

KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

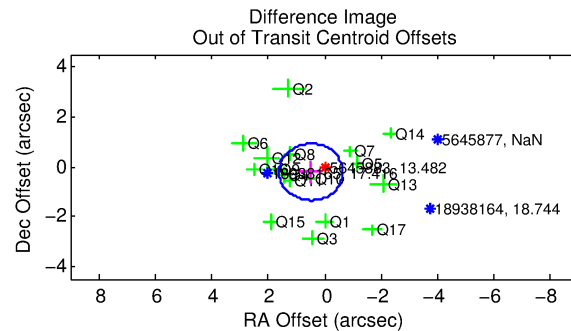
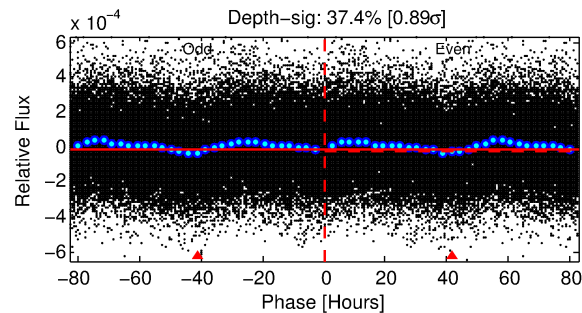
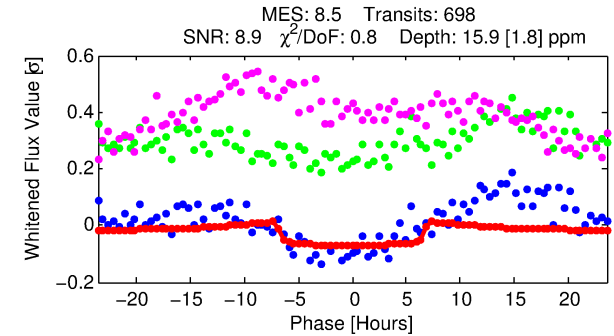
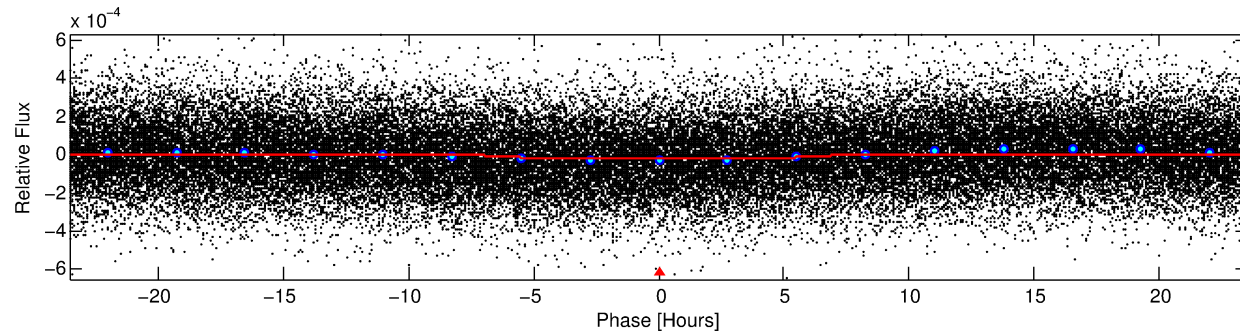
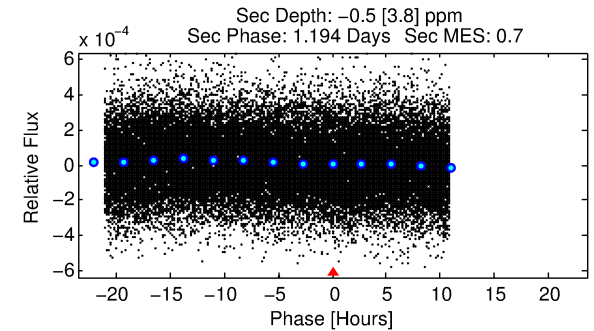
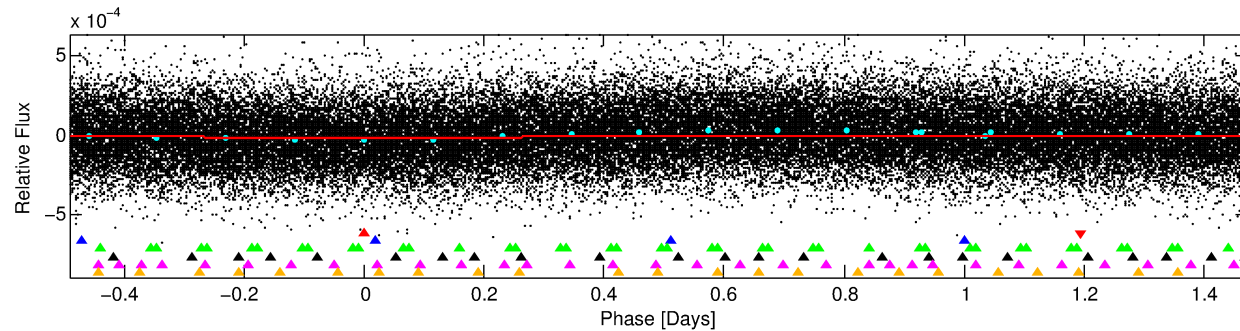
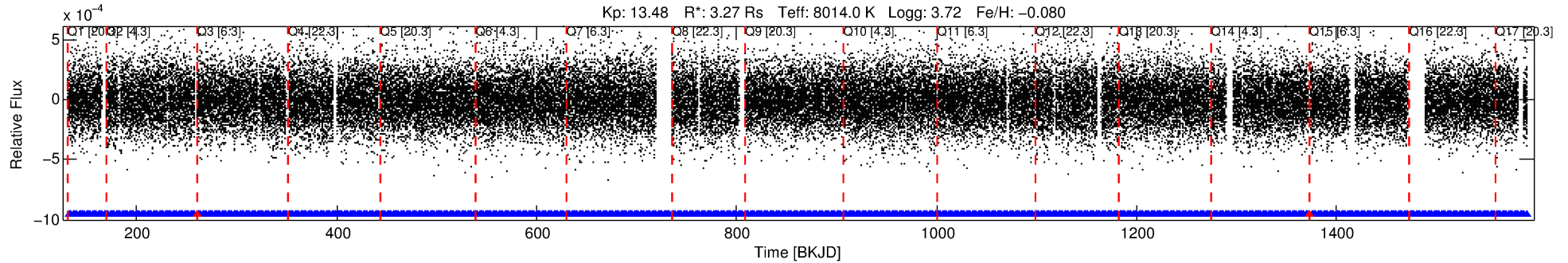
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-01

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 1 of 6 Period: 1.964 d



DV Fit Results:

Period = 1.96364 [0.00004] d
Epoch = 132.5636 [0.0105] BKJD
Rp/R* = 0.0039 [0.0022]
a/R* = 1.13 [0.79]
b = 0.74 [2.01]
Seff = 26037.28 [19158.62]
Teq = 3239 [596] K
Rp = 1.41 [1.00] Re
a = 0.0390 [0.0173] AU
Ag = N/A
Teffp = N/A

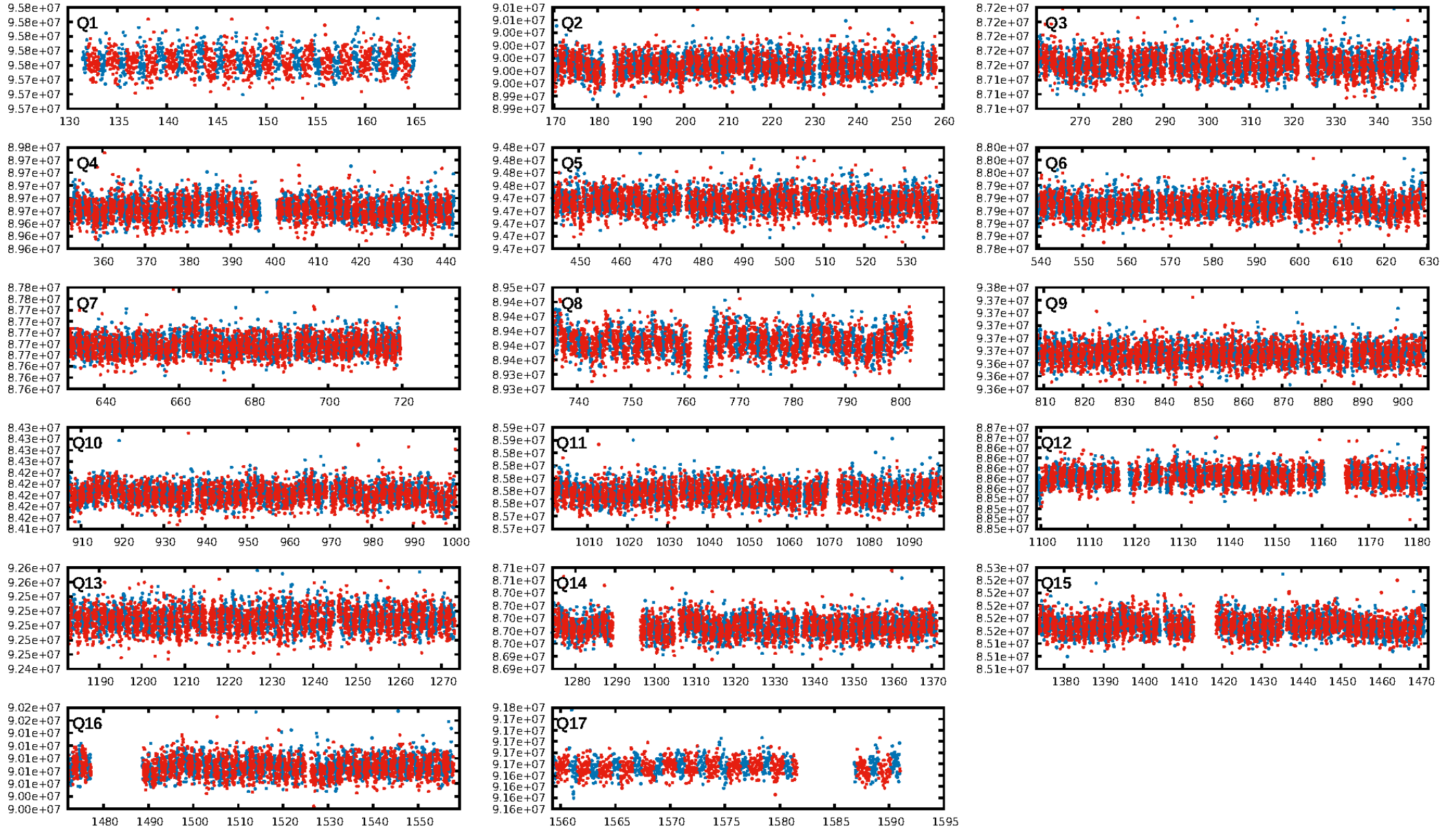
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [53.11σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [665/667]
GhostDiagnostic-chr: 3.01
Centroid-sig: N/A
Centroid-so: 1.550 arcsec [1.21σ]
OotOffset-rm: 0.539 arcsec [1.43σ]
KicOffset-rm: 0.418 arcsec [1.11σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

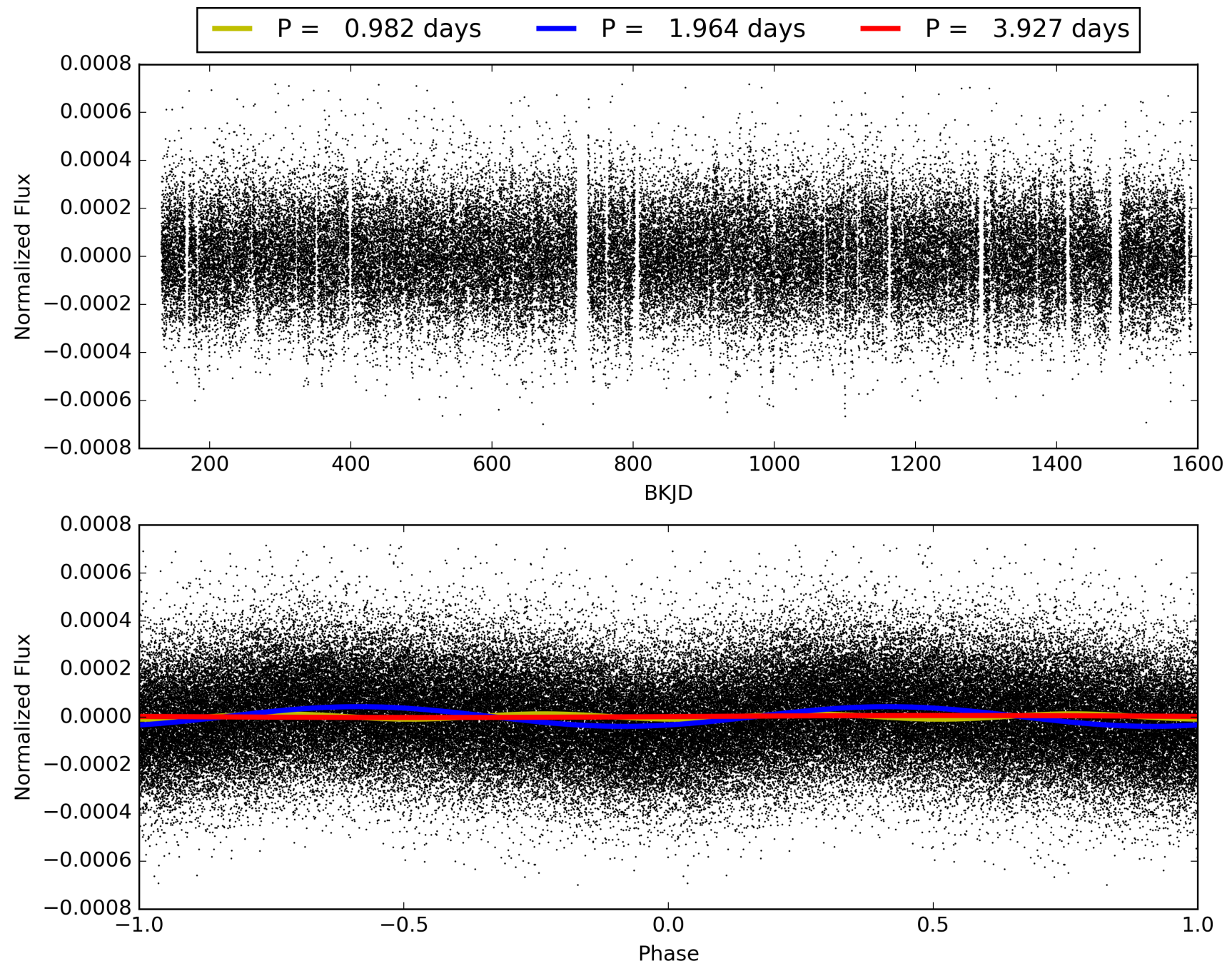
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005645883-01, PDC Light Curves

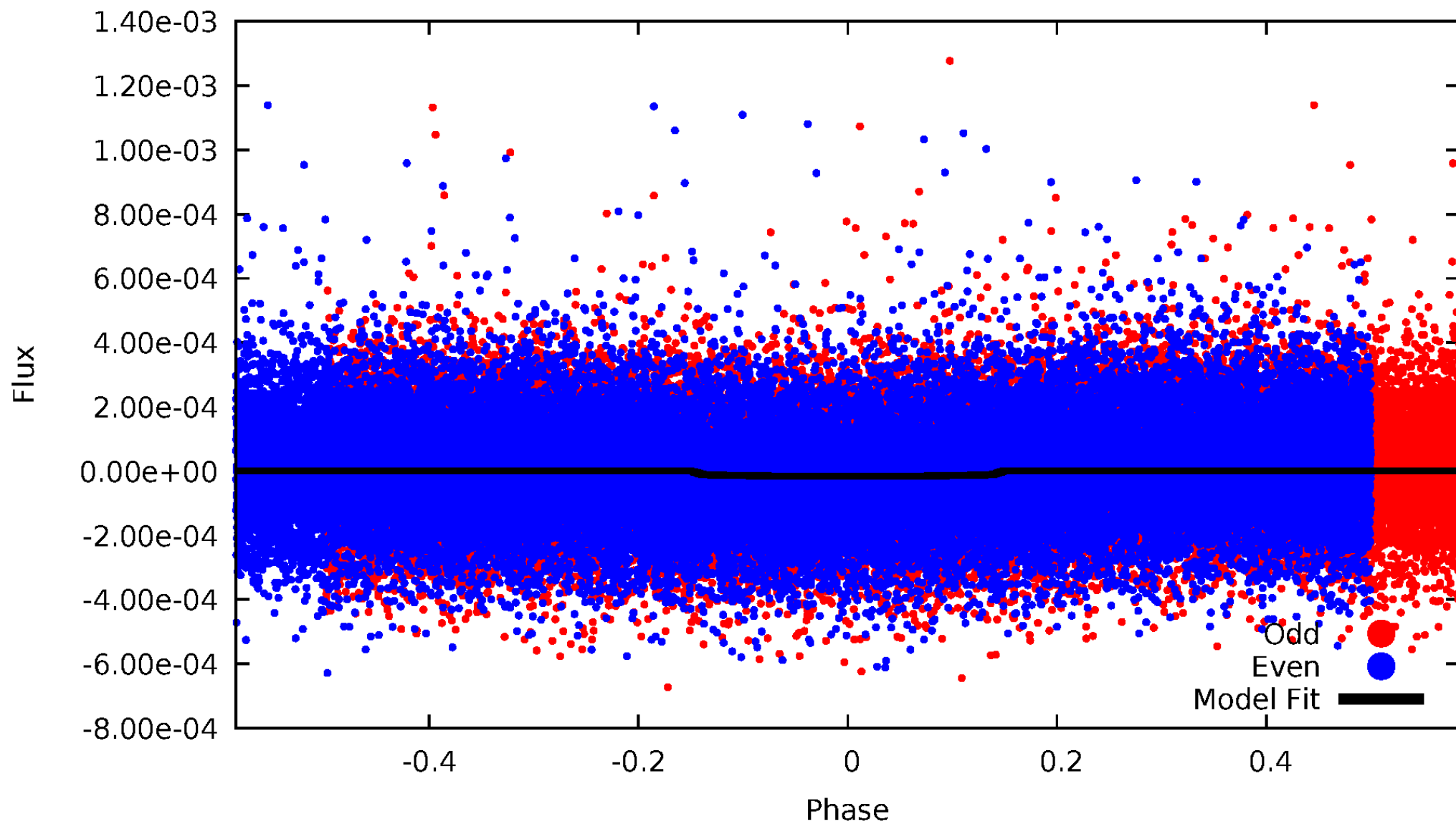


TCE 005645883-01



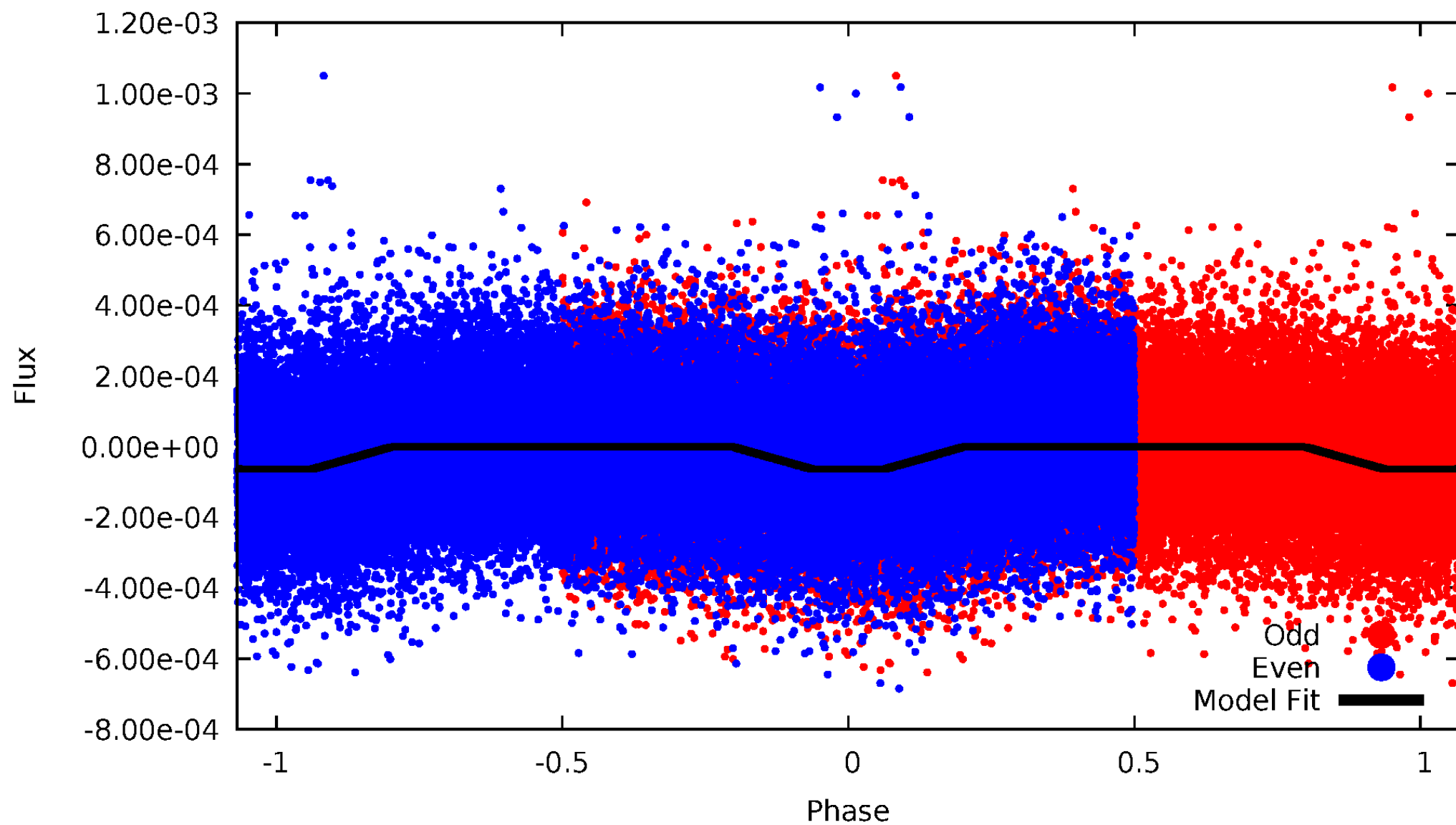
DV Odd/Even

TCE 005645883-01

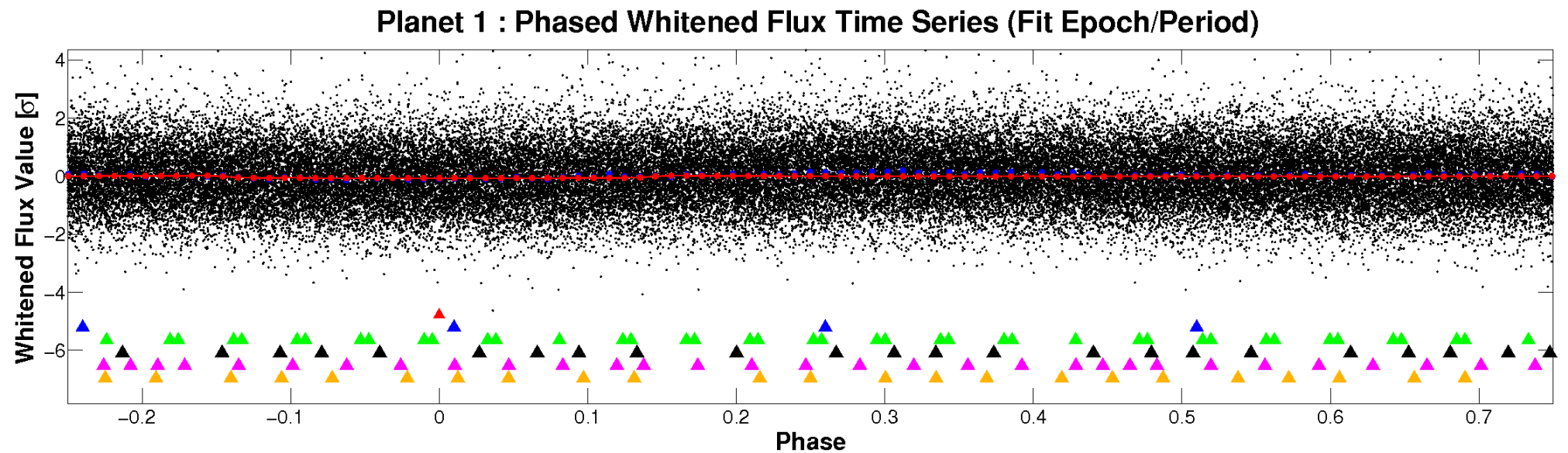
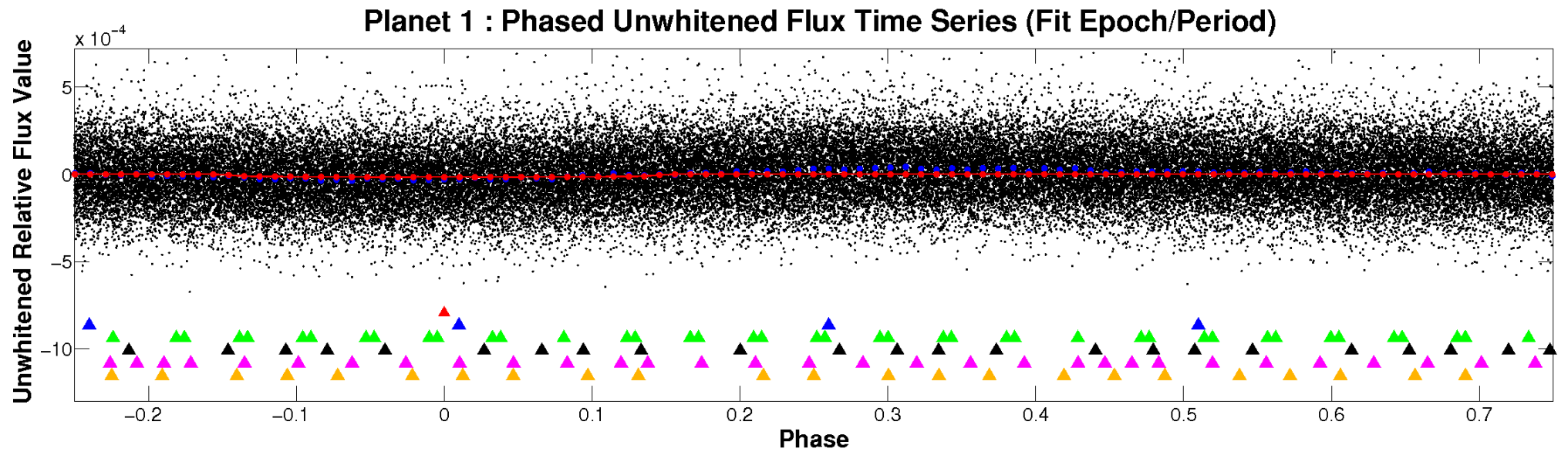


ALT Odd/Even

TCE 005645883-01

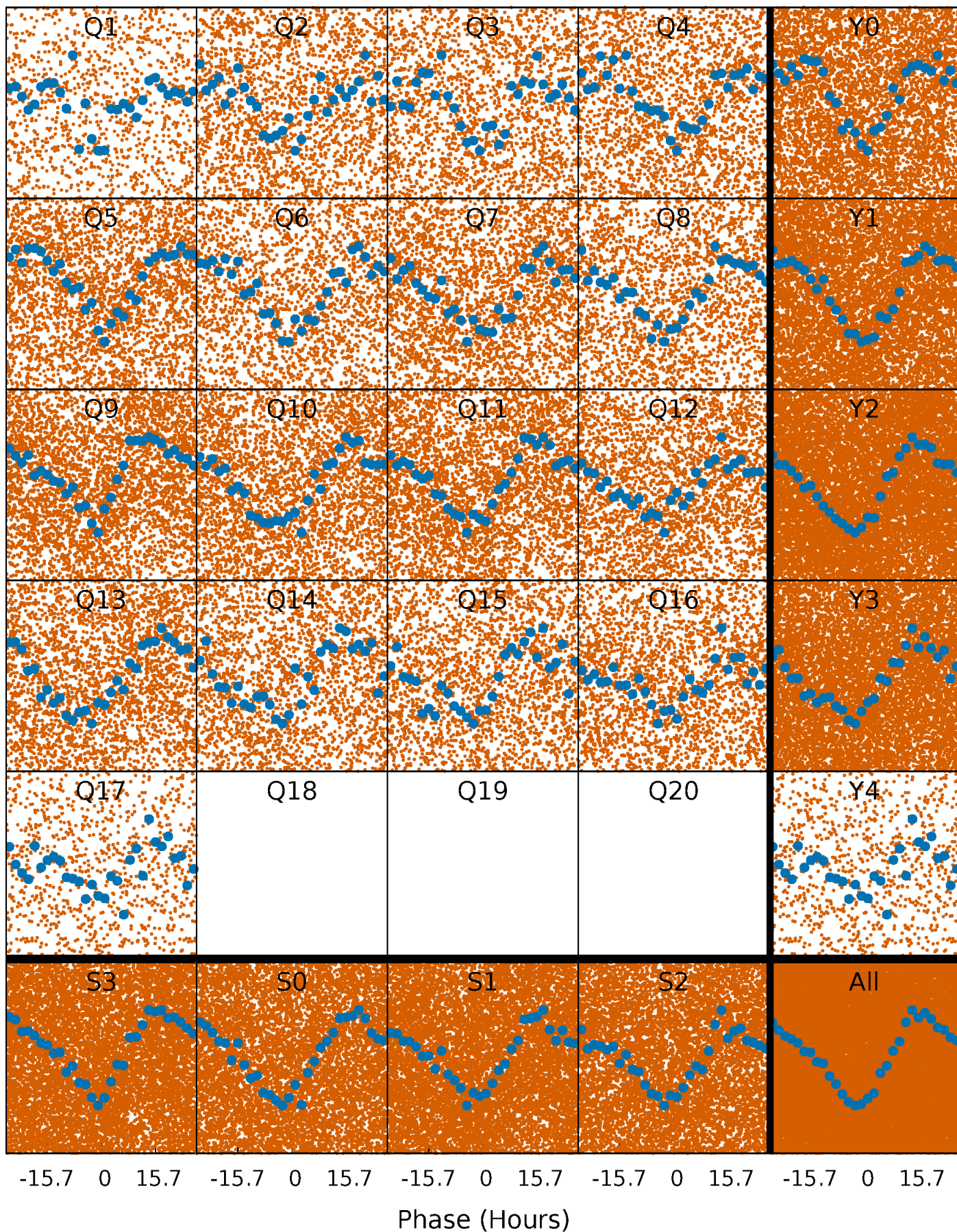


Non-Whitened Vs. Whitened Light Curve



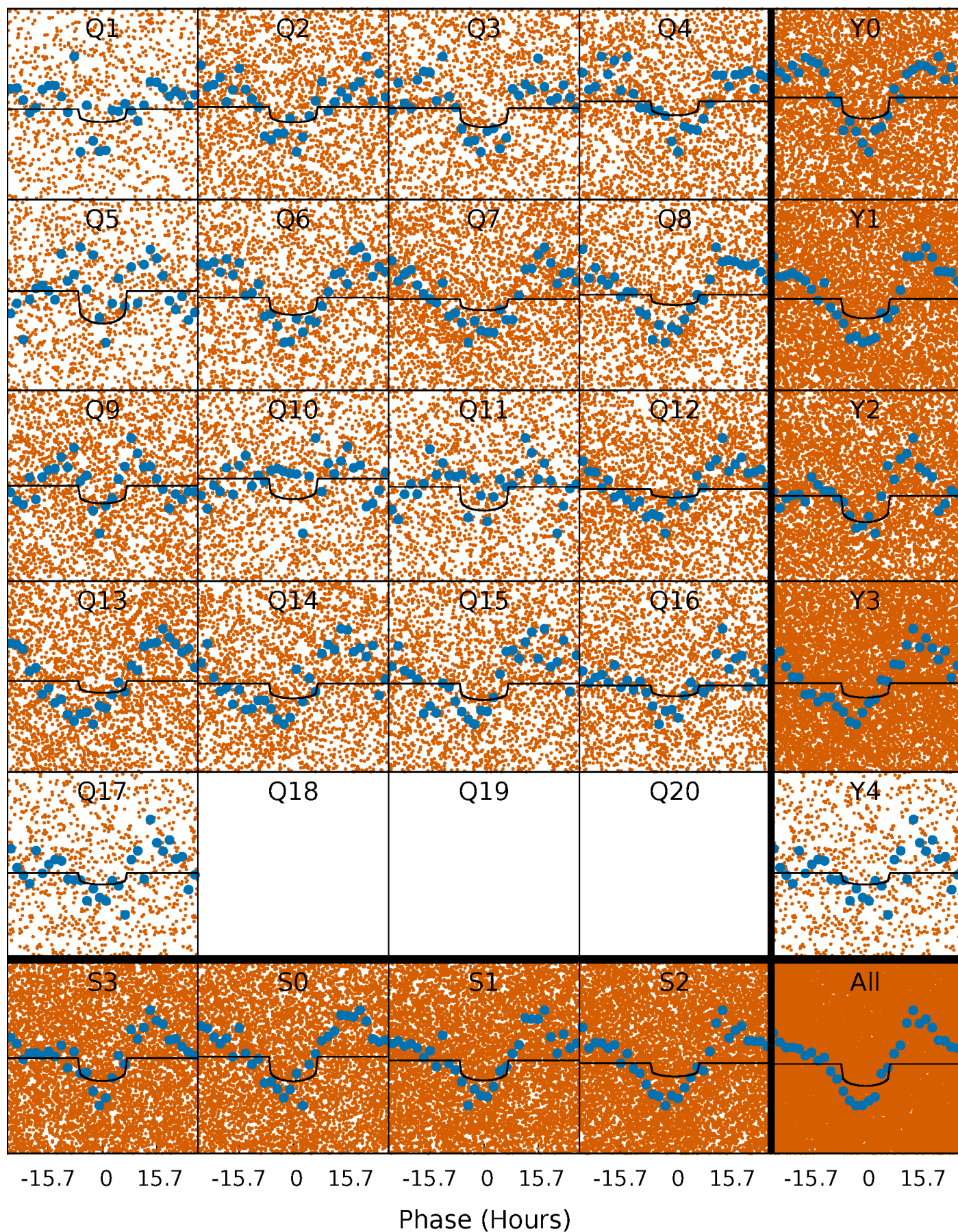
PDC Quarter-Phased Transit Curves

TCE 005645883-01 P= 1.963638 Days $T_0=132.563630$ (BKJD)



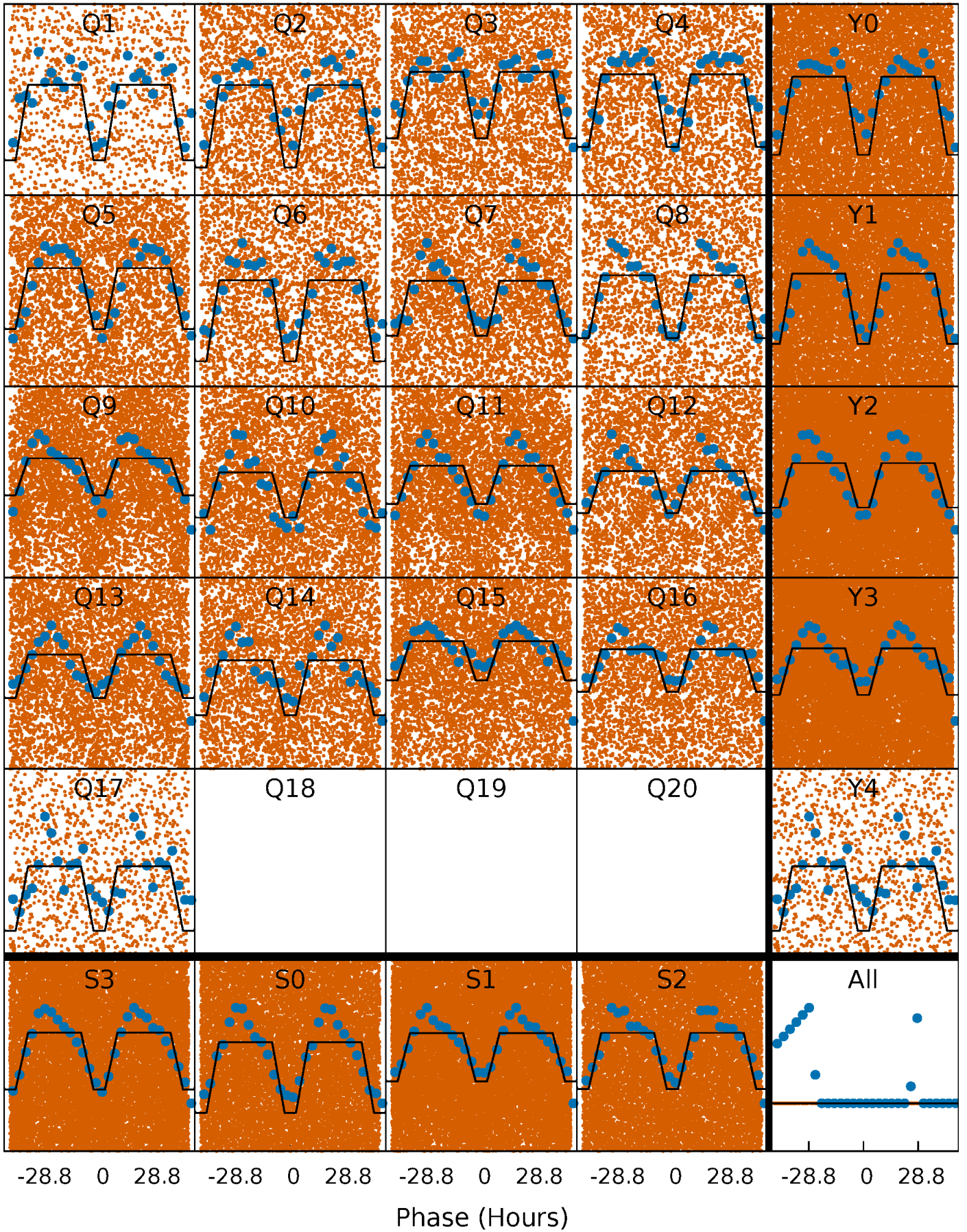
DV Quarter-Phased Transit Curves

TCE 005645883-01 P= 1.963638 Days $T_0=132.563630$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

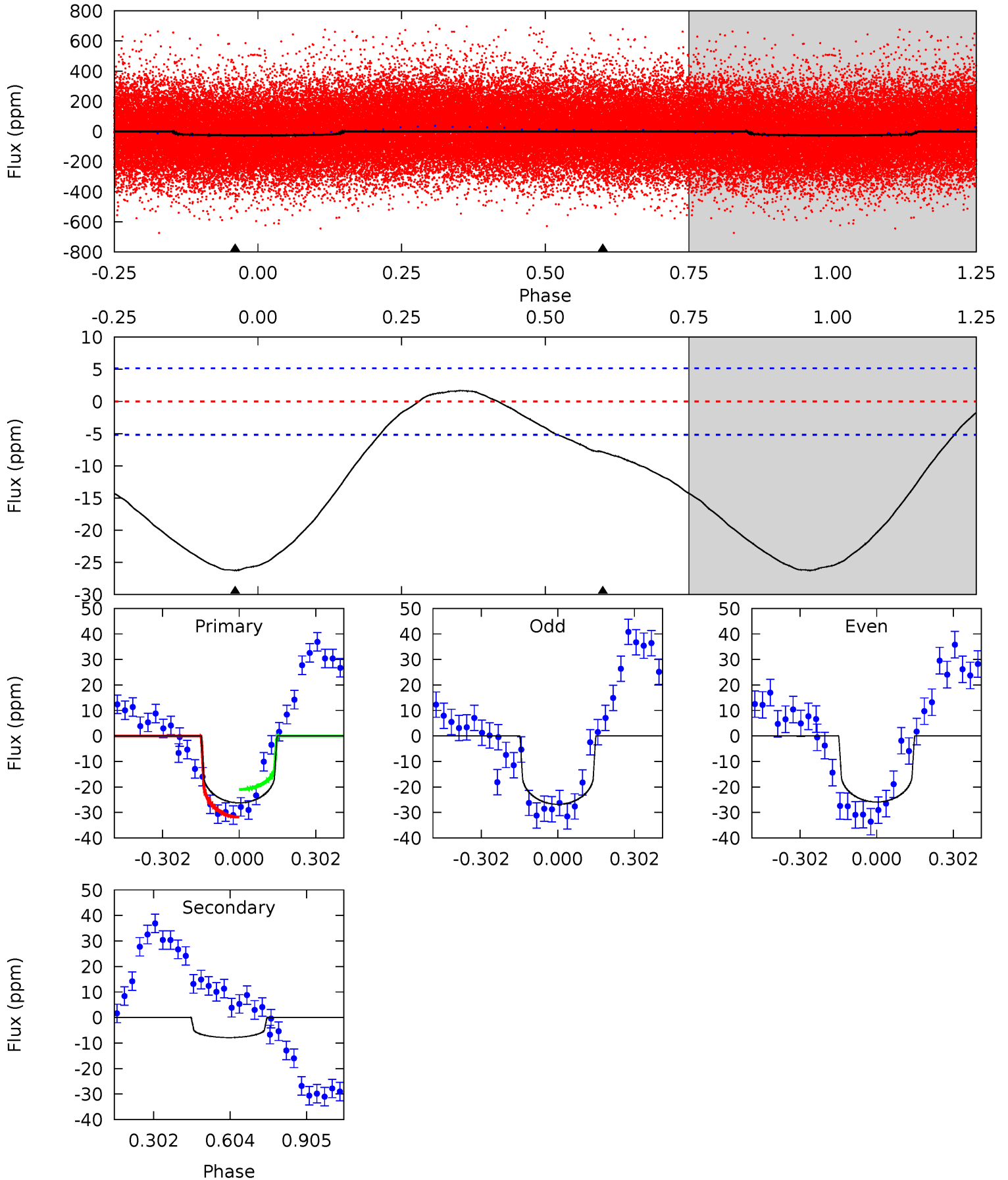
TCE 005645883-01 P= 1.963433 Days $T_0=132.550870$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-01, P = 1.963638 Days, E = 130.599992 Days

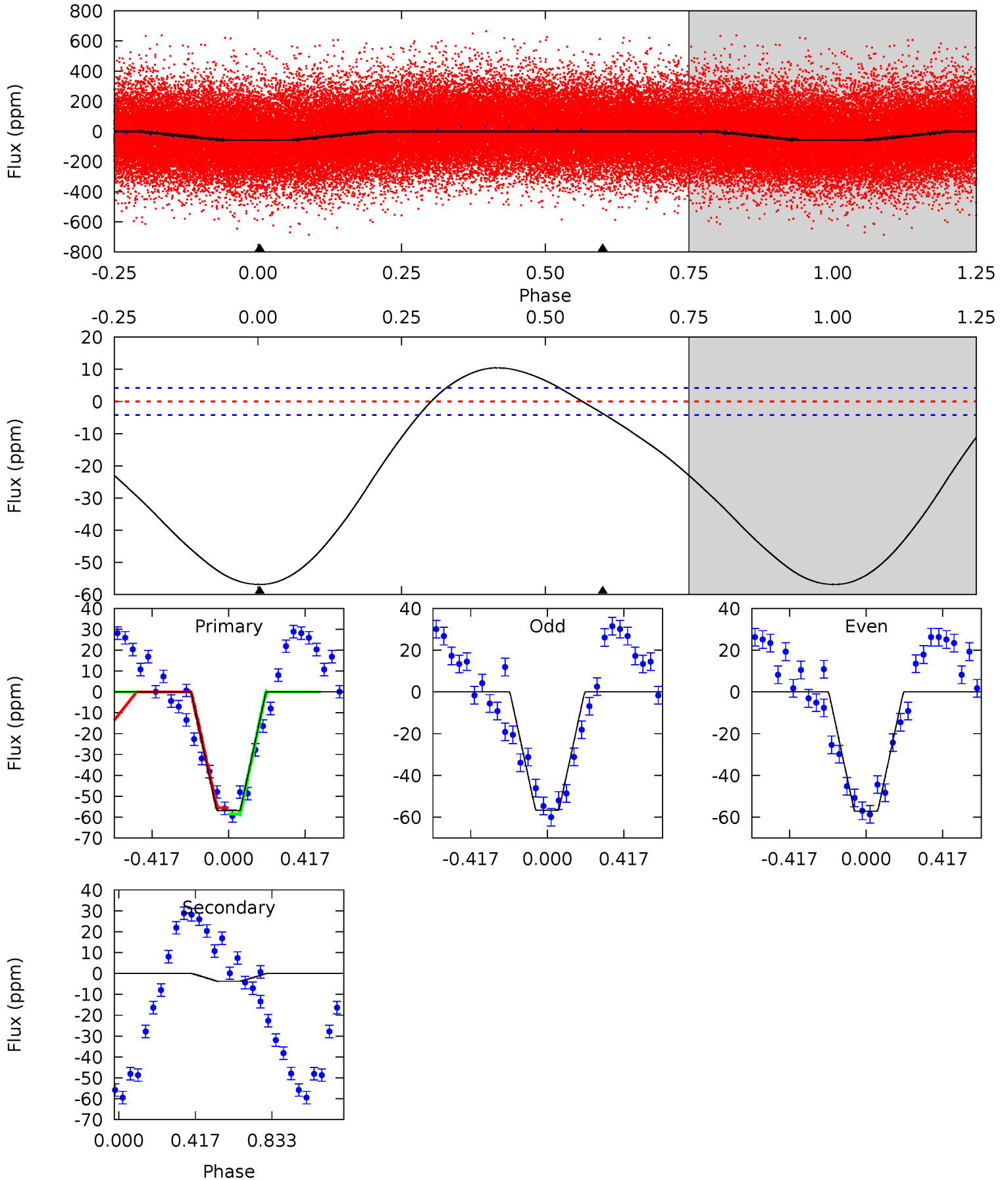
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.9 | 6.57 | 0 | 0 | 4.33 | 1.03 | 1.26 | 21.9 | 21.9 | 6.57 | 6.57 | 0.37 | 1.21 | 0.06 | 4.55 |



Alt Model-Shift Uniqueness Test

005645883-01, P = 1.963433 Days, E = 130.587437 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 57.6 | 3.79 | 0 | 0 | 4.26 | 0.81 | 5.35 | 57.6 | 57.6 | 3.79 | 3.79 | 0.25 | 1.06 | 0.16 | 1.50 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -8 ± 1 | $1.27^{+0.81}_{-0.66}$ | 4373^{+339}_{-496} | 6342^{+3725}_{-1263} | $4.018^{+13.026}_{-2.496}$ |
| Alt. | -4 ± 1 | $2.58^{+0.97}_{-0.87}$ | 4349^{+340}_{-507} | 3449^{+794}_{-6506} | $0.470^{+0.532}_{-0.232}$ |

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

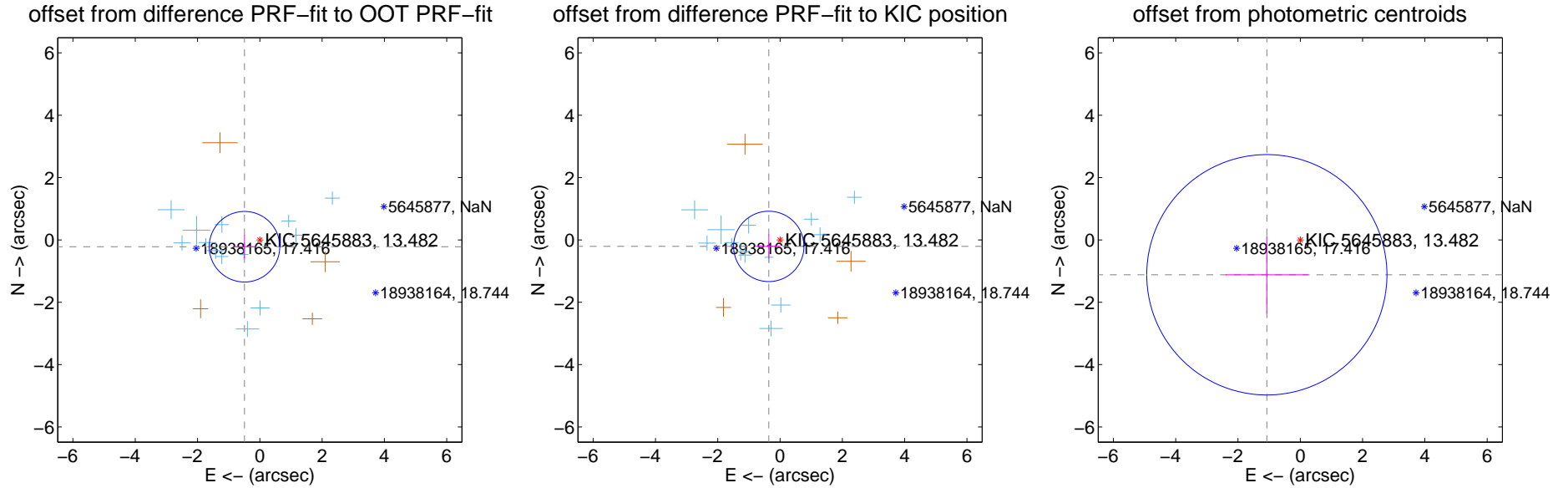
DV Centroid Data

Supplemental centroid analysis for 005645883-01. Kepler magnitude: 13.48. Transit SNR 8.86

There are 13 quarters with good PRF difference image offsets

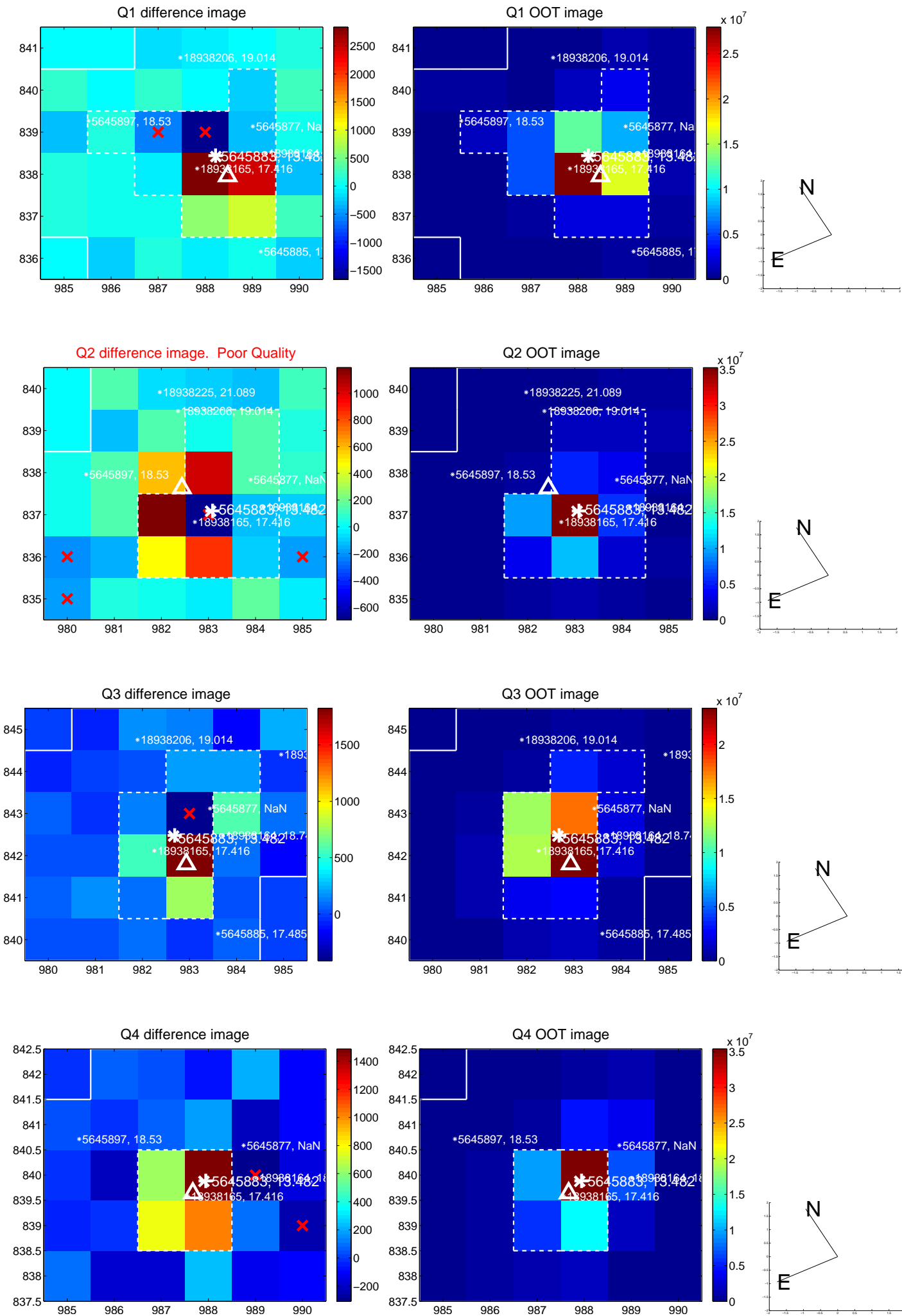
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.539 ± 0.377 | 1.43 | 0.492 ± 0.376 | -0.219 ± 0.381 |
| PRF-fit source offset from KIC position | 0.418 ± 0.376 | 1.11 | 0.362 ± 0.373 | -0.208 ± 0.385 |
| photometric centroid source offset | 1.55 ± 1.29 | 1.21 | 1.07 ± 1.33 | -1.12 ± 1.25 |

