

KIC 008362880

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008362880-01 | OBS | No | 2.263736 | 133.125245 | 182.9 | 7.500 | 9.3 | -1.0 | 1.68 | 6951 | 2.29 | 4277.37 |
| 008362880-02 | OBS | No | 577.149654 | 303.576370 | 1189.0 | 14.495 | 17.0 | 9.9 | 1.68 | 6951 | 10.74 | 2.65 |
| 008362880-03 | OBS | No | 2.263736 | 131.545050 | 128.8 | 7.500 | 10.1 | -1.0 | 1.68 | 6951 | 1.93 | 4277.37 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008362880-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |
| 008362880-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008362880-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS |

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

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

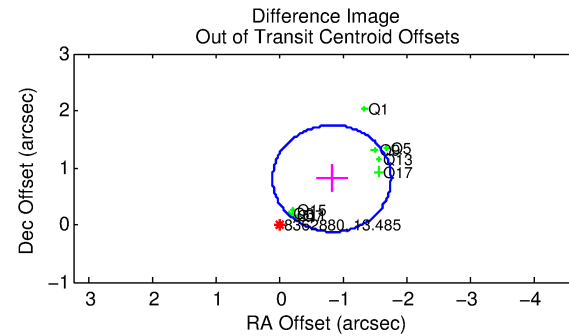
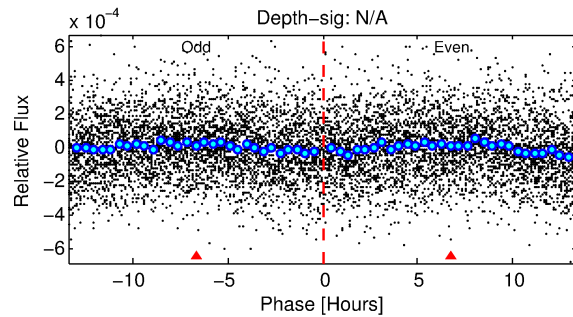
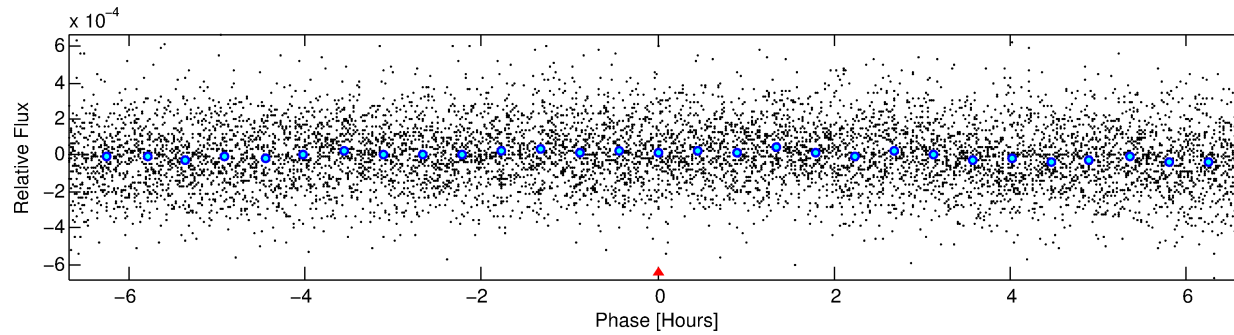
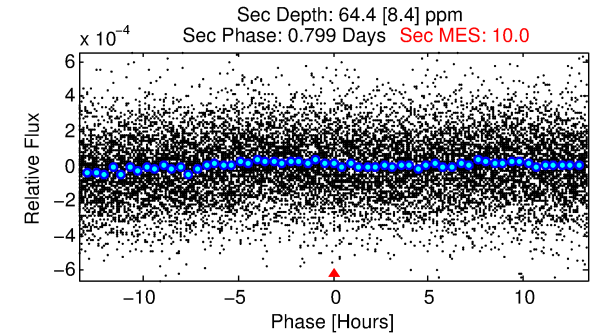
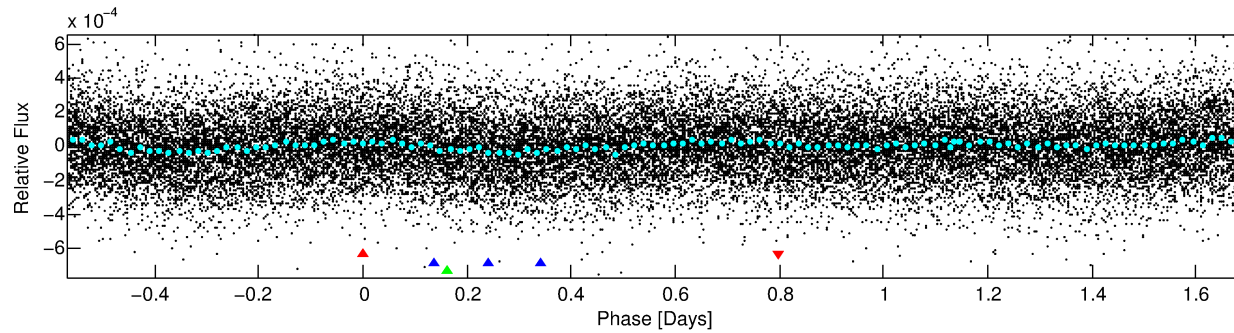
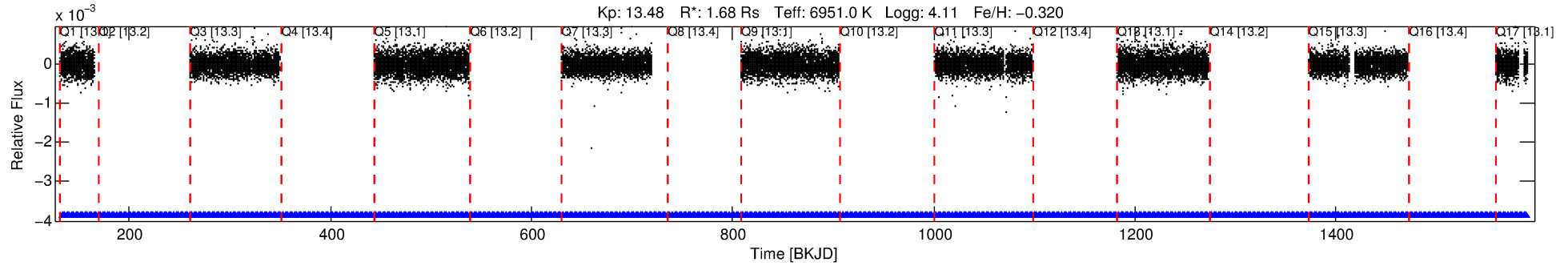
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008362880-01

No Significant Match Found

DV One-Page Summary

KIC: 8362880 Candidate: 1 of 3 Period: 2.264 d



TPS TCE Results:

Period = 2.26374 d
Epoch = 133.1252 BKJD

DV fit results are unavailable

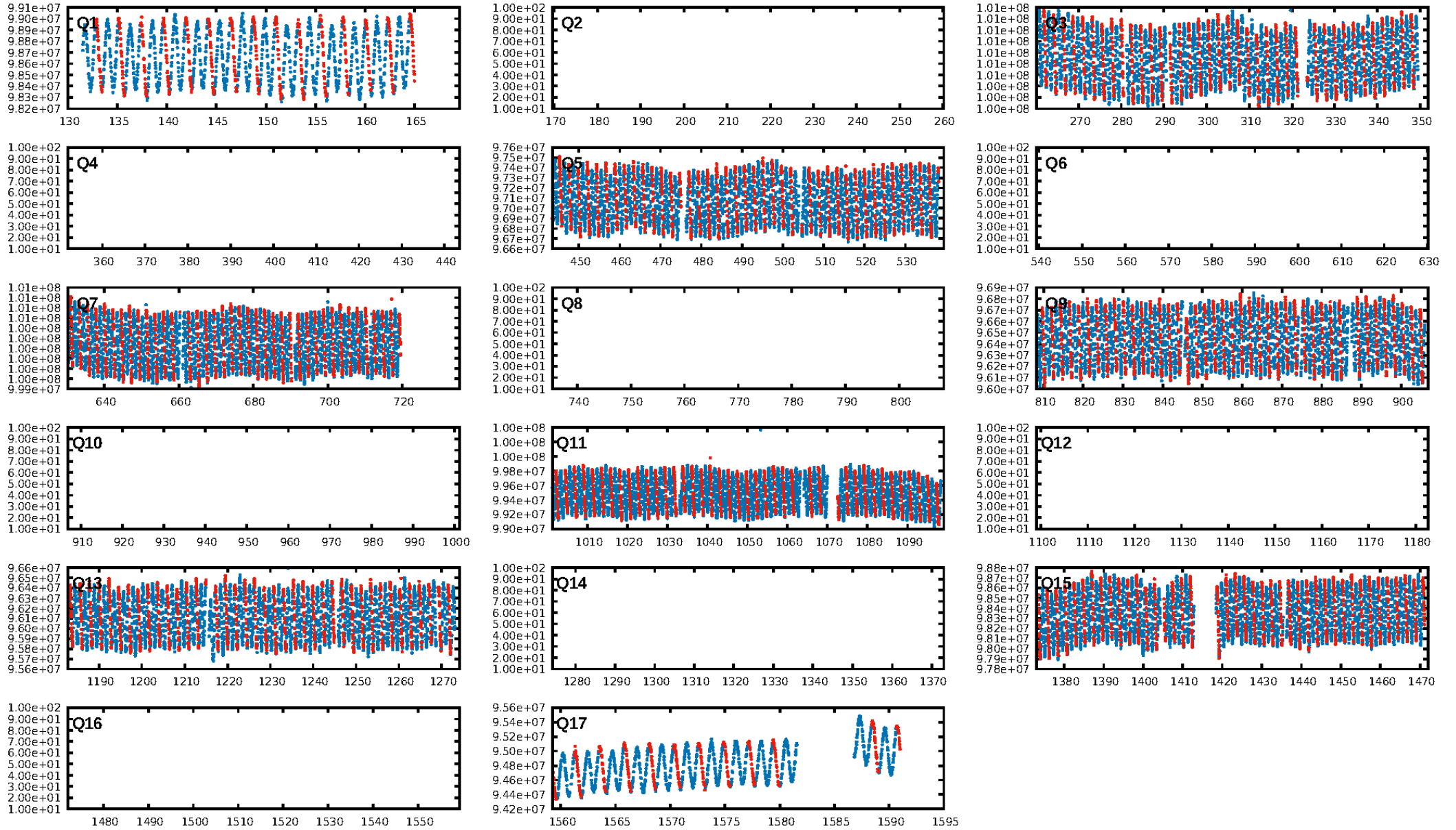
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.80e-22
RollingBand-fgt: 1.00 [280/280]
GhostDiagnostic-chr: 0.5837
Centroid-sig: 33.8%
Centroid-so: 14.060 arcsec [0.94σ]
OotOffset-rm: 1.152 arcsec [3.71σ]
KicOffset-rm: 0.085 arcsec [0.73σ]
OotOffset-st: 0/4/0/5 [9]
KicOffset-st: 0/4/0/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/9]

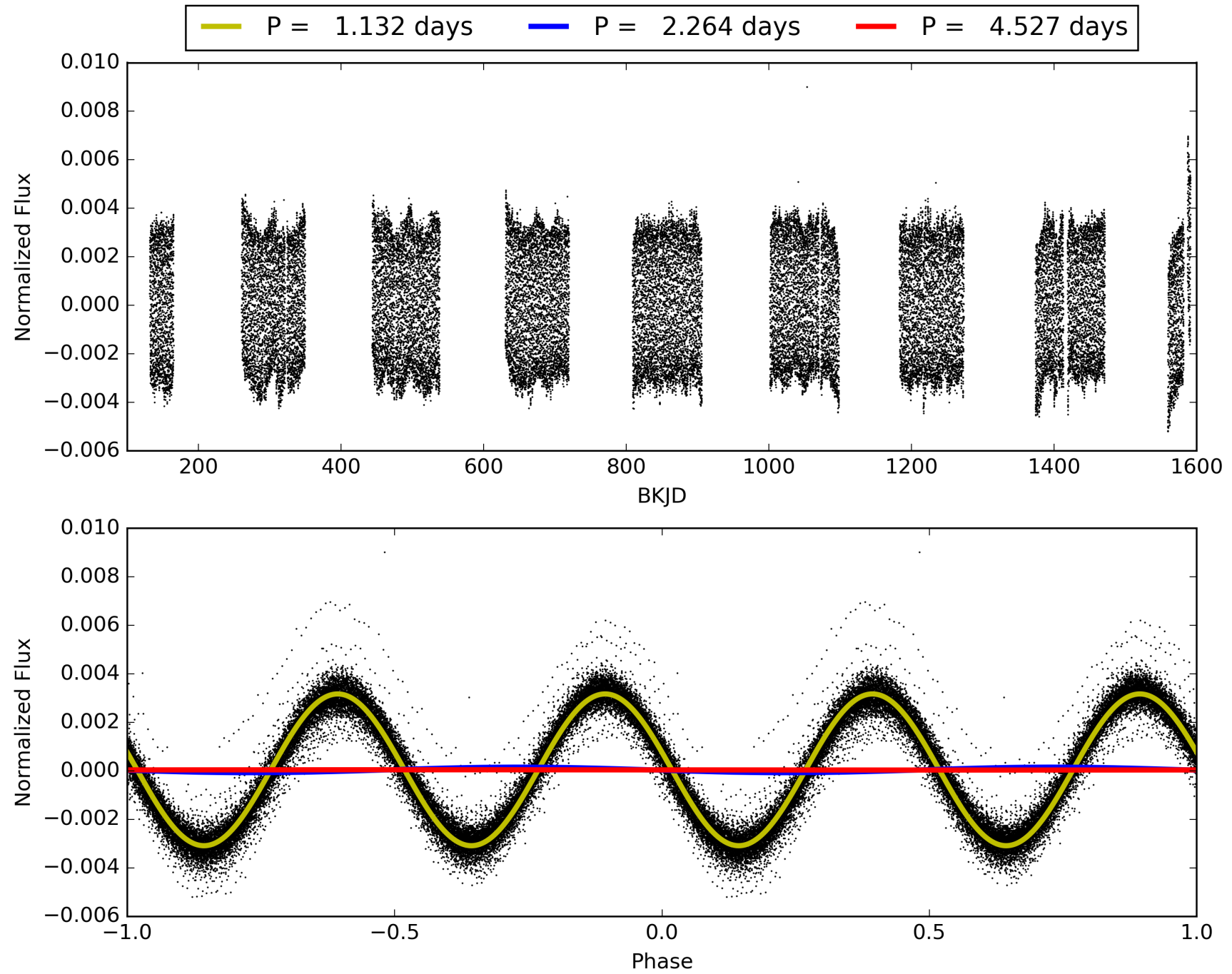
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:37:41 Z

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

TCE 008362880-01, PDC Light Curves

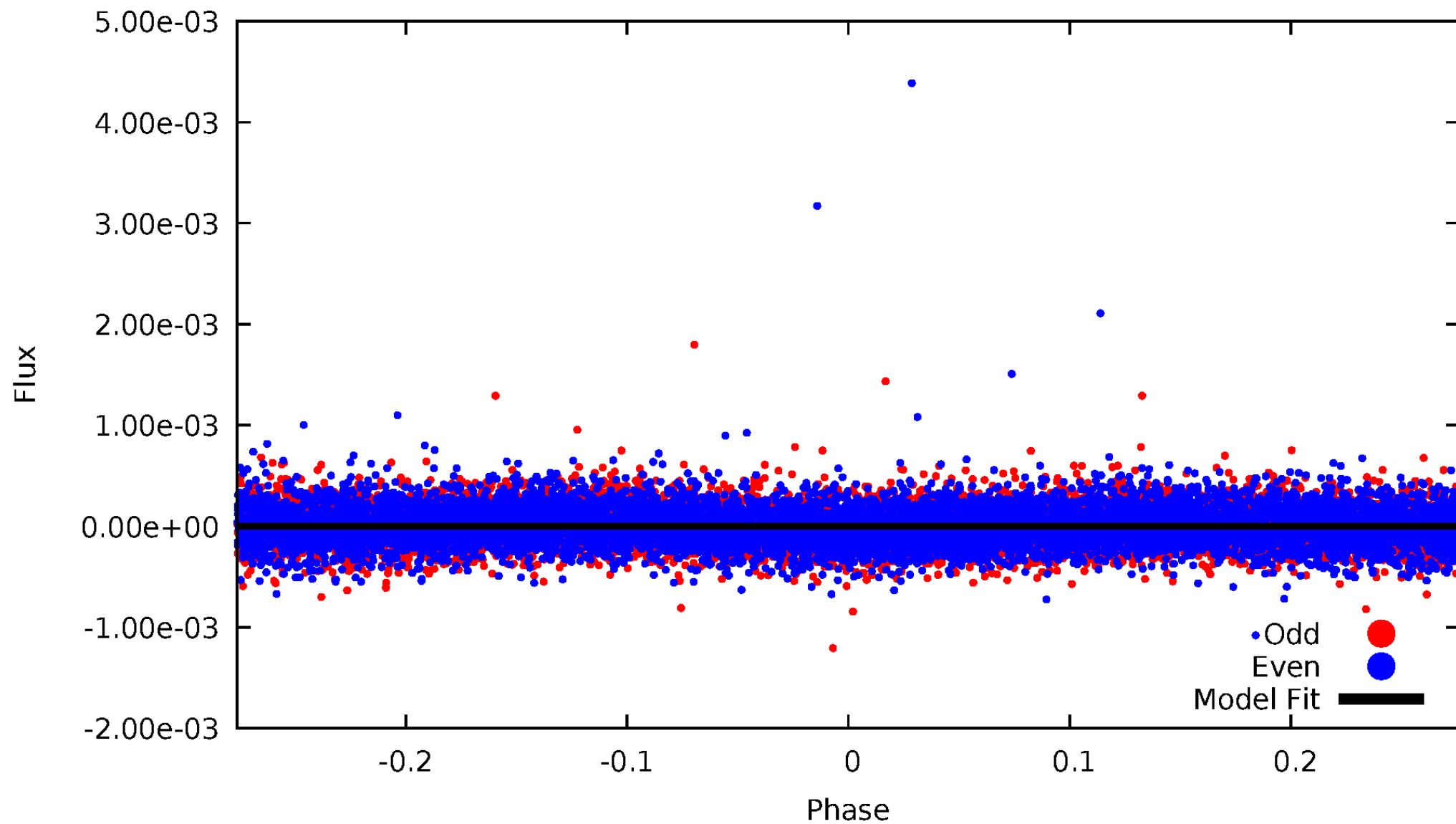


TCE 008362880-01



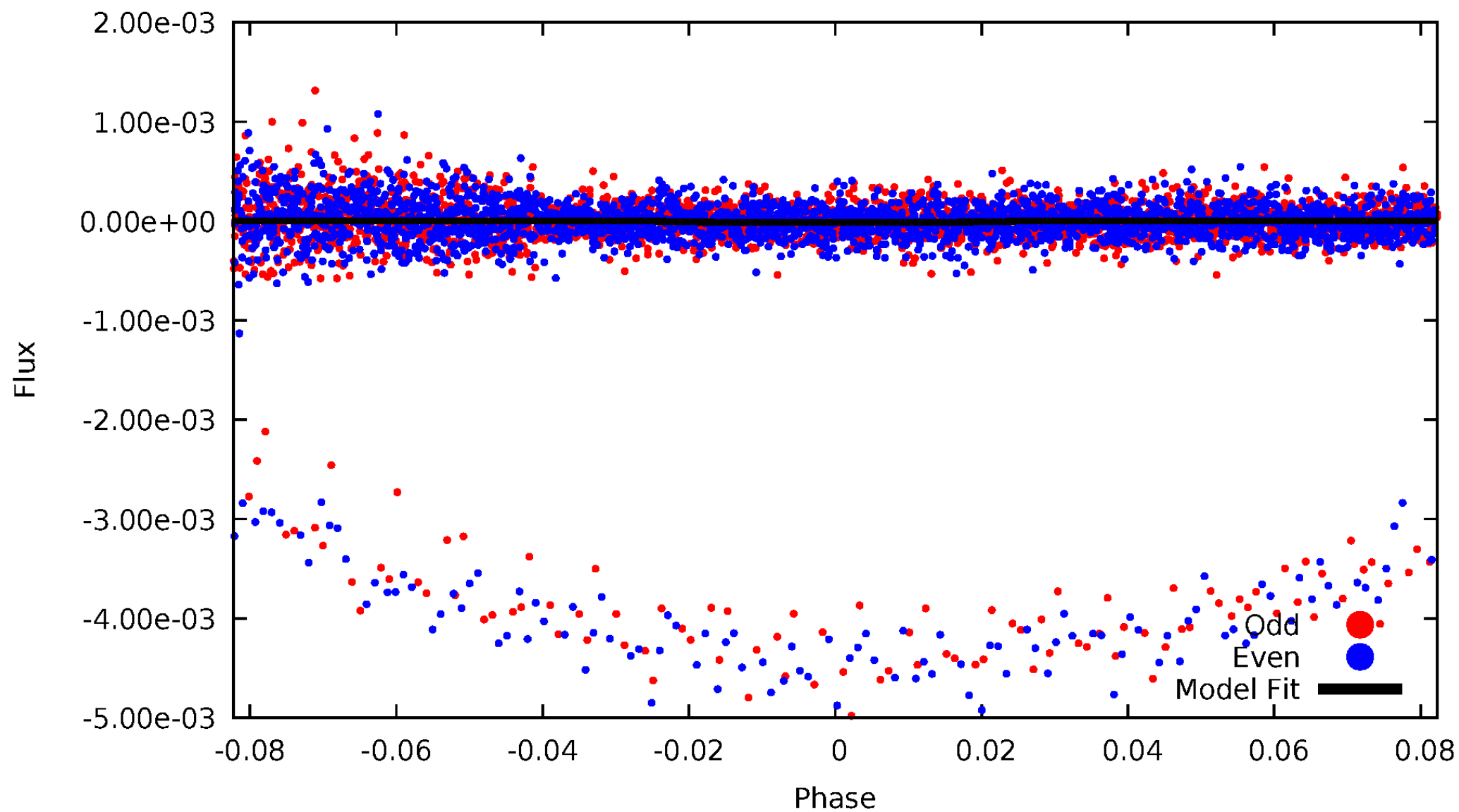
DV Odd/Even

TCE 008362880-01

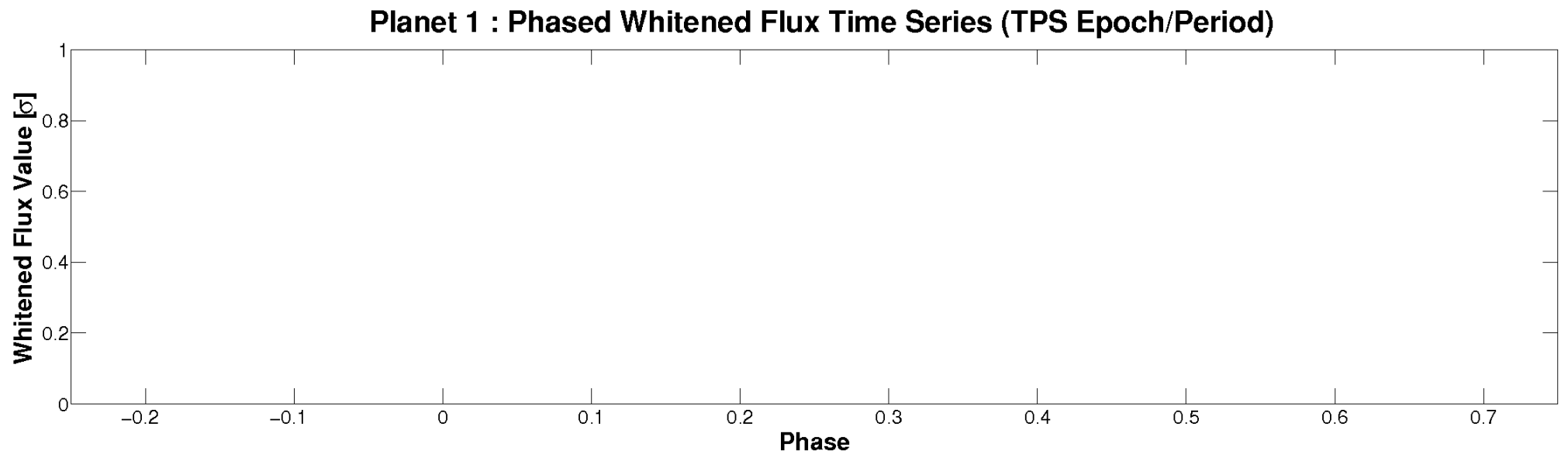
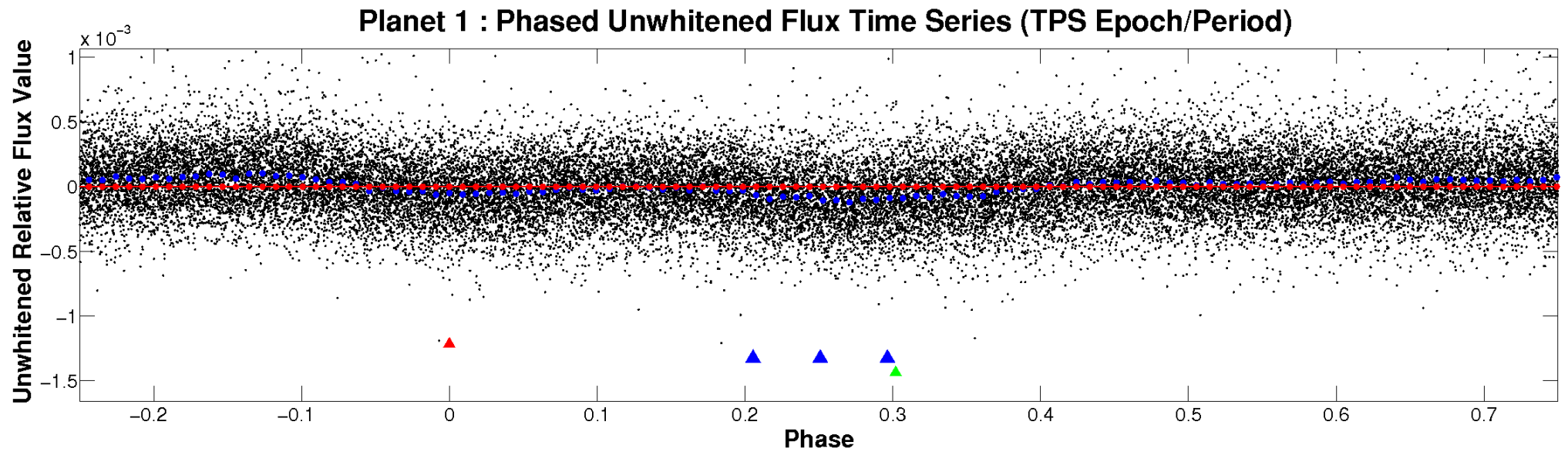


