

KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

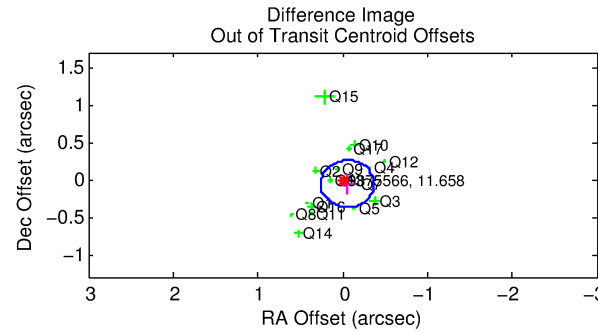
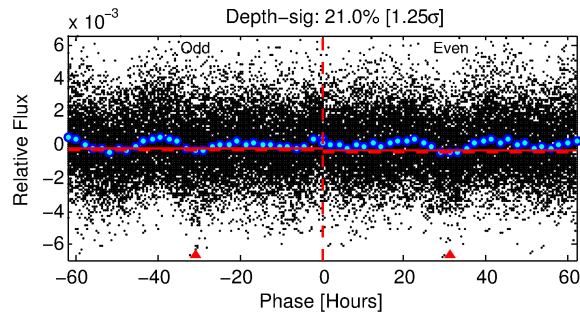
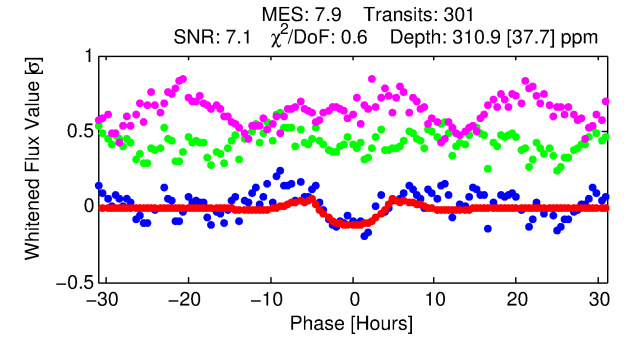
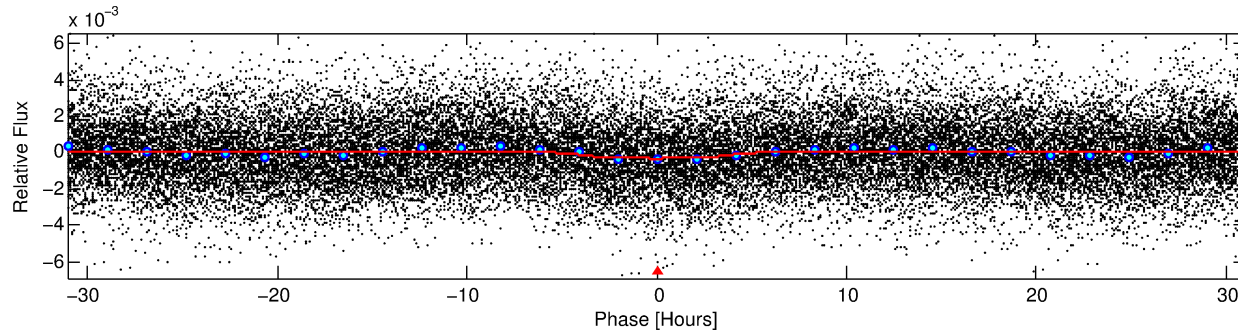
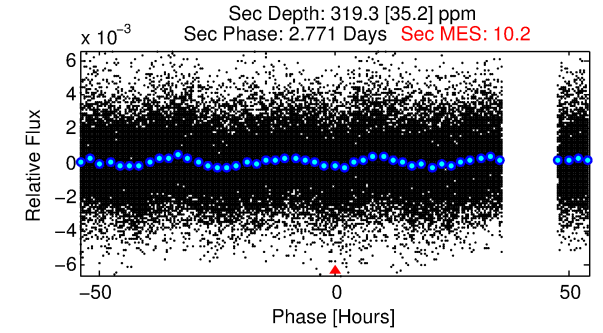
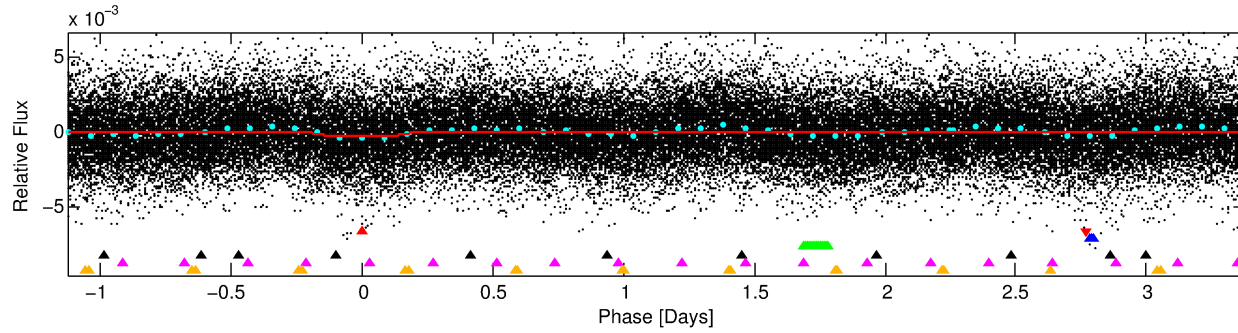
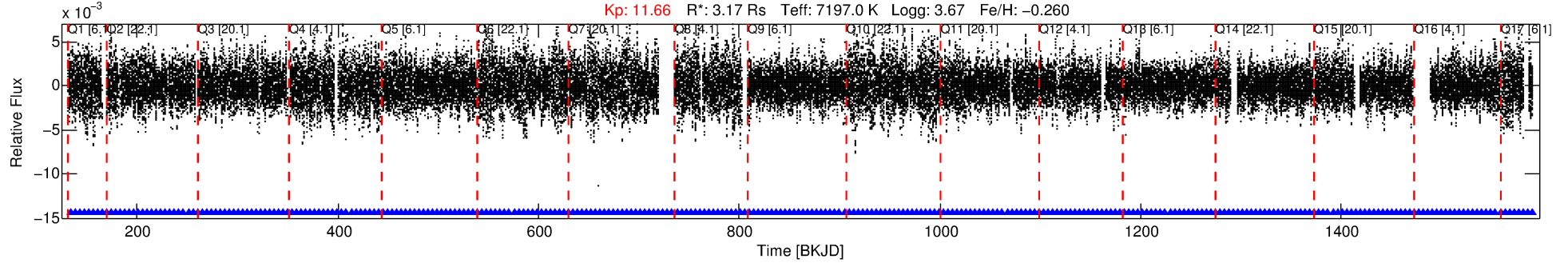
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-01

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 1 of 6 Period: 4.508 d



DV Fit Results:

Period = 4.50770 [0.00009] d
Epoch = 133.8964 [0.0153] BKJD
Rp/R* = 0.0208 [0.0014]
a/R* = 1.44 [0.09]
b = 0.97 [0.01]
Seff = 5906.06 [5237.66]
Teq = 2235 [496] K
Rp = 7.19 [3.71] Re
a = 0.0640 [0.0337] AU
Ag = 13.93 [12.37] [1.05σ]
Teffp = 6677 [403] K [6.95σ]

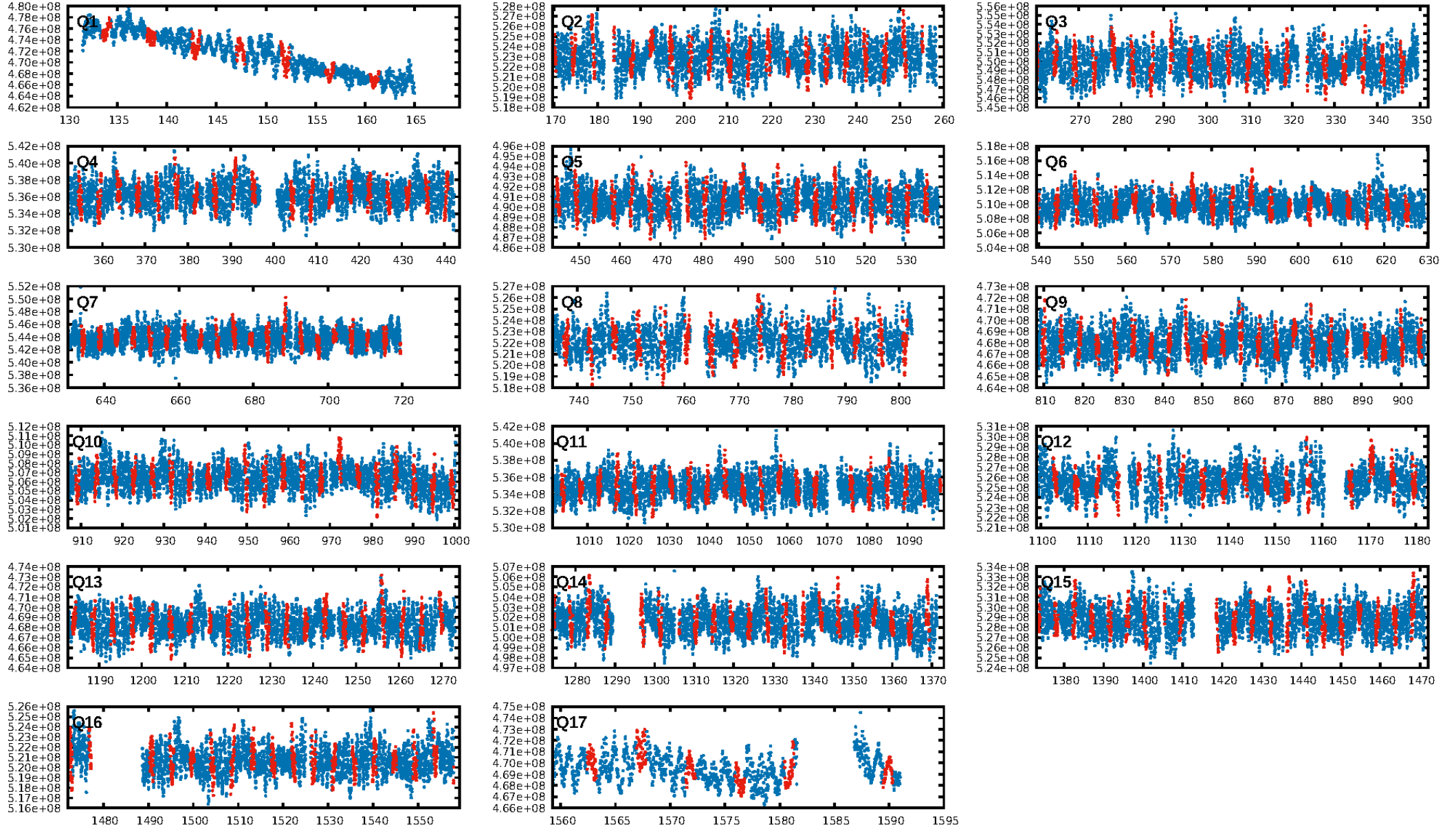
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.38e-06
RollingBand-fgt: 1.00 [288/288]
GhostDiagnostic-chr: 2.219
Centroid-sig: 9.3%
Centroid-so: 0.210 arcsec [4.31σ]
OotOffset-rm: 0.079 arcsec [0.76σ]
KicOffset-rm: 0.317 arcsec [3.16σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

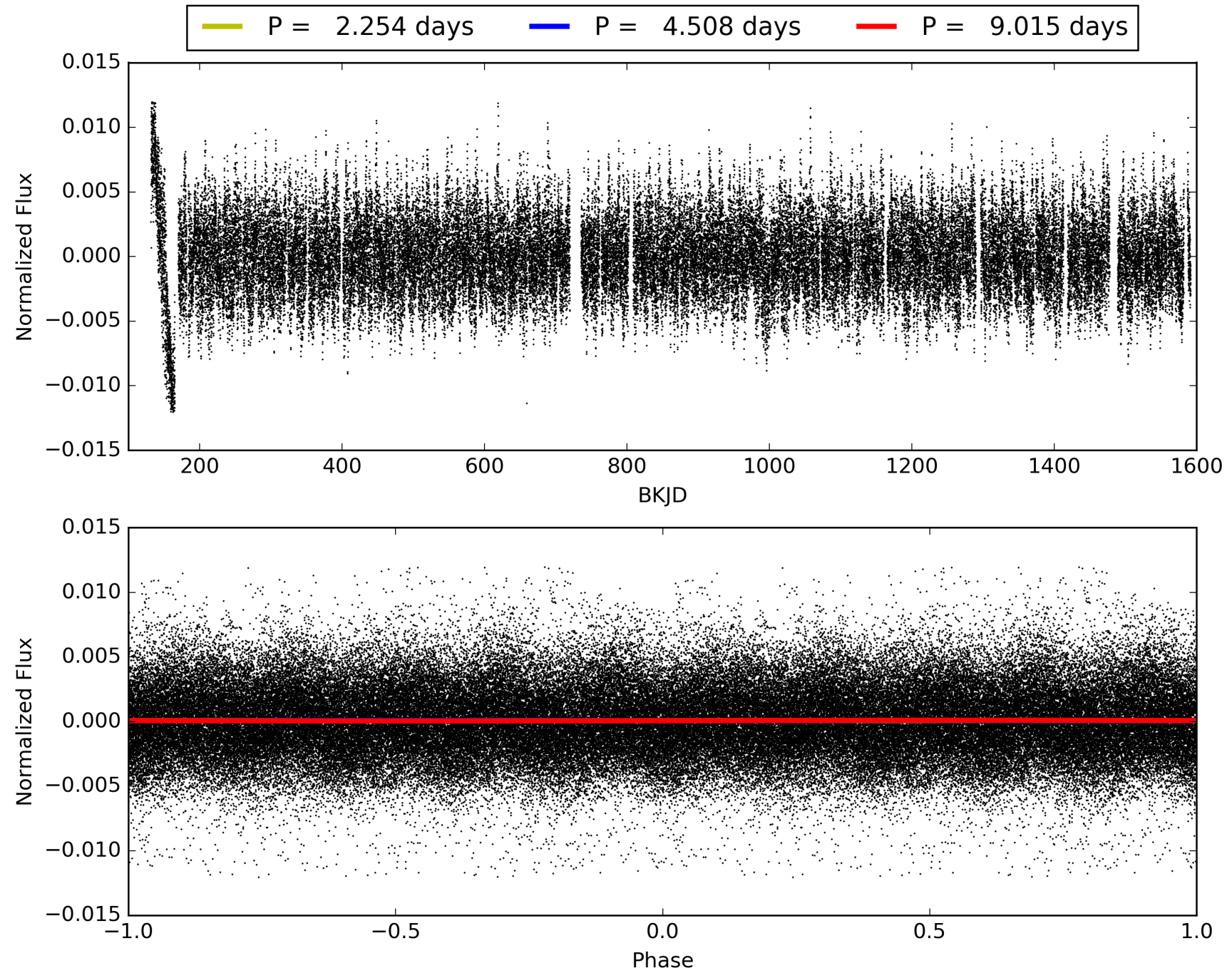
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:17 Z