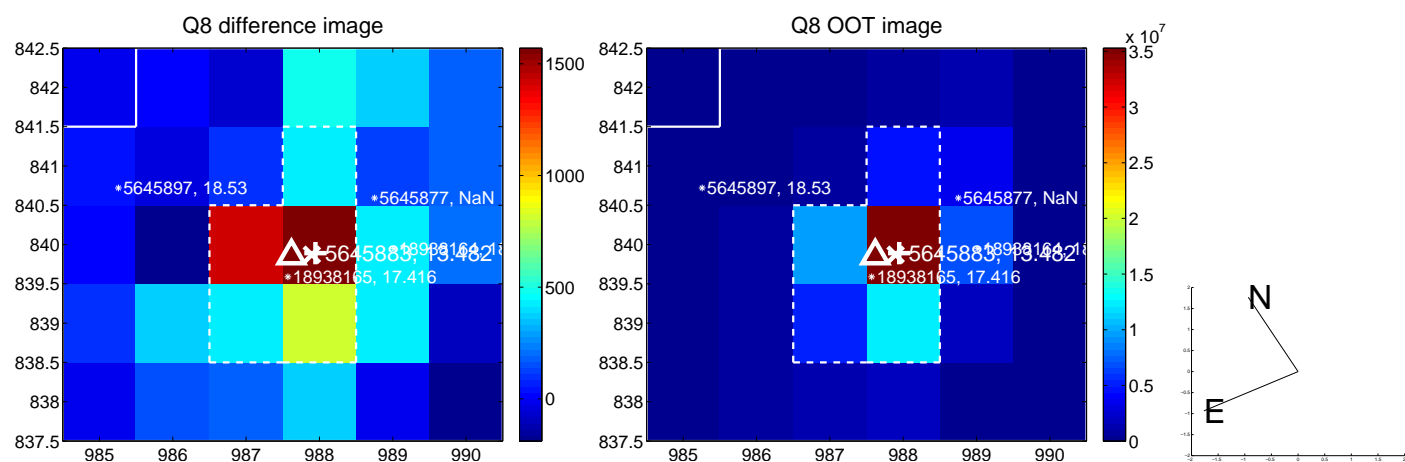
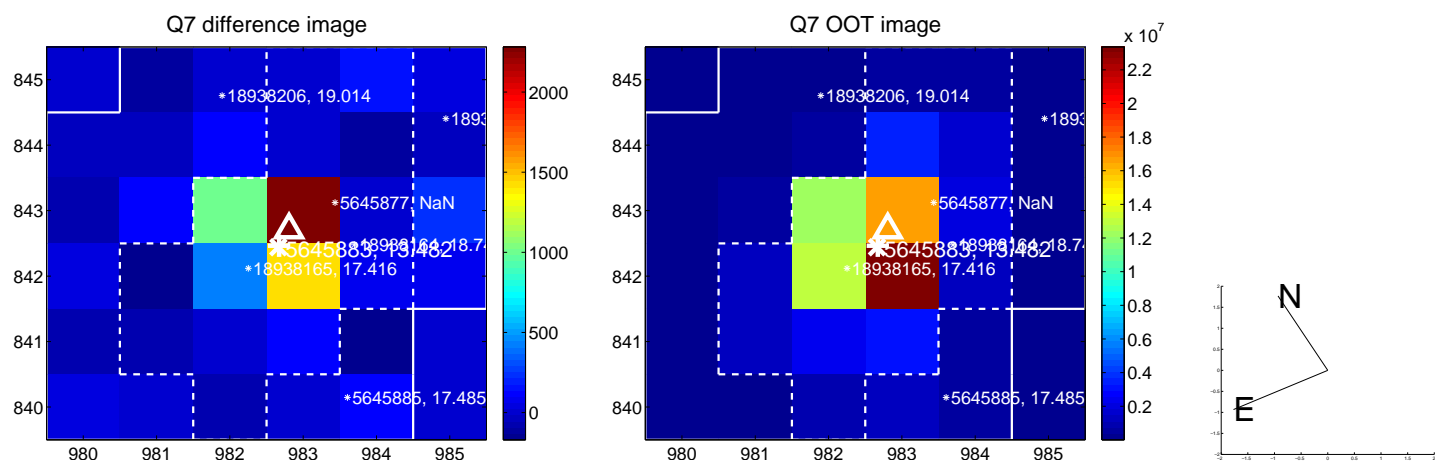
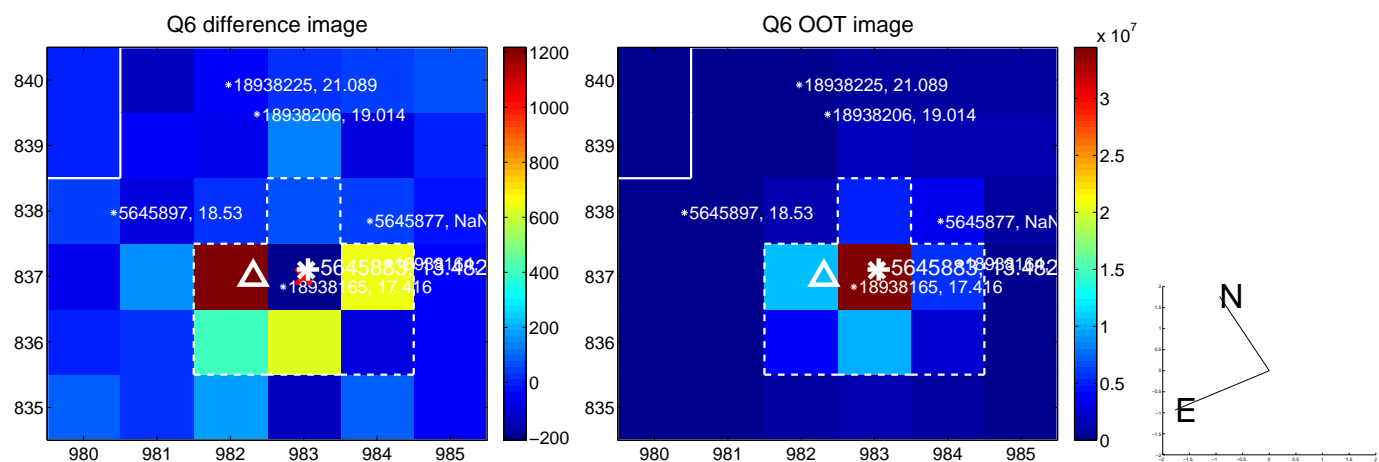
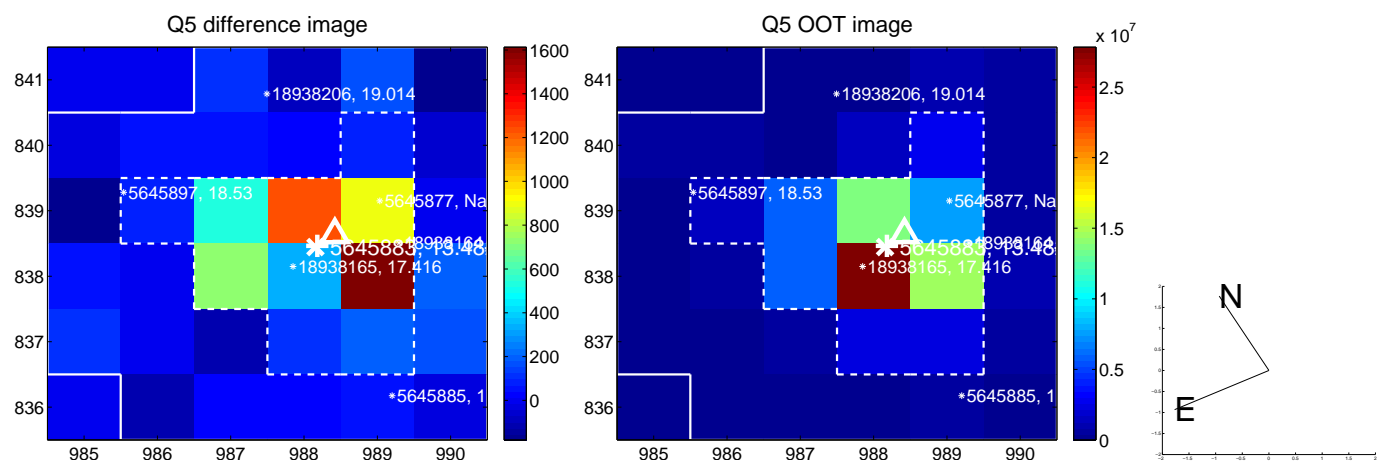


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

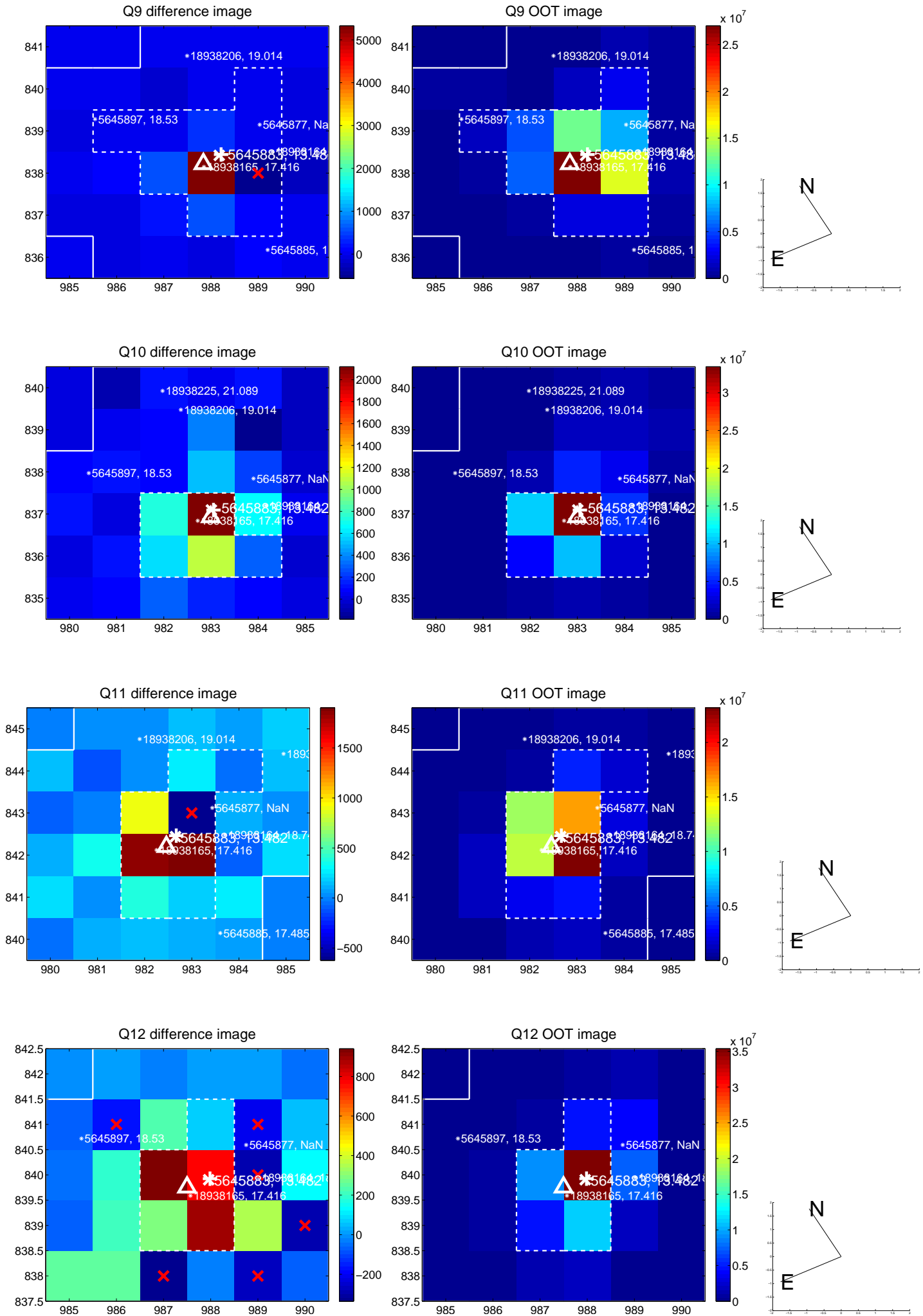
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



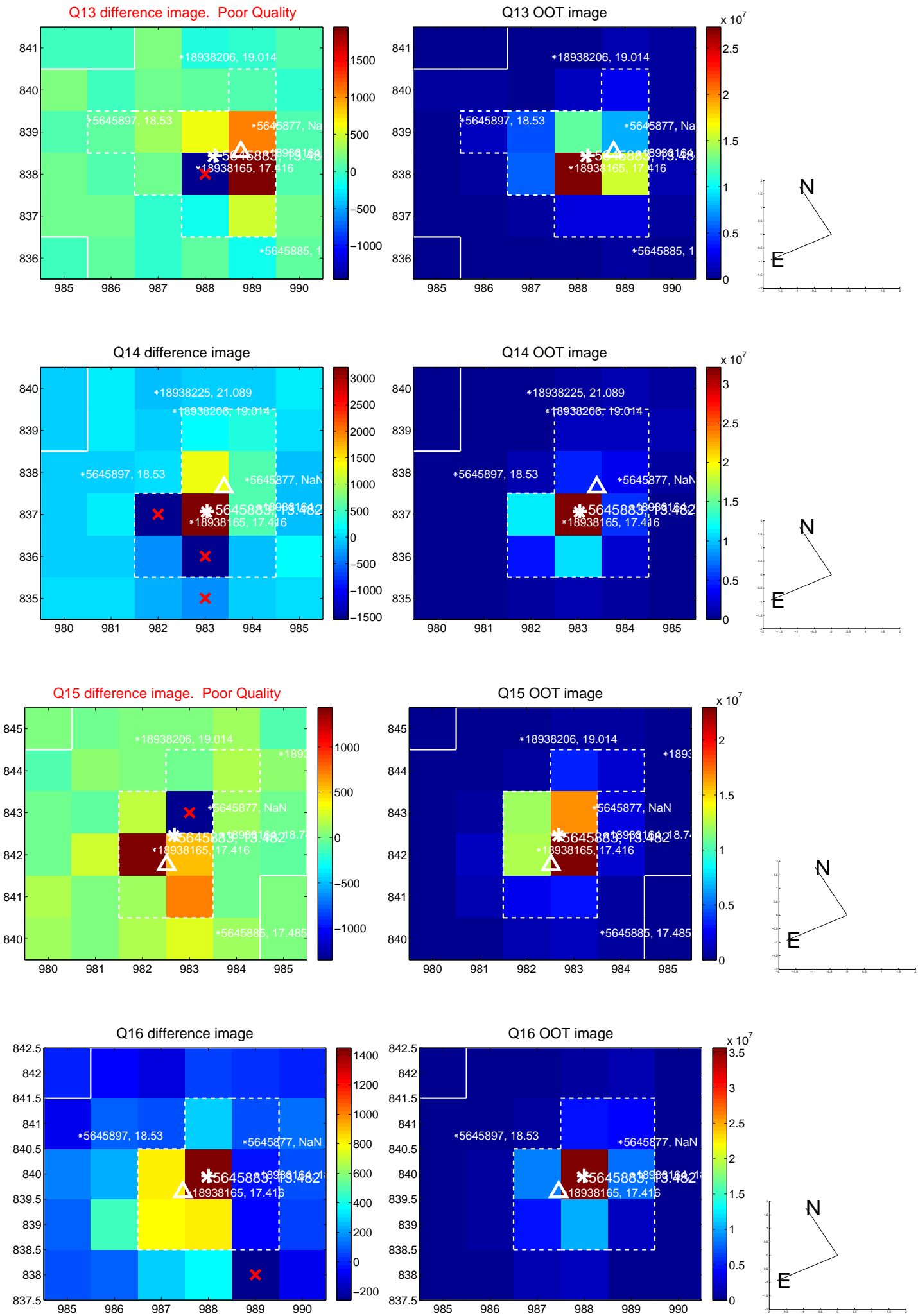
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



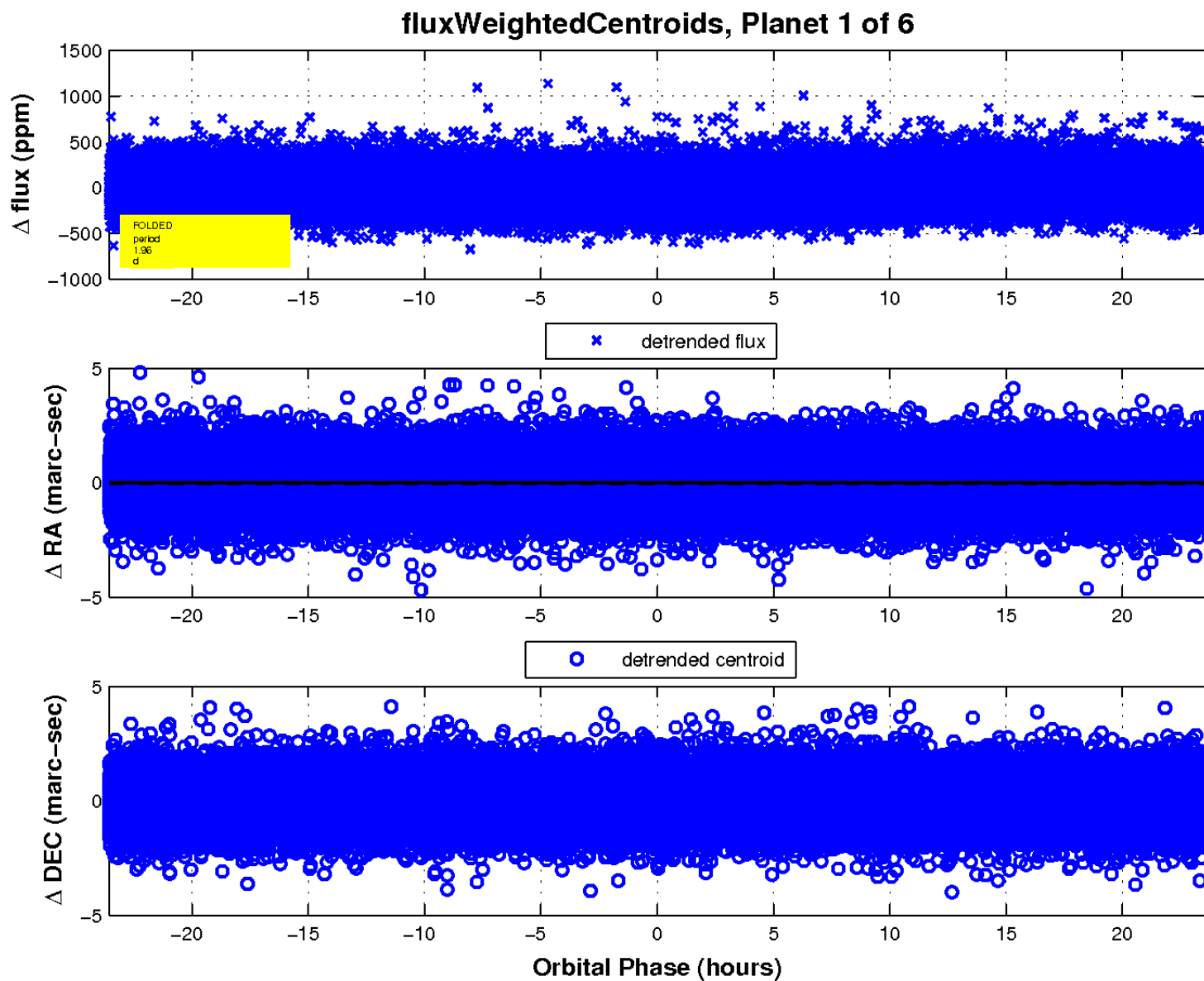
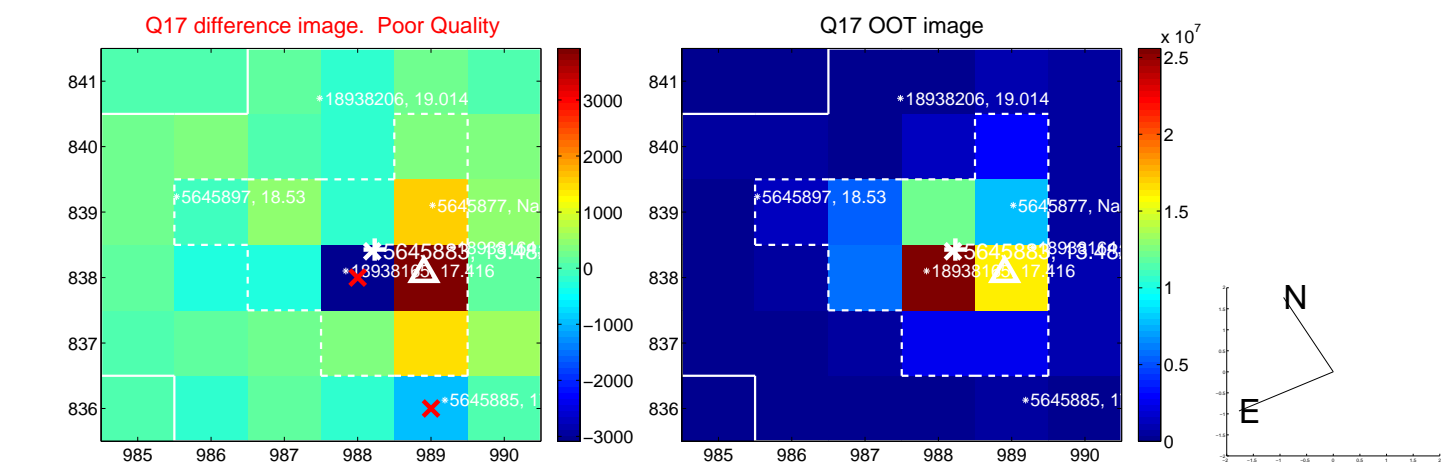
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

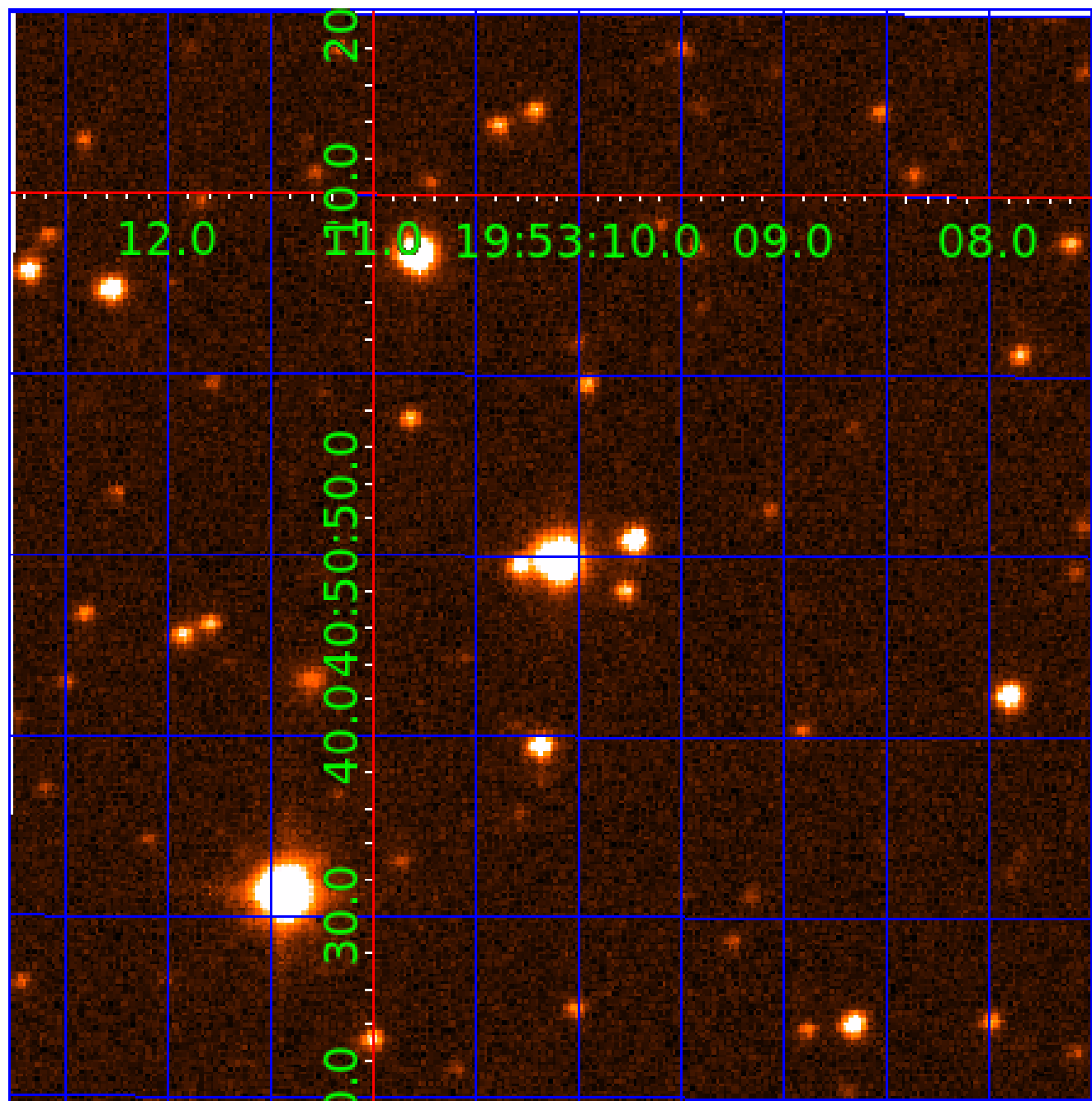


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

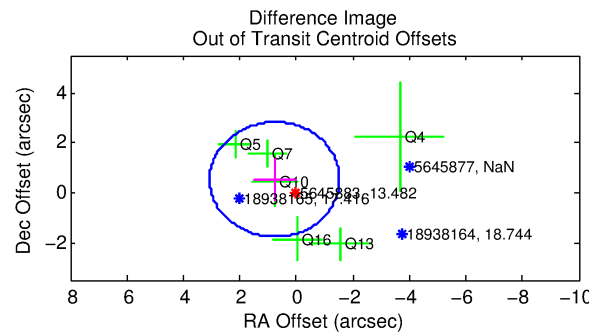
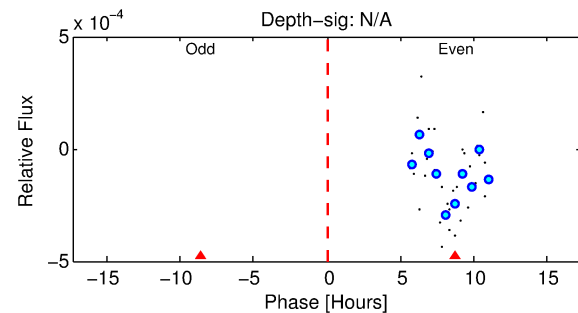
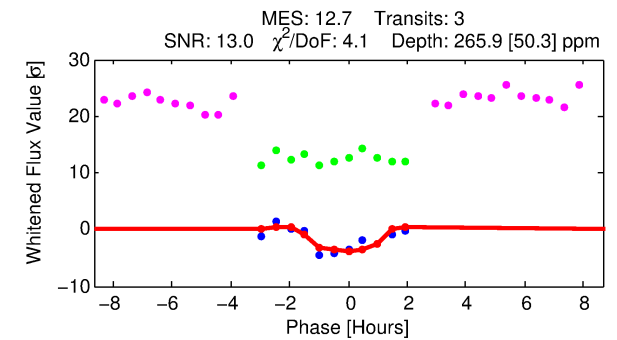
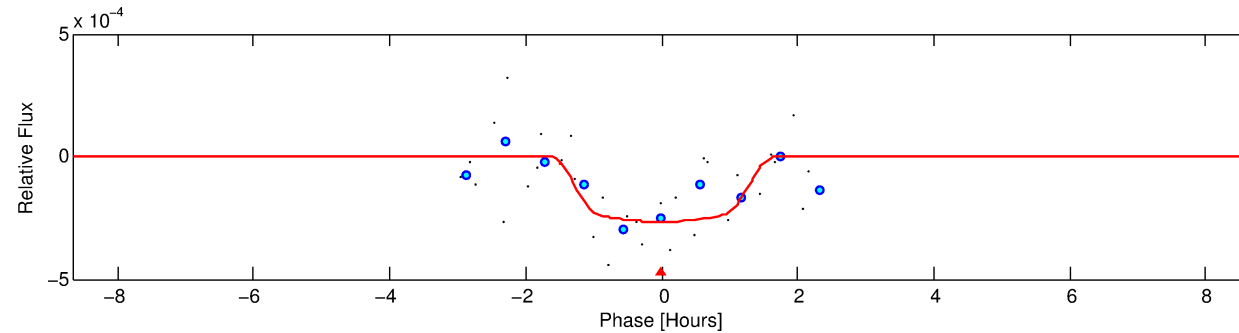
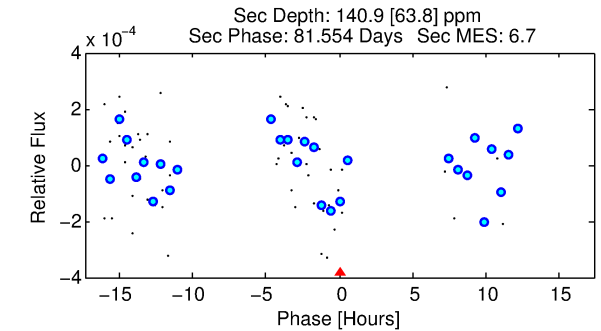
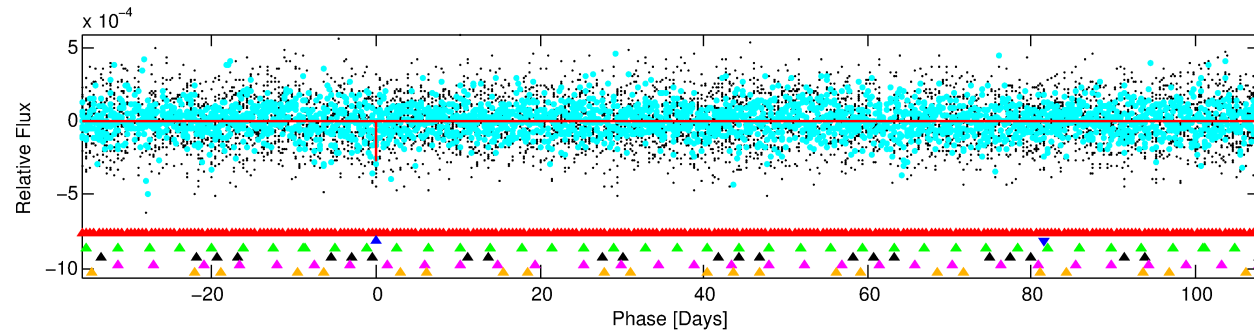
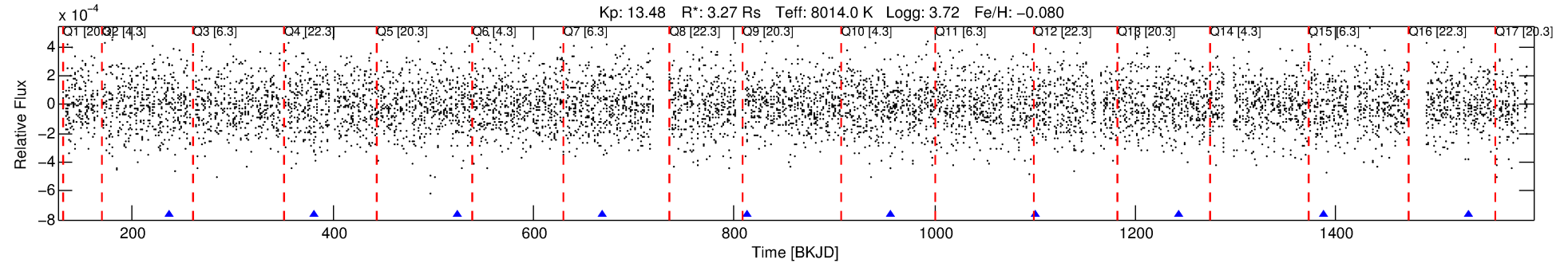
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-02

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 2 of 6 Period: 143.836 d



DV Fit Results:

Period = 143.83647 [0.00203] d
Epoch = 237.1470 [0.0115] BKJD
Rp/R* = 0.0176 [0.0123]
a/R* = 171.84 [717.78]
b = 0.91 [0.79]
Seff = 84.95 [62.51]
Teq = 774 [142] K
Rp = 6.28 [5.22] Re
a = 0.6829 [0.3021] AU
Ag = 916.54 [1499.68] [0.61] σ
Teffp = 6586 [2437] K [2.38] σ

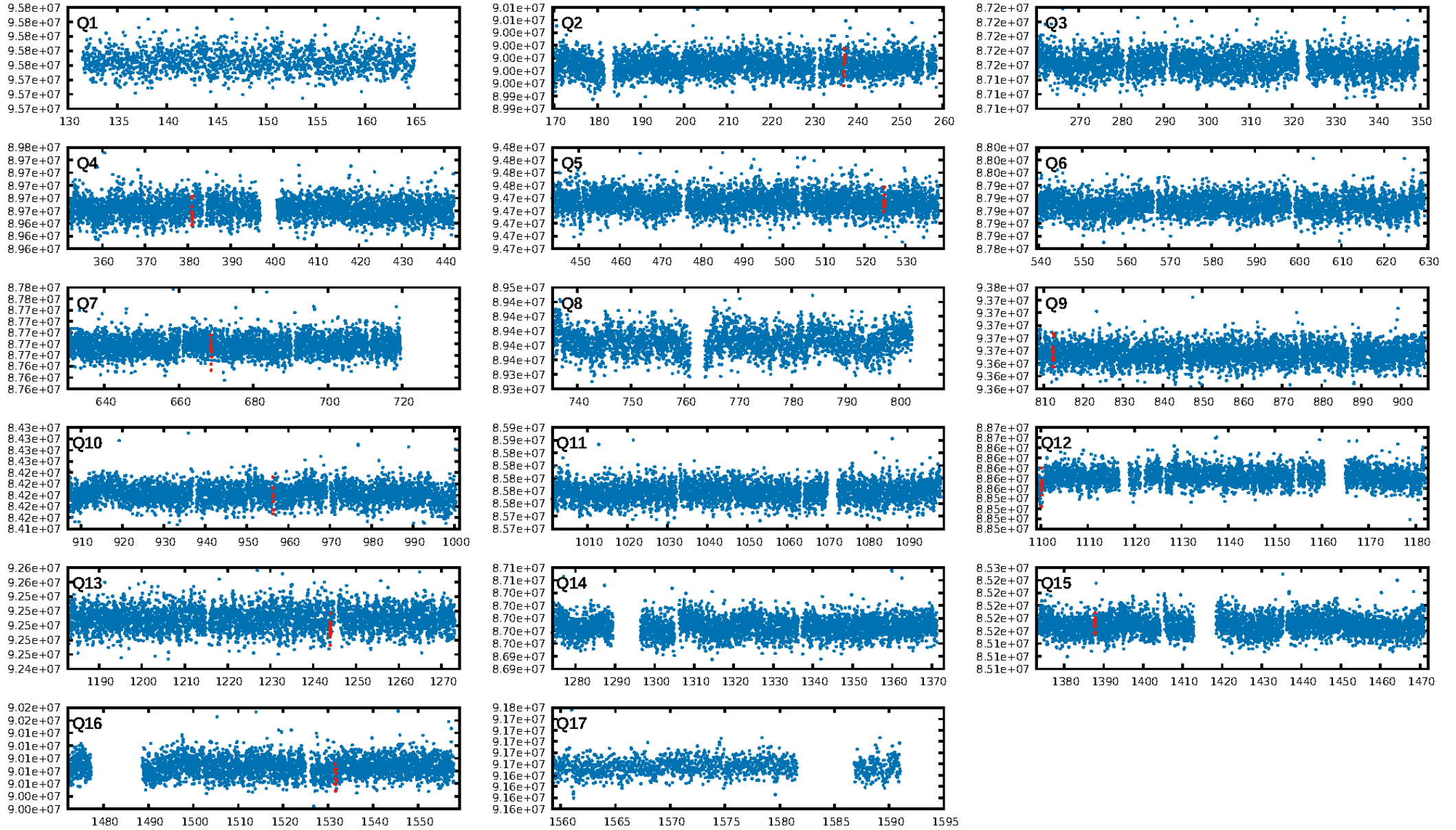
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [569.86] σ
LongPeriod-sig: N/A
ModelChiSquare2-sig: 27.9%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.204
Centroid-sig: N/A
Centroid-so: 1.708 arcsec [1.25] σ
OotOffset-rm: 0.933 arcsec [1.22] σ
OotOffset-st: 1/1/2/2 [6]
KicOffset-rm: 0.843 arcsec [1.07] σ
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.33 [3/9]

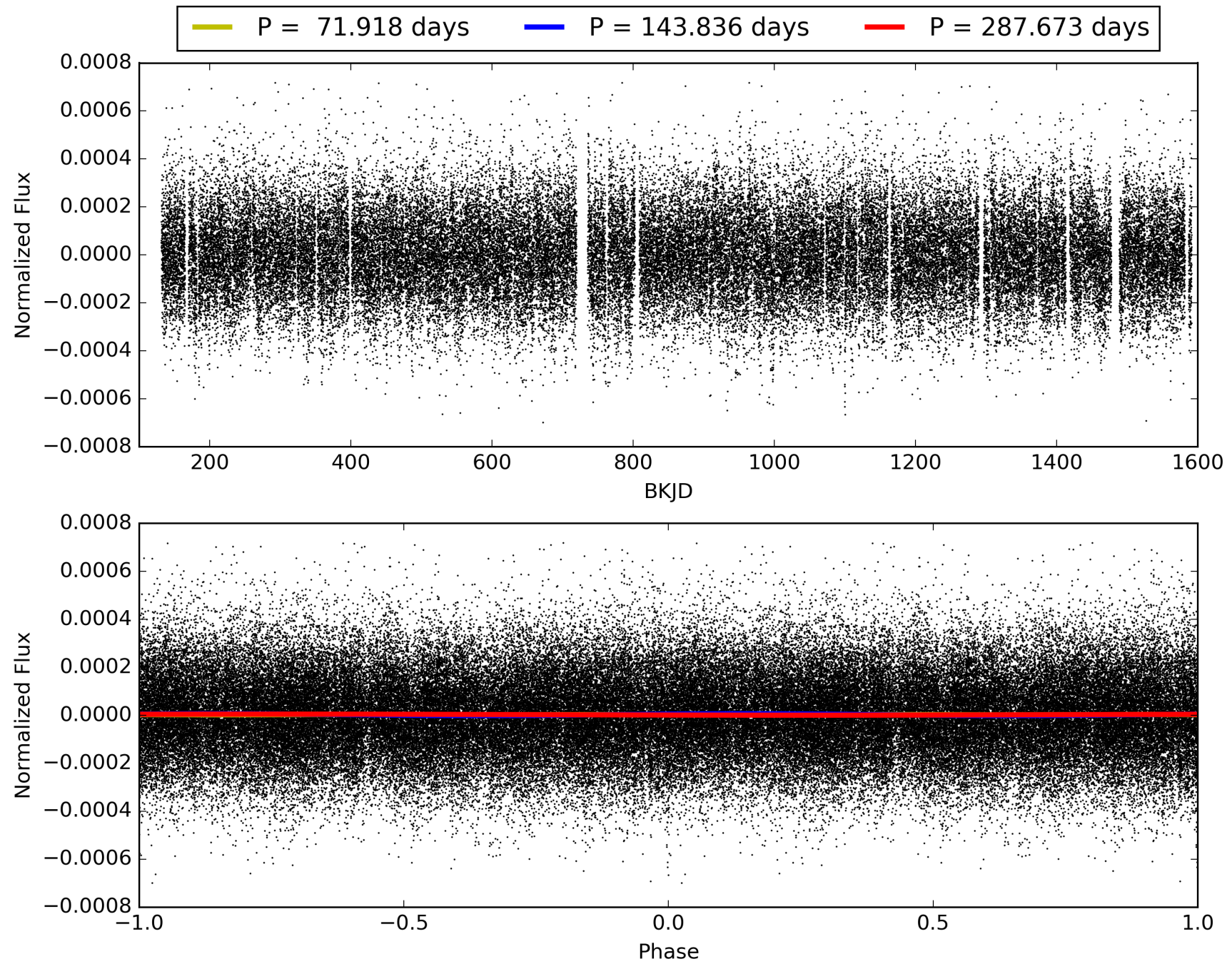
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:10:38 Z

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

TCE 005645883-02, PDC Light Curves

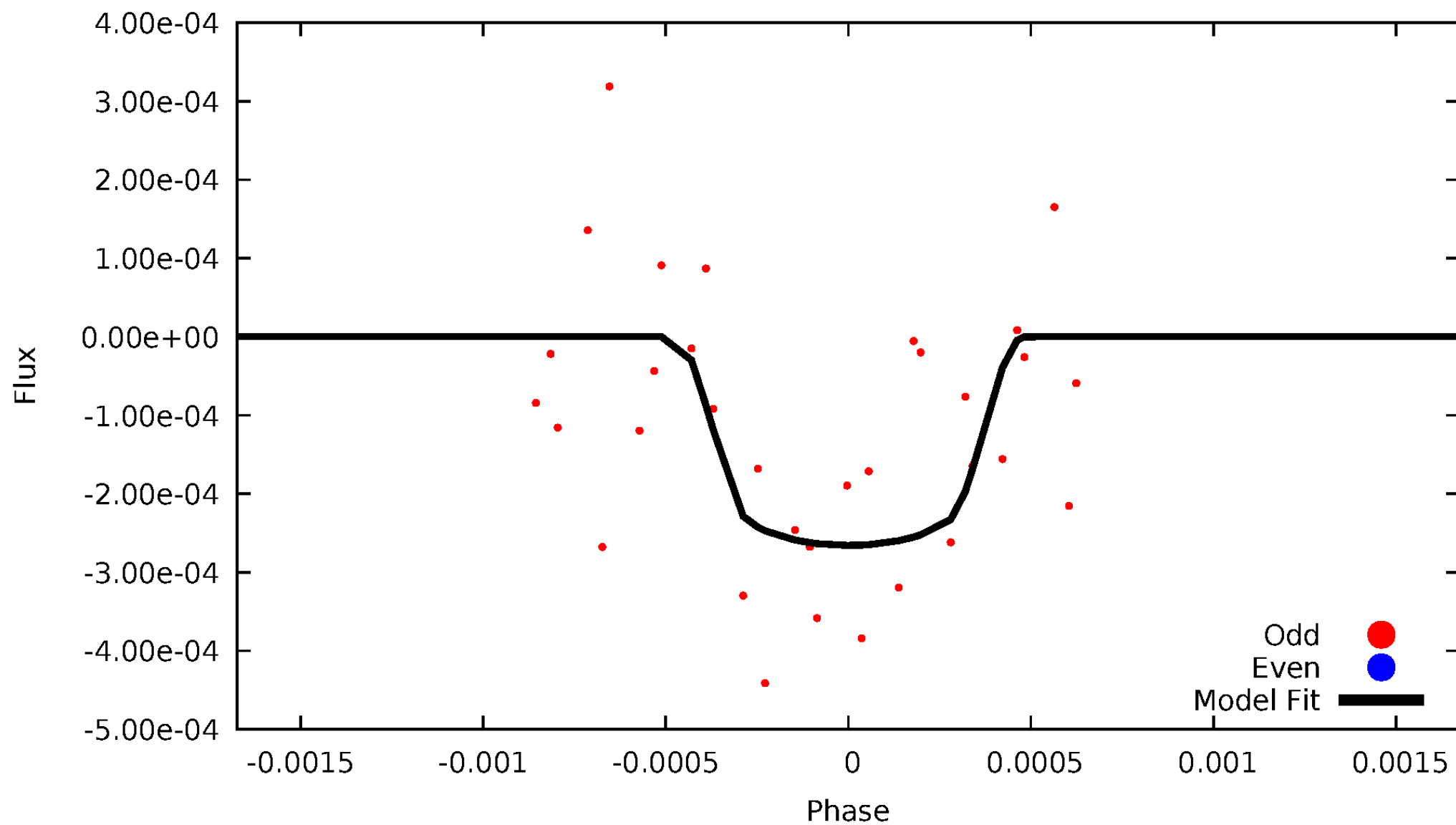


TCE 005645883-02



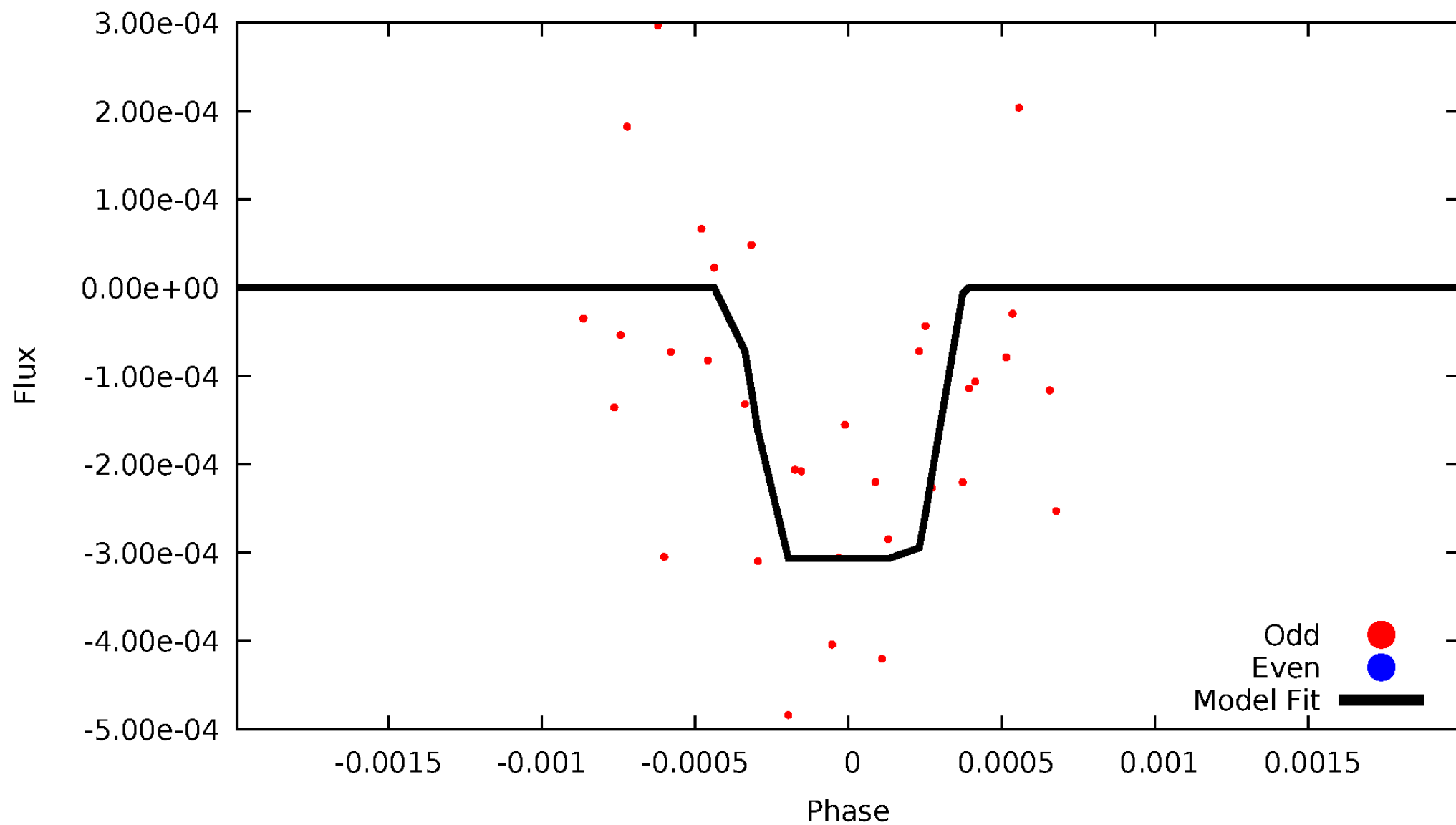
DV Odd/Even

TCE 005645883-02



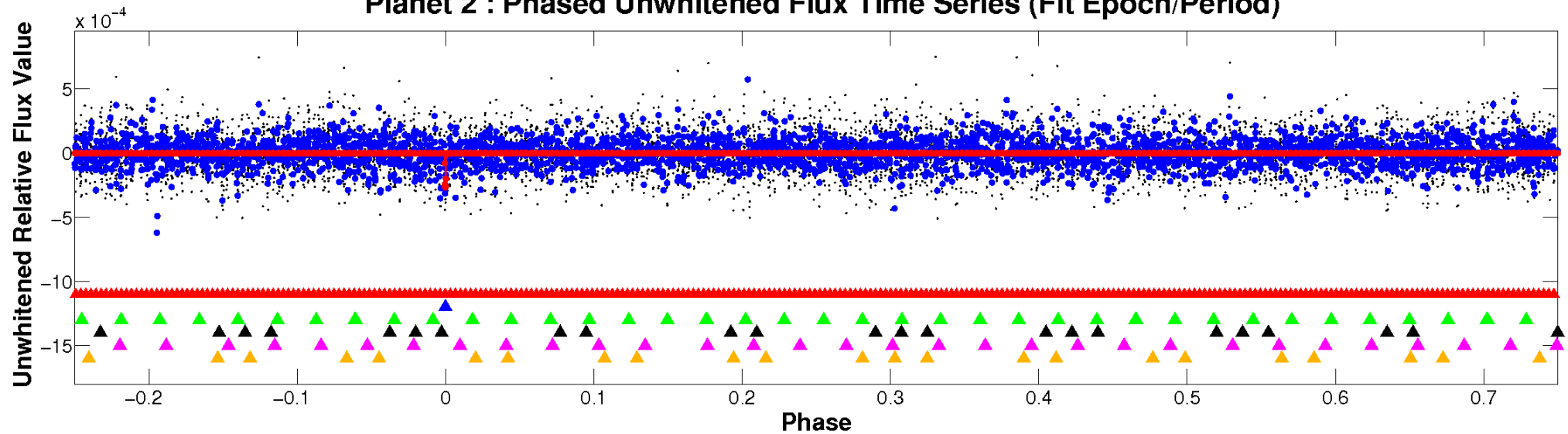
ALT Odd/Even

TCE 005645883-02

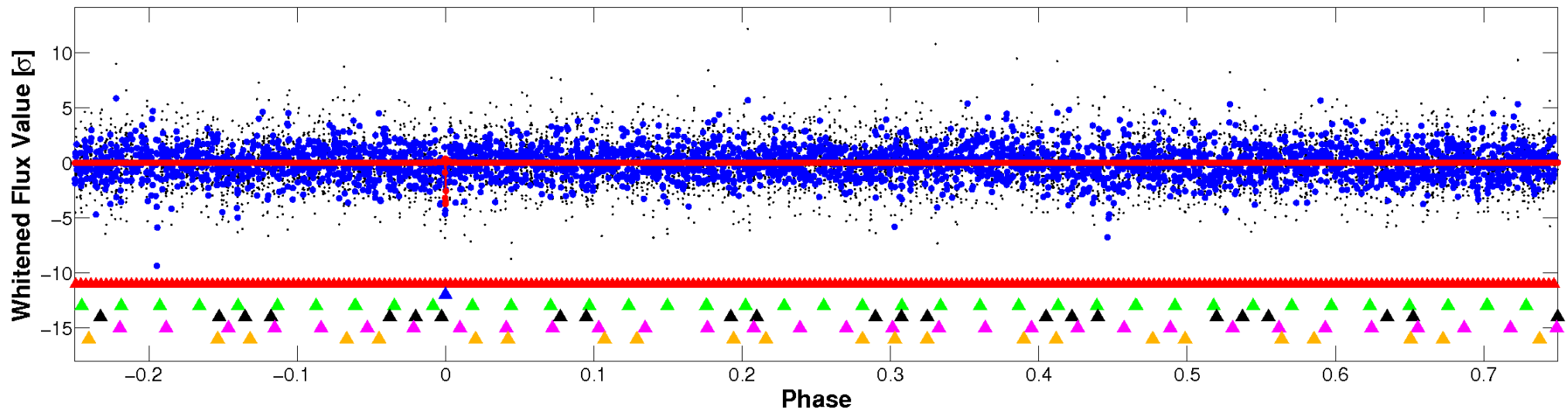


Non-Whitened Vs. Whitened Light Curve

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

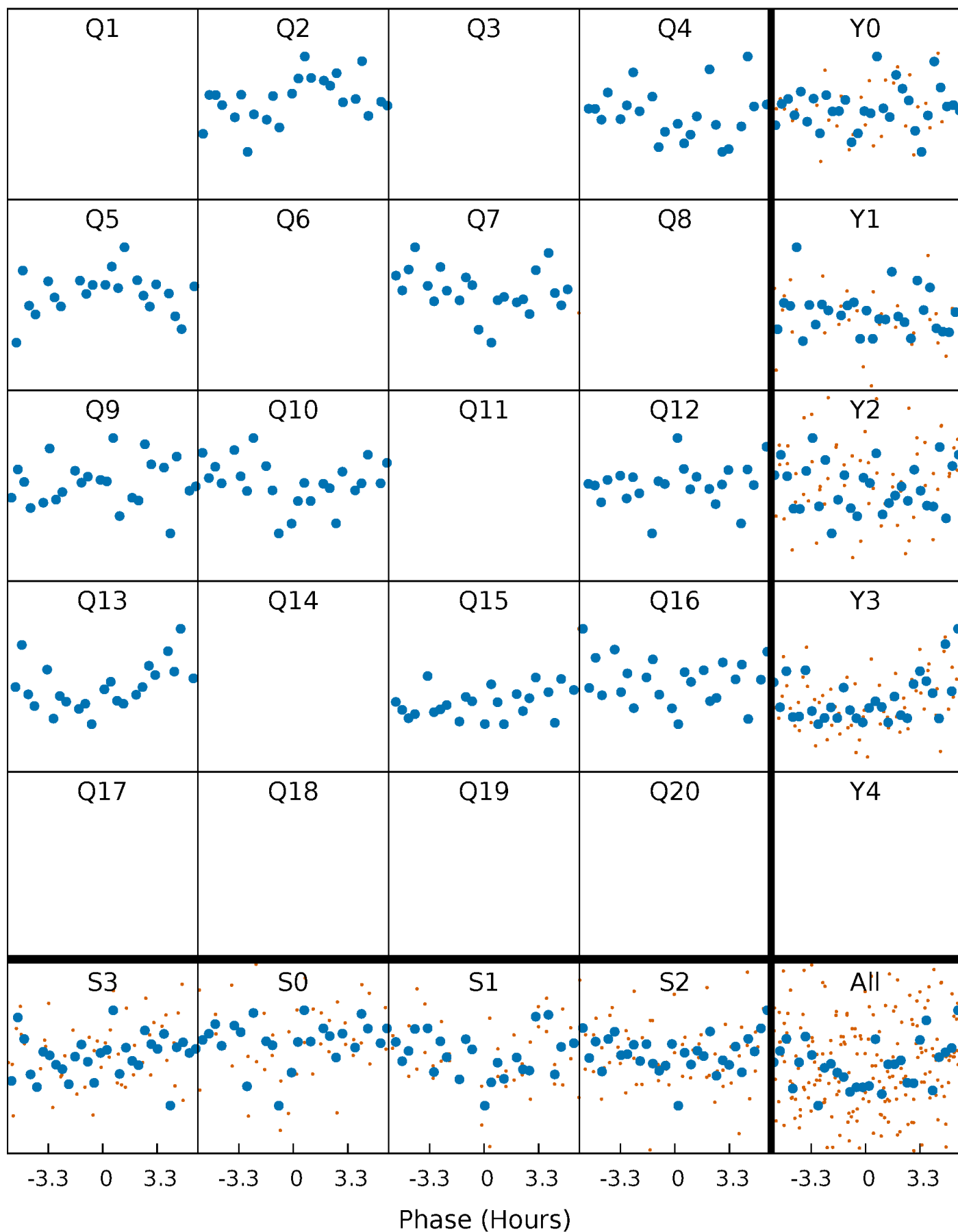


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



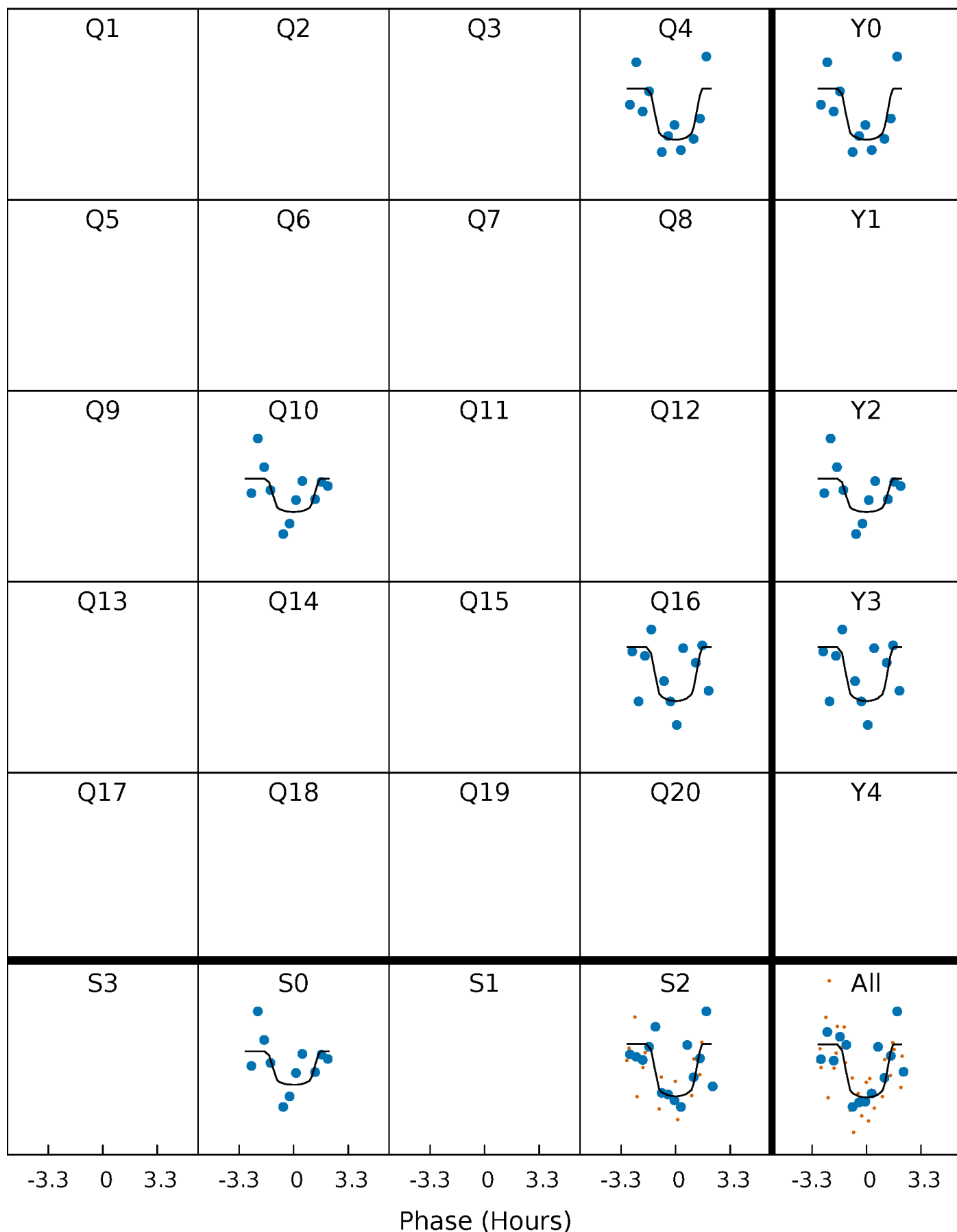
PDC Quarter-Phased Transit Curves

TCE 005645883-02 P=143.836466 Days $T_0=237.146955$ (BKJD)