ALT Odd/Even

TCE 008362880-01

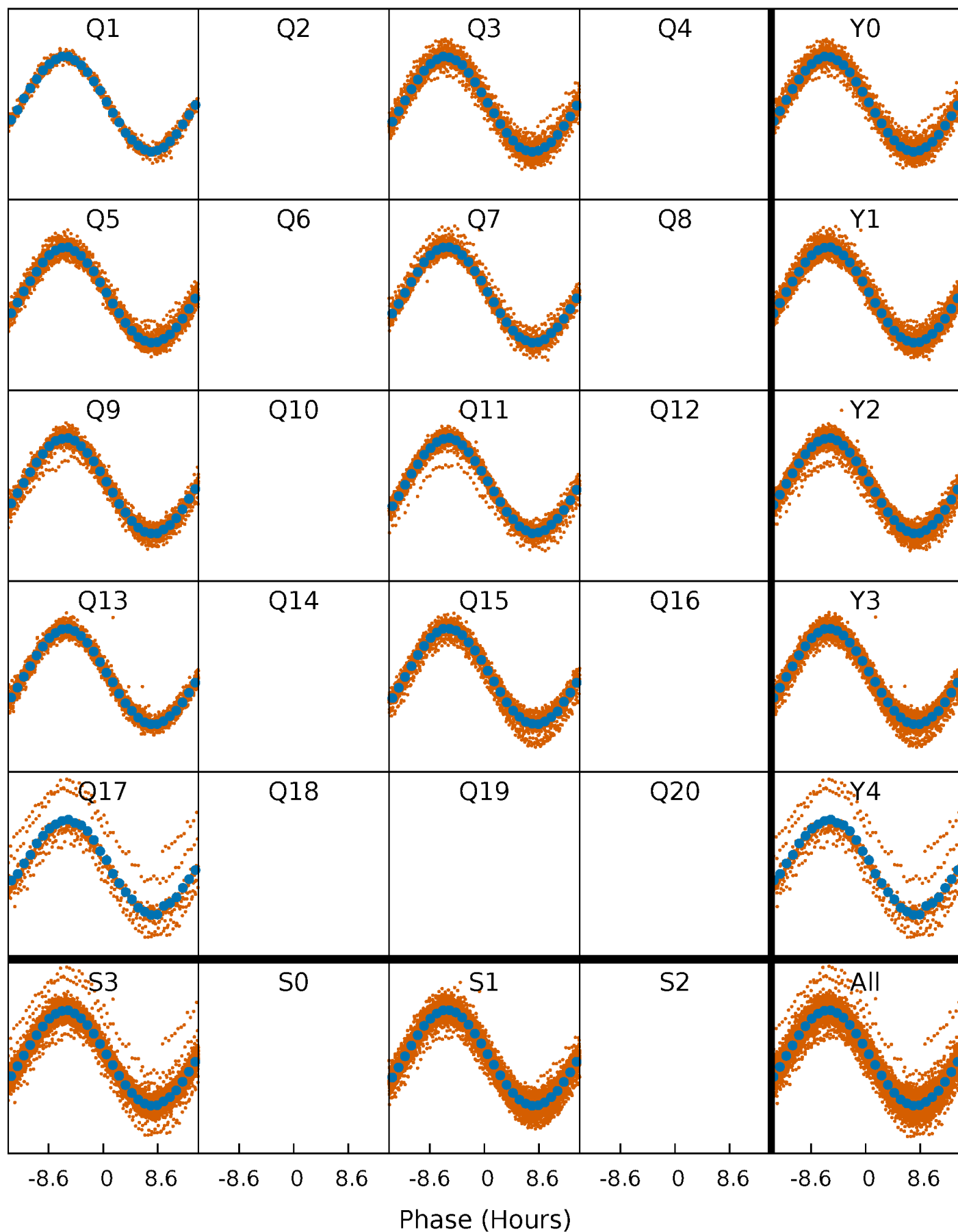


Non-Whitened Vs. Whitened Light Curve



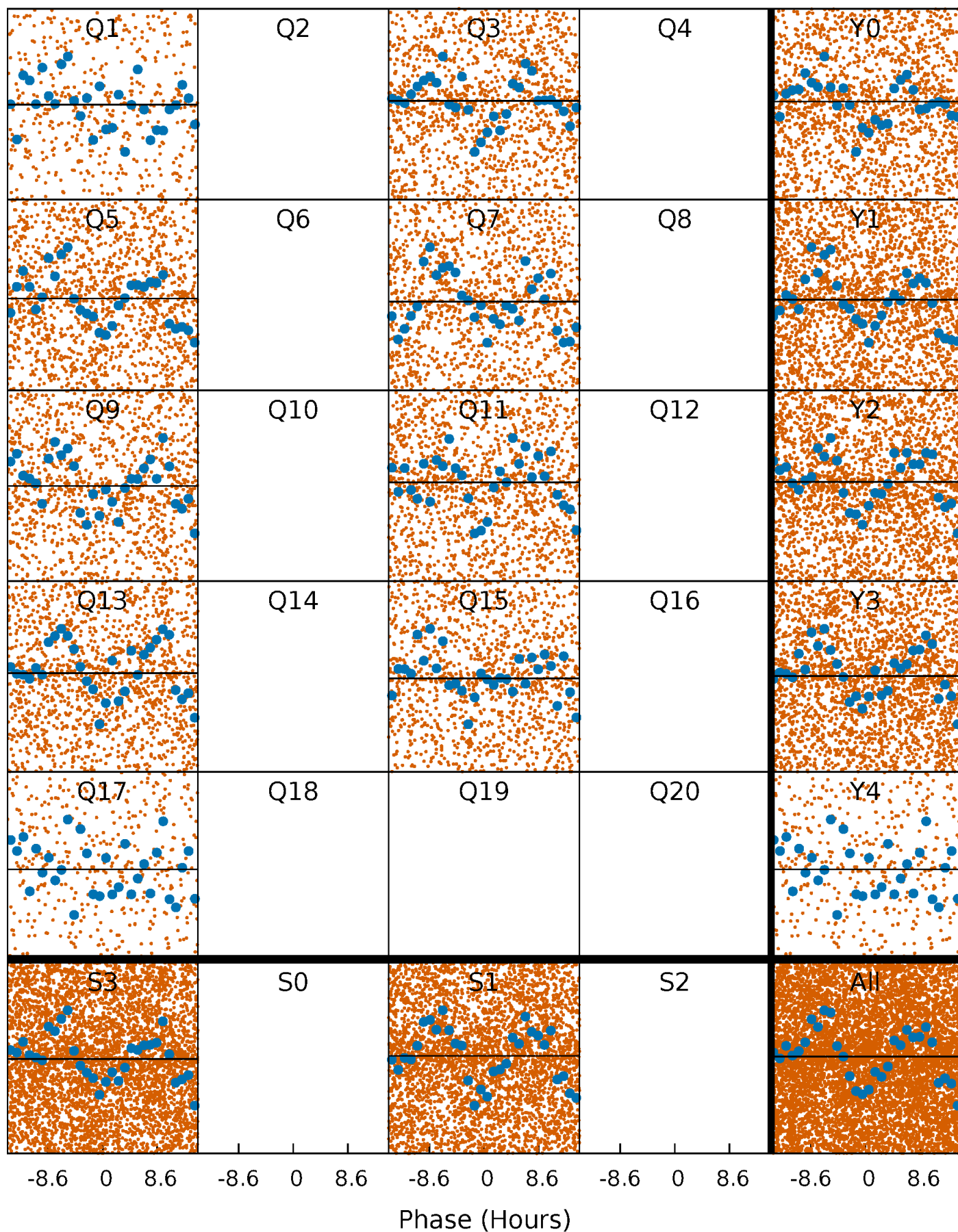
PDC Quarter-Phased Transit Curves

TCE 008362880-01 P= 2.263736 Days $T_0=133.125245$ (BKJD)



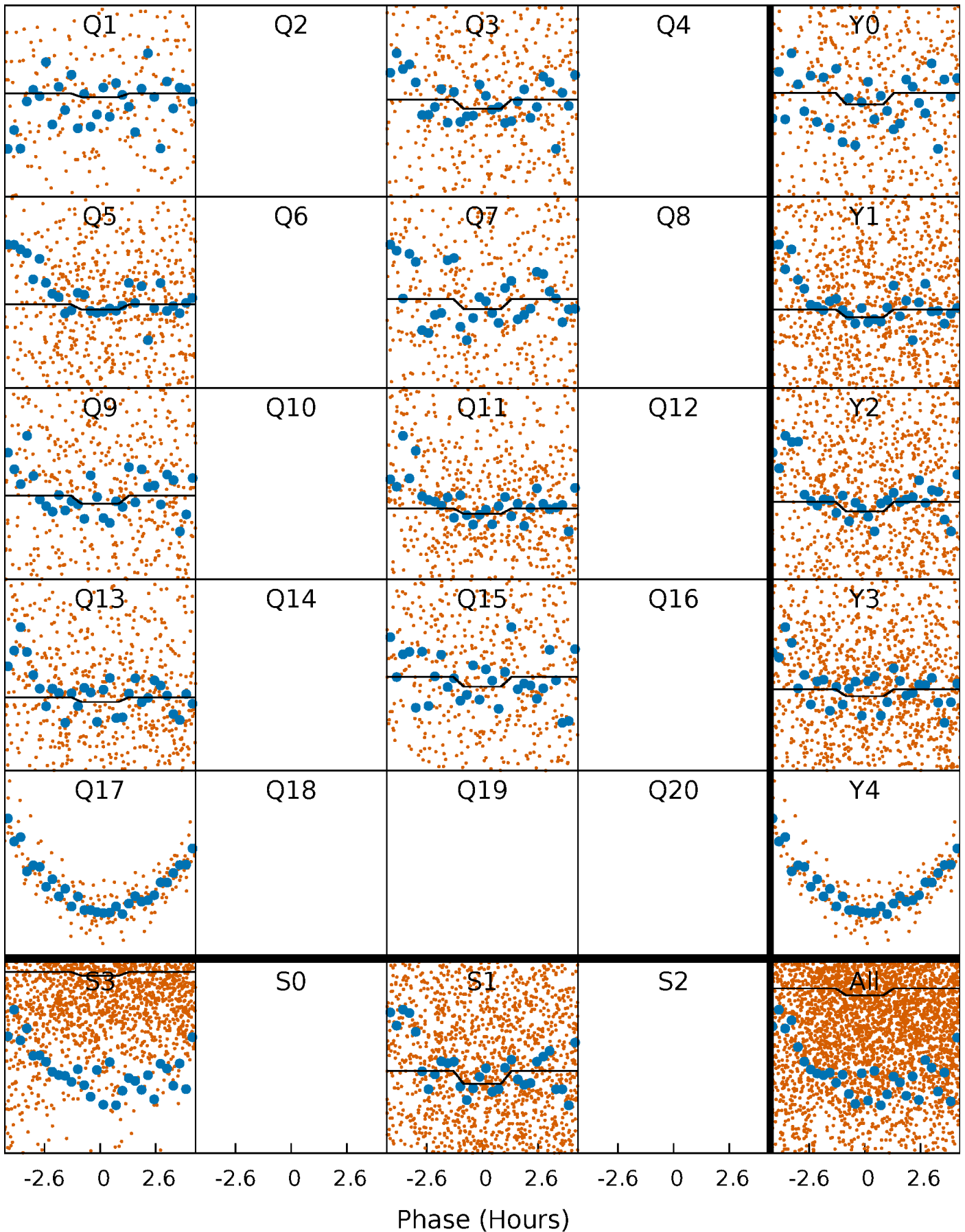
DV Quarter-Phased Transit Curves

TCE 008362880-01 P= 2.263736 Days $T_0=133.125245$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

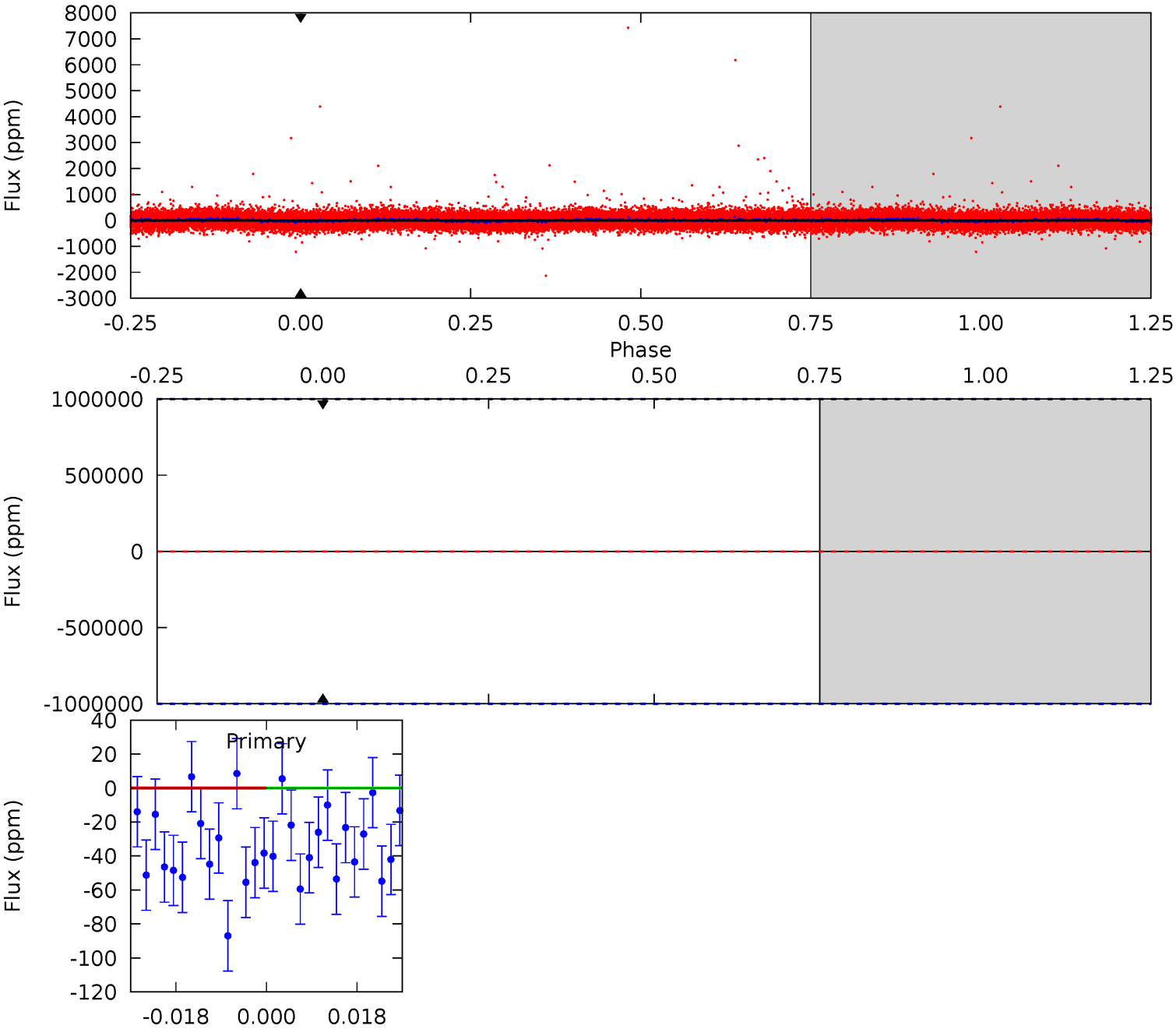
TCE 008362880-01 P= 2.263736 Days $T_0=133.453259$ (BKJD)



DV Model-Shift Uniqueness Test

008362880-01, P = 2.263736 Days, E = 130.861509 Days

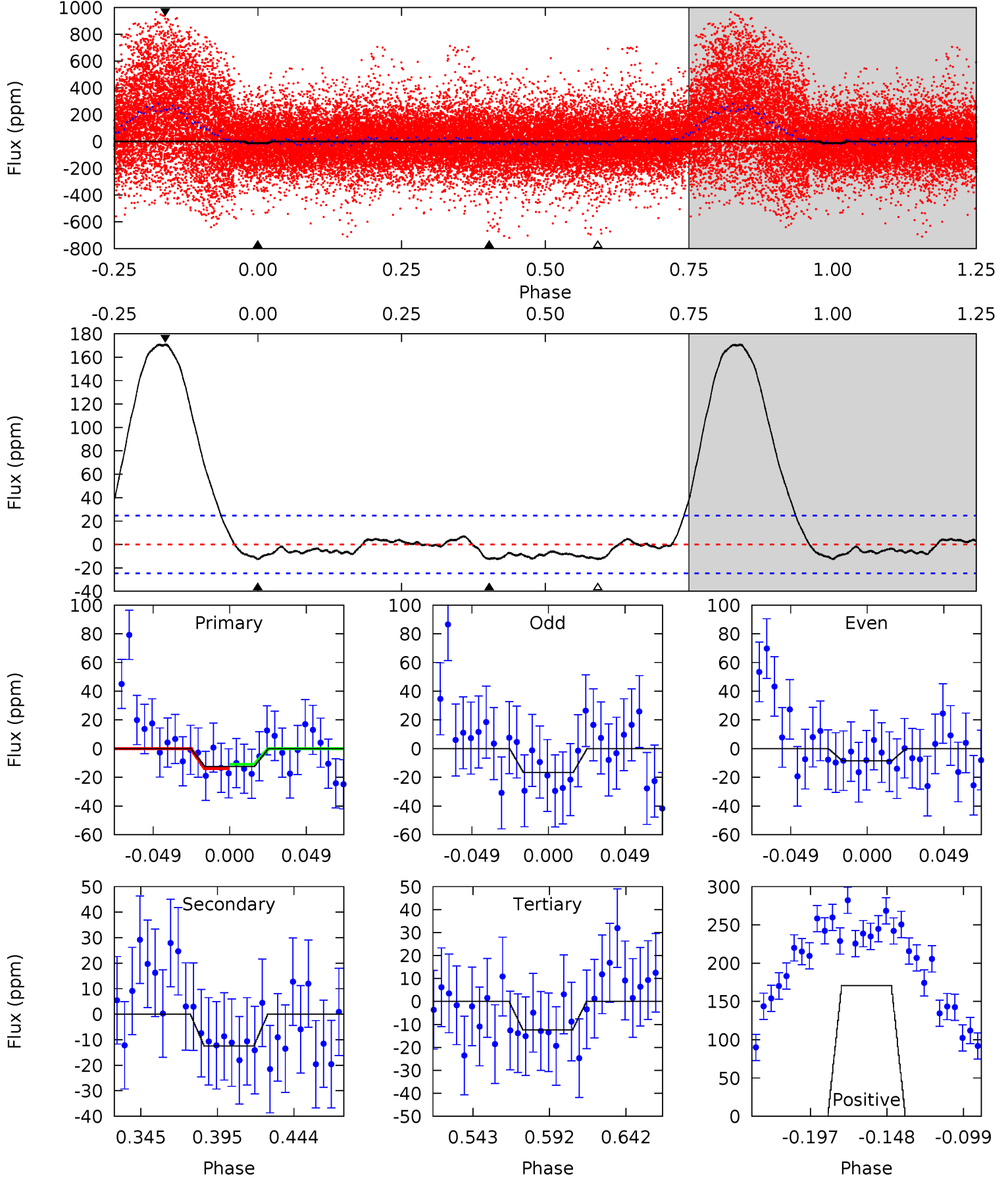
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

008362880-01, P = 2.263736 Days, E = 131.189523 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.39 | 2.38 | 2.37 | 32.7 | 4.71 | 1.97 | 10.4 | 0.02 | -30.3 | 0.01 | -30.3 | 0.79 | 13.6 | 0.93 | 0.27 |



Stellar Parameters For KIC 008362880

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (g \cdot \text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--------------------------------------|
| | 6951^{+192}_{-312} | $4.112^{+0.209}_{-0.171}$ | $-0.320^{+0.300}_{-0.300}$ | $1.678^{+0.478}_{-0.478}$ | $1.333^{+0.179}_{-0.247}$ | $0.398^{+0.470}_{-0.187}$ |
| | +3%/-4% | +5%/-4% | +94%/-94% | +28%/-28% | +13%/-19% | +118%/-47% |
| 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 008362880-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|--------------------------|----------------------|---------------------------|--------------------------------|
| DV | 0 ± 1000000 | $12.94^{+13.70}_{-9.11}$ | 2880^{+193}_{-233} | -5120^{+43569}_{-32981} | $-5.964^{+930.432}_{-858.196}$ |
| Alt. | -12 ± 5 | $12.38^{+12.97}_{-8.99}$ | 2857^{+220}_{-226} | -2867^{+6003}_{-187} | $0.055^{+0.663}_{-0.043}$ |

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 $A_{obs} \gg 1.0$

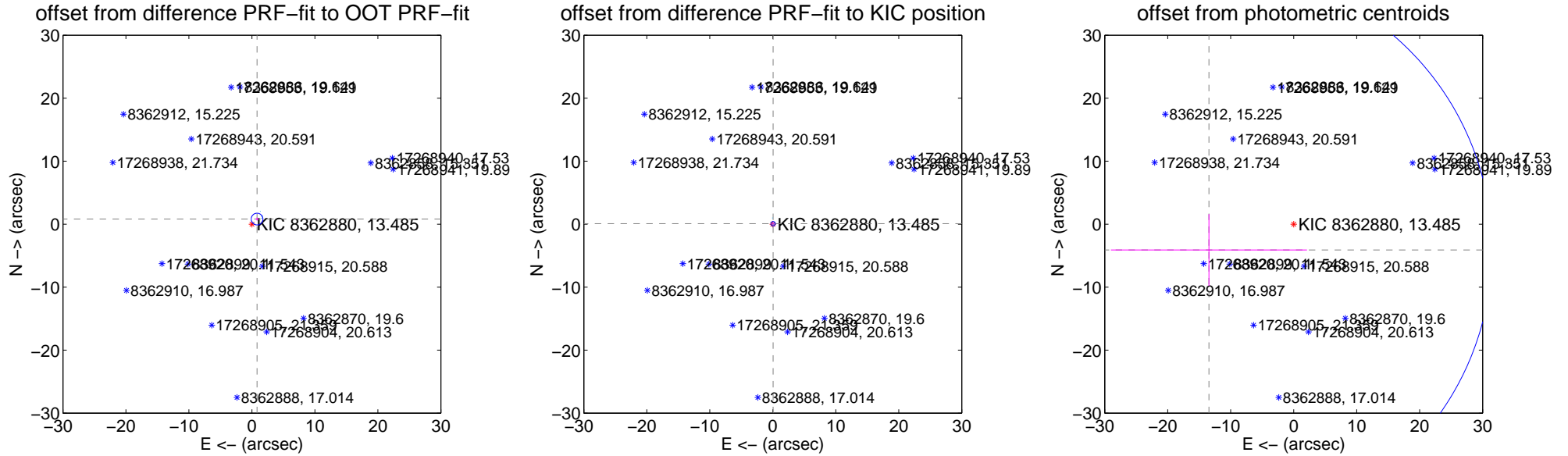
DV Centroid Data

Supplemental centroid analysis for 008362880-01. Kepler magnitude: 13.48. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

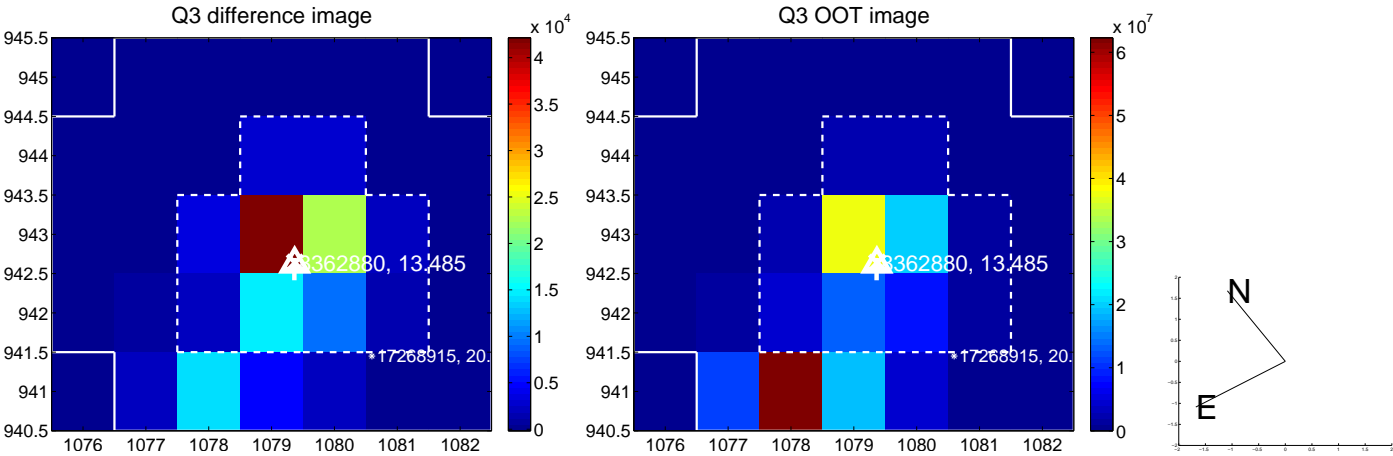
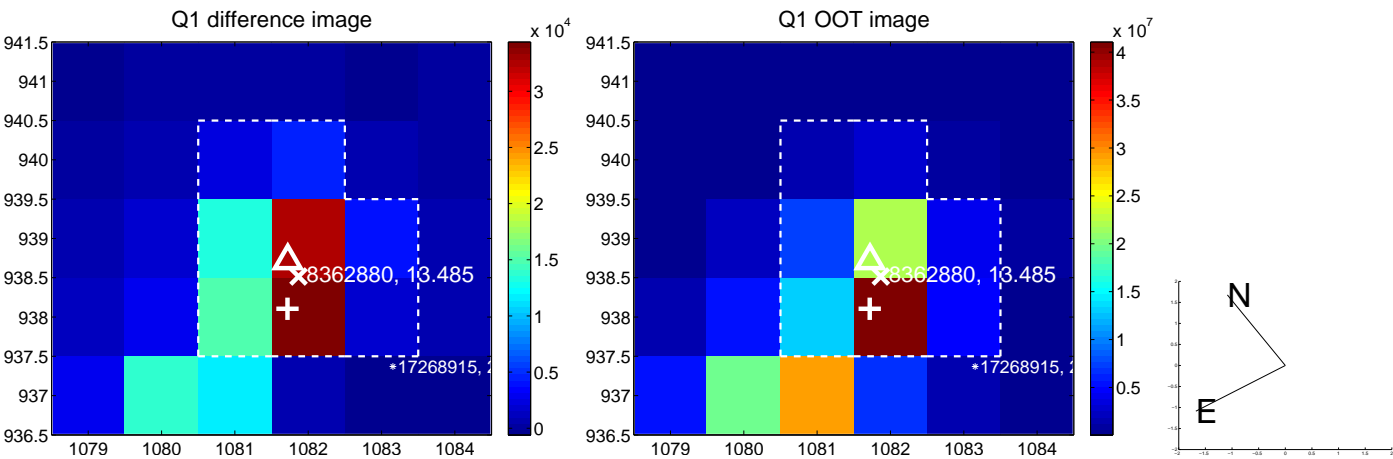
The direct PRF centroid is offset from the target star catalog position by about 1.74 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.152 \pm 0.311 | 3.71 | -0.819 \pm 0.230 | 0.810 \pm 0.231 |
| PRF-fit source offset from KIC position | 0.085 \pm 0.116 | 0.73 | -0.044 \pm 0.077 | 0.072 \pm 0.135 |
| photometric centroid source offset | 14.06 \pm 14.98 | 0.94 | 13.45 \pm 15.56 | -4.10 \pm 5.69 |

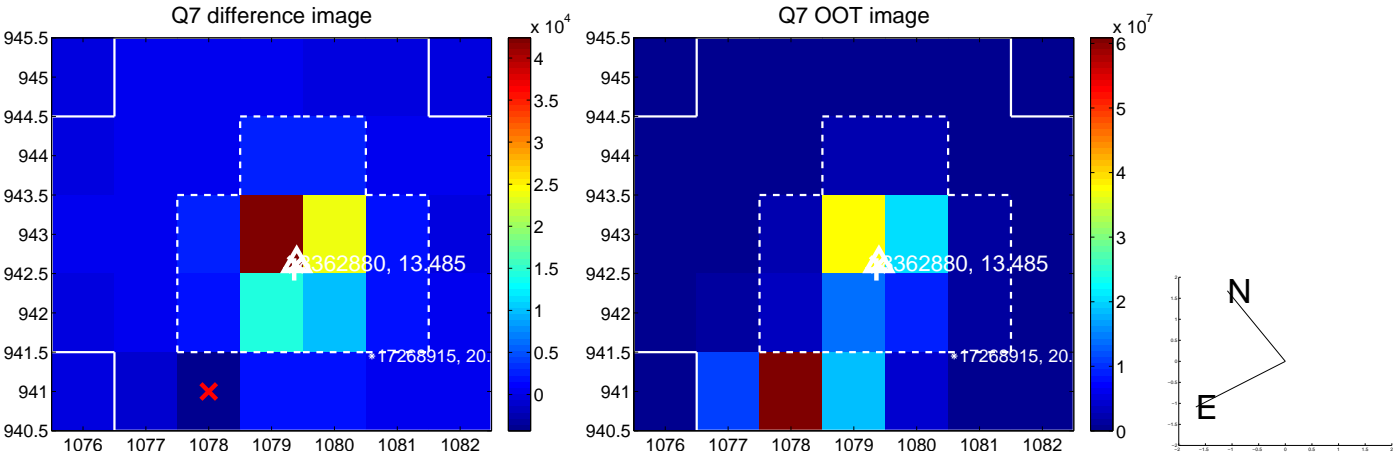
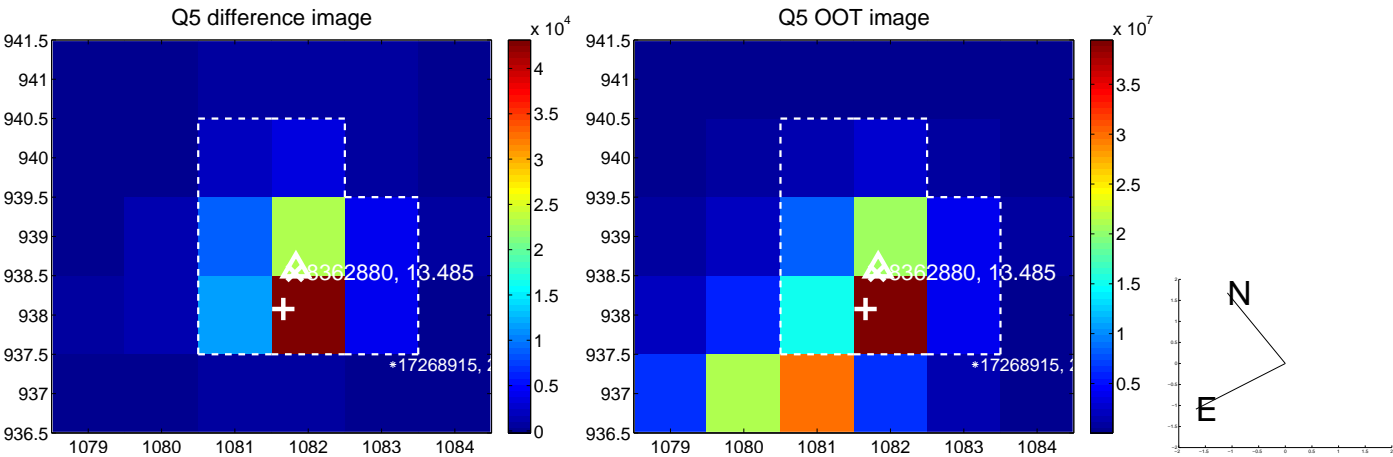