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

TCE 009875566-01, PDC Light Curves

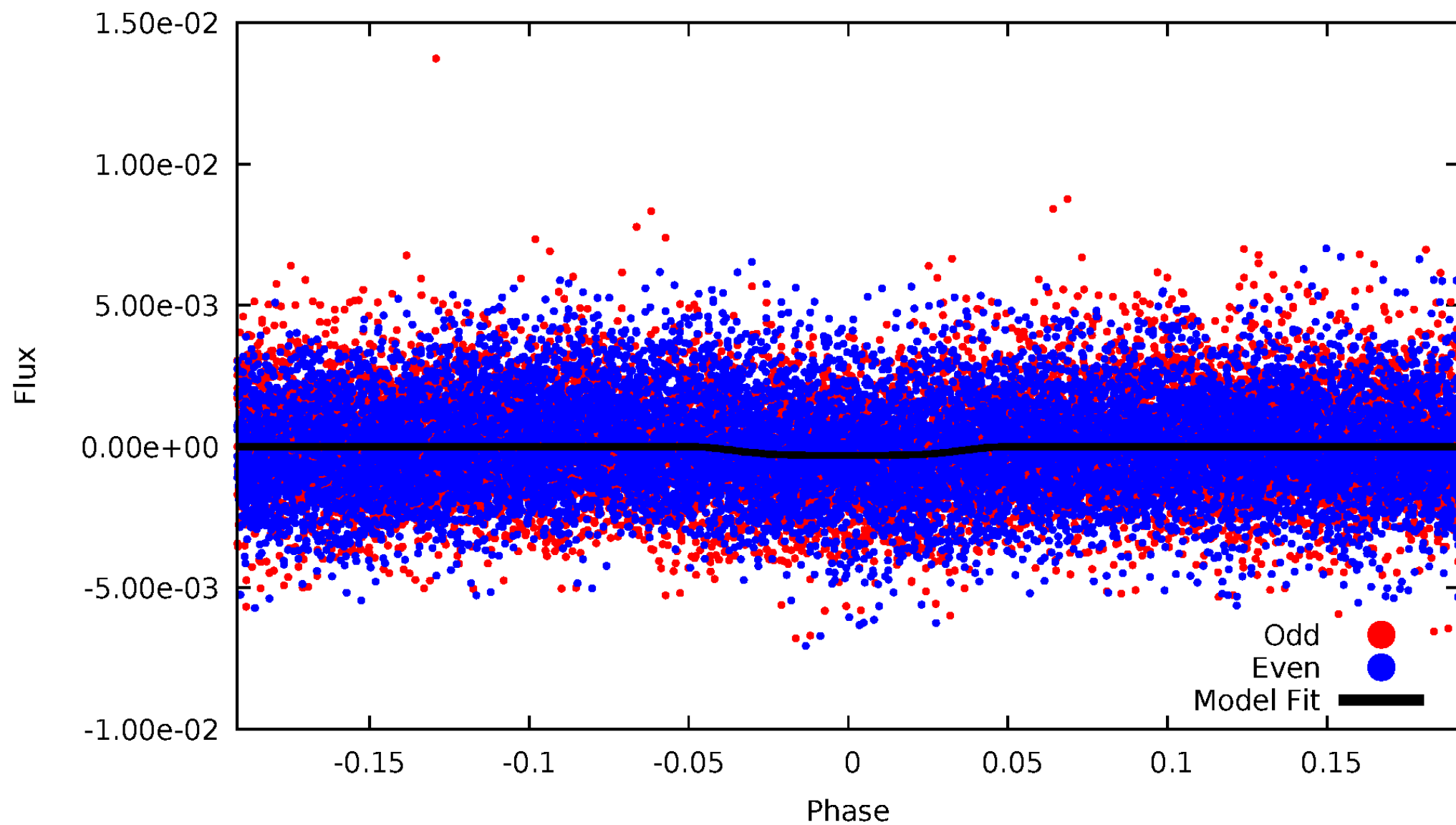


TCE 009875566-01



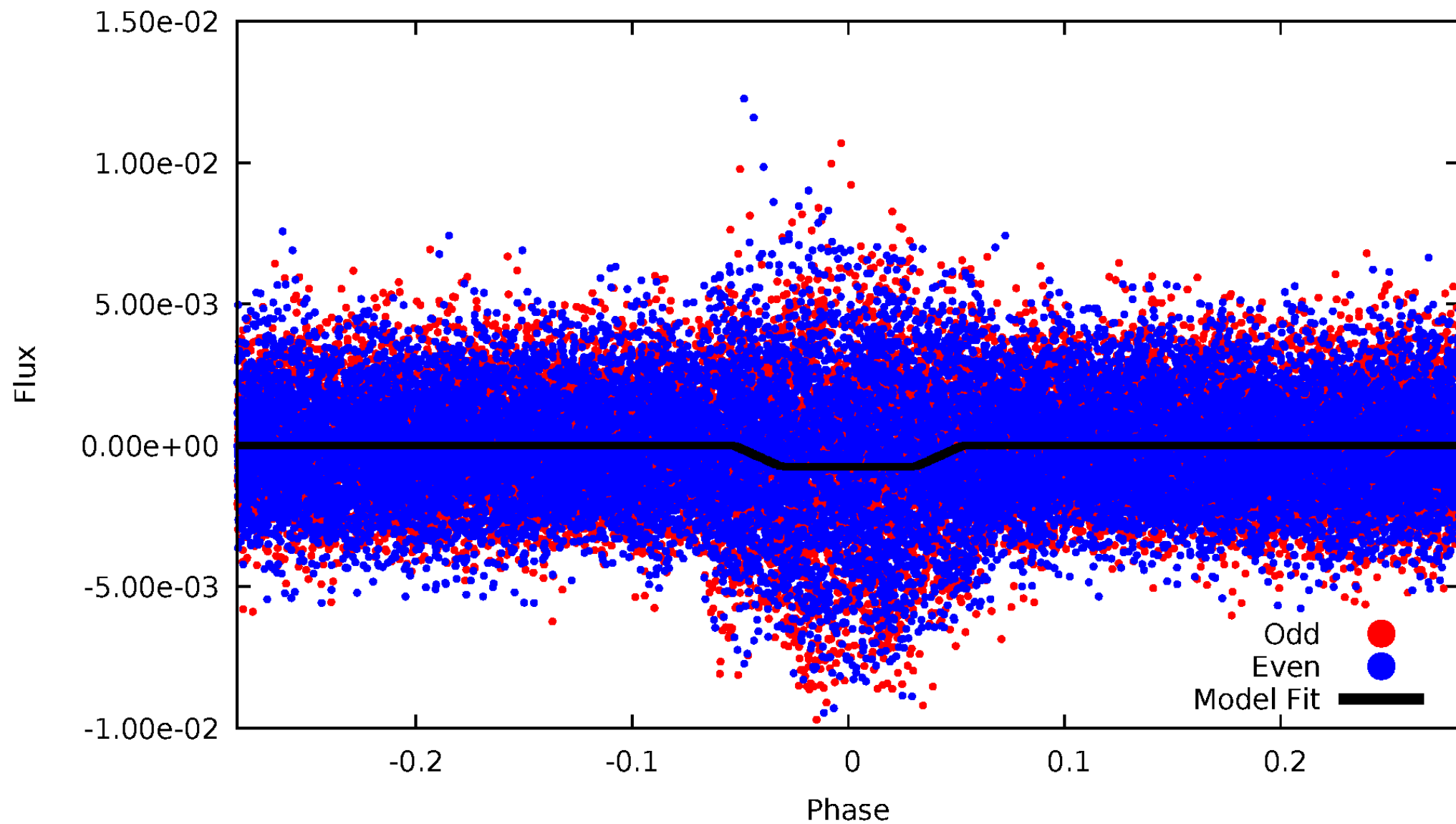
DV Odd/Even

TCE 009875566-01

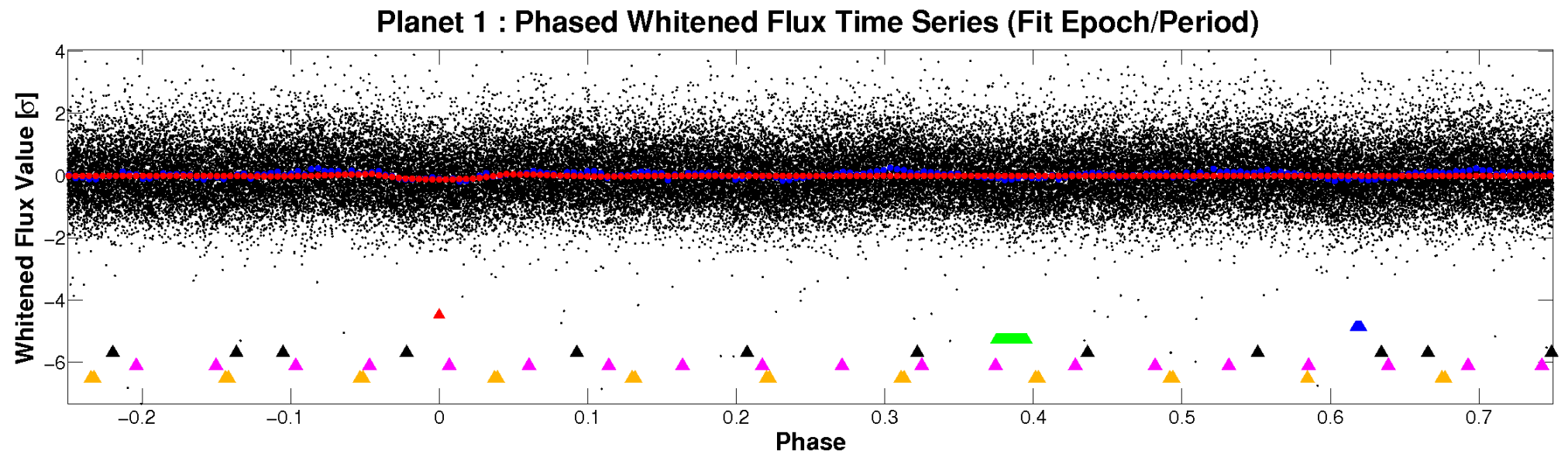
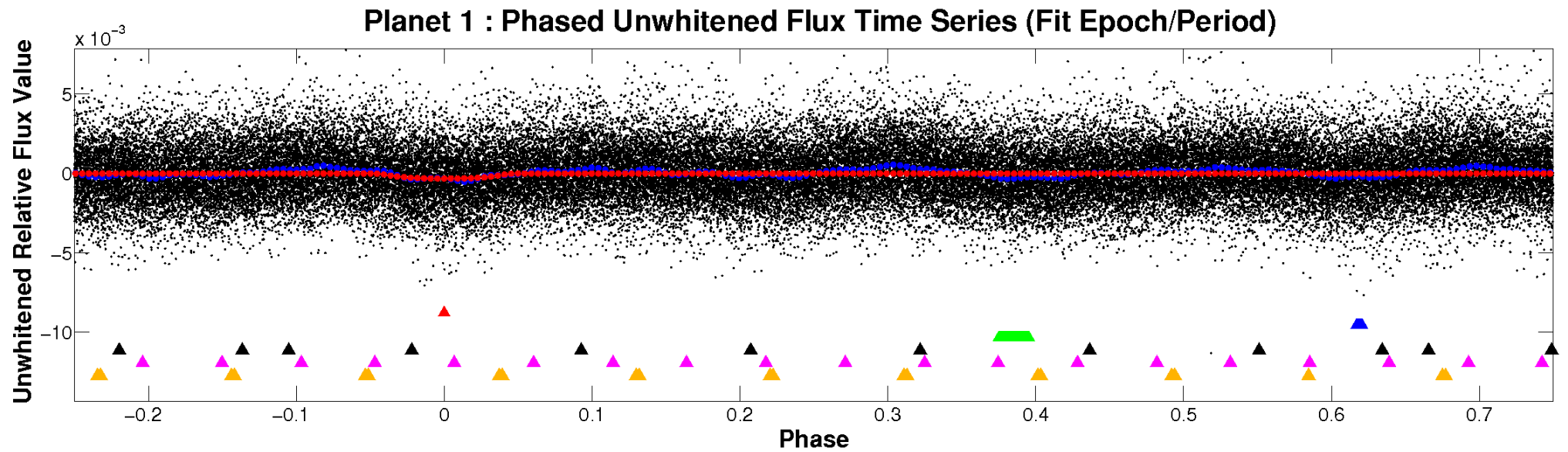


ALT Odd/Even

TCE 009875566-01

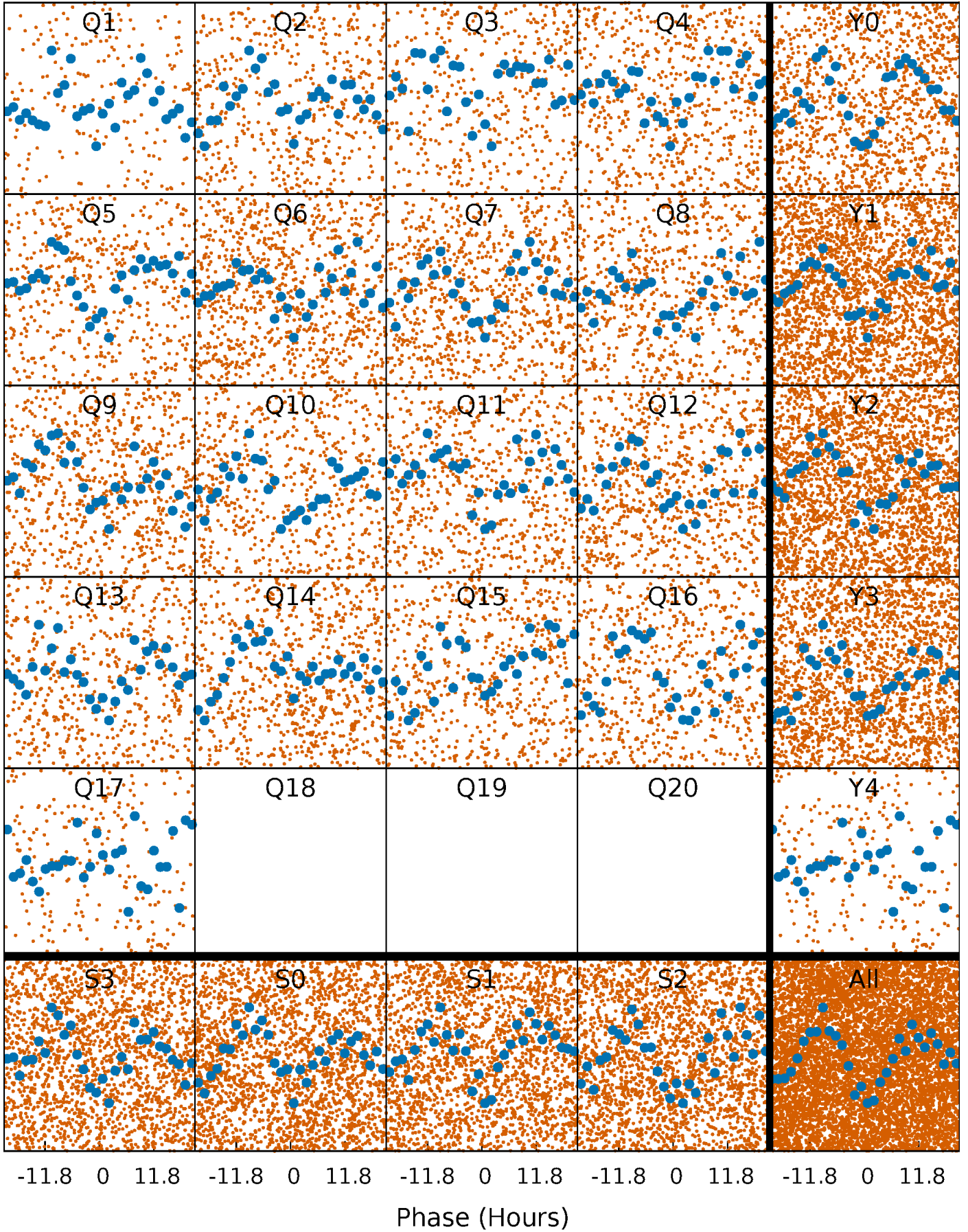


Non-Whitened Vs. Whitened Light Curve



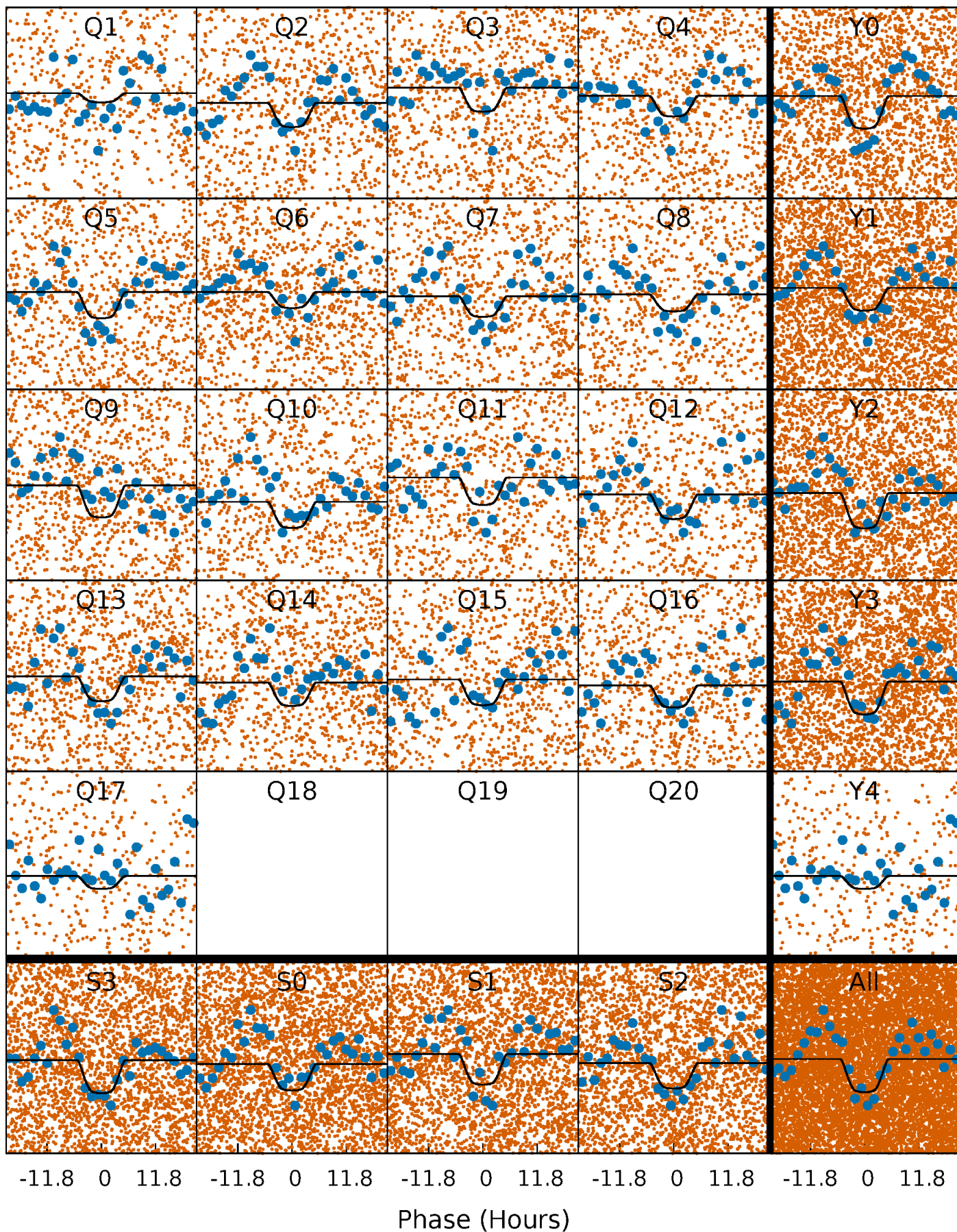
PDC Quarter-Phased Transit Curves

TCE 009875566-01 P= 4.507702 Days $T_0=133.896366$ (BKJD)



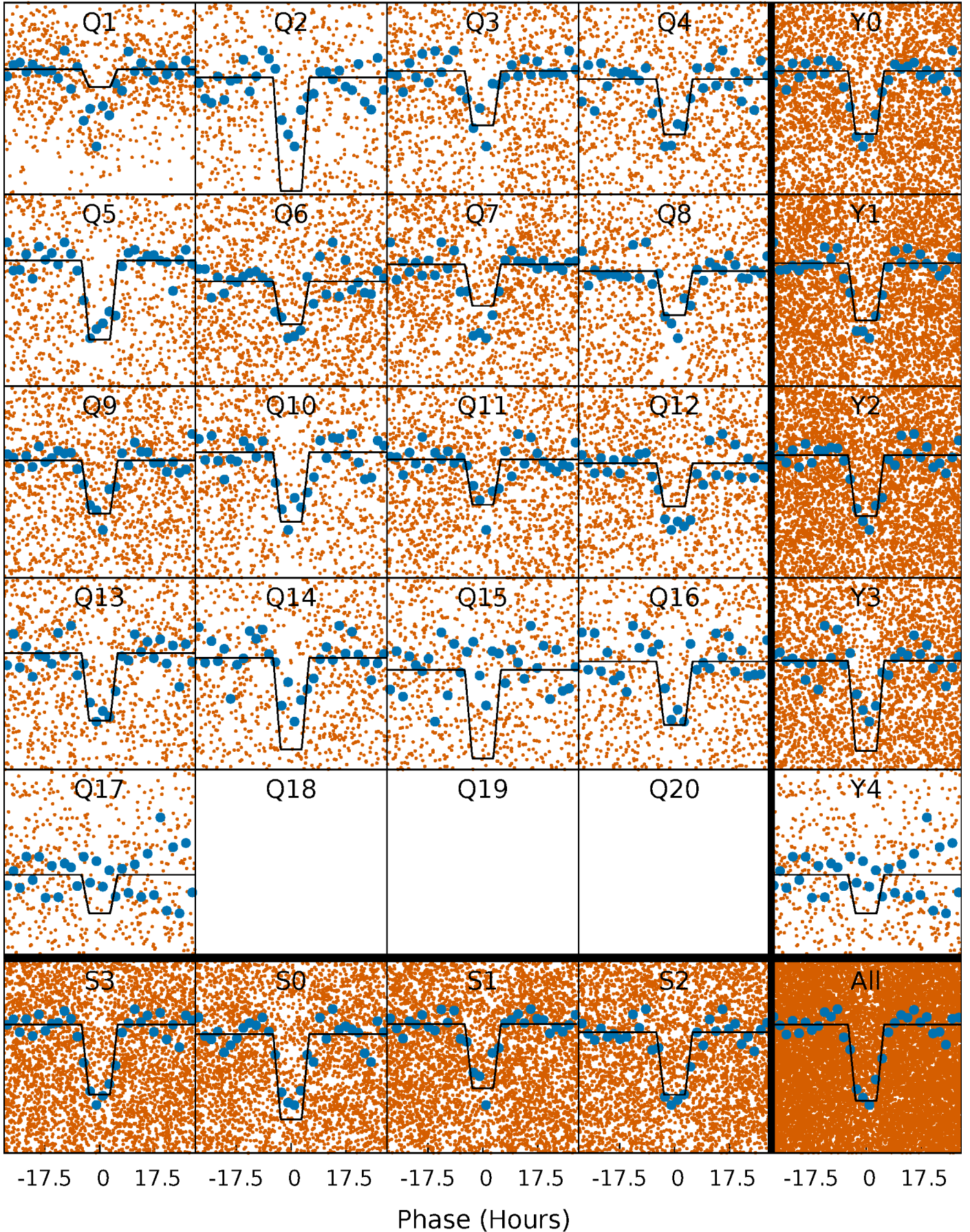
DV Quarter-Phased Transit Curves

TCE 009875566-01 P= 4.507702 Days $T_0=133.896366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

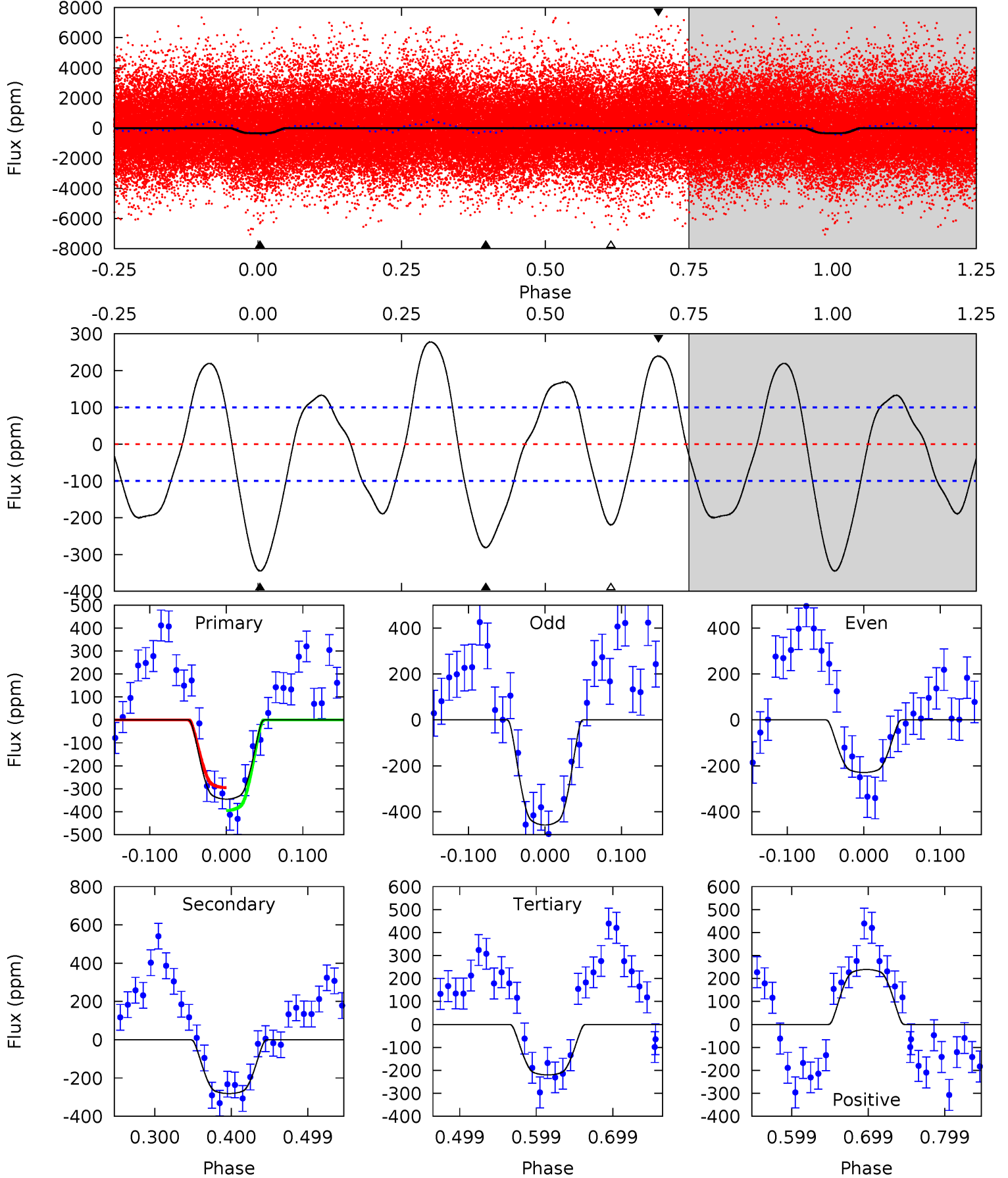
TCE 009875566-01 P= 4.507620 Days $T_0=133.926382$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-01, P = 4.507702 Days, E = 129.388664 Days