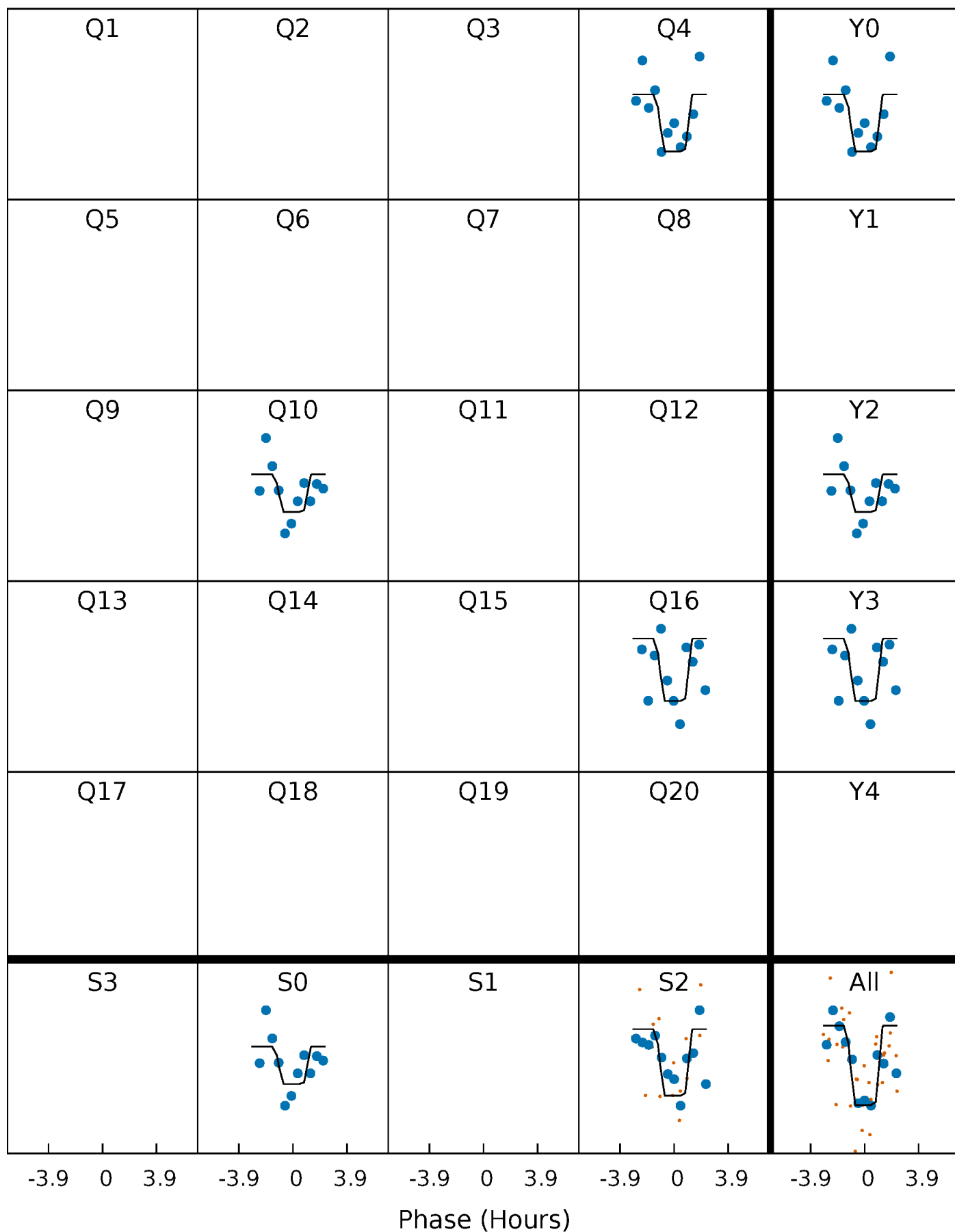
DV Quarter-Phased Transit Curves

TCE 005645883-02 P=143.836466 Days $T_0=237.146955$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

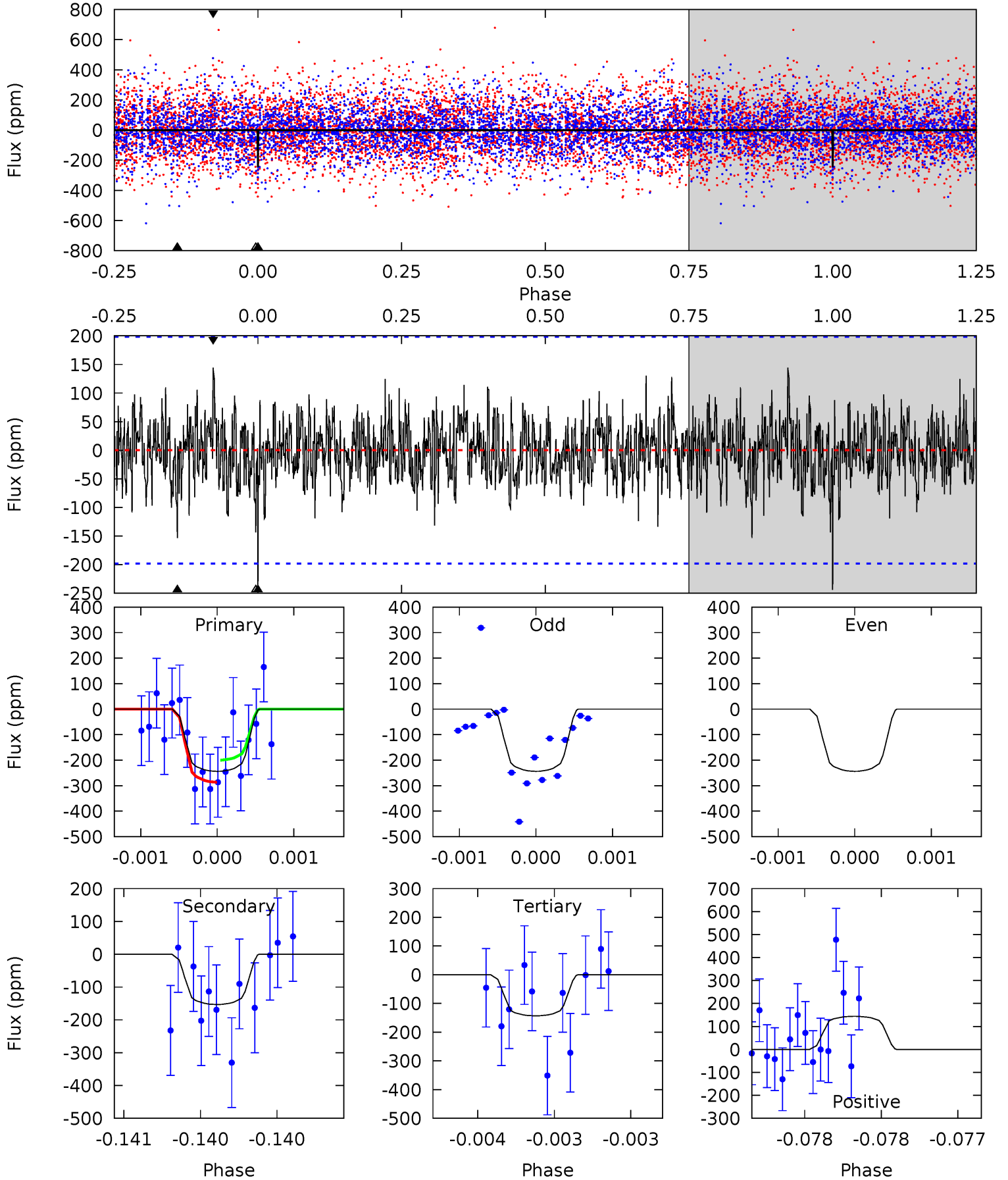
TCE 005645883-02 P=143.835003 Days $T_0=237.149564$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-02, P = 143.836466 Days, E = 93.310489 Days

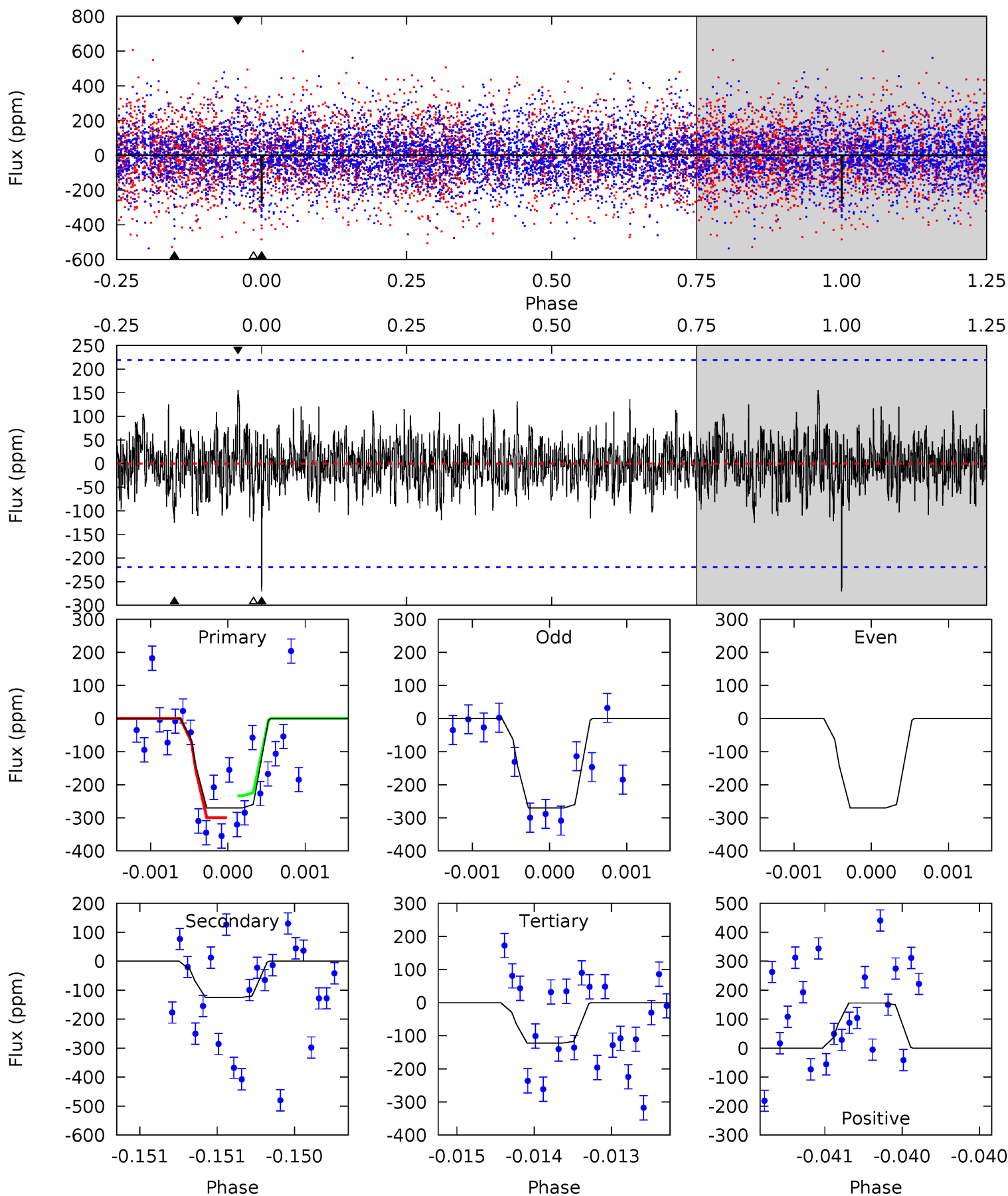
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.74 | 4.24 | 3.96 | 3.98 | 5.48 | 3.33 | 1.17 | 2.79 | 2.76 | 0.28 | 0.25 | 0 | 0.96 | 0.37 | 1.19 |



Alt Model-Shift Uniqueness Test

005645883-02, P = 143.835003 Days, E = 93.314561 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.81 | 3.15 | 3.07 | 3.93 | 5.51 | 3.39 | 0.98 | 3.74 | 2.88 | 0.08 | -0.77 | 0 | 1.05 | 0.37 | 0.82 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|-----------------------|
| DV | -153 ± 36 | $5.84^{+3.98}_{-3.40}$ | 1038^{+83}_{-108} | 6366^{+4337}_{-1371} | 1150^{+5390}_{-752} |
| Alt. | -125 ± 40 | $5.90^{+4.24}_{-3.29}$ | 1041^{+83}_{-112} | 6094^{+2989}_{-1361} | 890^{+3488}_{-604} |

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

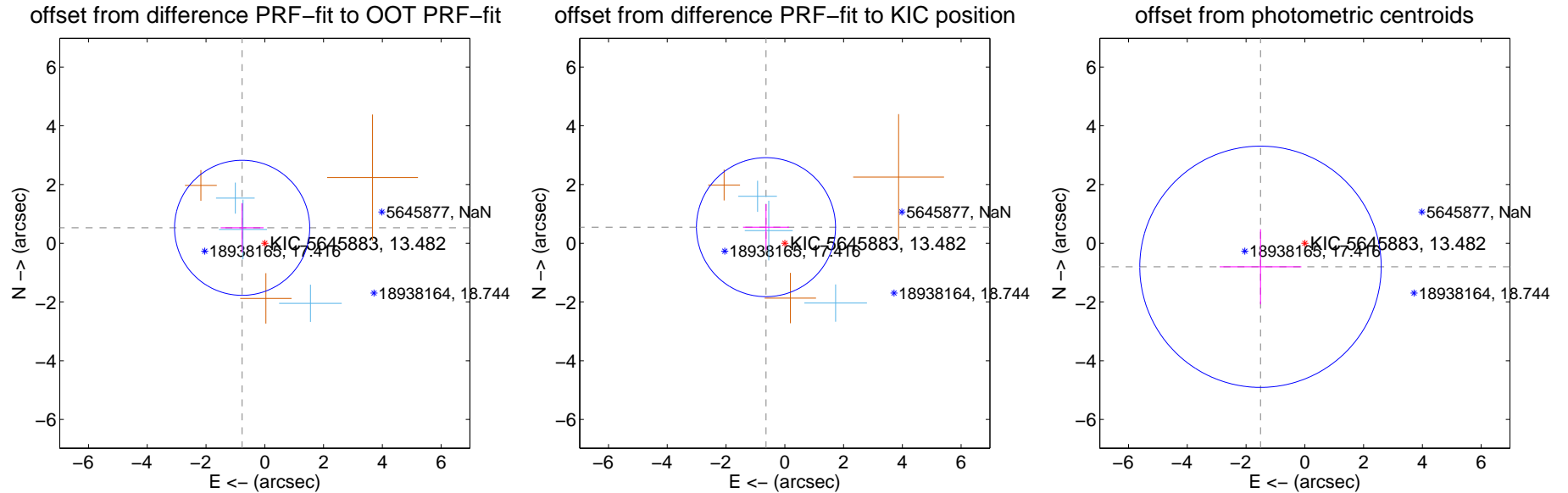
DV Centroid Data

Supplemental centroid analysis for 005645883-02. Kepler magnitude: 13.48. Transit SNR 13.02

There are 3 quarters with good PRF difference image offsets

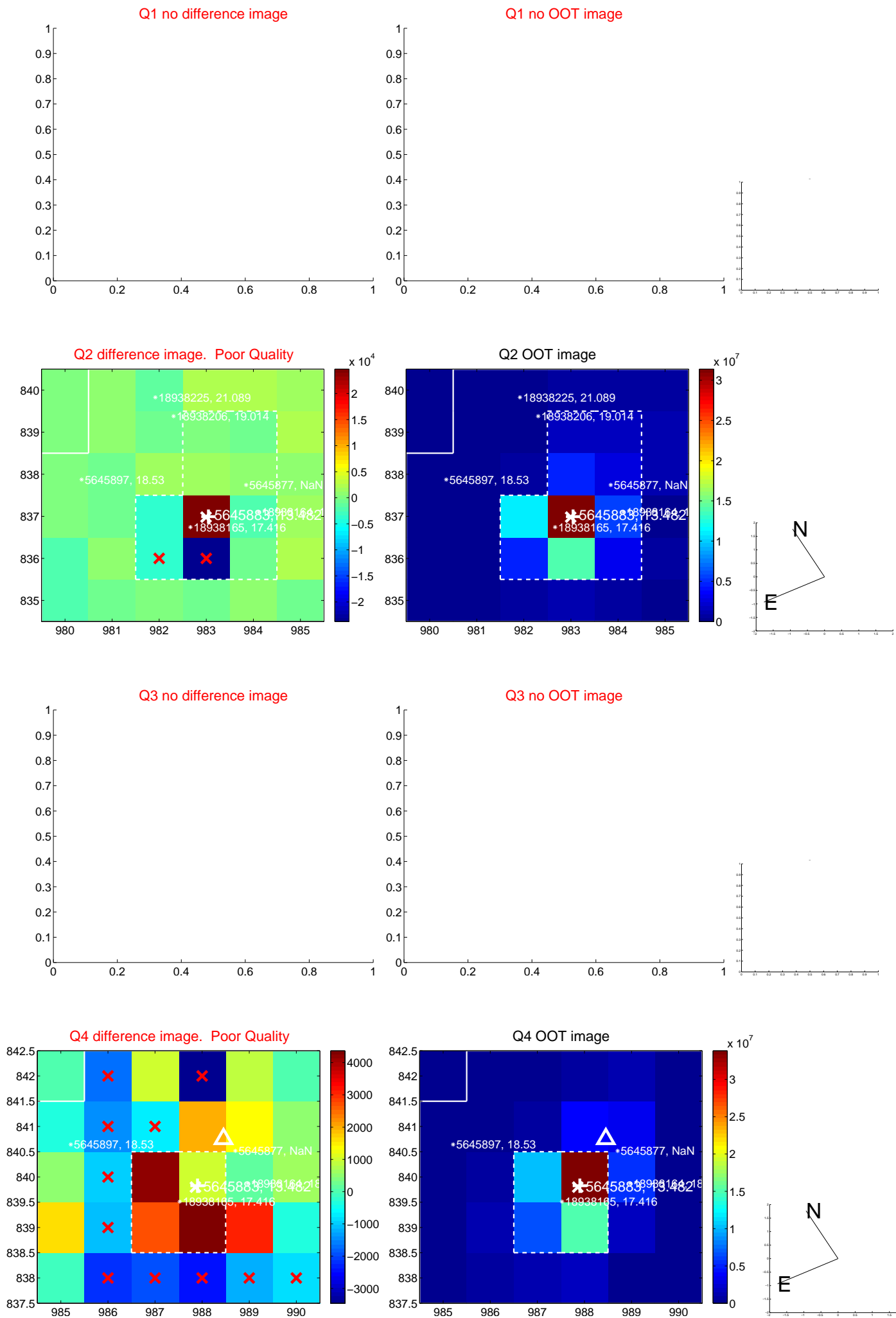
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.933 ± 0.767 | 1.22 | 0.771 ± 0.731 | 0.526 ± 0.838 |
| PRF-fit source offset from KIC position | 0.843 ± 0.789 | 1.07 | 0.640 ± 0.783 | 0.548 ± 0.784 |
| photometric centroid source offset | 1.71 ± 1.37 | 1.25 | 1.51 ± 1.39 | -0.80 ± 1.28 |

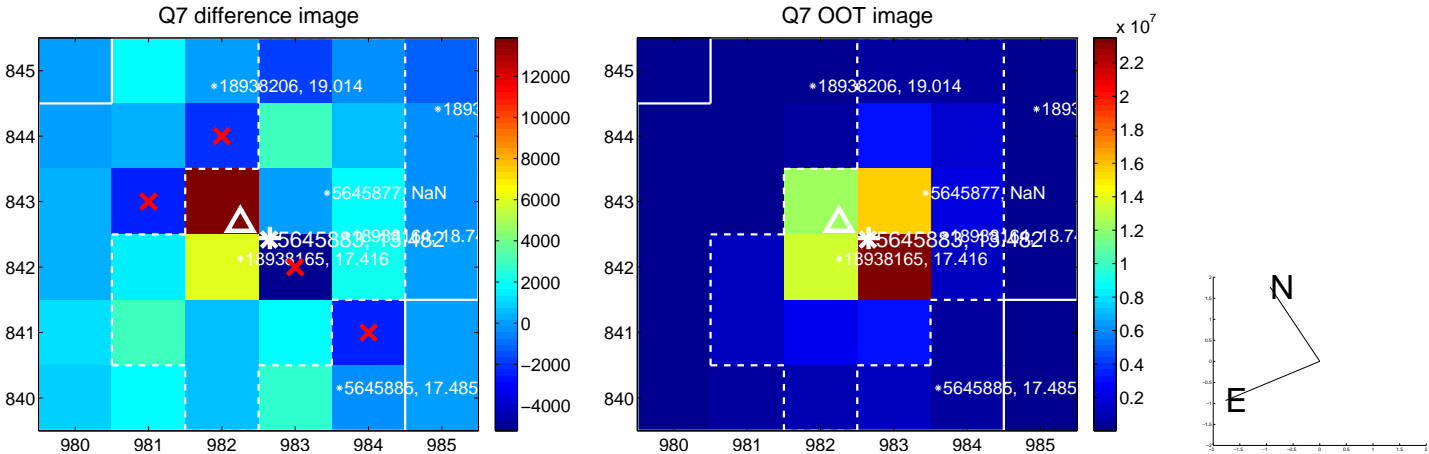
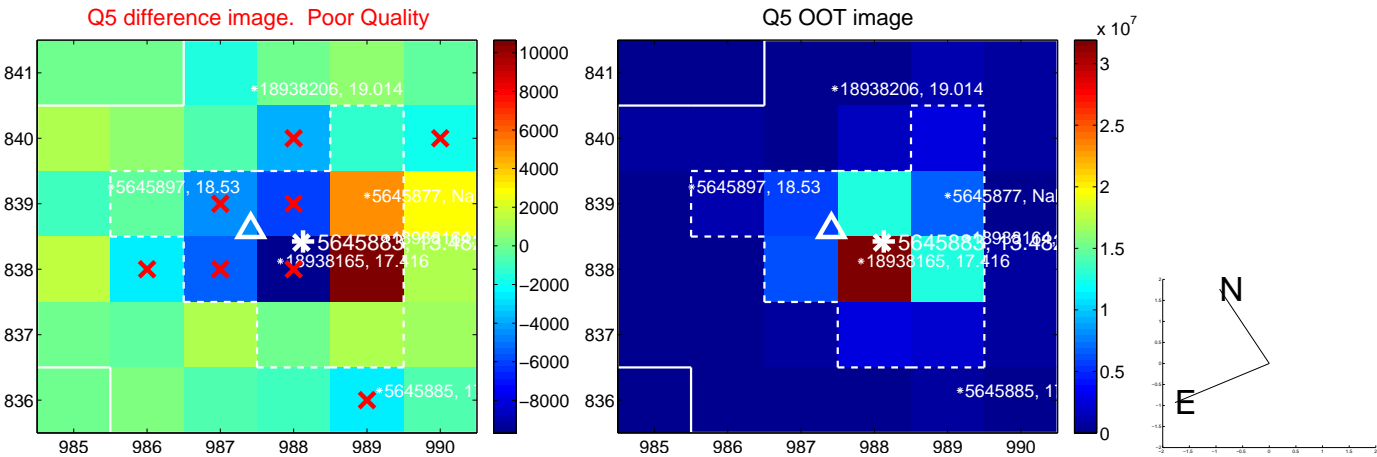


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

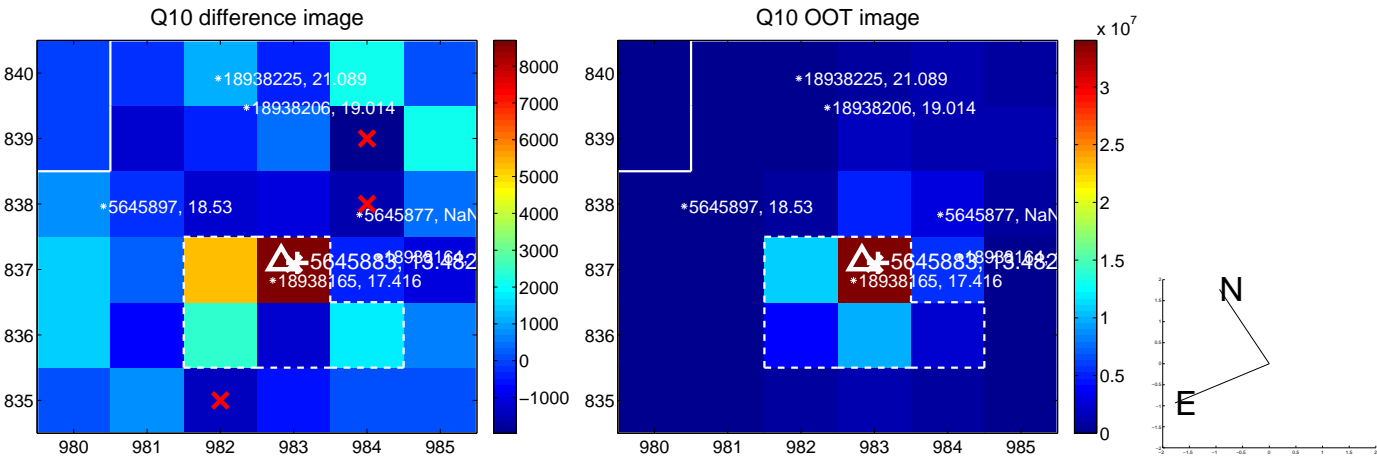
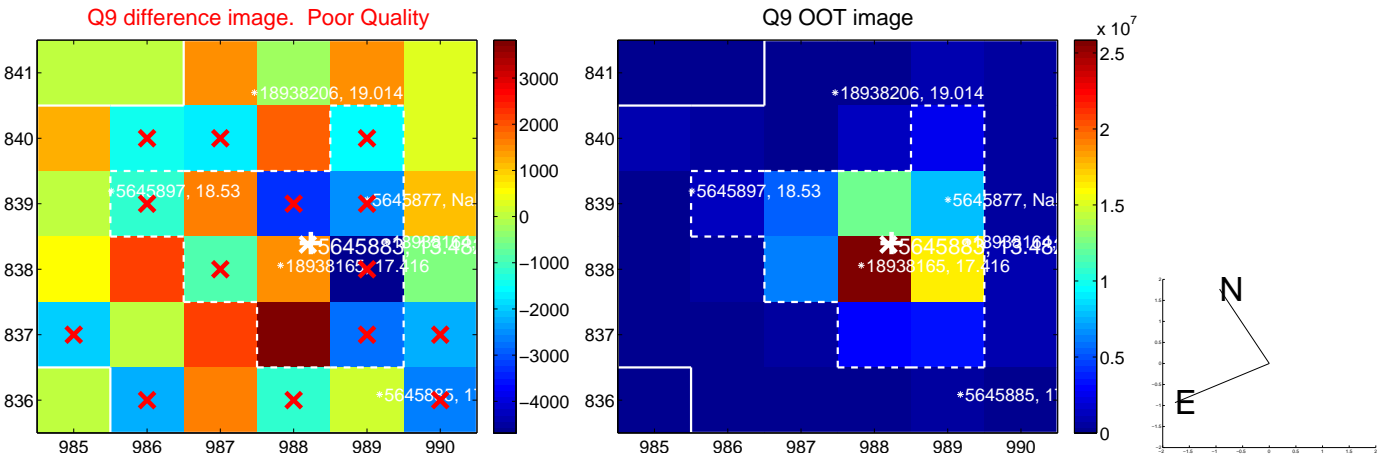
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



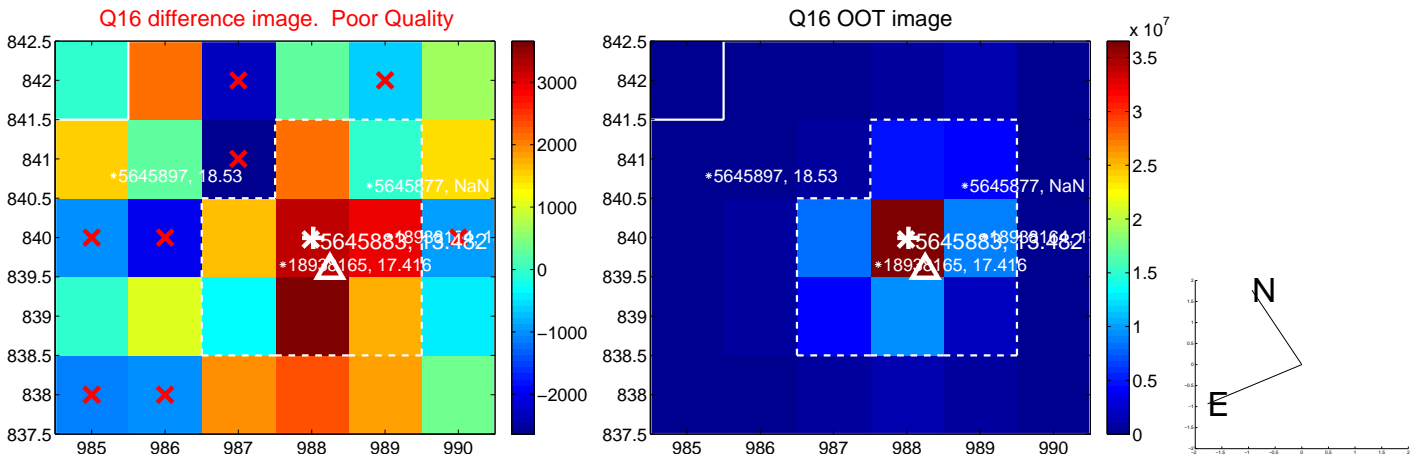
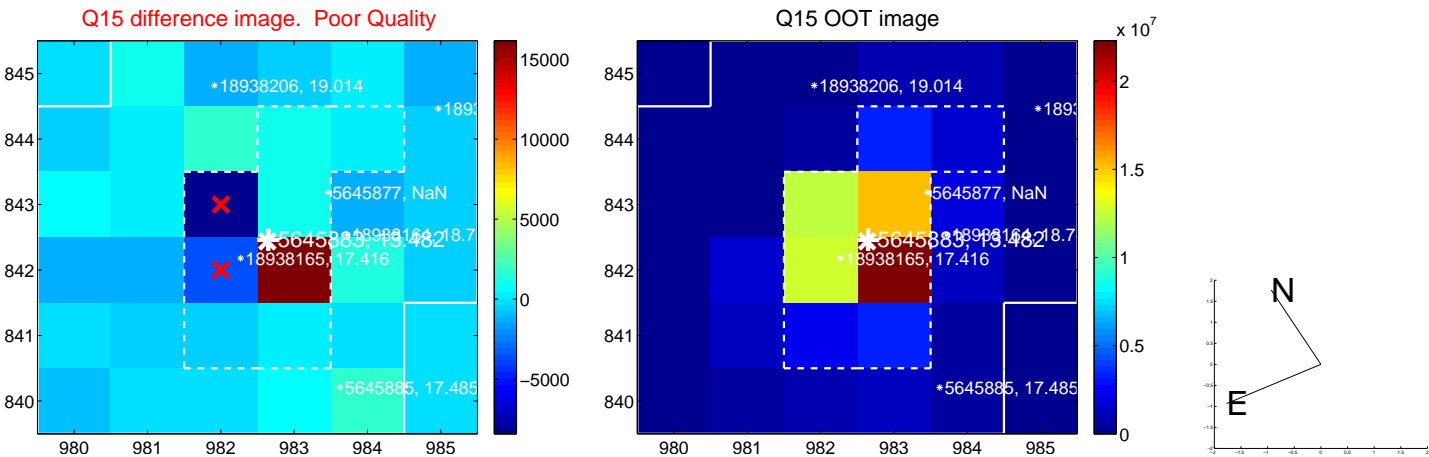
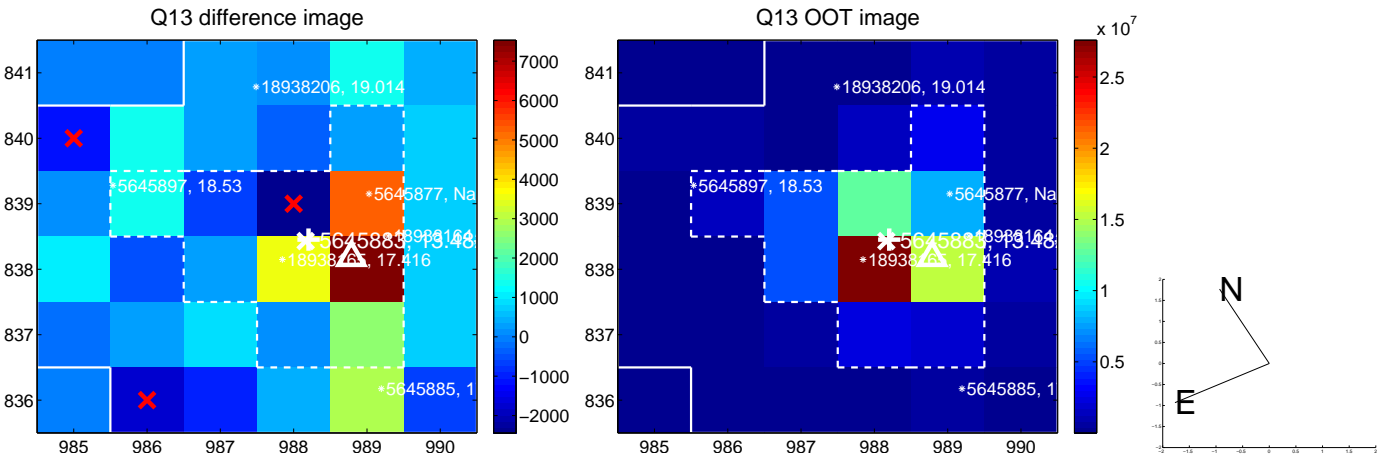
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



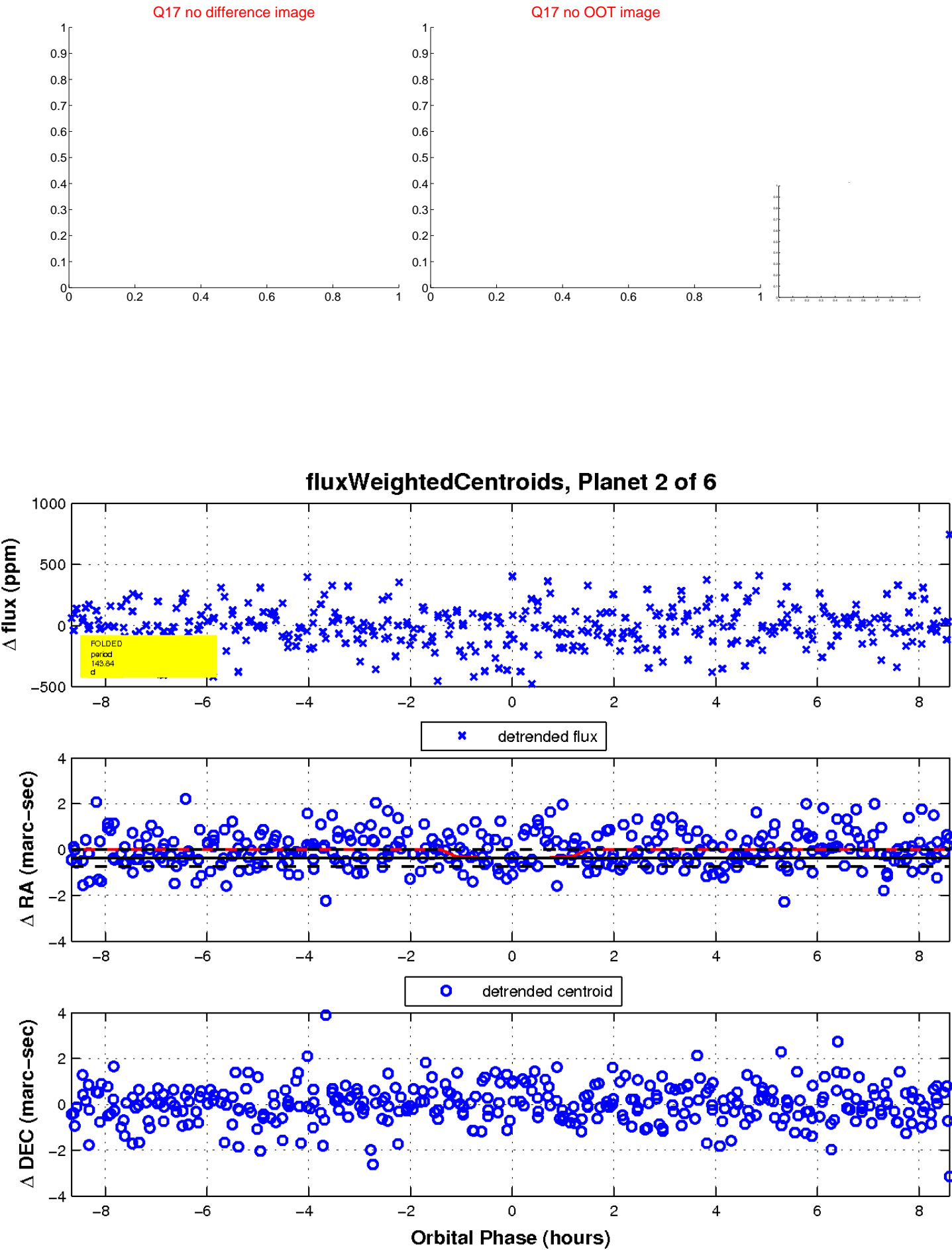
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

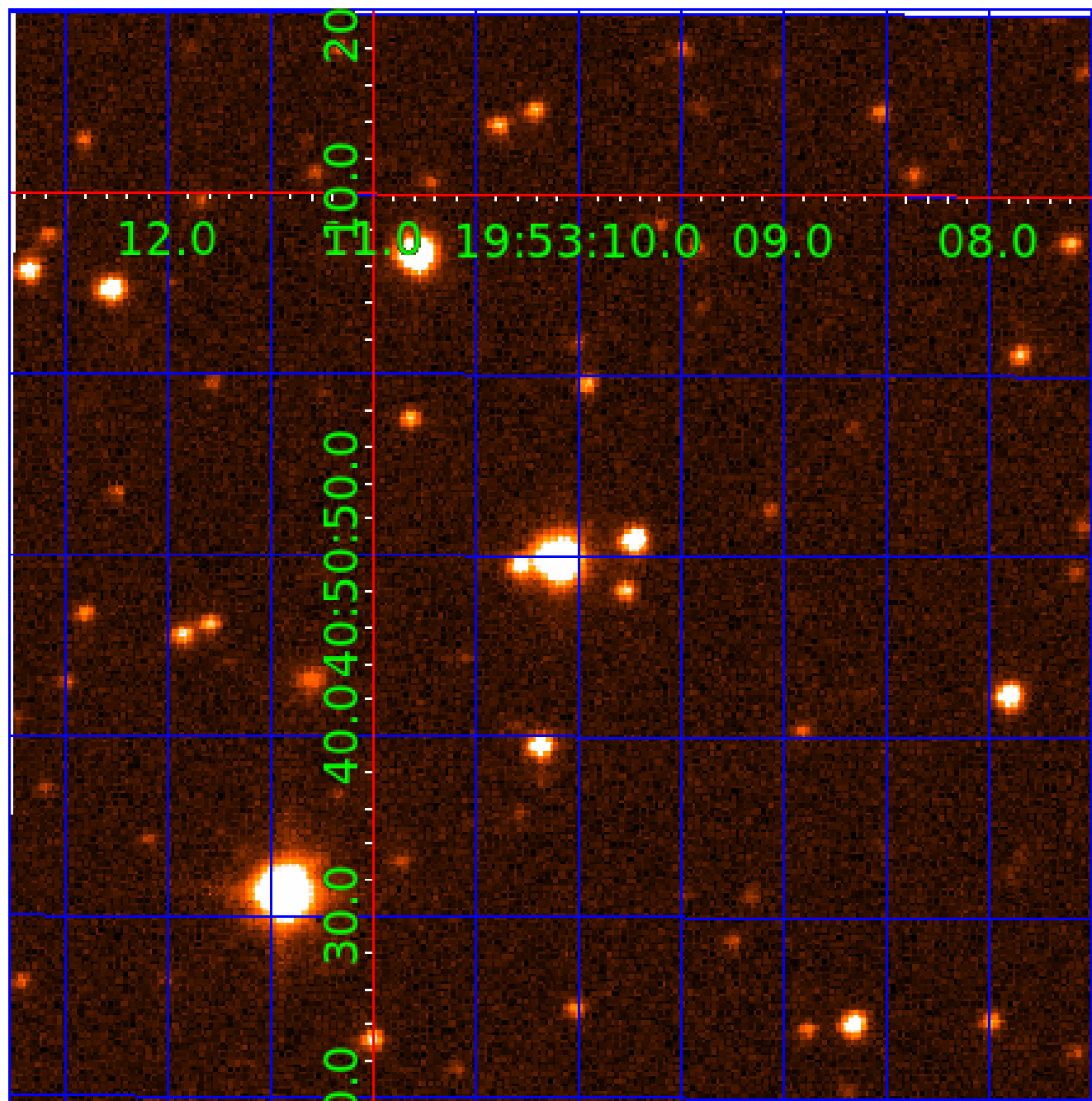


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

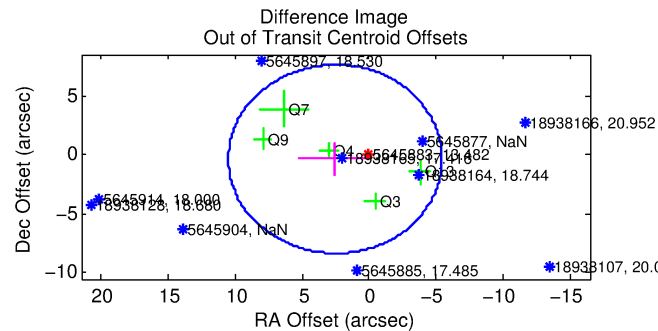
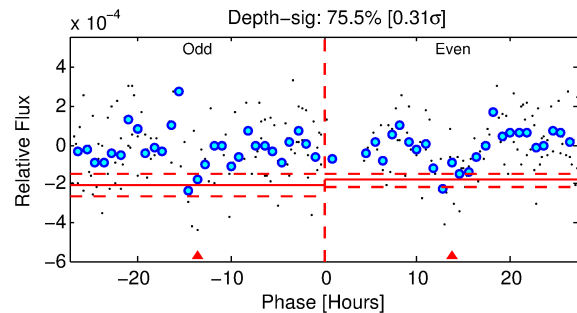
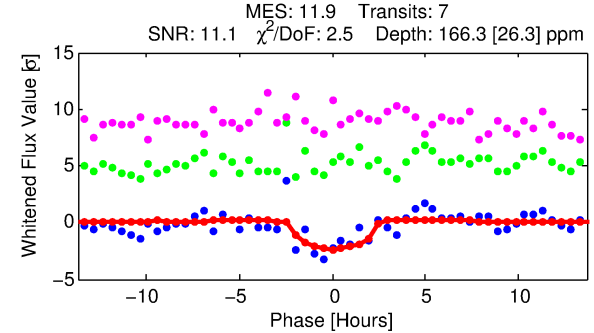
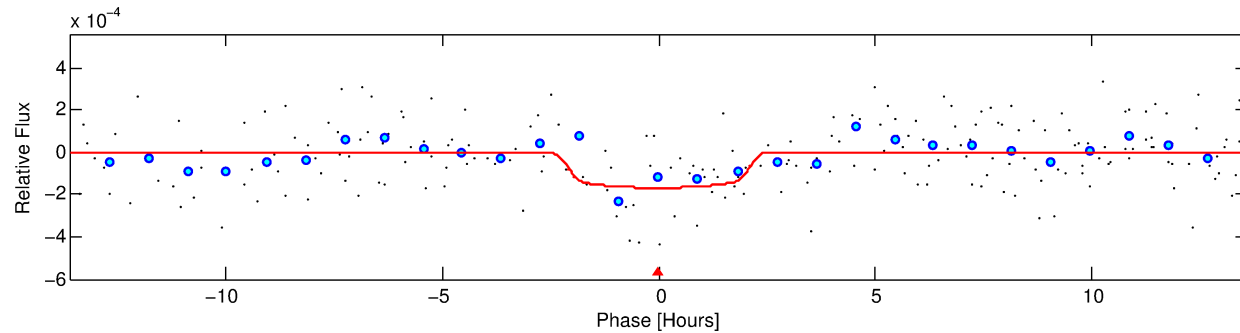
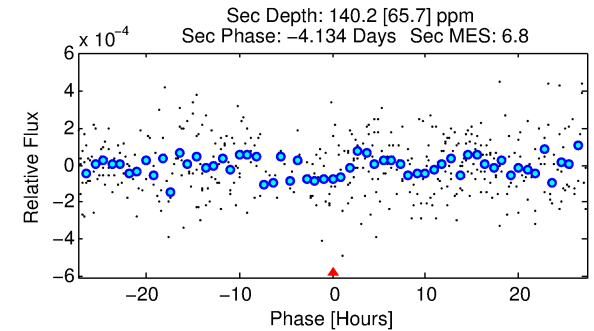
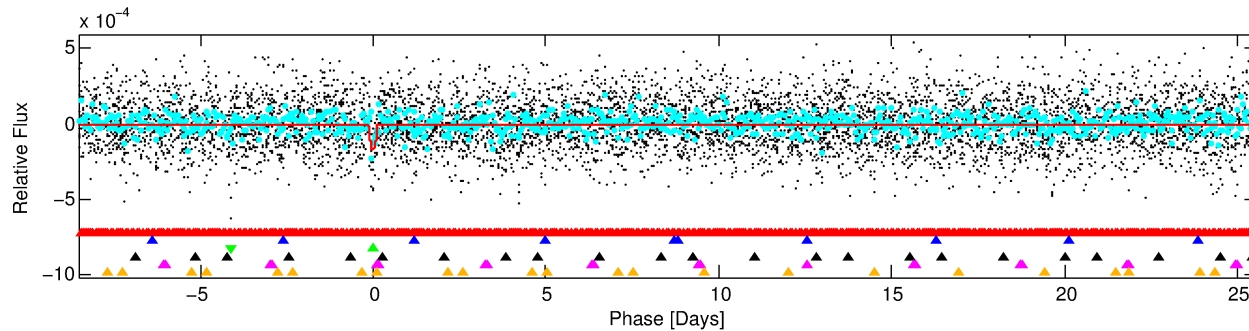
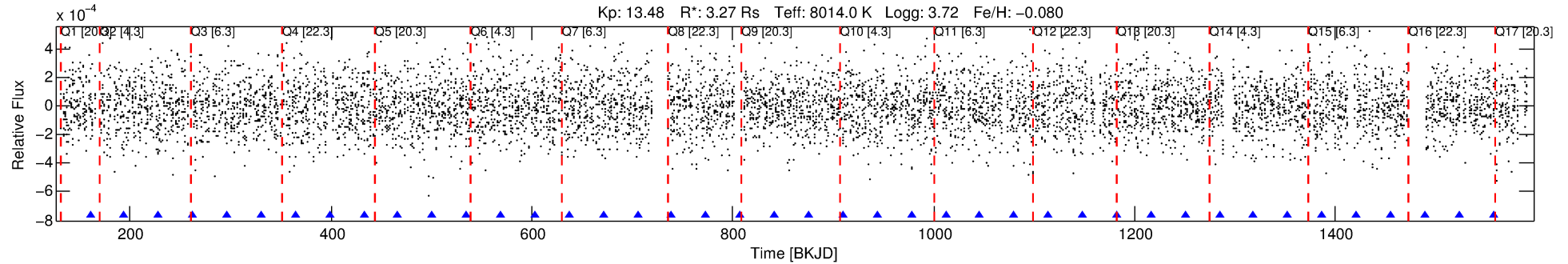
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-03

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 3 of 6 Period: 34.064 d



DV Fit Results:

Period = 34.06438 [0.00090] d
Epoch = 160.3082 [0.0173] BKJD
Rp/R* = 0.0136 [0.0111]
a/R* = 28.31 [138.72]
b = 0.89 [1.22]
Seff = 579.80 [426.62]
Teq = 1251 [230] K
Rp = 4.87 [4.54] Re
a = 0.2614 [0.1156] AU
Ag = 222.54 [410.23] [0.54σ]
Teffp = 7472 [3188] K [1.95σ]

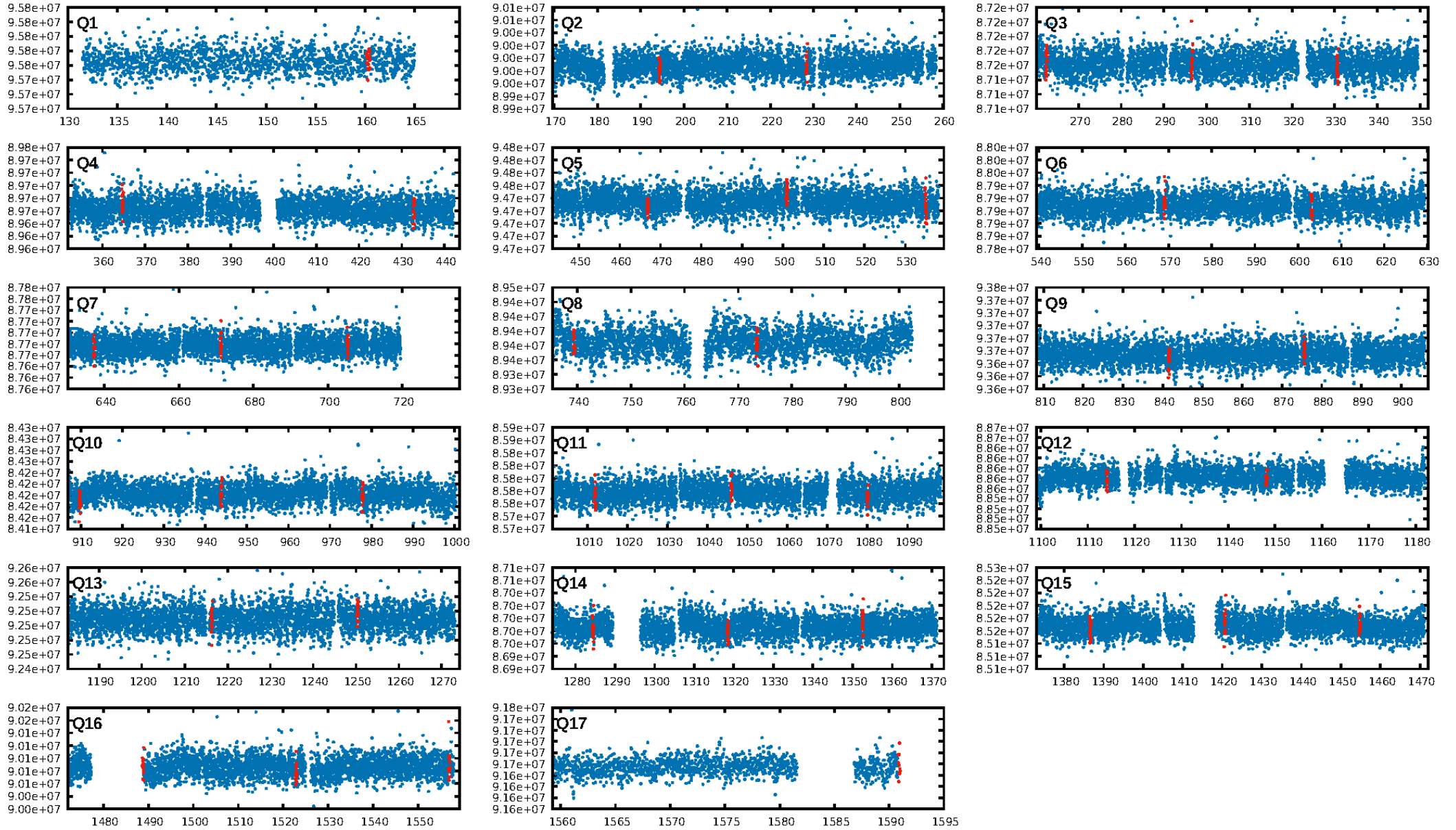
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [53.11σ]
LongPeriod-sig: 100.0% [54.51σ]
ModelChiSquare2-sig: 5.9%
ModelChiSquareGof-sig: 50.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.08625
Centroid-sig: N/A
Centroid-so: 0.244 arcsec [0.28σ]
OotOffset-rm: 2.556 arcsec [0.96σ]
KicOffset-rm: 2.391 arcsec [0.90σ]
OotOffset-st: 0/2/1/2 [5]
KicOffset-st: 0/2/1/2 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 0.44 [7/16]

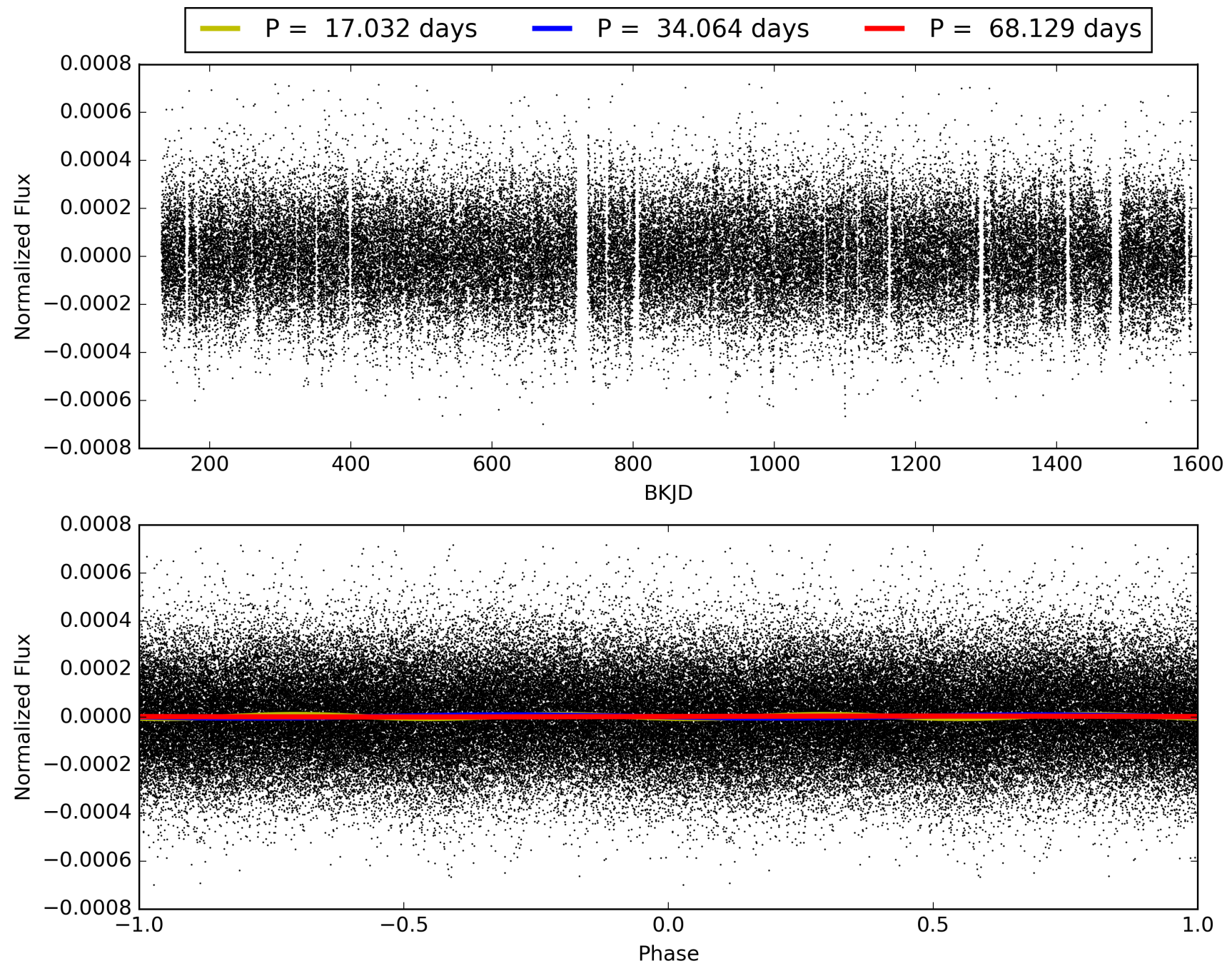
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:10:42 Z

