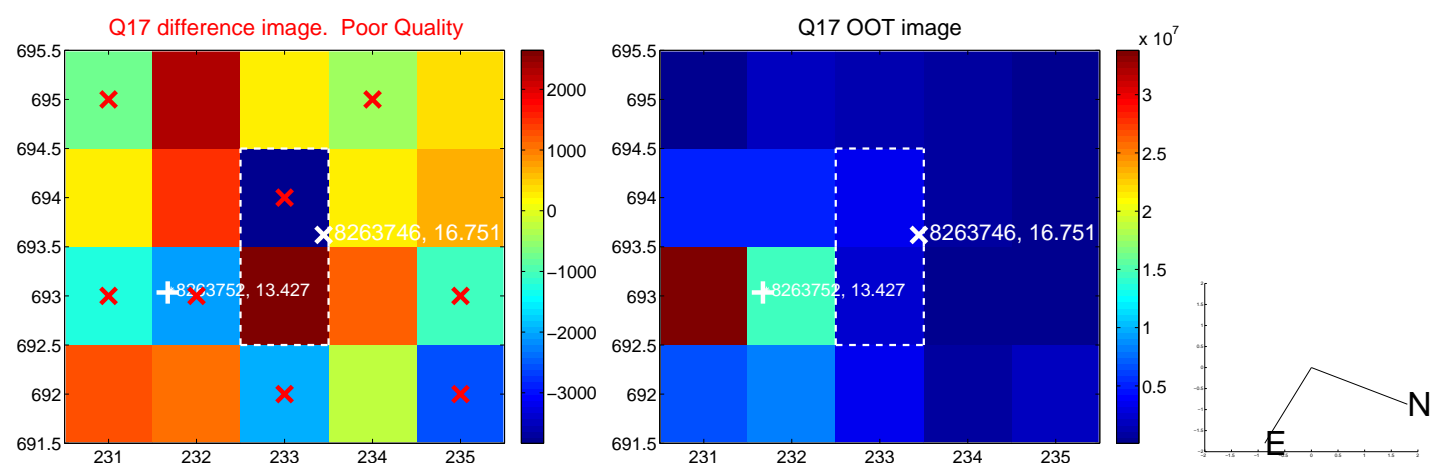
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