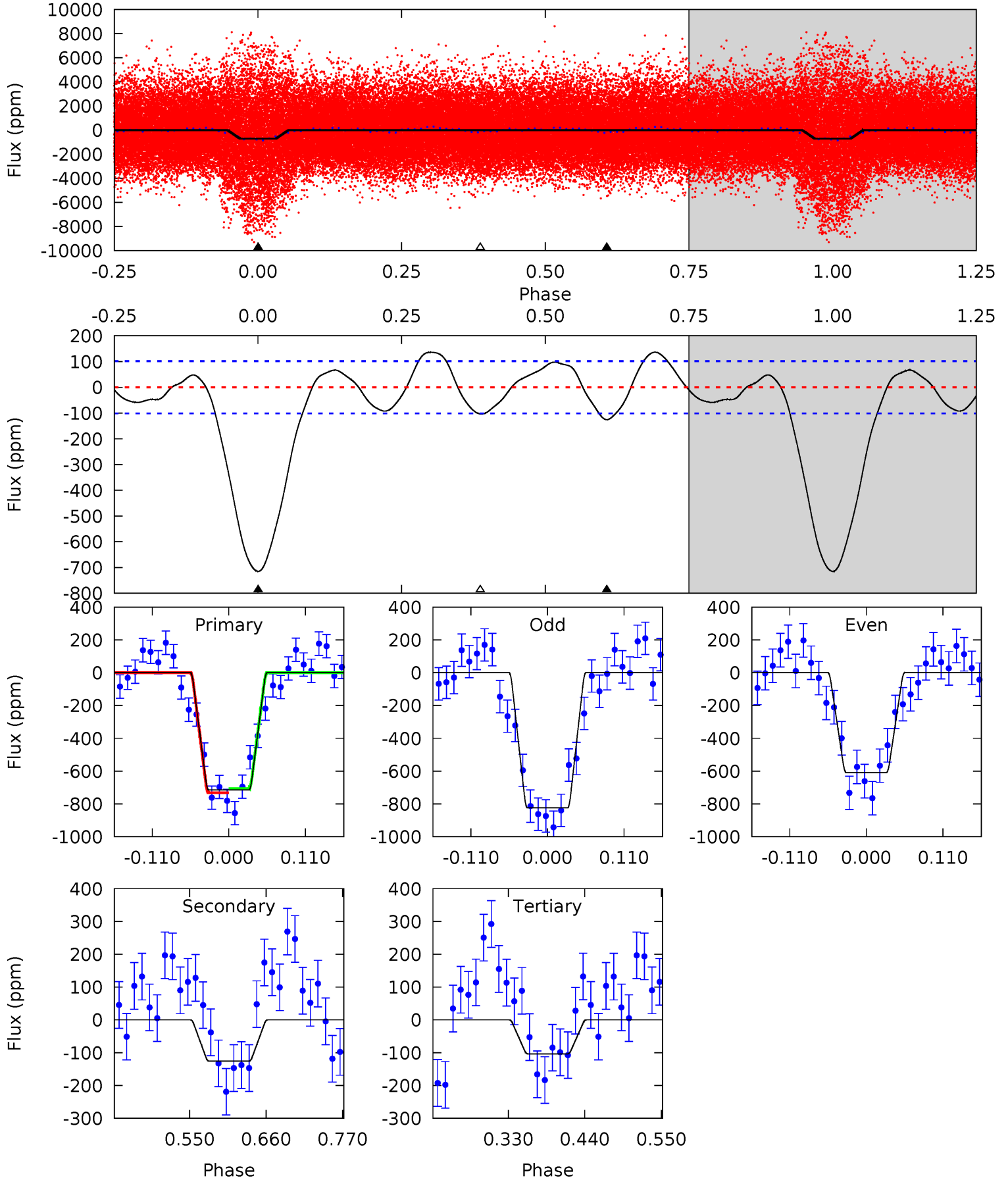
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.8 | 12.9 | 10.0 | 10.9 | 4.57 | 1.65 | 6.70 | 5.73 | 4.83 | 2.81 | 1.92 | 5.25 | 1.13 | 0.45 | 2.27 |



Alt Model-Shift Uniqueness Test

009875566-01, P = 4.507620 Days, E = 129.418762 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 32.0 | 5.63 | 4.64 | 0 | 4.54 | 1.60 | 2.92 | 27.4 | 32.0 | 0.99 | 5.63 | 4.81 | 1.24 | 0.16 | 0.56 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -281 ± 22 | $6.63^{+1.12}_{-1.89}$ | 2985^{+216}_{-408} | 6352^{+344}_{-322} | 14^{+12}_{-3} |
| Alt. | -126 ± 22 | $8.85^{+1.22}_{-2.37}$ | 2985^{+218}_{-405} | 4607^{+230}_{-224} | $3.759^{+2.915}_{-1.085}$ |

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

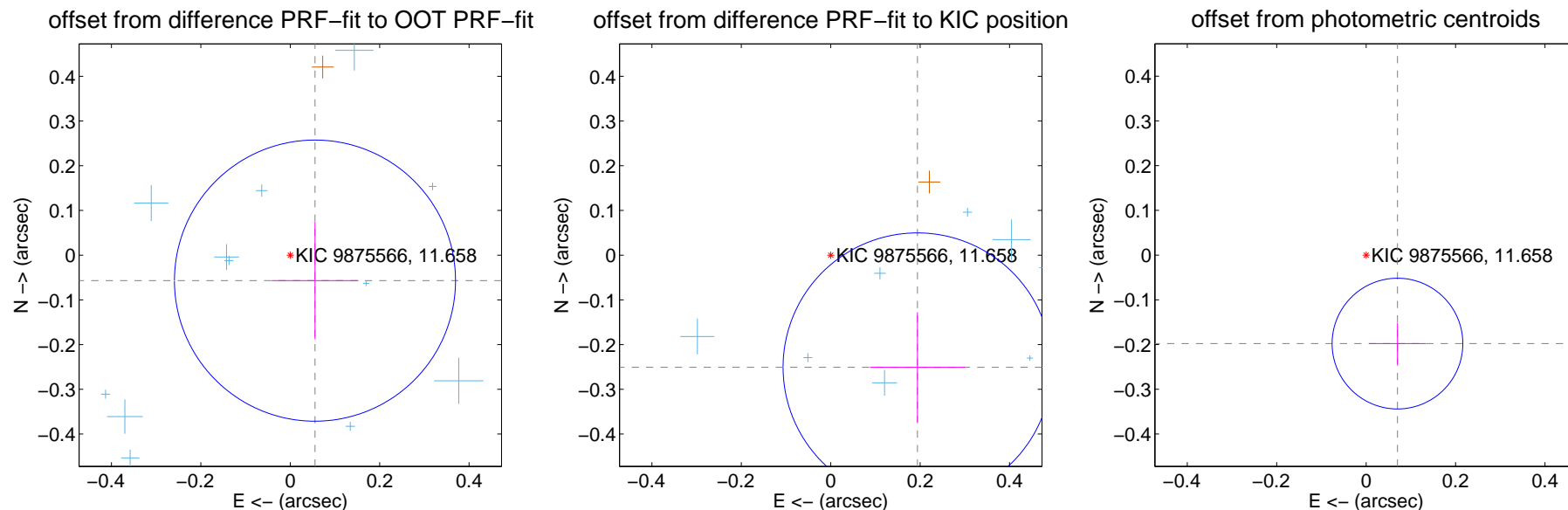
DV Centroid Data

Supplemental centroid analysis for 009875566-01. **Kepler magnitude: 11.66.** Transit SNR 7.14

There are 16 quarters with good PRF difference image offsets

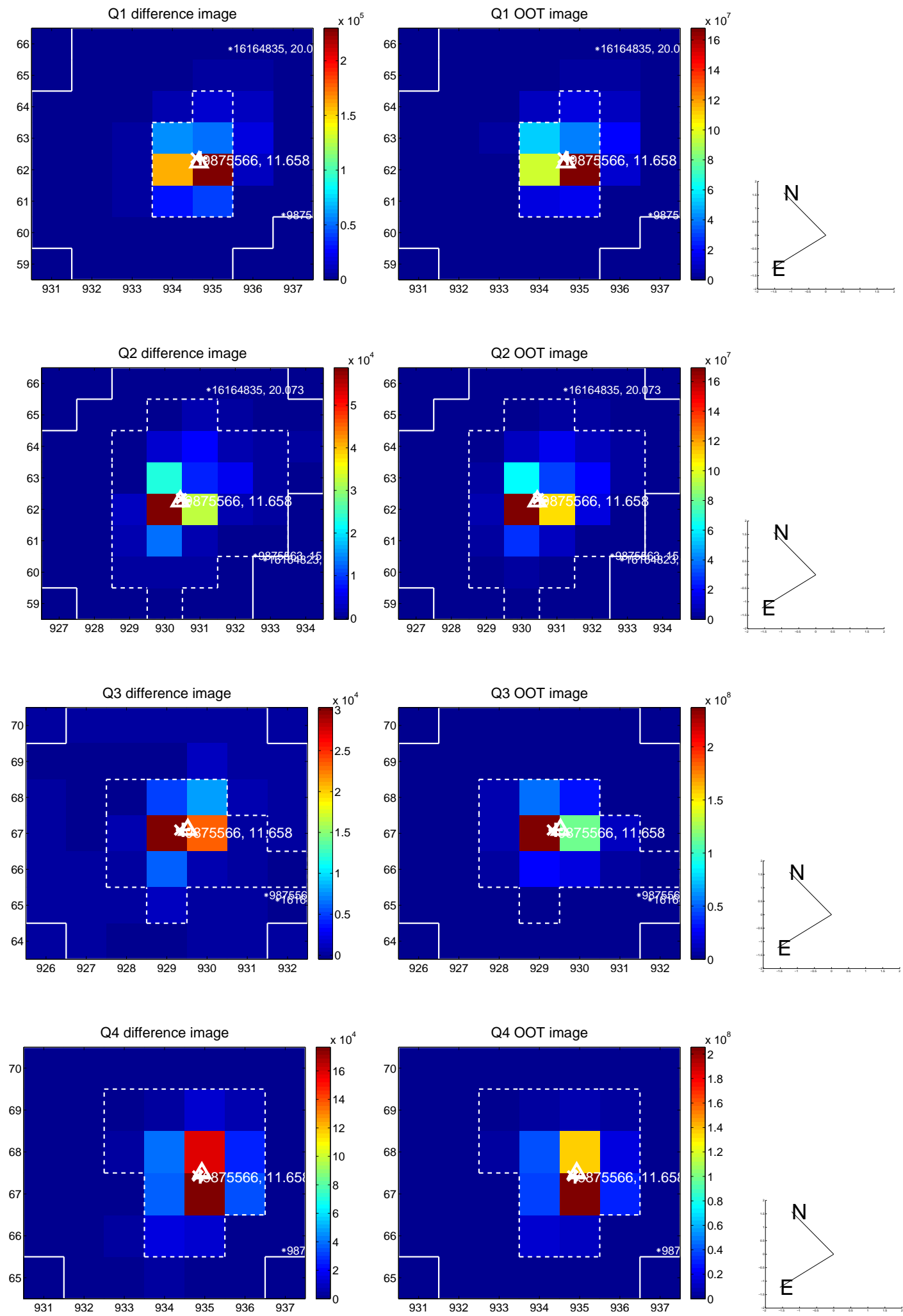
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.079 ± 0.105 | 0.76 | -0.055 ± 0.097 | -0.057 ± 0.131 |
| PRF-fit source offset from KIC position | 0.317 ± 0.100 | 3.16 | -0.194 ± 0.106 | -0.251 ± 0.123 |
| photometric centroid source offset | 0.21 ± 0.05 | 4.31 | -0.07 ± 0.06 | -0.20 ± 0.05 |

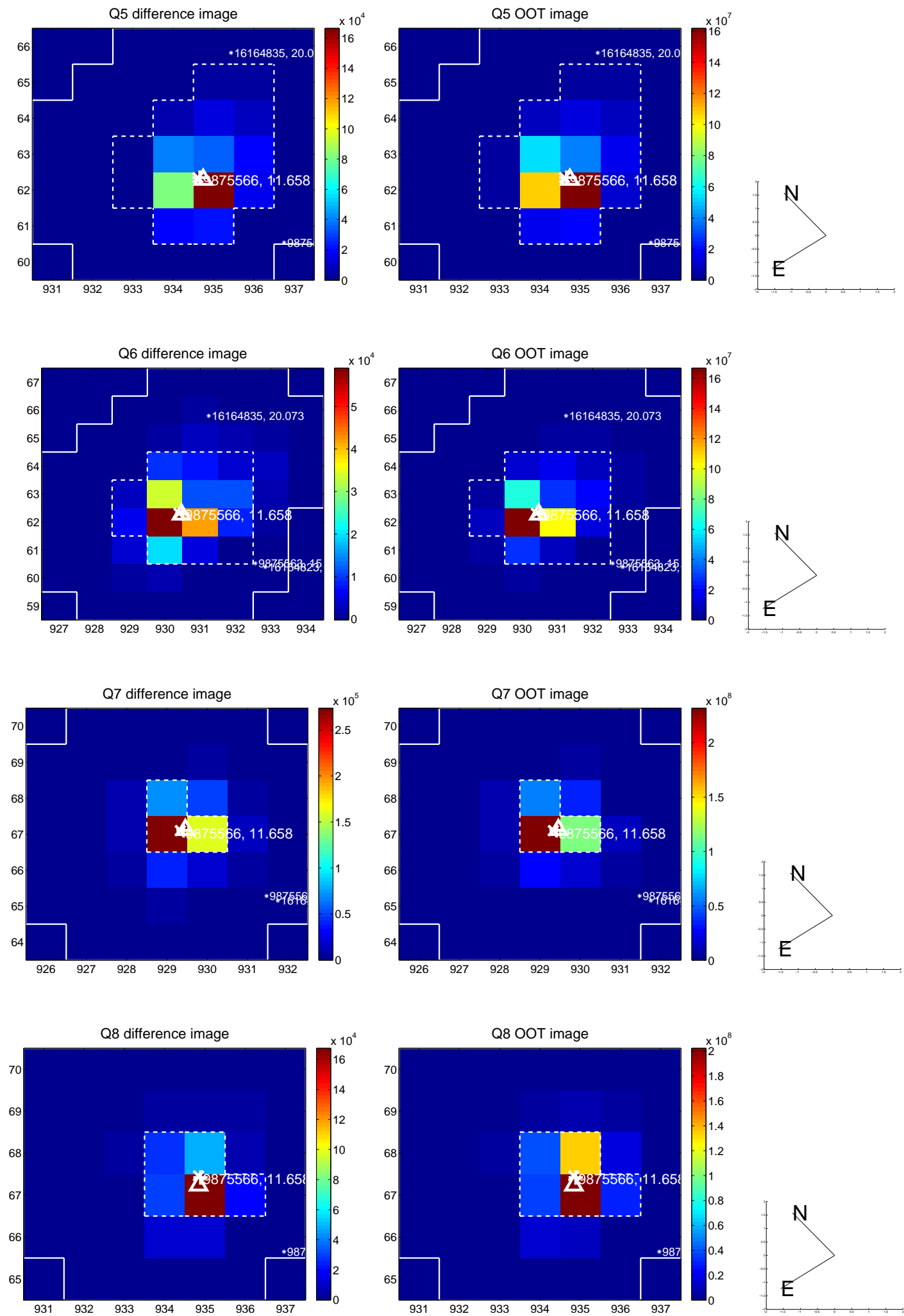


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

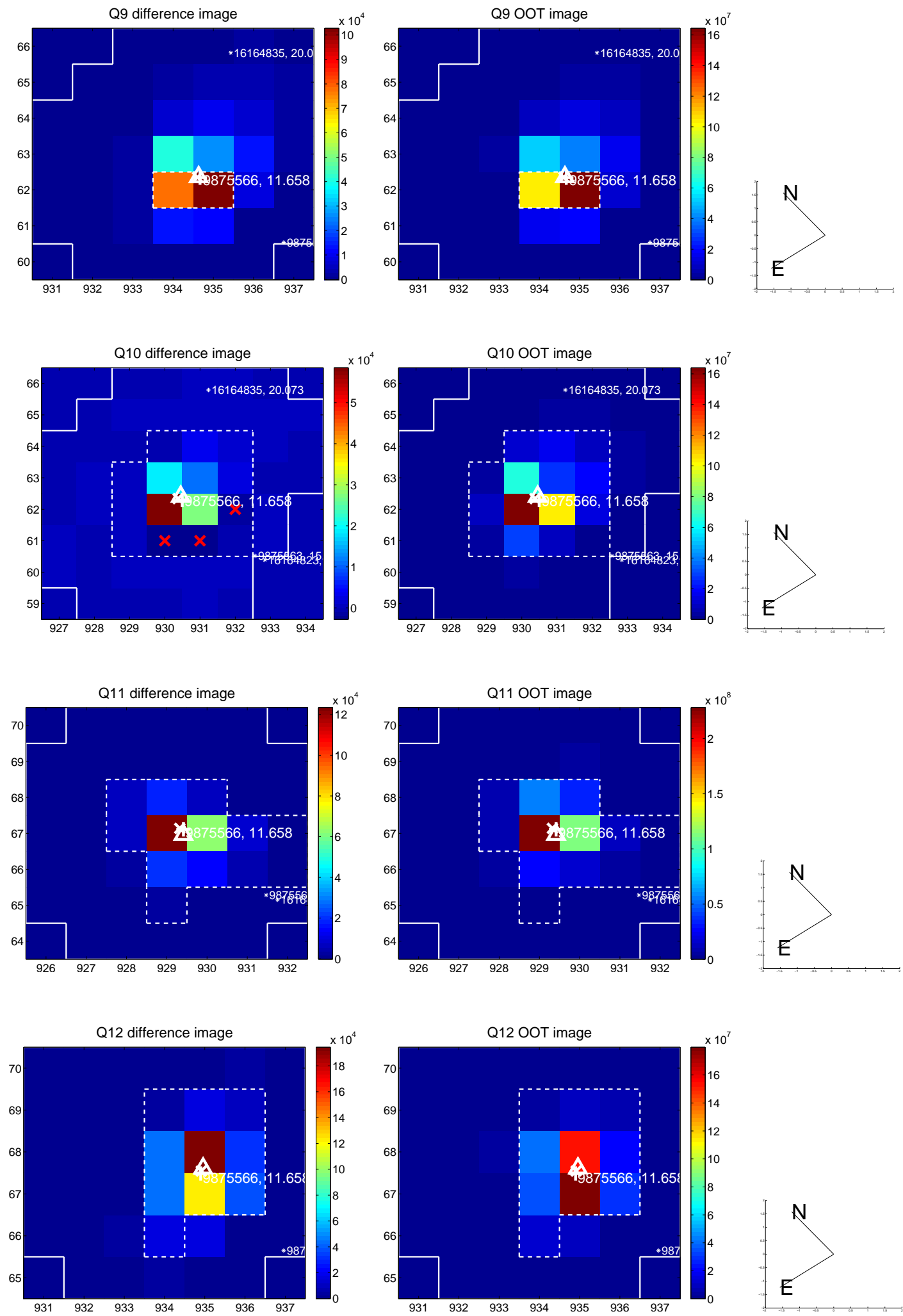
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



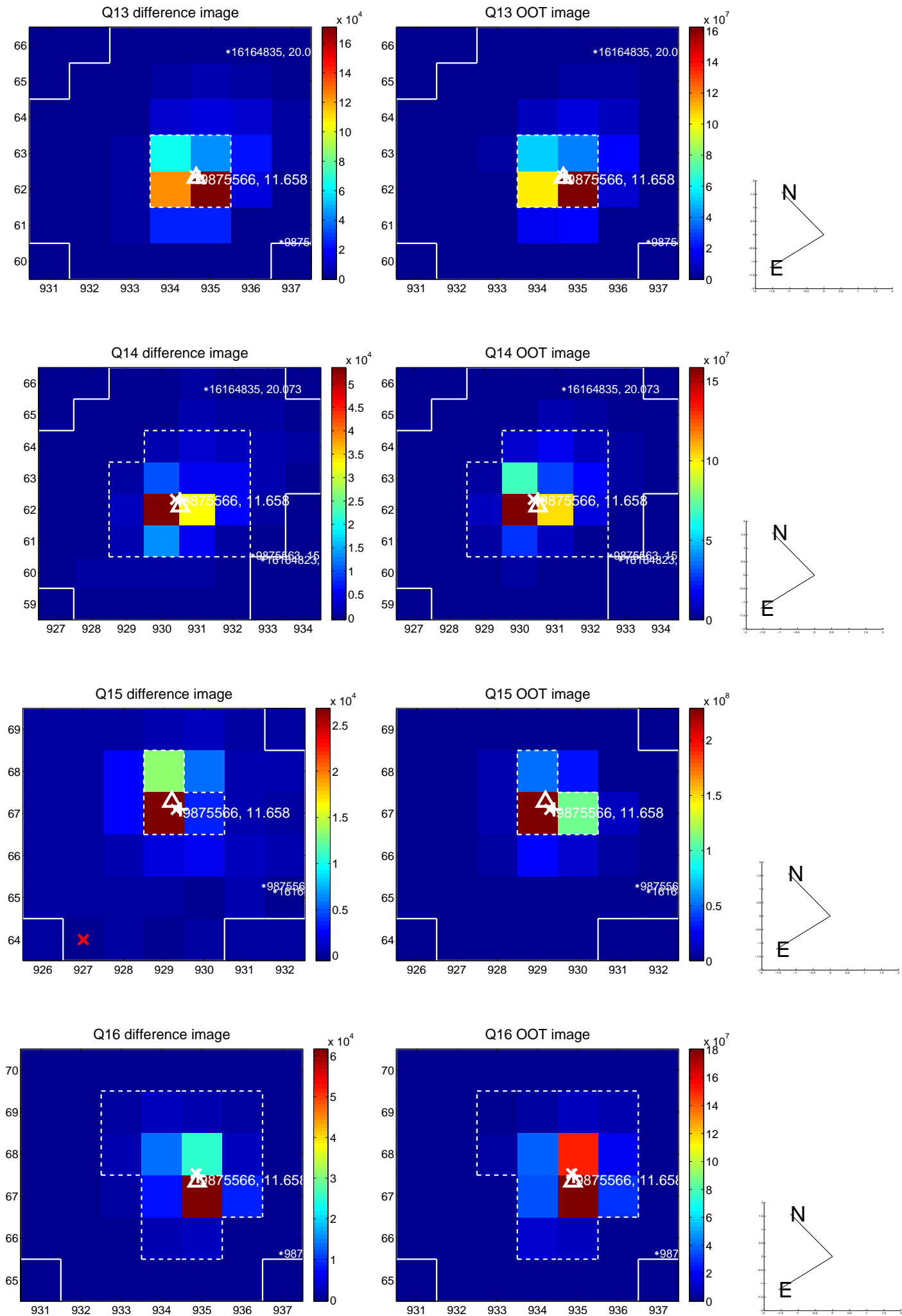
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