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

TCE 005645883-03, PDC Light Curves

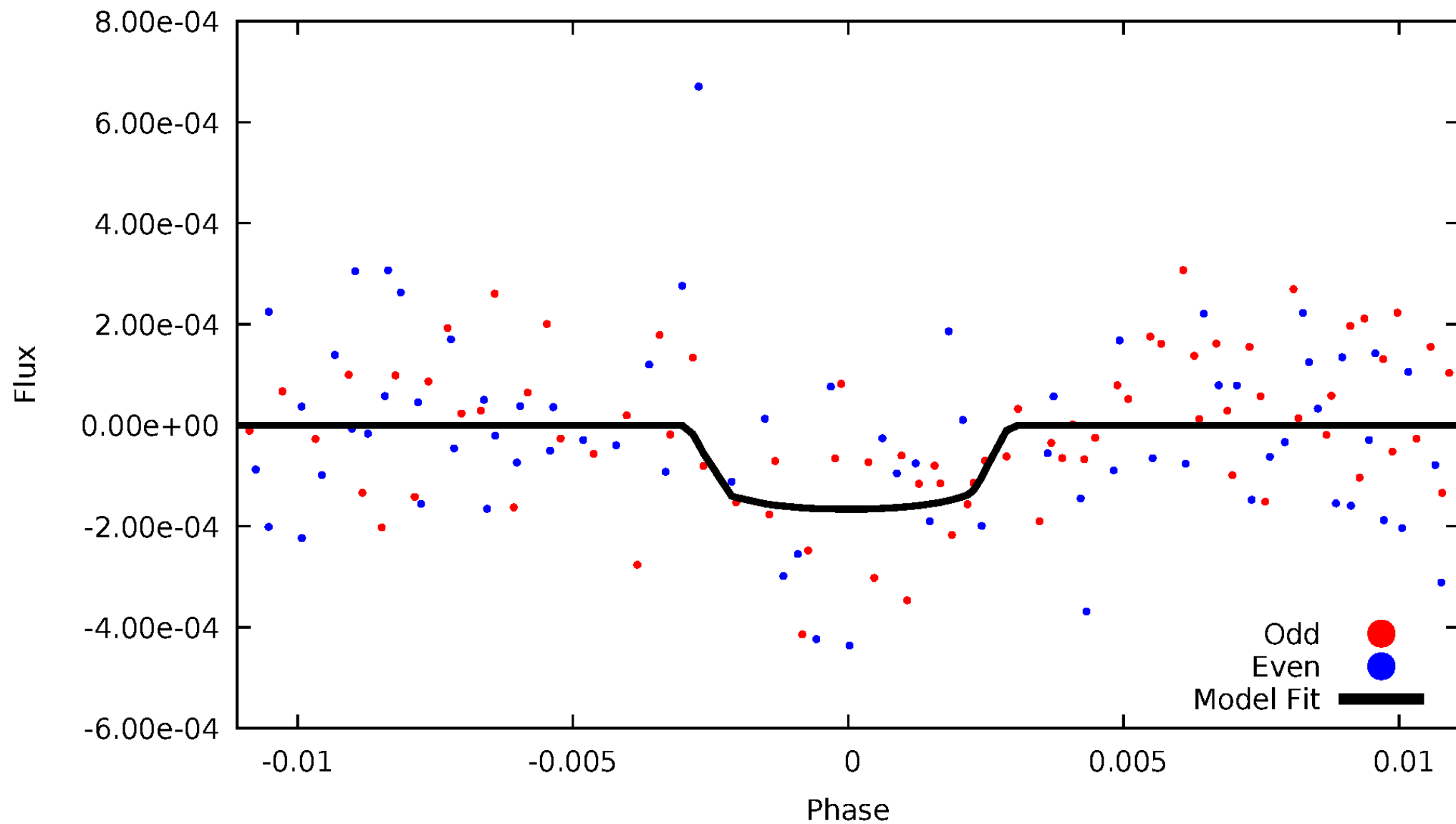


TCE 005645883-03



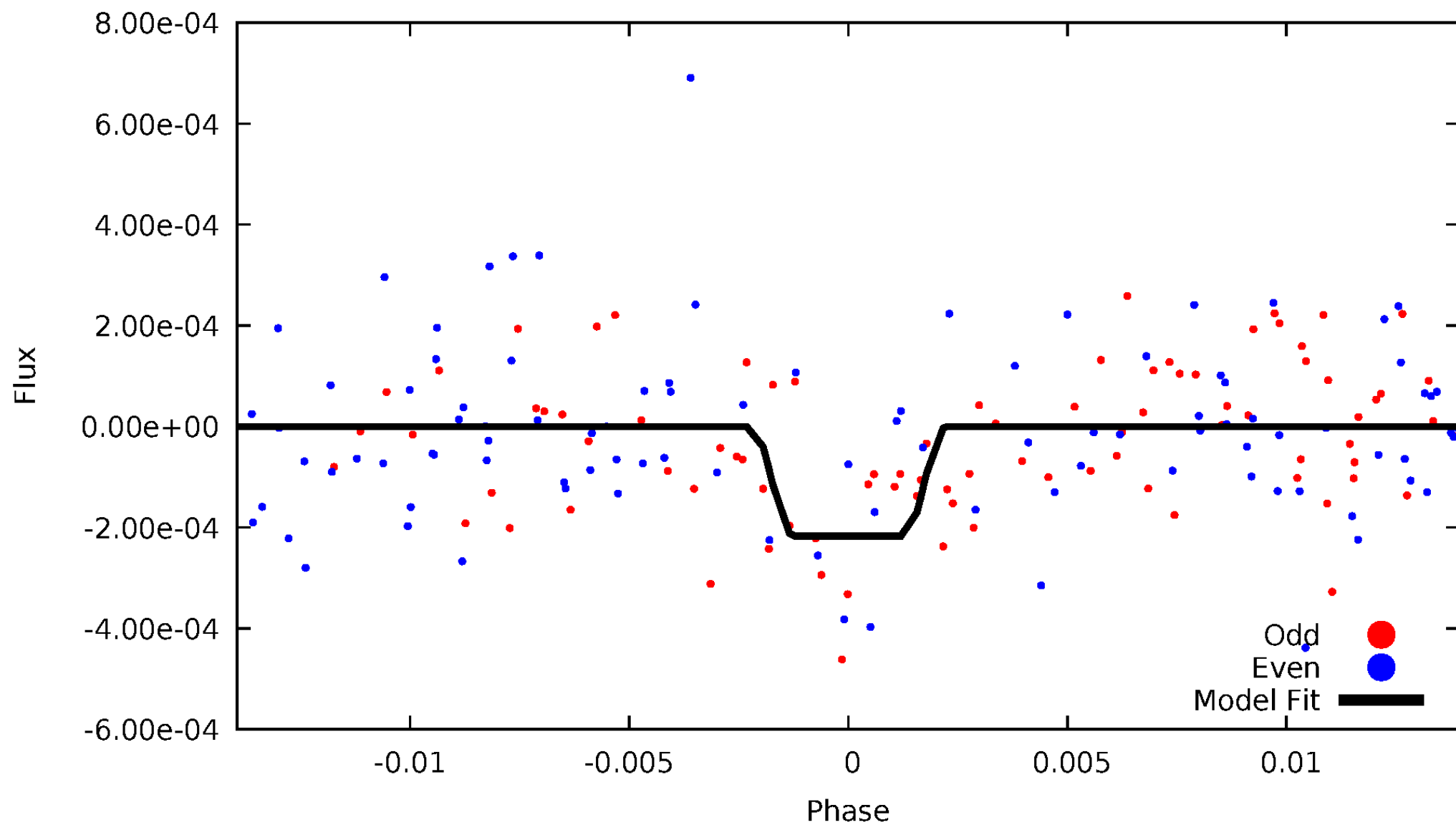
DV Odd/Even

TCE 005645883-03



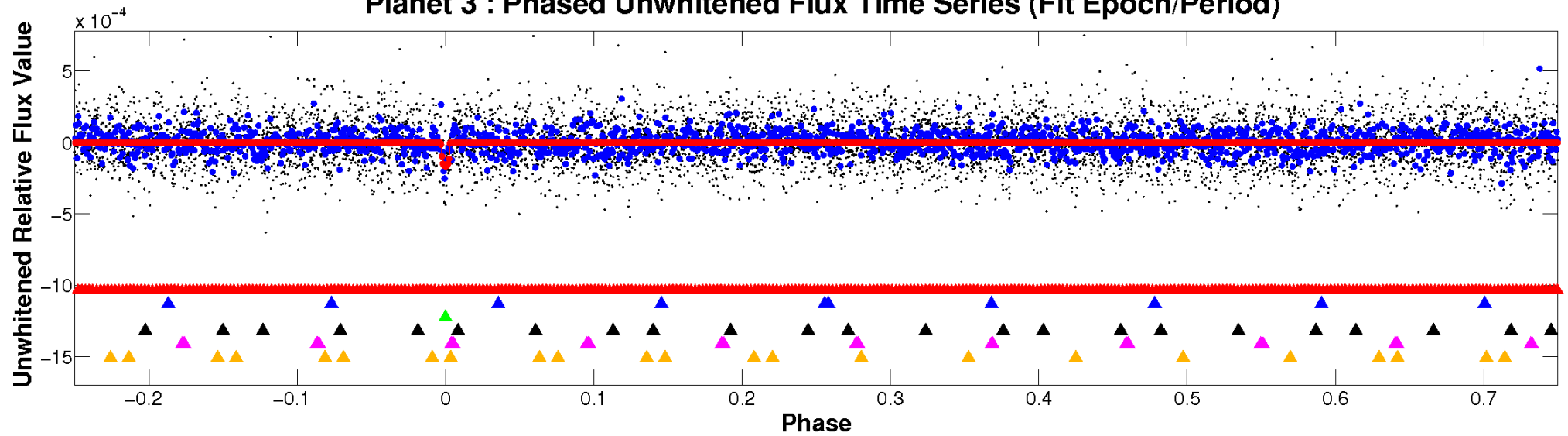
ALT Odd/Even

TCE 005645883-03

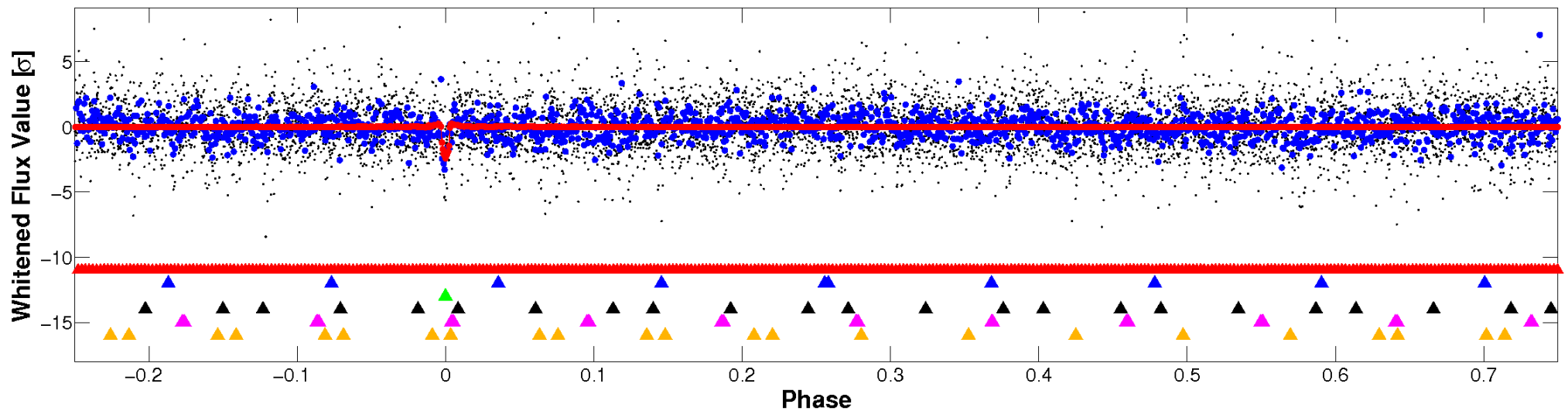


Non-Whitened Vs. Whitened Light Curve

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

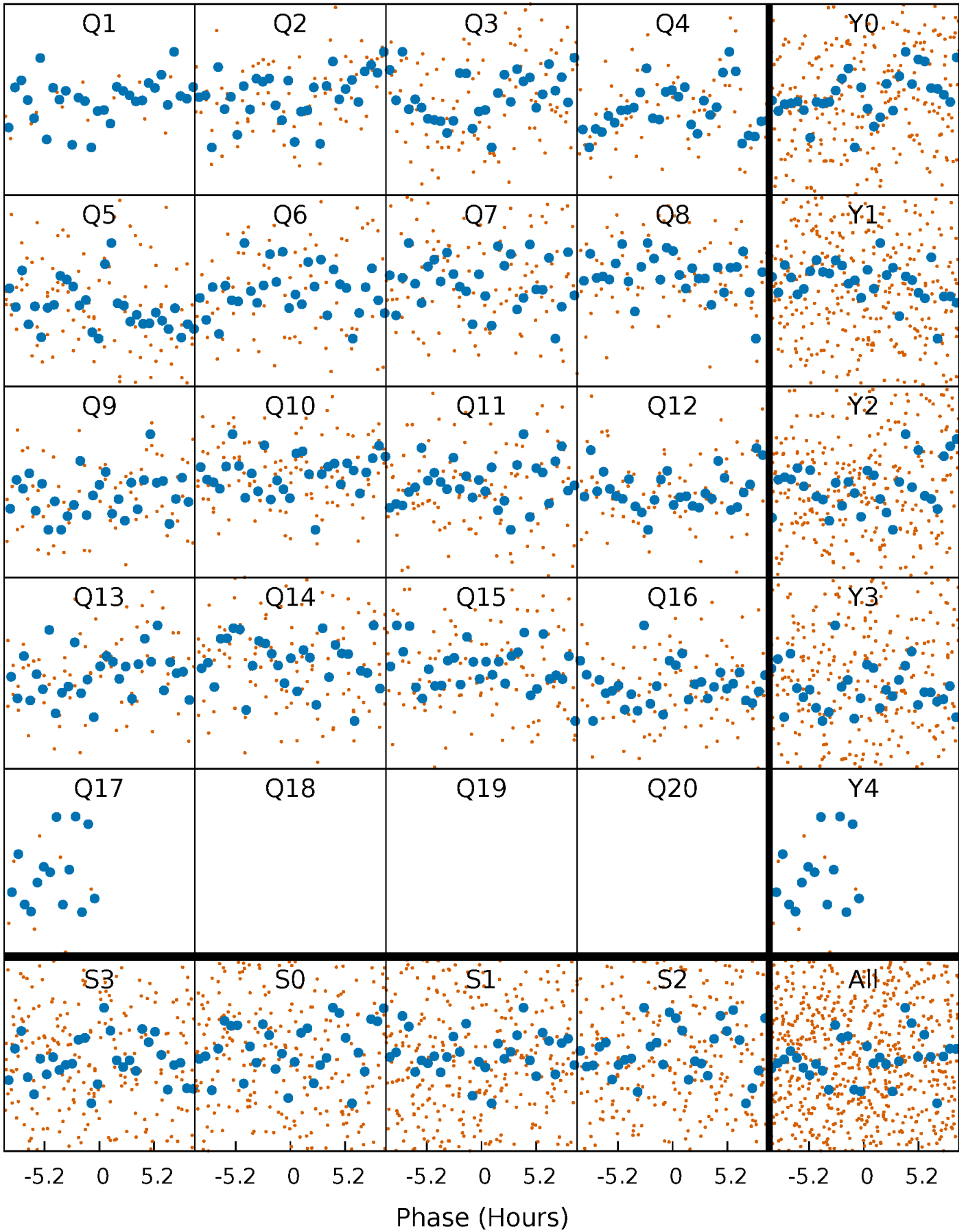


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



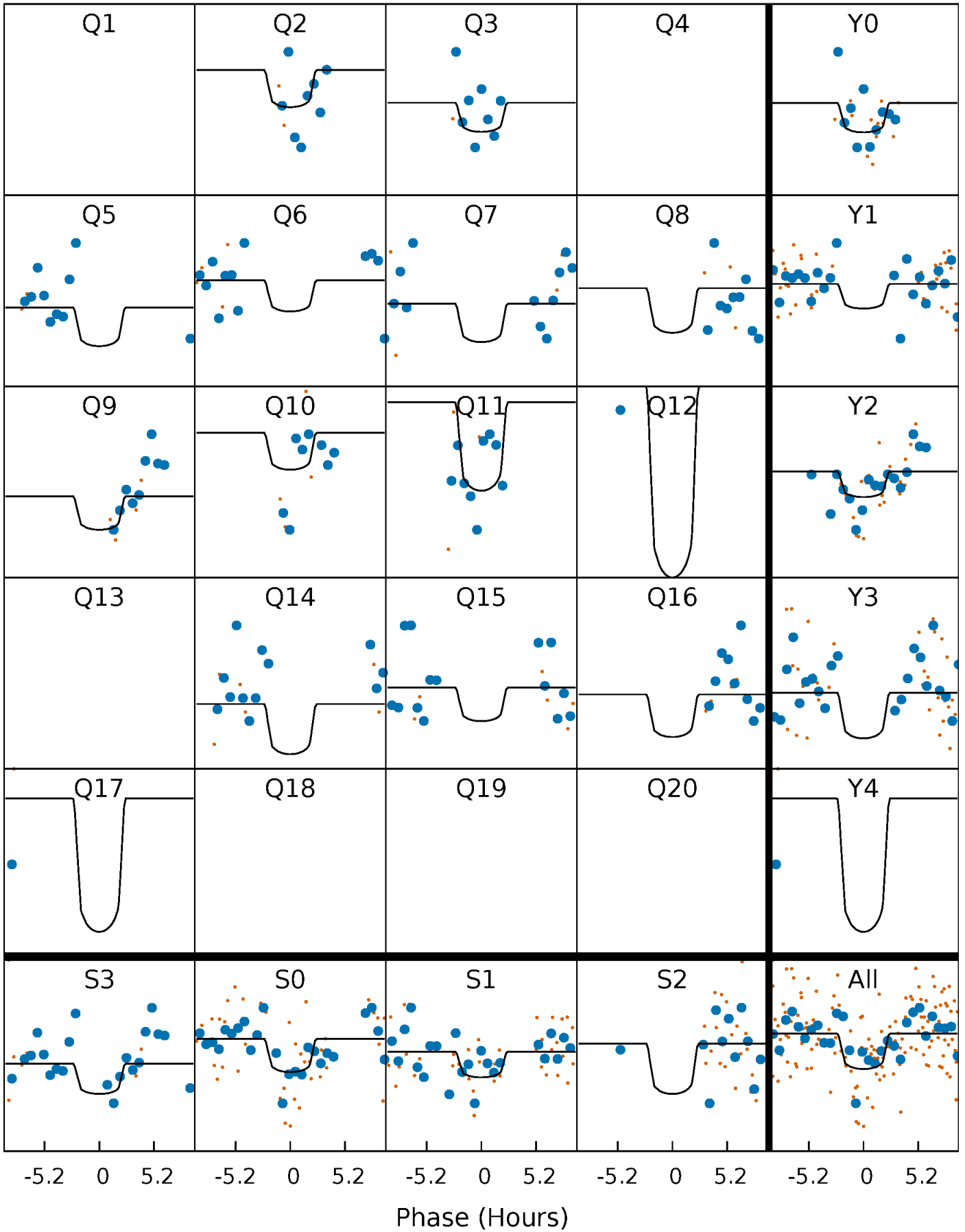
PDC Quarter-Phased Transit Curves

TCE 005645883-03 P= 34.064377 Days $T_0=160.308177$ (BKJD)



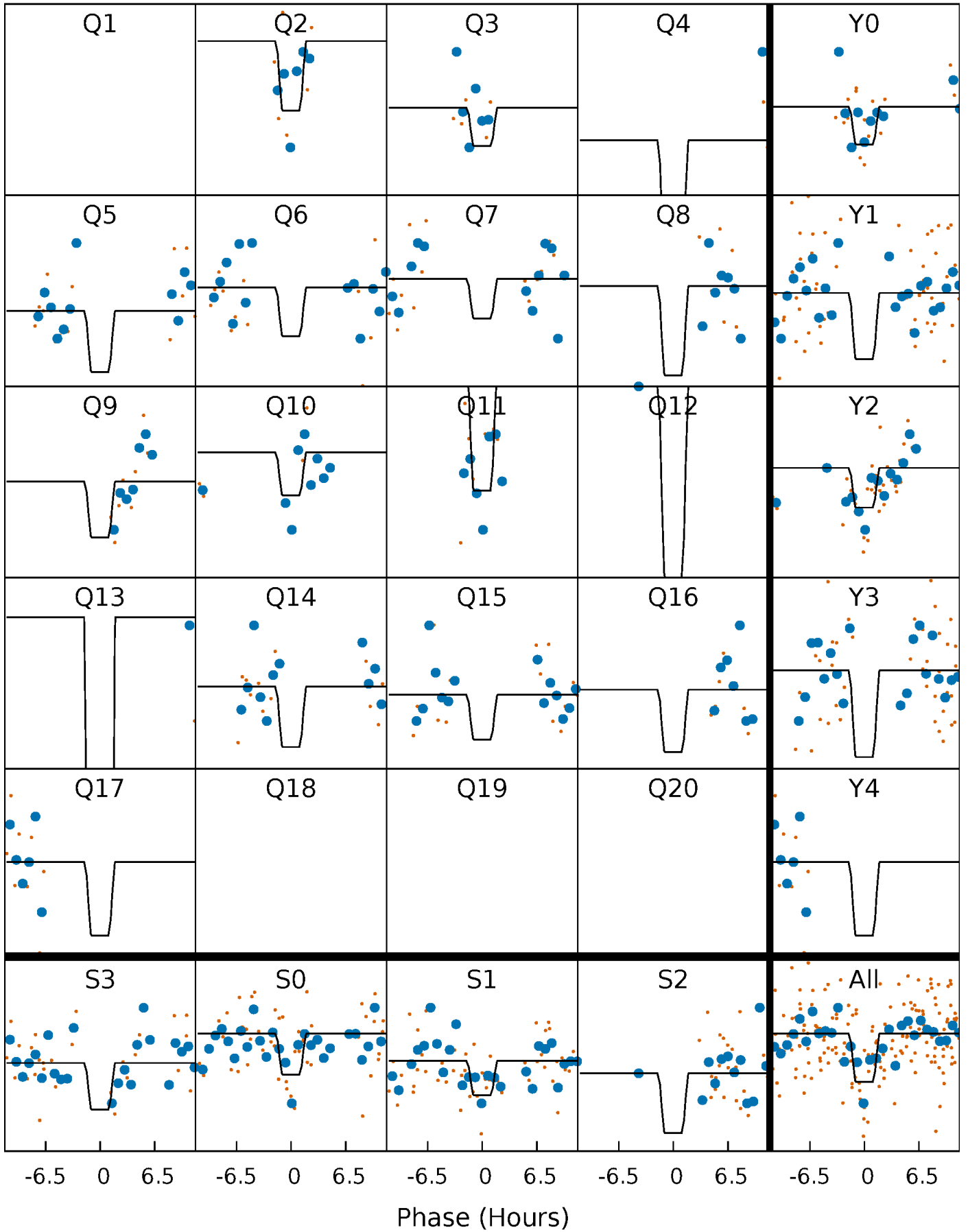
DV Quarter-Phased Transit Curves

TCE 005645883-03 $P = 34.064377$ Days $T_0 = 160.308177$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

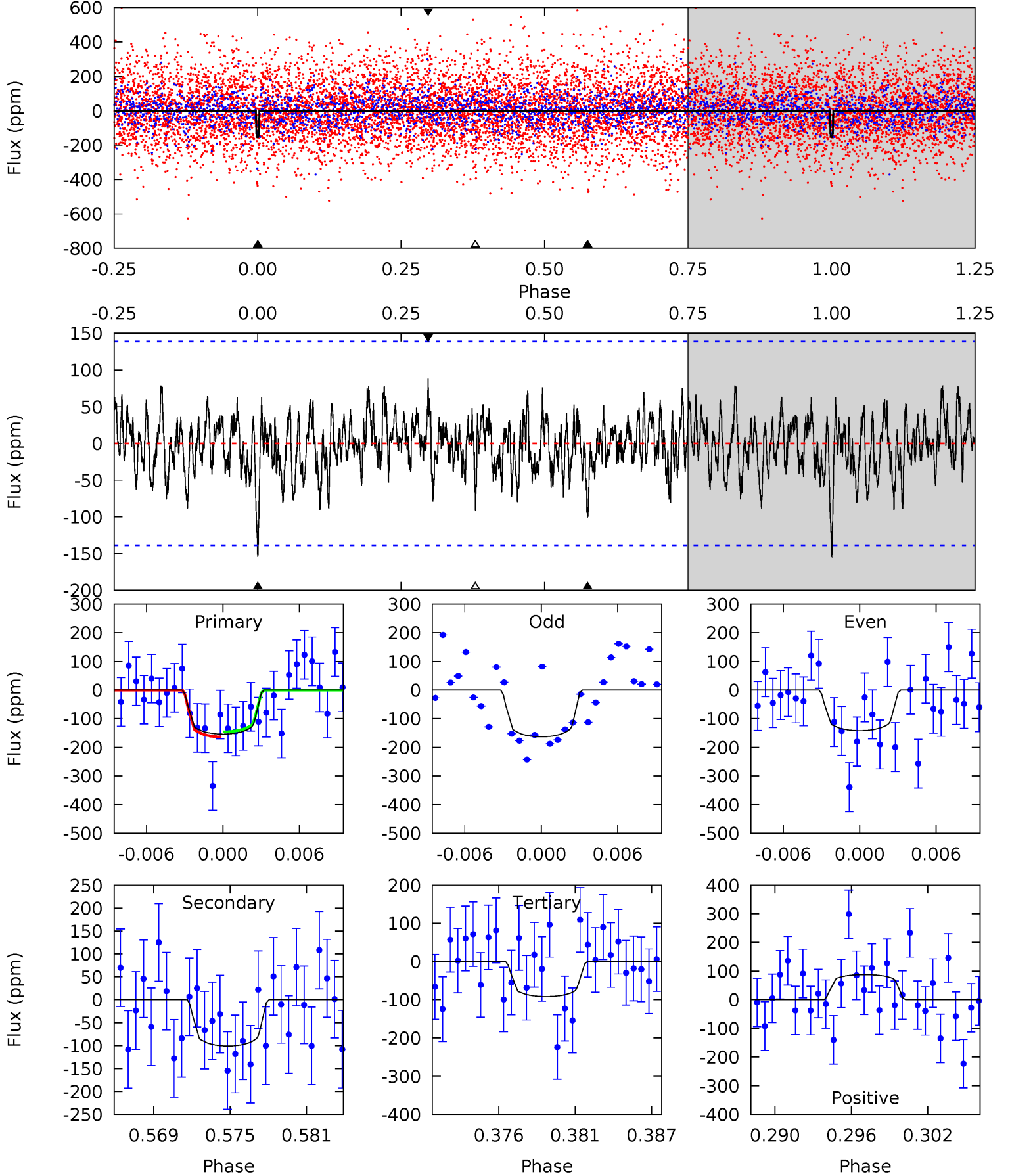
TCE 005645883-03 P= 34.062051 Days $T_0=160.347458$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-03, P = 34.064377 Days, E = 126.243800 Days

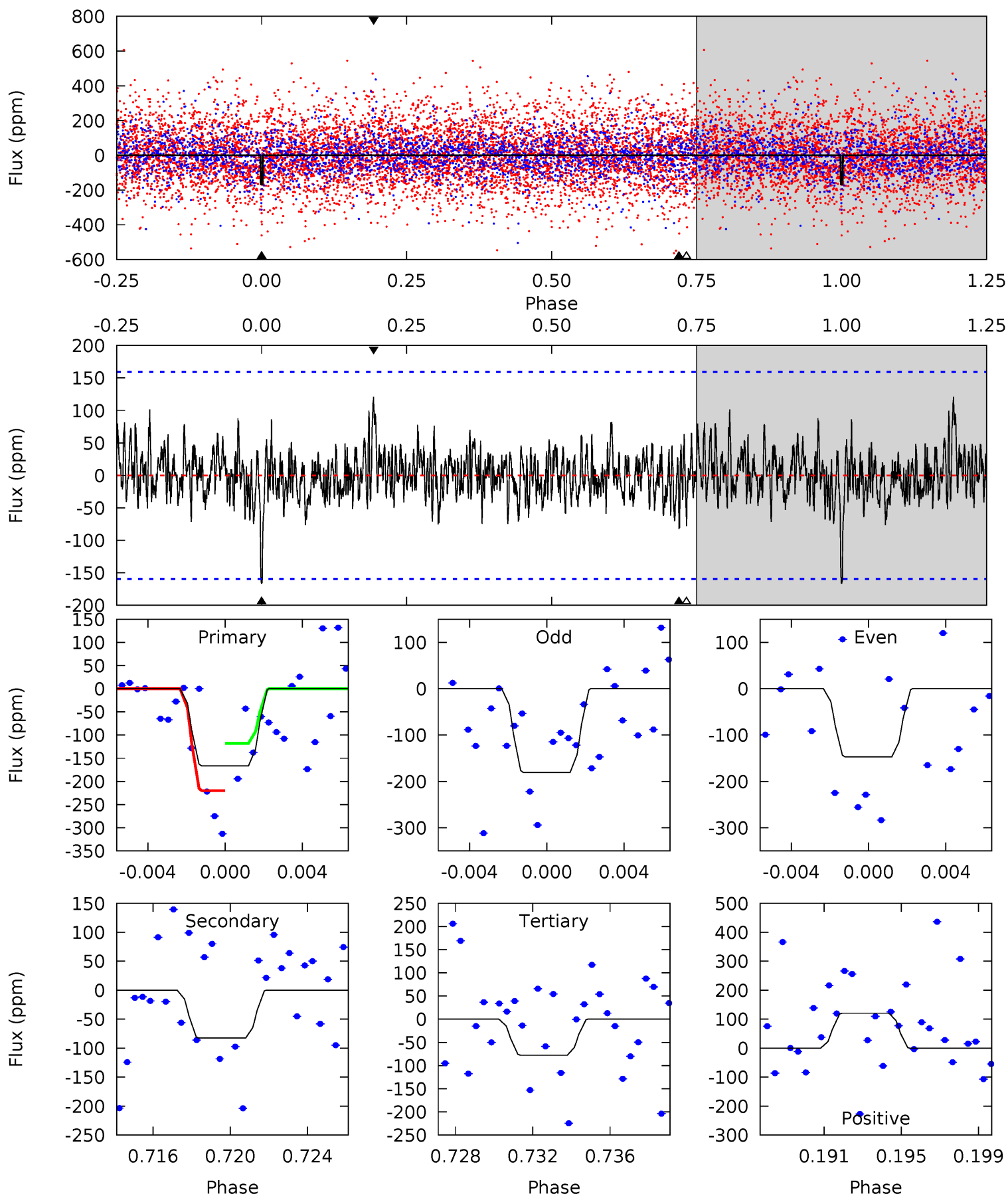
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.69 | 3.73 | 3.39 | 3.25 | 5.13 | 2.76 | 1.14 | 2.30 | 2.44 | 0.34 | 0.48 | 0.39 | 0.89 | 0.36 | 0.33 |



Alt Model-Shift Uniqueness Test

005645883-03, P = 34.062051 Days, E = 126.285407 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.43 | 2.69 | 2.54 | 3.94 | 5.20 | 2.88 | 0.97 | 2.90 | 1.49 | 0.16 | -1.25 | 0.55 | 0.94 | 0.42 | 1.67 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|---------------------|
| DV | -101 ± 27 | $4.84^{+3.78}_{-2.91}$ | 1681^{+130}_{-186} | 6282^{+4724}_{-1418} | 151^{+818}_{-103} |
| Alt. | -83 ± 31 | $4.75^{+3.86}_{-2.63}$ | 1682^{+141}_{-188} | 5971^{+3963}_{-1400} | 126^{+578}_{-90} |

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 $A_{obs} \gg 1.0$

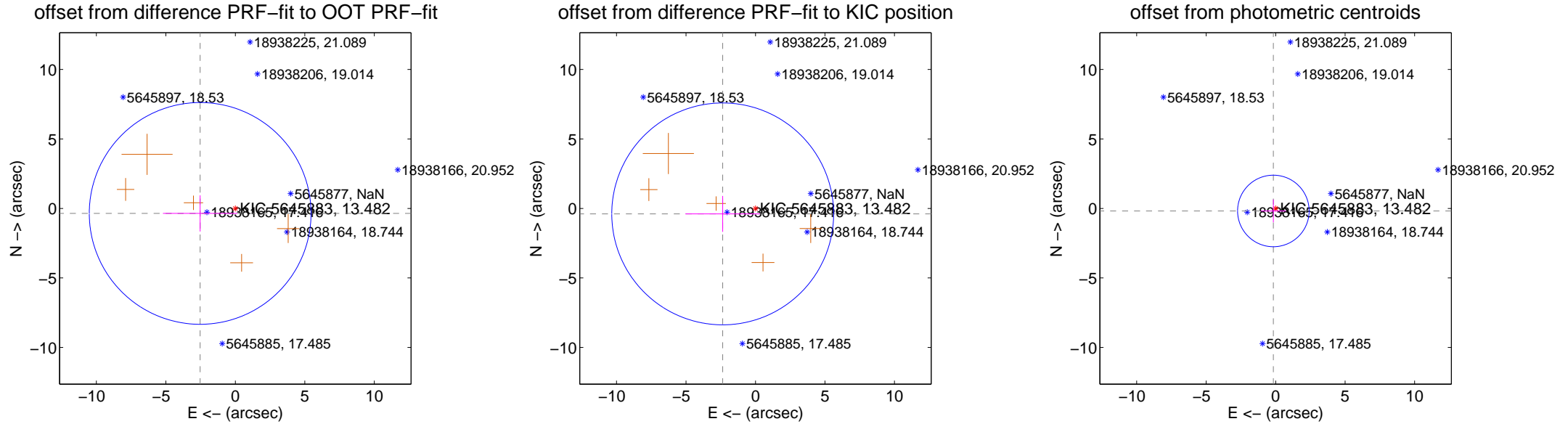
DV Centroid Data

Supplemental centroid analysis for 005645883-03. Kepler magnitude: 13.48. Transit SNR 11.15

There are 0 quarters with good PRF difference image offsets

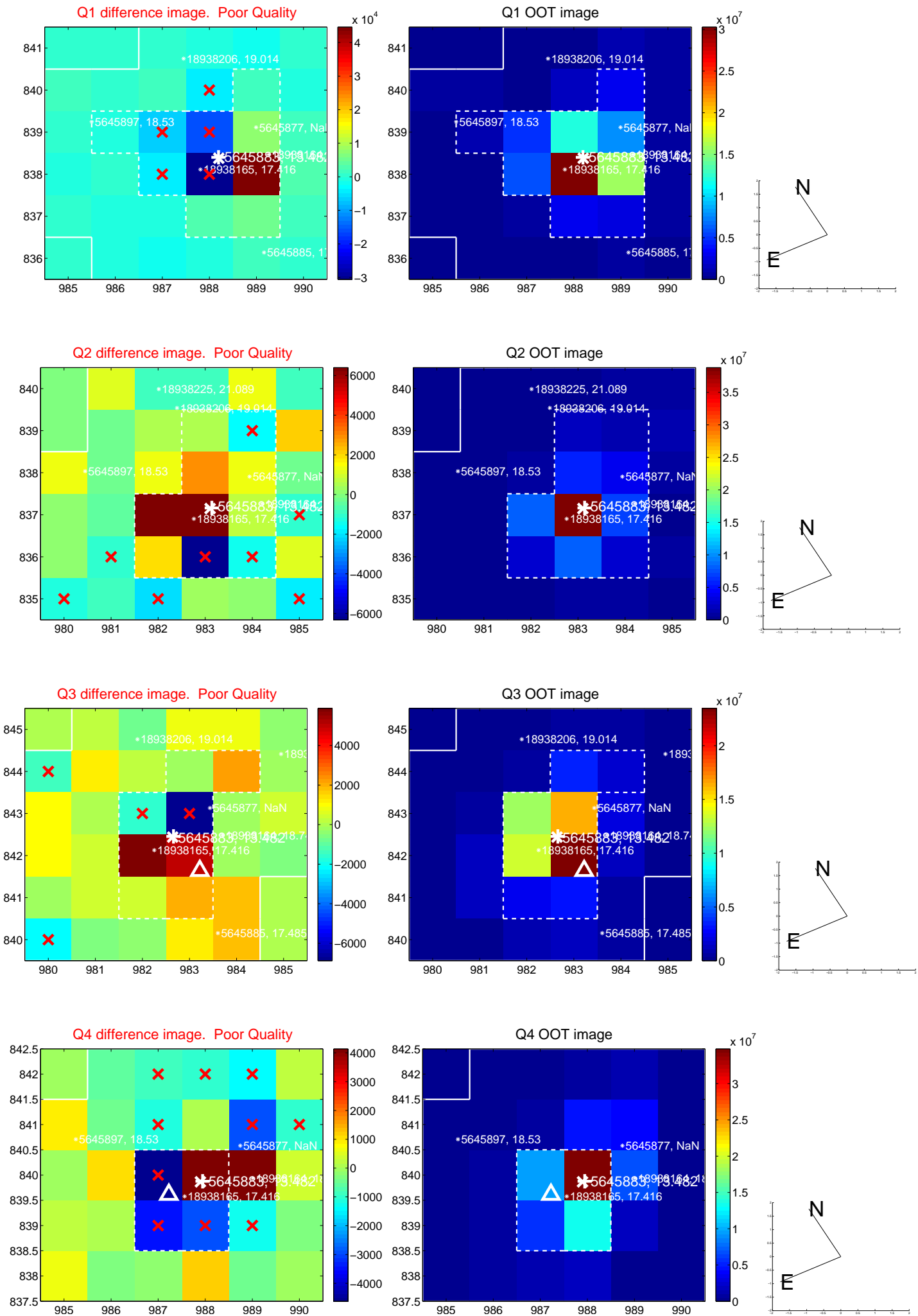
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.556 ± 2.659 | 0.96 | 2.531 ± 2.679 | -0.358 ± 1.301 |
| PRF-fit source offset from KIC position | 2.391 ± 2.660 | 0.90 | 2.359 ± 2.688 | -0.392 ± 1.291 |
| photometric centroid source offset | 0.24 ± 0.86 | 0.28 | 0.16 ± 0.90 | -0.18 ± 0.82 |

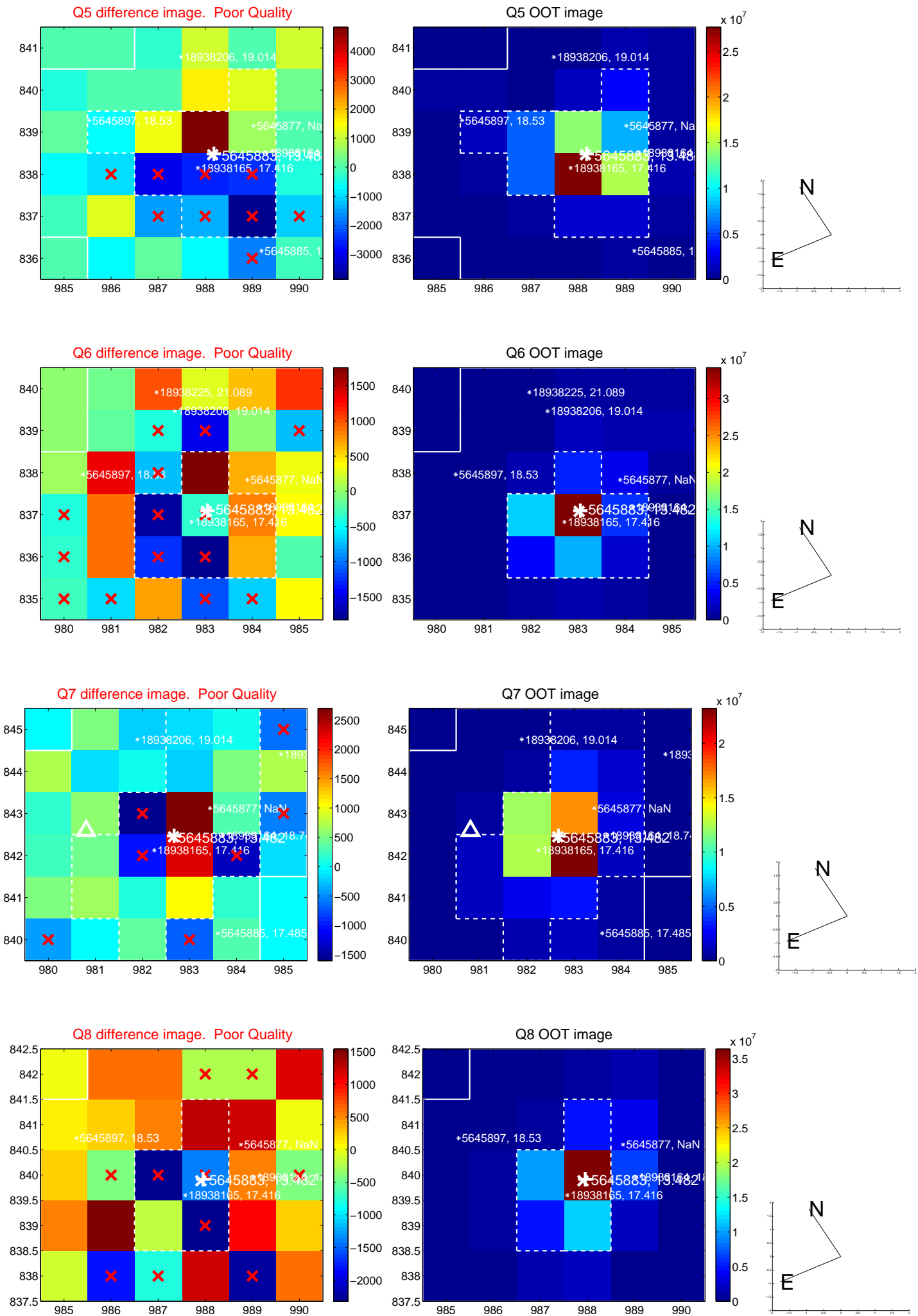


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

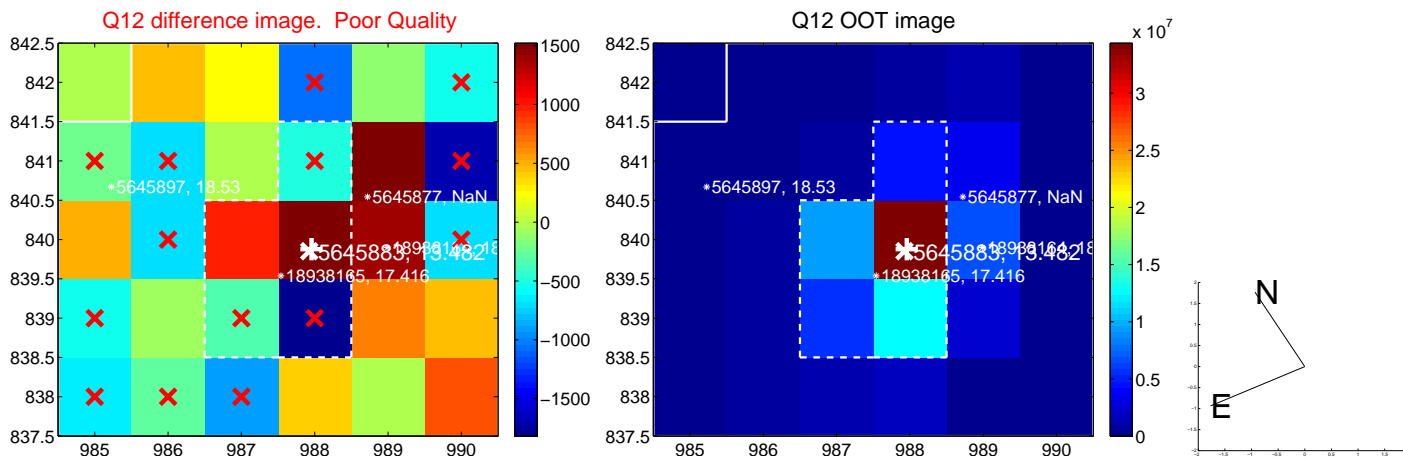
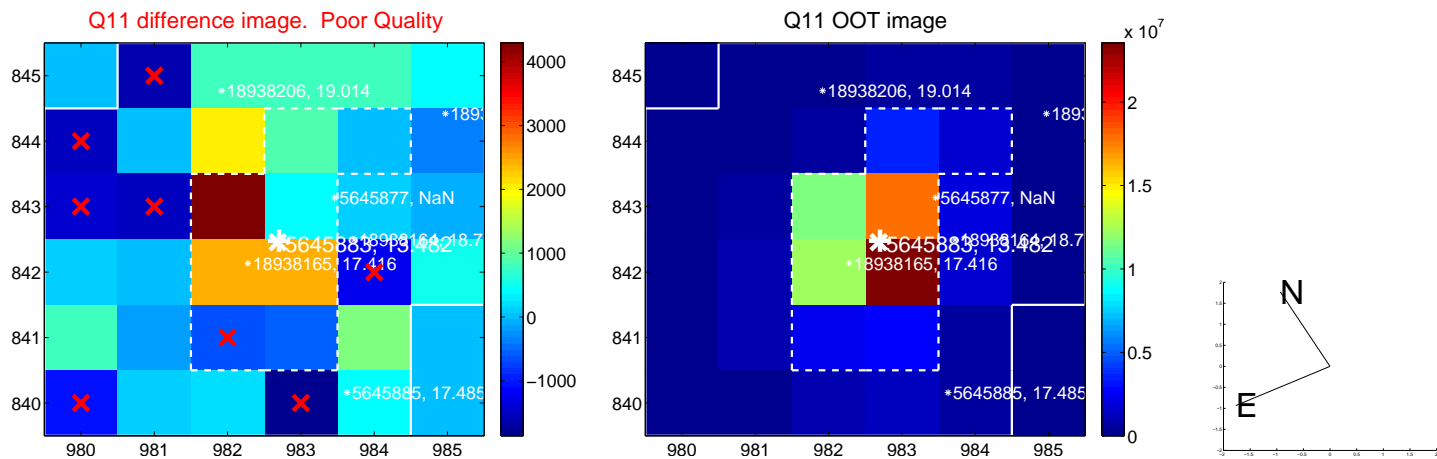
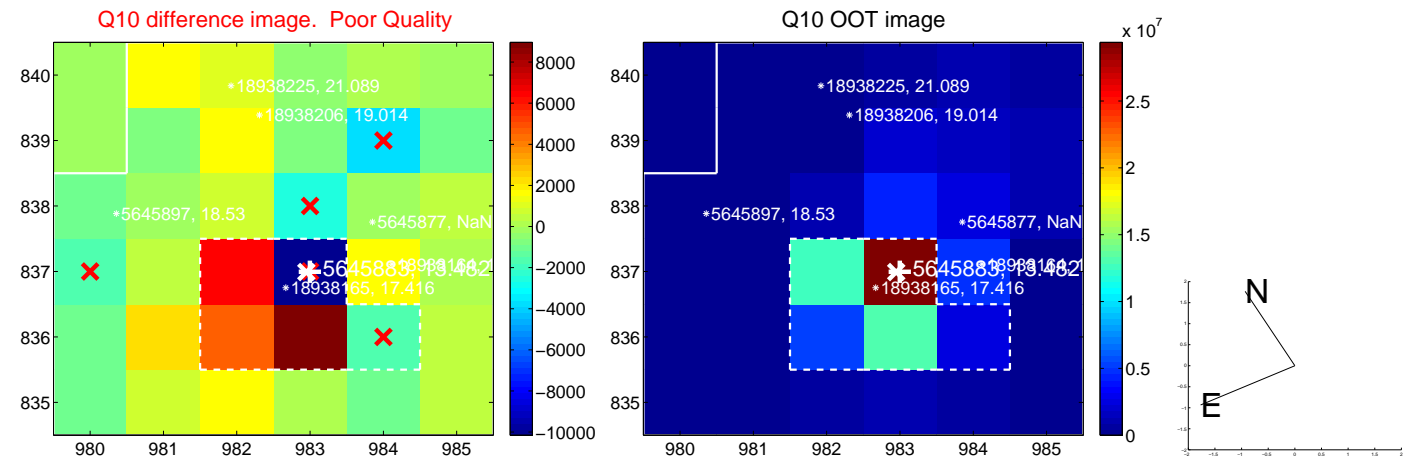
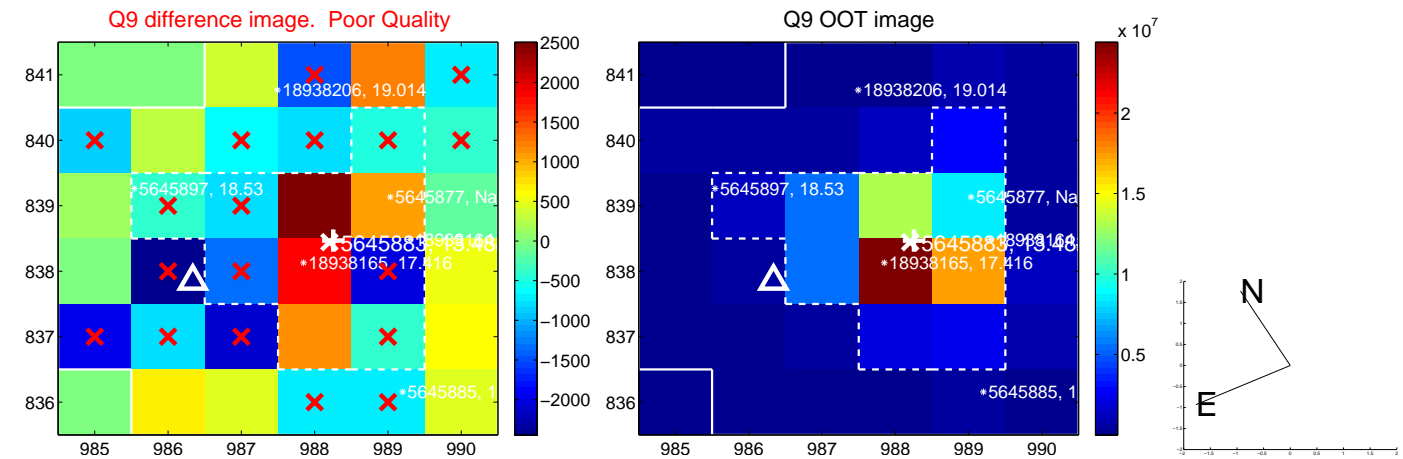
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



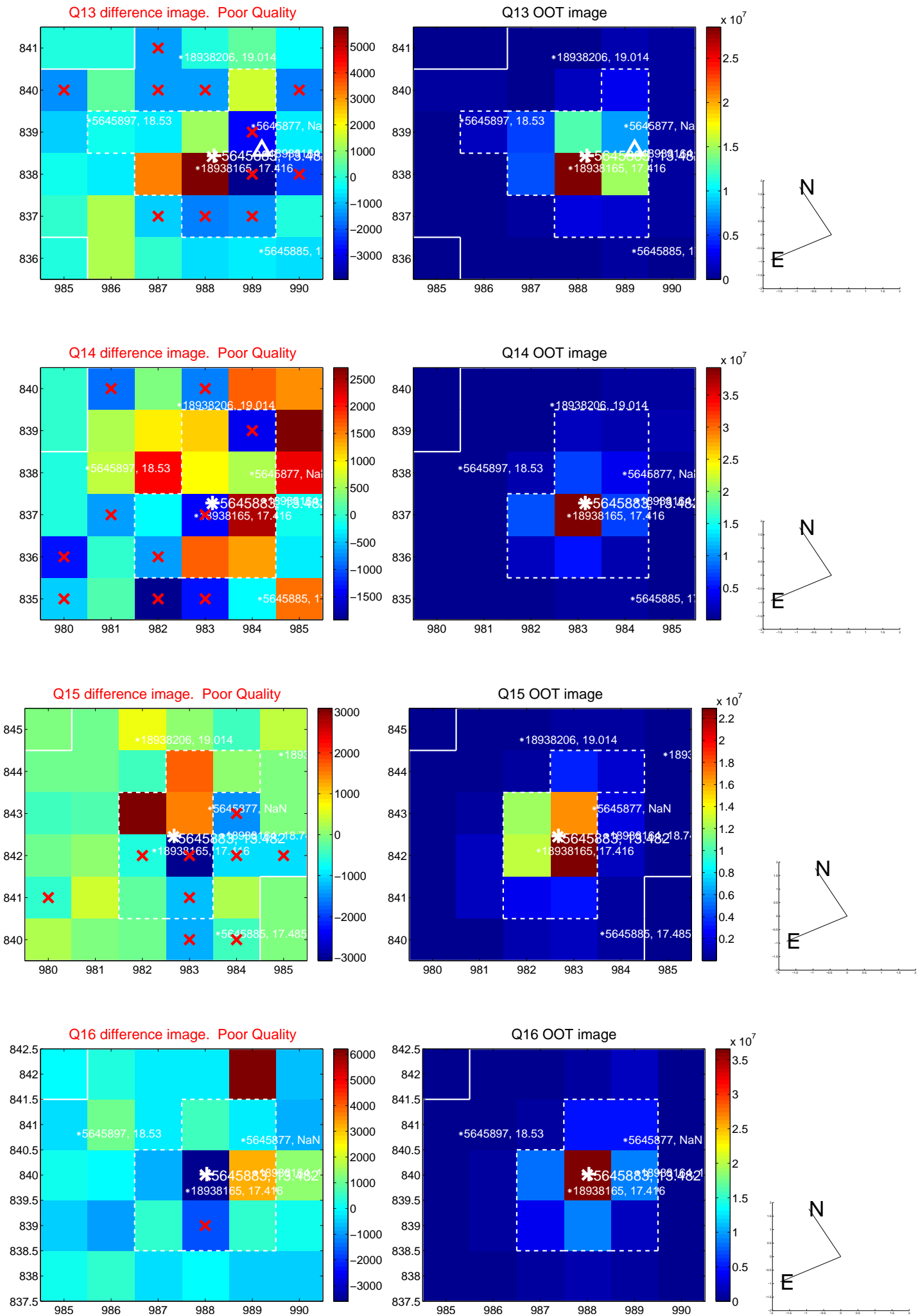
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



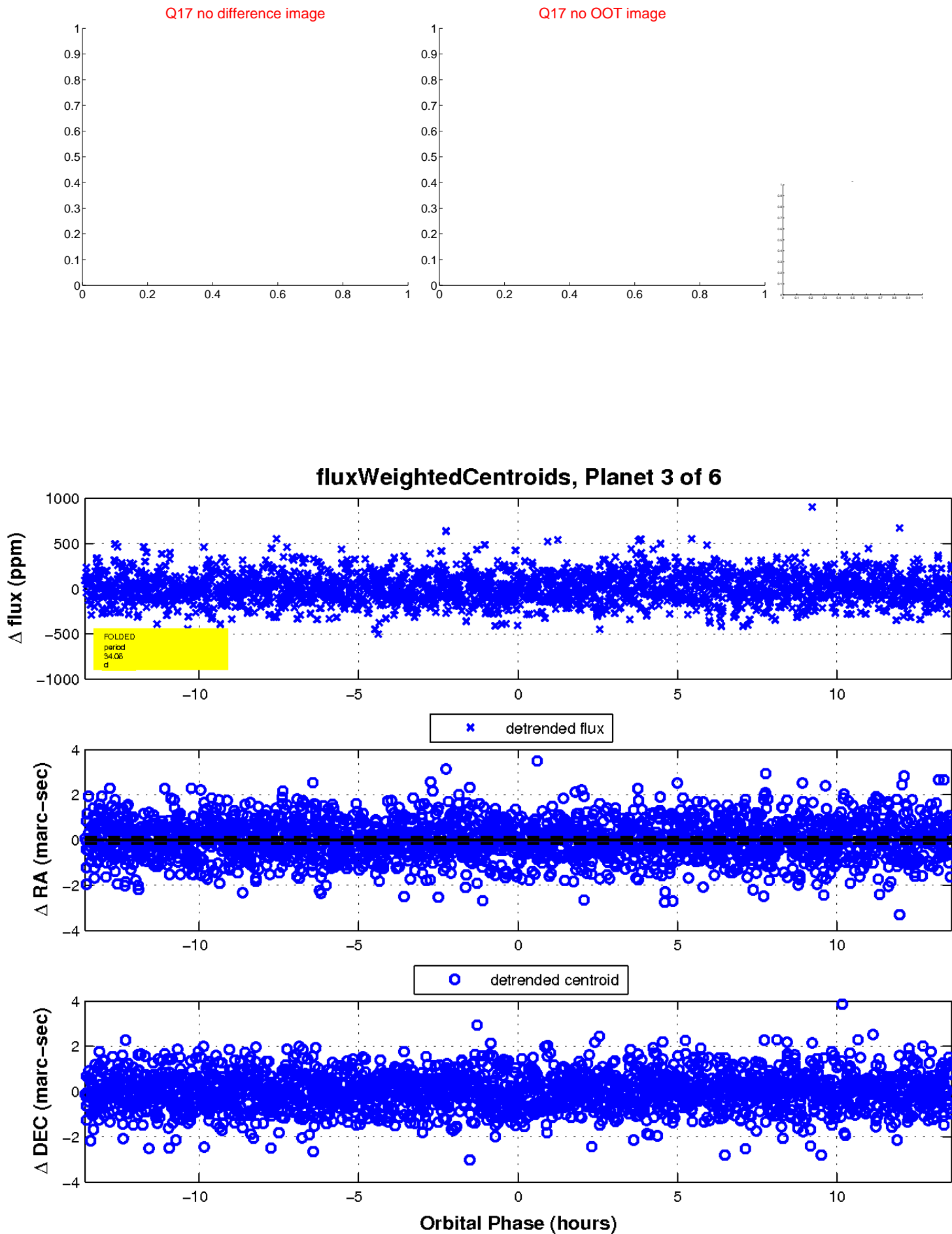
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