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

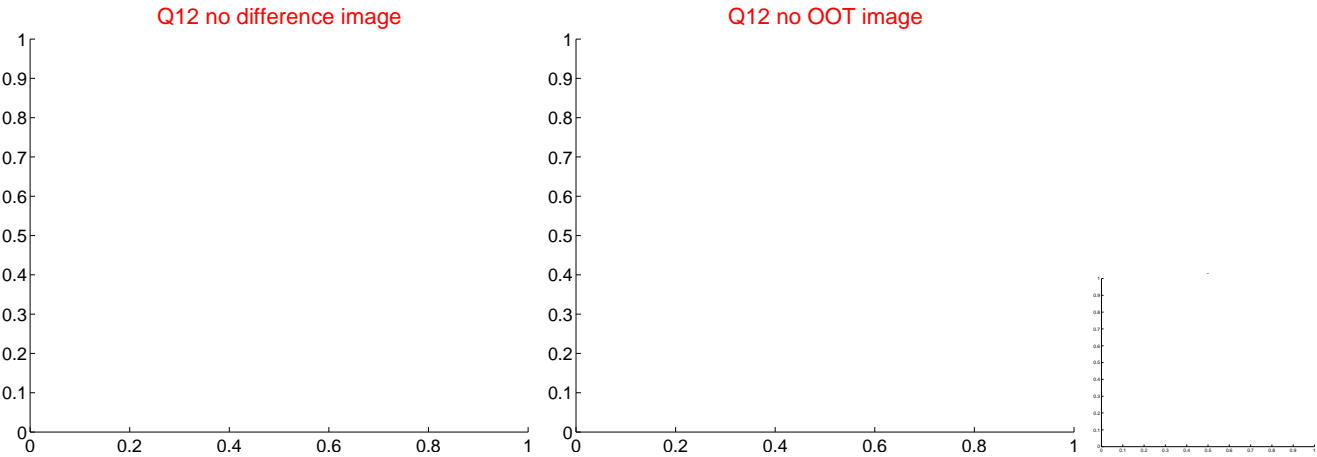
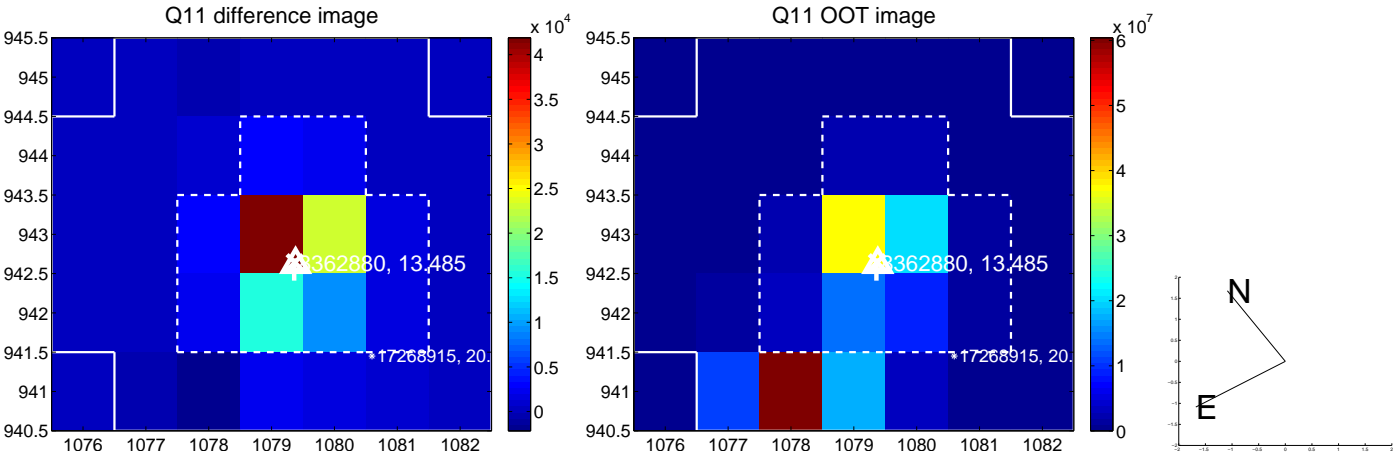
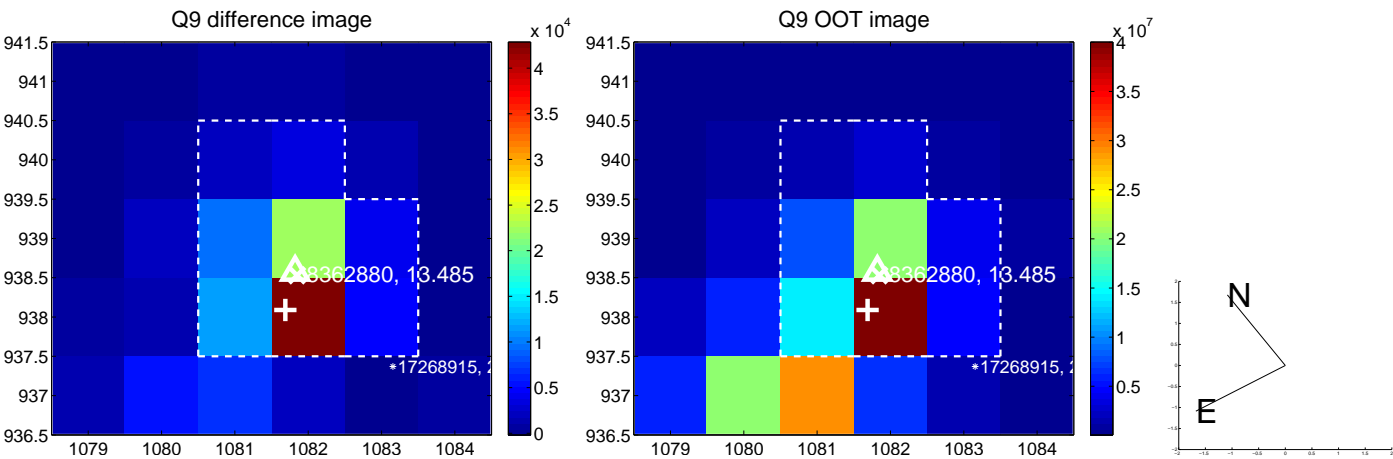
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



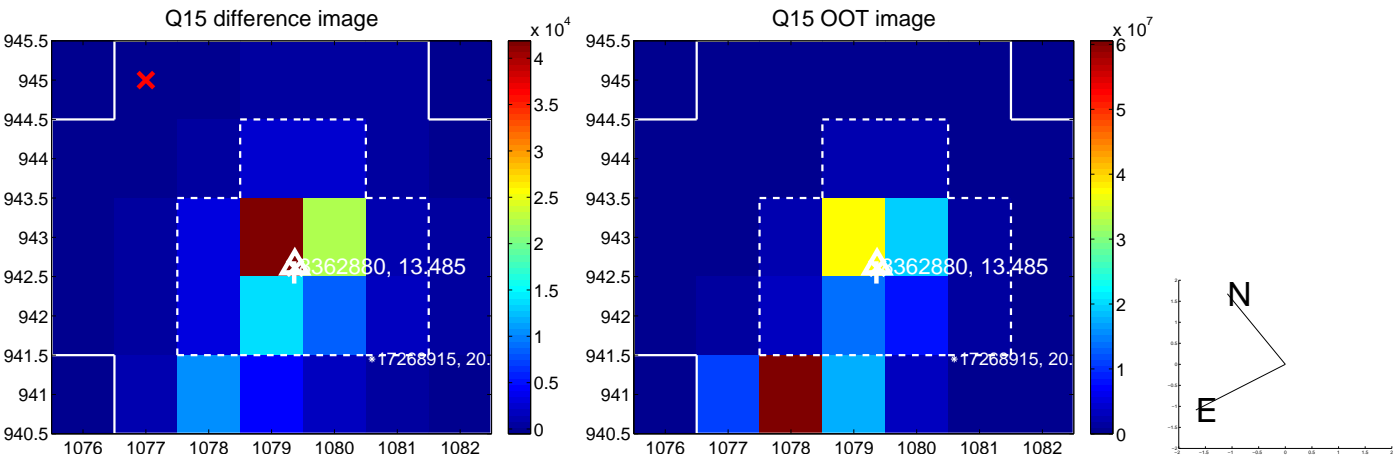
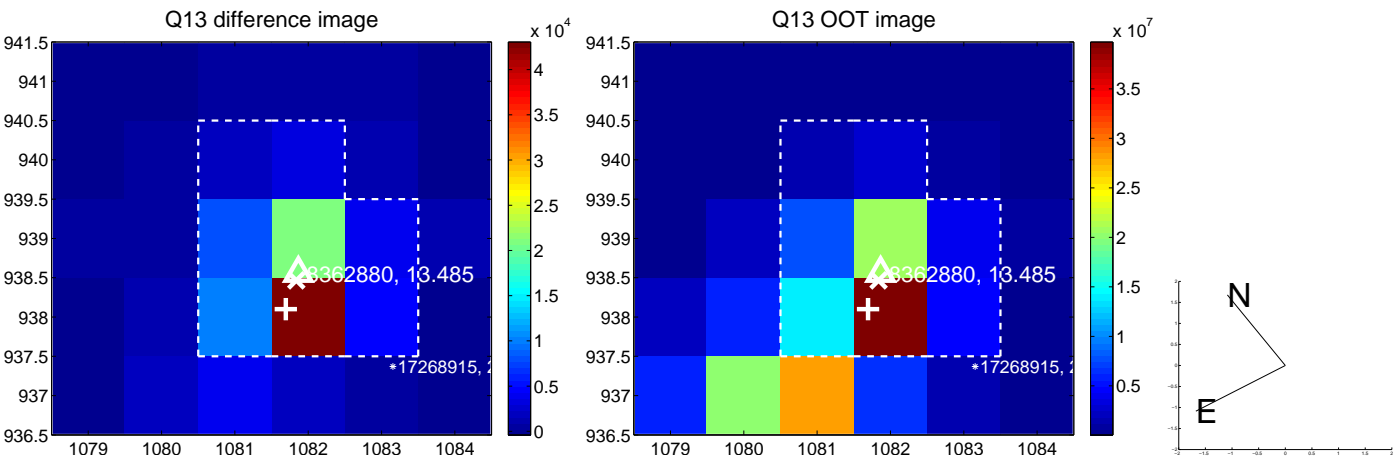
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



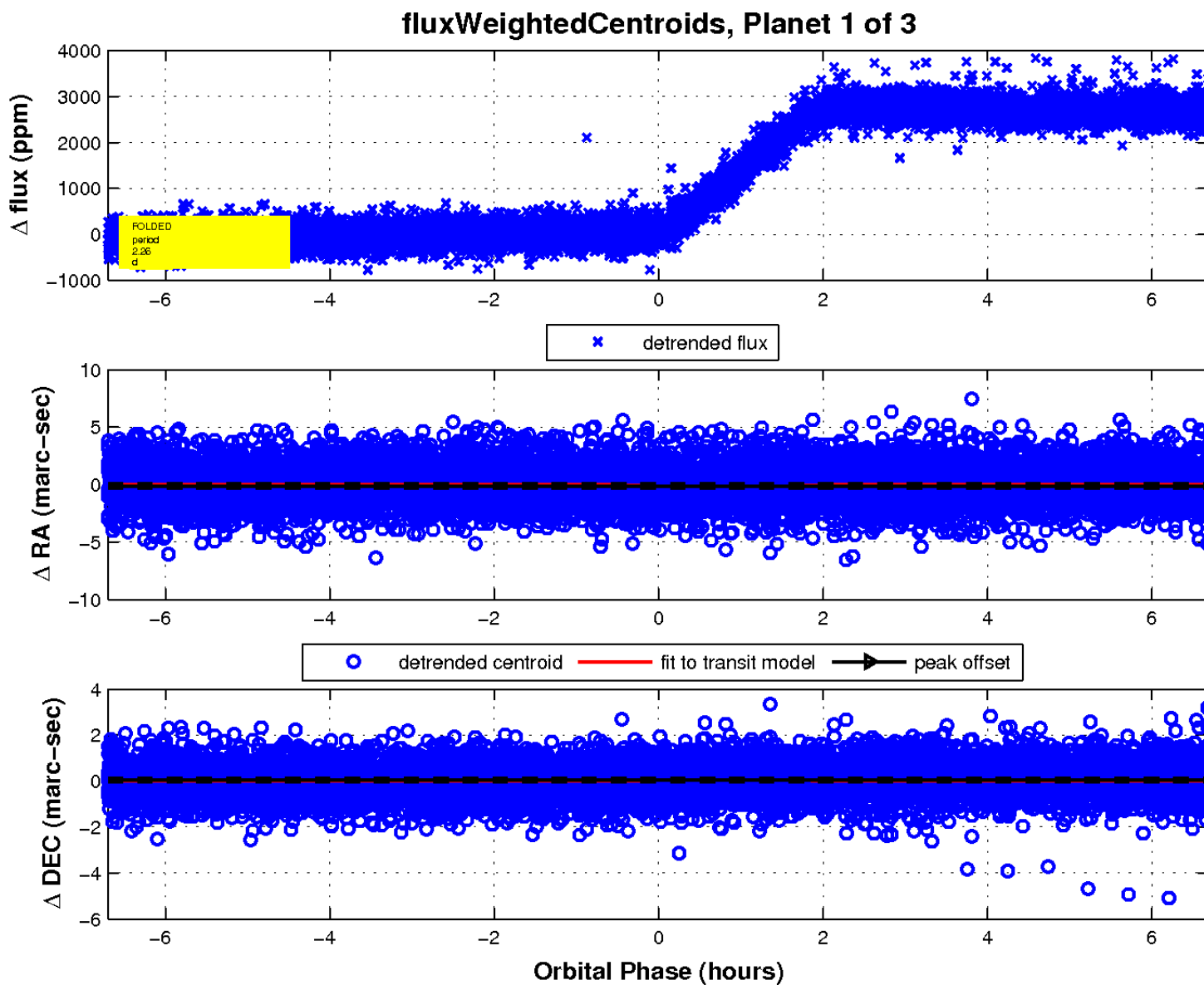
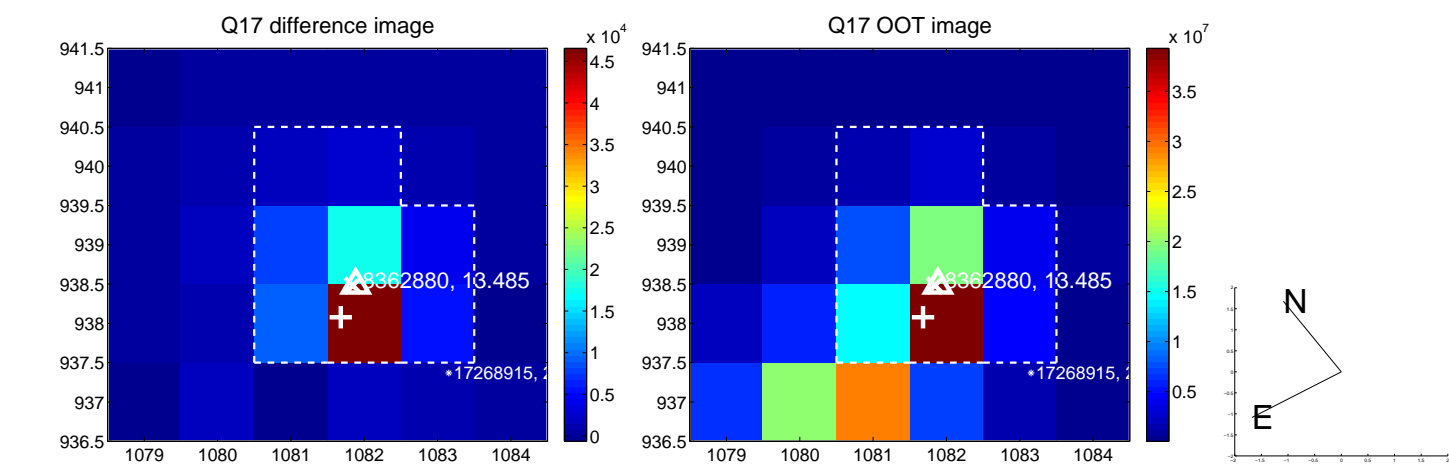
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

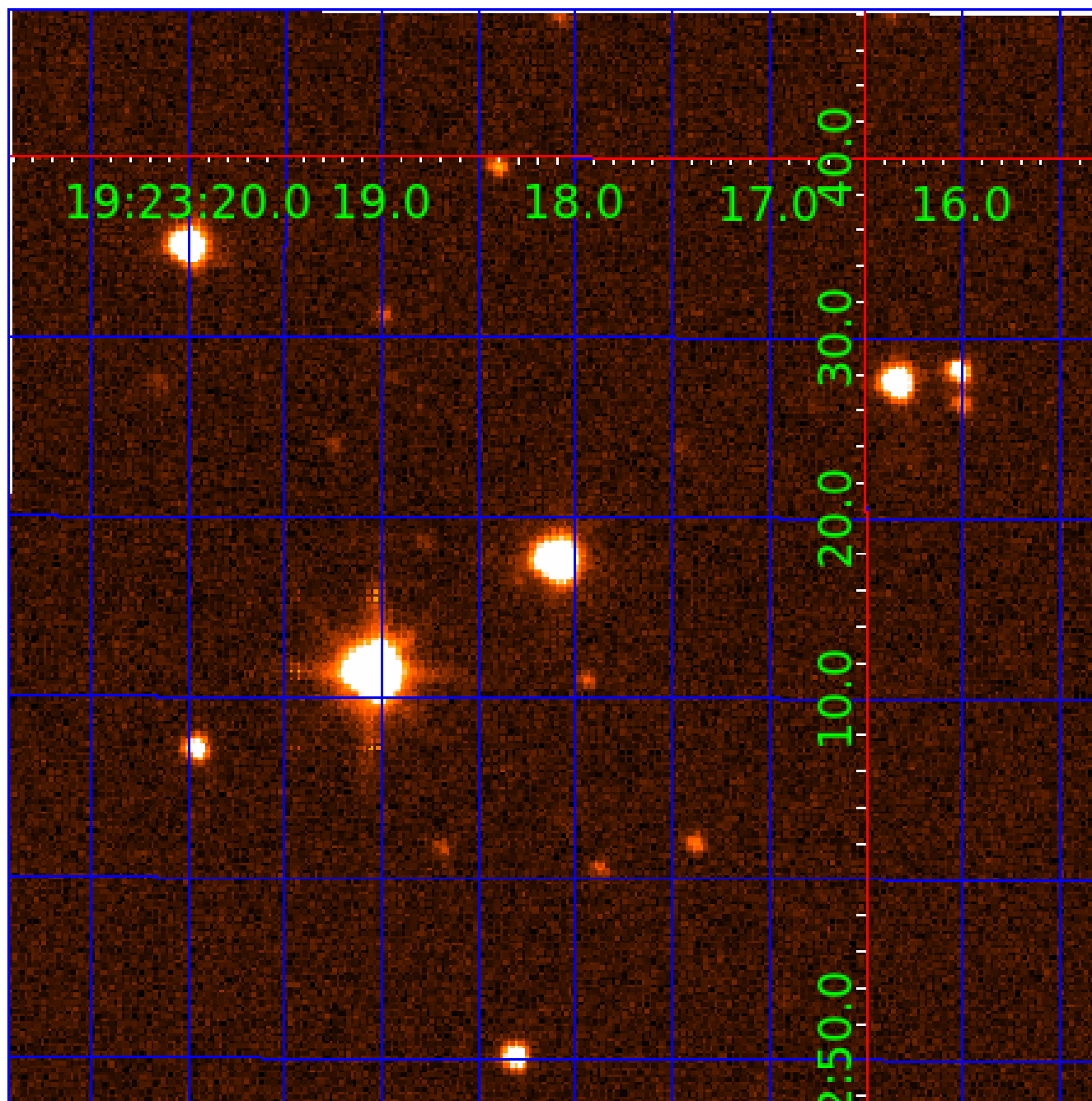


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008362880

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008362880-01 | OBS | No | 2.263736 | 133.125245 | 182.9 | 7.500 | 9.3 | -1.0 | 1.68 | 6951 | 2.29 | 4277.37 |
| 008362880-02 | OBS | No | 577.149654 | 303.576370 | 1189.0 | 14.495 | 17.0 | 9.9 | 1.68 | 6951 | 10.74 | 2.65 |
| 008362880-03 | OBS | No | 2.263736 | 131.545050 | 128.8 | 7.500 | 10.1 | -1.0 | 1.68 | 6951 | 1.93 | 4277.37 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008362880-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |
| 008362880-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008362880-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS |

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

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

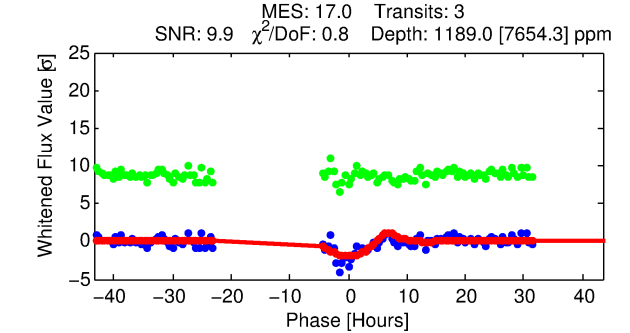
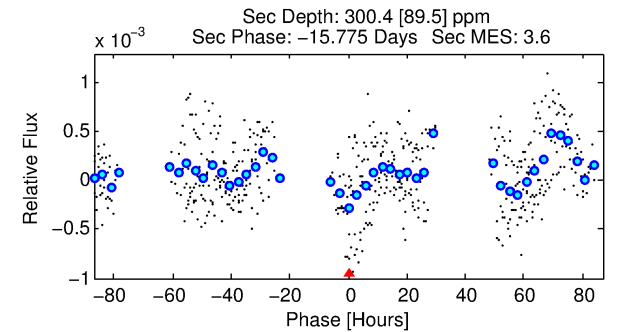
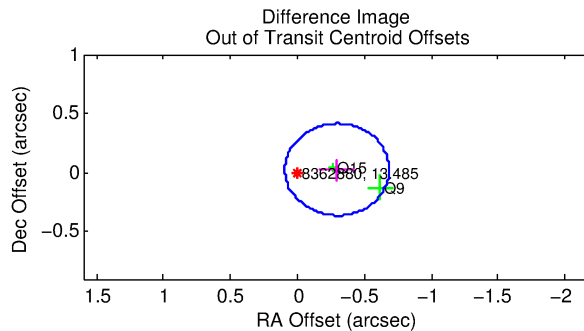
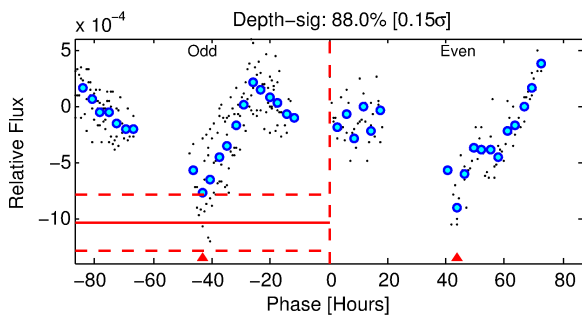
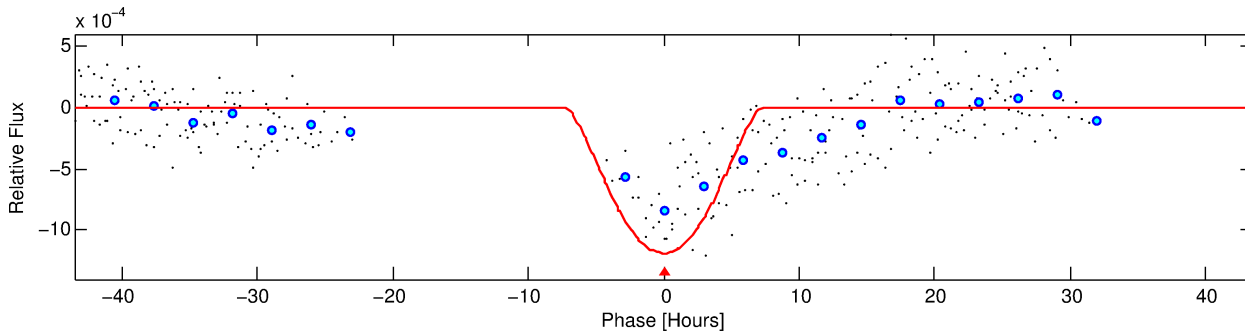
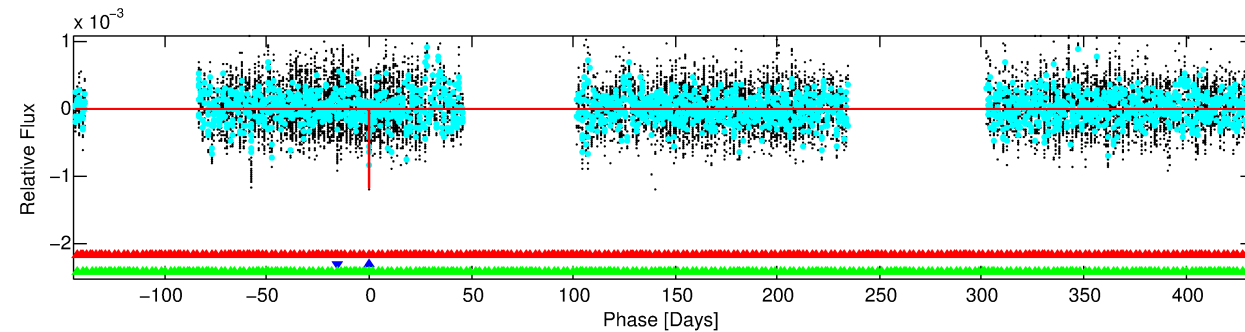
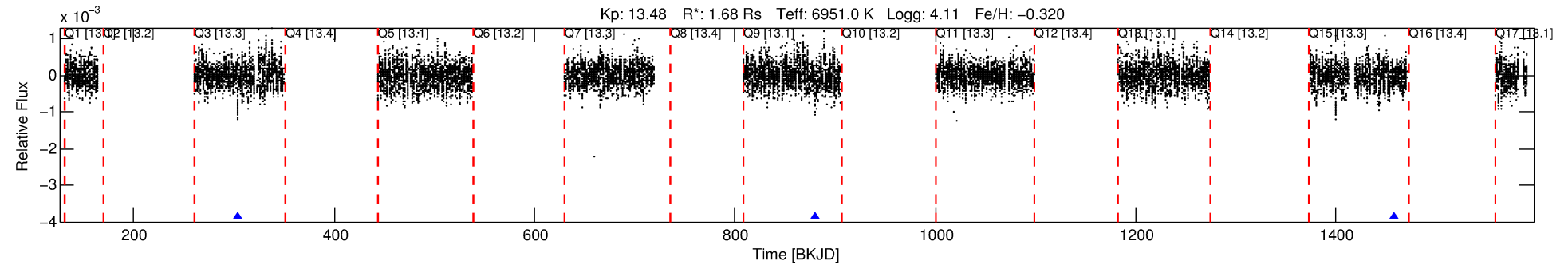
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008362880-02

No Significant Match Found

DV One-Page Summary

KIC: 8362880 Candidate: 2 of 3 Period: 577.150 d



DV Fit Results:

Period = 577.14965 [0.01364] d
Epoch = 303.5764 [0.0212] BKJD
Rp/R* = 0.0587 [0.0787]
a/R* = 105.71 [35.09]
b = 1.00 [0.15]
Seff = 2.65 [1.09]
Teq = 325 [34] K
Rp = 10.74 [14.73] Re
a = 1.4919 [0.3709] AU
Ag = 3188.46 [8690.58] [0.37 σ]
Teffp = 3778 [2556] K [1.35 σ]