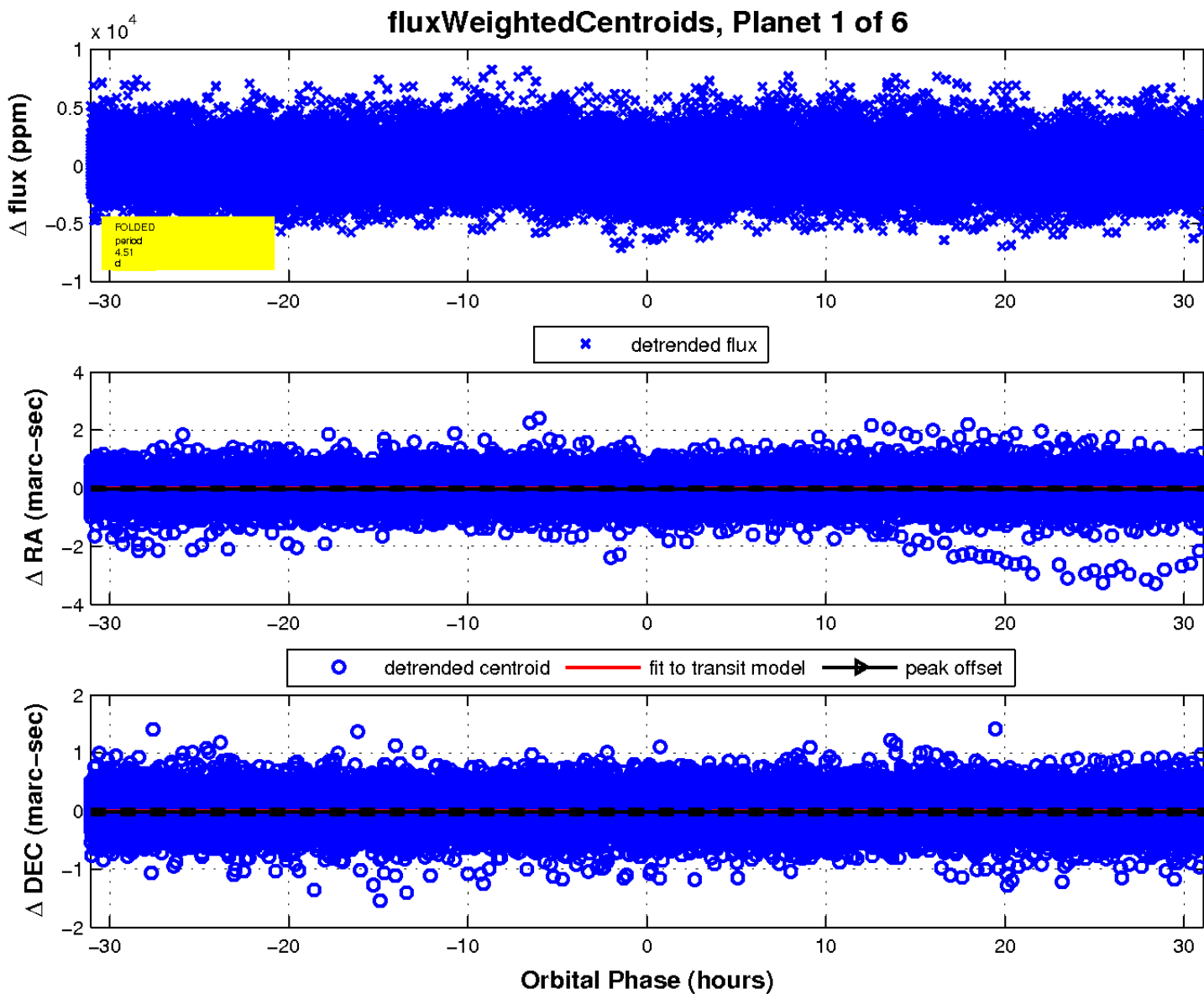
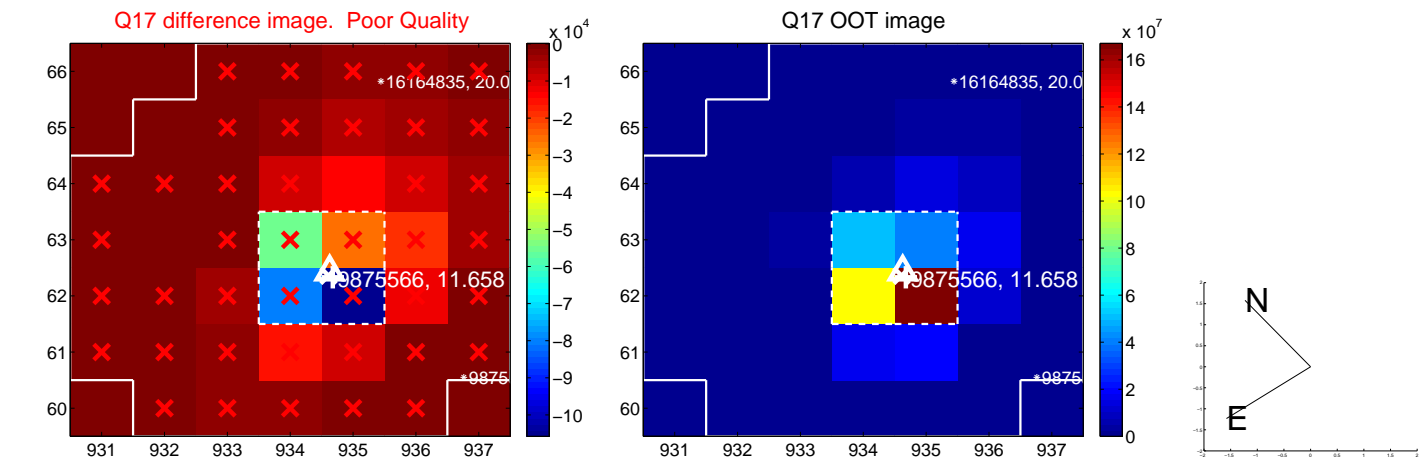
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

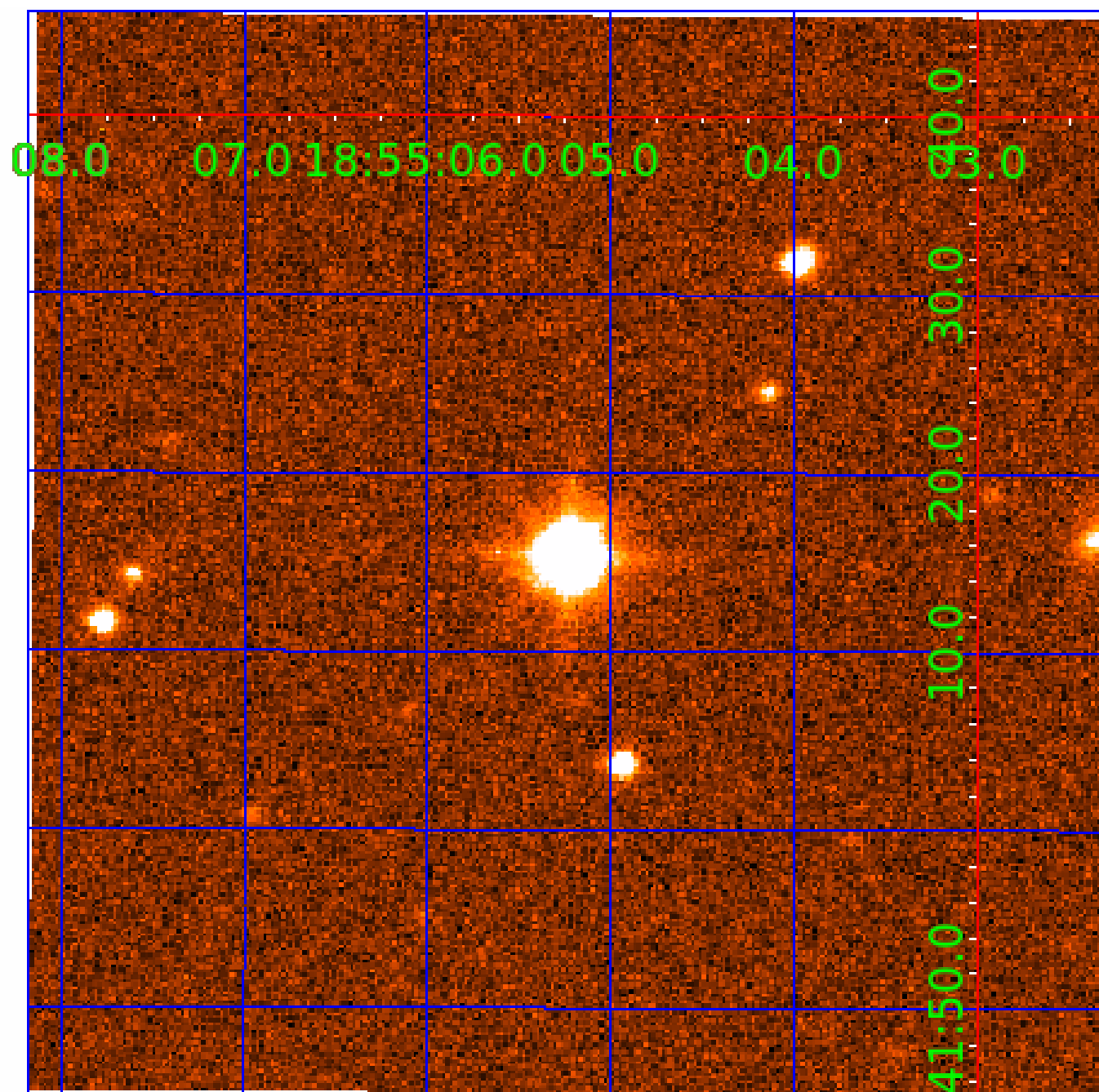


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

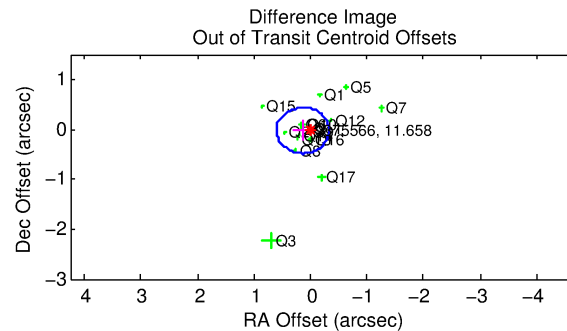
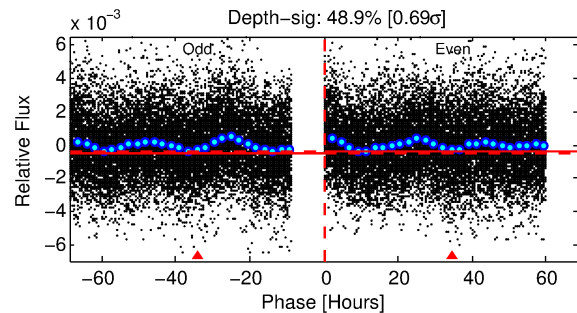
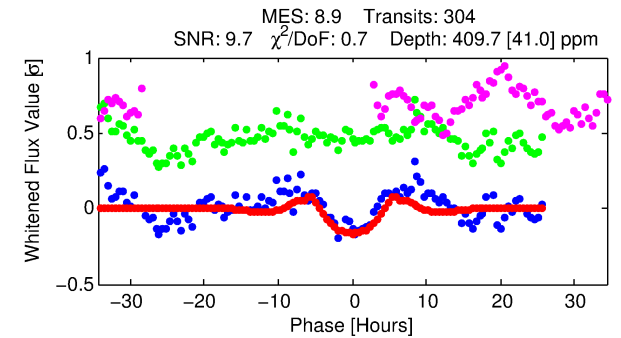
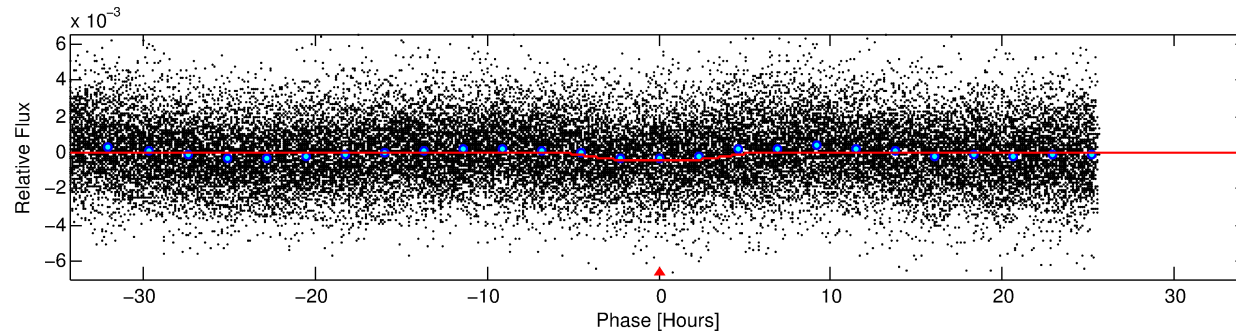
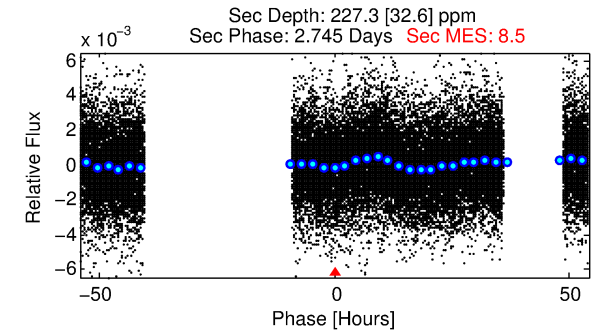
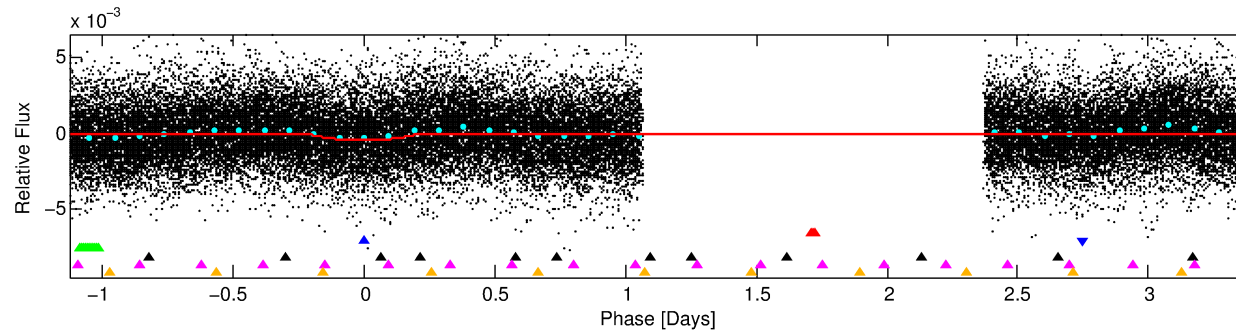
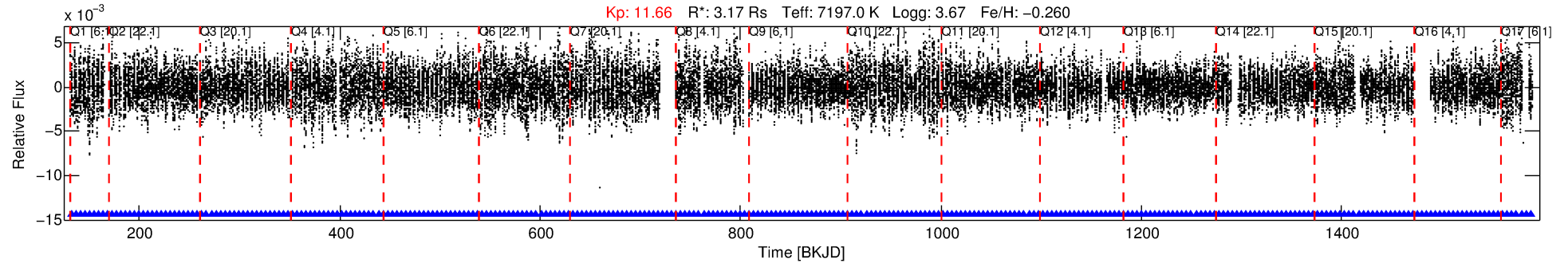
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-02

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 2 of 6 Period: 4.508 d



DV Fit Results:

Period = 4.50775 [0.00008] d
Epoch = 132.1697 [0.0145] BKJD
Rp/R* = 0.0239 [0.0014]
a/R* = 1.39 [0.07]
b = 0.97 [0.01]
Seff = 5905.97 [5237.58]
Teq = 2235 [496] K
Rp = 8.27 [4.25] Re
a = 0.0640 [0.0337] AU
Ag = 7.50 [6.68] [0.97σ]
Teffp = 5720 [356] K [5.71σ]