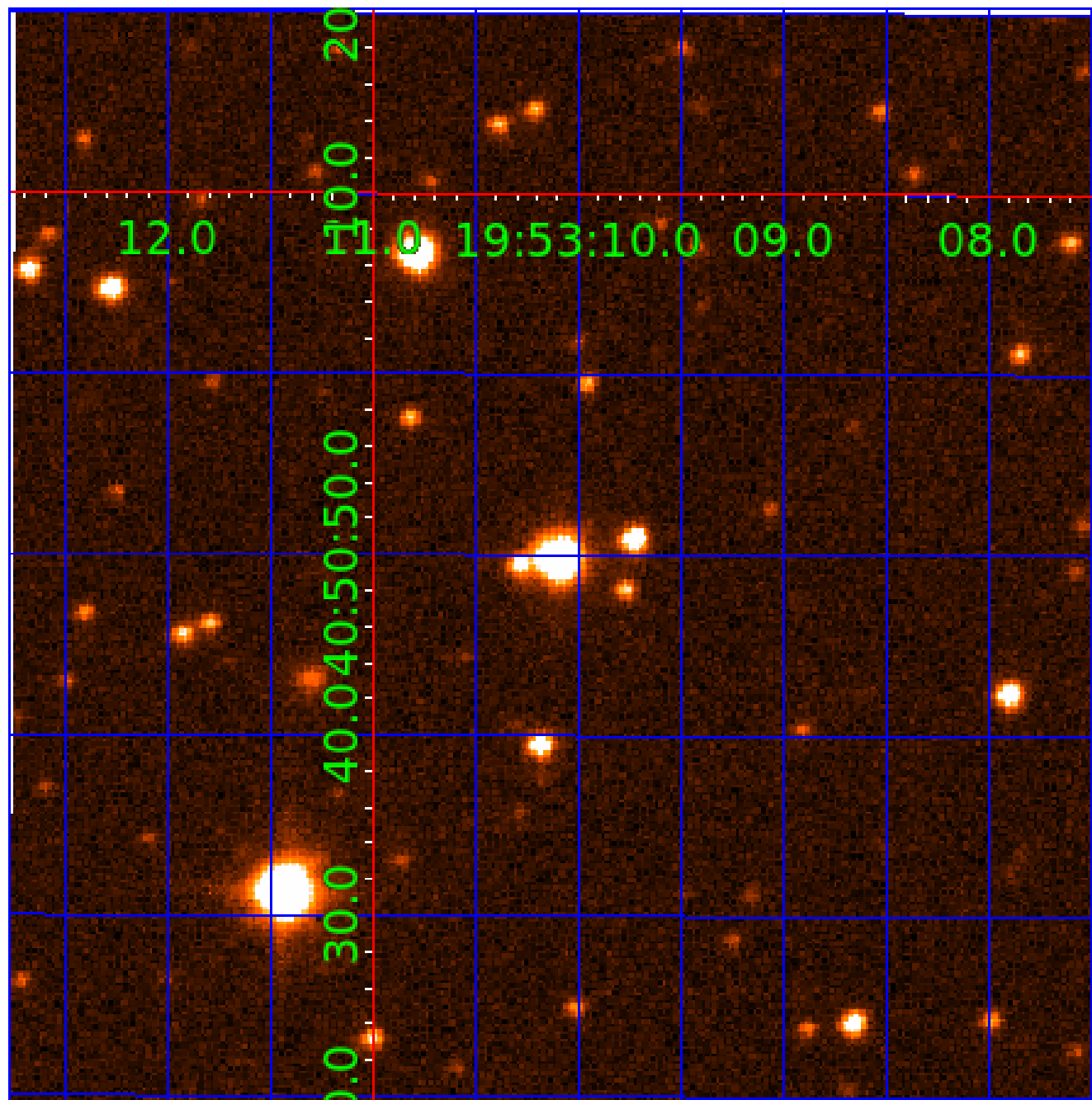


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

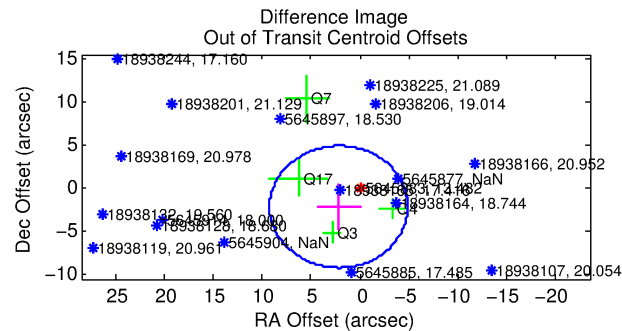
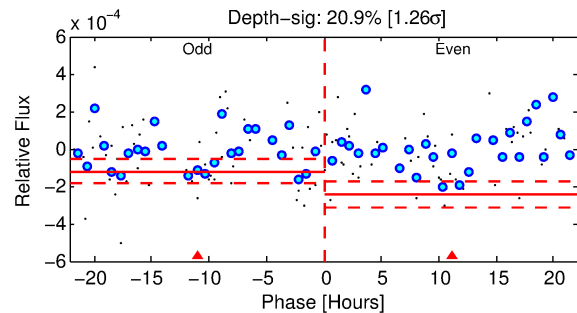
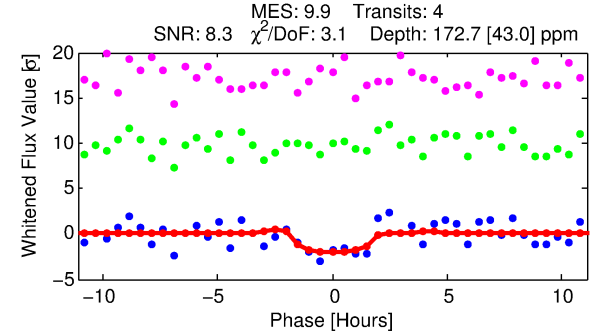
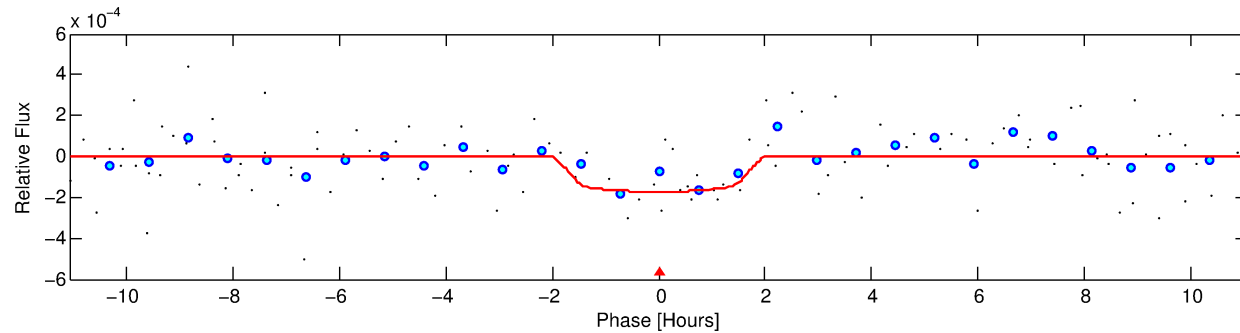
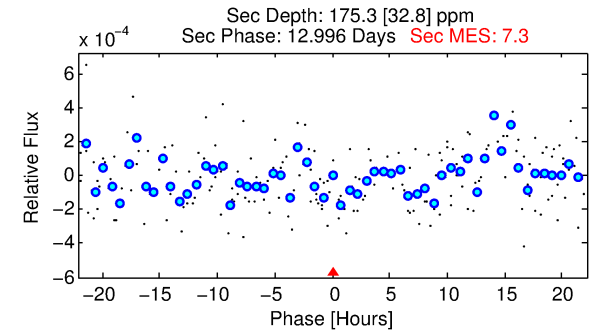
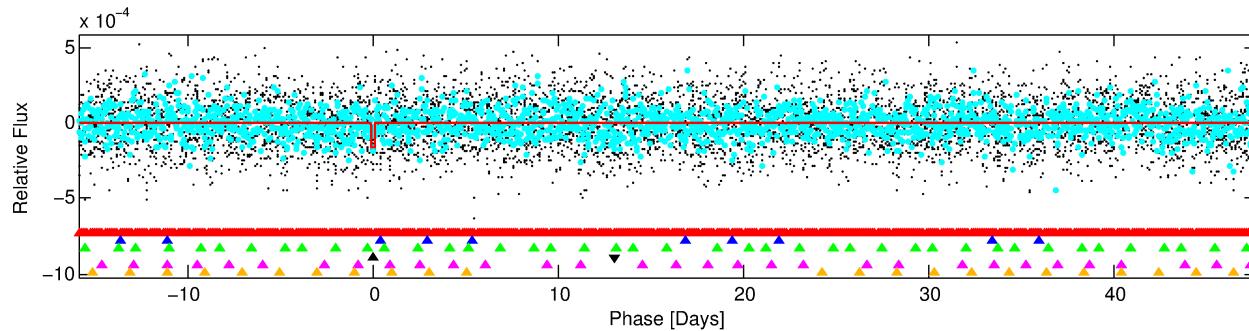
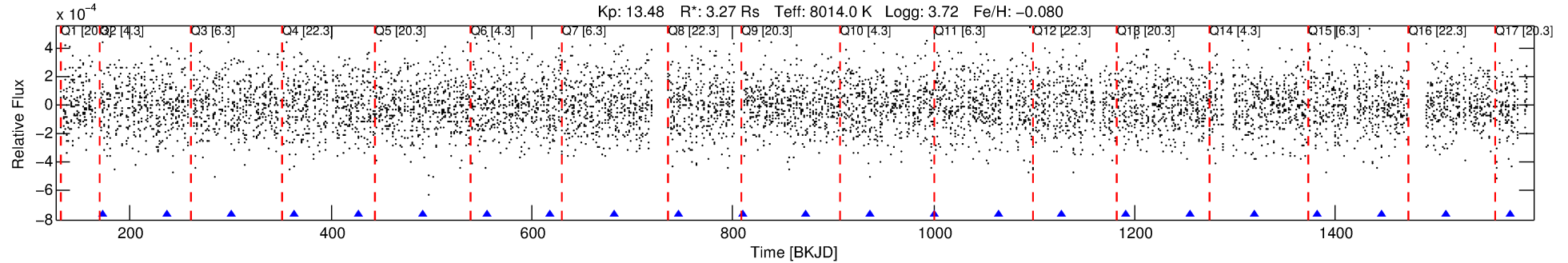
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-04

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 4 of 6 Period: 63.648 d



DV Fit Results:

Period = 63.64820 [0.00165] d
Epoch = 173.1180 [0.0220] BKJD
Rp/R* = 0.0139 [0.0168]
a/R* = 64.51 [476.38]
b = 0.89 [1.77]
Seff = 251.94 [185.38]
Teq = 1016 [187] K
Rp = 4.97 [6.40] Re
a = 0.3965 [0.1754] AU
Ag = 614.73 [1552.43] [0.40σ]
Teffp = 7821 [4746] K [1.43σ]

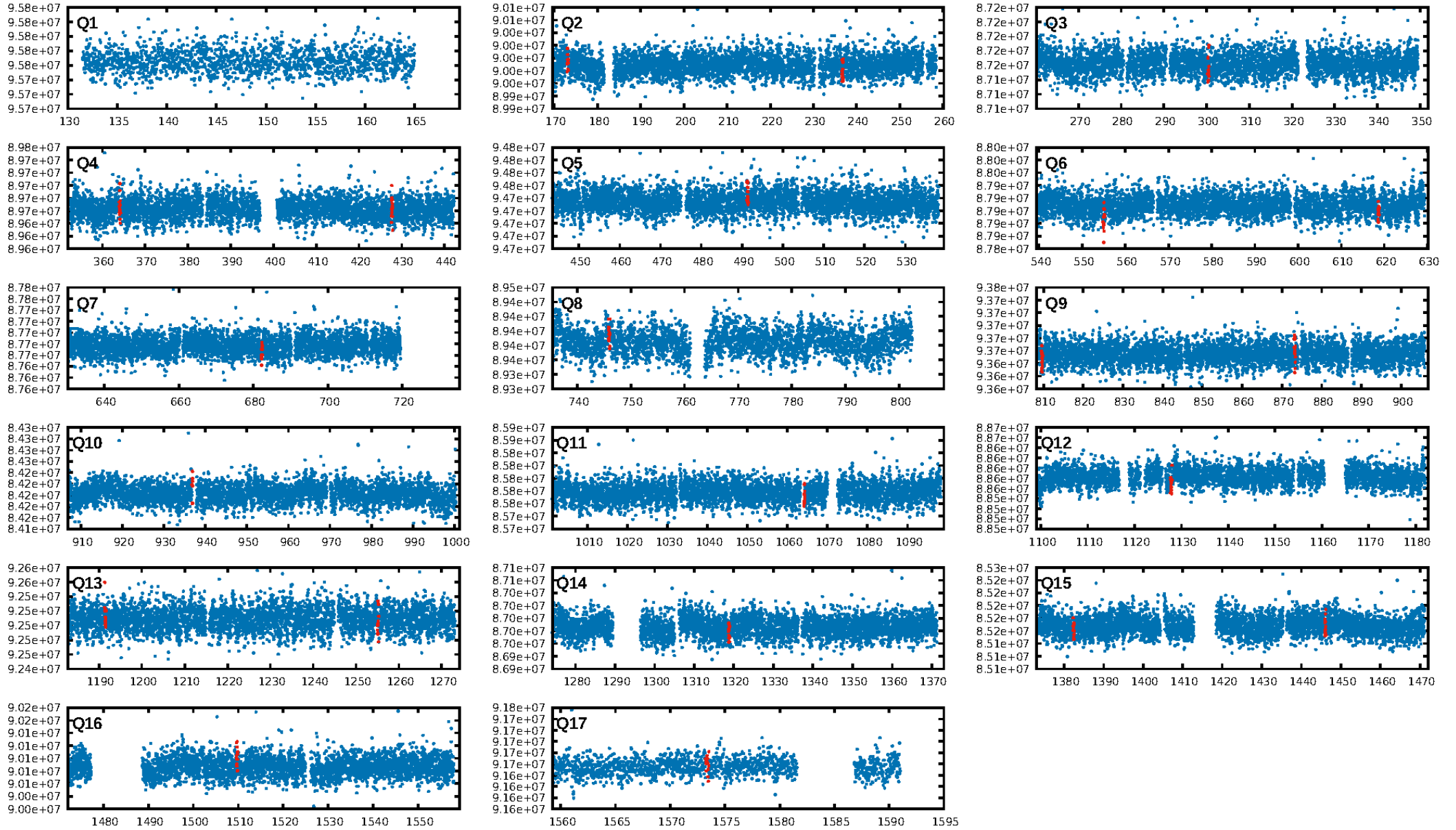
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [86.41σ]
LongPeriod-sig: 100.0% [12.05σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 56.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 6.009
Centroid-sig: N/A
Centroid-so: 1.276 arcsec [1.08σ]
OotOffset-rm: 3.076 arcsec [1.31σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-rm: 3.035 arcsec [1.28σ]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.38 [5/13]

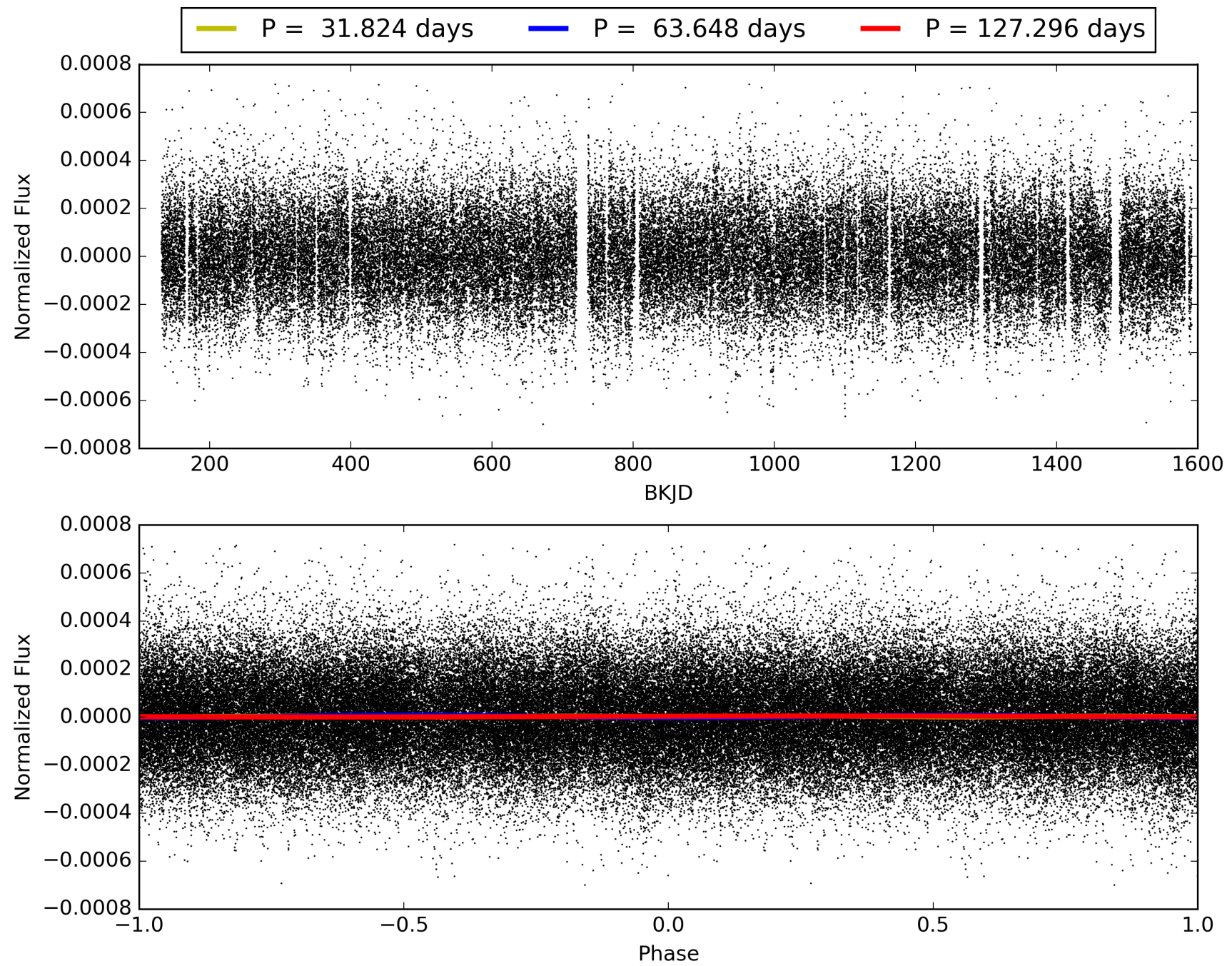
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:10:45 Z

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

TCE 005645883-04, PDC Light Curves

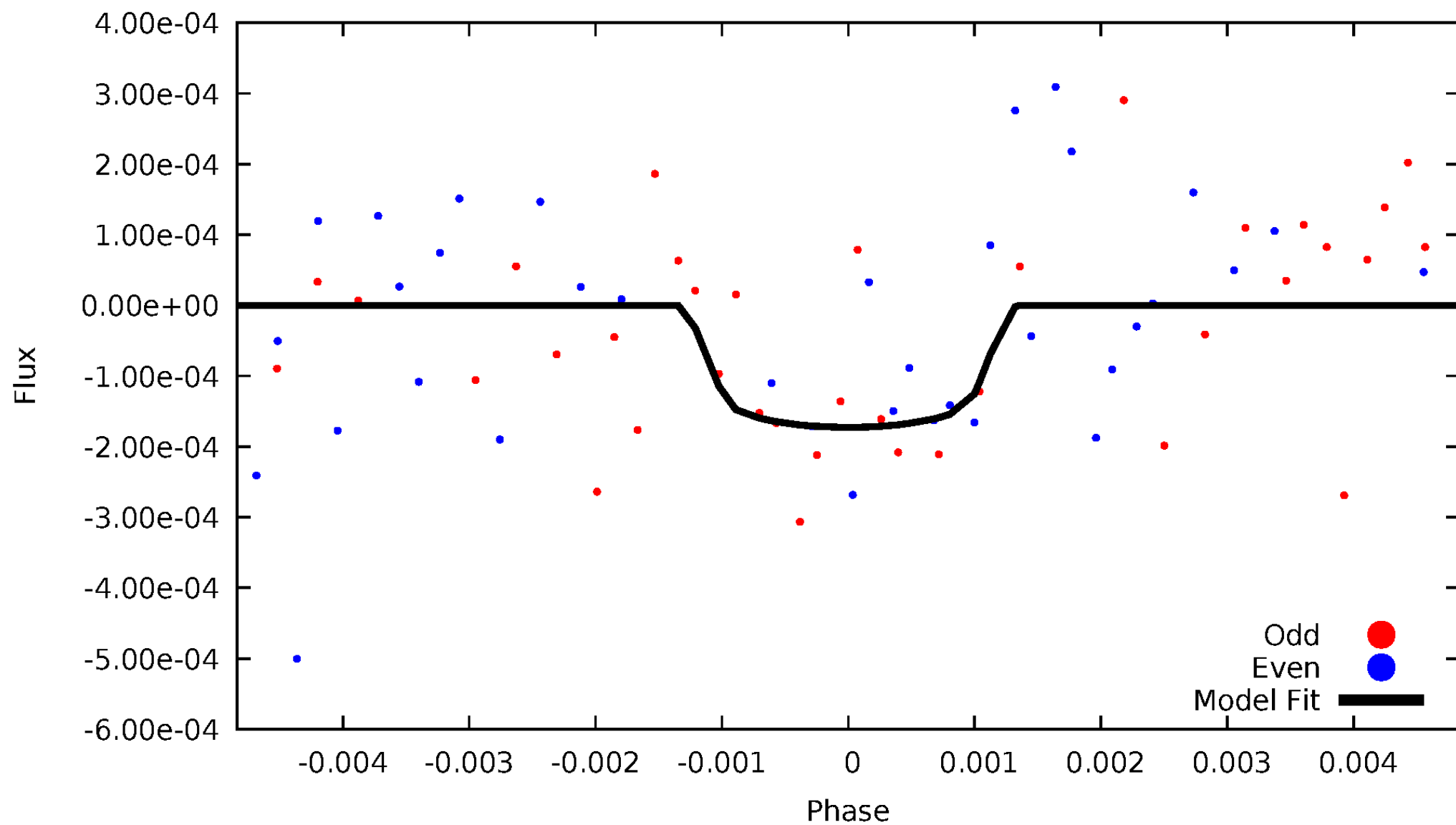


TCE 005645883-04



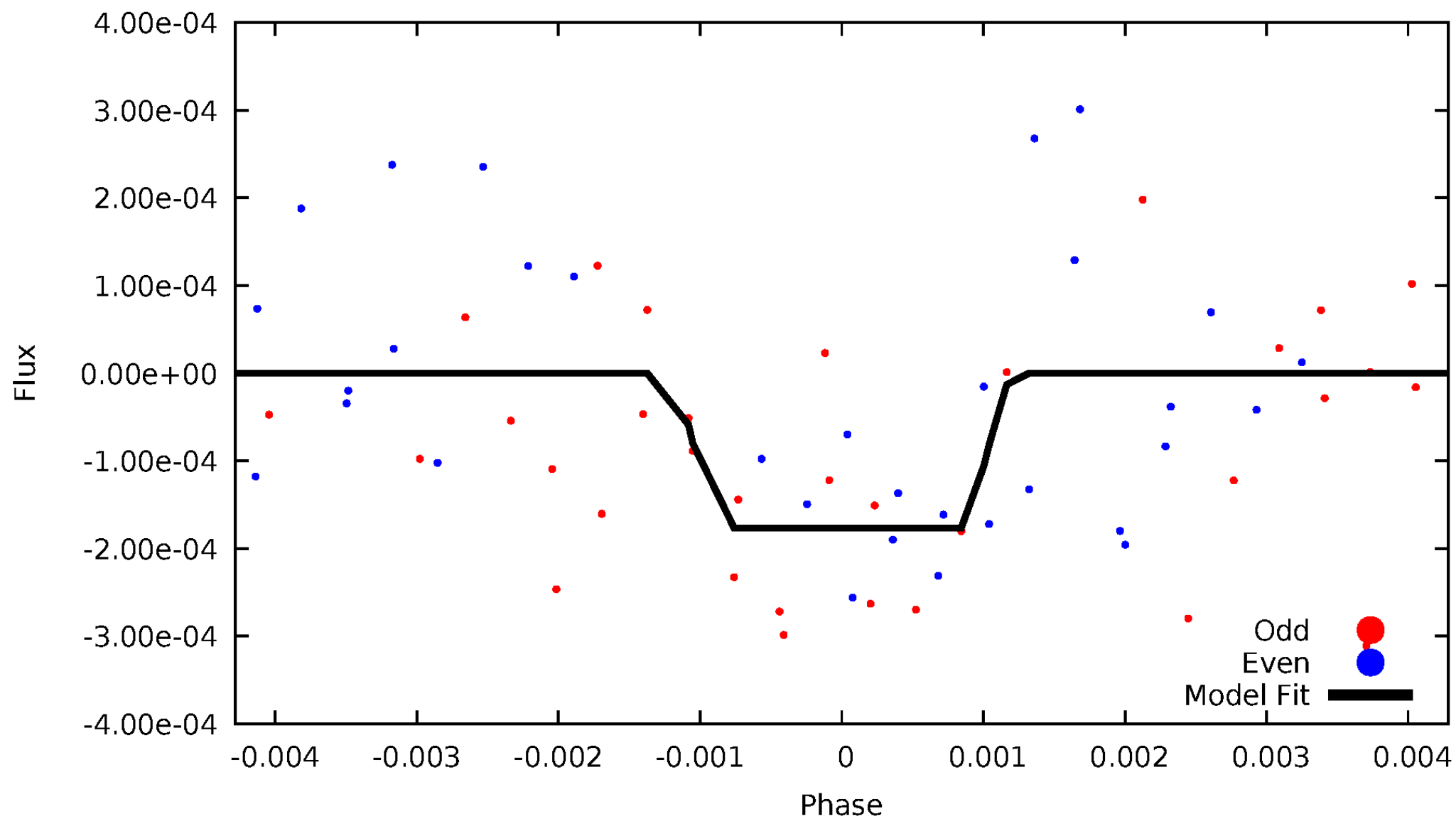
DV Odd/Even

TCE 005645883-04



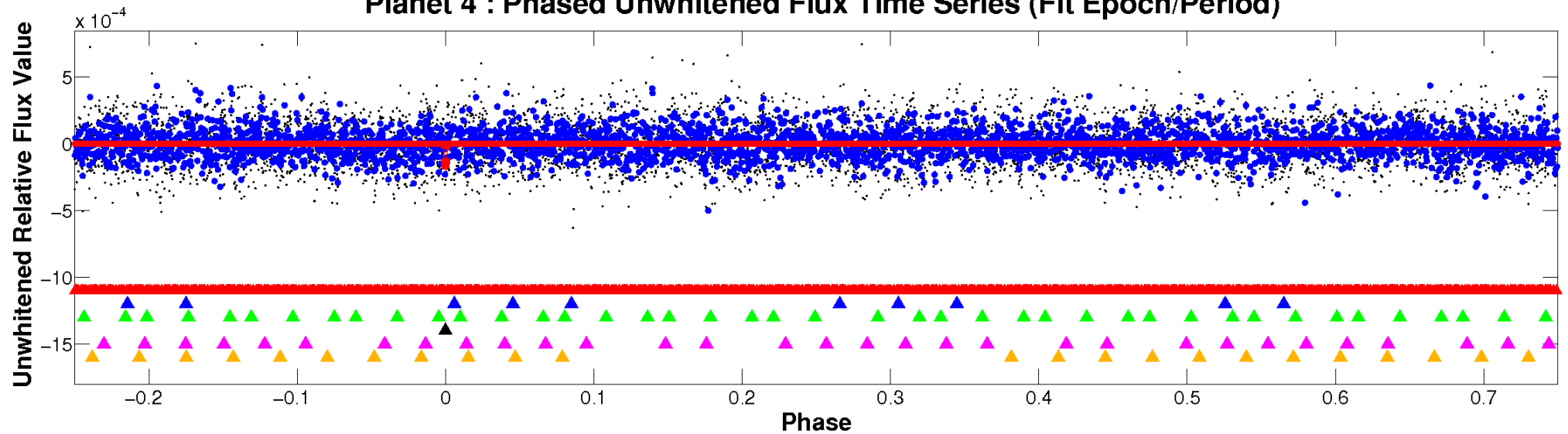
ALT Odd/Even

TCE 005645883-04

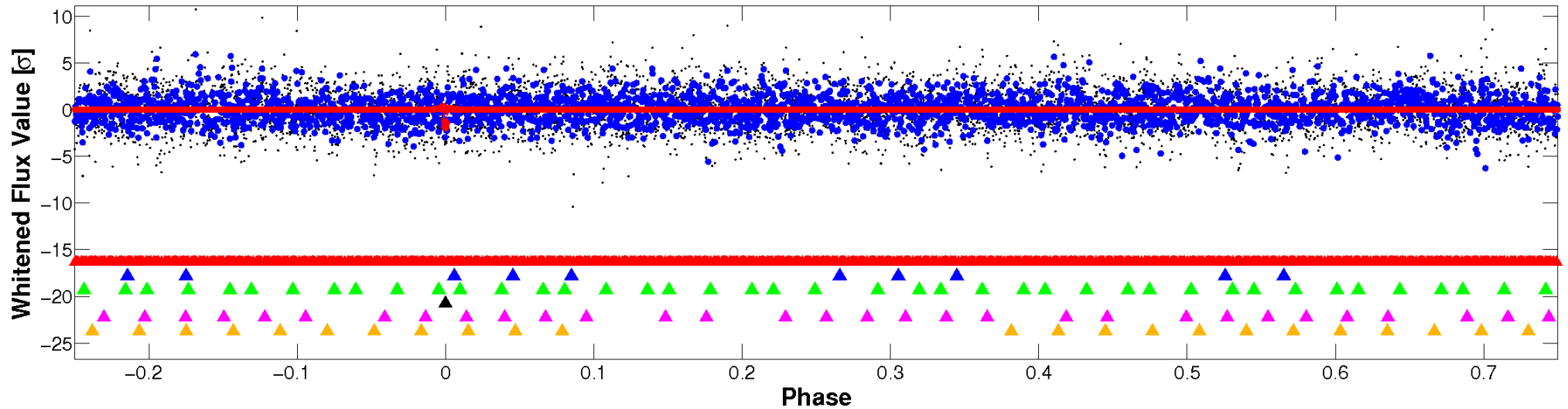


Non-Whitened Vs. Whitened Light Curve

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

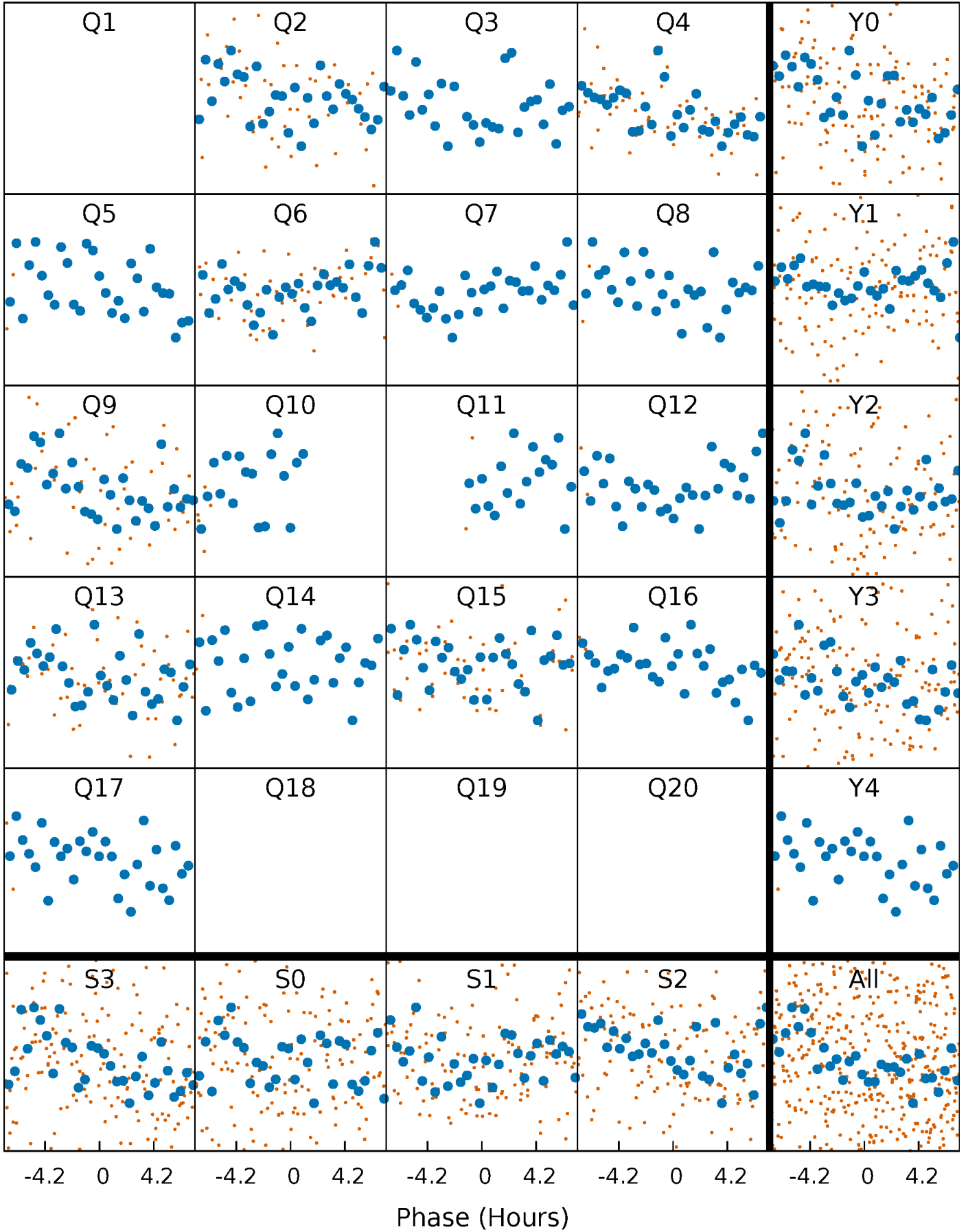


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



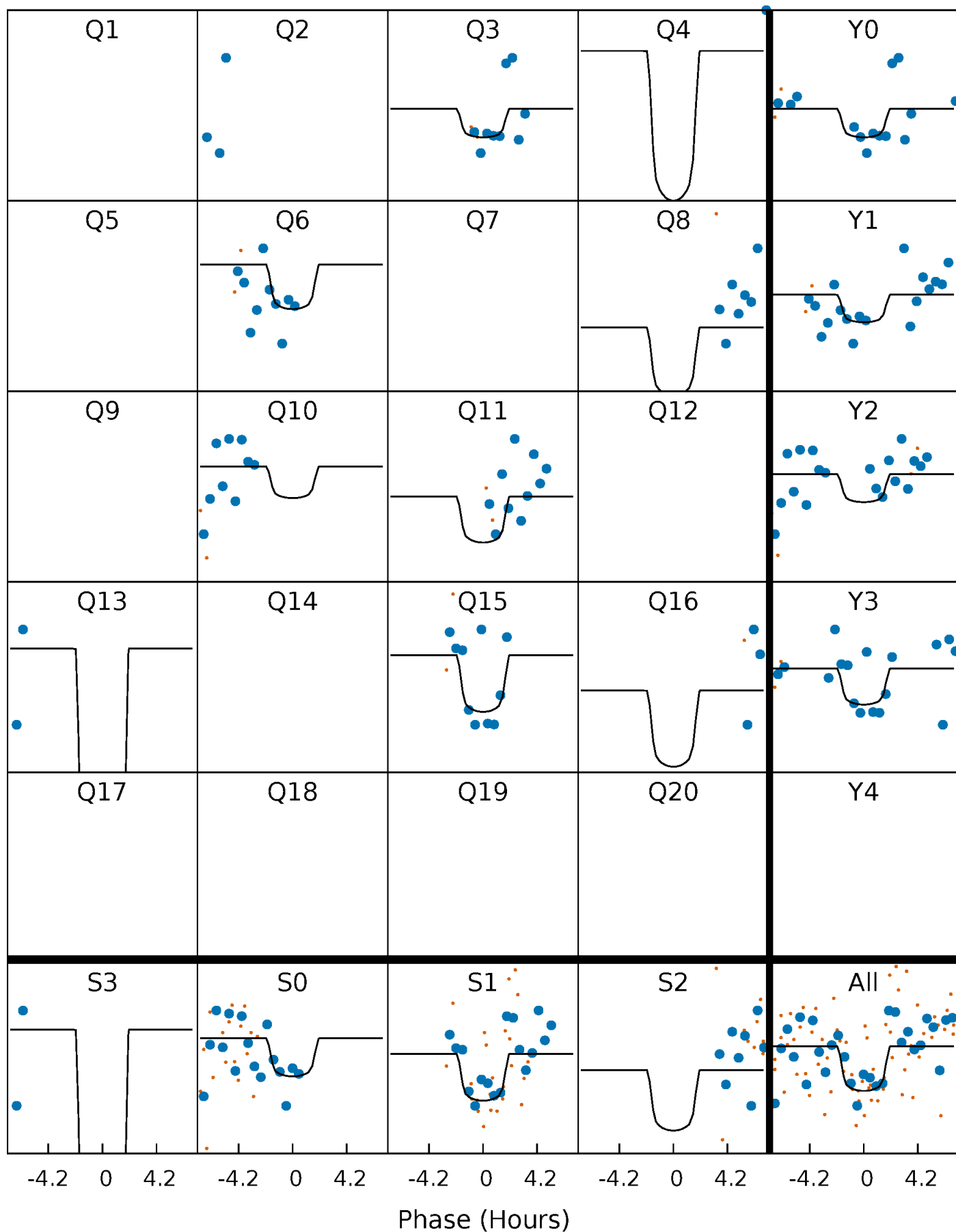
PDC Quarter-Phased Transit Curves

TCE 005645883-04 P= 63.648198 Days $T_0=173.117998$ (BKJD)



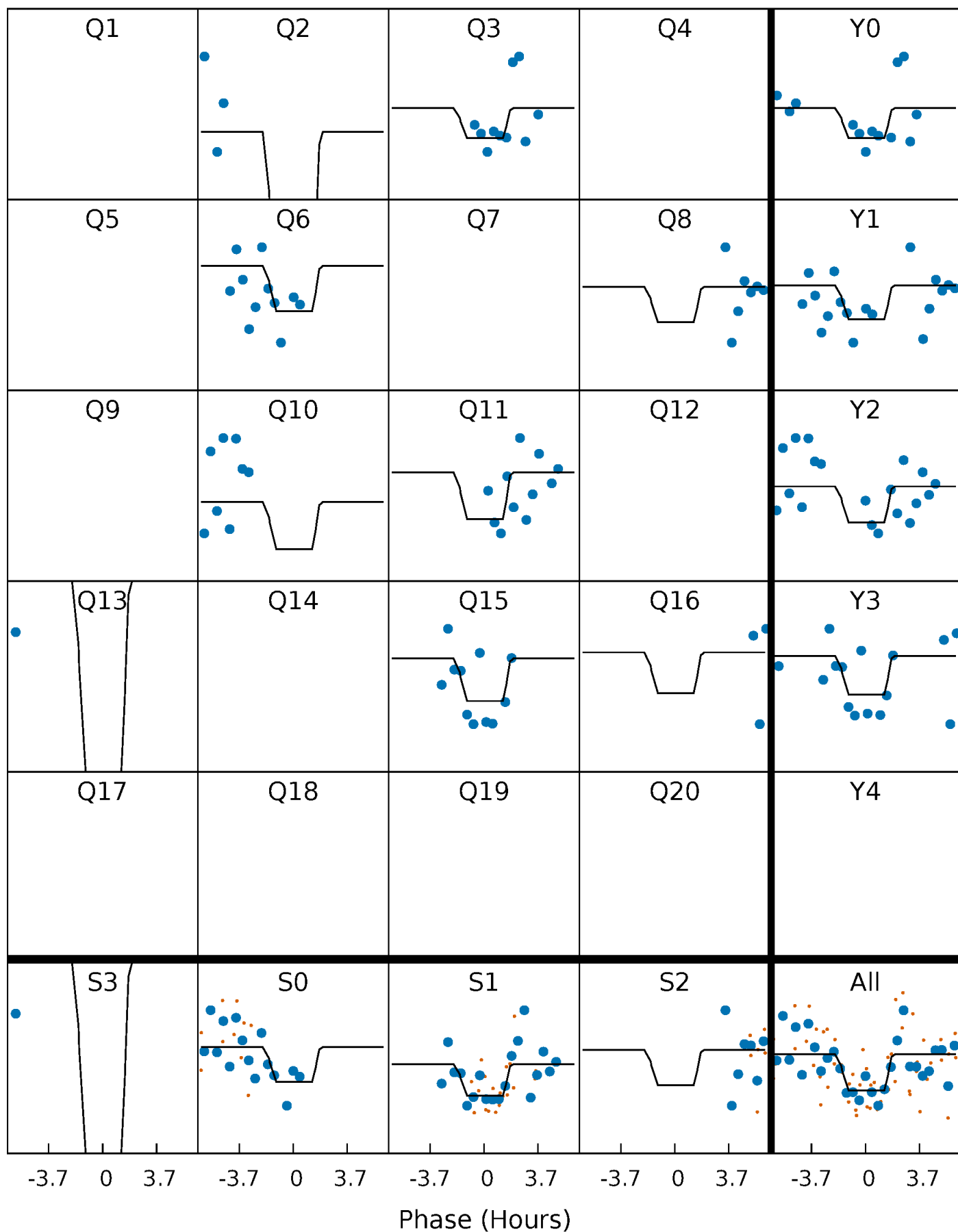
DV Quarter-Phased Transit Curves

TCE 005645883-04 P= 63.648198 Days $T_0=173.117998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

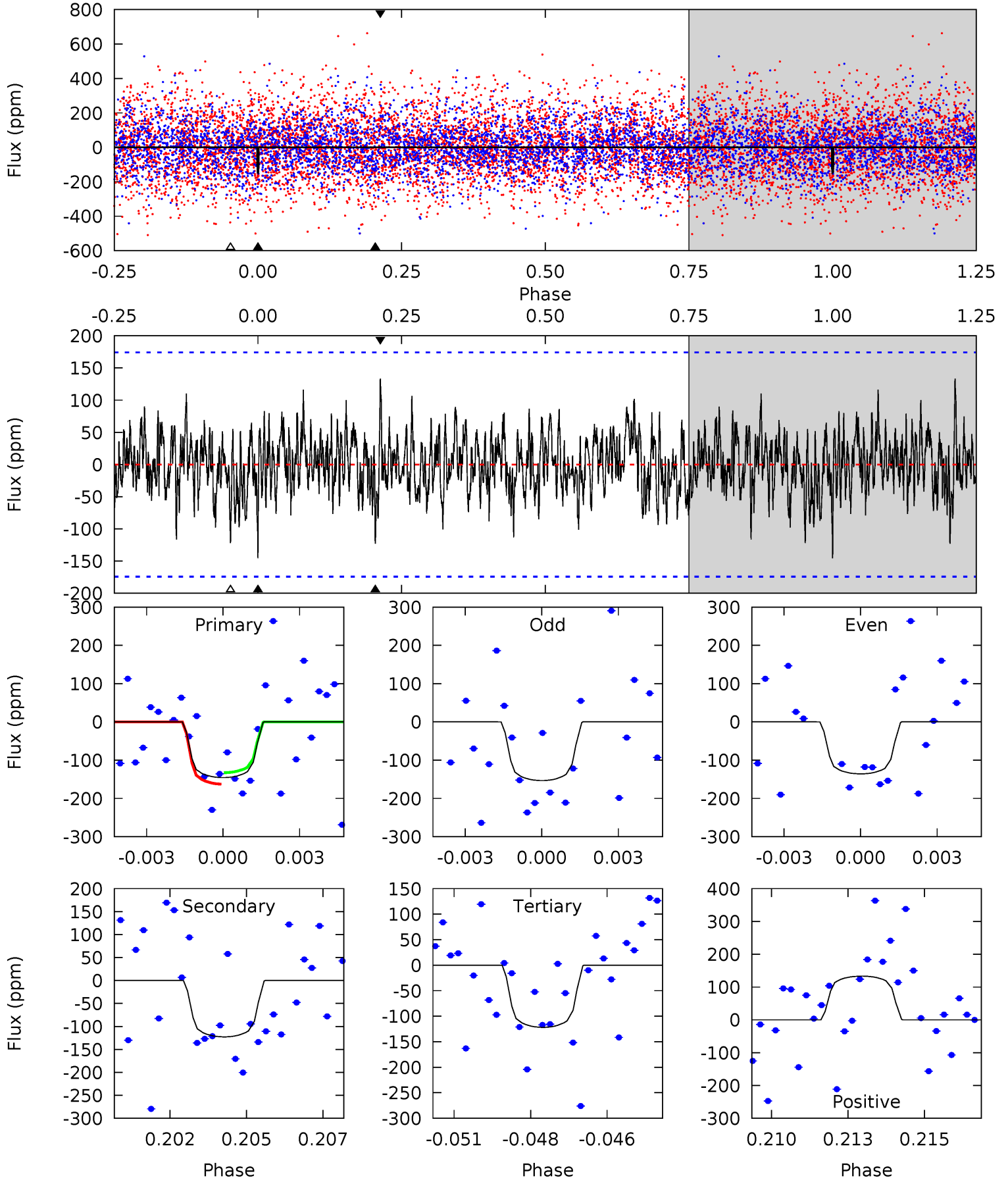
TCE 005645883-04 P= 63.649070 Days $T_0=173.113619$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-04, P = 63.648198 Days, E = 109.469800 Days

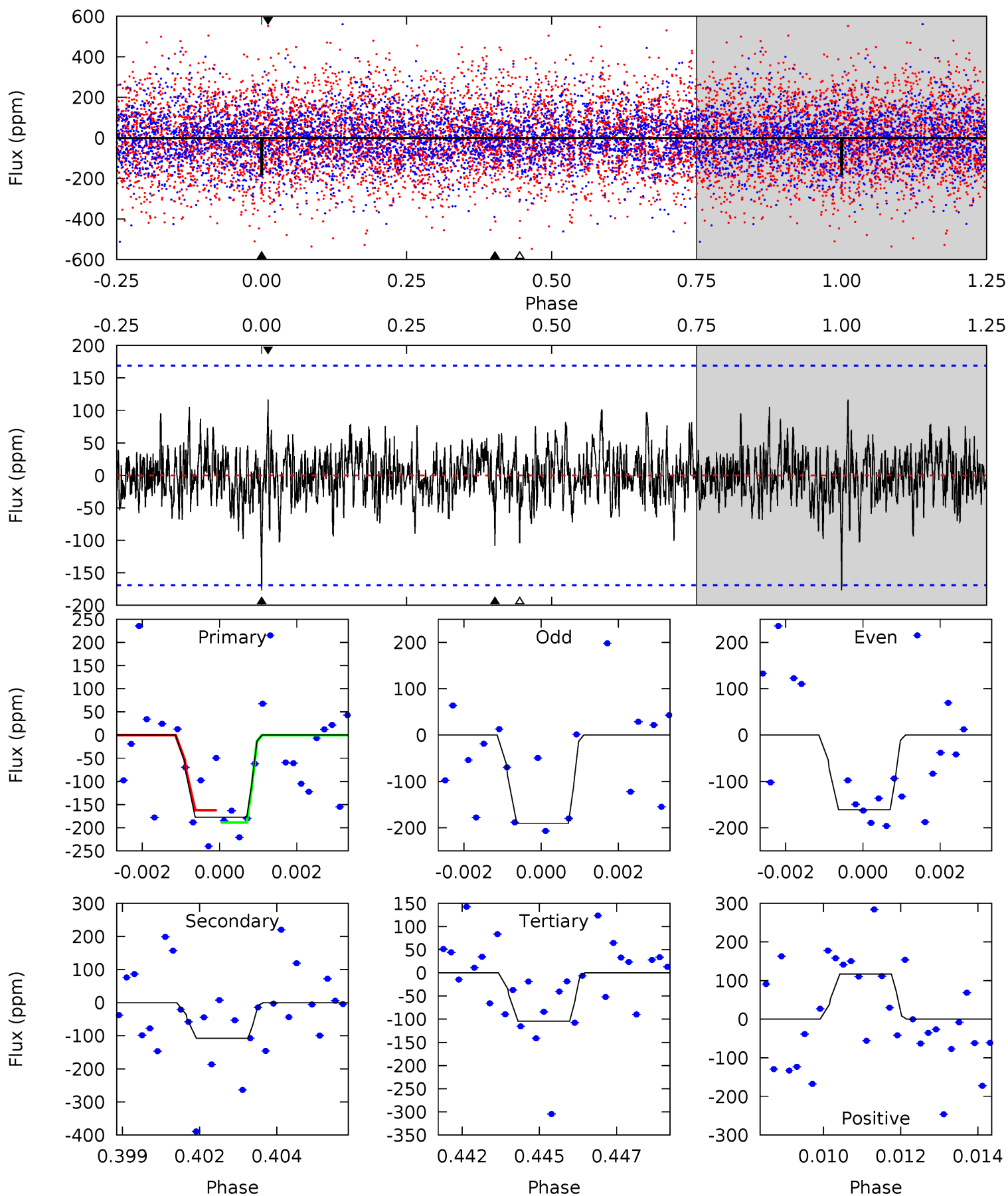
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.42 | 3.73 | 3.70 | 4.04 | 5.28 | 3.02 | 1.17 | 0.72 | 0.37 | 0.03 | -0.32 | 0.27 | 0.89 | 0.48 | 0.45 |



Alt Model-Shift Uniqueness Test

005645883-04, P = 63.649070 Days, E = 109.464549 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.55 | 3.38 | 3.27 | 3.65 | 5.29 | 3.04 | 0.97 | 2.27 | 1.90 | 0.11 | -0.27 | 0.46 | 1.00 | 0.40 | 0.41 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-04 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|----------------------|
| DV | -123 ± 33 | $6.05^{+4.77}_{-3.88}$ | 1365^{+116}_{-156} | 6003^{+5122}_{-1404} | 298^{+1907}_{-215} |
| Alt. | -108 ± 32 | $5.38^{+5.31}_{-3.57}$ | 1366^{+108}_{-152} | 6069^{+5792}_{-1556} | 301^{+2258}_{-225} |

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 $A_{obs} \gg 1.0$

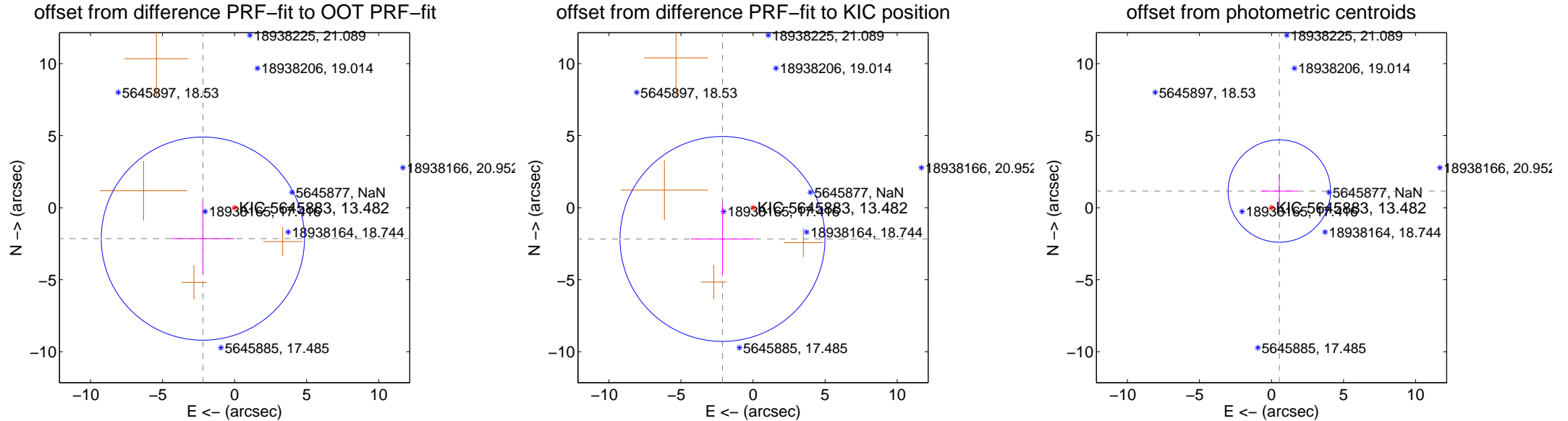
DV Centroid Data

Supplemental centroid analysis for 005645883-04. Kepler magnitude: 13.48. Transit SNR 8.33

There are 0 quarters with good PRF difference image offsets

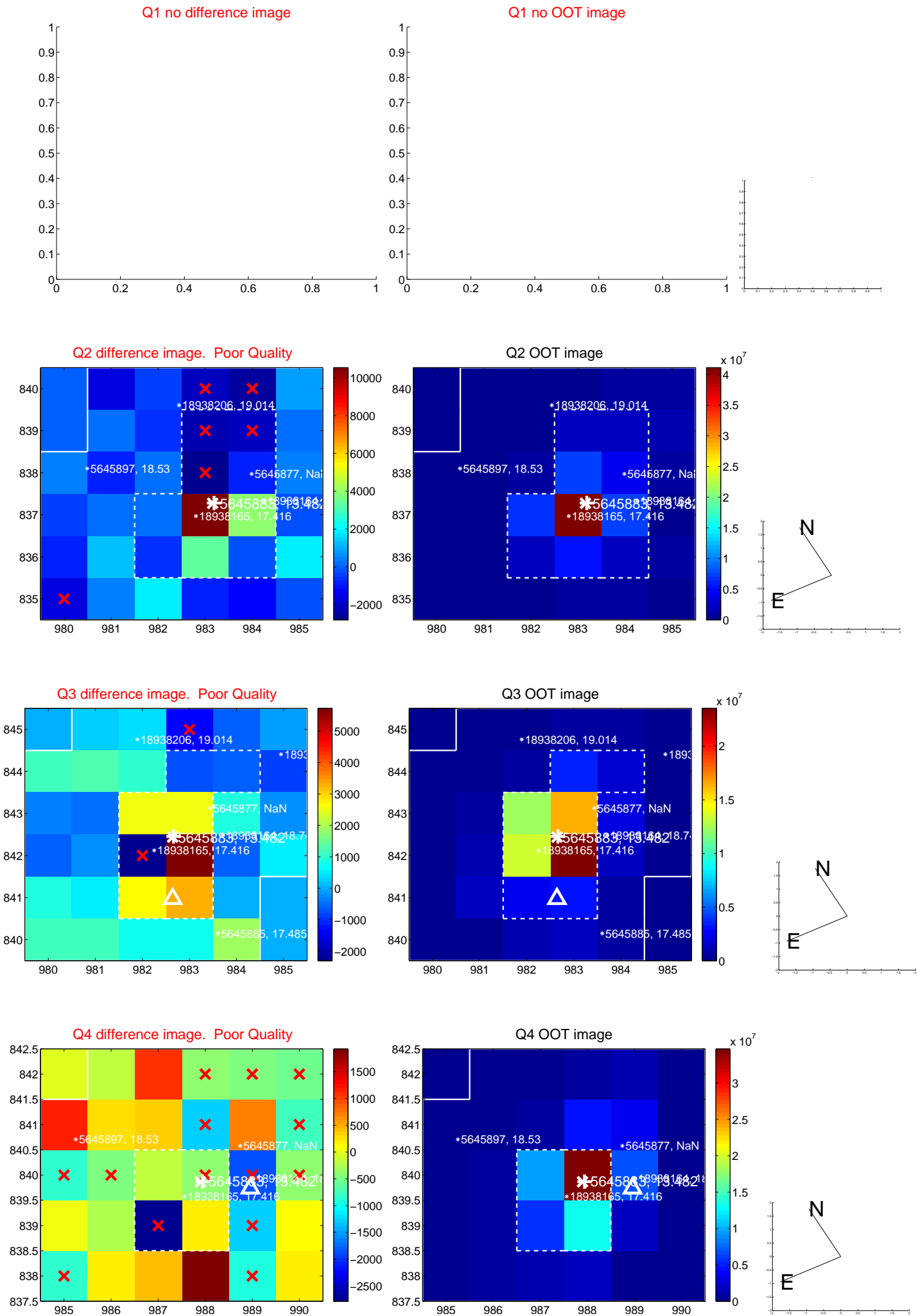
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.076 ± 2.351 | 1.31 | 2.201 ± 2.193 | -2.149 ± 2.506 |
| PRF-fit source offset from KIC position | 3.035 ± 2.371 | 1.28 | 2.120 ± 2.209 | -2.171 ± 2.516 |
| photometric centroid source offset | 1.28 ± 1.18 | 1.08 | -0.54 ± 1.27 | 1.15 ± 1.16 |