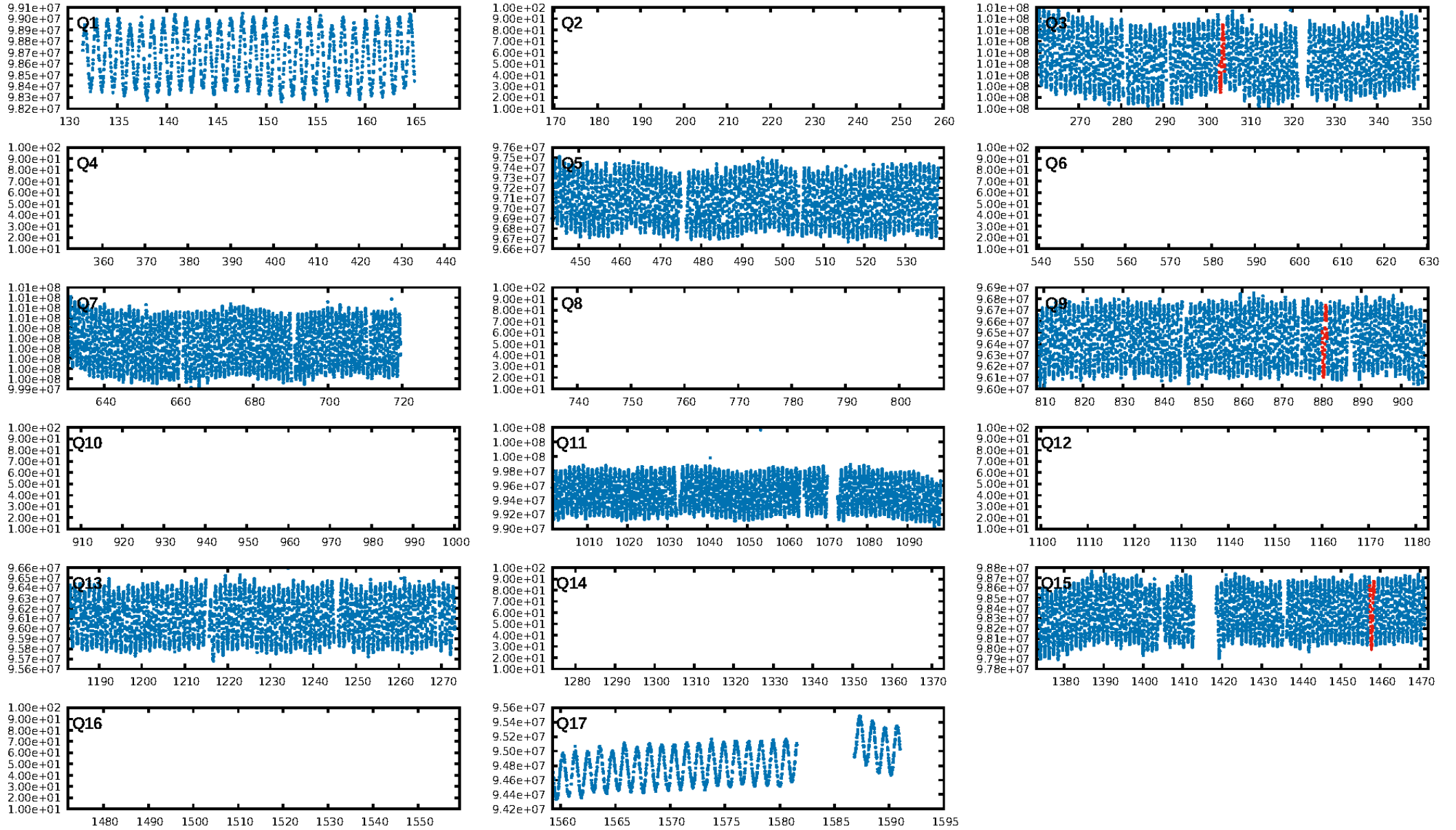
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [845.42 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.19e-33
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.746
Centroid-sig: 0.0%
Centroid-so: 1.473 arcsec [1.39 σ]
OotOffset-rm: 0.296 arcsec [2.29 σ]
KicOffset-rm: 0.273 arcsec [0.75 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/3]

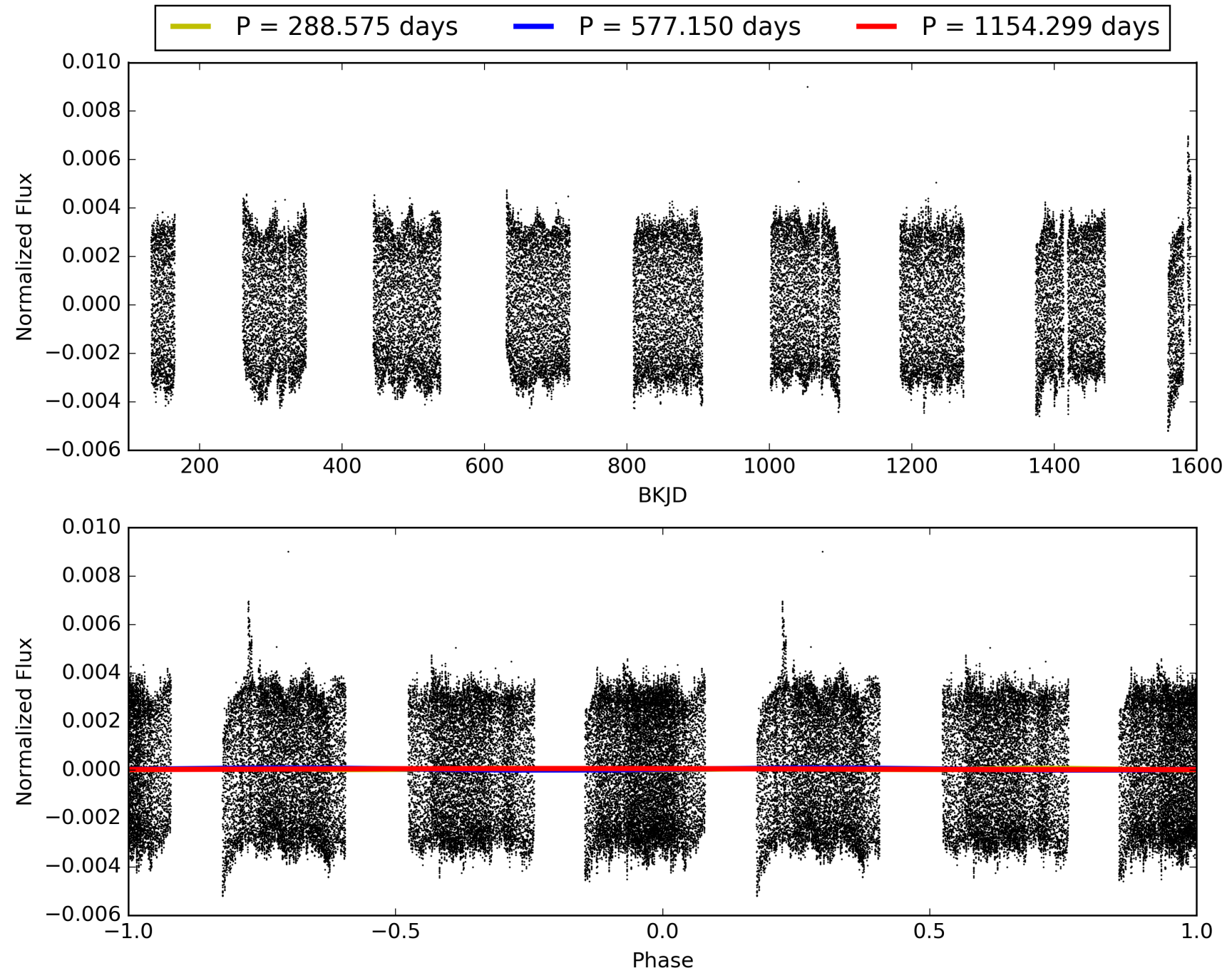
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:37:48 Z

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

TCE 008362880-02, PDC Light Curves

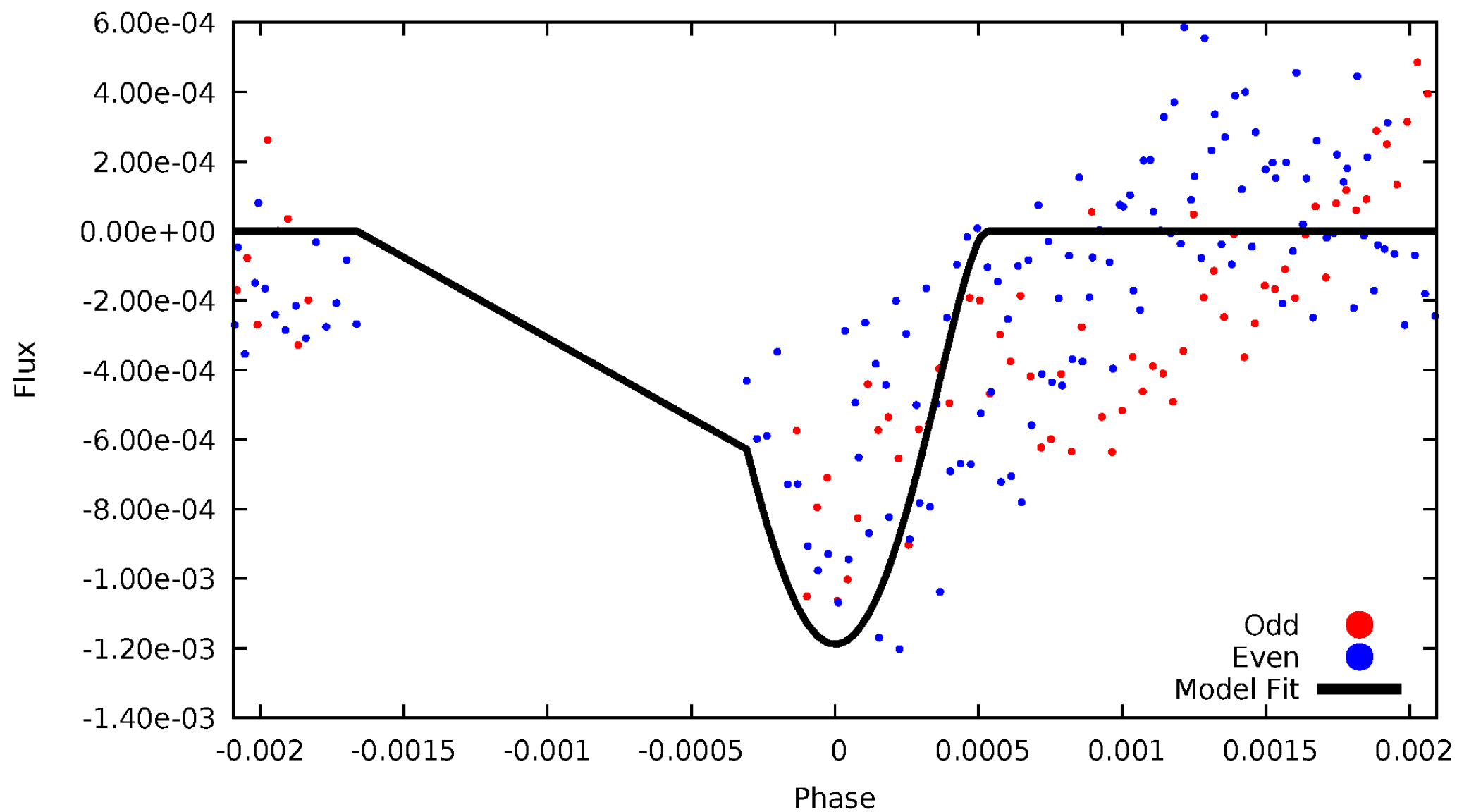


TCE 008362880-02



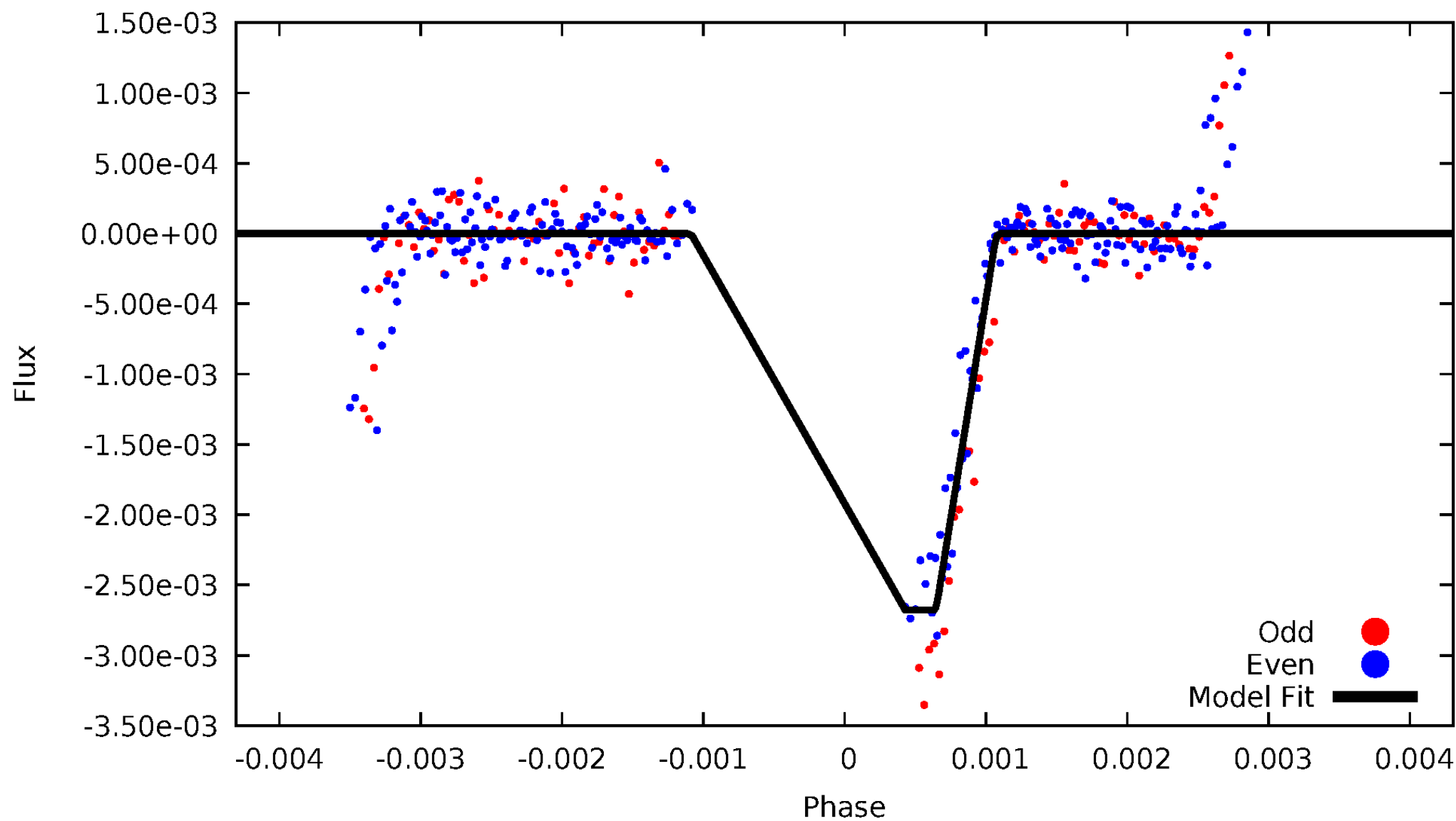
DV Odd/Even

TCE 008362880-02



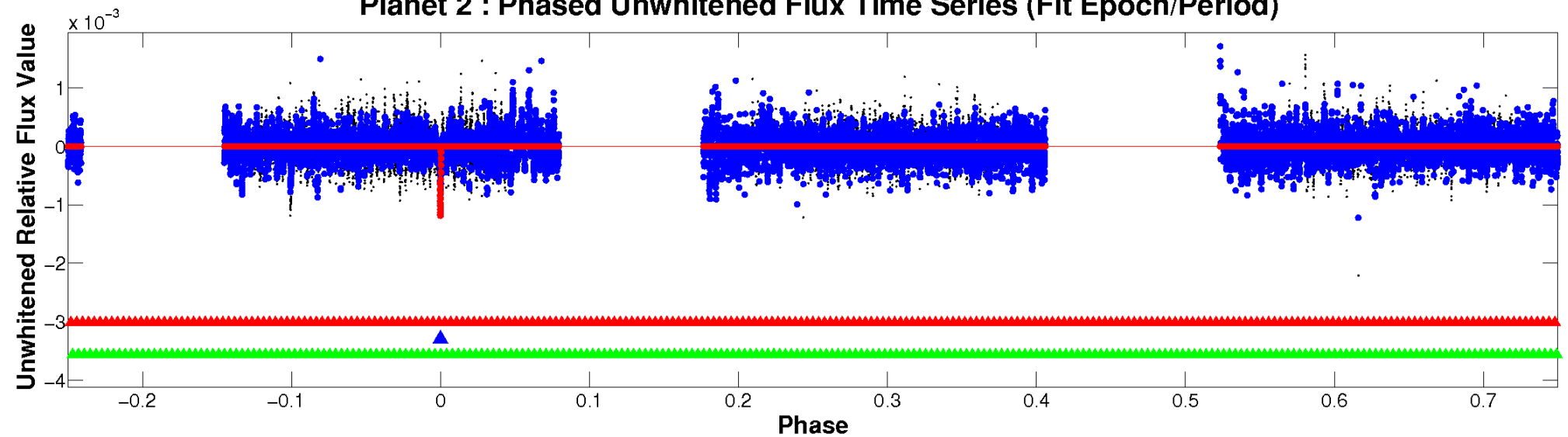
ALT Odd/Even

TCE 008362880-02

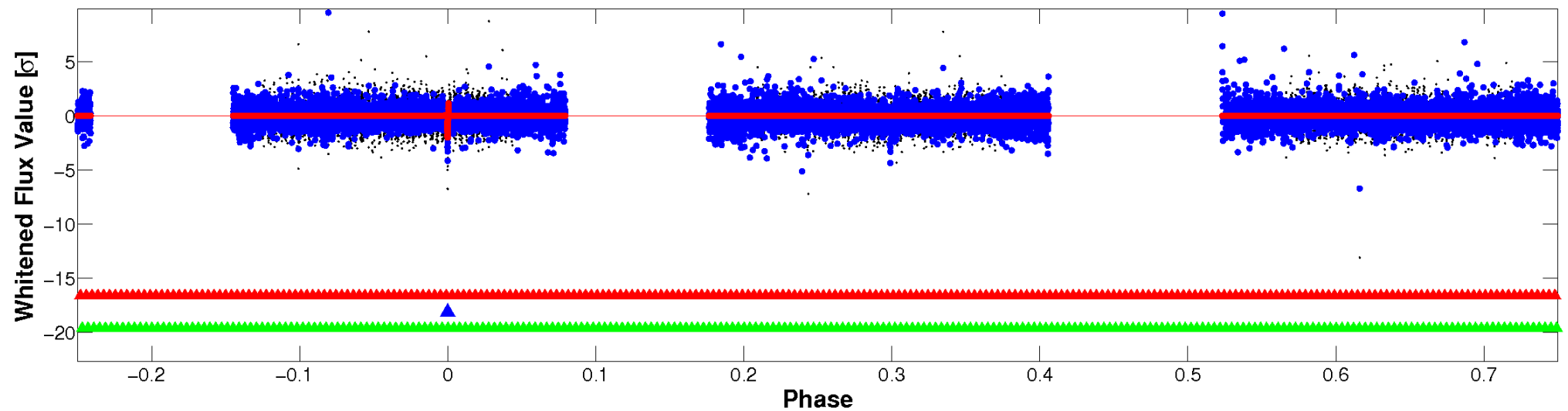


Non-Whitened Vs. Whitened Light Curve

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

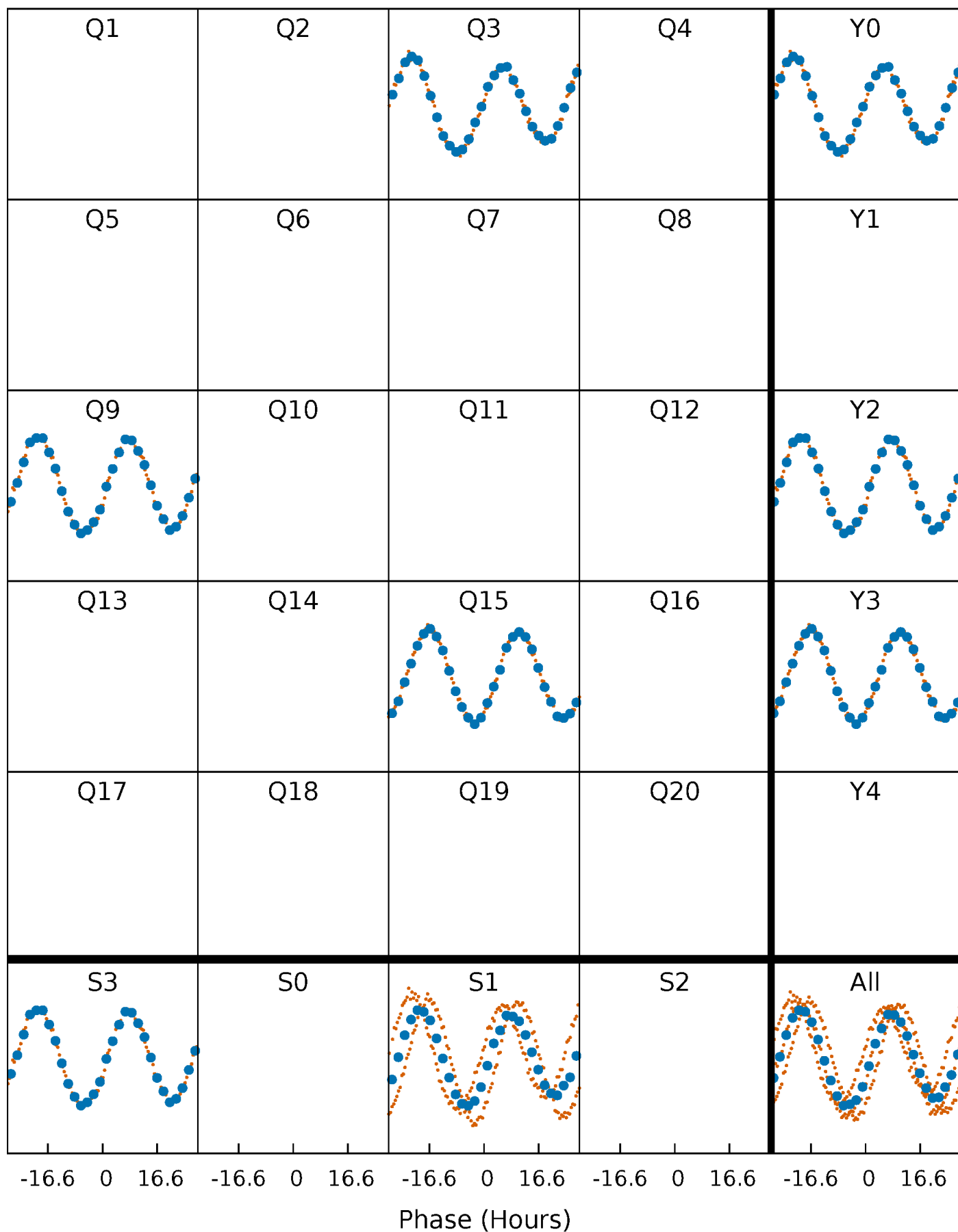


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



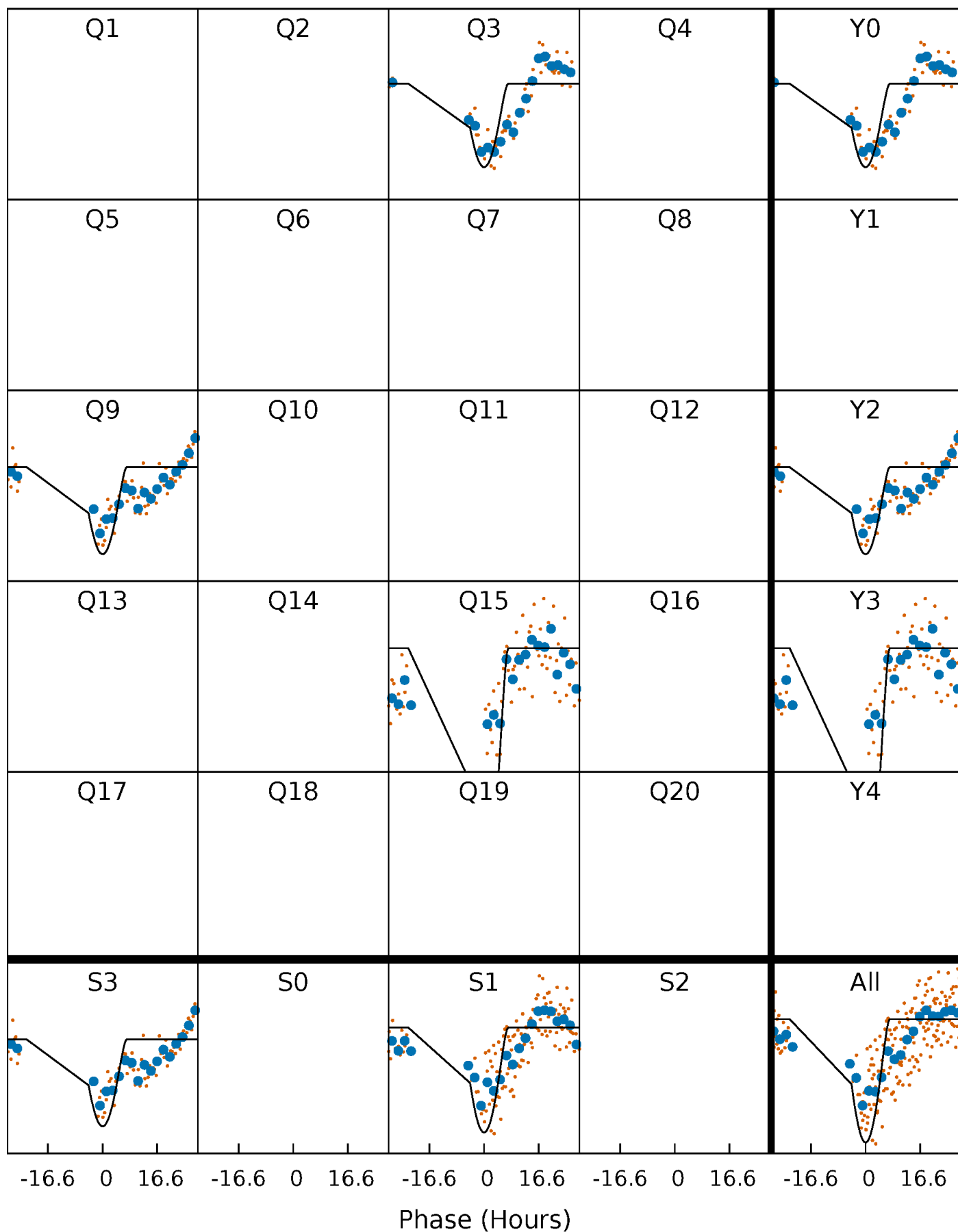
PDC Quarter-Phased Transit Curves

TCE 008362880-02 $P=577.149654$ Days $T_0=303.576370$ (BKJD)