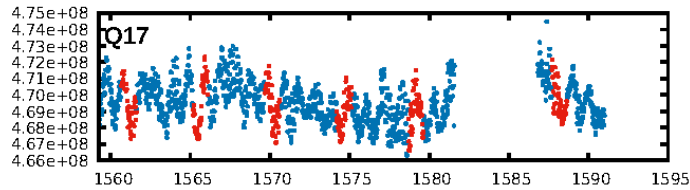
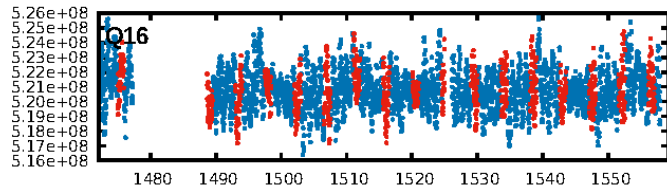
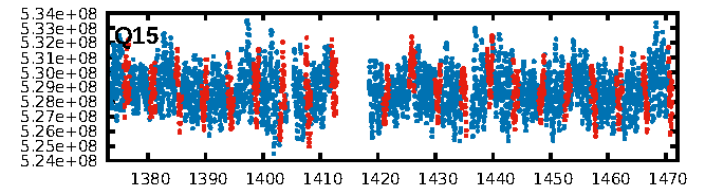
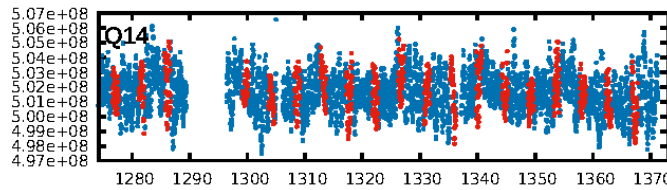
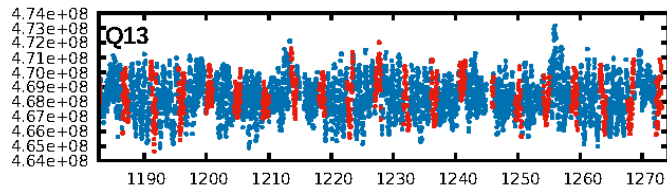
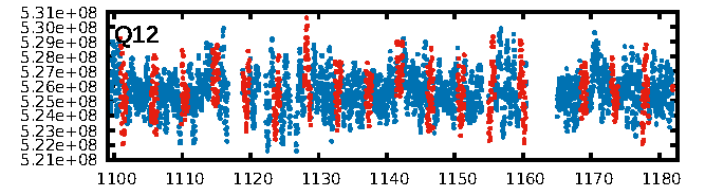
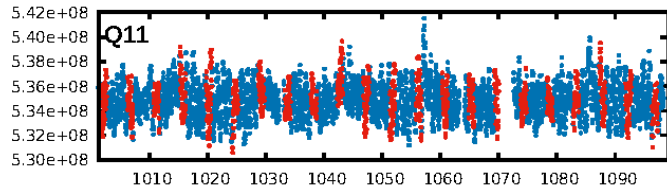
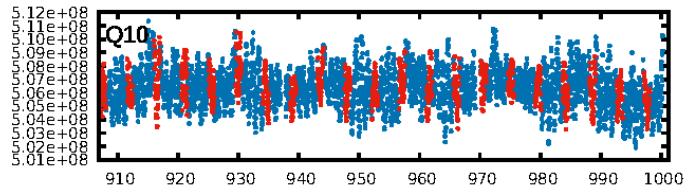
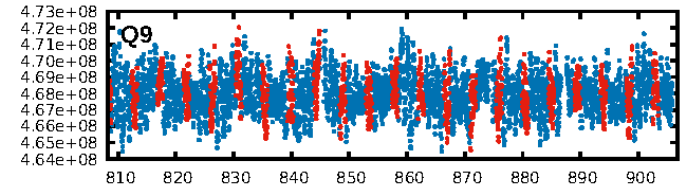
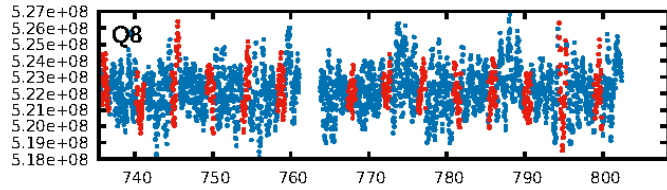
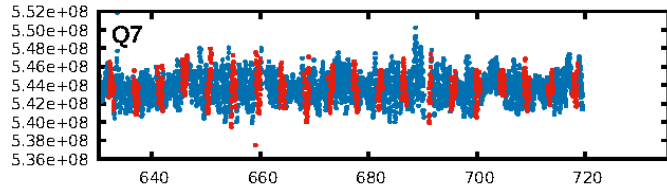
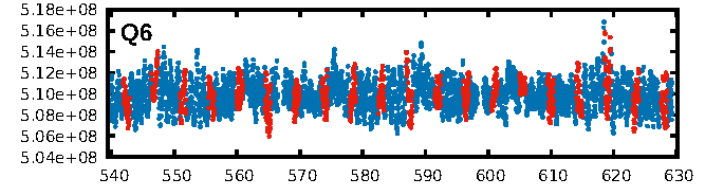
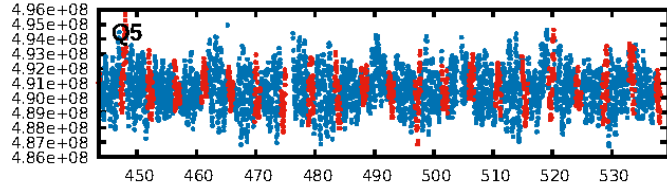
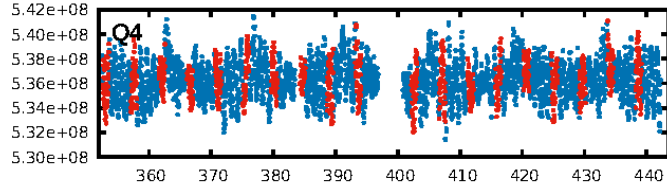
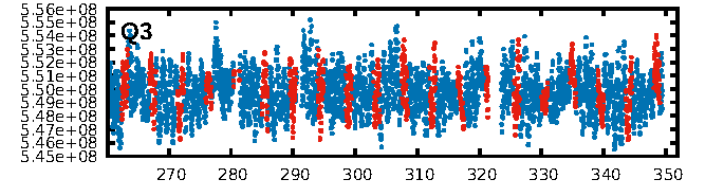
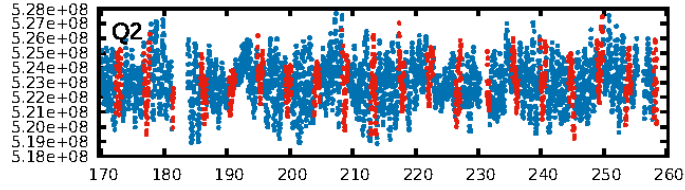
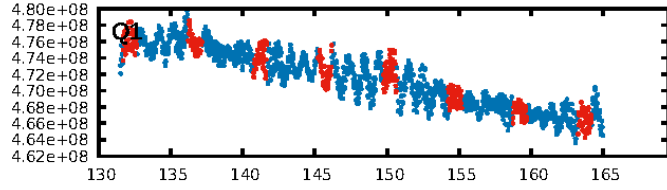
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.24e-08
RollingBand-fgt: 1.00 [290/290]
GhostDiagnostic-chr: 1.1
Centroid-sig: 17.3%
Centroid-so: 0.234 arcsec [6.38σ]
OotOffset-rm: 0.141 arcsec [0.92σ]
KicOffset-rm: 0.343 arcsec [2.32σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.41 [7/17]

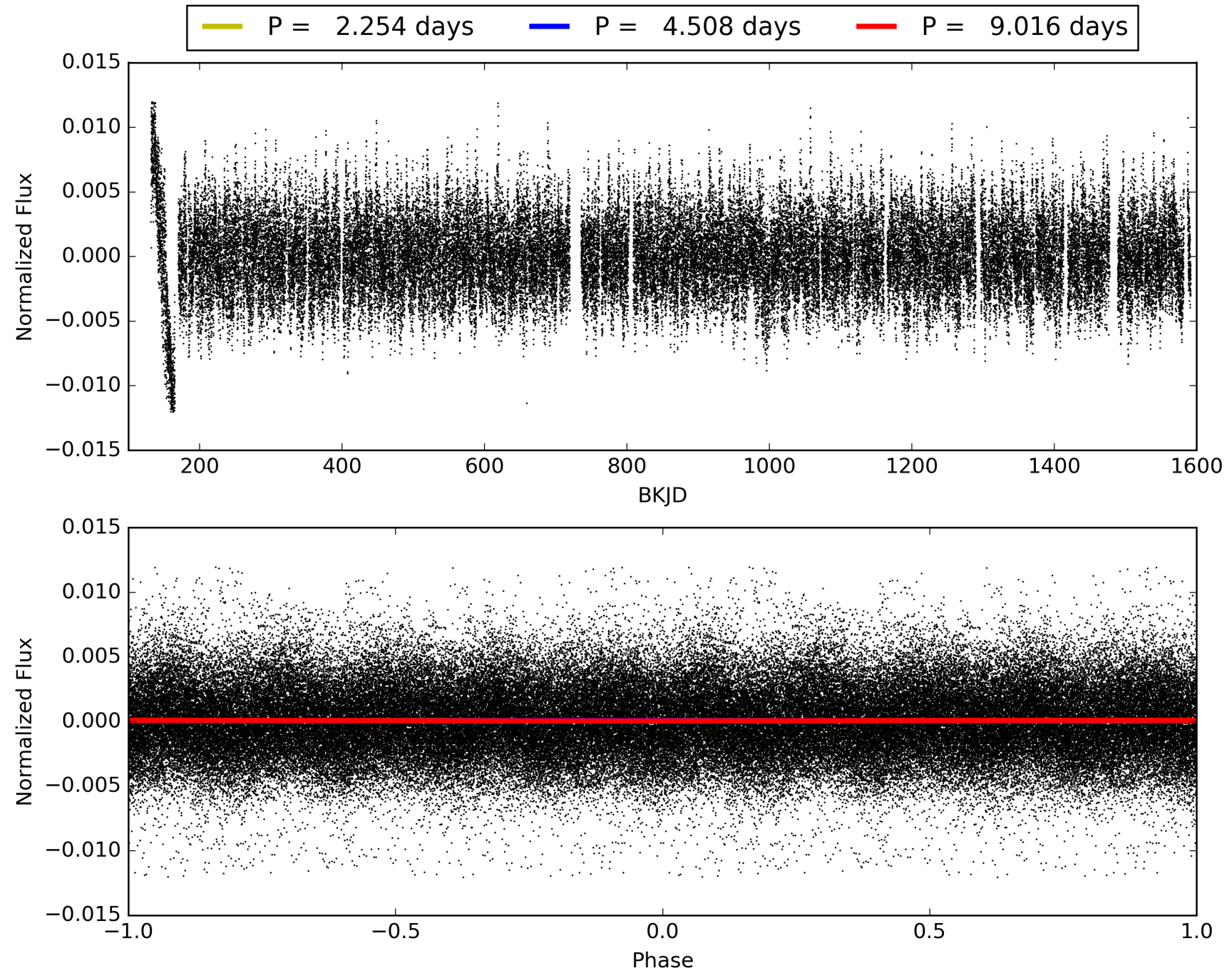
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:28 Z