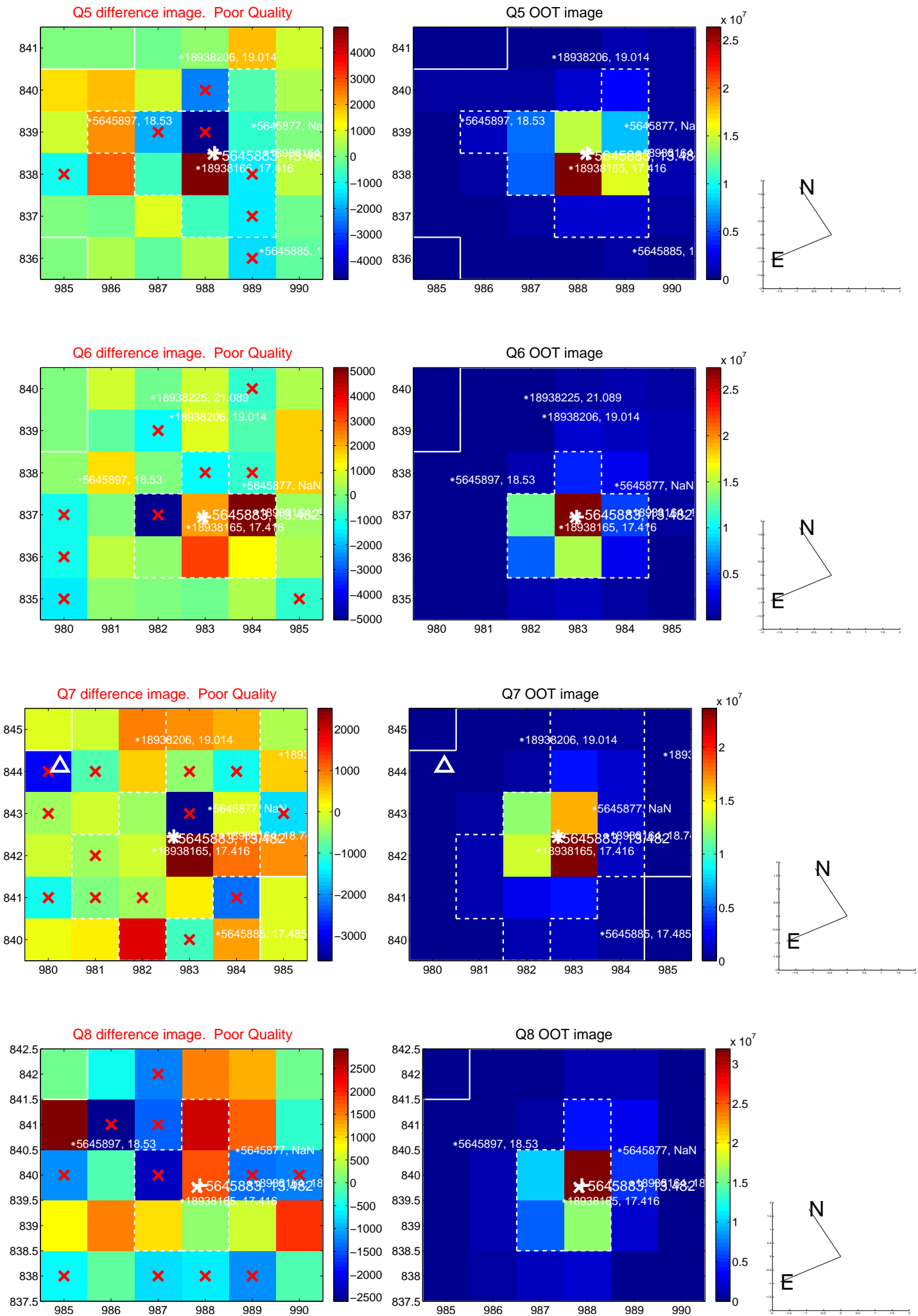


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

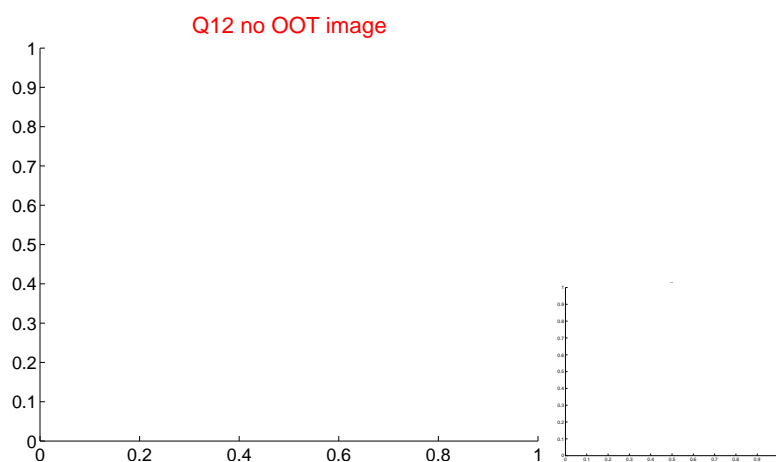
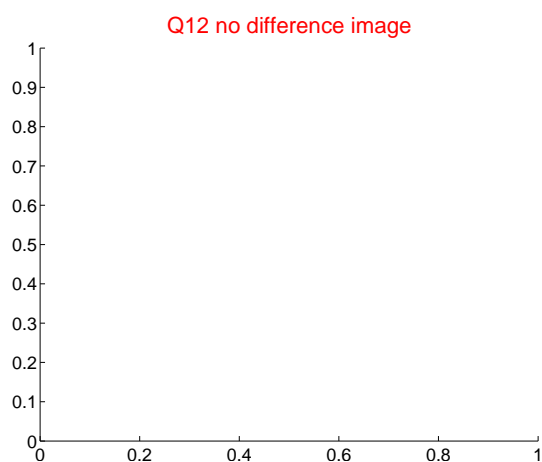
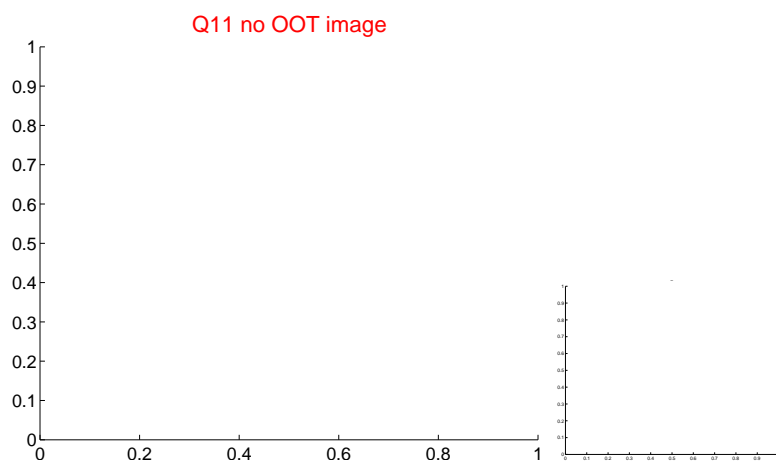
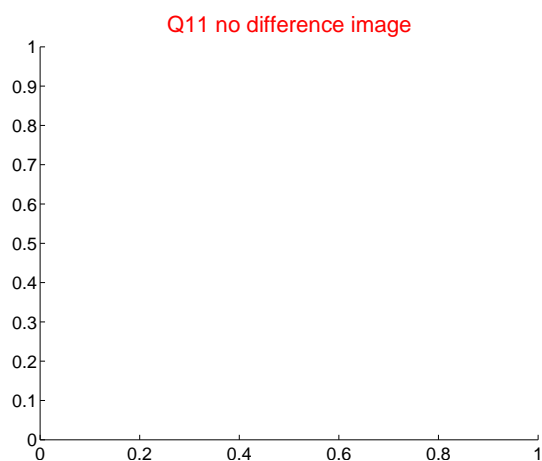
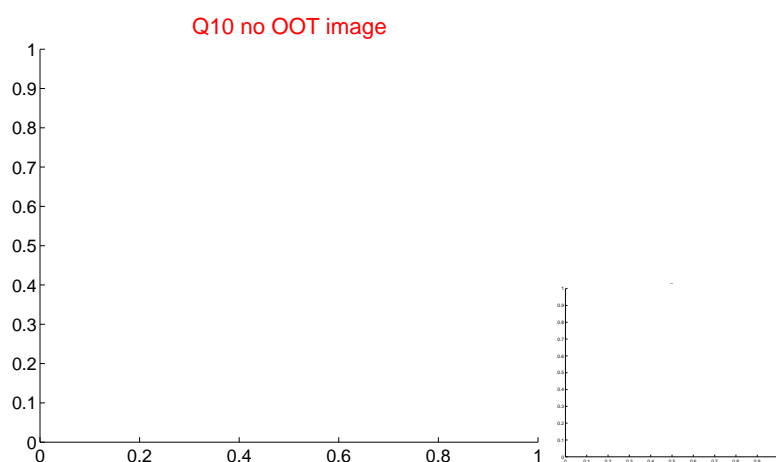
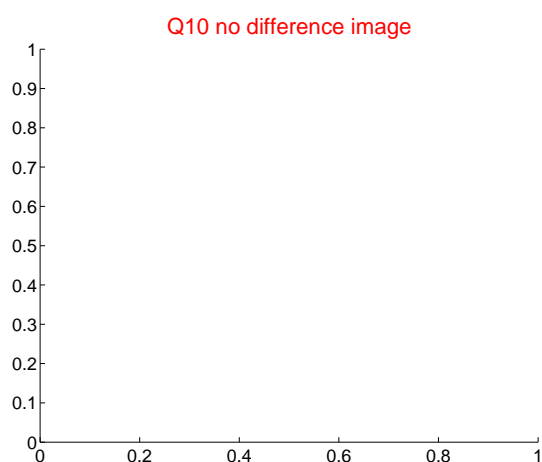
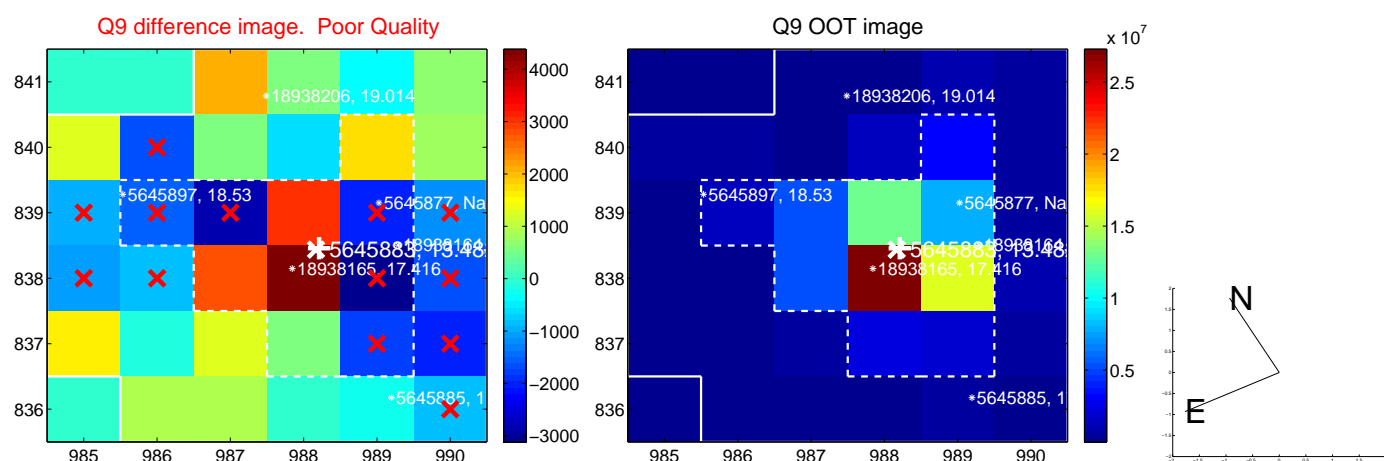
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



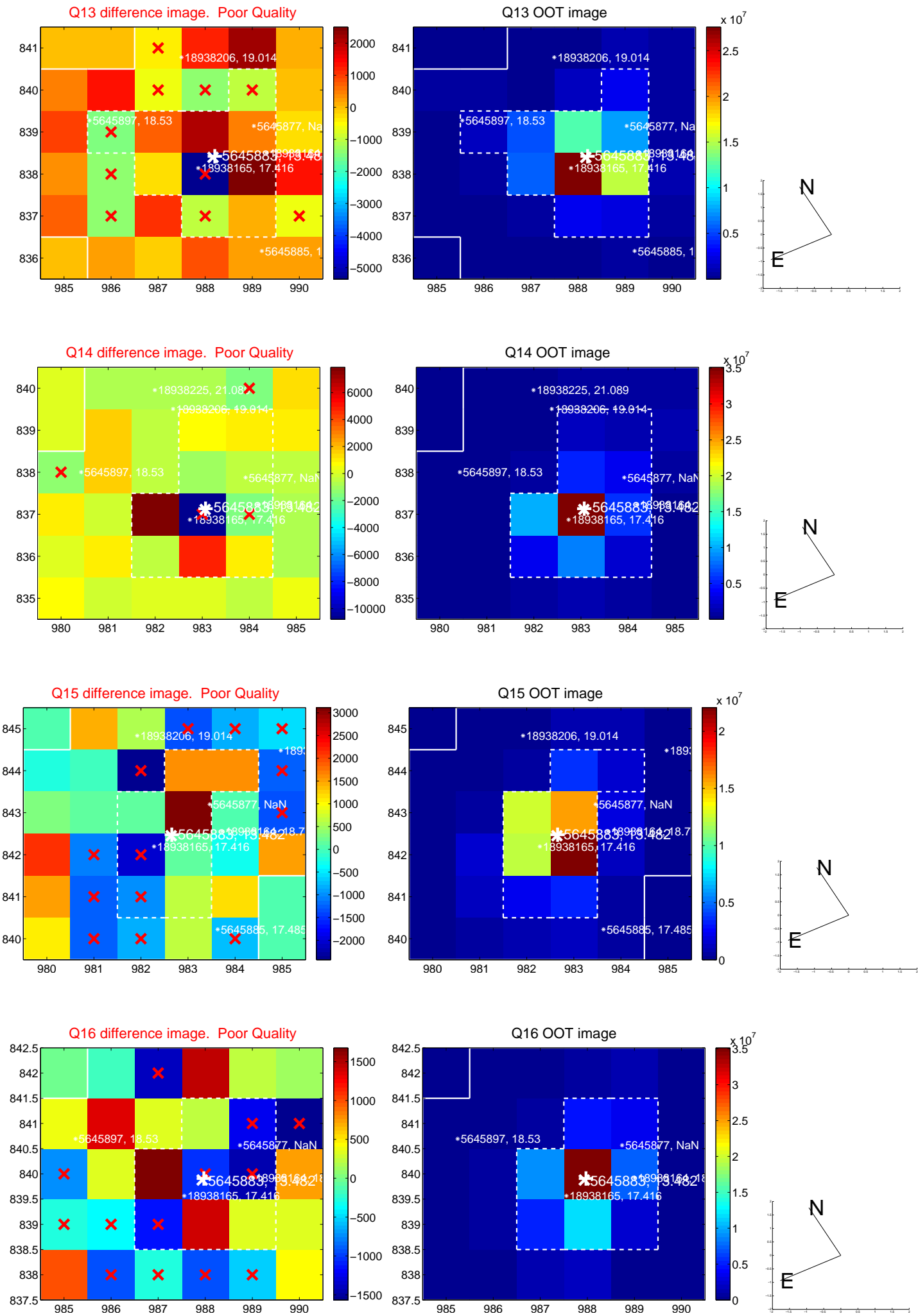
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



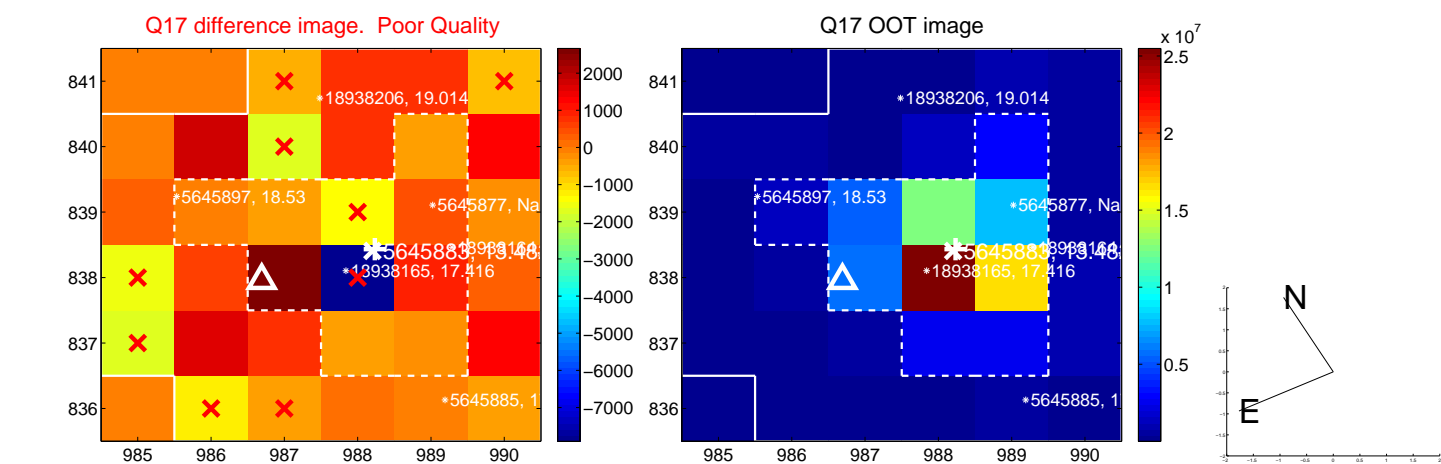
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



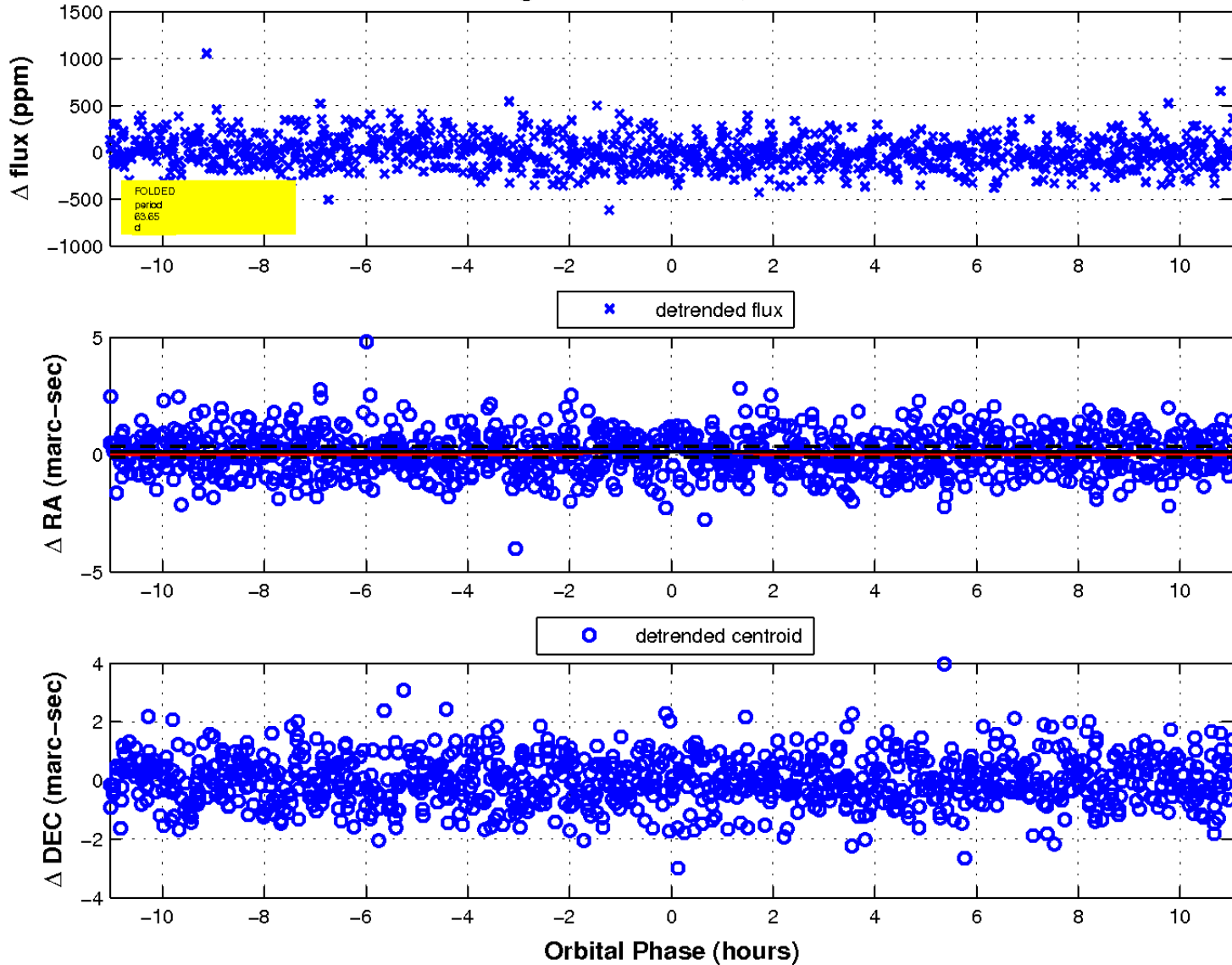
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

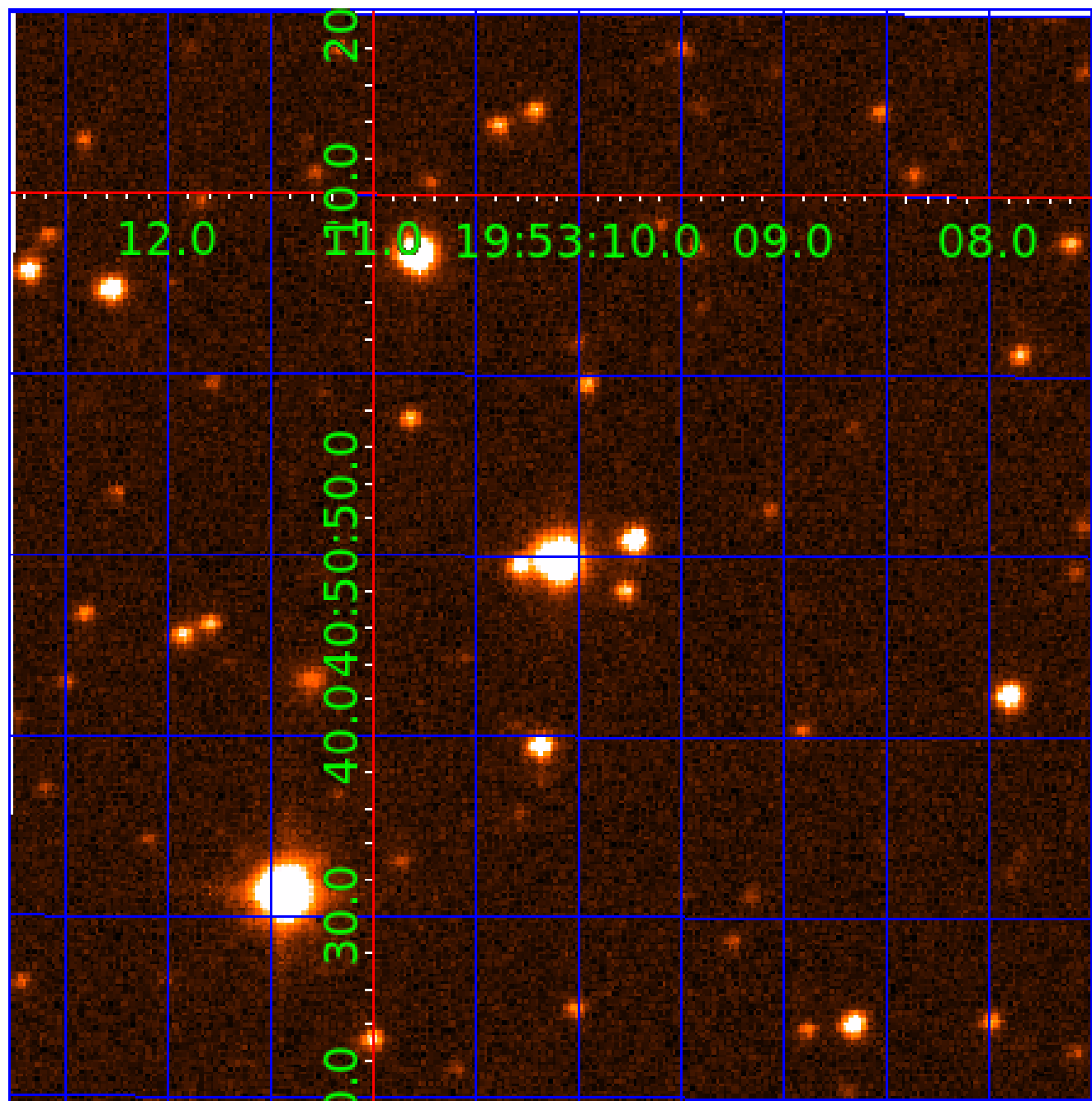


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

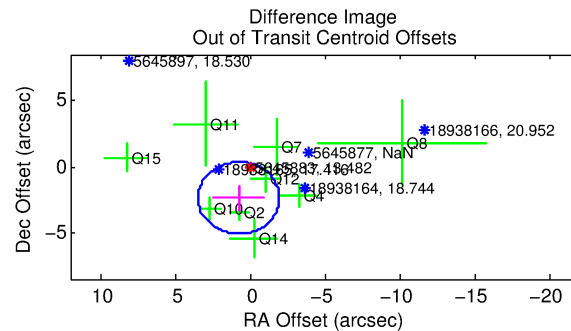
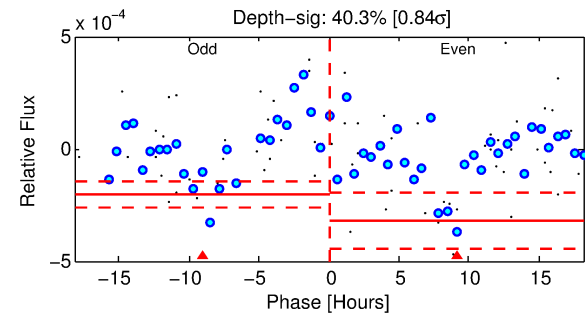
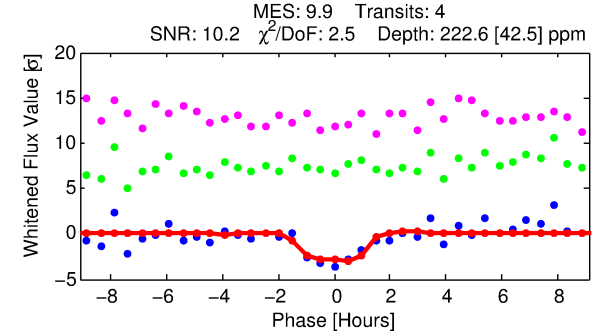
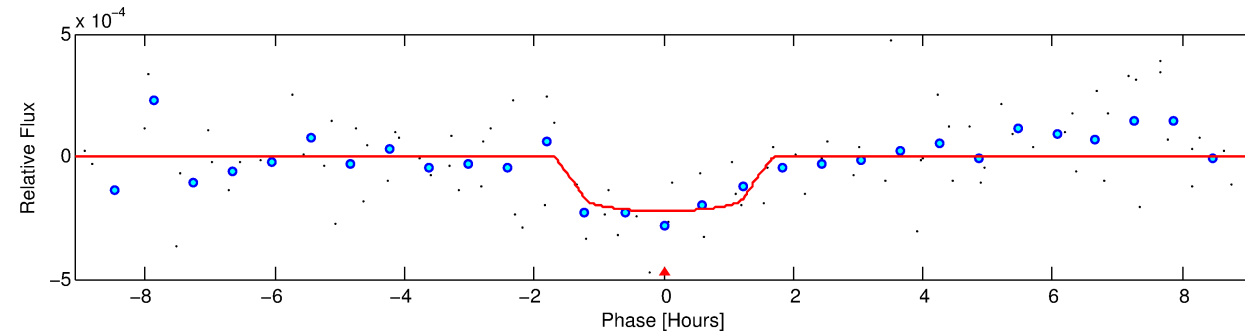
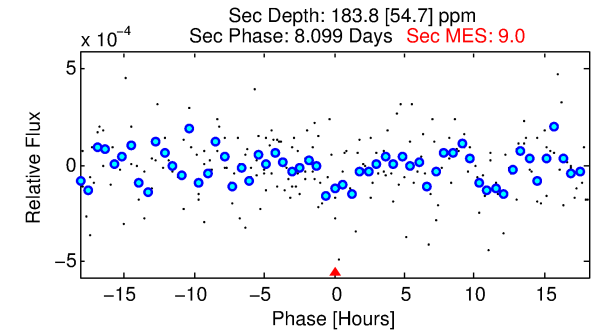
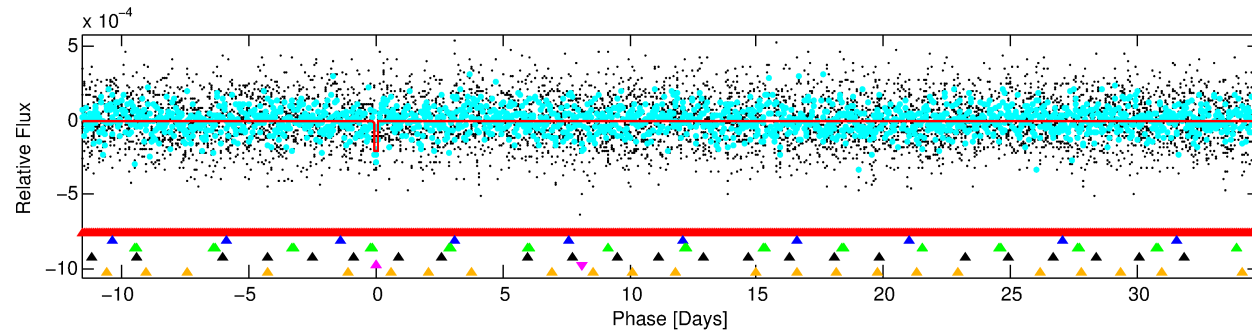
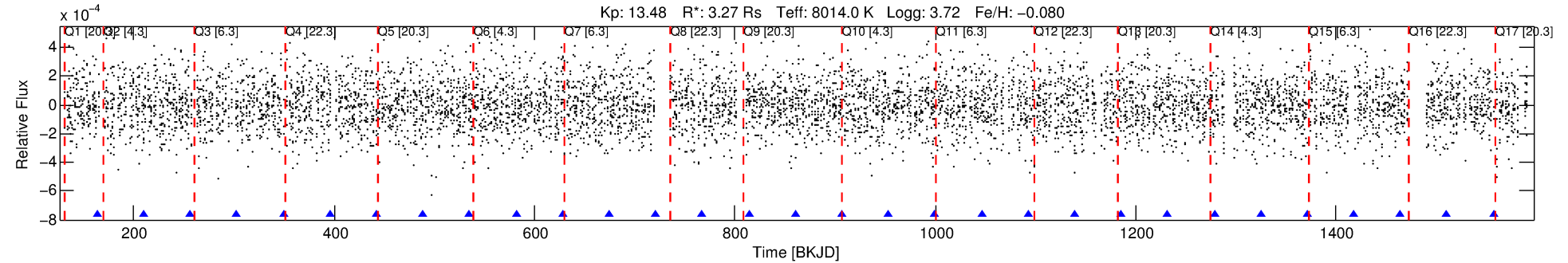
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-05

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 5 of 6 Period: 46.449 d



DV Fit Results:

Period = 46.44895 [0.00103] d
Epoch = 163.6097 [0.0178] BKJD
Rp/R* = 0.0151 [0.0243]
a/R* = 72.34 [663.26]
b = 0.81 [4.09]
Seff = 383.45 [282.15]
Teq = 1128 [208] K
Rp = 5.41 [9.00] Re
a = 0.3214 [0.1422] AU
Ag = 357.20 [1178.28] [0.30σ]
Teffp = 7584 [6113] K [1.06σ]

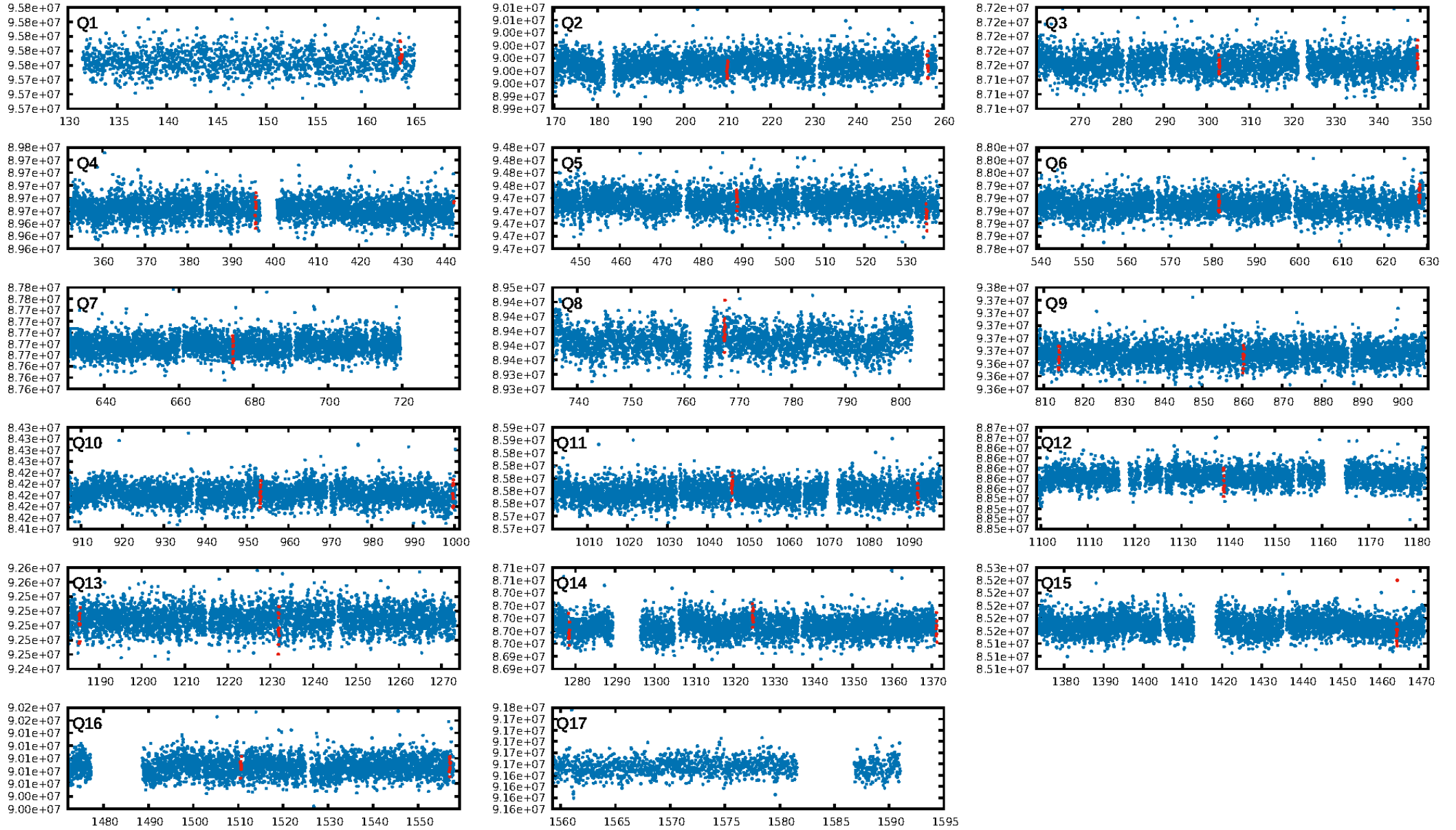
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.51σ]
LongPeriod-sig: 100.0% [86.41σ]
ModelChiSquare2-sig: 4.8%
ModelChiSquareGof-sig: 88.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.633
Centroid-sig: N/A
Centroid-so: 2.171 arcsec [2.40σ]
OotOffset-rm: 2.485 arcsec [2.74σ]
KicOffset-rm: 2.448 arcsec [2.69σ]
OotOffset-st: 3/3/3/0 [9]
KicOffset-st: 3/3/3/0 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 0.47 [7/15]

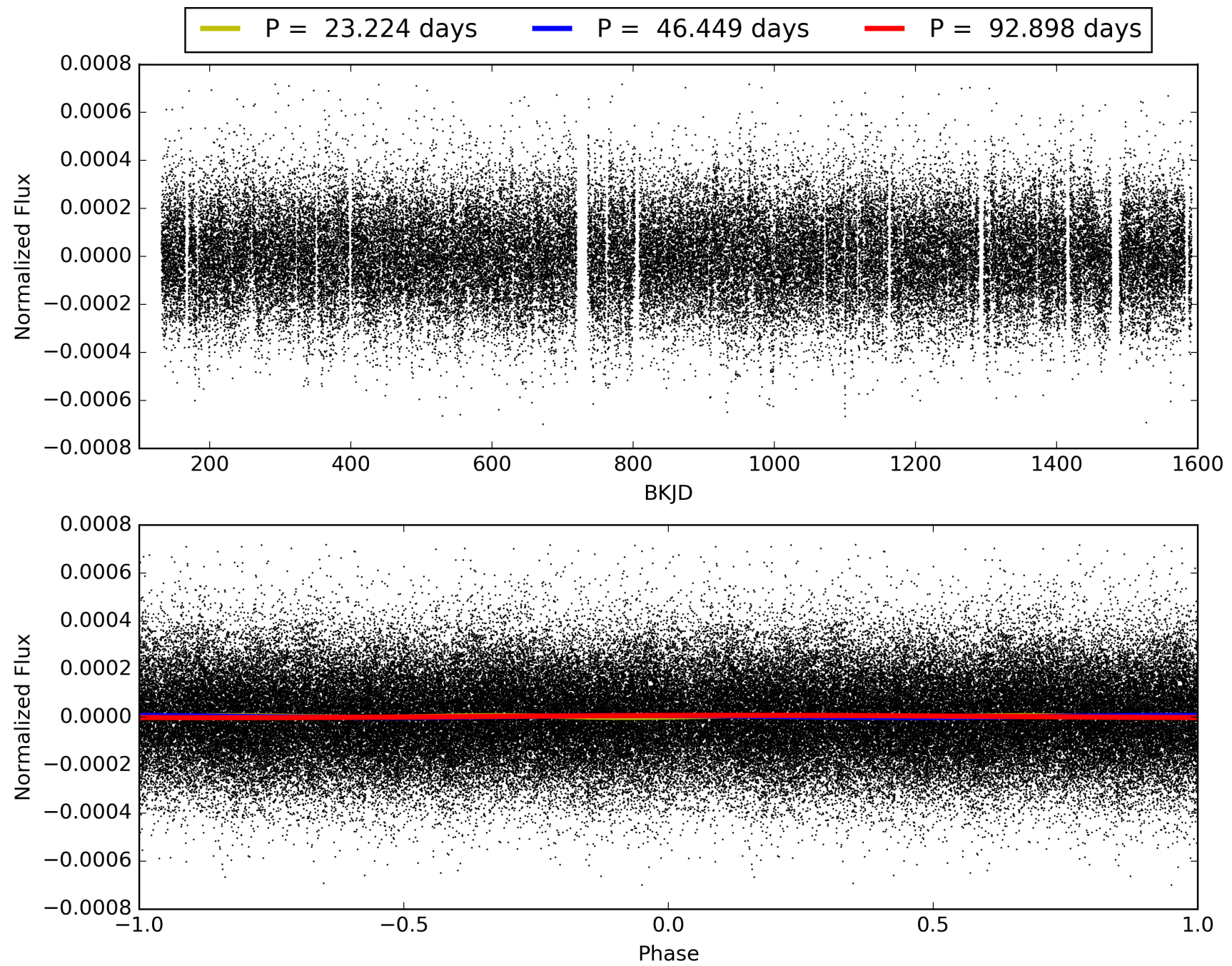
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:10:48 Z

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

TCE 005645883-05, PDC Light Curves

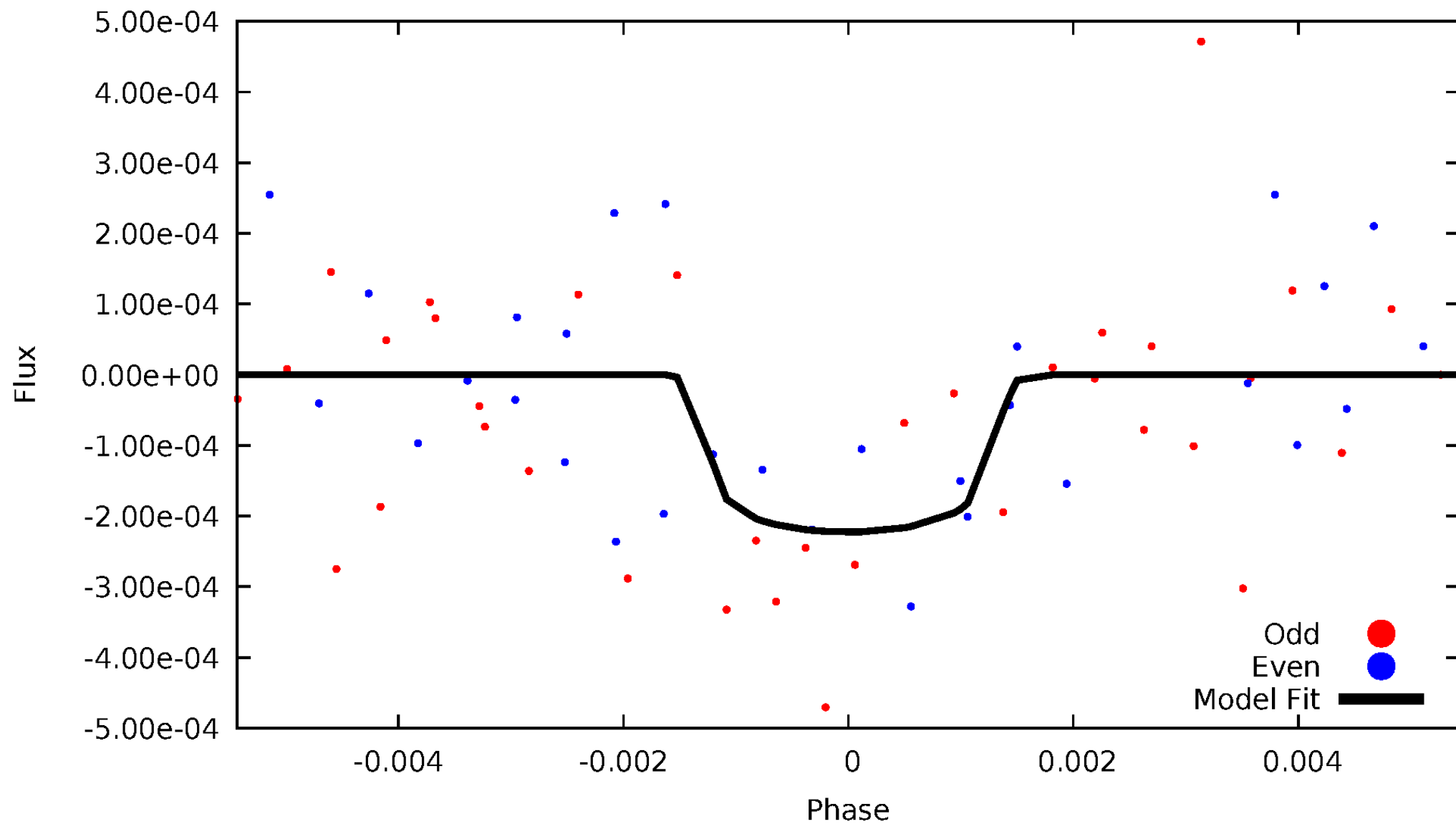


TCE 005645883-05



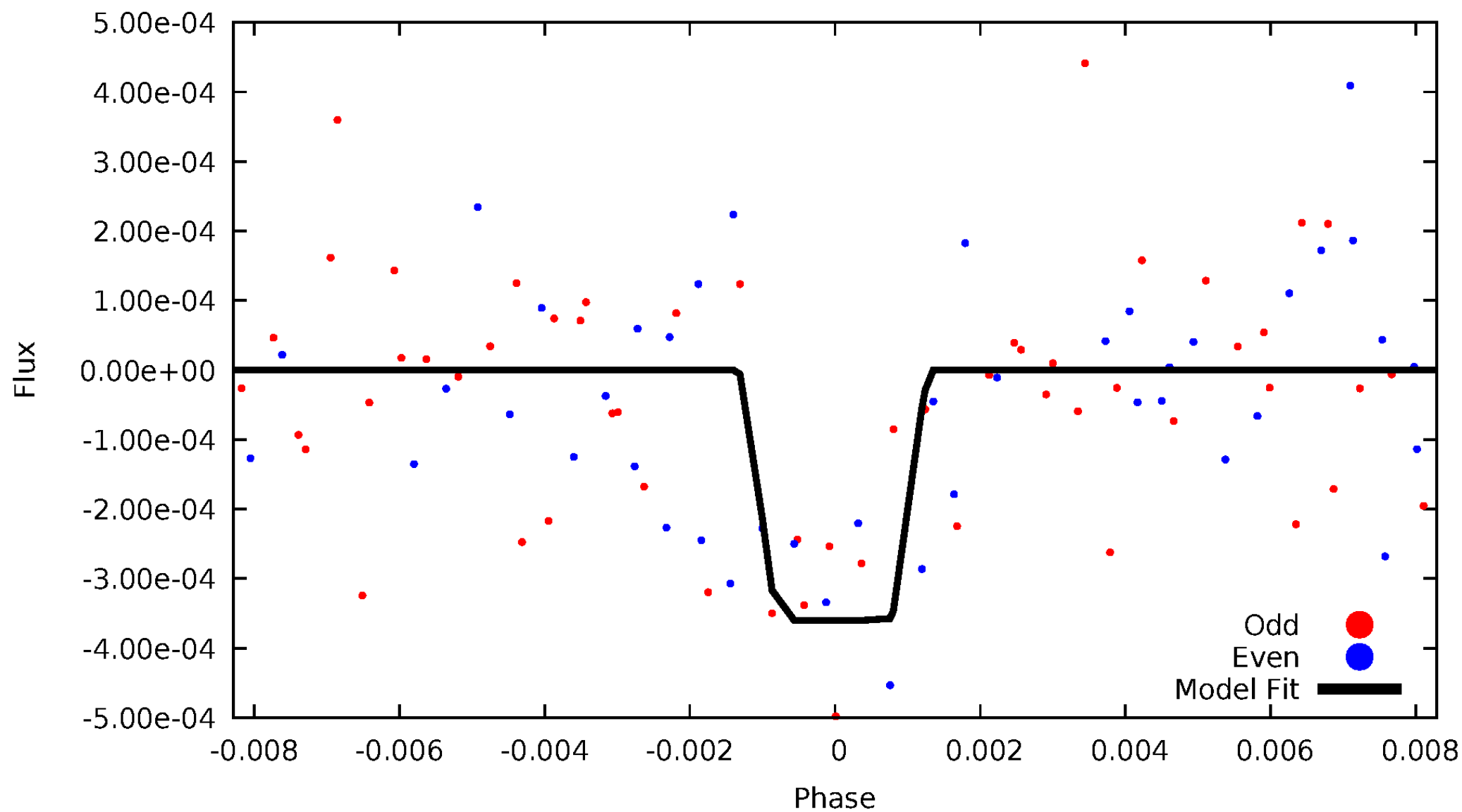
DV Odd/Even

TCE 005645883-05



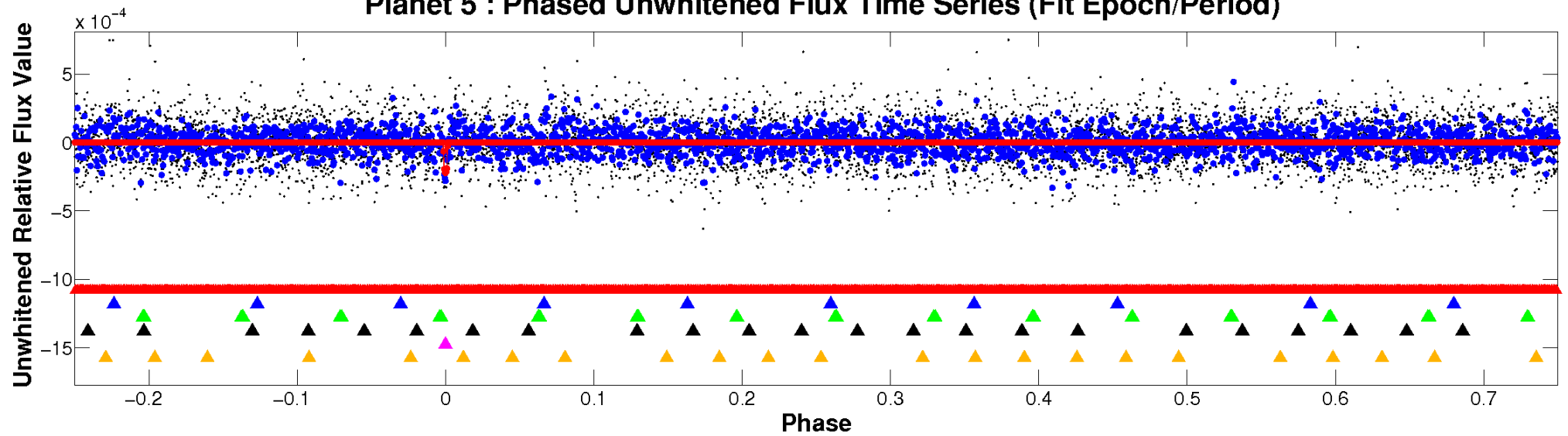
ALT Odd/Even

TCE 005645883-05

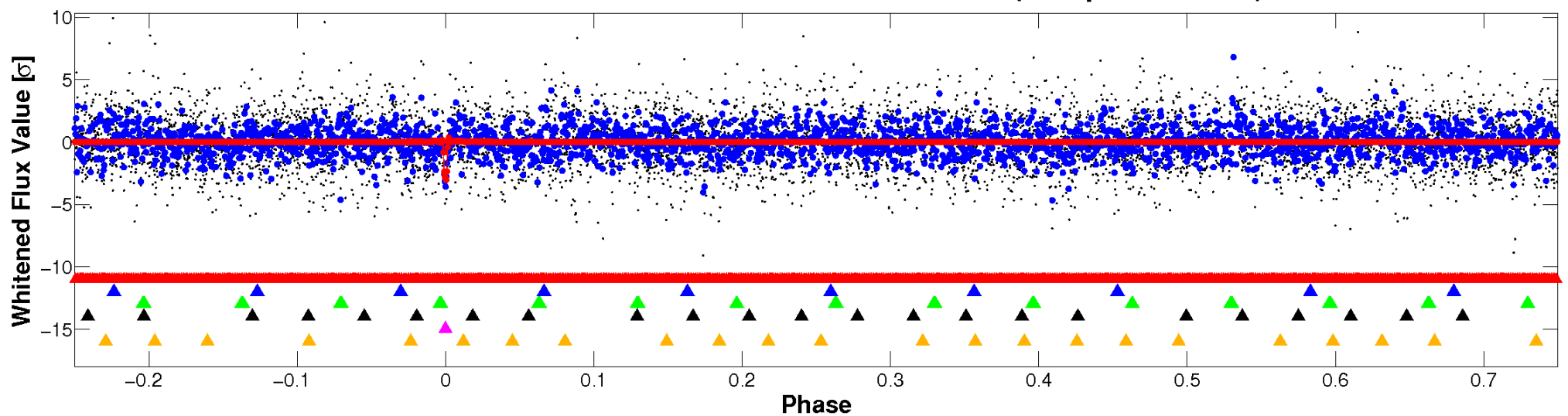


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

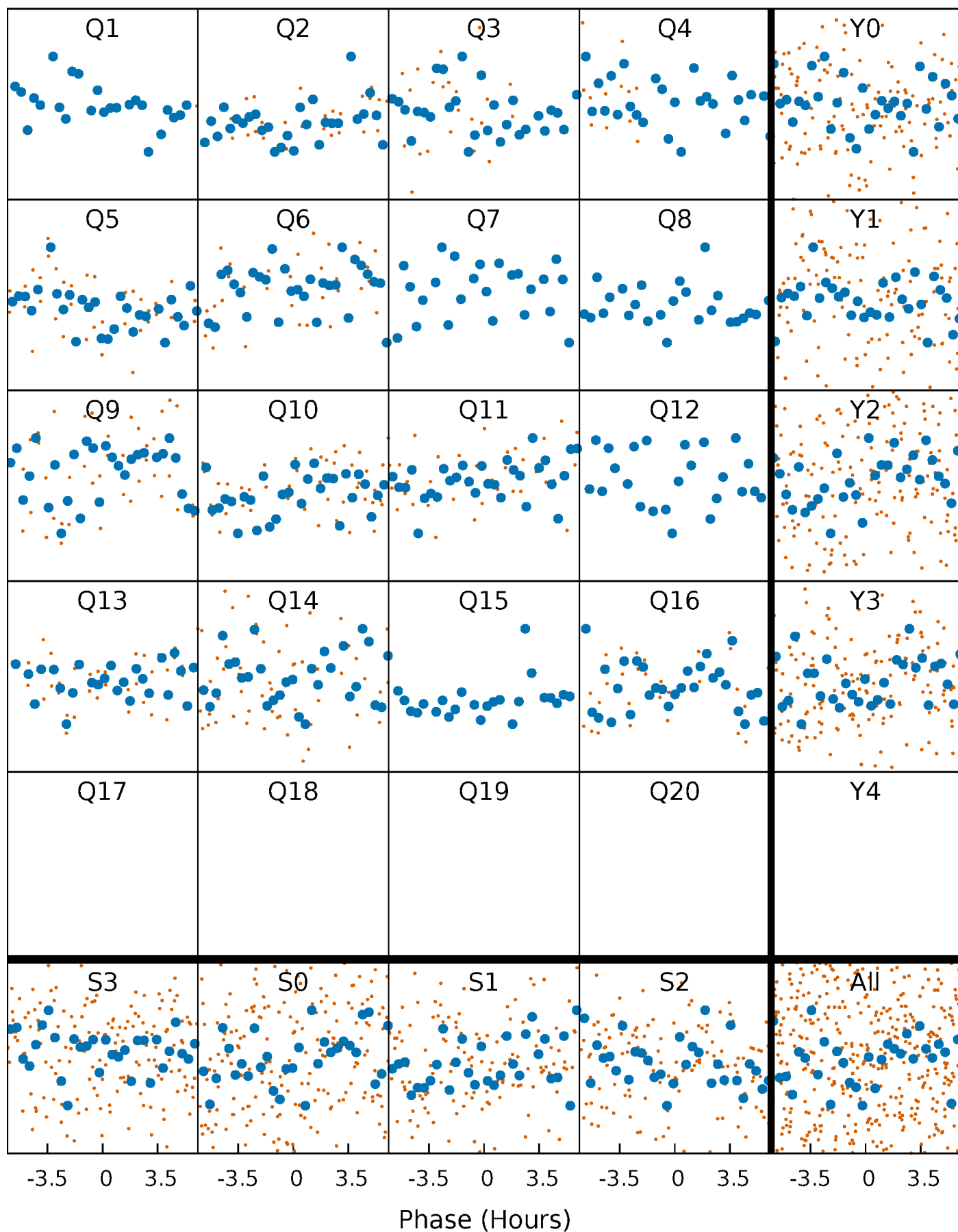


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



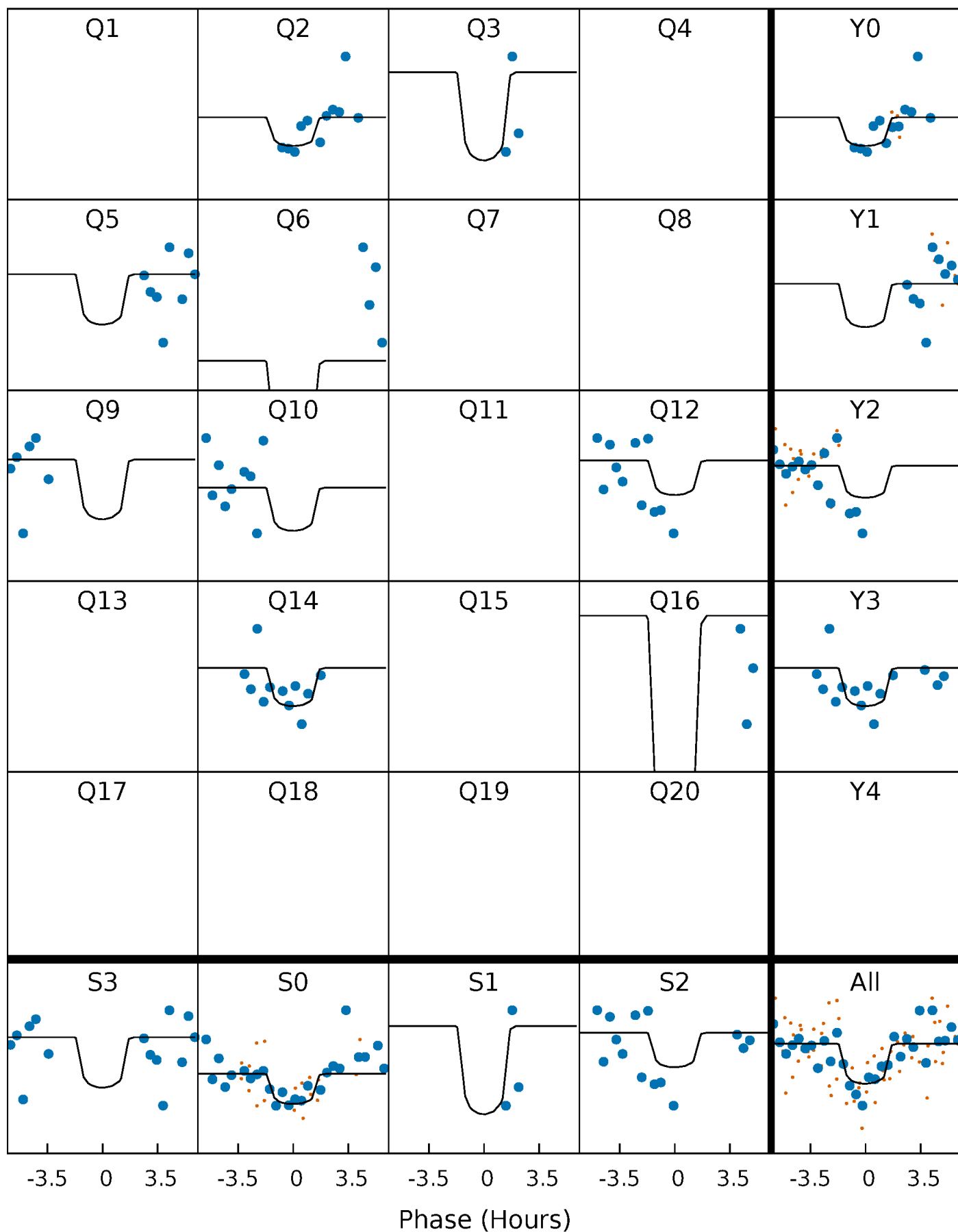
PDC Quarter-Phased Transit Curves

TCE 005645883-05 $P = 46.448951$ Days $T_0 = 163.609748$ (BKJD)