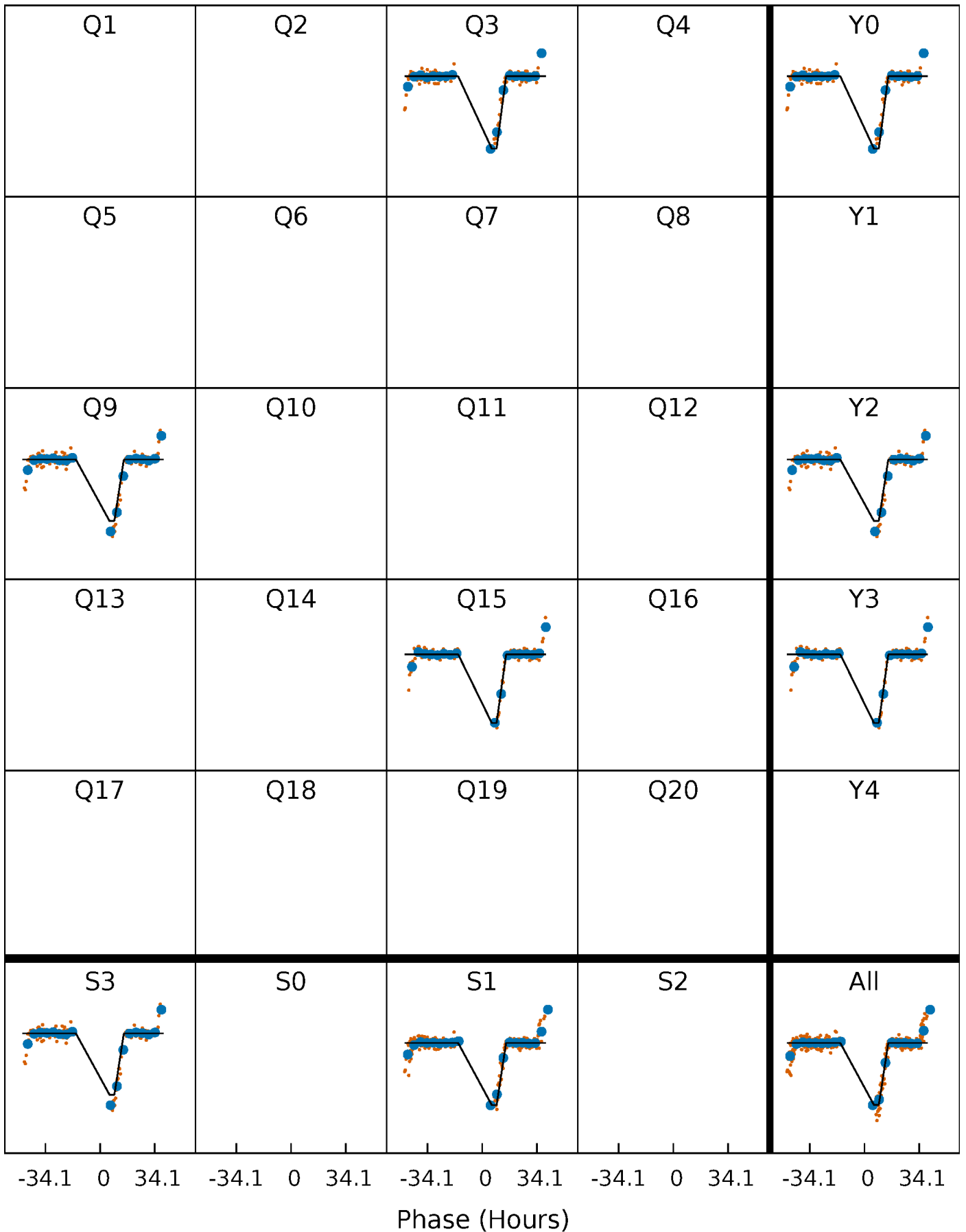
DV Quarter-Phased Transit Curves

TCE 008362880-02 $P=577.149654$ Days $T_0=303.576370$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

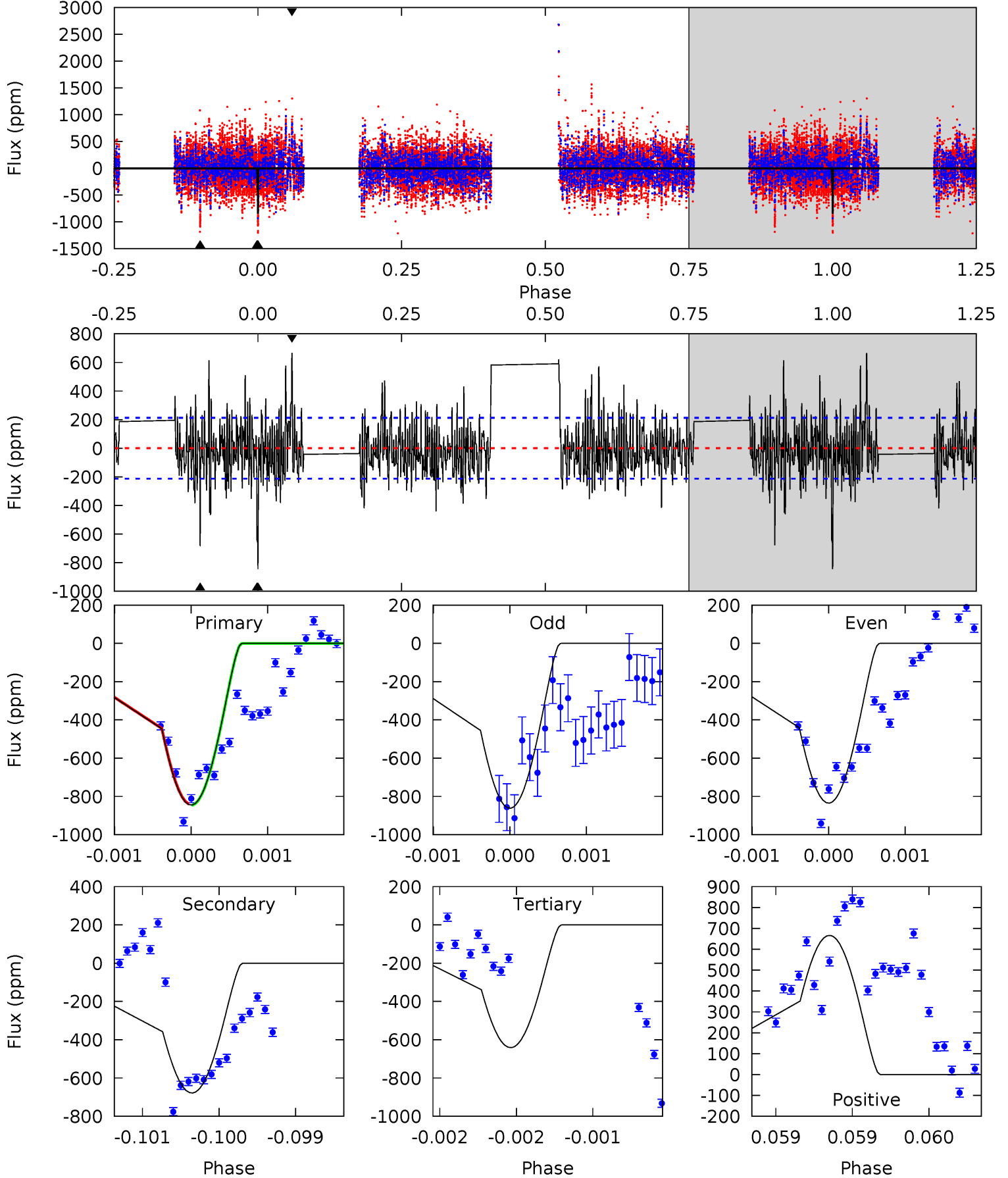
TCE 008362880-02 P=577.193581 Days $T_0=303.151112$ (BKJD)



DV Model-Shift Uniqueness Test

008362880-02, P = 577.149654 Days, E = 303.576370 Days

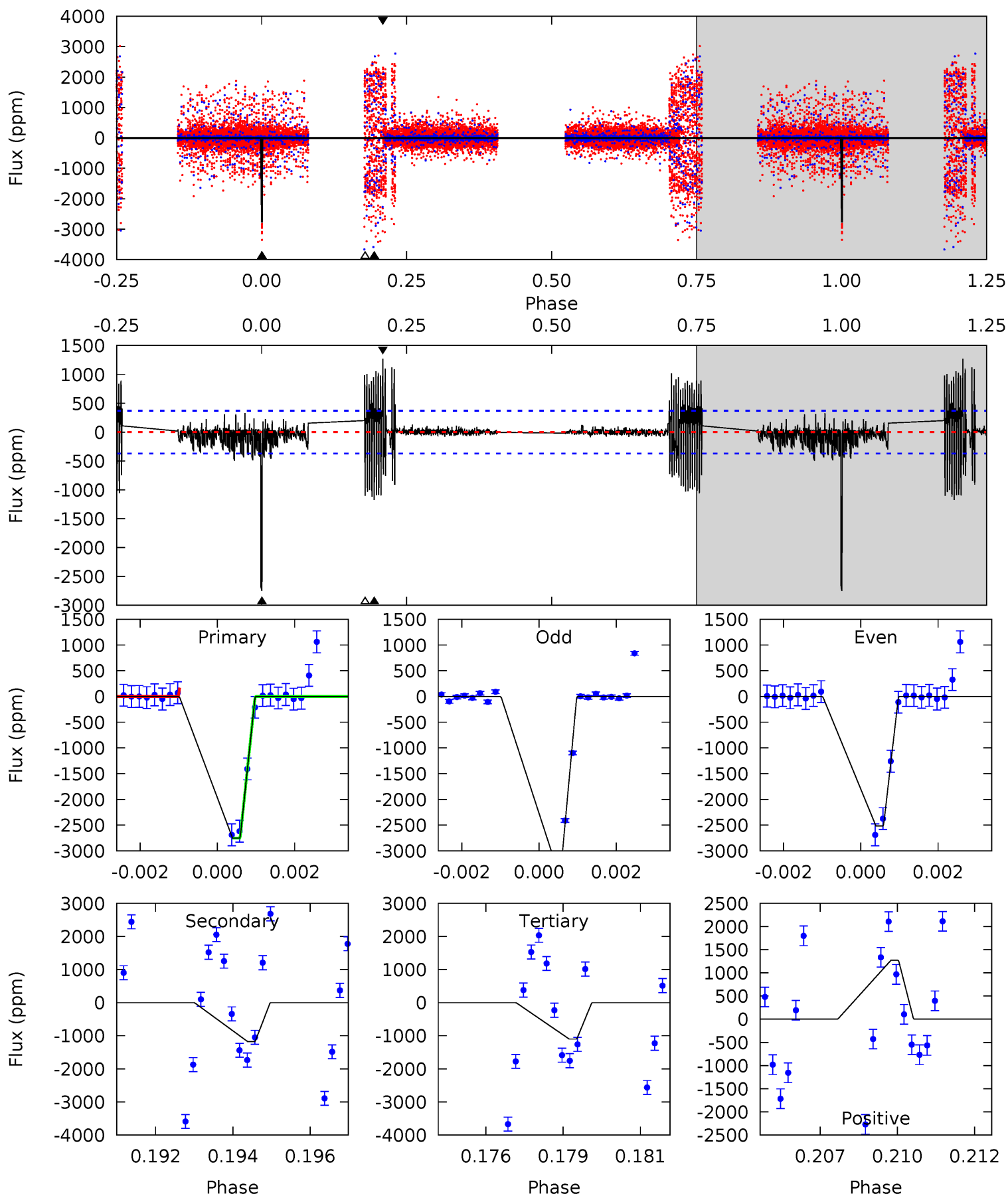
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.8 | 17.5 | 16.5 | 17.2 | 5.49 | 3.35 | 4.11 | 5.24 | 4.60 | 0.95 | 0.30 | 0.34 | 0.90 | 0.44 | 0.06 |



Alt Model-Shift Uniqueness Test

008362880-02, P = 577.193581 Days, E = 303.151112 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 39.3 | 16.8 | 15.7 | 18.2 | 5.31 | 3.06 | 2.94 | 23.6 | 21.2 | 1.07 | -1.37 | 5.35 | 0.98 | 0.32 | 5.44 |



Stellar Parameters For KIC 008362880

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6951^{+192}_{-312} | $4.112^{+0.209}_{-0.171}$ | $-0.320^{+0.300}_{-0.300}$ | $1.678^{+0.478}_{-0.478}$ | $1.333^{+0.179}_{-0.247}$ | $0.398^{+0.470}_{-0.187}$ |
| | +3%/-4% | +5%/-4% | +94%/-94% | +28%/-28% | +13%/-19% | +118%/-47% |
| 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 008362880-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|----------------|--------------------------|-------------------|-----------------------|-------------------------|
| DV | -678 ± 39 | $14.06^{+13.18}_{-8.94}$ | 451^{+38}_{-34} | 4173^{+2338}_{-777} | 4190^{+26200}_{-3110} |
| Alt. | -1174 ± 70 | $13.56^{+13.34}_{-9.24}$ | 447^{+39}_{-34} | 4688^{+3637}_{-940} | 7696^{+65031}_{-5713} |

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 $A_{obs} \gg 1.0$

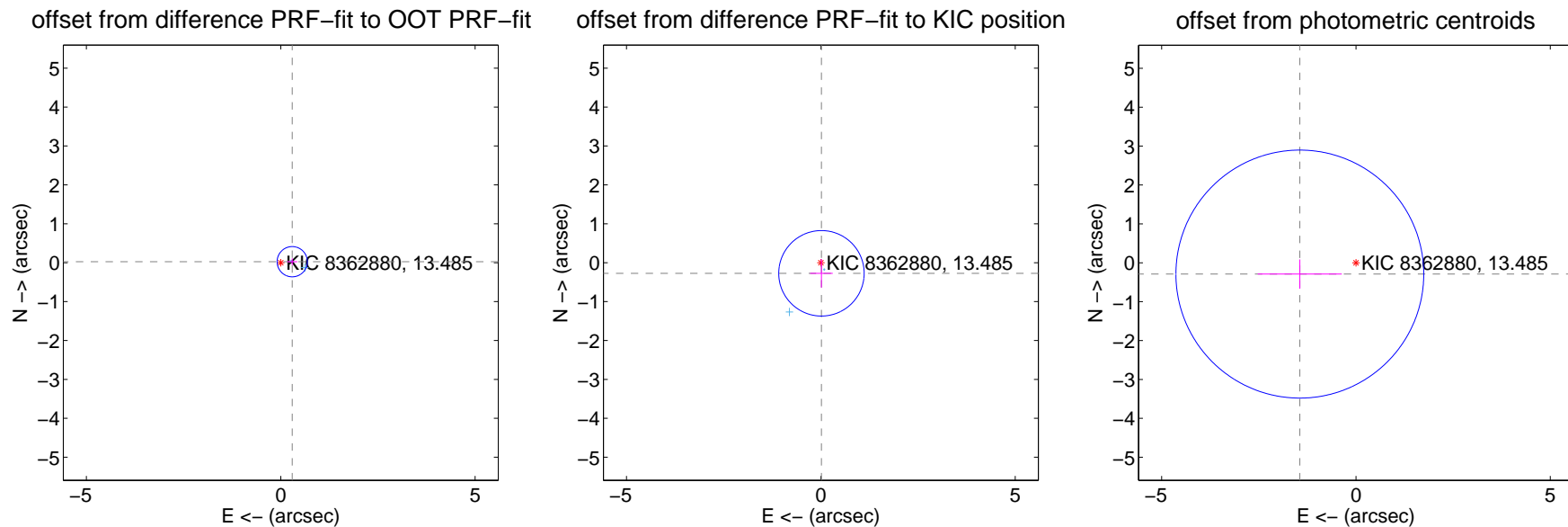
DV Centroid Data

Supplemental centroid analysis for 008362880-02. Kepler magnitude: 13.48. Transit SNR 9.90

There are 2 quarters with good PRF difference image offsets

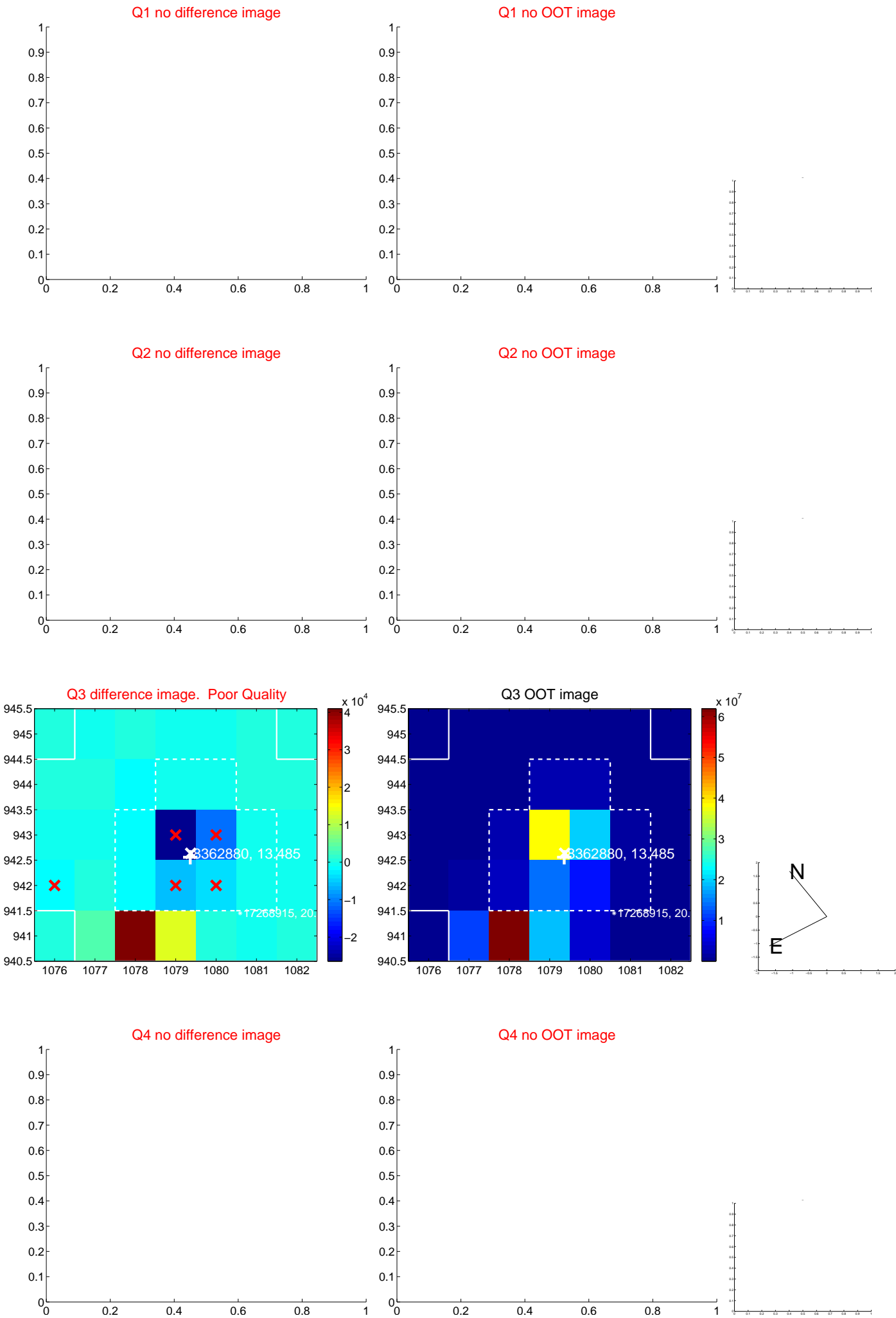
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.296 ± 0.130 | 2.29 | -0.295 ± 0.130 | 0.026 ± 0.087 |
| PRF-fit source offset from KIC position | 0.273 ± 0.366 | 0.75 | -0.015 ± 0.291 | -0.273 ± 0.366 |
| photometric centroid source offset | 1.47 ± 1.06 | 1.39 | 1.44 ± 1.08 | -0.29 ± 0.38 |

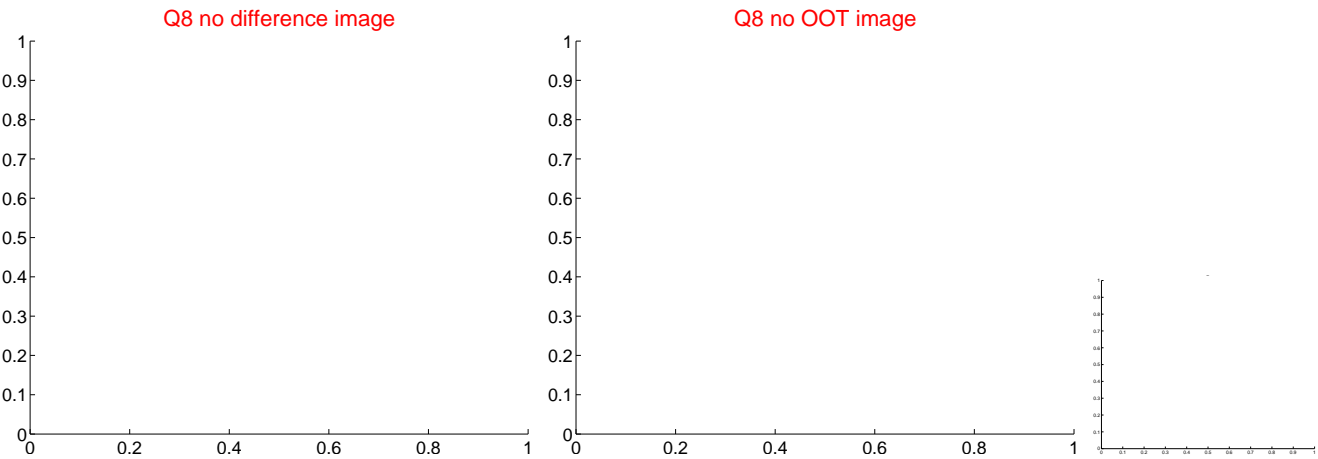
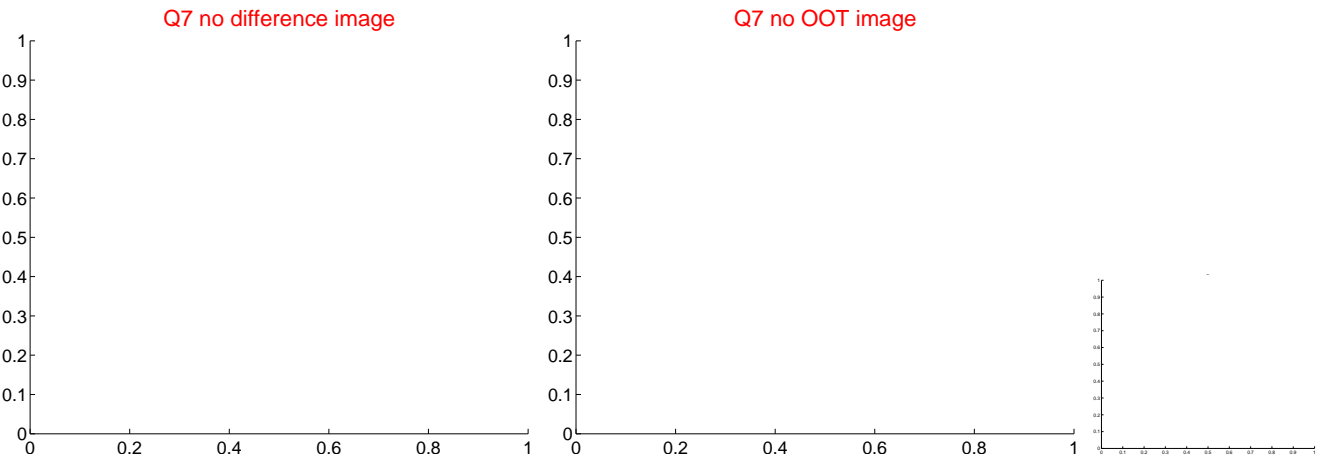
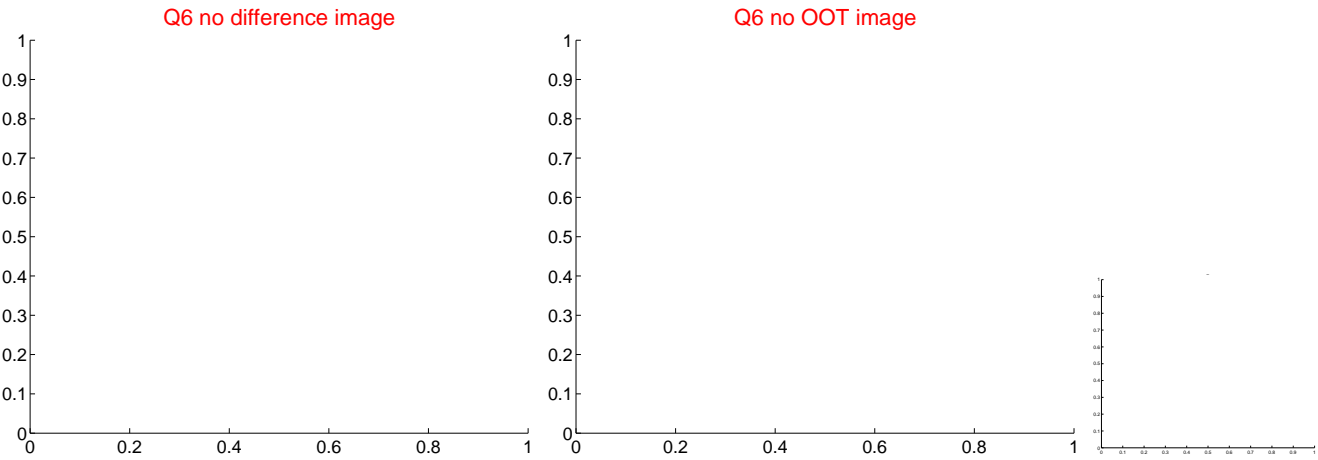
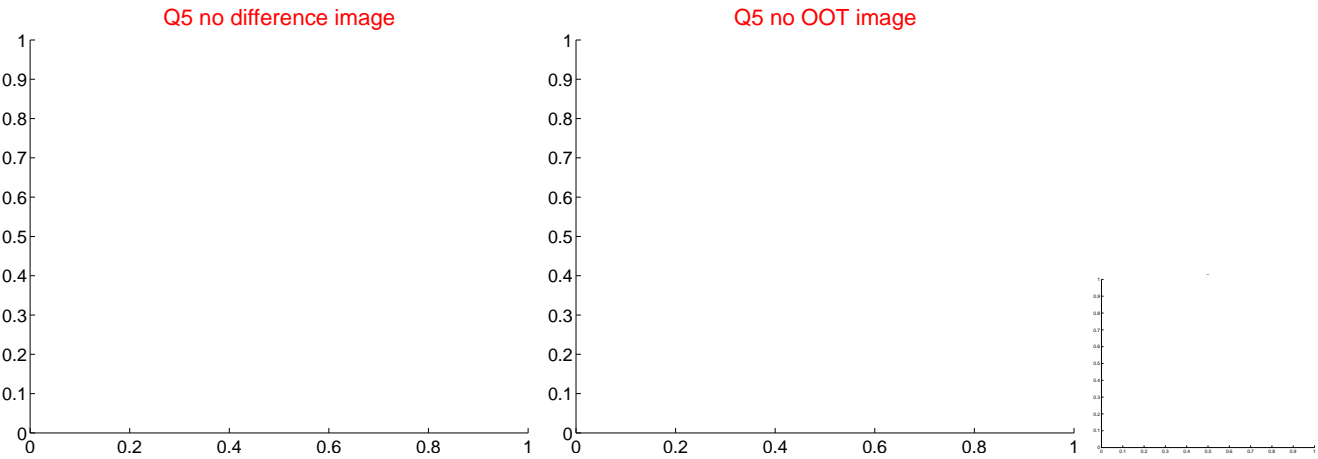


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

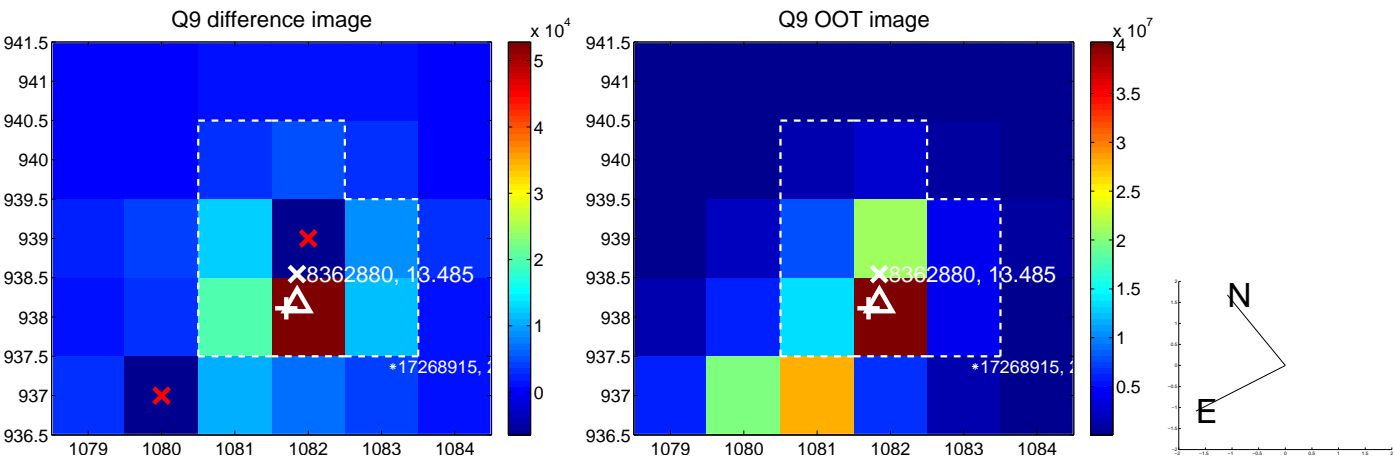
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