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

TCE 009875566-02, PDC Light Curves

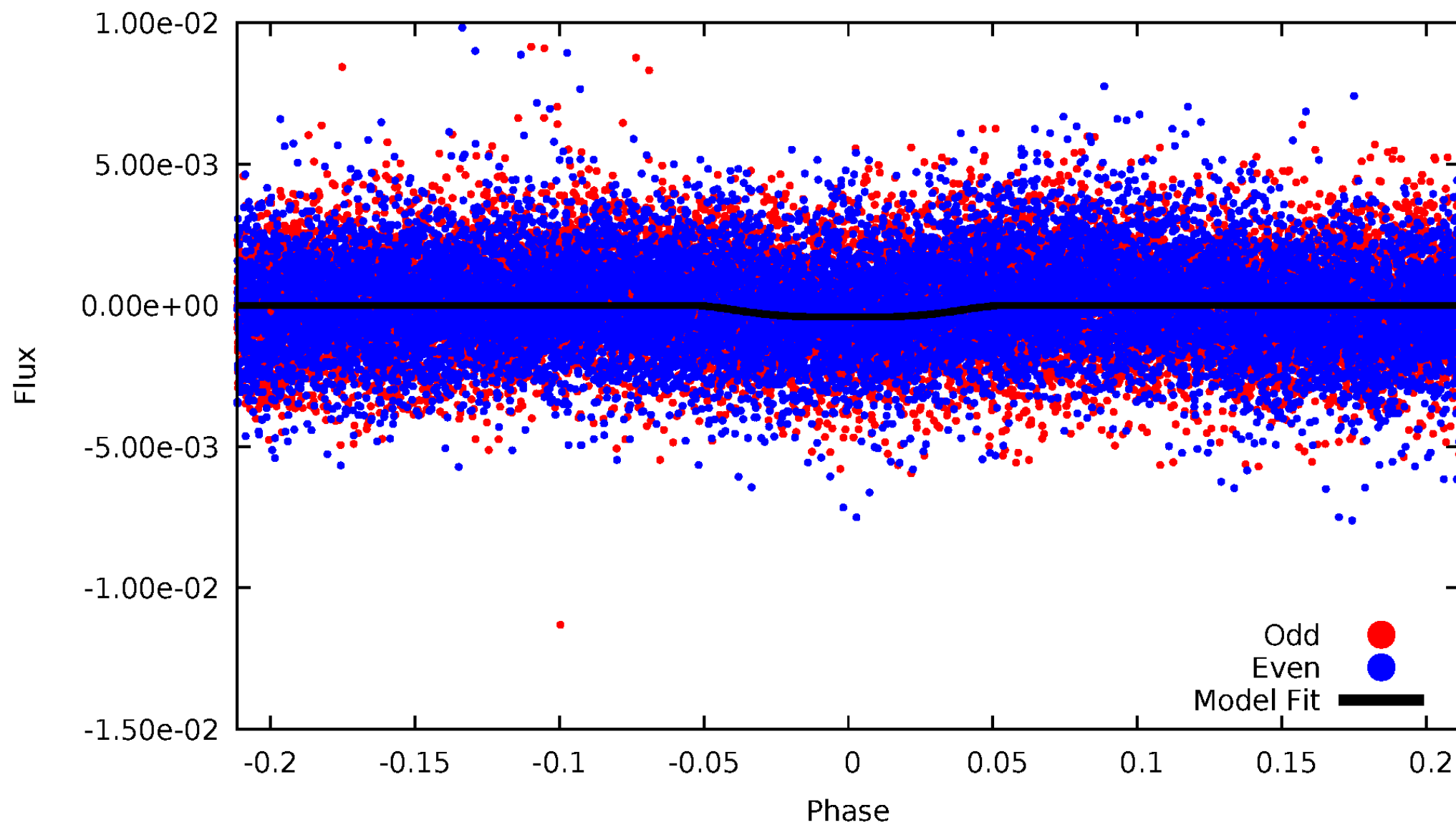


TCE 009875566-02



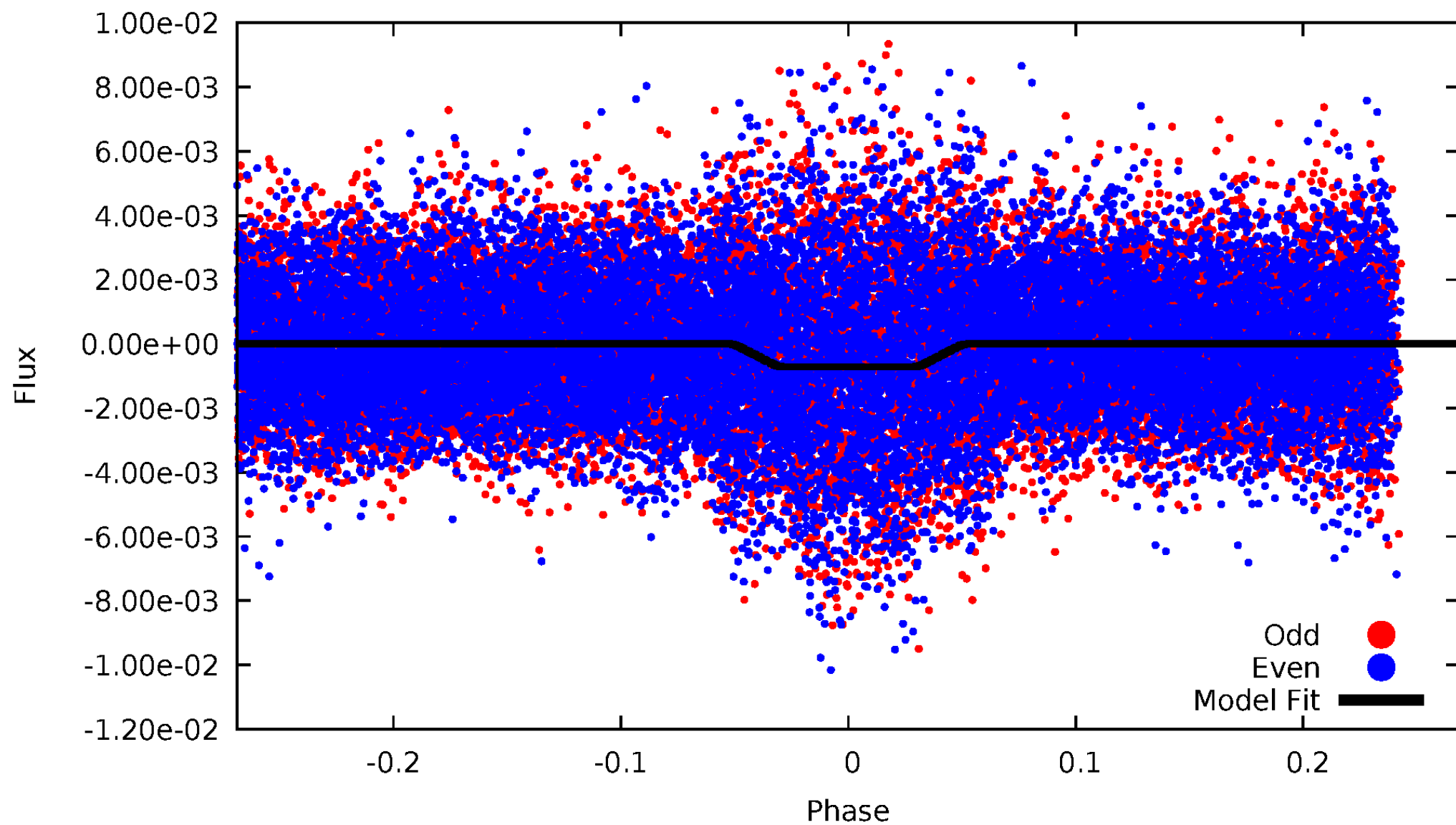
DV Odd/Even

TCE 009875566-02



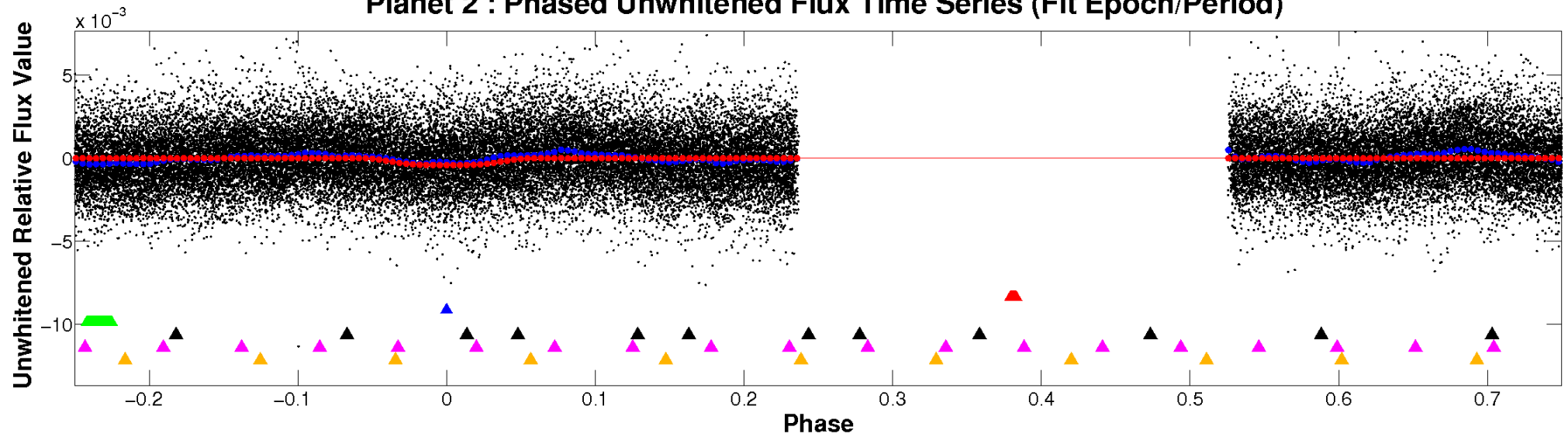
ALT Odd/Even

TCE 009875566-02

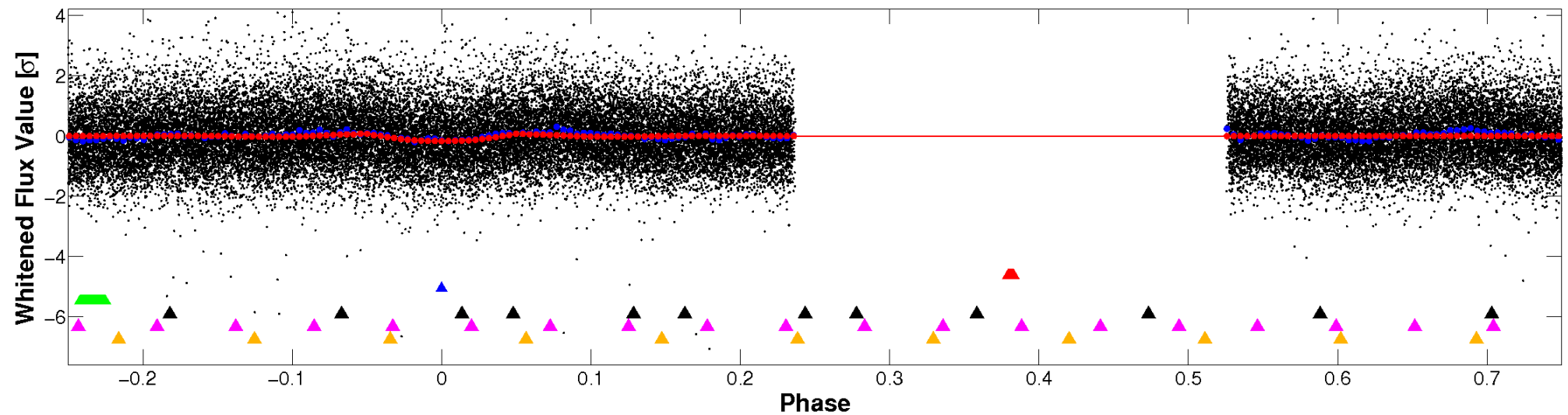


Non-Whitened Vs. Whitened Light Curve

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

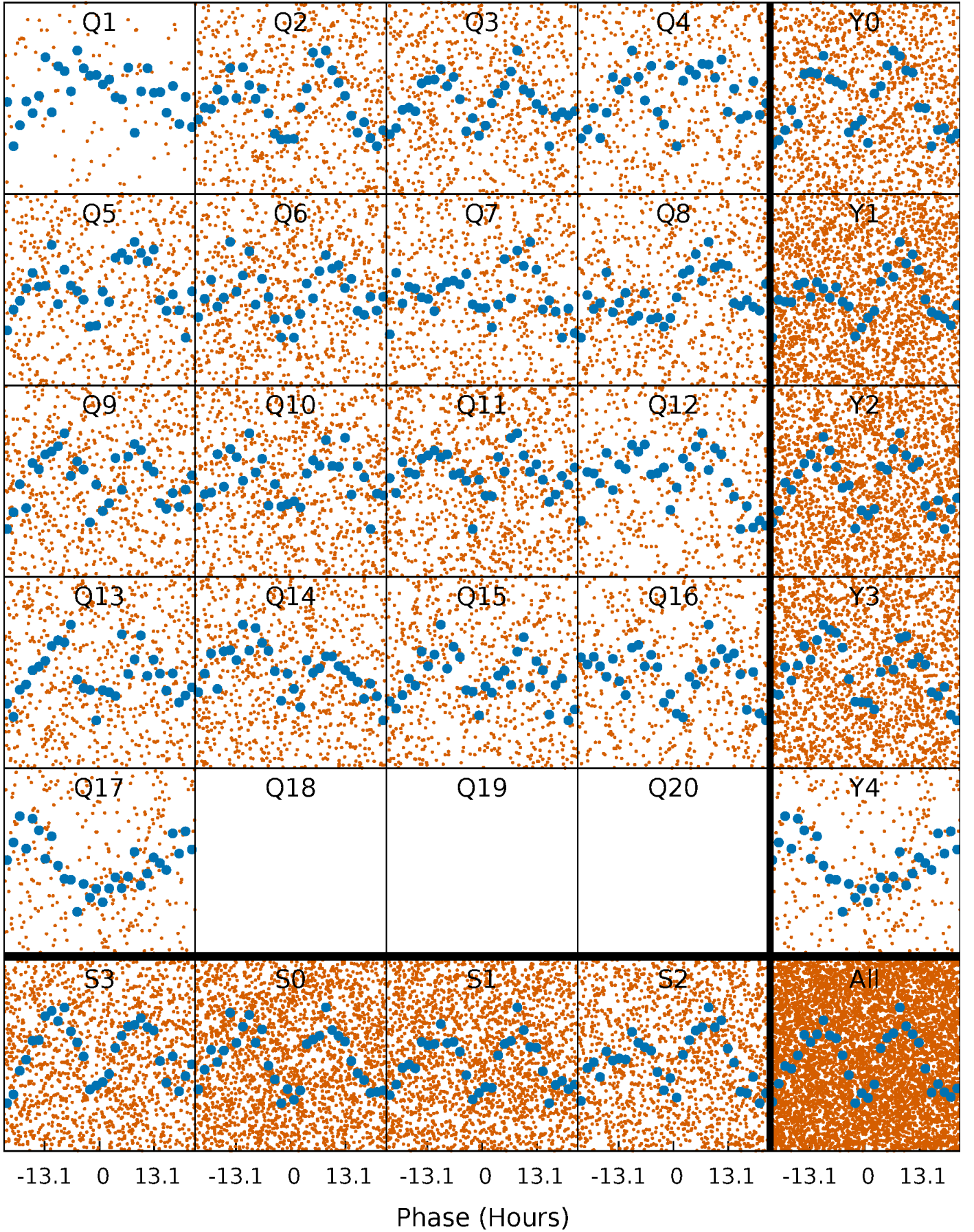


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



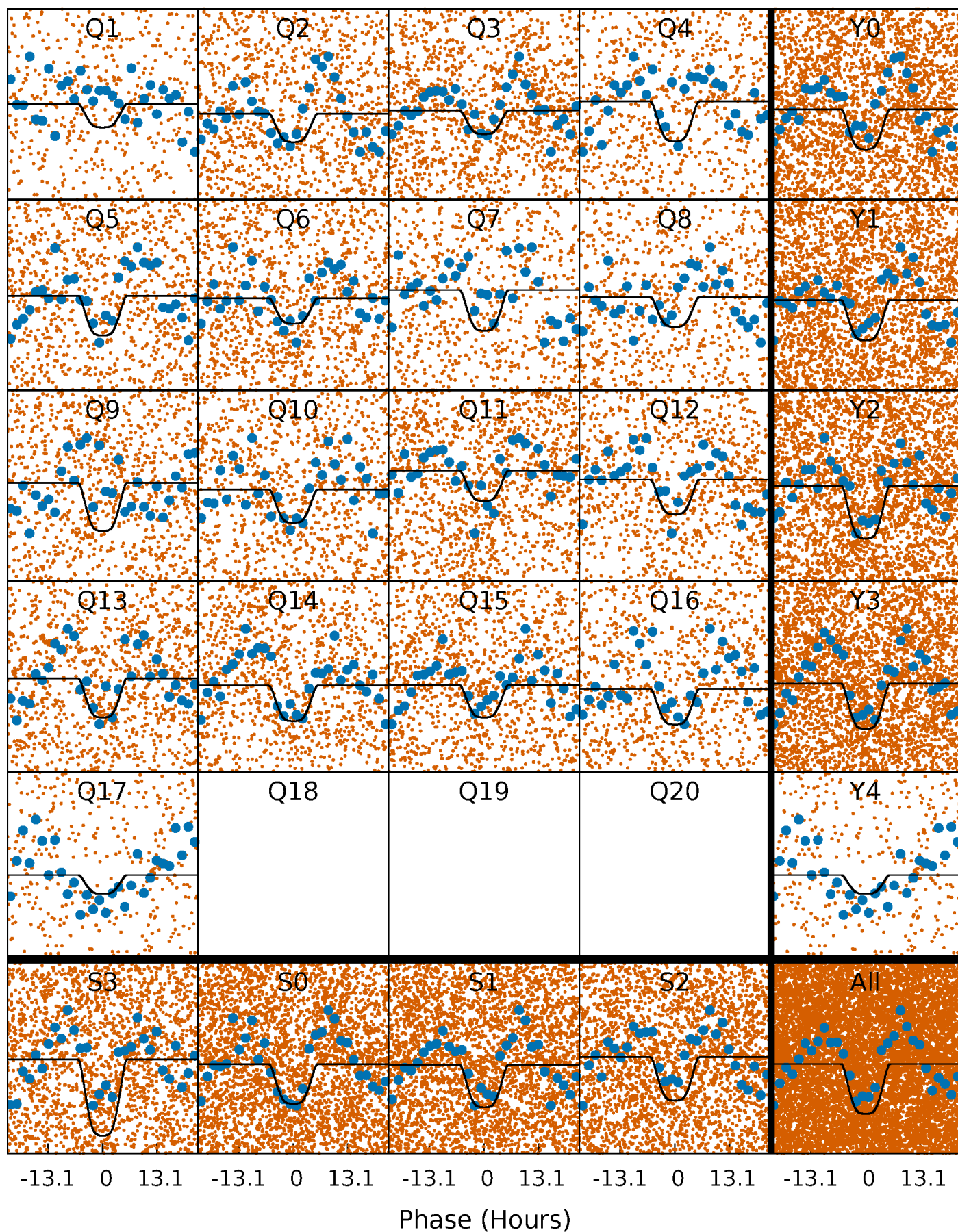
PDC Quarter-Phased Transit Curves

TCE 009875566-02 P= 4.507755 Days $T_0=132.169700$ (BKJD)



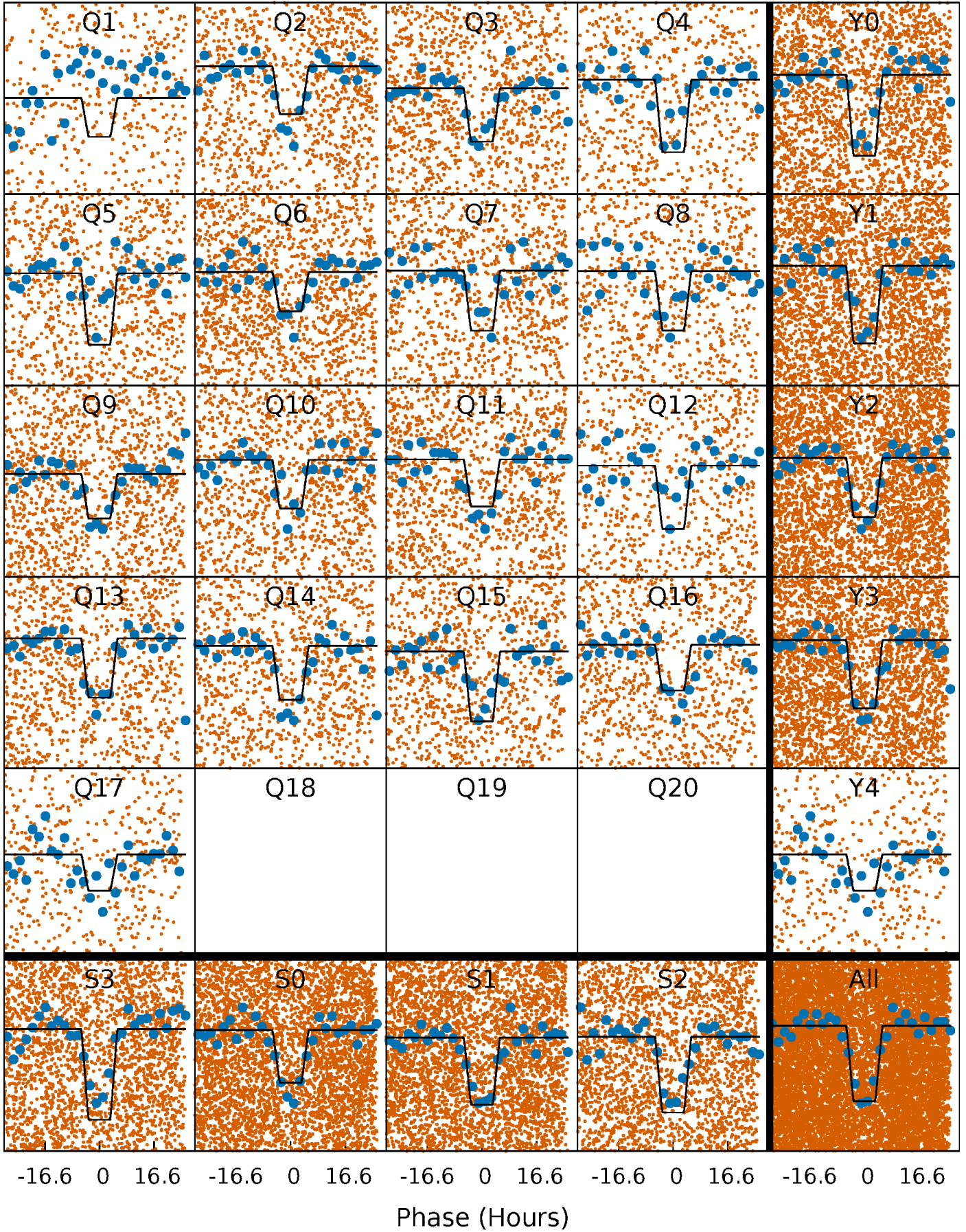
DV Quarter-Phased Transit Curves

TCE 009875566-02 P= 4.507755 Days $T_0=132.169700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

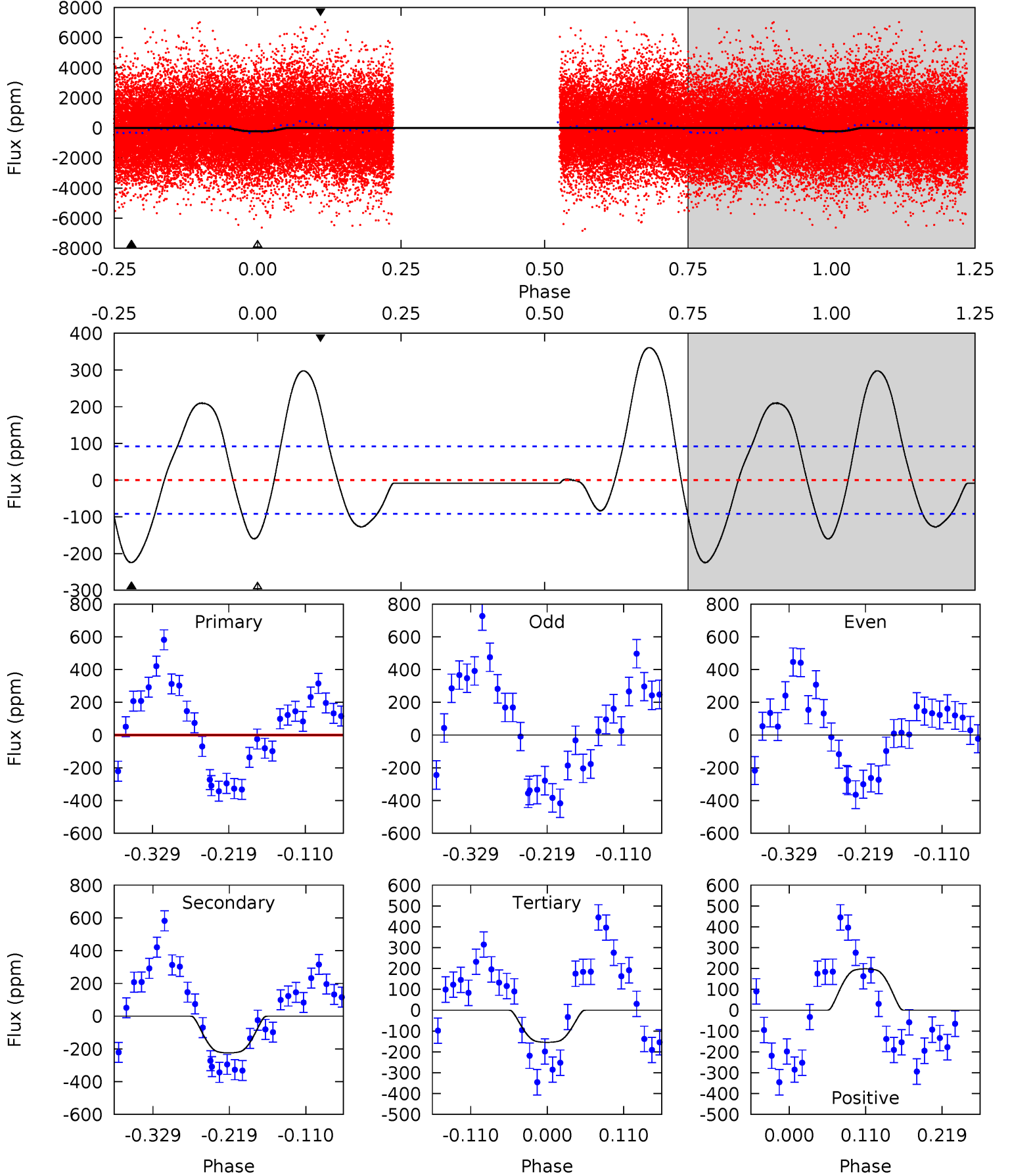
TCE 009875566-02 P= 4.507851 Days $T_0=132.141475$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-02, P = 4.507755 Days, E = 127.661945 Days

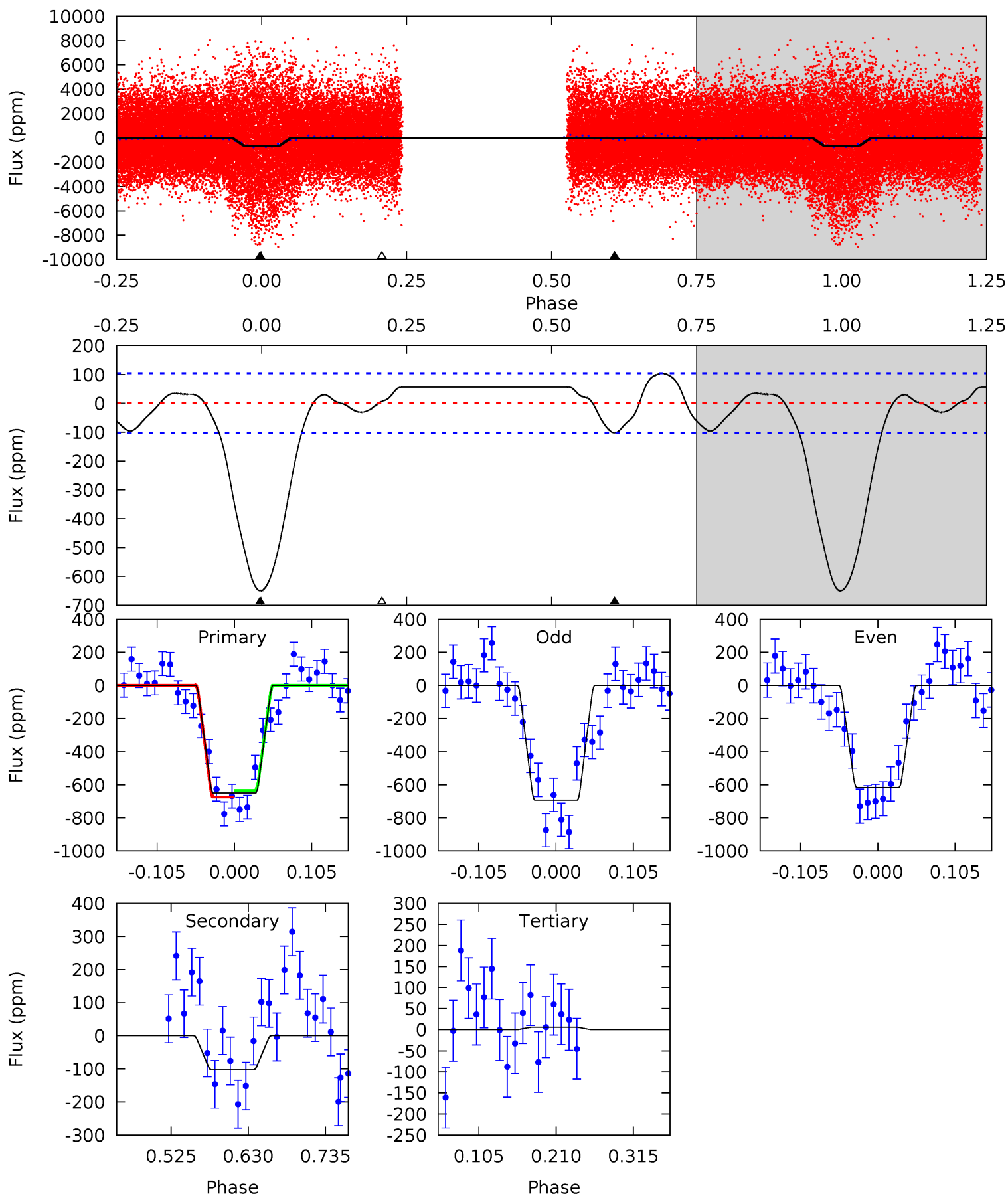
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.1 | 11.1 | 7.63 | 9.81 | 4.55 | 1.60 | 6.96 | 3.47 | 1.29 | 3.48 | 1.30 | 1.51 | 0.77 | 0.62 | 2.47 |



Alt Model-Shift Uniqueness Test

009875566-02, P = 4.507851 Days, E = 127.633624 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.4 | 4.51 | -0.27 | 0 | 4.55 | 1.62 | 1.81 | 28.7 | 28.4 | 4.78 | 4.51 | 1.67 | 1.18 | 0.14 | 0.91 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -225 ± 20 | $7.67^{+1.21}_{-1.97}$ | 2986^{+226}_{-370} | 5595^{+281}_{-242} | $8.778^{+6.363}_{-2.204}$ |
| Alt. | -103 ± 23 | $8.42^{+1.44}_{-2.33}$ | 2961^{+236}_{-401} | 4474^{+263}_{-282} | $3.328^{+2.629}_{-1.052}$ |

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 $A_{obs} \gg 1.0$

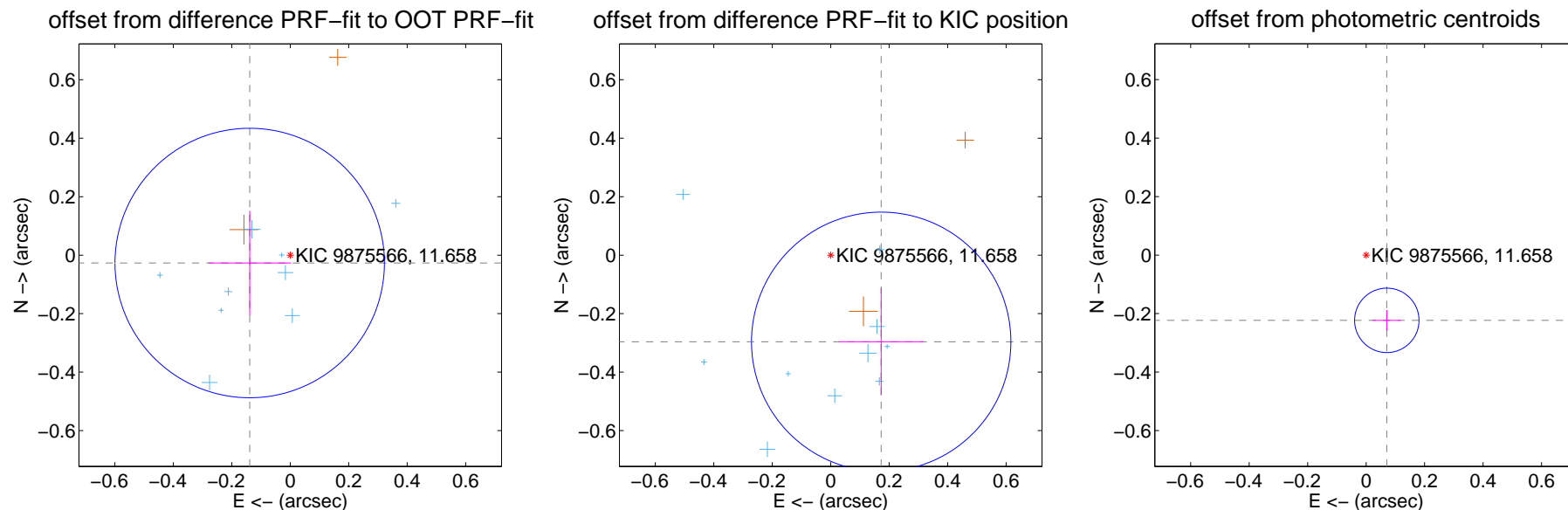
DV Centroid Data

Supplemental centroid analysis for 009875566-02. **Kepler magnitude: 11.66.** Transit SNR 9.70