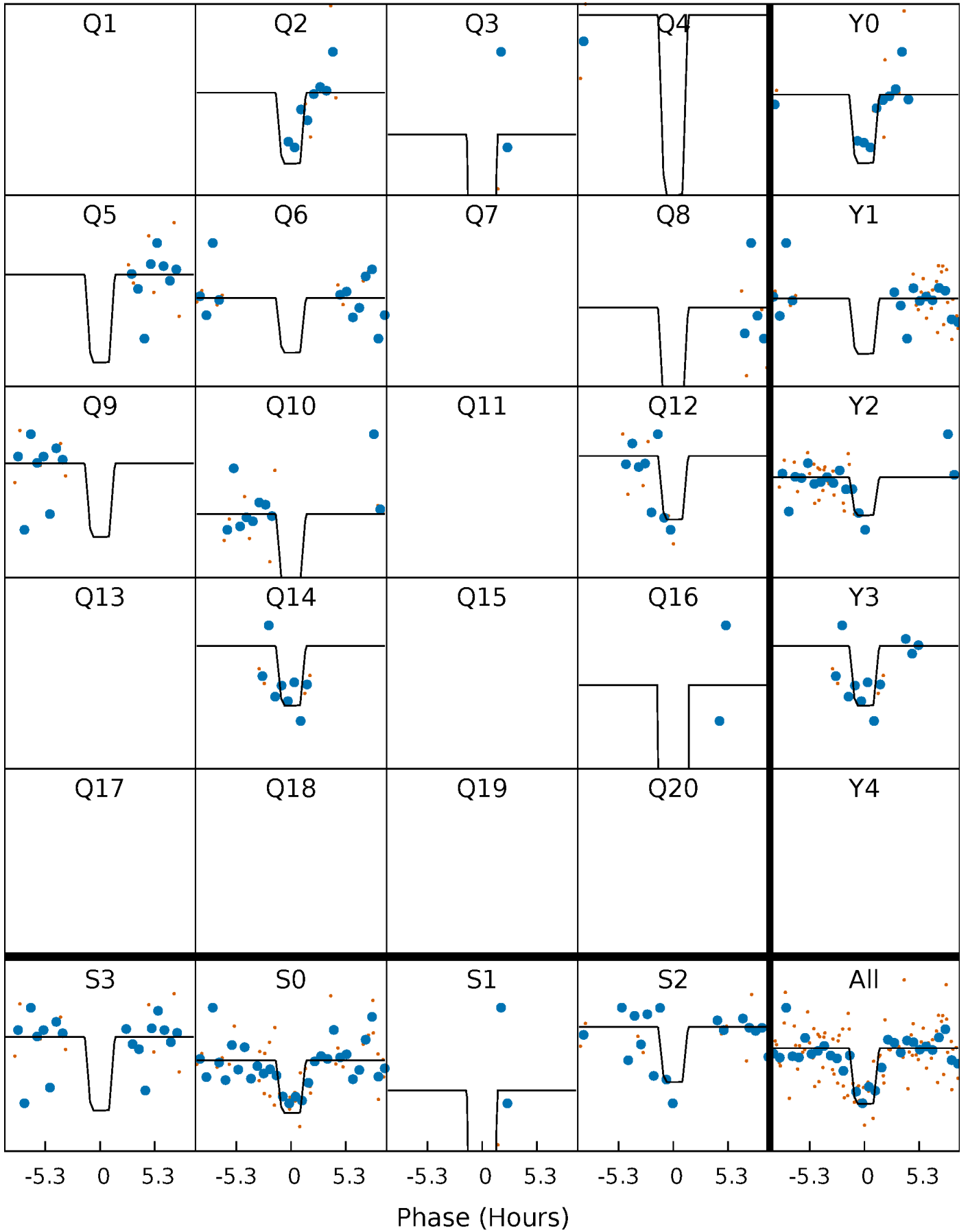
DV Quarter-Phased Transit Curves

TCE 005645883-05 P= 46.448951 Days $T_0=163.609748$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

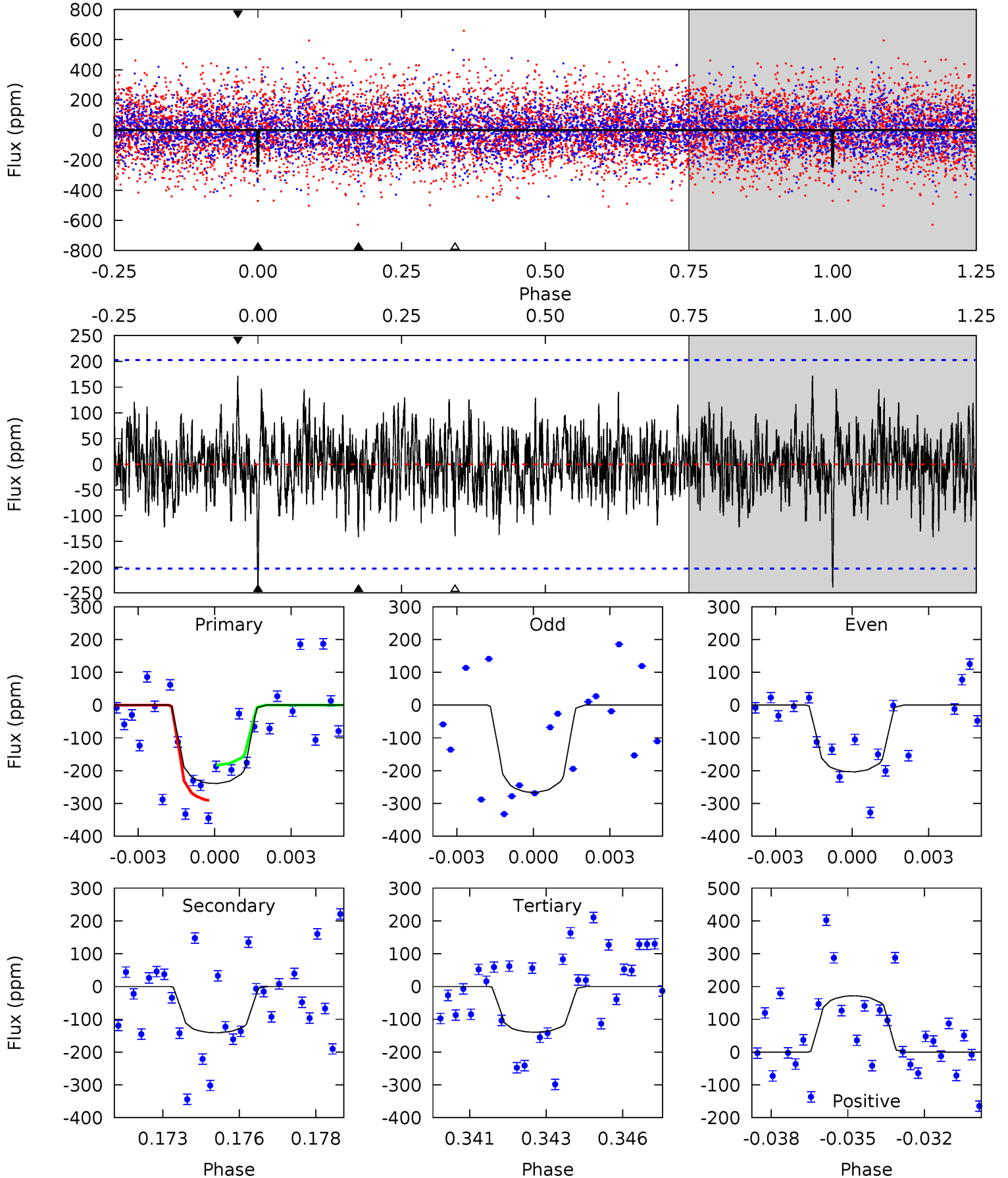
TCE 005645883-05 P= 46.449162 Days $T_0=163.595354$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-05, P = 46.448951 Days, E = 117.160797 Days

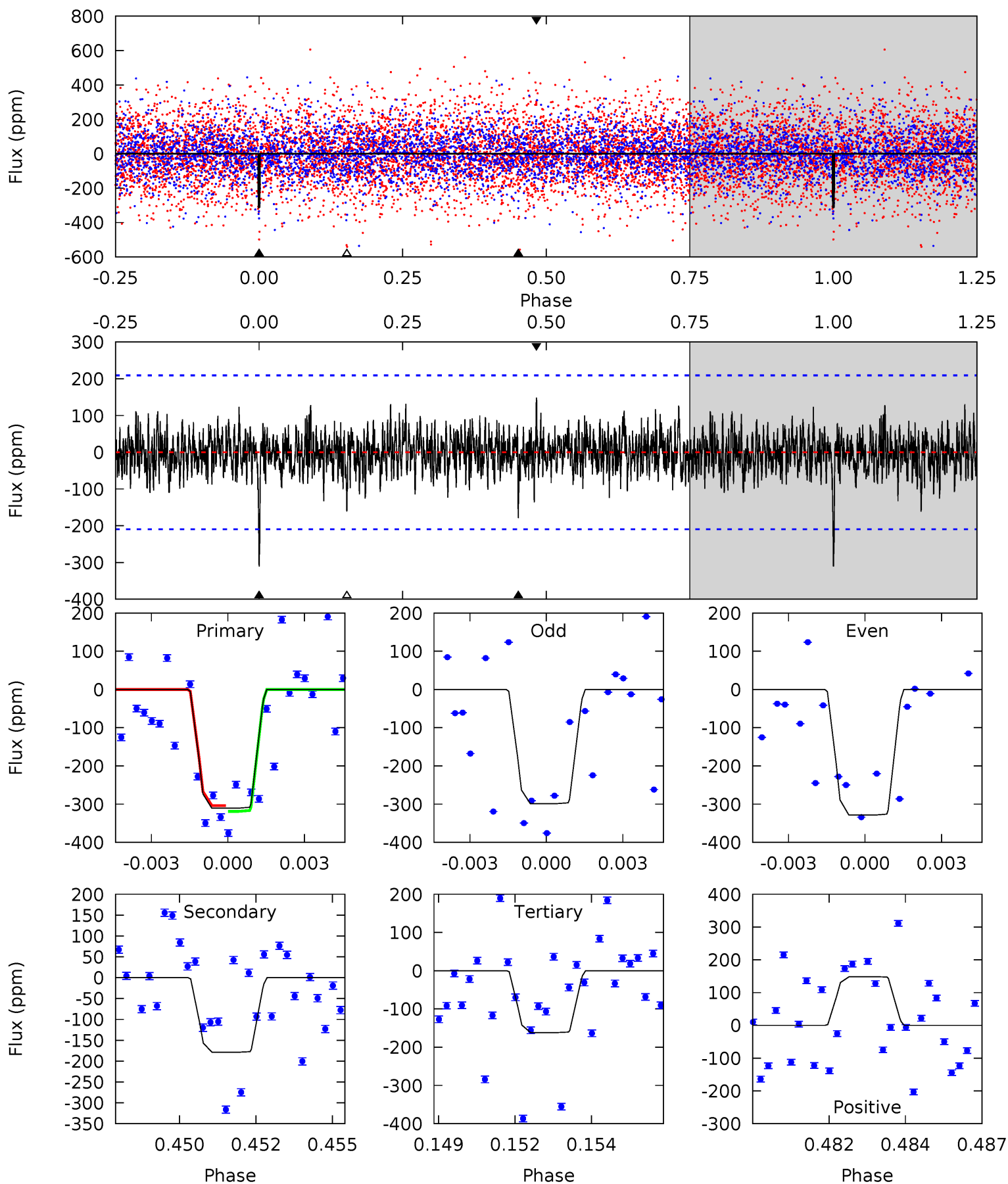
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.22 | 3.67 | 3.63 | 4.47 | 5.27 | 3.00 | 1.21 | 2.60 | 1.76 | 0.04 | -0.80 | 0.87 | 1.18 | 0.42 | 1.39 |



Alt Model-Shift Uniqueness Test

005645883-05, P = 46.449162 Days, E = 117.146192 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.82 | 4.50 | 4.07 | 3.74 | 5.27 | 3.00 | 1.07 | 3.75 | 4.08 | 0.43 | 0.76 | 0.37 | 0.97 | 0.32 | 0.19 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-05 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|----------------------|
| DV | -141 ± 38 | $7.71^{+7.24}_{-5.34}$ | 1515^{+120}_{-182} | 5524^{+5342}_{-1395} | 133^{+1152}_{-102} |
| Alt. | -179 ± 40 | $7.81^{+7.88}_{-4.97}$ | 1514^{+124}_{-169} | 5707^{+4862}_{-1336} | 163^{+1129}_{-120} |

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 $A_{obs} \gg 1.0$

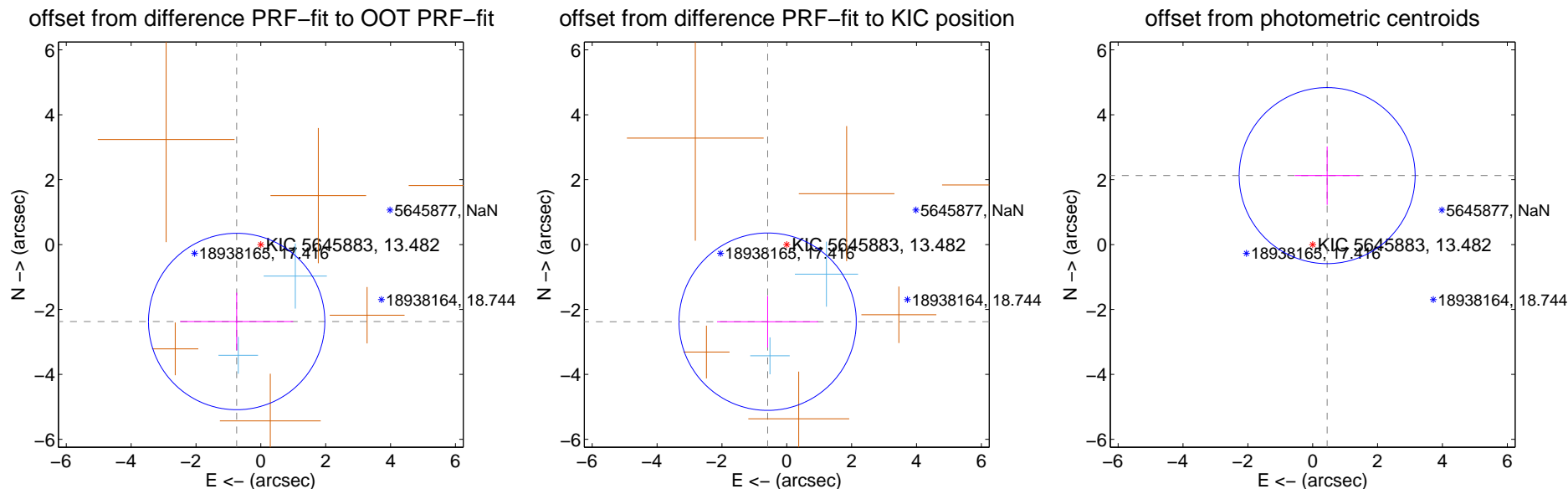
DV Centroid Data

Supplemental centroid analysis for 005645883-05. Kepler magnitude: 13.48. Transit SNR 10.20

There are 2 quarters with good PRF difference image offsets

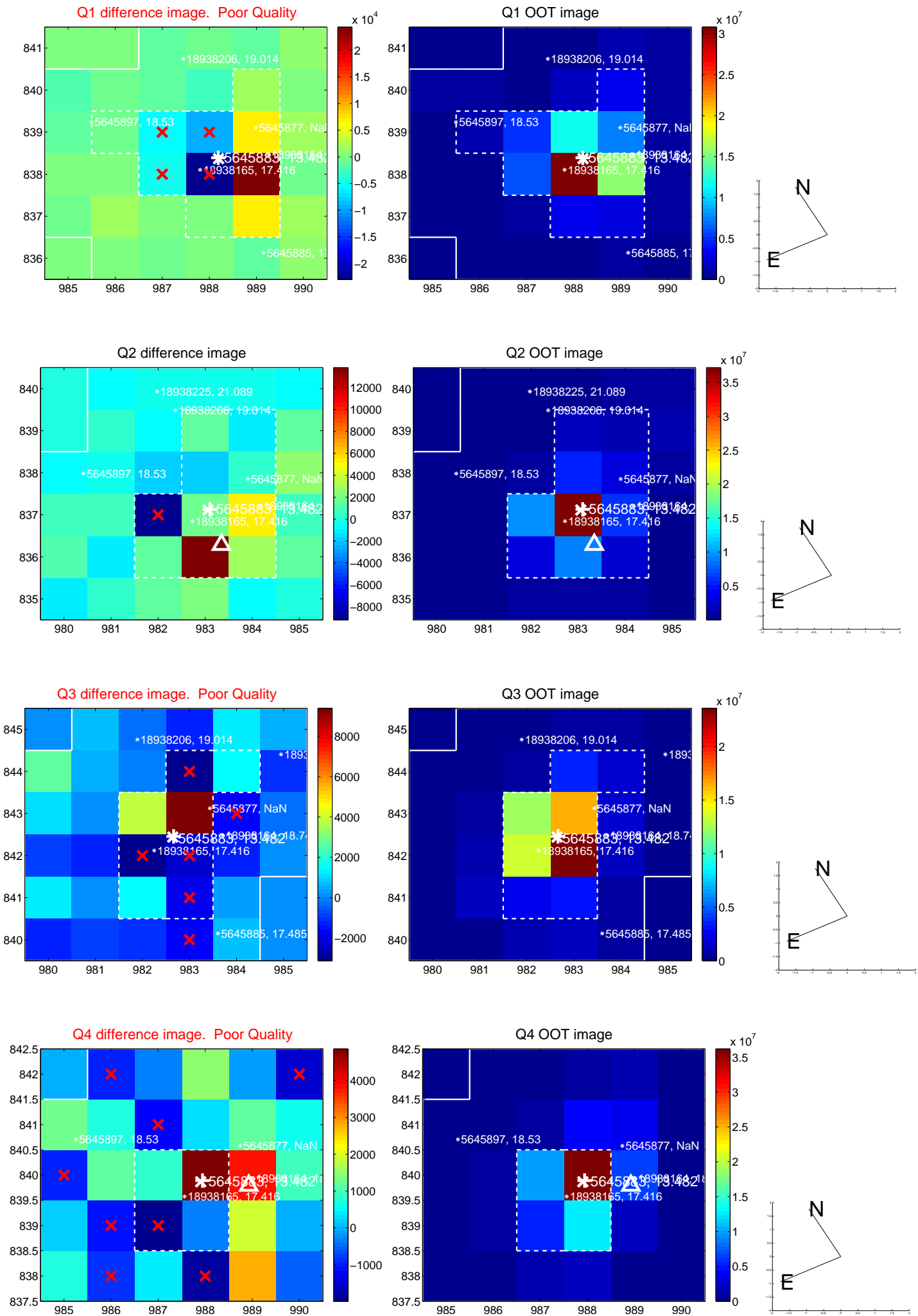
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.485 ± 0.906 | 2.74 | 0.746 ± 1.744 | -2.370 ± 0.889 |
| PRF-fit source offset from KIC position | 2.448 ± 0.911 | 2.69 | 0.591 ± 1.559 | -2.376 ± 0.796 |
| photometric centroid source offset | 2.17 ± 0.90 | 2.40 | -0.44 ± 1.00 | 2.13 ± 0.90 |

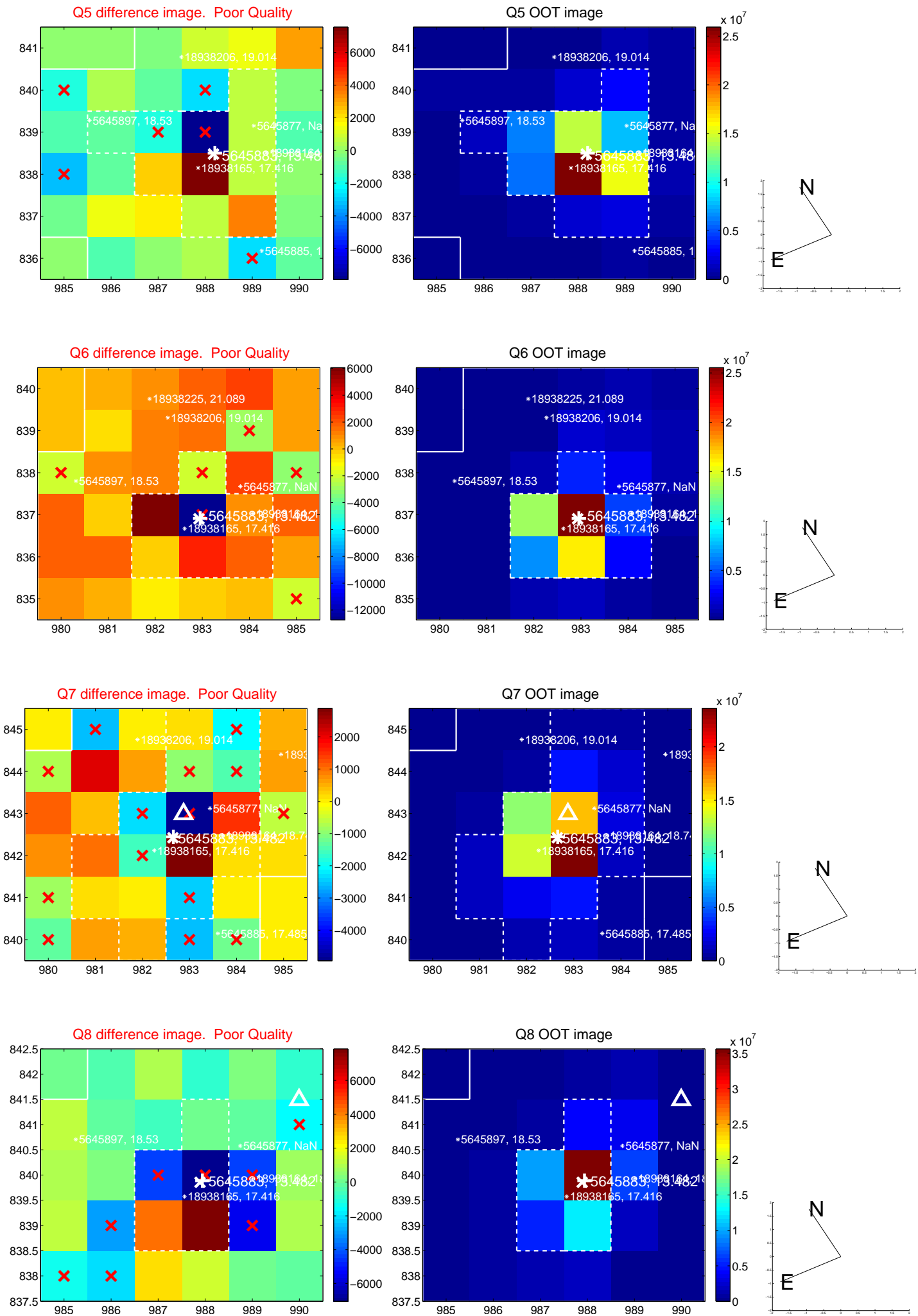


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

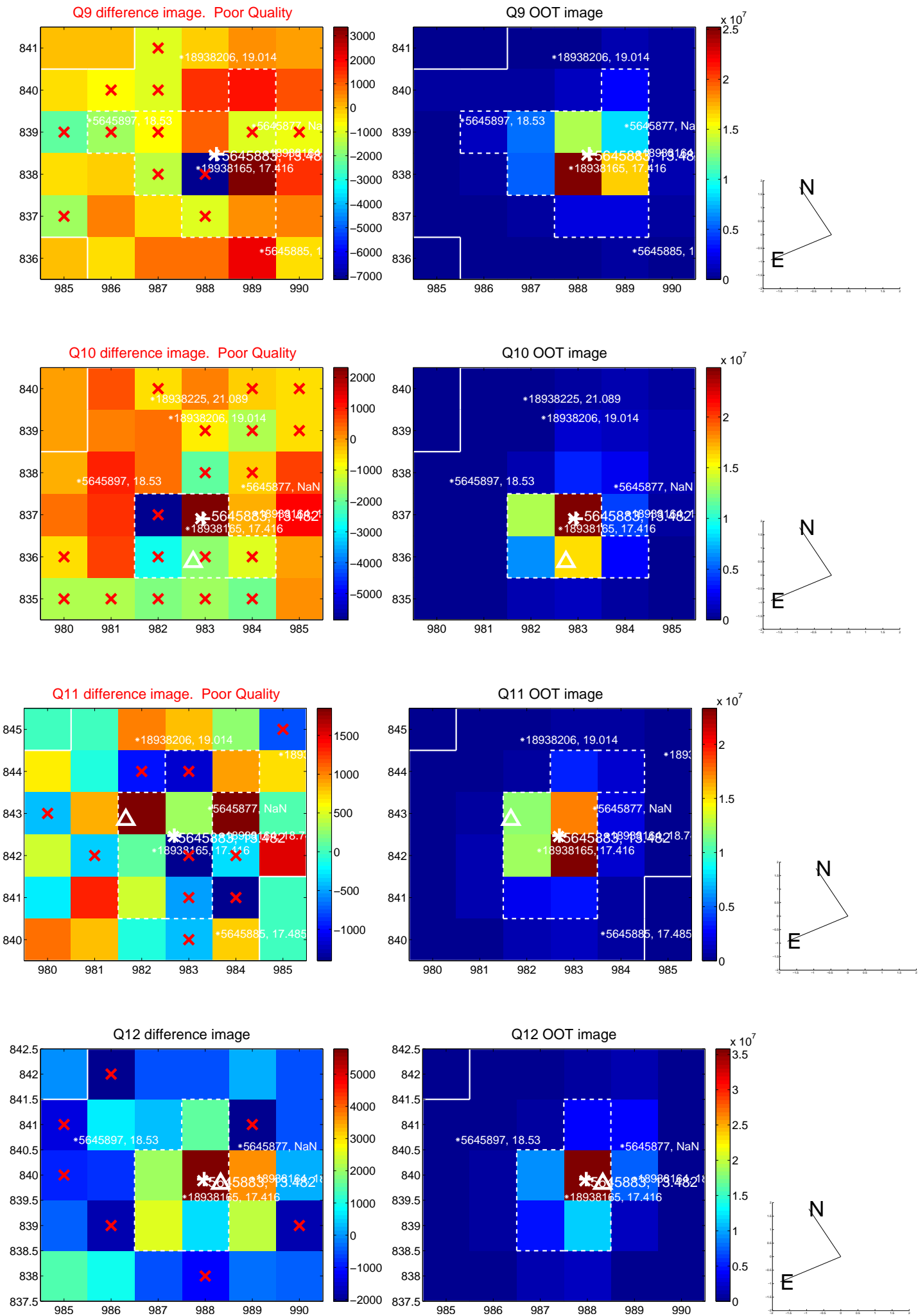
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



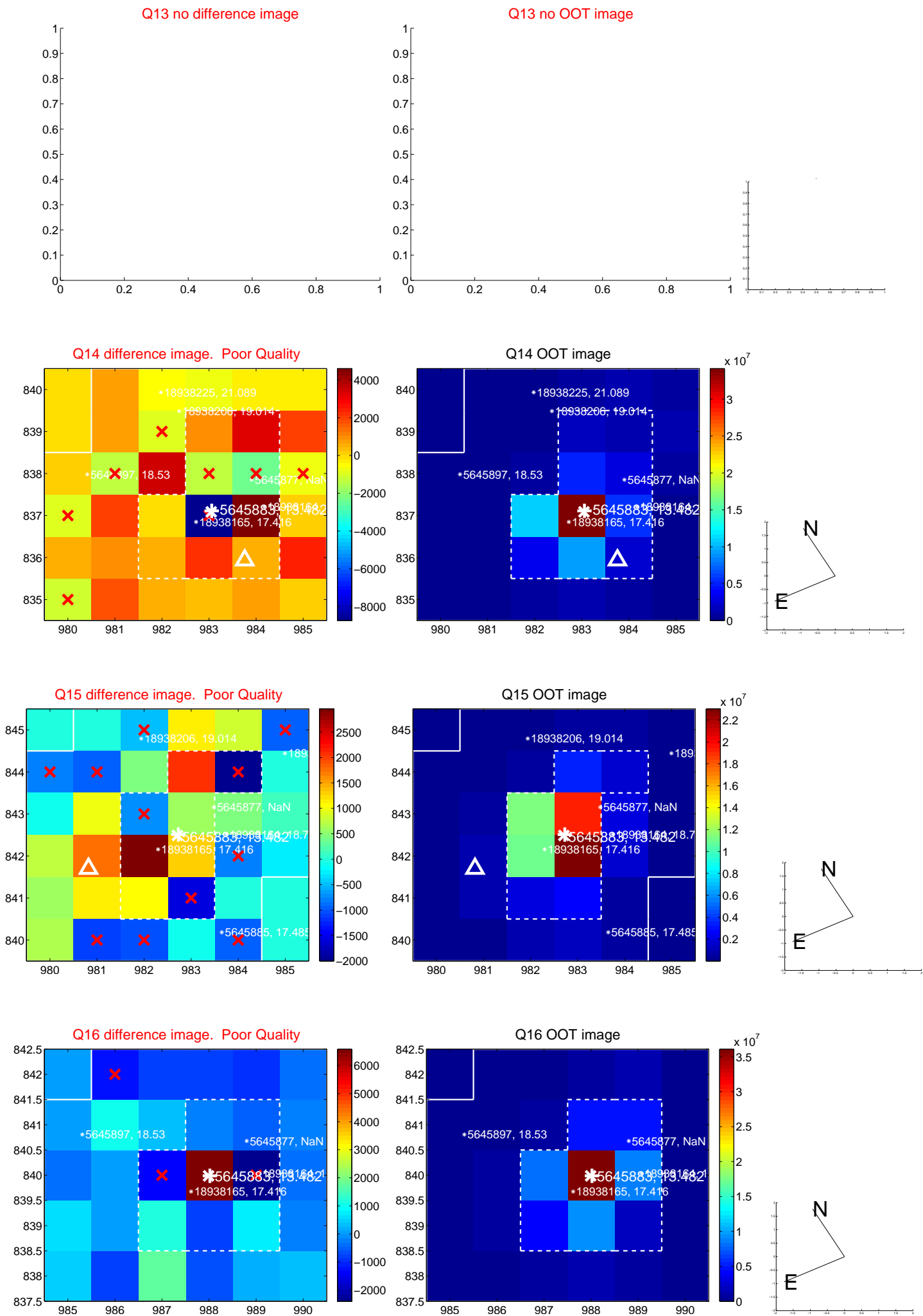
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



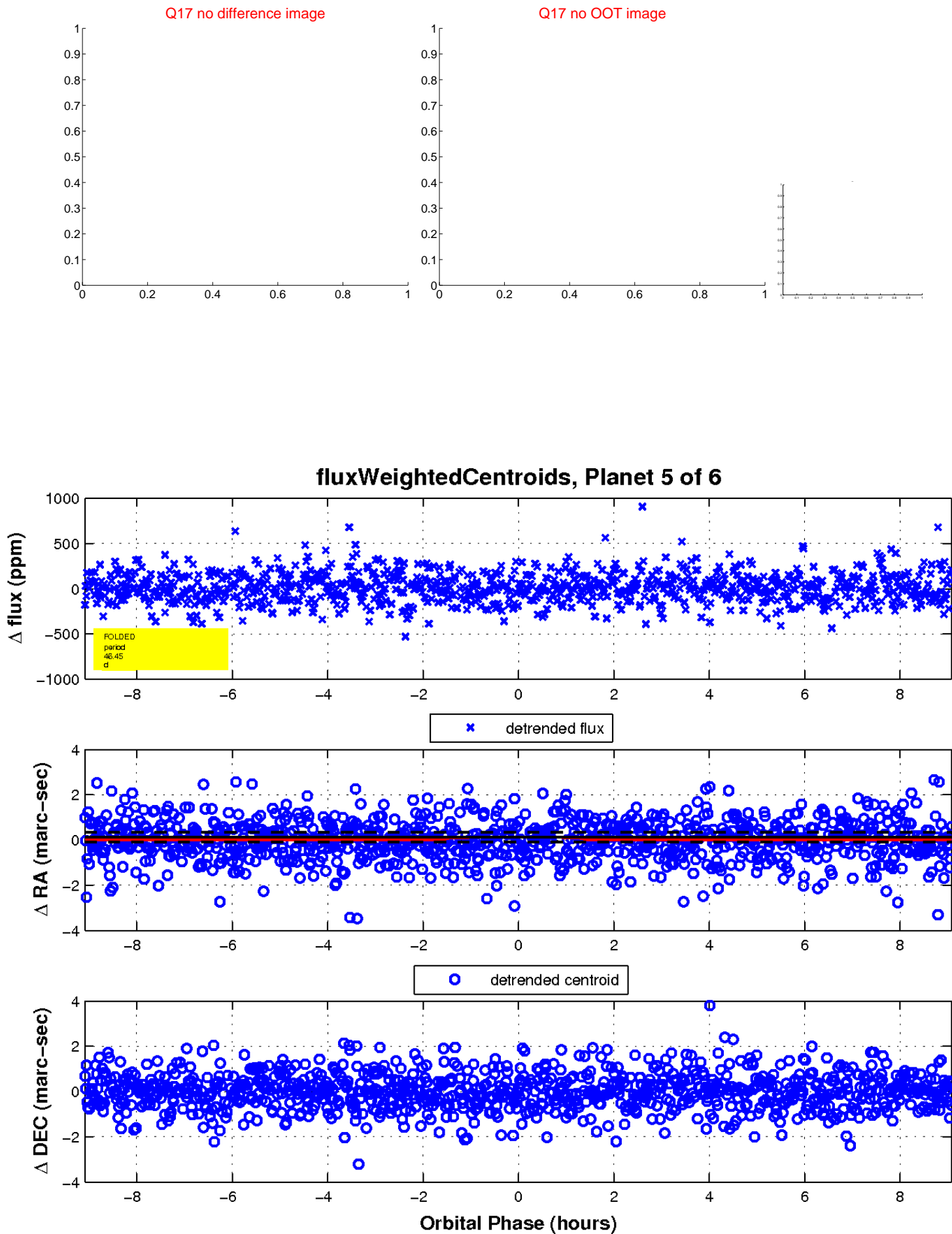
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

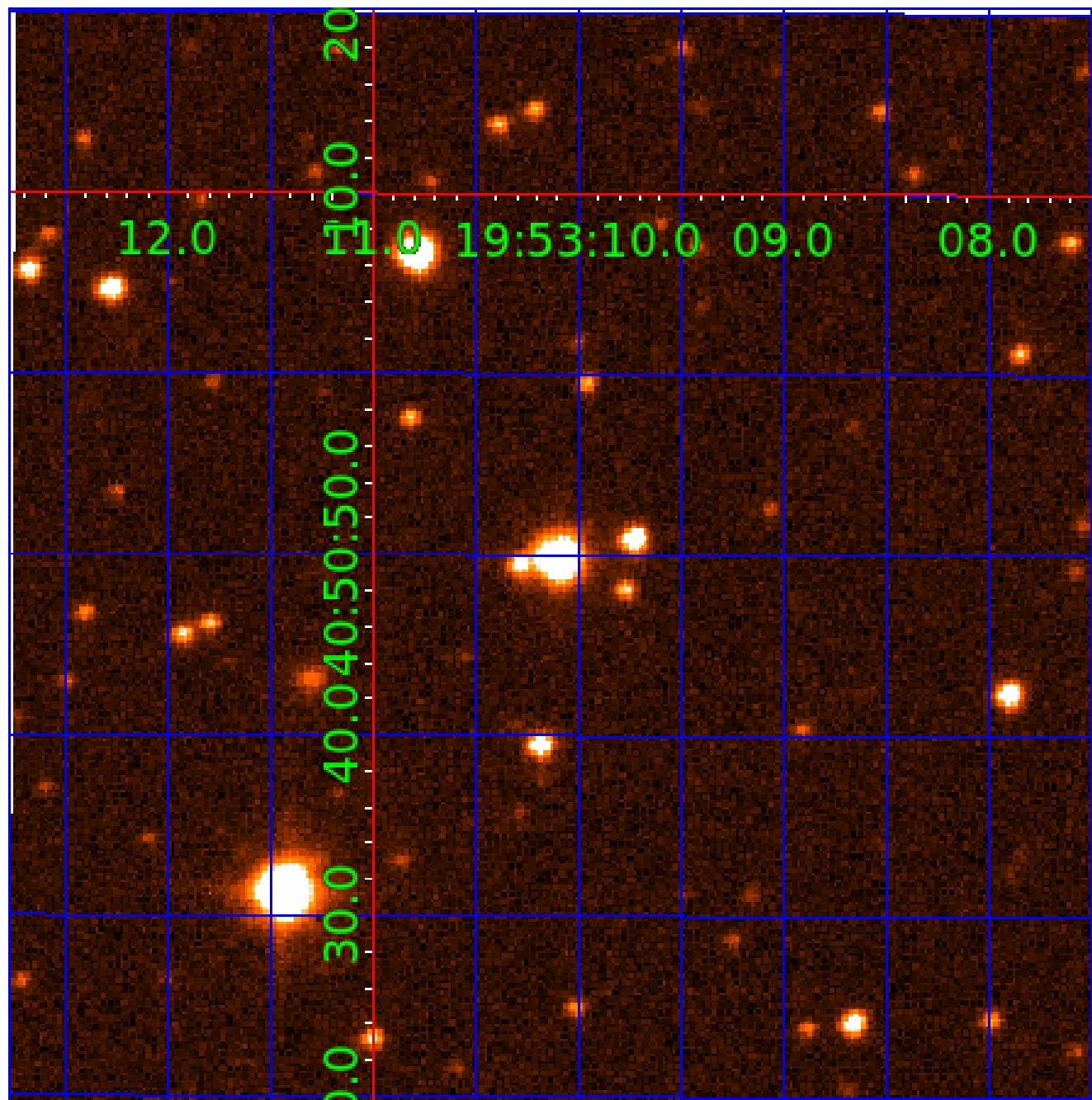


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005645883

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005645883-01 | OBS | No | 1.963638 | 132.563630 | 15.9 | 13.778 | 8.5 | 8.9 | 3.27 | 8014 | 1.41 | 26037.28 |
| 005645883-02 | OBS | No | 143.836466 | 237.146955 | 265.9 | 2.890 | 12.7 | 13.0 | 3.27 | 8014 | 6.28 | 84.95 |
| 005645883-03 | OBS | No | 34.064377 | 160.308177 | 166.3 | 4.534 | 11.9 | 11.1 | 3.27 | 8014 | 4.87 | 579.80 |
| 005645883-04 | OBS | No | 63.648198 | 173.117998 | 172.7 | 3.694 | 9.9 | 8.3 | 3.27 | 8014 | 4.97 | 251.94 |
| 005645883-05 | OBS | No | 46.448951 | 163.609748 | 222.6 | 3.029 | 9.9 | 10.2 | 3.27 | 8014 | 5.41 | 383.45 |
| 005645883-06 | OBS | No | 65.665327 | 133.753692 | 337.3 | 1.577 | 11.5 | 10.4 | 3.27 | 8014 | 6.68 | 241.67 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005645883-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 005645883-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 005645883-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST |
| 005645883-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_MEAS |
| 005645883-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |
| 005645883-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

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

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

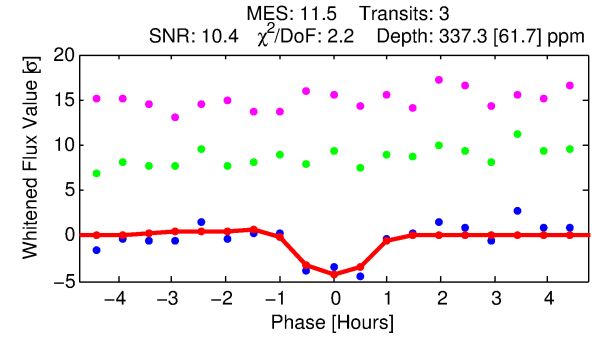
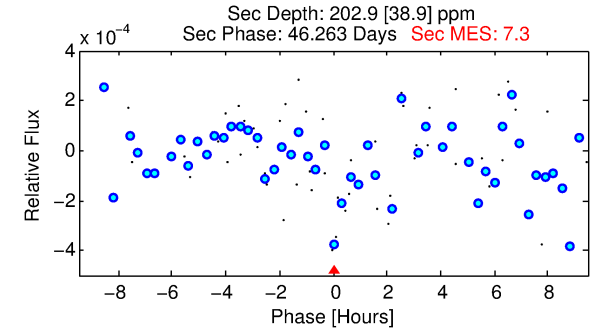
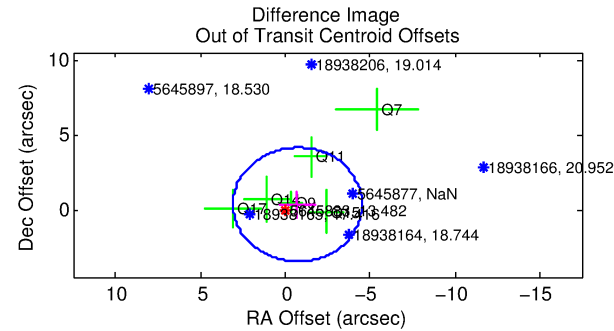
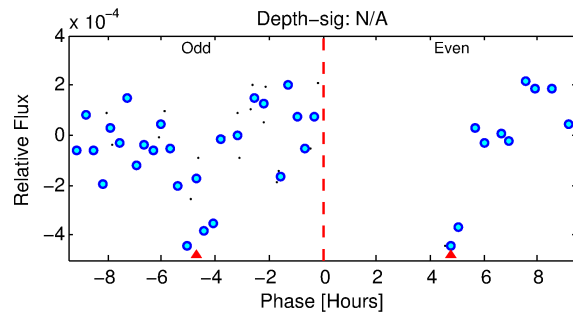
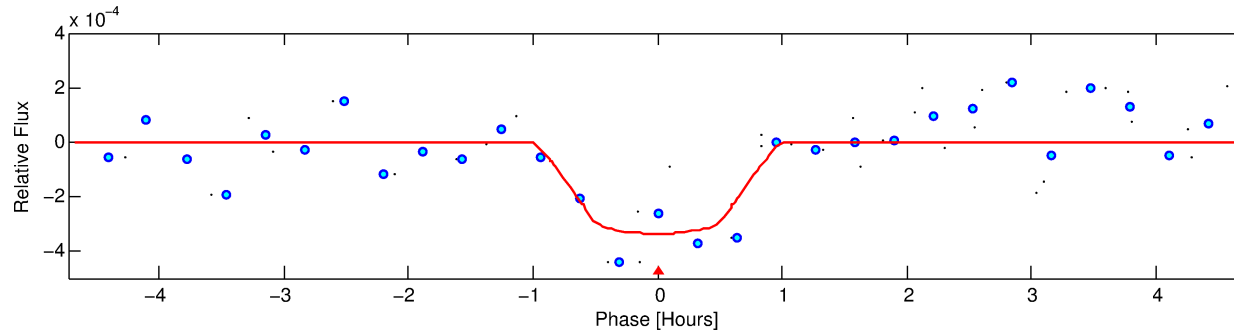
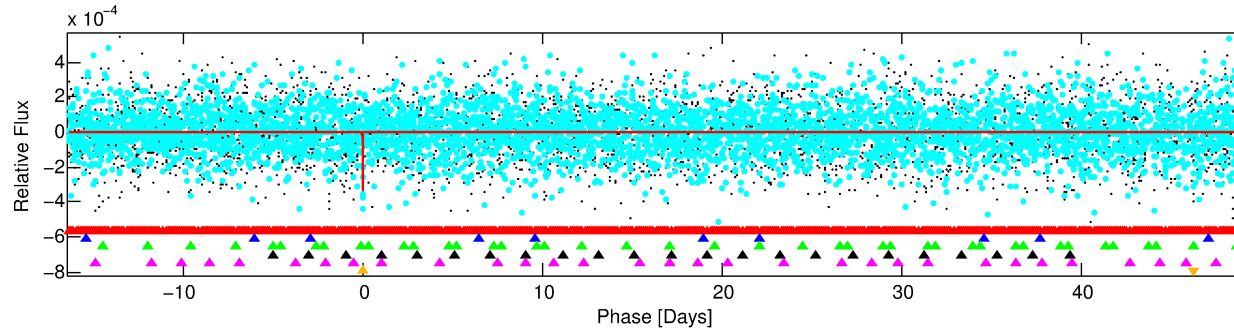
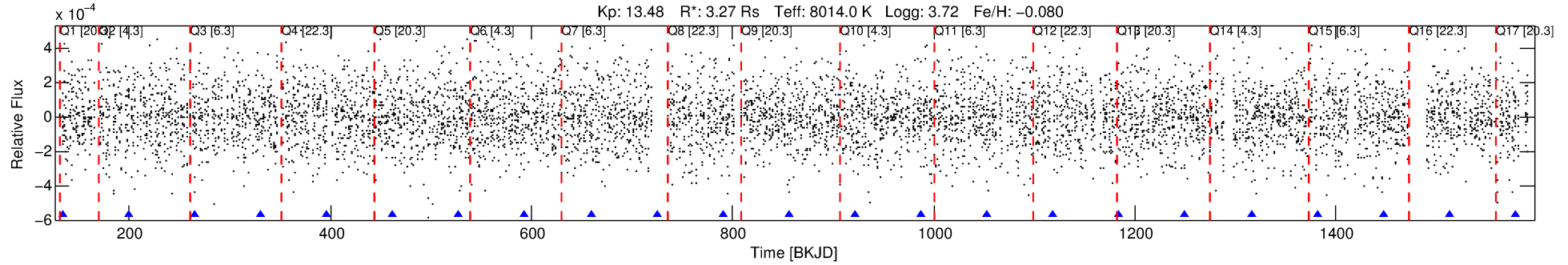
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645883-06

No Significant Match Found

DV One-Page Summary

KIC: 5645883 Candidate: 6 of 6 Period: 65.665 d



DV Fit Results:

Period = 65.66533 [0.00072] d
Epoch = 133.7537 [0.0074] BKJD
Rp/R* = 0.0187 [0.0469]
a/R* = 196.52 [2834.23]
b = 0.81 [6.28]
Seff = 241.67 [177.83]
Teq = 1005 [185] K
Rp = 6.68 [17.01] Re
a = 0.4049 [0.1791] AU
Ag = 409.45 [2073.63] [0.20σ]
Teffp = 6992 [8769] K [0.68σ]

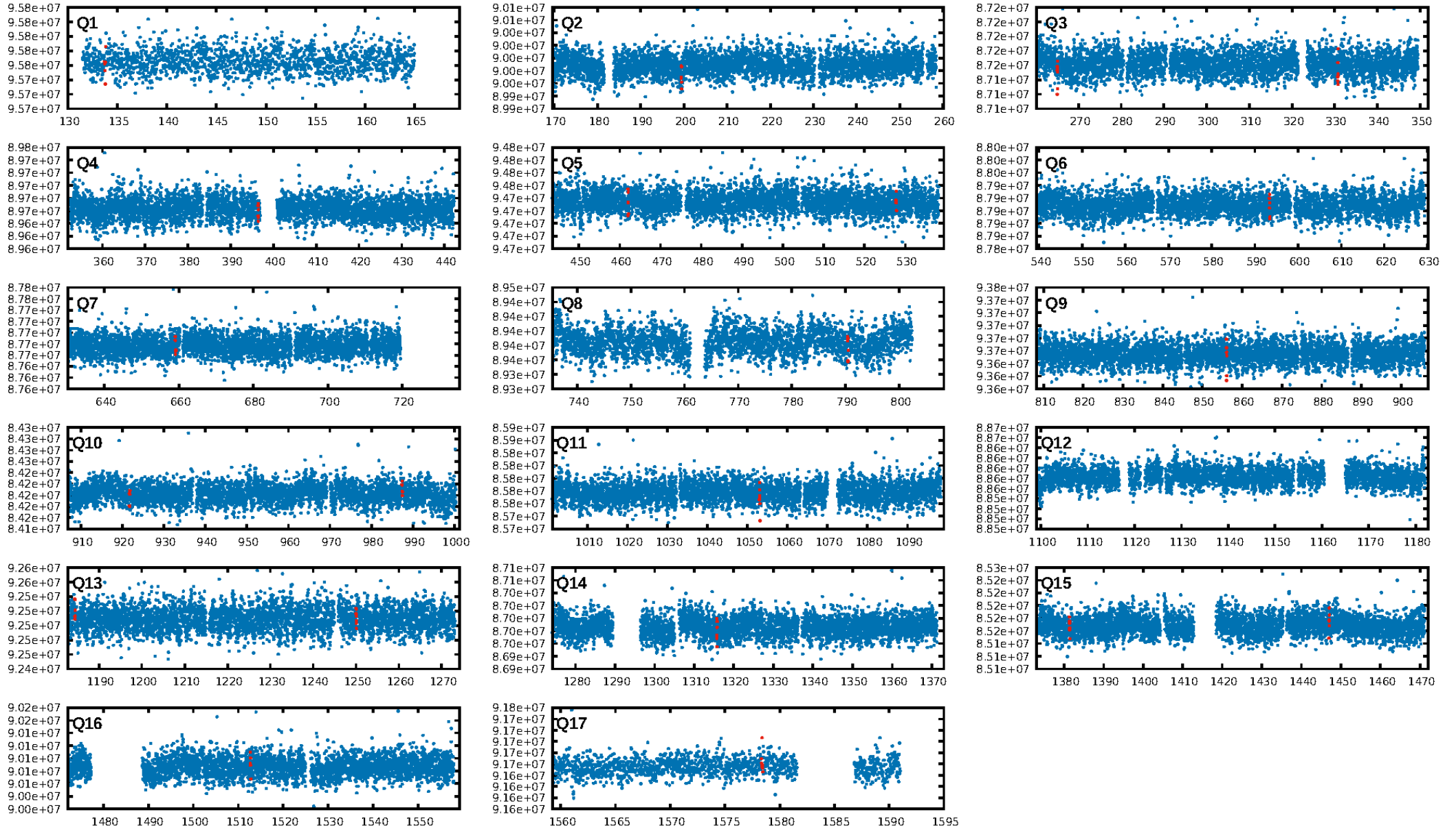
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.05σ]
LongPeriod-sig: 100.0% [569.86σ]
ModelChiSquare2-sig: 32.2%
ModelChiSquareGof-sig: 24.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5112
Centroid-sig: N/A
Centroid-so: 1.369 arcsec [1.39σ]
OotOffset-rm: 0.800 arcsec [0.63σ]
KicOffset-rm: 0.940 arcsec [0.68σ]
OotOffset-st: 1/3/0/2 [6]
KicOffset-st: 1/3/0/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.62 [10/16]

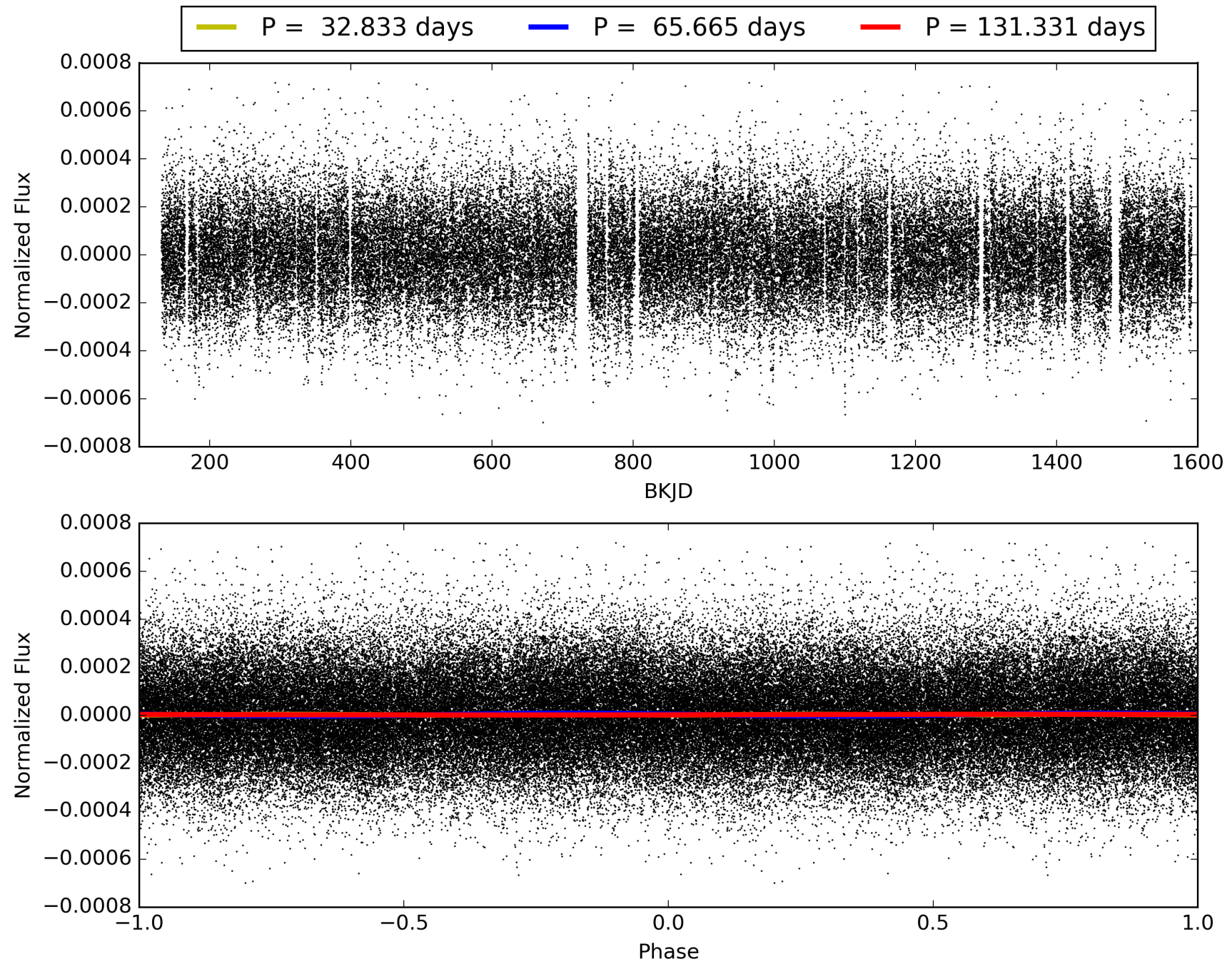
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:10:52 Z