Q13 no difference image



Q13 no OOT image



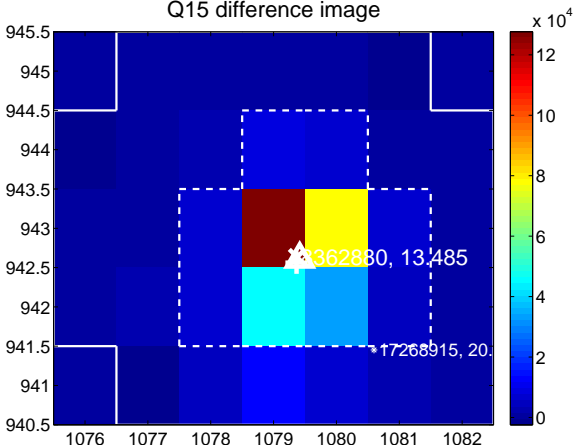
Q14 no difference image



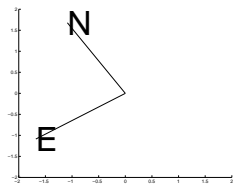
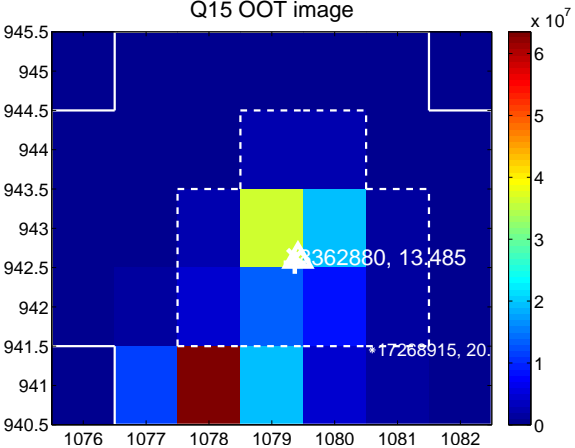
Q14 no OOT image



Q15 difference image



Q15 OOT image



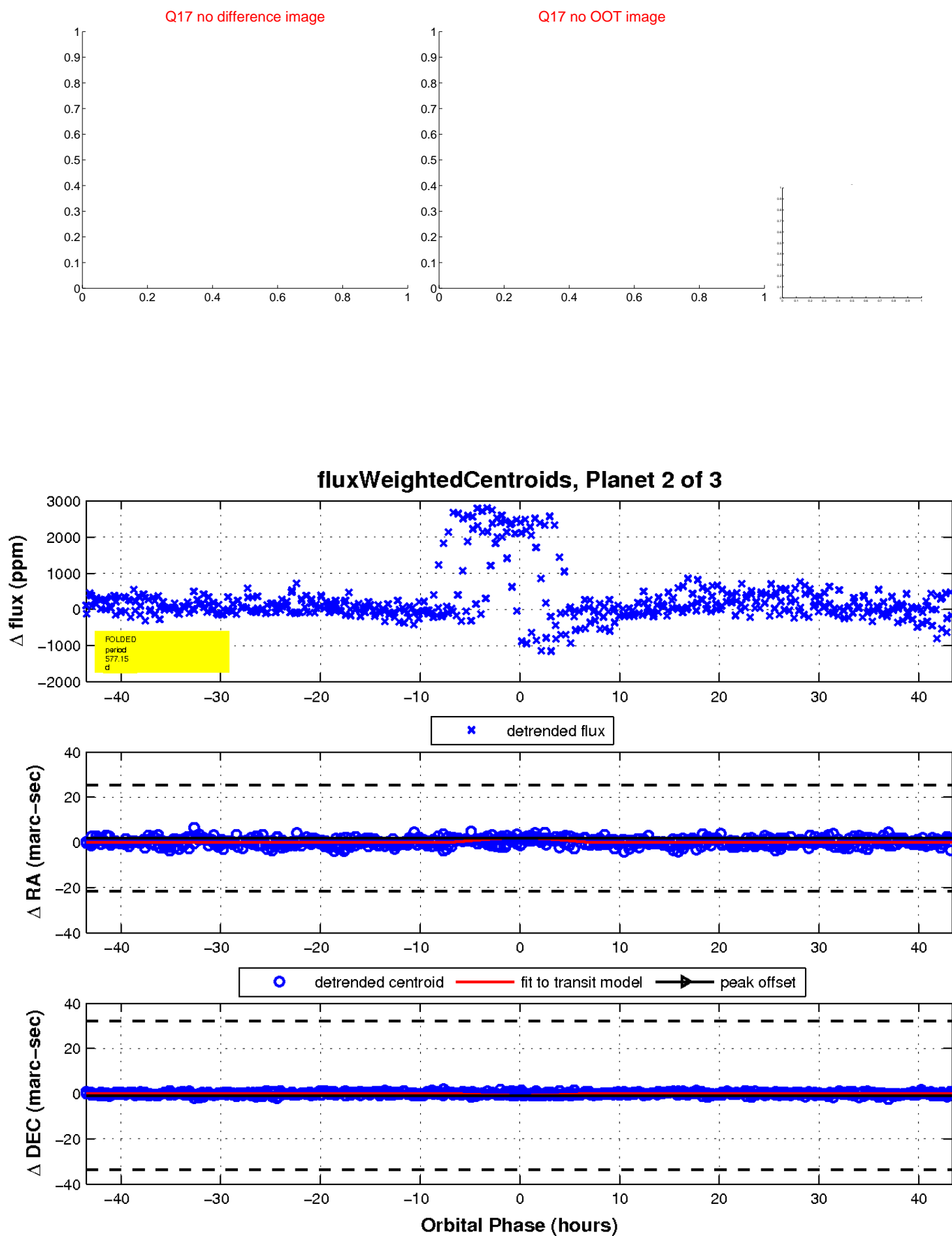
Q16 no difference image



Q16 no OOT image

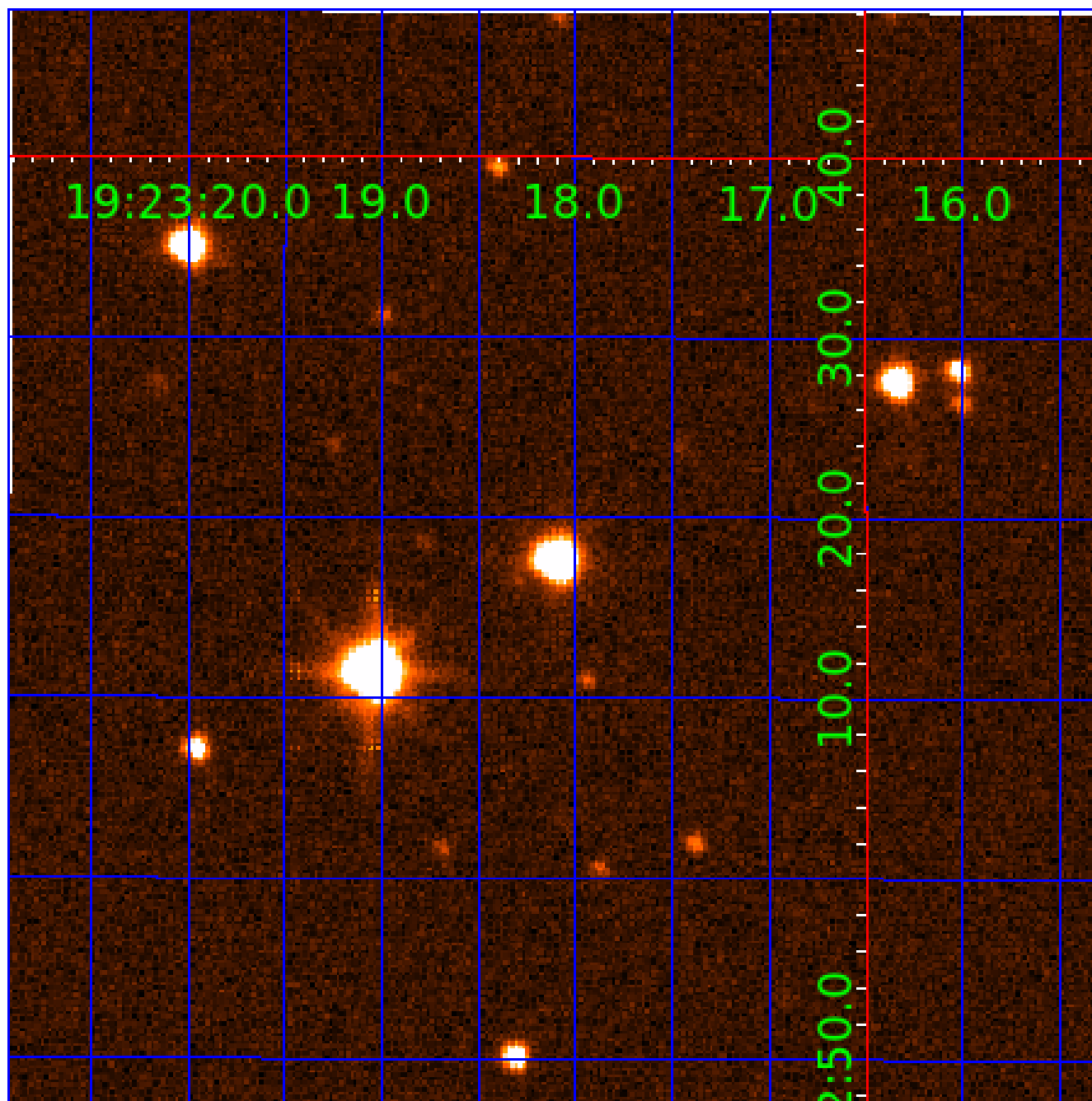


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008362880

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008362880-01 | OBS | No | 2.263736 | 133.125245 | 182.9 | 7.500 | 9.3 | -1.0 | 1.68 | 6951 | 2.29 | 4277.37 |
| 008362880-02 | OBS | No | 577.149654 | 303.576370 | 1189.0 | 14.495 | 17.0 | 9.9 | 1.68 | 6951 | 10.74 | 2.65 |
| 008362880-03 | OBS | No | 2.263736 | 131.545050 | 128.8 | 7.500 | 10.1 | -1.0 | 1.68 | 6951 | 1.93 | 4277.37 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008362880-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS |
| 008362880-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008362880-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS |

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

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

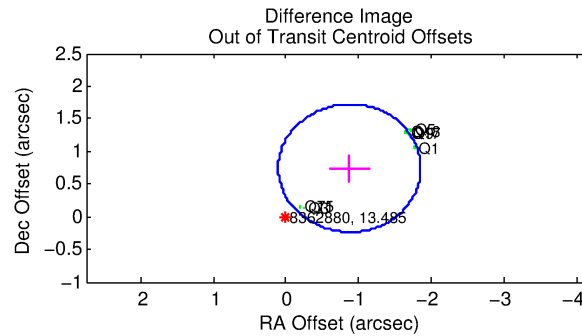
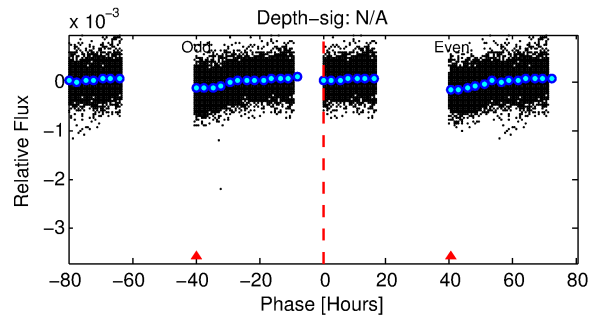
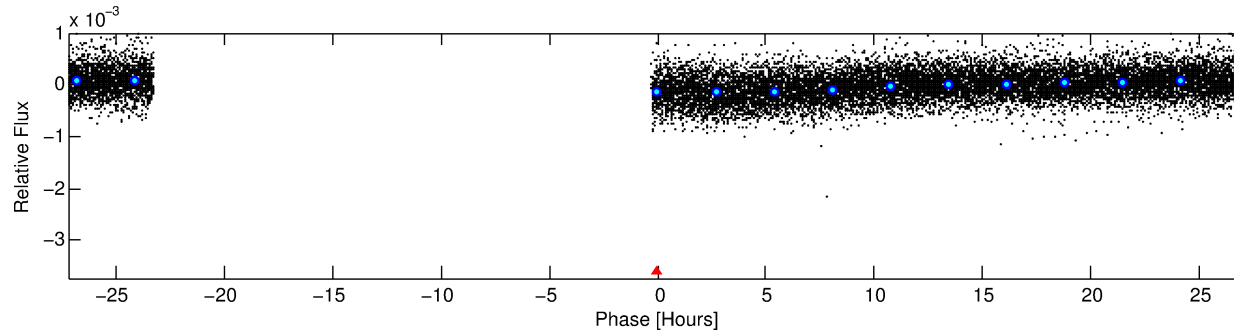
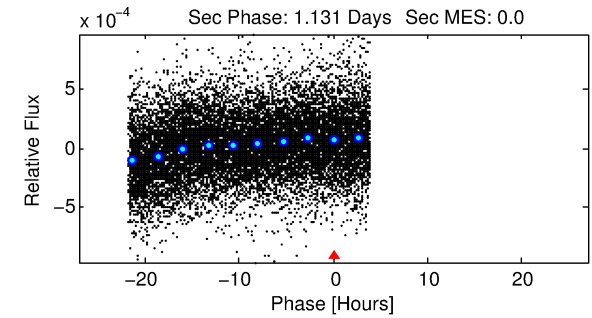
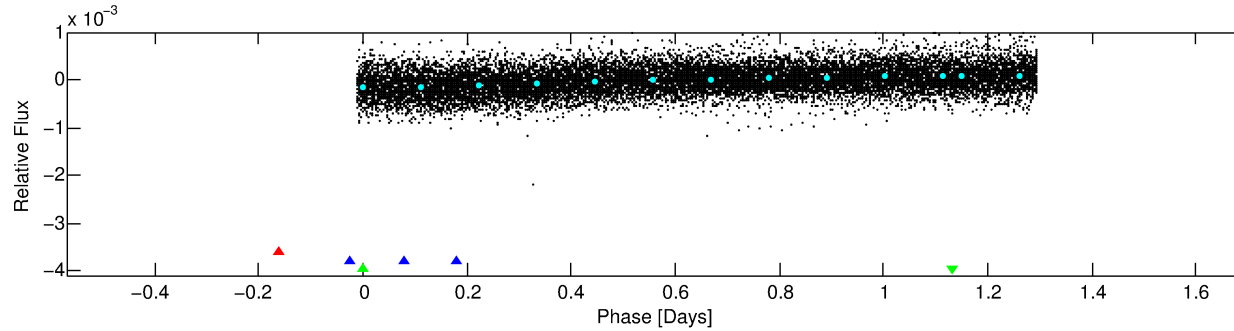
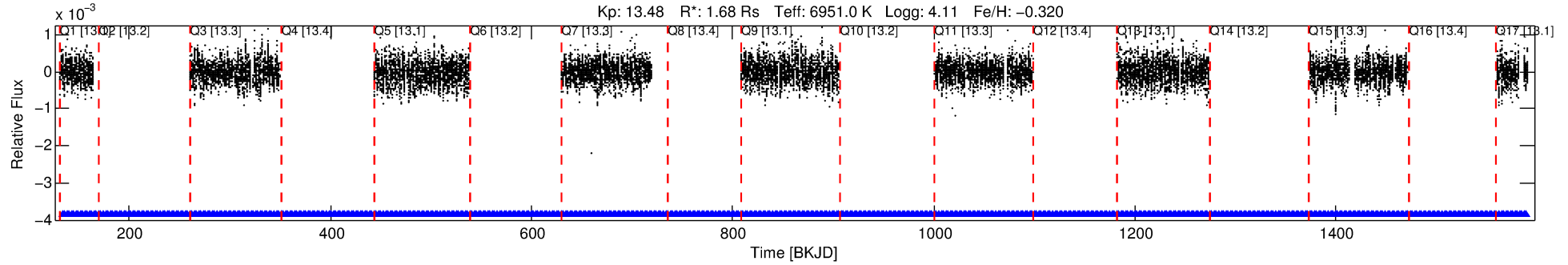
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008362880-03

No Significant Match Found

DV One-Page Summary

KIC: 8362880 Candidate: 3 of 3 Period: 2.264 d



TPS TCE Results:

Period = 2.26374 d
Epoch = 131.5450 BKJD

DV fit results are unavailable

DV Diagnostic Results:

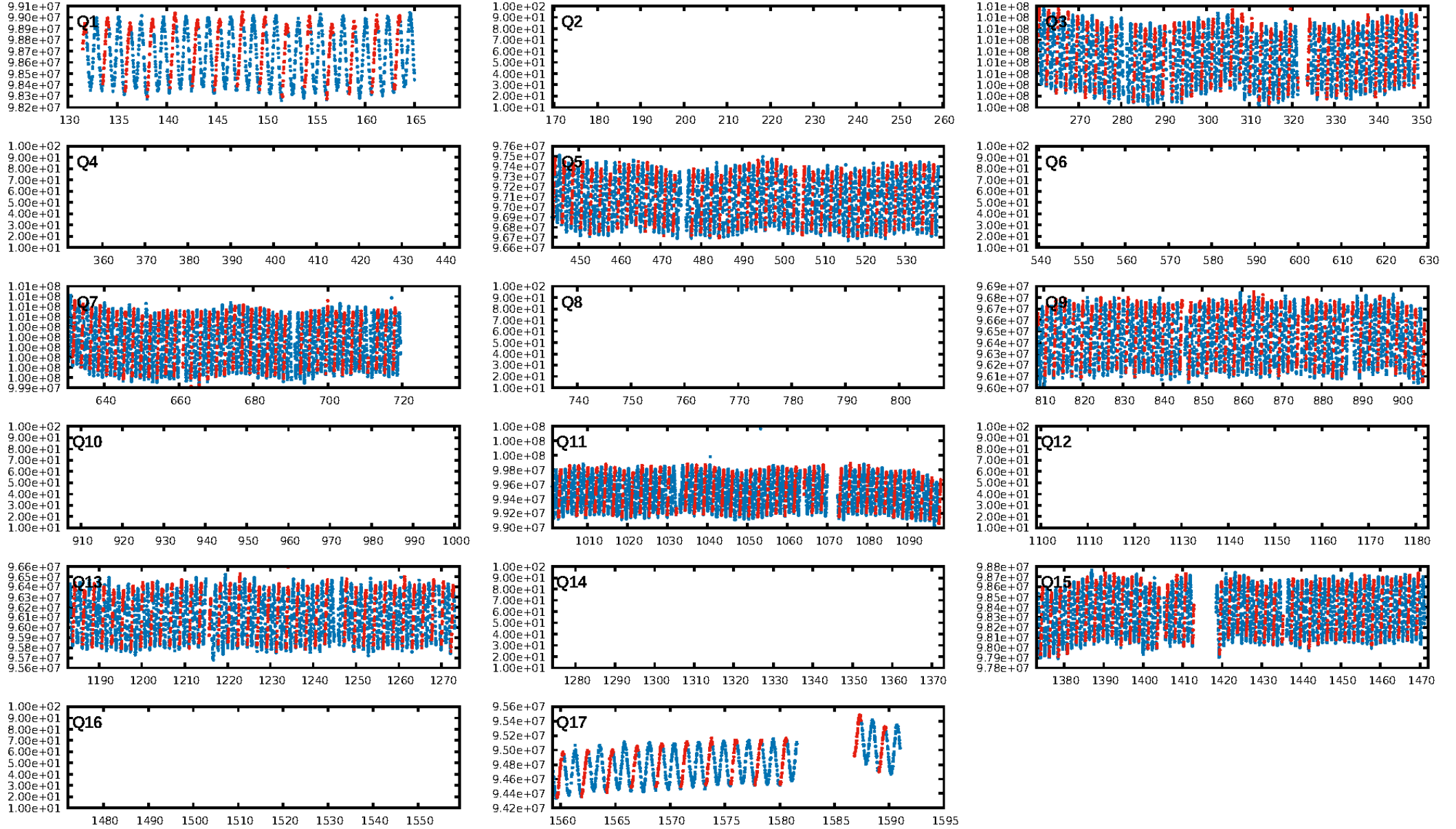
ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [845.42 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.50e-25
RollingBand-fgt: 1.00 [277/277]
GhostDiagnostic-chr: 1.248

Centroid-sig: 0.0%
Centroid-so: 3.147 arcsec [81.83 σ]
OotOffset-rm: 1.148 arcsec [3.52 σ]
KicOffset-rm: 0.129 arcsec [1.36 σ]
OotOffset-st: 0/4/0/5 [9]
KicOffset-st: 0/4/0/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/9]

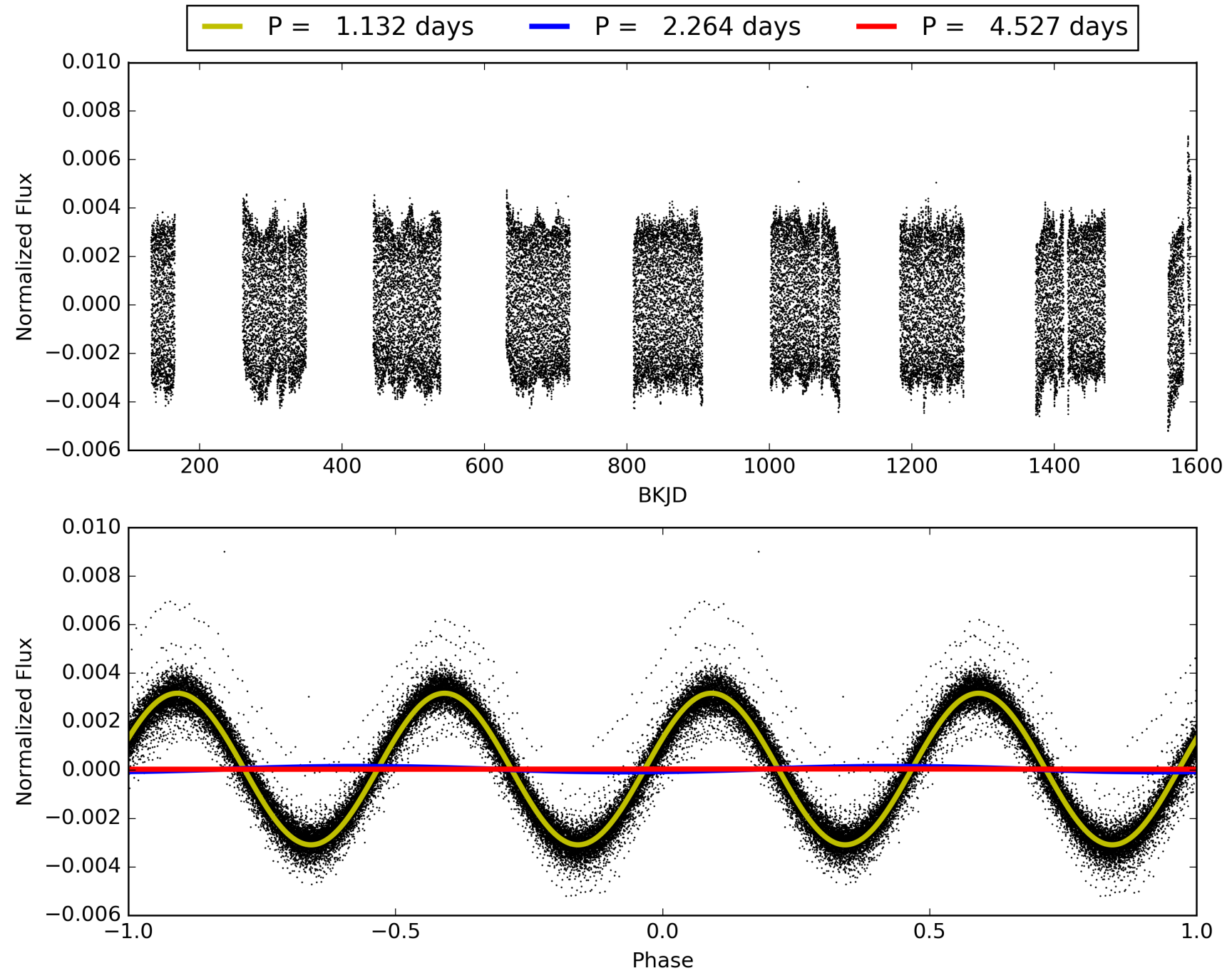
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:37:54 Z