There are 12 quarters with good PRF difference image offsets

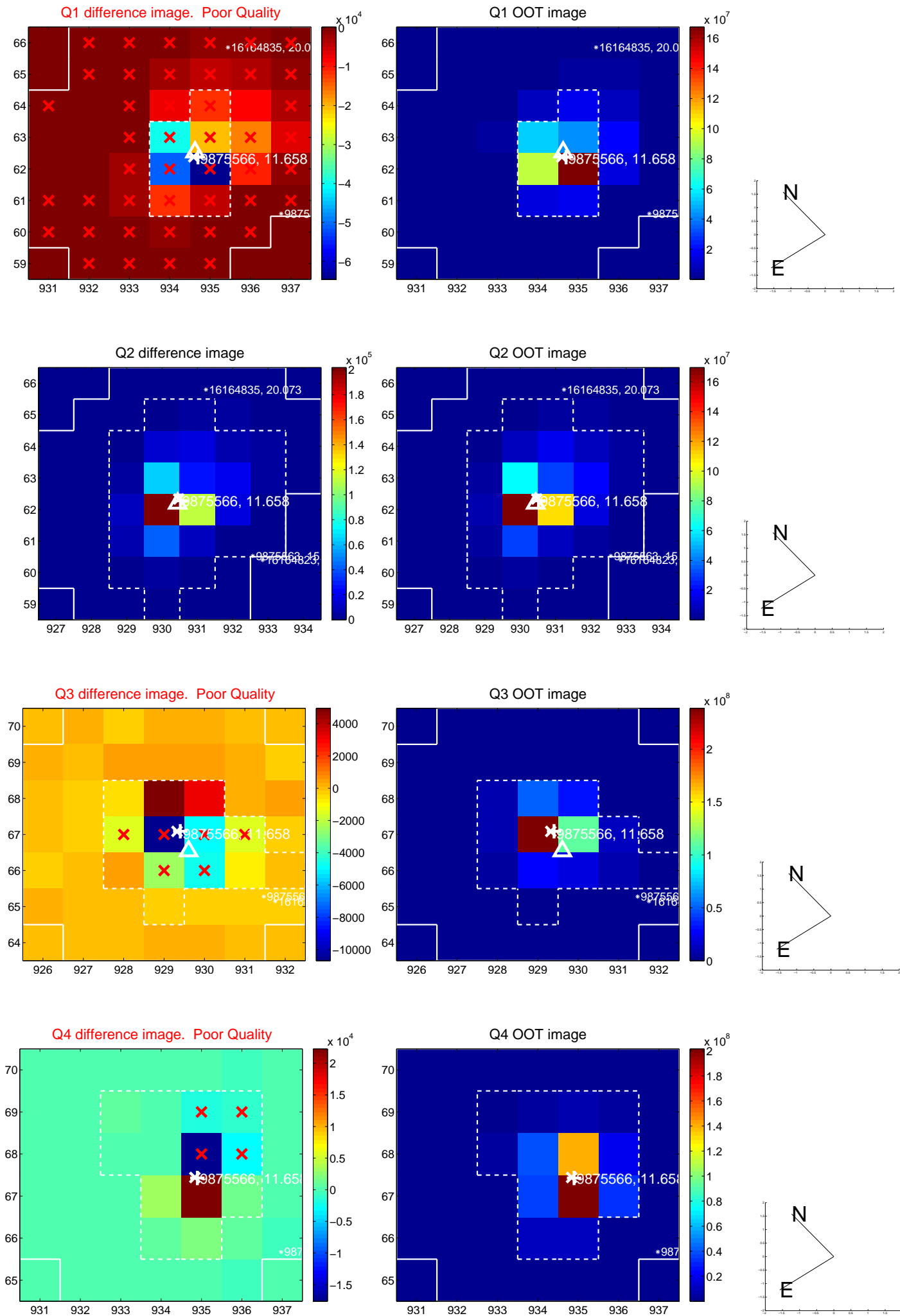
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-----------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.141 ± 0.154 | 0.92 | 0.139 ± 0.141 | -0.027 ± 0.179 |
| PRF-fit source offset from KIC position | 0.343 ± 0.148 | 2.32 | -0.173 ± 0.145 | -0.297 ± 0.183 |
| photometric centroid source offset | 0.23 ± 0.04 | 6.38 | -0.07 ± 0.05 | -0.22 ± 0.04 |

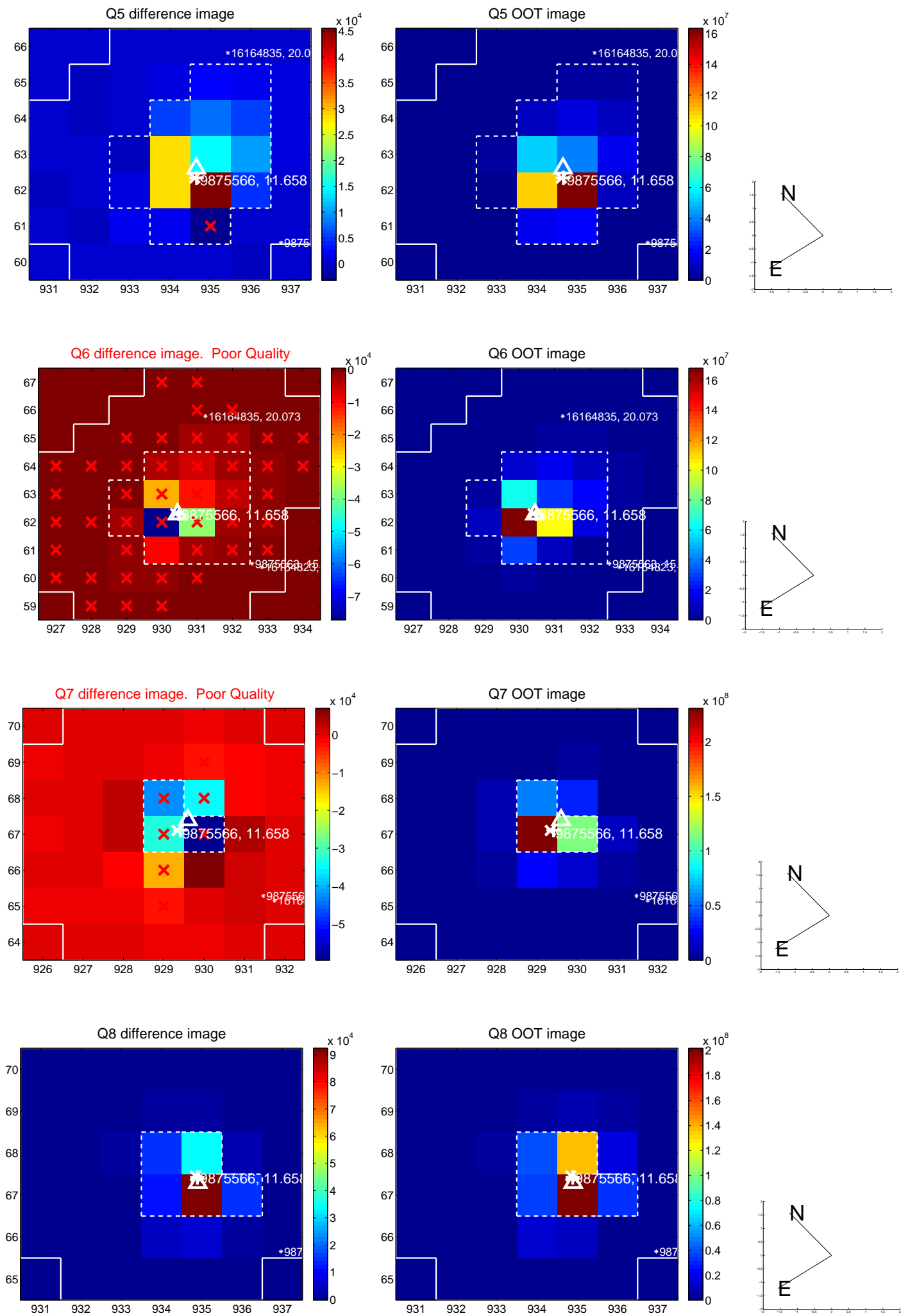


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

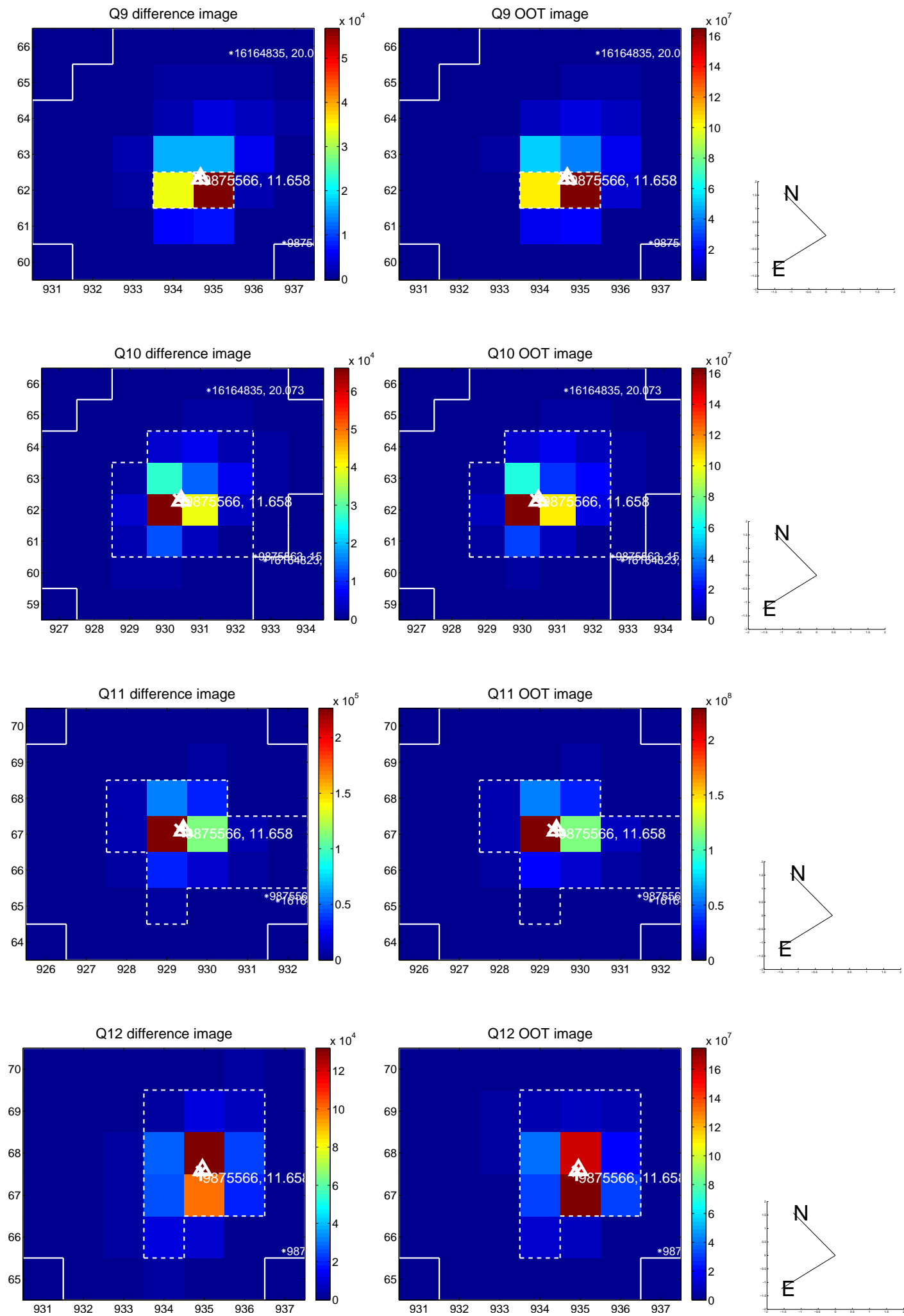
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



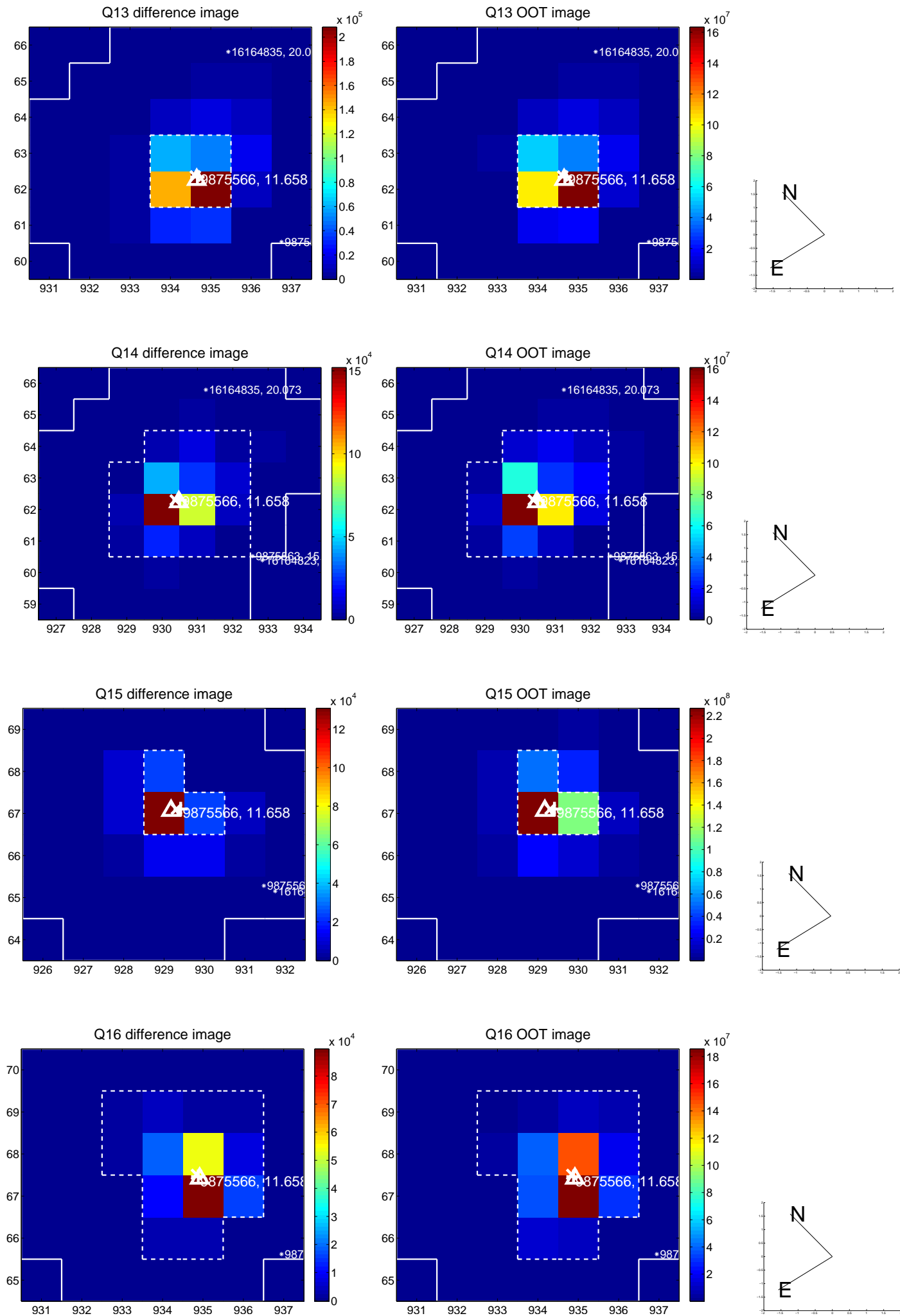
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



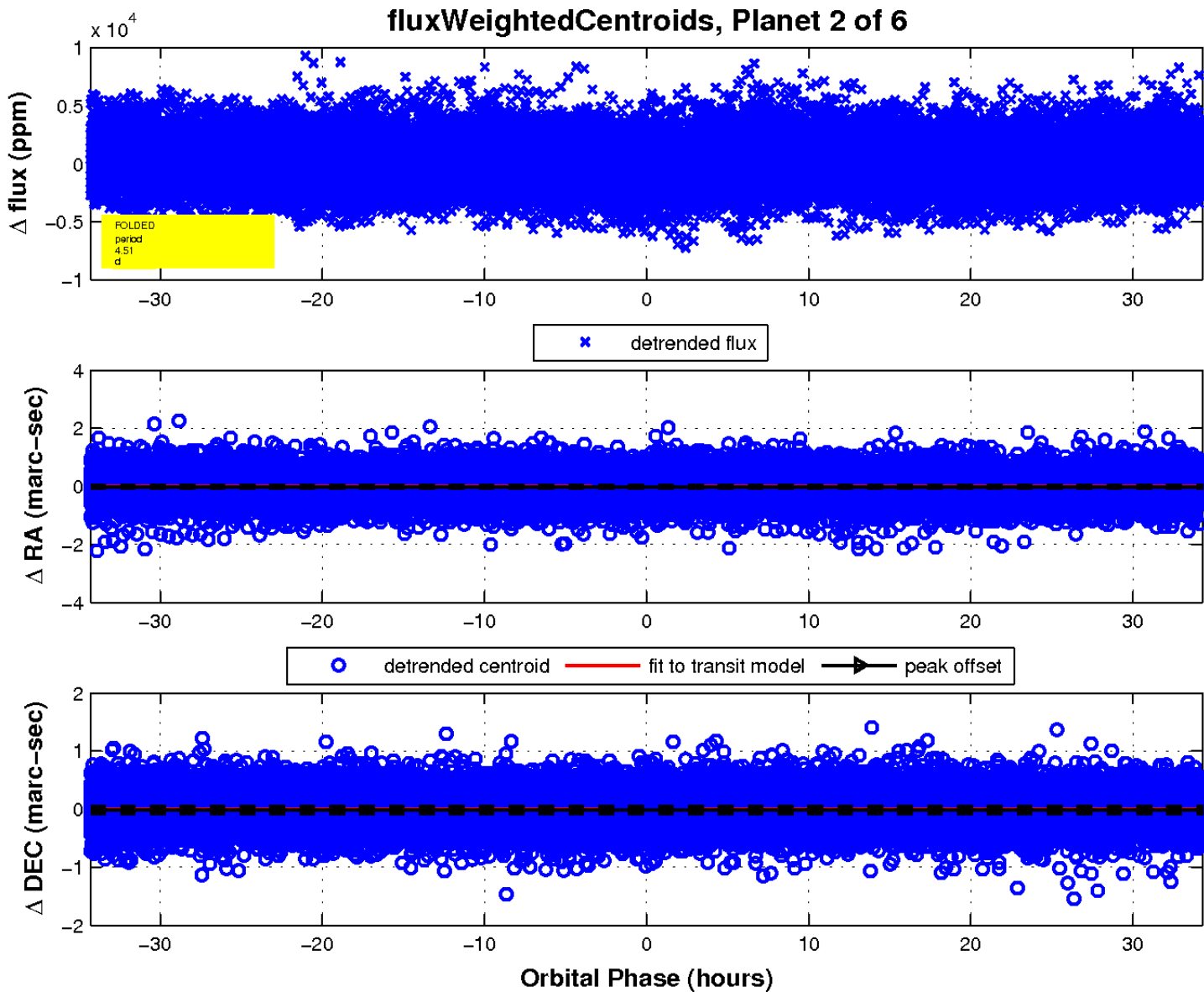
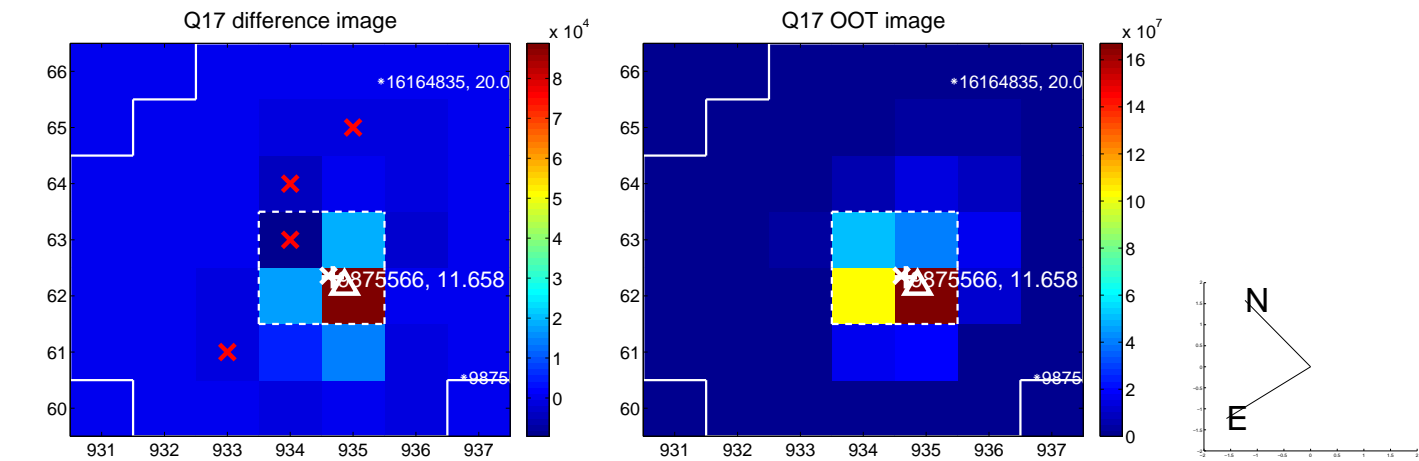
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