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

TCE 005645883-06, PDC Light Curves

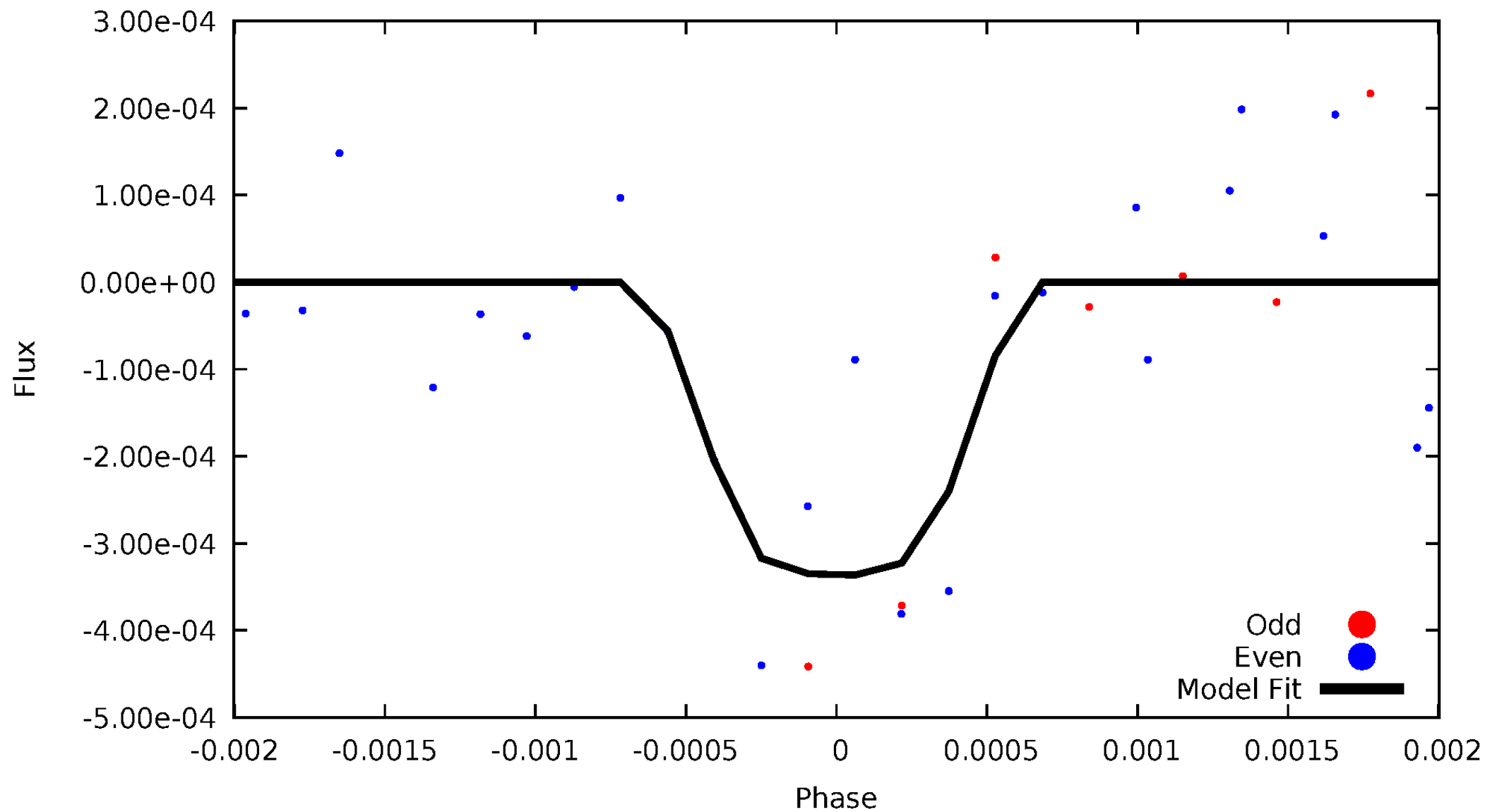


TCE 005645883-06



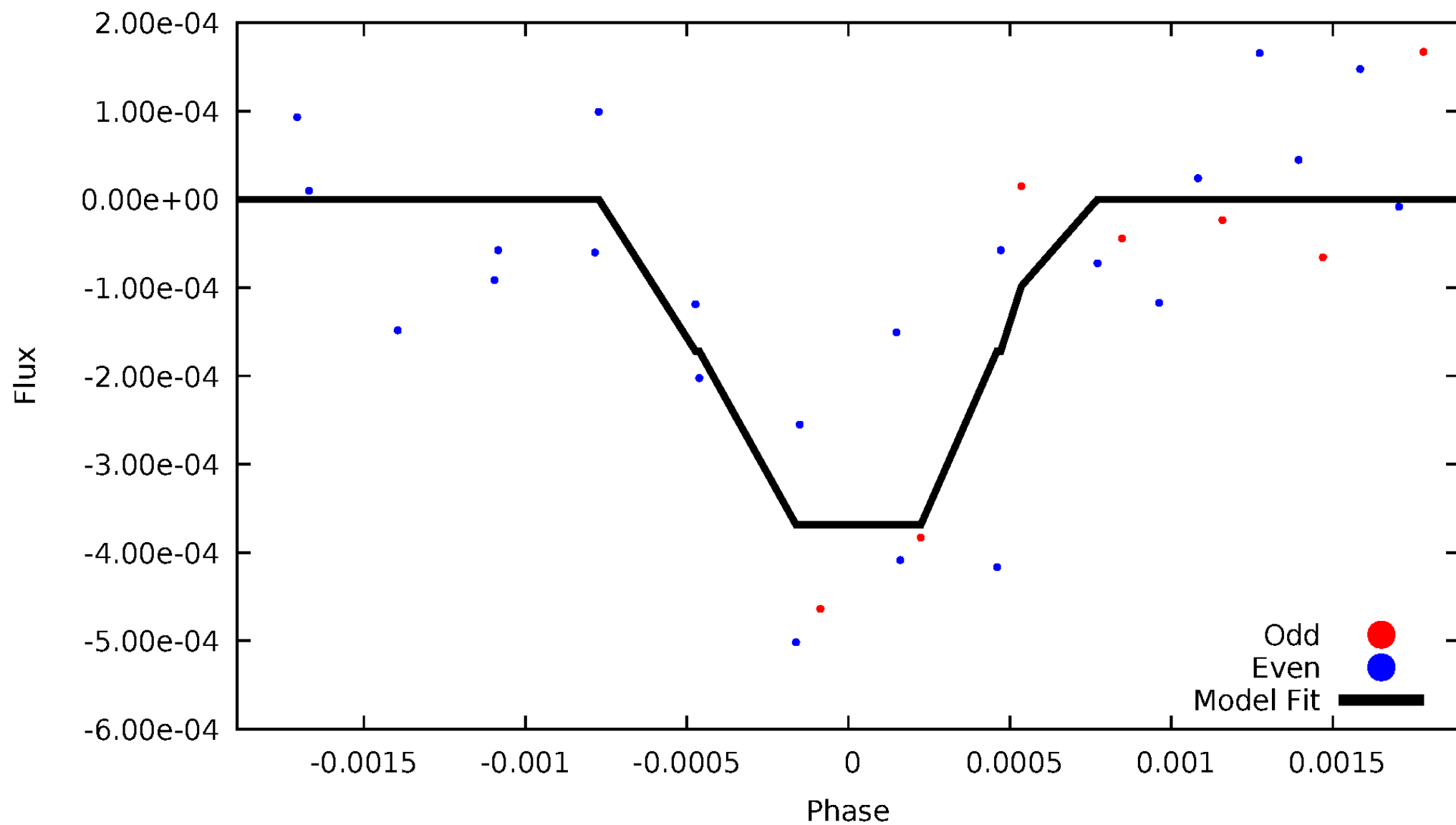
DV Odd/Even

TCE 005645883-06



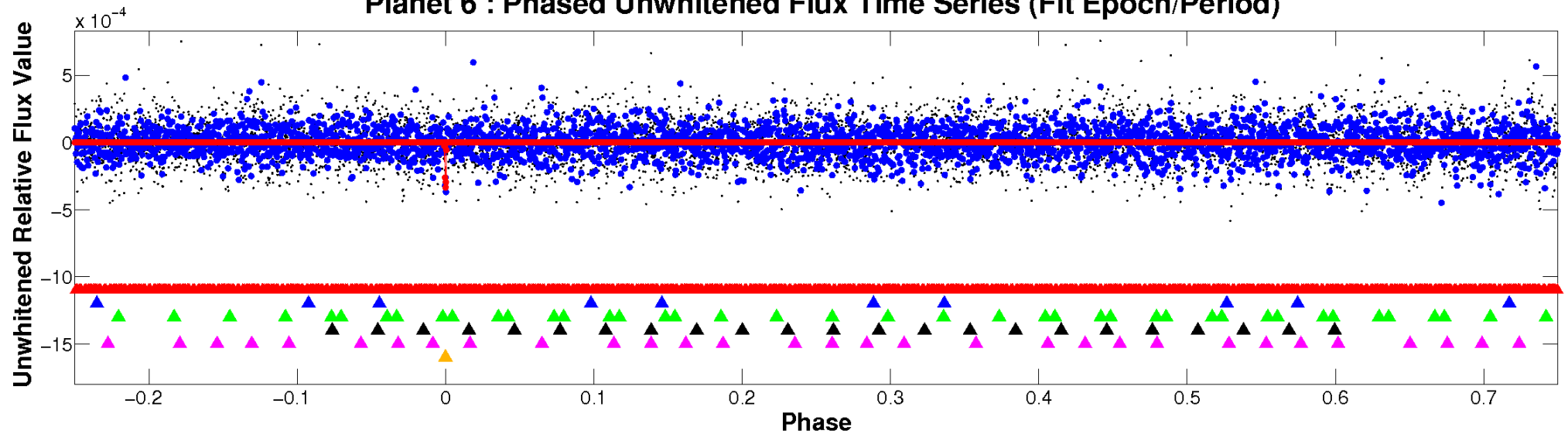
ALT Odd/Even

TCE 005645883-06

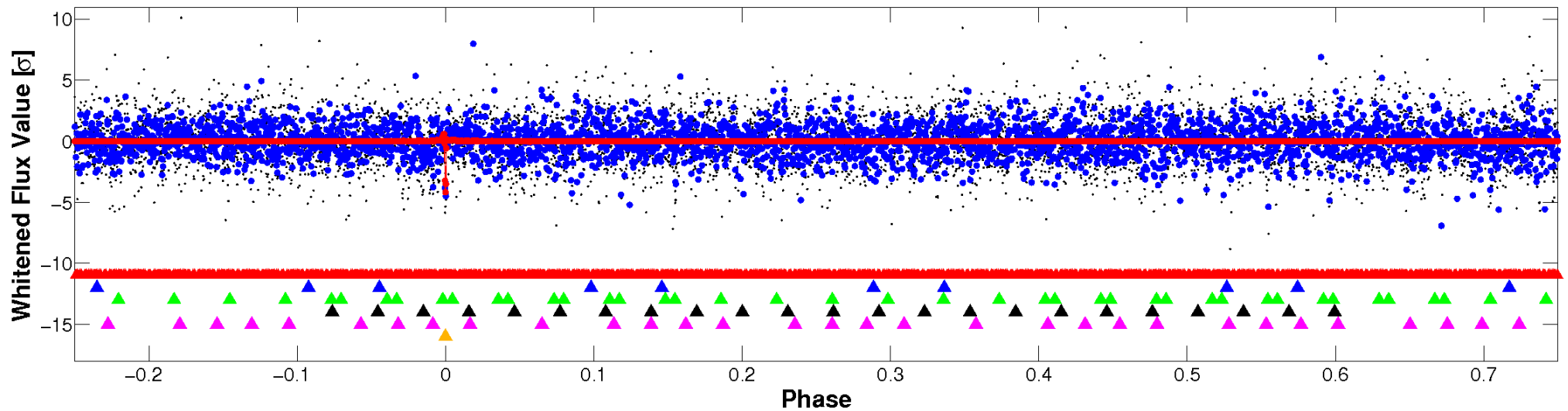


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

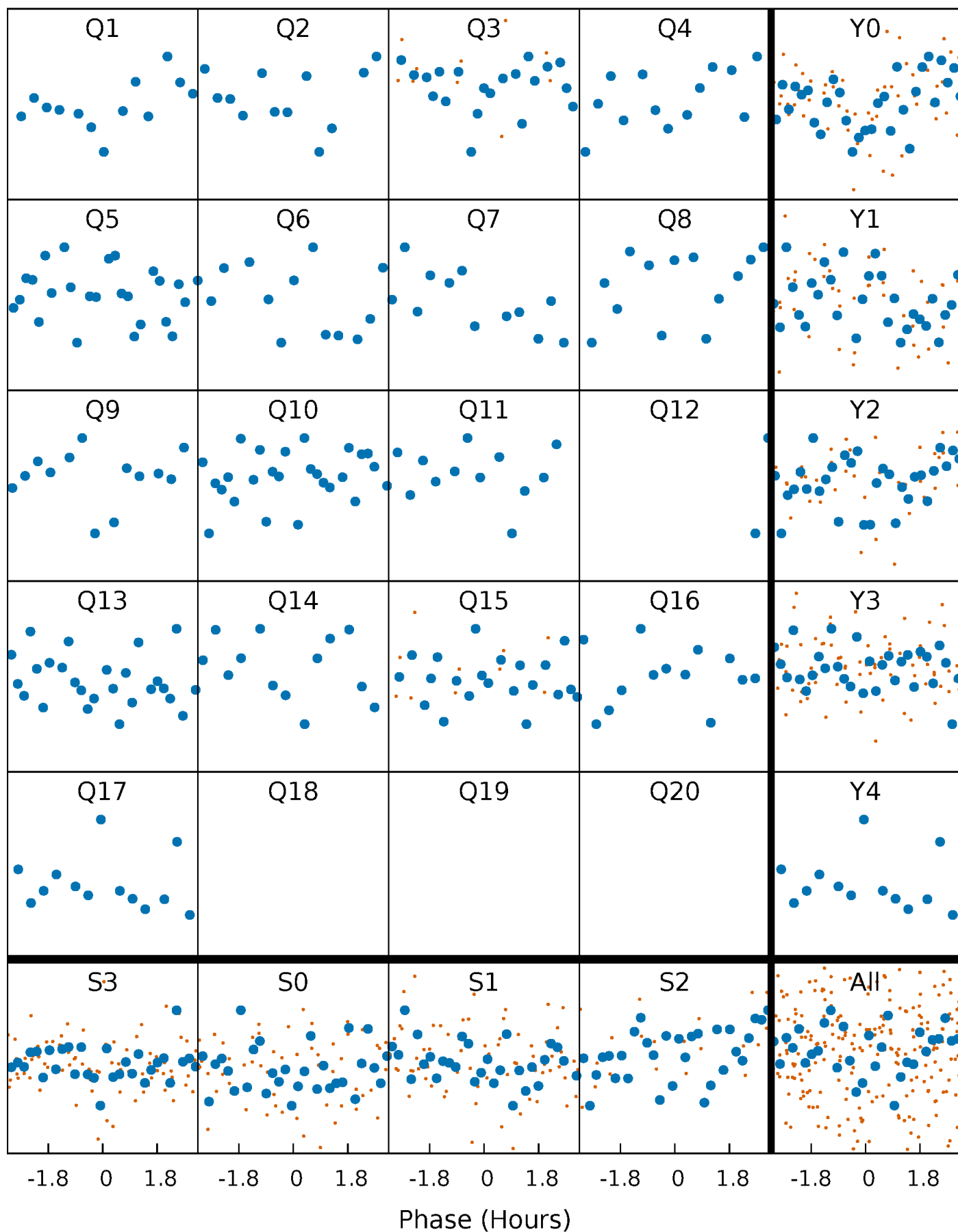


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



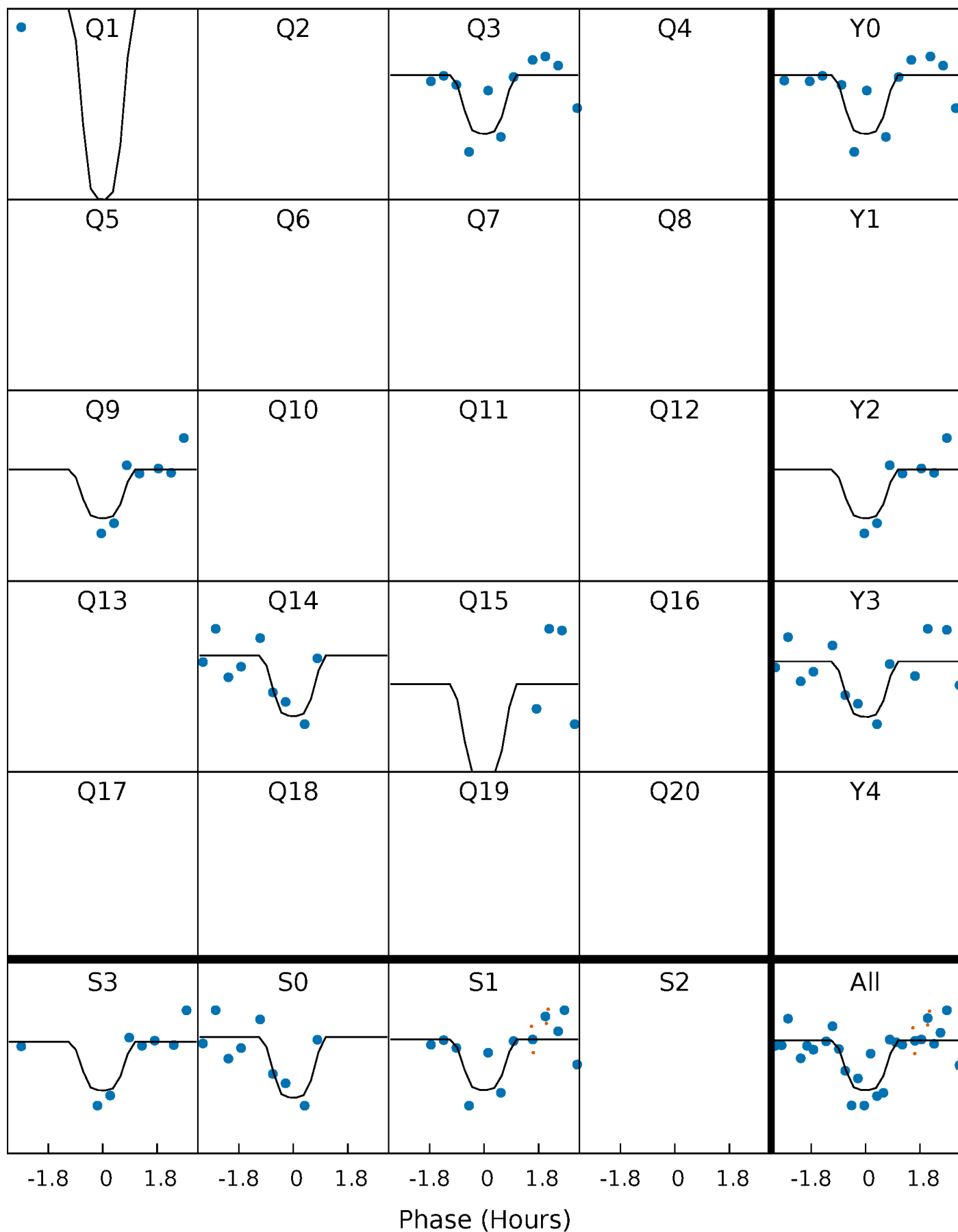
PDC Quarter-Phased Transit Curves

TCE 005645883-06 P= 65.665327 Days $T_0=133.753692$ (BKJD)



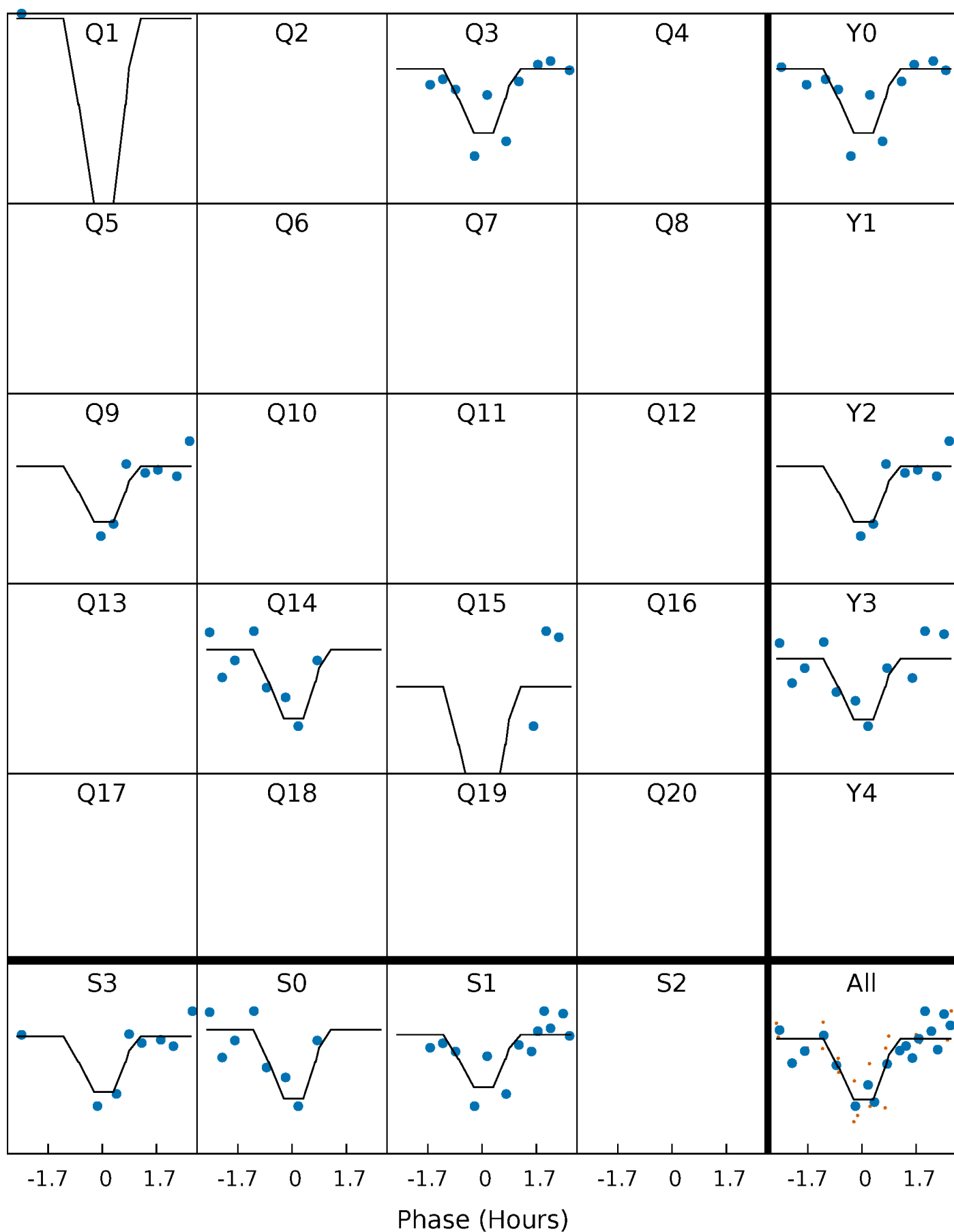
DV Quarter-Phased Transit Curves

TCE 005645883-06 P= 65.665327 Days $T_0=133.753692$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

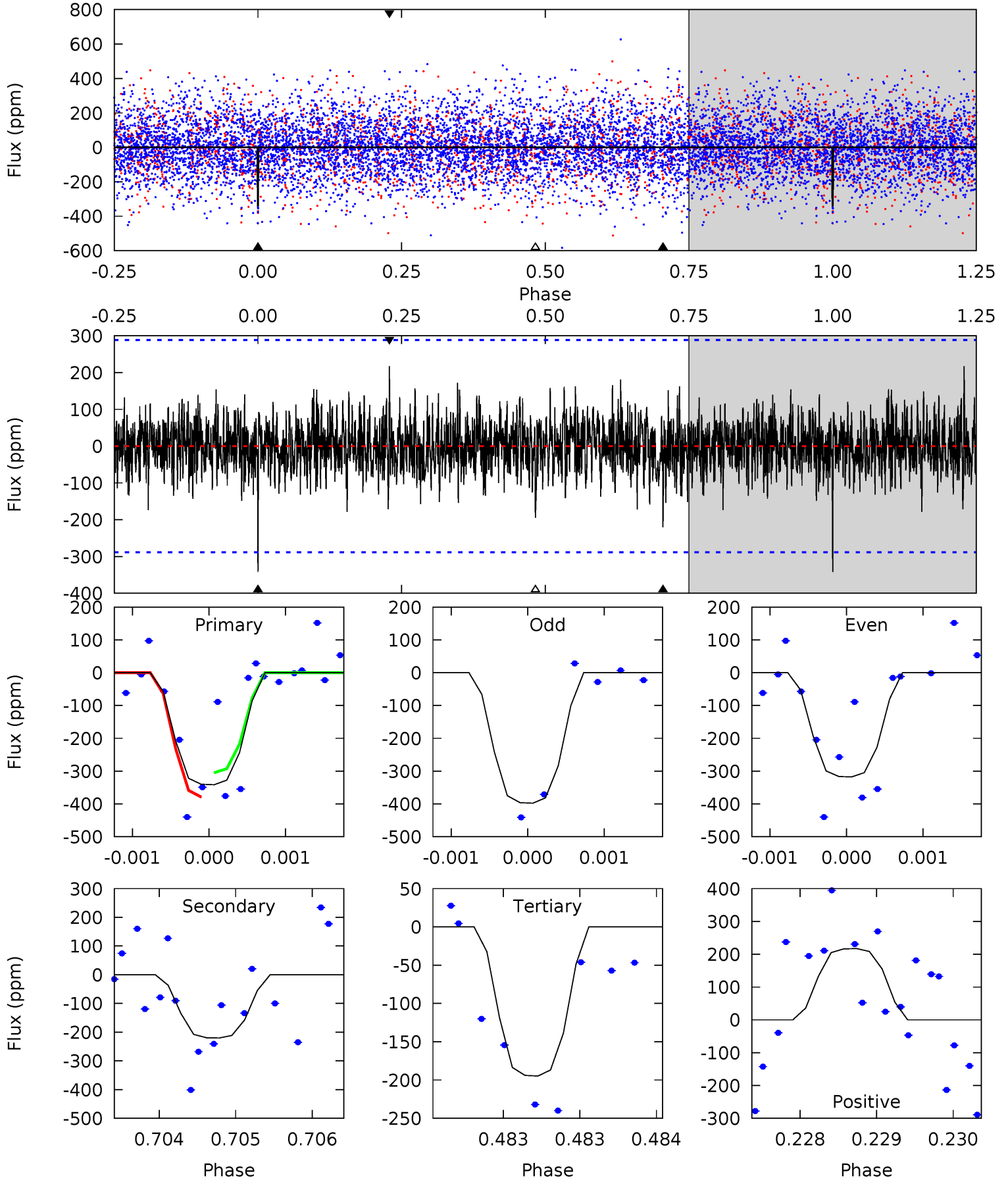
TCE 005645883-06 P= 65.665910 Days $T_0=133.746822$ (BKJD)



DV Model-Shift Uniqueness Test

005645883-06, P = 65.665327 Days, E = 68.088365 Days

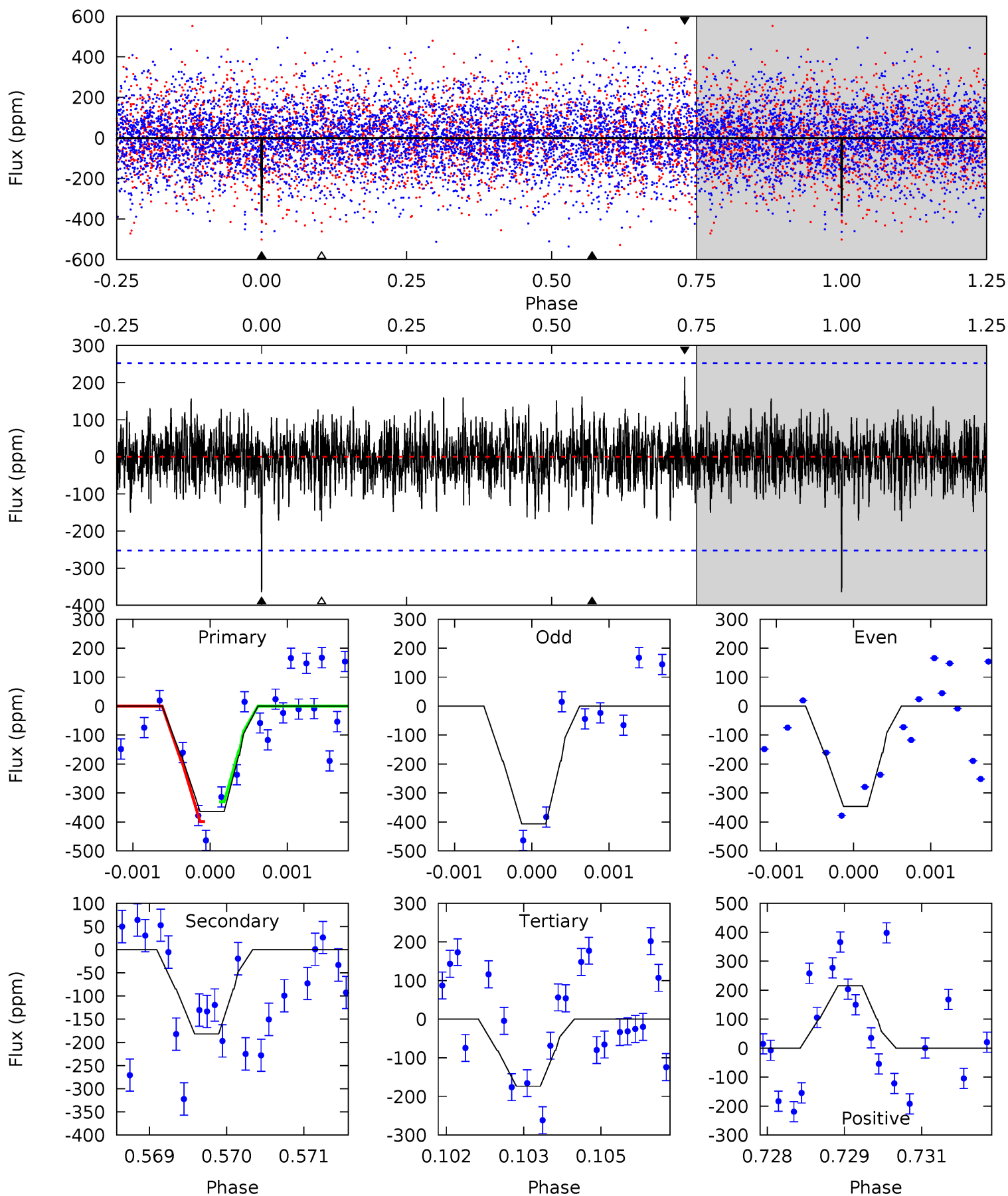
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.47 | 4.17 | 3.69 | 4.12 | 5.46 | 3.31 | 1.05 | 2.78 | 2.35 | 0.48 | 0.06 | 0.67 | 1.08 | 0.39 | 0.68 |



Alt Model-Shift Uniqueness Test

005645883-06, P = 65.665910 Days, E = 68.080912 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.81 | 3.90 | 3.72 | 4.63 | 5.41 | 3.23 | 1.10 | 4.09 | 3.18 | 0.18 | -0.73 | 0.60 | 0.99 | 0.37 | 0.72 |



Stellar Parameters For KIC 005645883

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8014^{+223}_{-335} | $3.720^{+0.424}_{-0.106}$ | $-0.080^{+0.200}_{-0.350}$ | $3.274^{+0.793}_{-1.472}$ | $2.054^{+0.336}_{-0.504}$ | $0.082^{+0.307}_{-0.028}$ |
| | +3%/-4% | +11%/-3% | +250%/-438% | +24%/-45% | +16%/-25% | +373%/-34% |
| 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 005645883-06 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|--------------------------|----------------------|------------------------|---------------------|
| DV | -220 ± 53 | $12.93^{+13.52}_{-8.86}$ | 1356^{+106}_{-155} | 4791^{+3876}_{-1045} | 121^{+1109}_{-93} |
| Alt. | -182 ± 47 | $12.39^{+13.72}_{-8.40}$ | 1357^{+100}_{-163} | 4708^{+3284}_{-1060} | 106^{+878}_{-82} |

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 $A_{obs} \gg 1.0$

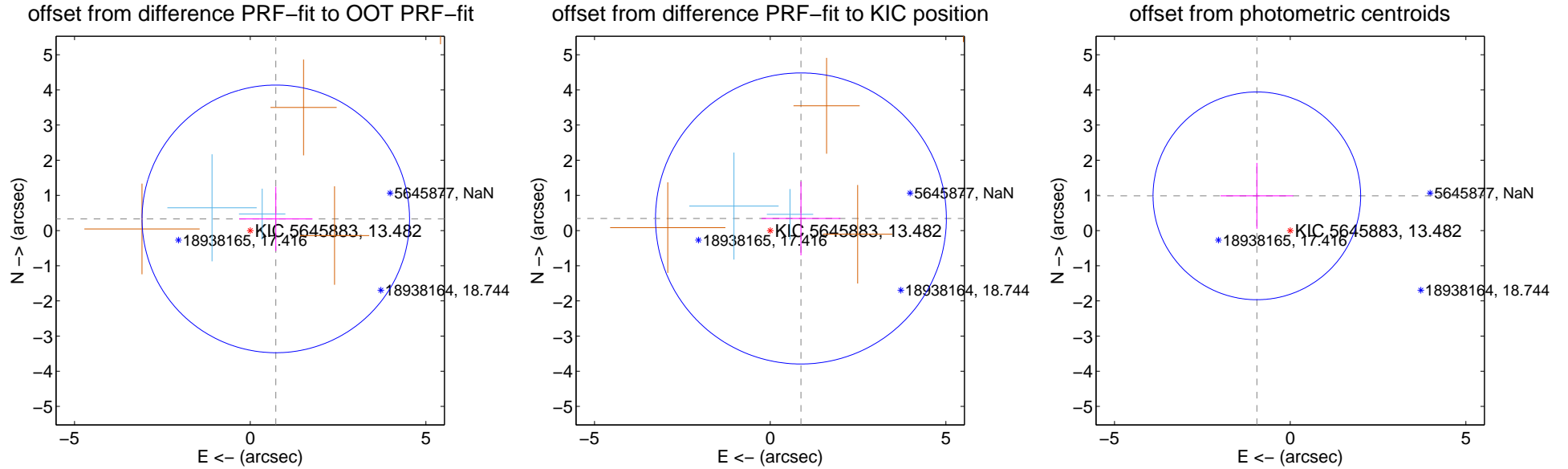
DV Centroid Data

Supplemental centroid analysis for 005645883-06. Kepler magnitude: 13.48. Transit SNR 10.36

There are 2 quarters with good PRF difference image offsets

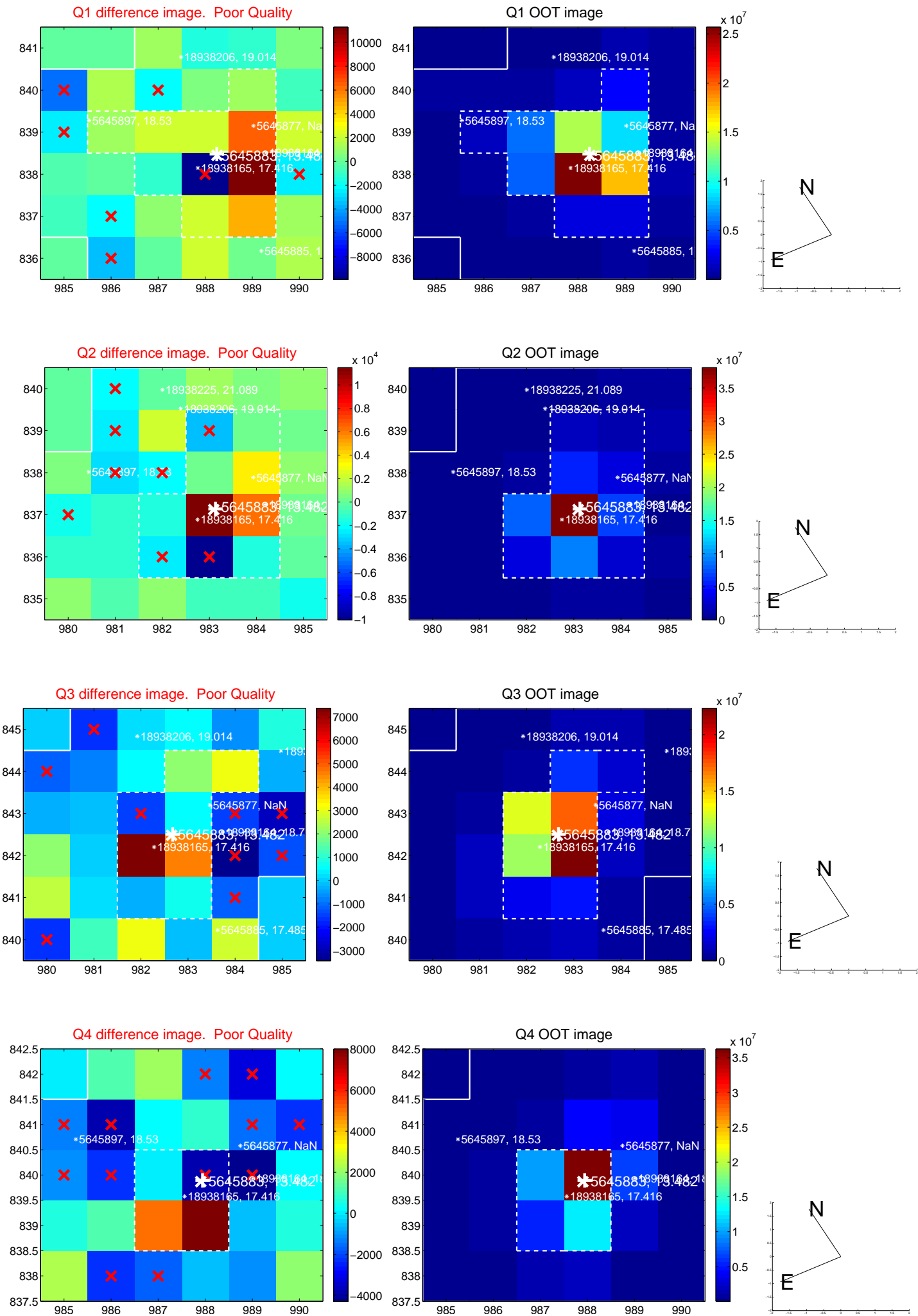
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.800 ± 1.269 | 0.63 | -0.728 ± 1.044 | 0.332 ± 0.911 |
| PRF-fit source offset from KIC position | 0.940 ± 1.379 | 0.68 | -0.875 ± 1.121 | 0.344 ± 1.050 |
| photometric centroid source offset | 1.37 ± 0.98 | 1.39 | 0.95 ± 1.03 | 0.99 ± 0.94 |

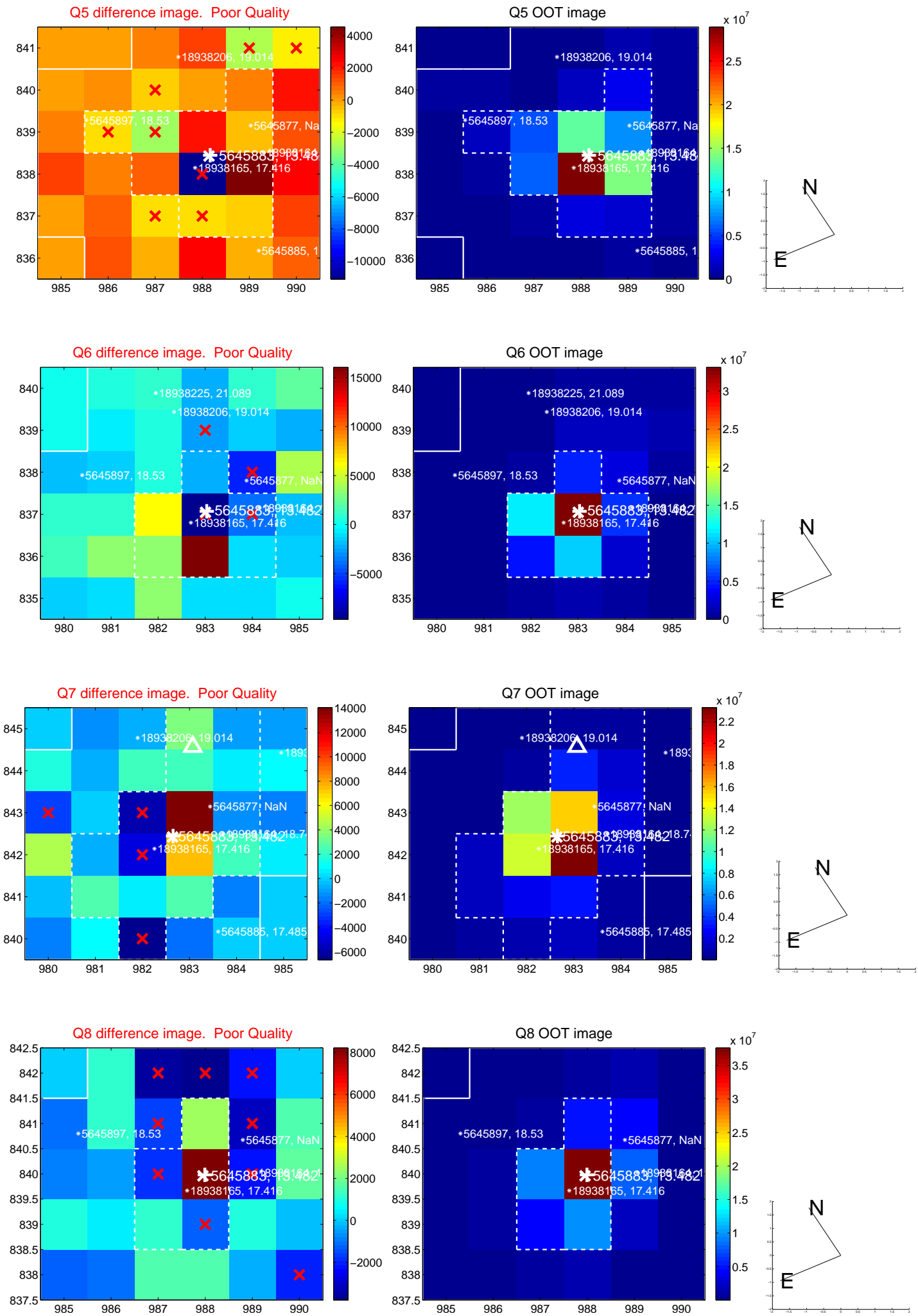


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

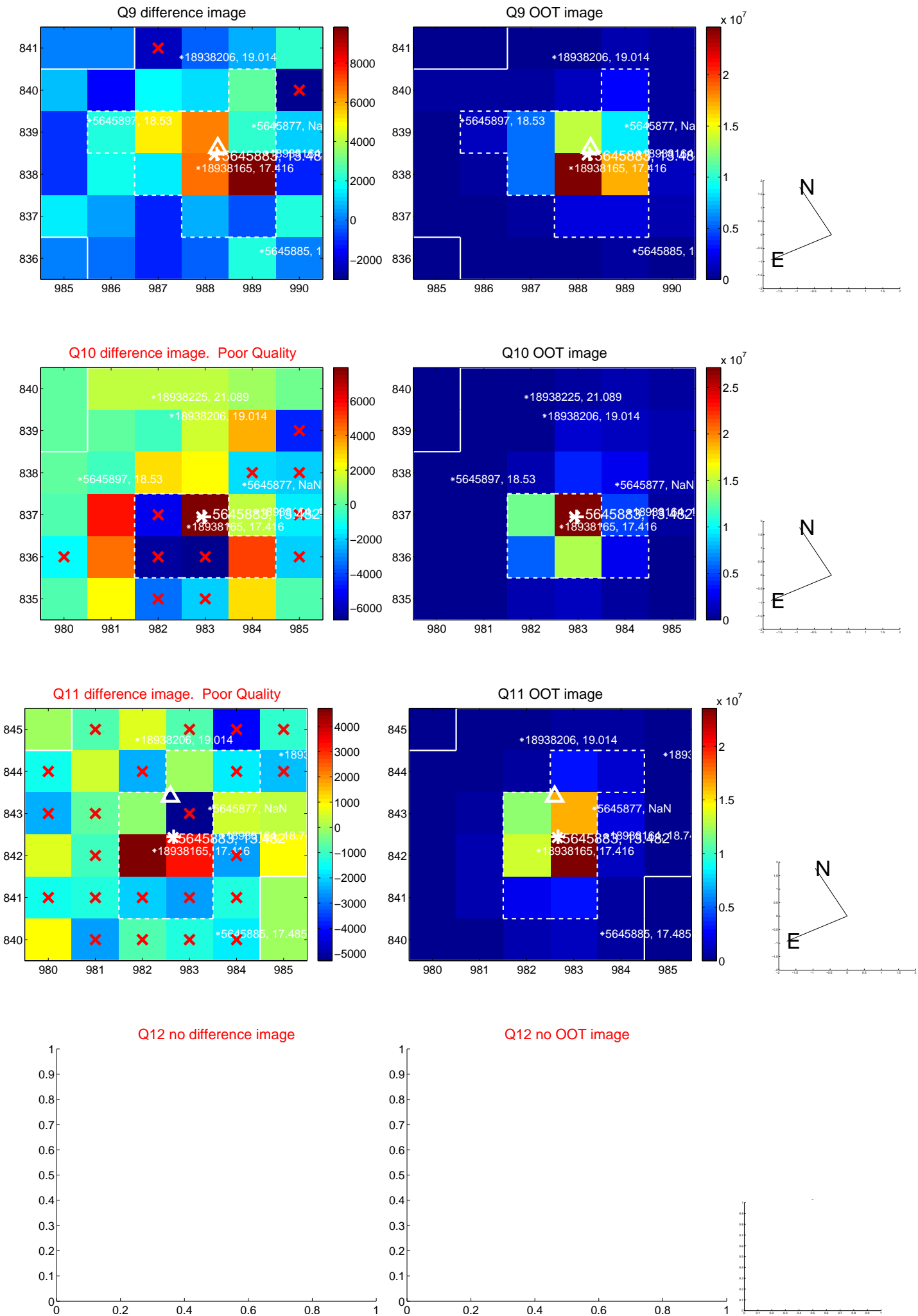
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



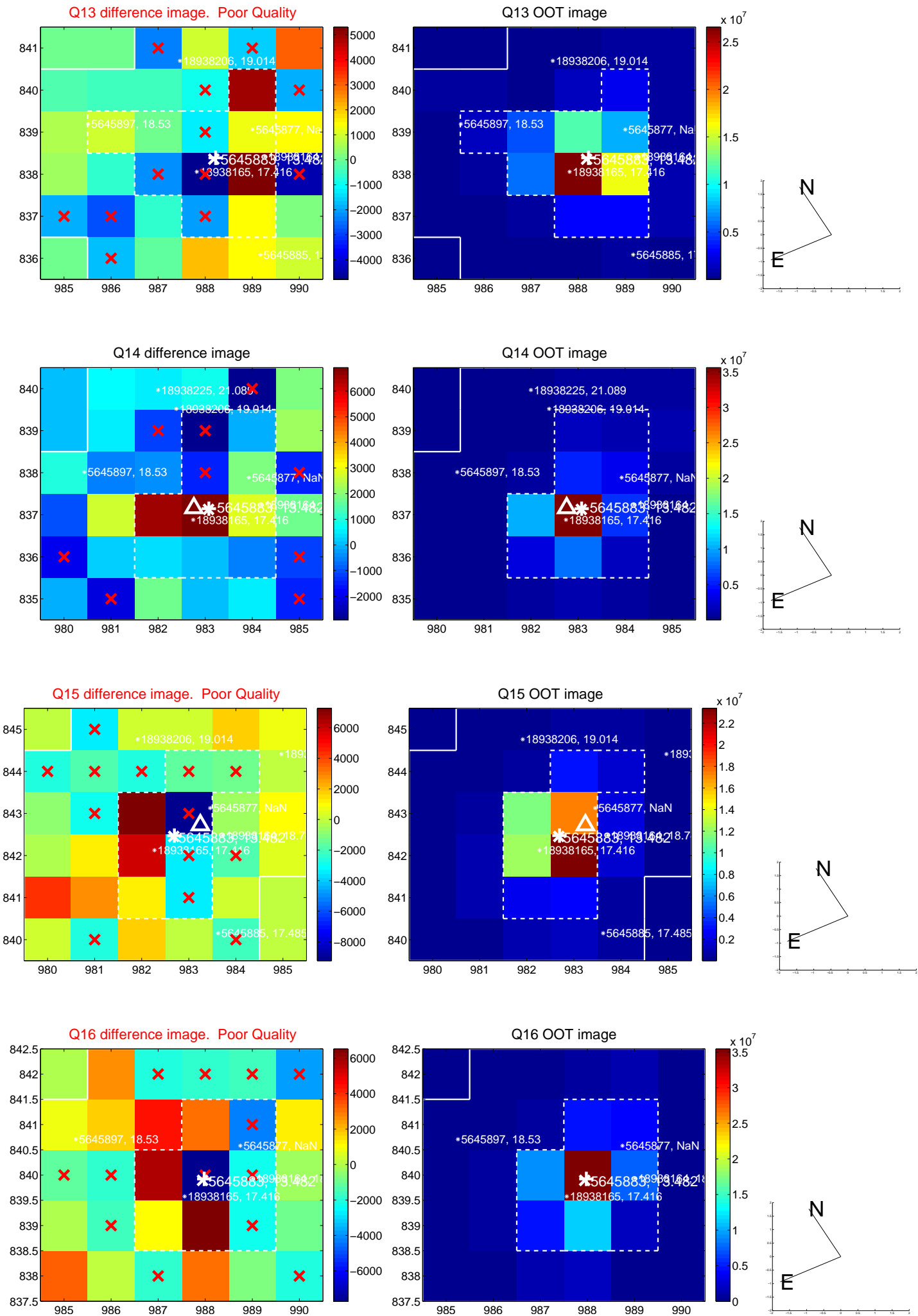
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



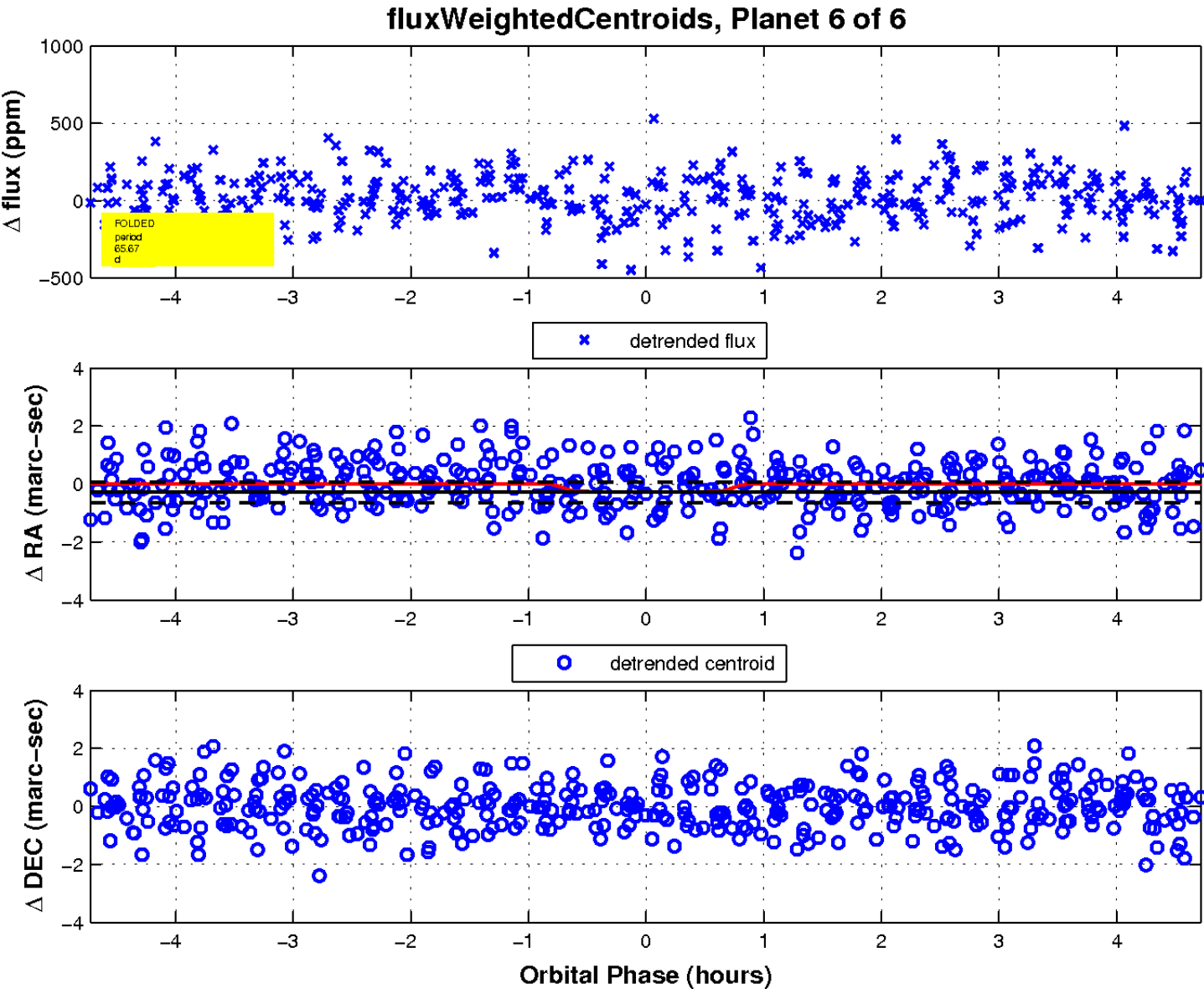
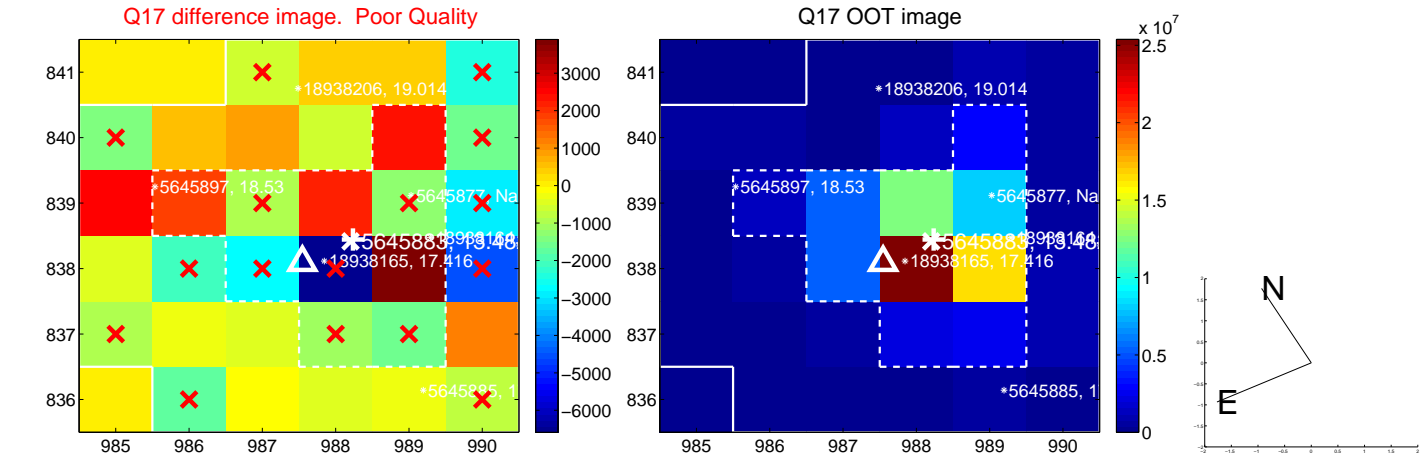
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