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

TCE 008362880-03, PDC Light Curves

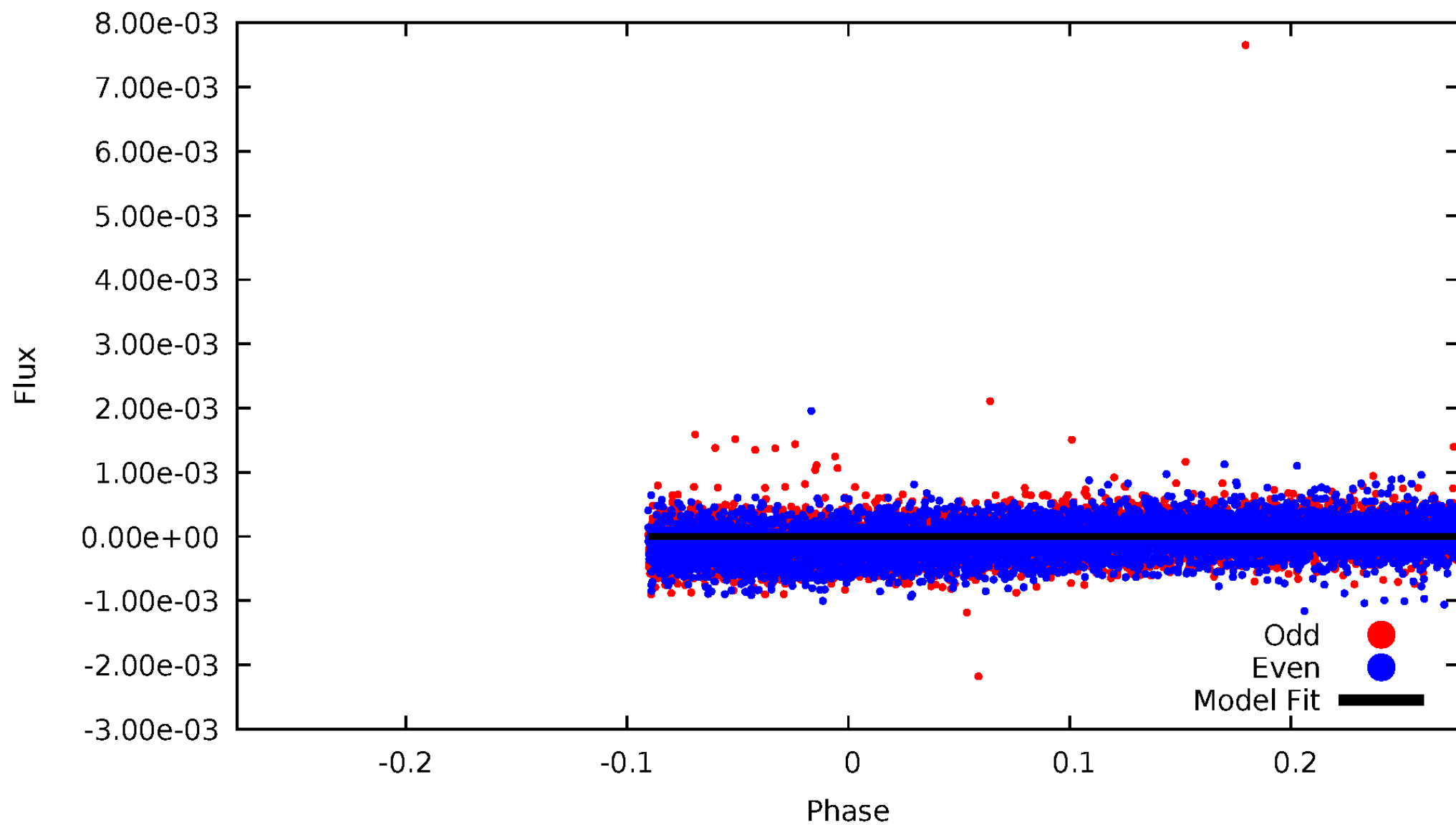


TCE 008362880-03



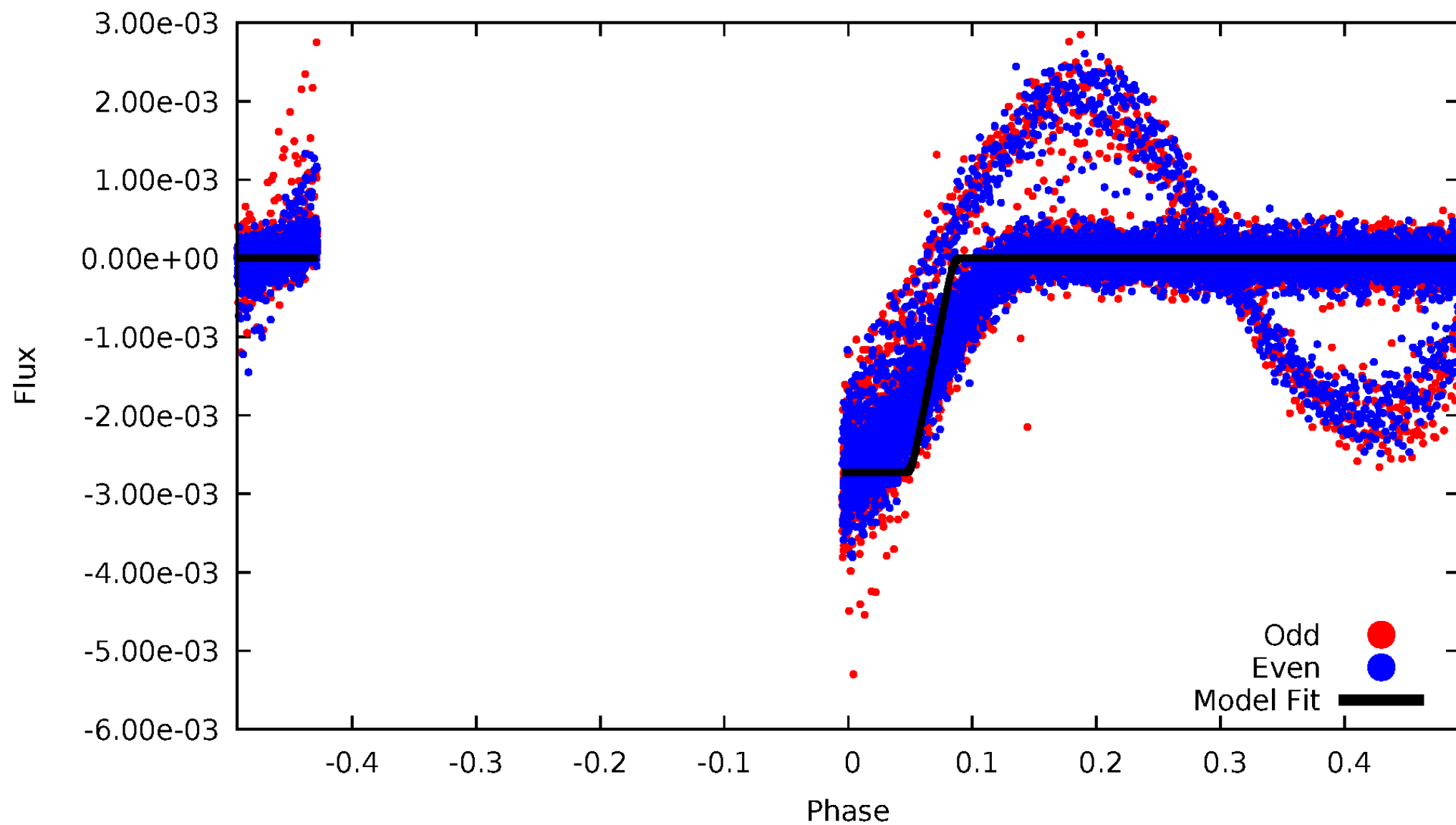
DV Odd/Even

TCE 008362880-03

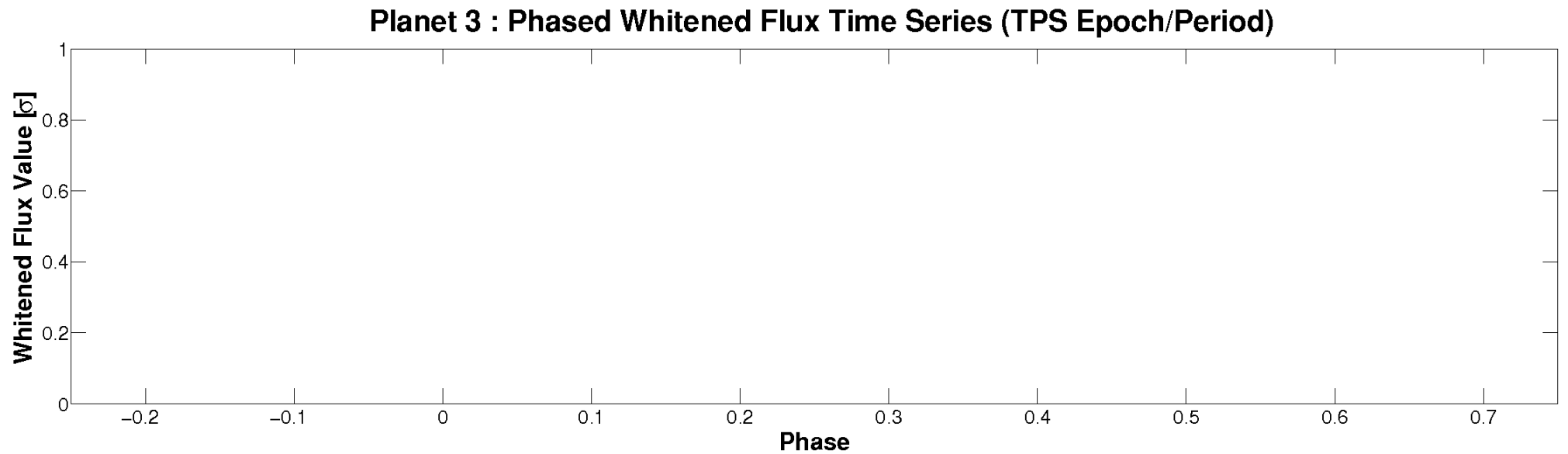
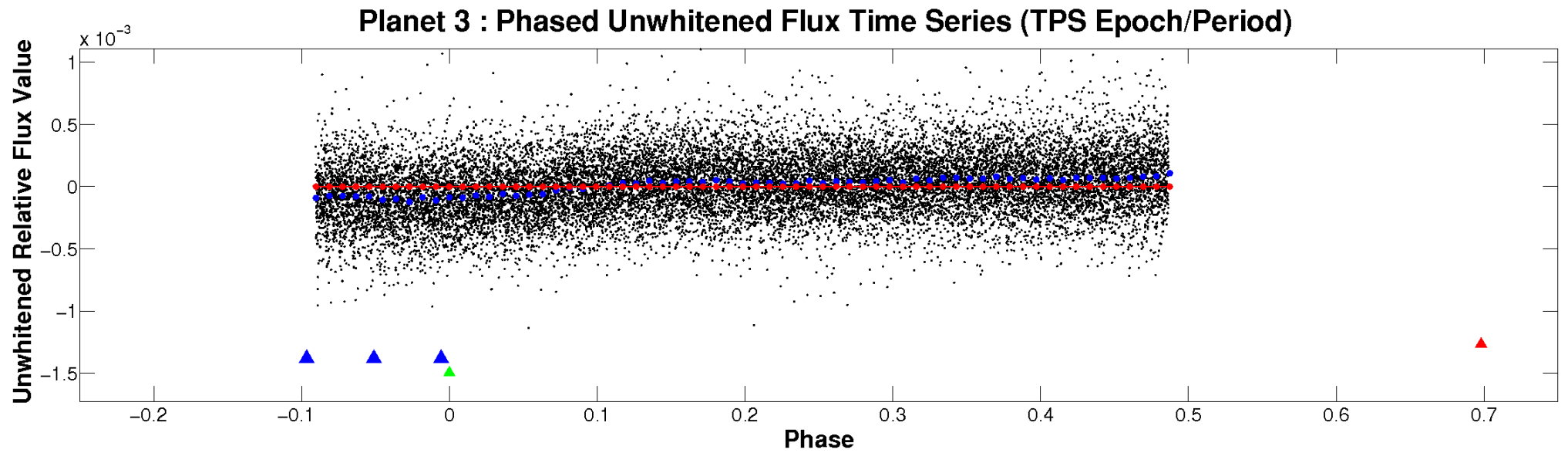


ALT Odd/Even

TCE 008362880-03

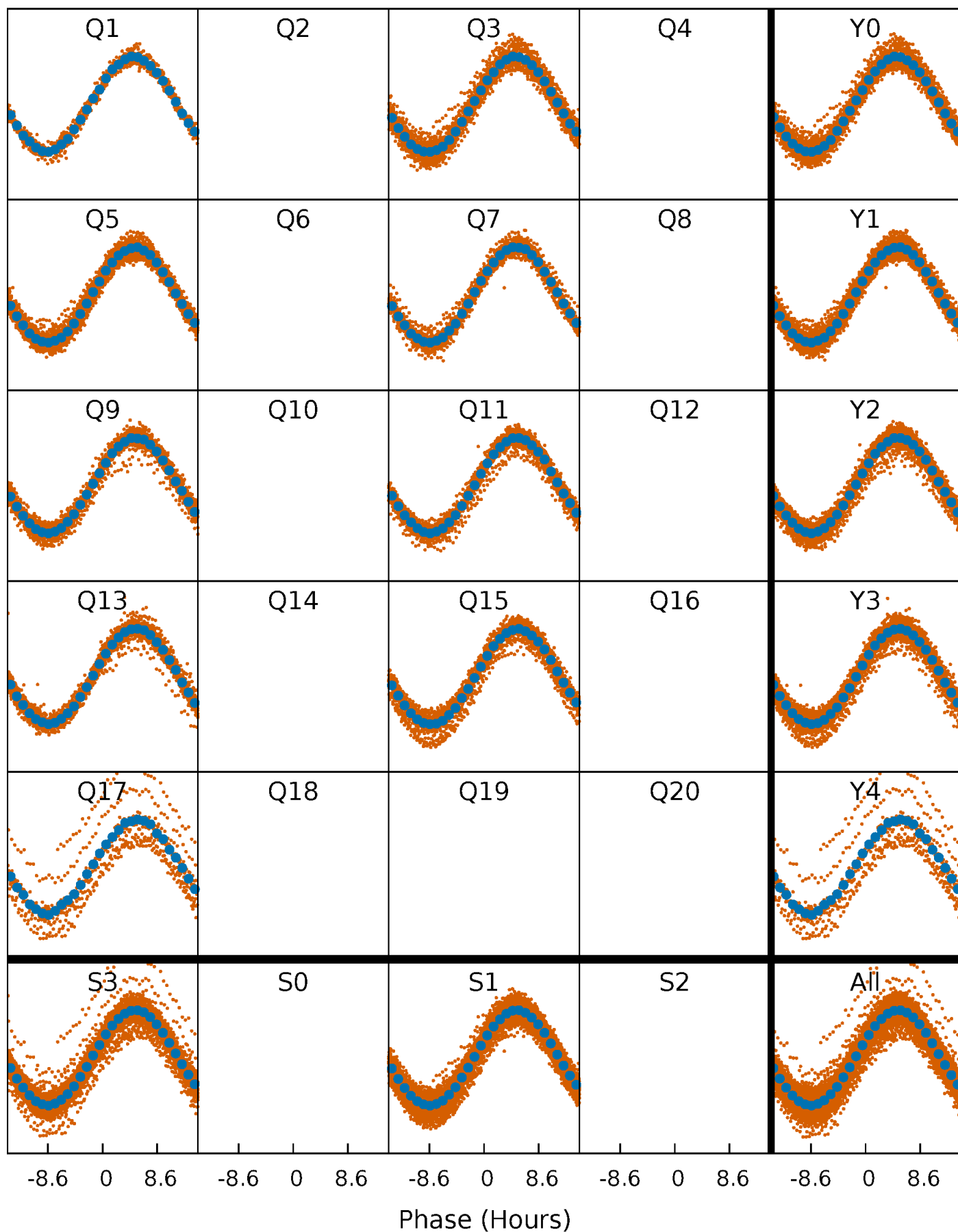


Non-Whitened Vs. Whitened Light Curve



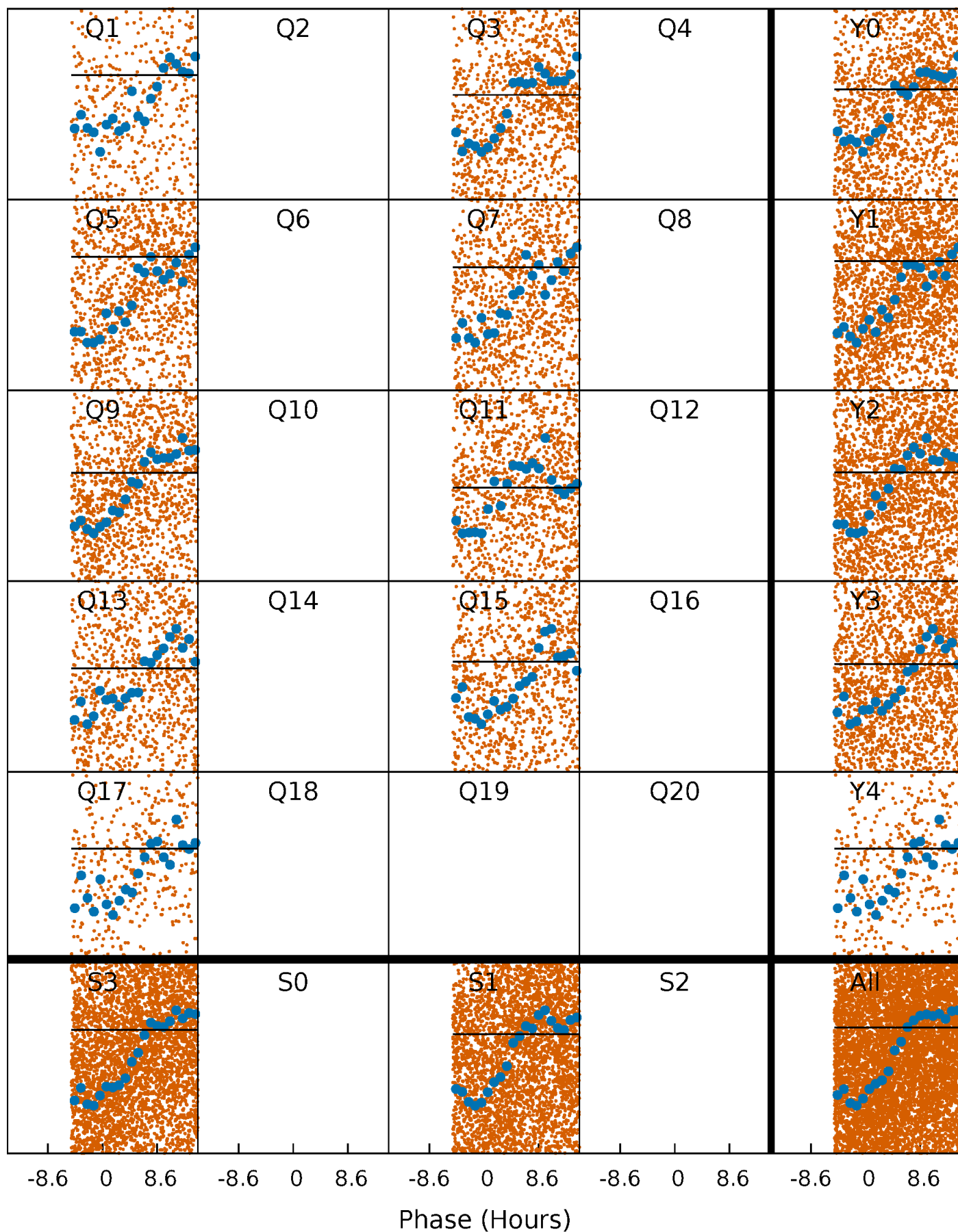
PDC Quarter-Phased Transit Curves

TCE 008362880-03 P= 2.263736 Days $T_0=131.545050$ (BKJD)



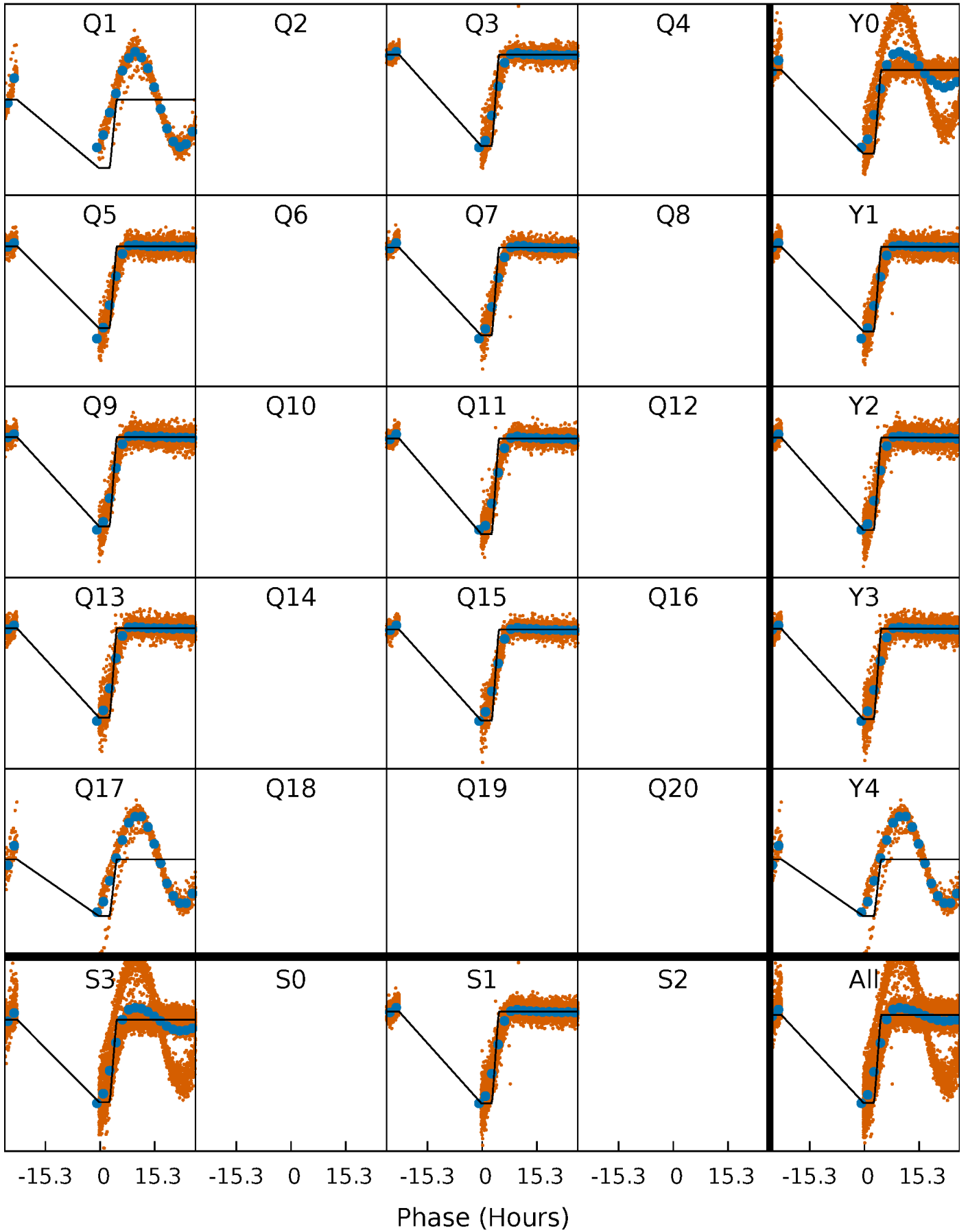
DV Quarter-Phased Transit Curves

TCE 008362880-03 $P = 2.263736$ Days $T_0 = 131.545050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

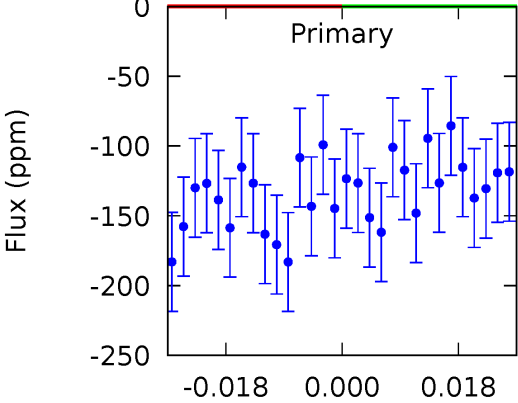
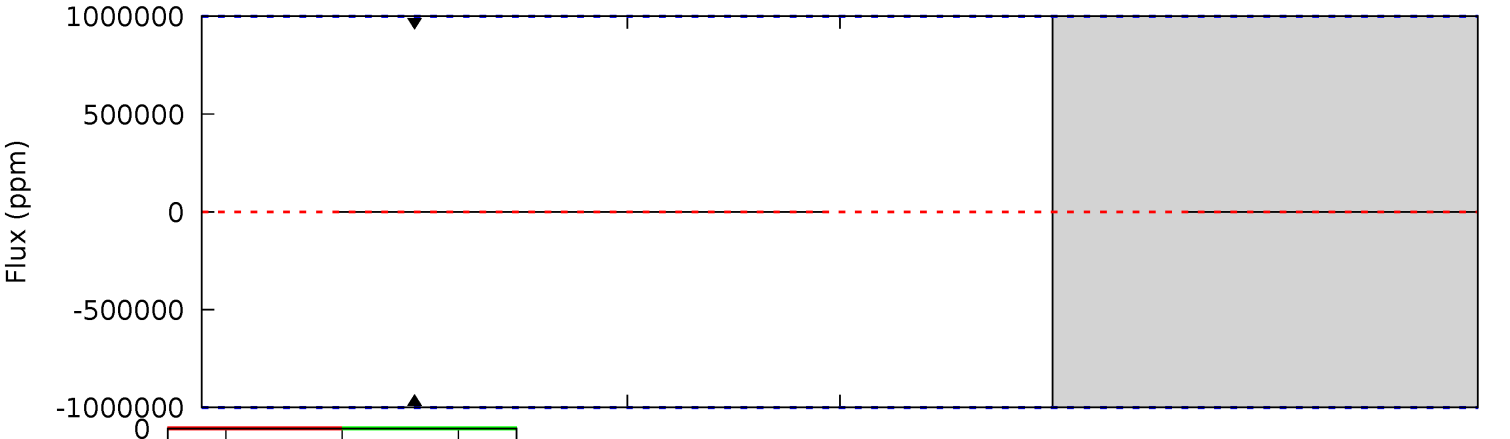
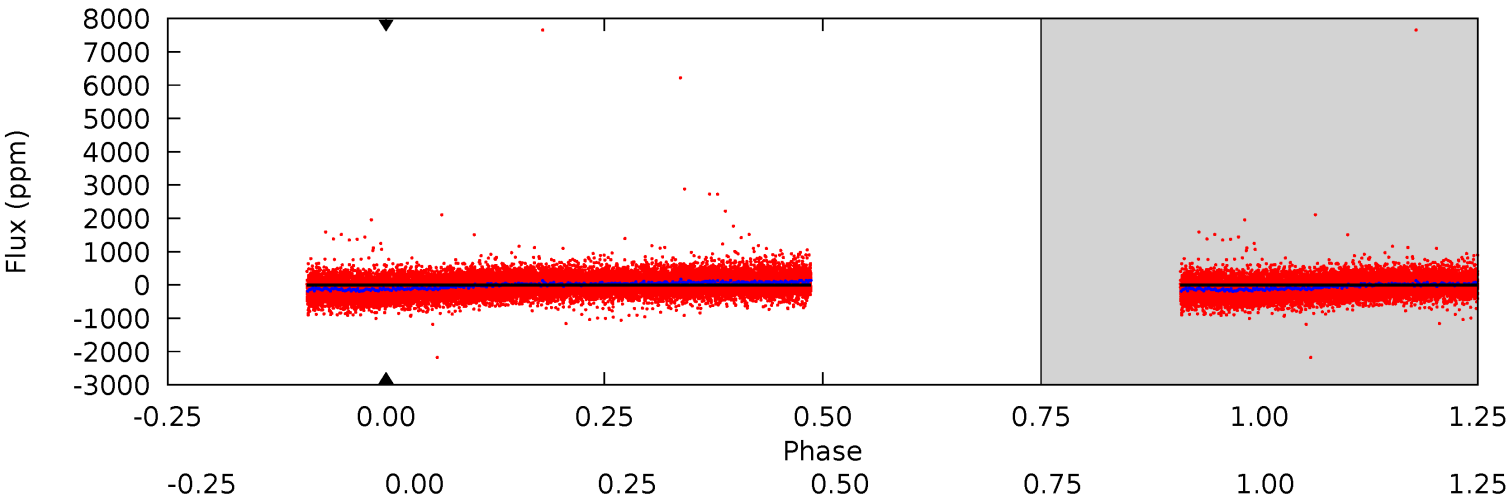
TCE 008362880-03 P= 2.263736 Days $T_0=133.615228$ (BKJD)



DV Model-Shift Uniqueness Test

008362880-03, P = 2.263736 Days, E = 129.281314 Days

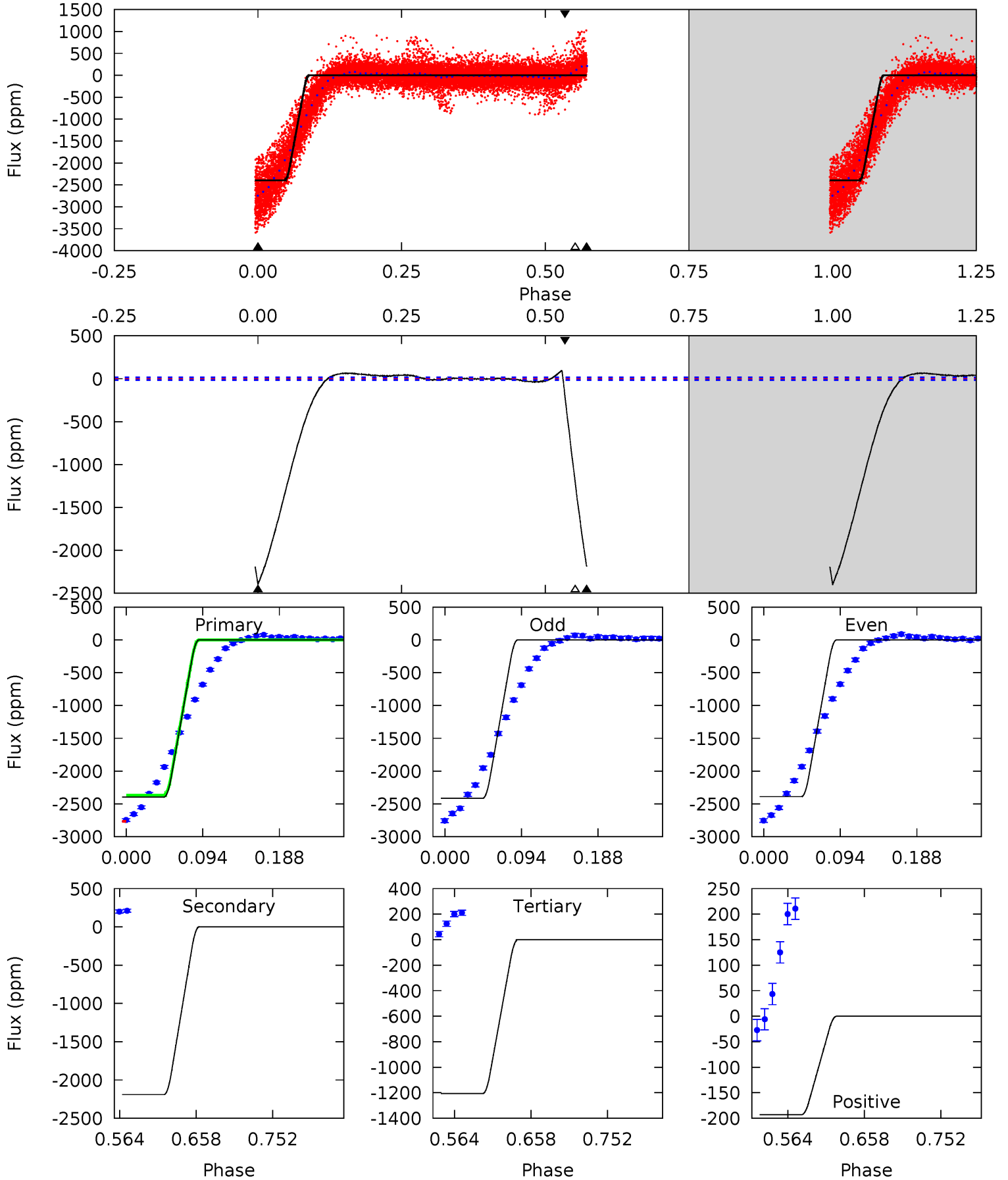
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

008362880-03, P = 2.263736 Days, E = 131.351492 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|-------|-------|-------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 699.4 | 639.1 | 352.0 | -56.3 | 4.58 | 1.67 | 85.0 | 347.4 | 755.7 | 287.2 | 695.4 | 3.72 | 0.97 | 0.04 | 0 |



Stellar Parameters For KIC 008362880

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6951^{+192}_{-312} | $4.112^{+0.209}_{-0.171}$ | $-0.320^{+0.300}_{-0.300}$ | $1.678^{+0.478}_{-0.478}$ | $1.333^{+0.179}_{-0.247}$ | $0.398^{+0.470}_{-0.187}$ |
| | +3%/-4% | +5%/-4% | +94%/-94% | +28%/-28% | +13%/-19% | +118%/-47% |
| 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 008362880-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|---------------------------|----------------------|---------------------------|----------------------------------|
| DV | 0 ± 1000000 | $12.26^{+15.27}_{-9.06}$ | 2859^{+239}_{-227} | -5643^{+42459}_{-36113} | $-11.232^{+940.989}_{-1015.194}$ |
| Alt. | -2190 ± 3 | $16.39^{+16.25}_{-10.70}$ | 2851^{+208}_{-230} | 4939^{+3887}_{-1197} | $6.117^{+46.132}_{-4.582}$ |

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

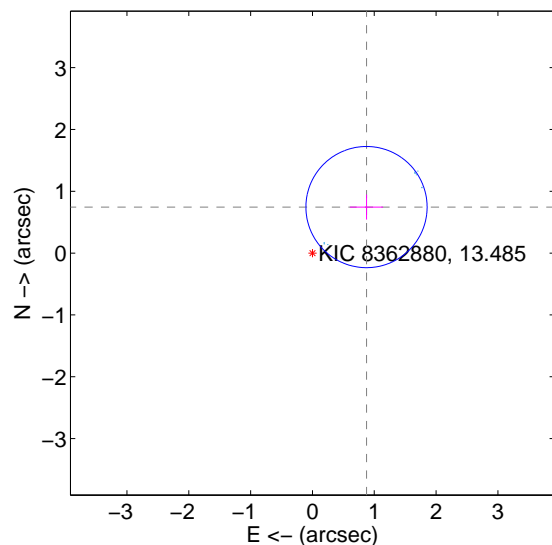
Supplemental centroid analysis for 008362880-03. Kepler magnitude: 13.48. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

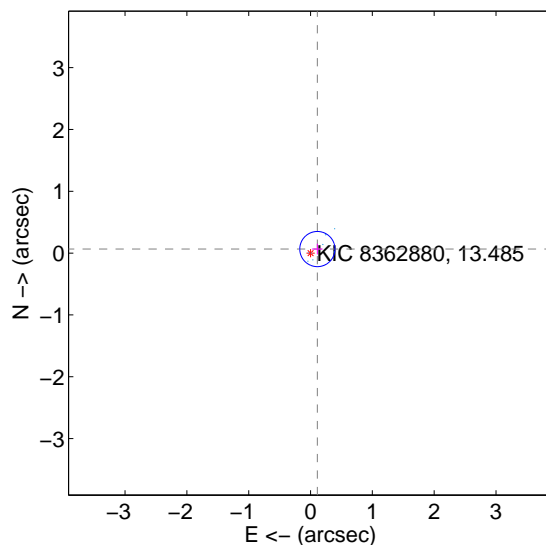
The direct PRF centroid is offset from the target star catalog position by about 1.73 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.148 ± 0.327 | 3.52 | -0.875 ± 0.267 | 0.744 ± 0.202 |
| PRF-fit source offset from KIC position | 0.129 ± 0.095 | 1.36 | -0.111 ± 0.085 | 0.065 ± 0.086 |
| photometric centroid source offset | 3.15 ± 0.04 | 81.83 | 3.01 ± 0.04 | -0.92 ± 0.01 |

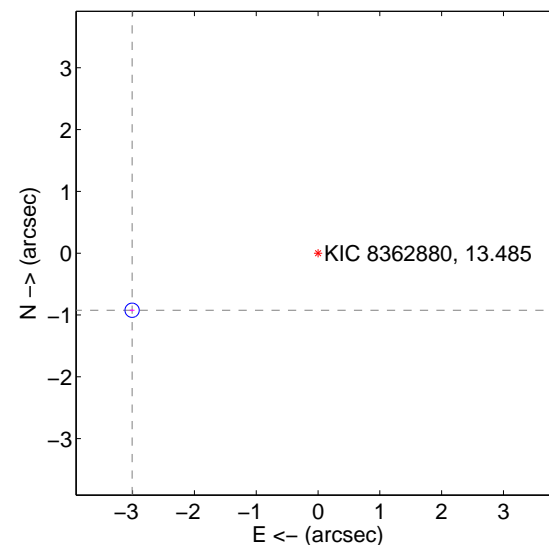
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

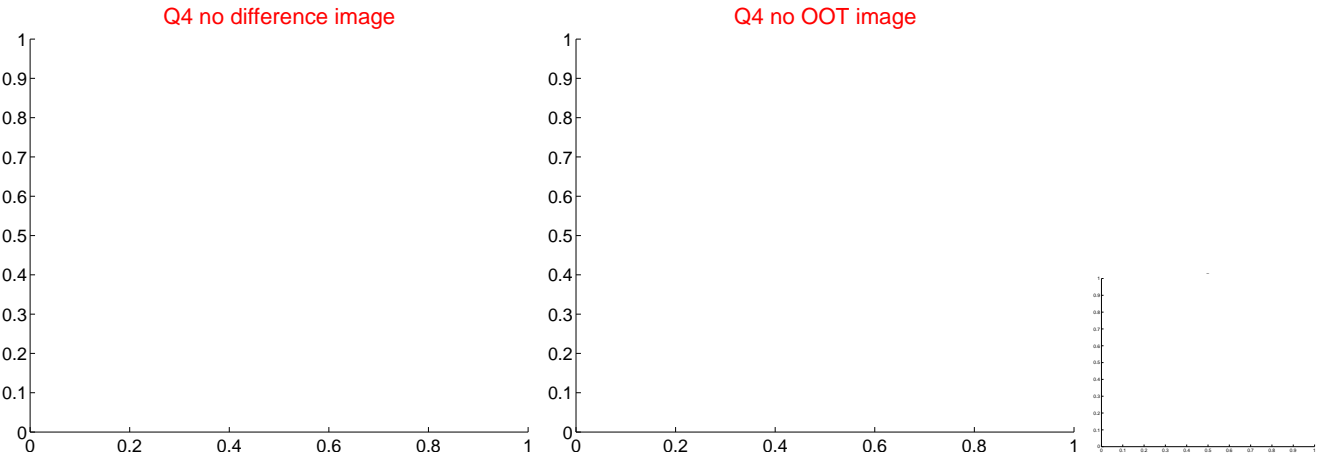
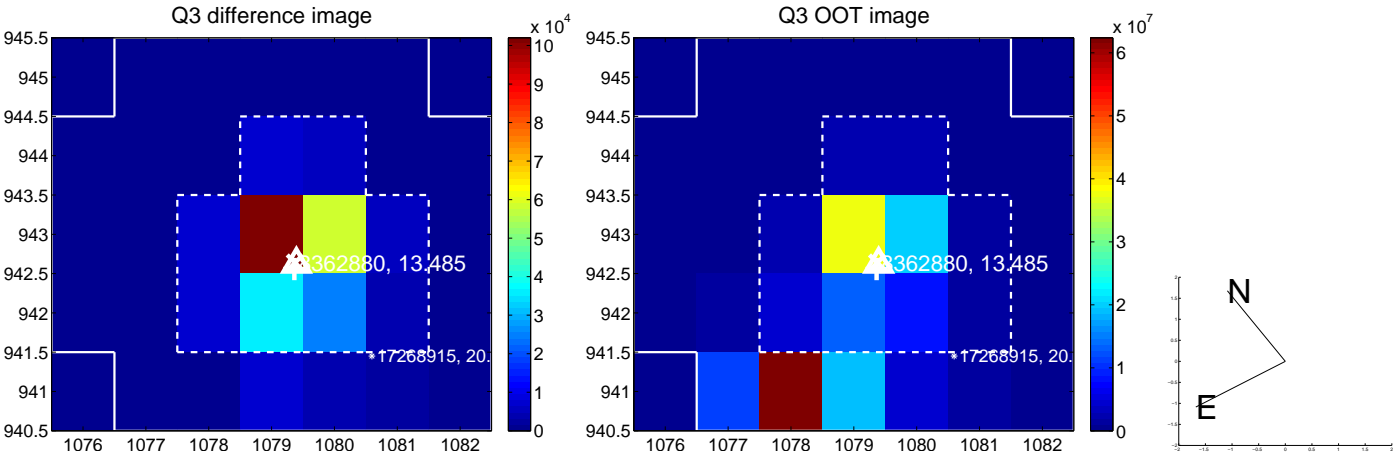
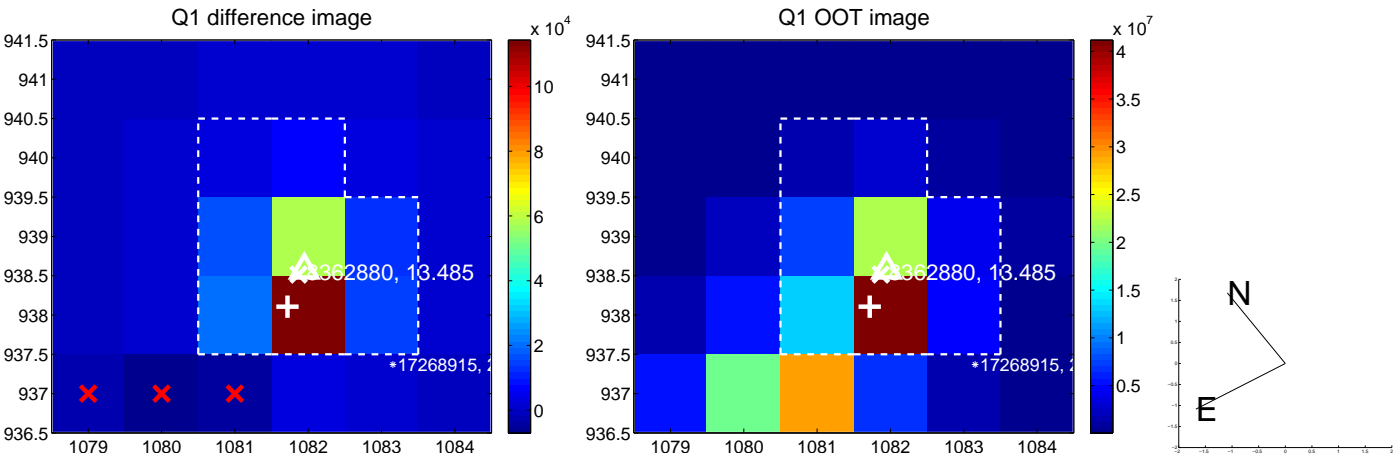


offset from photometric centroids

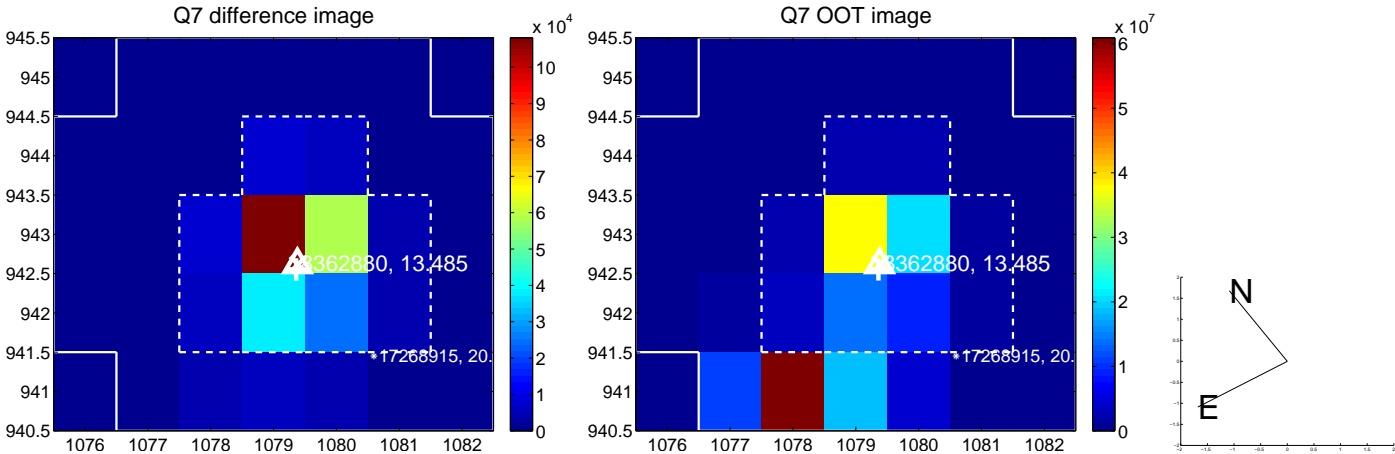
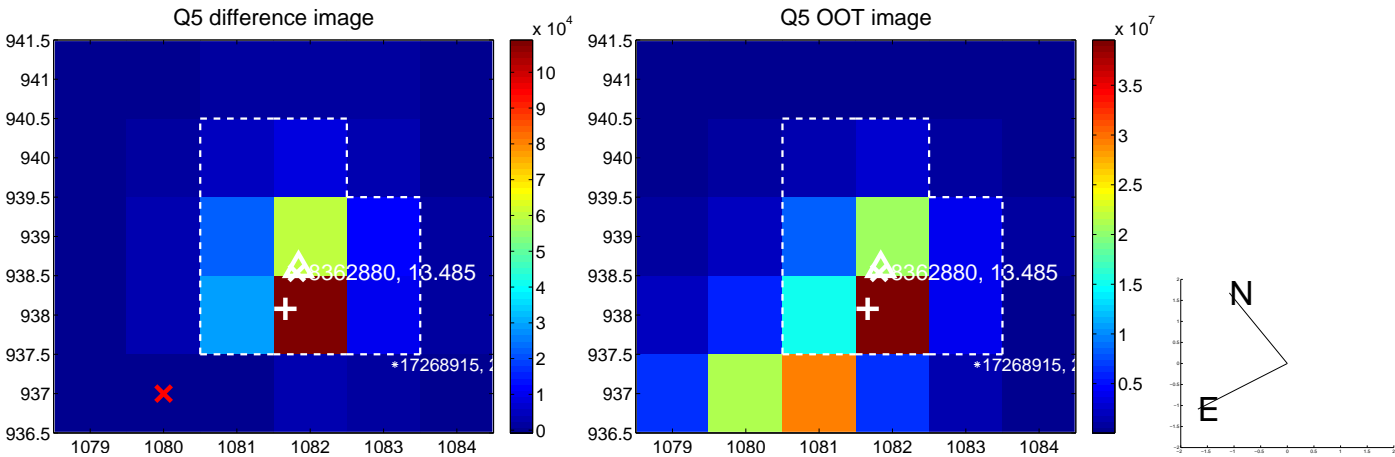


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

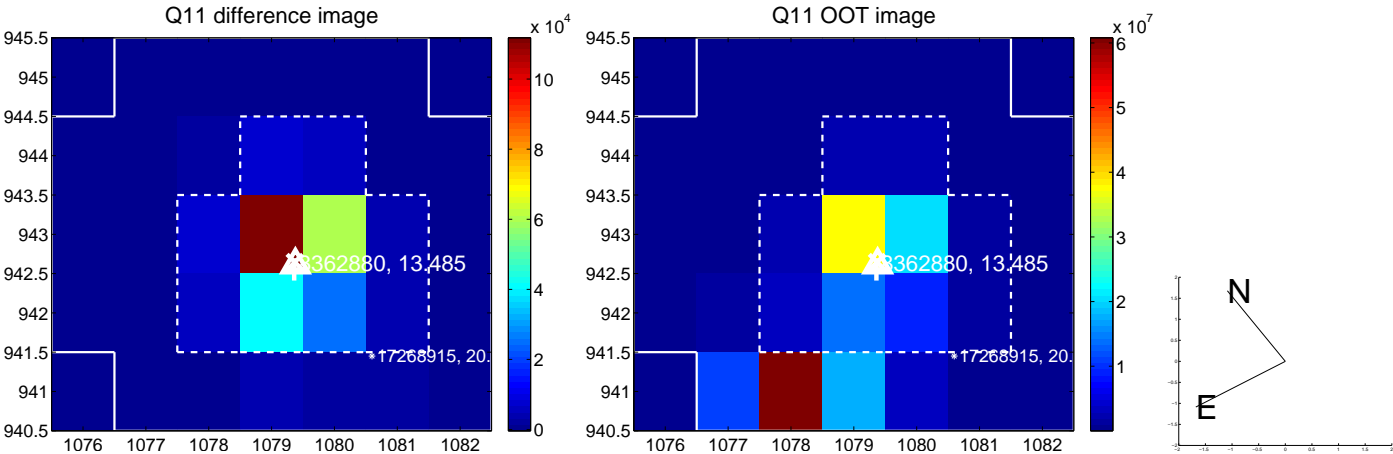
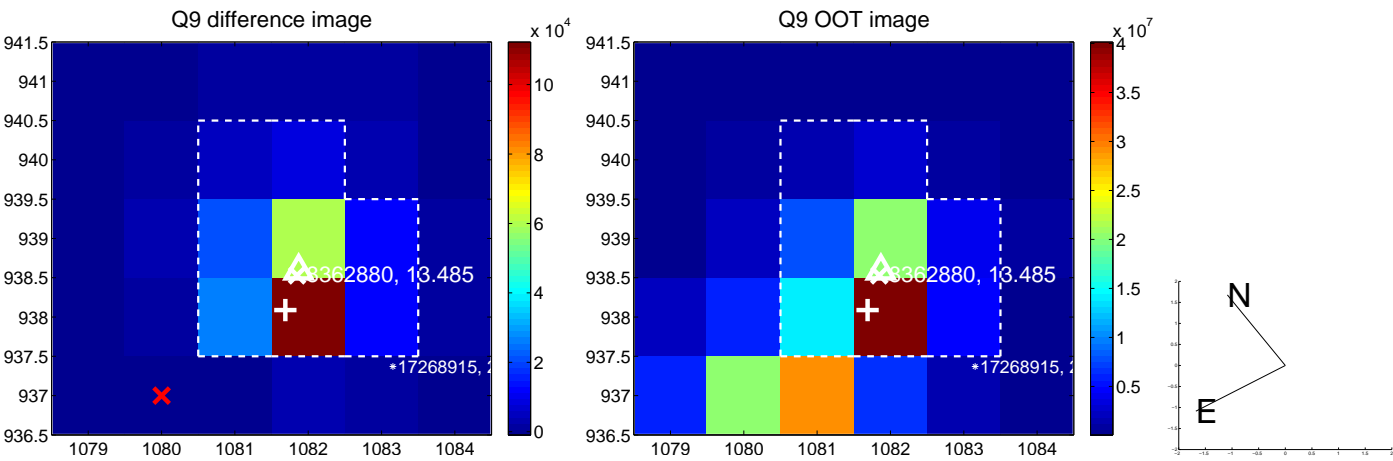
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



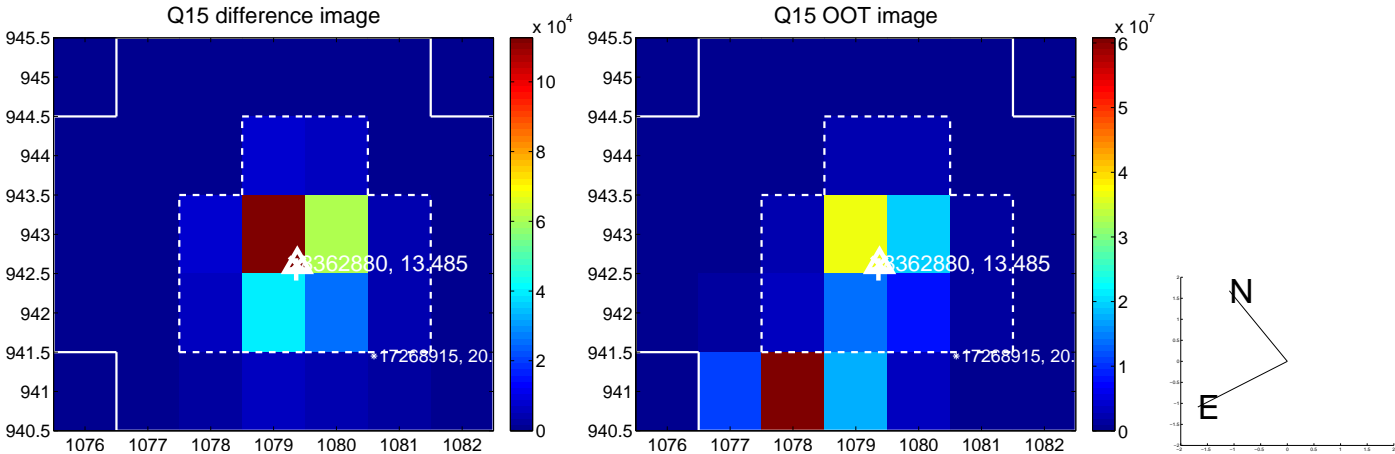
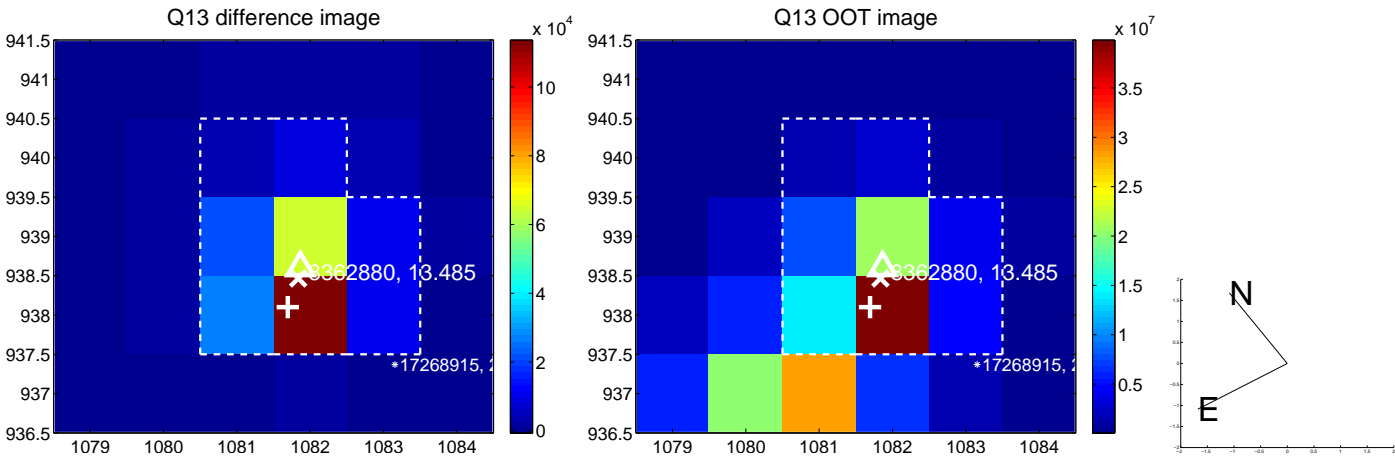
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



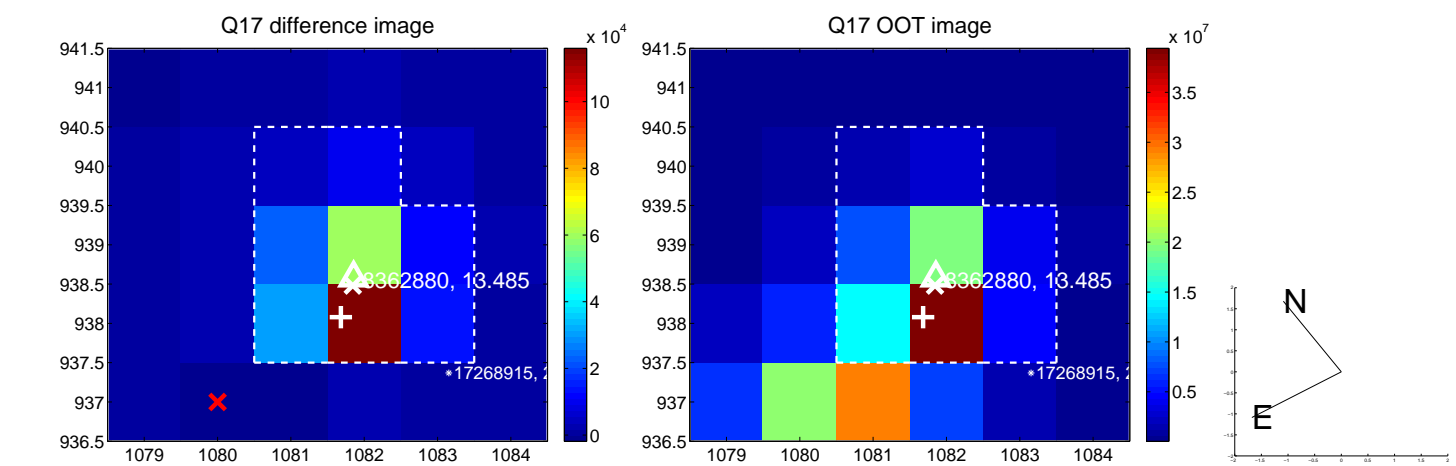
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



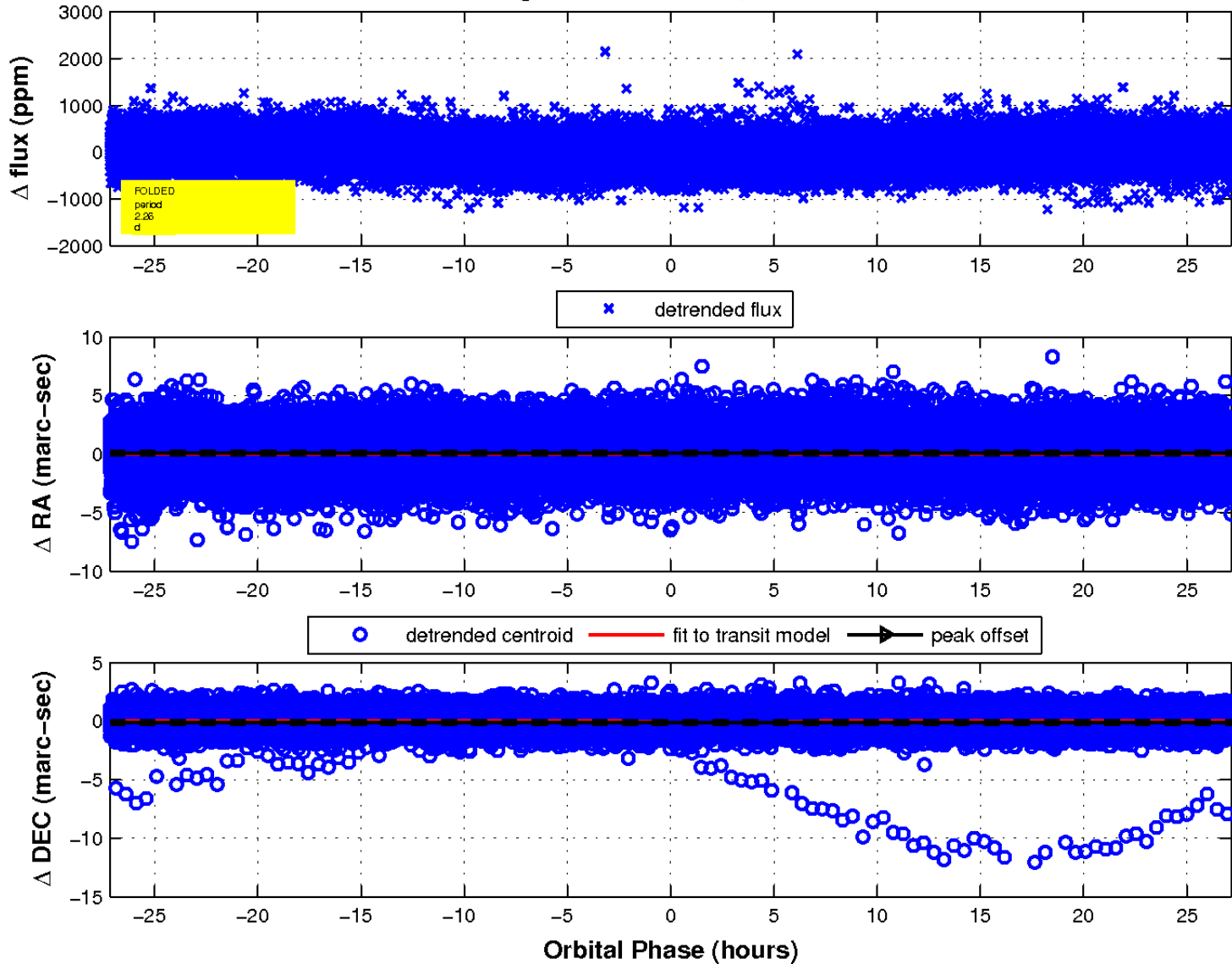
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