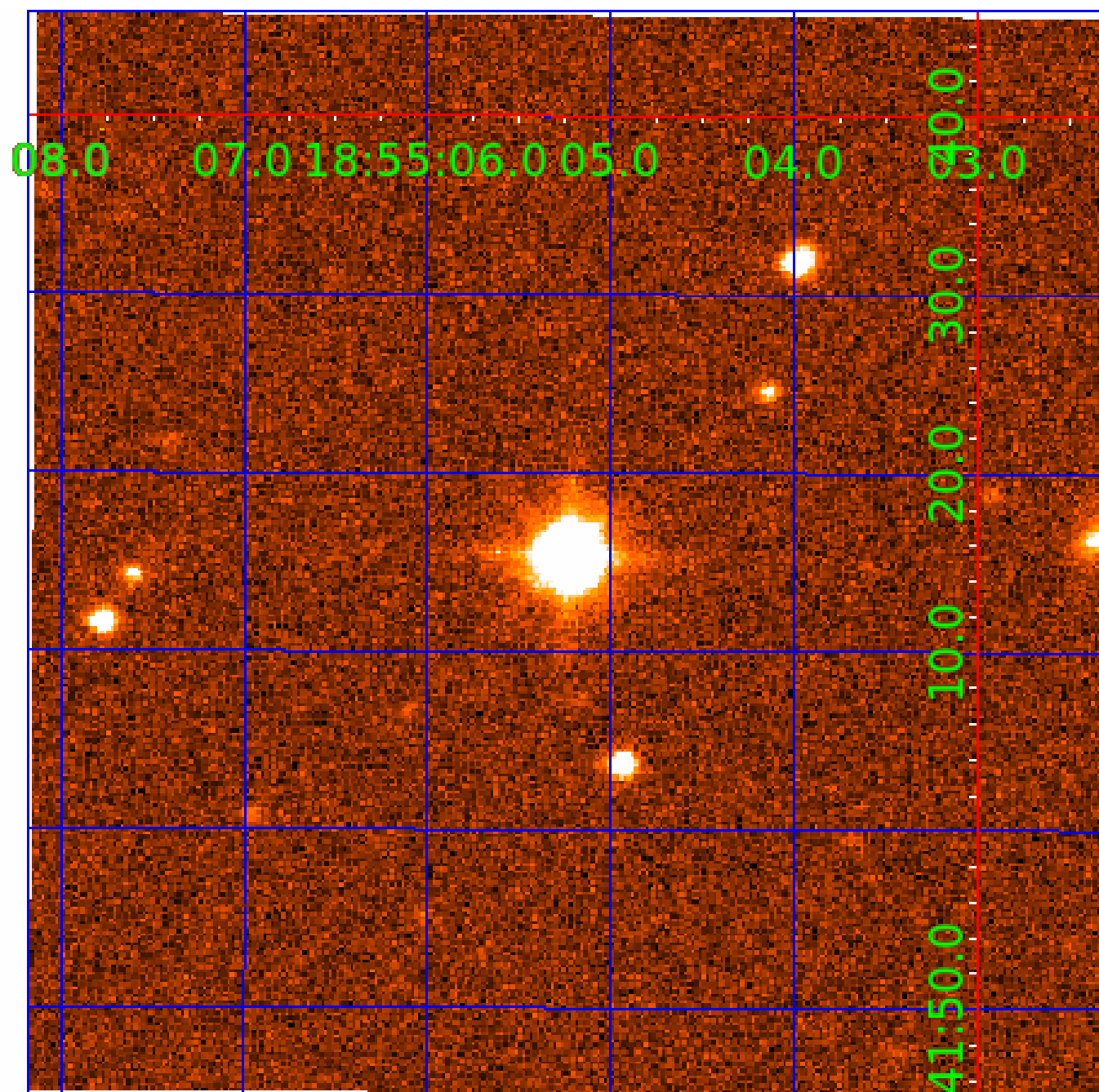


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

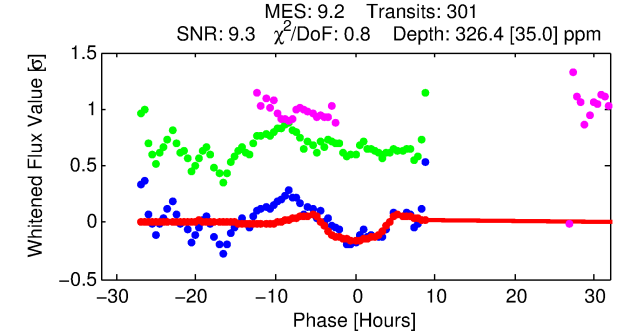
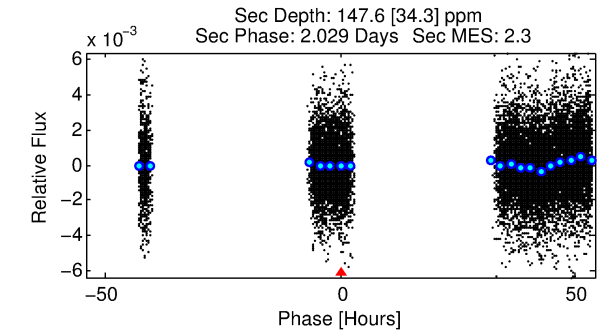
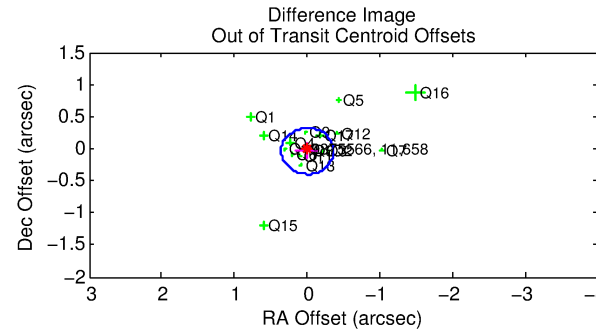
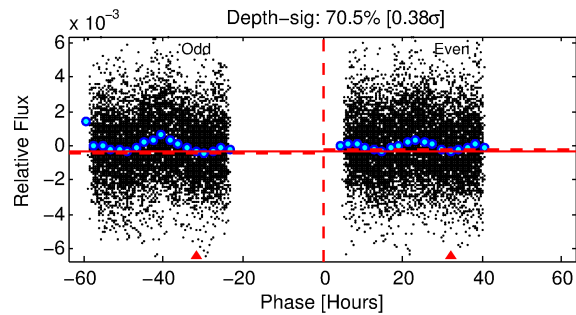
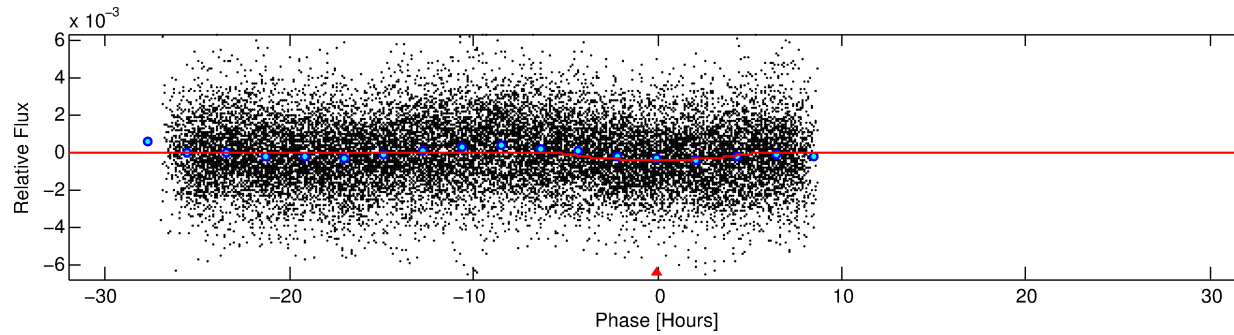
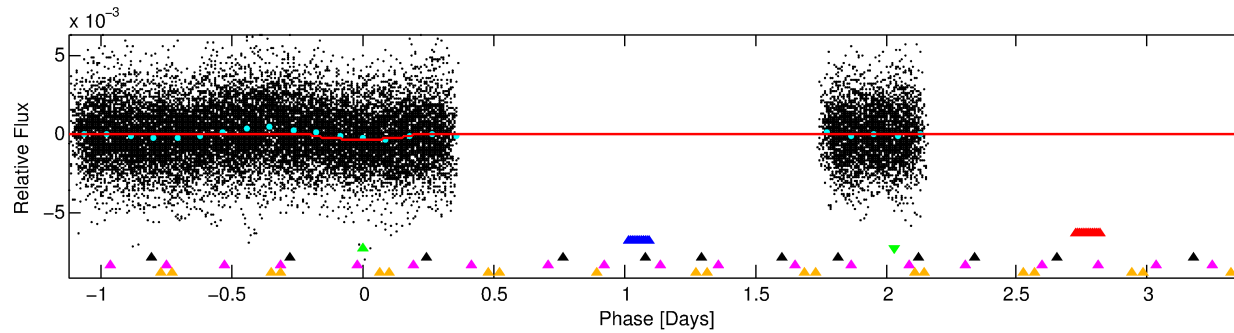
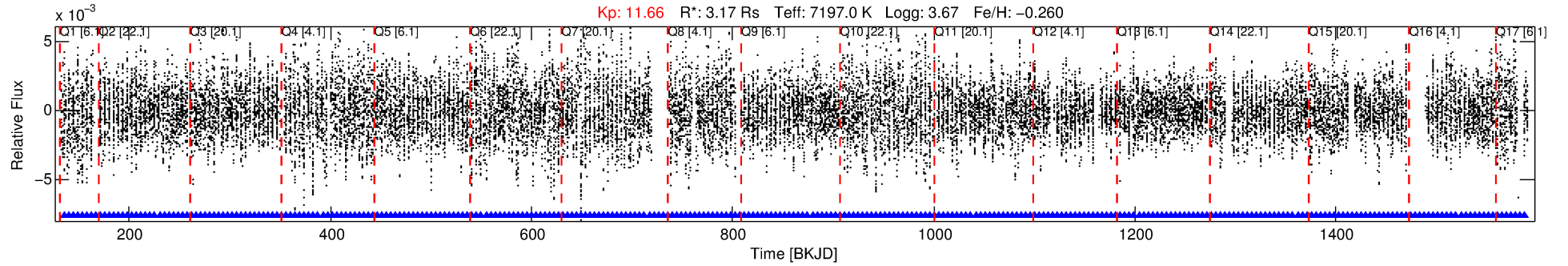
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-03

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 3 of 6 Period: 4.508 d



DV Fit Results:

Period = 4.50799 [0.00008] d
Epoch = 135.5864 [0.0155] BKJD
 R_p/R^* = 0.0210 [0.0013]
 a/R^* = 1.46 [0.11]
 b = 0.96 [0.01]
 Seff = 5905.56 [5237.21]
 Teq = 2235 [496] K
 R_p = 7.27 [3.74] R_e
 a = 0.0640 [0.0337] AU
 Ag = 6.30 [5.73] [0.92 σ]
 Teffp = 5475 [426] K [4.95 σ]

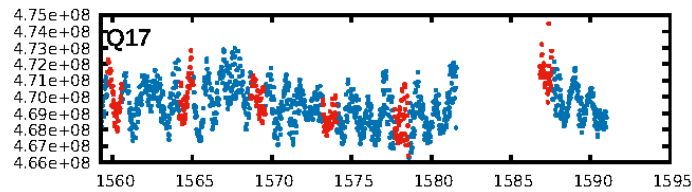
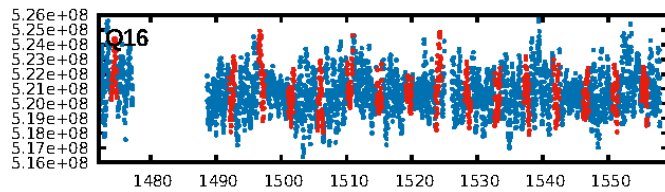
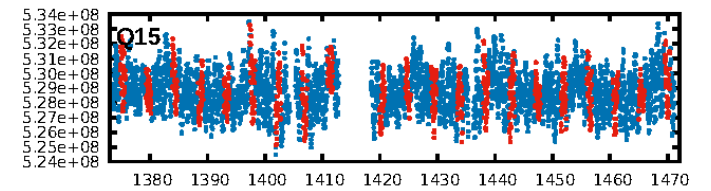
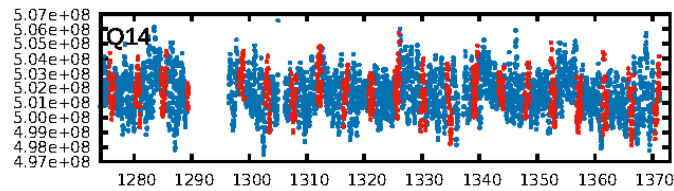
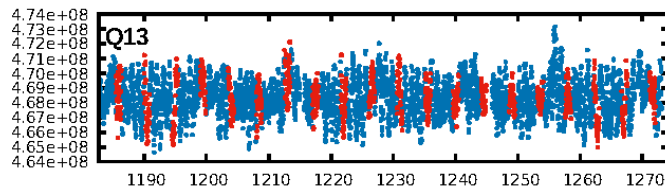
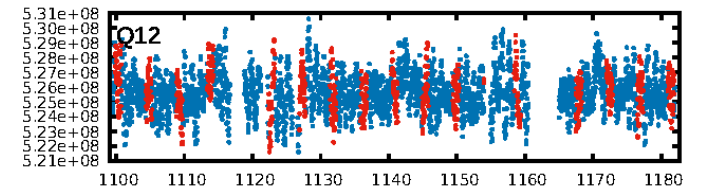
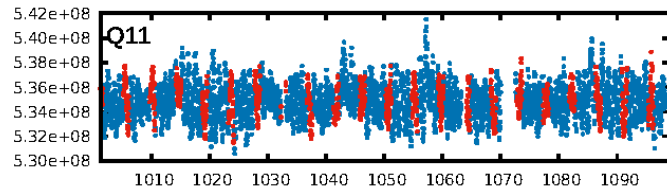
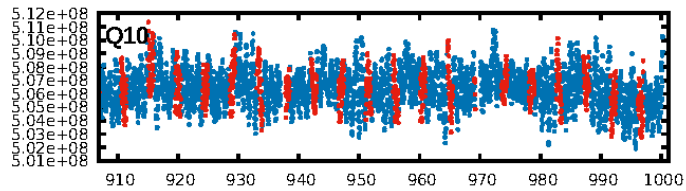
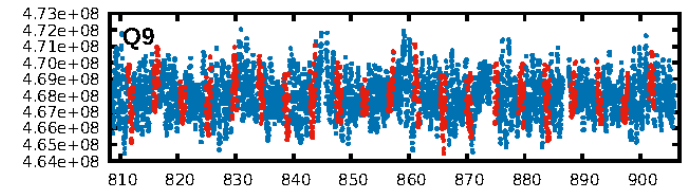
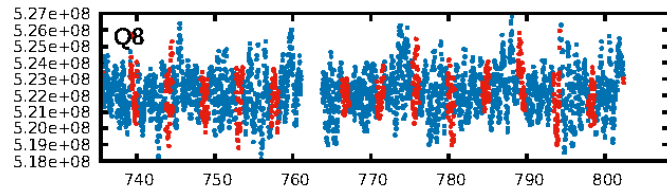
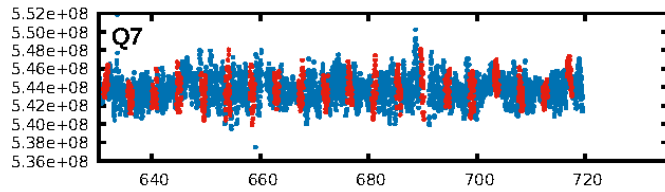
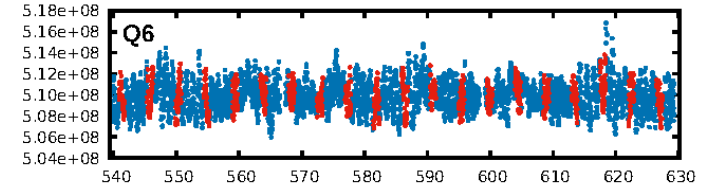
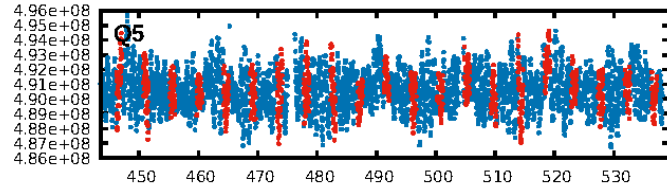
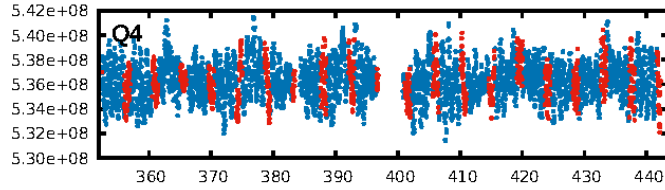
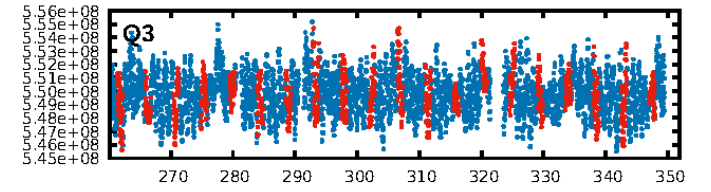
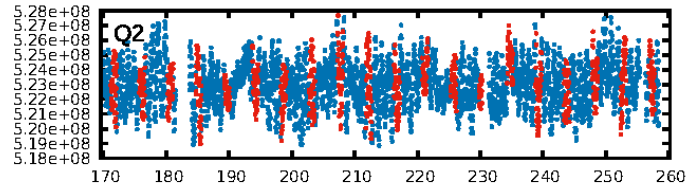
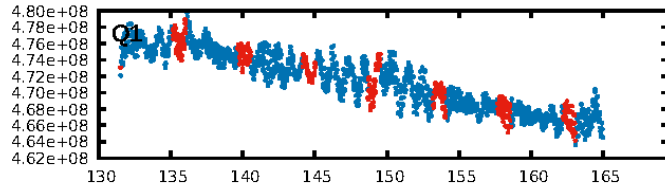
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [144.55 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.10e-08
RollingBand-fgt: 1.00 [288/288]
GhostDiagnostic-chr: 0.3712
Centroid-sig: 0.0%
Centroid-so: 0.236 arcsec [5.32 σ]
OotOffset-rm: 0.038 arcsec [0.32 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.328 arcsec [3.05 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.82 [14/17]

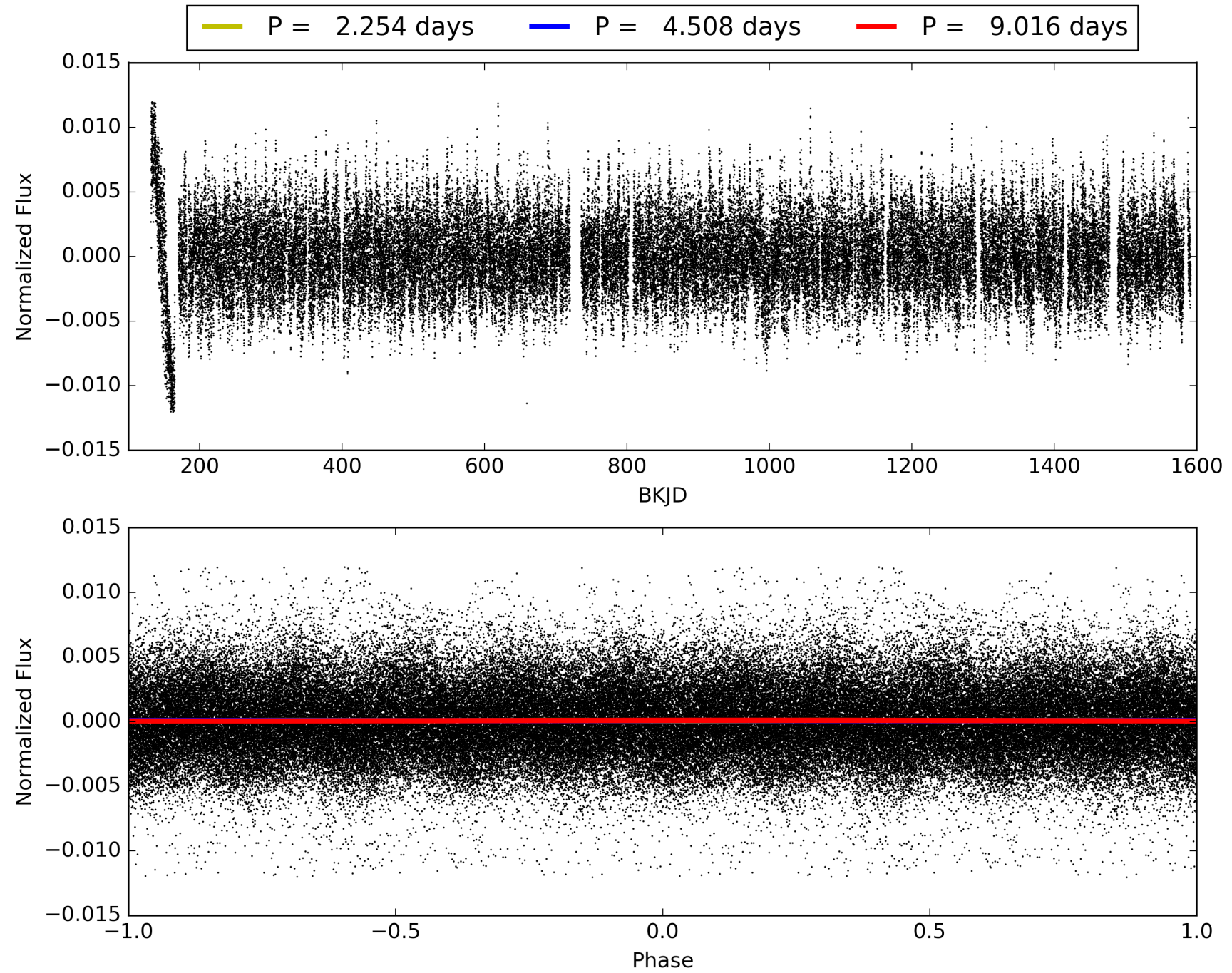
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:37 Z

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

TCE 009875566-03, PDC Light Curves

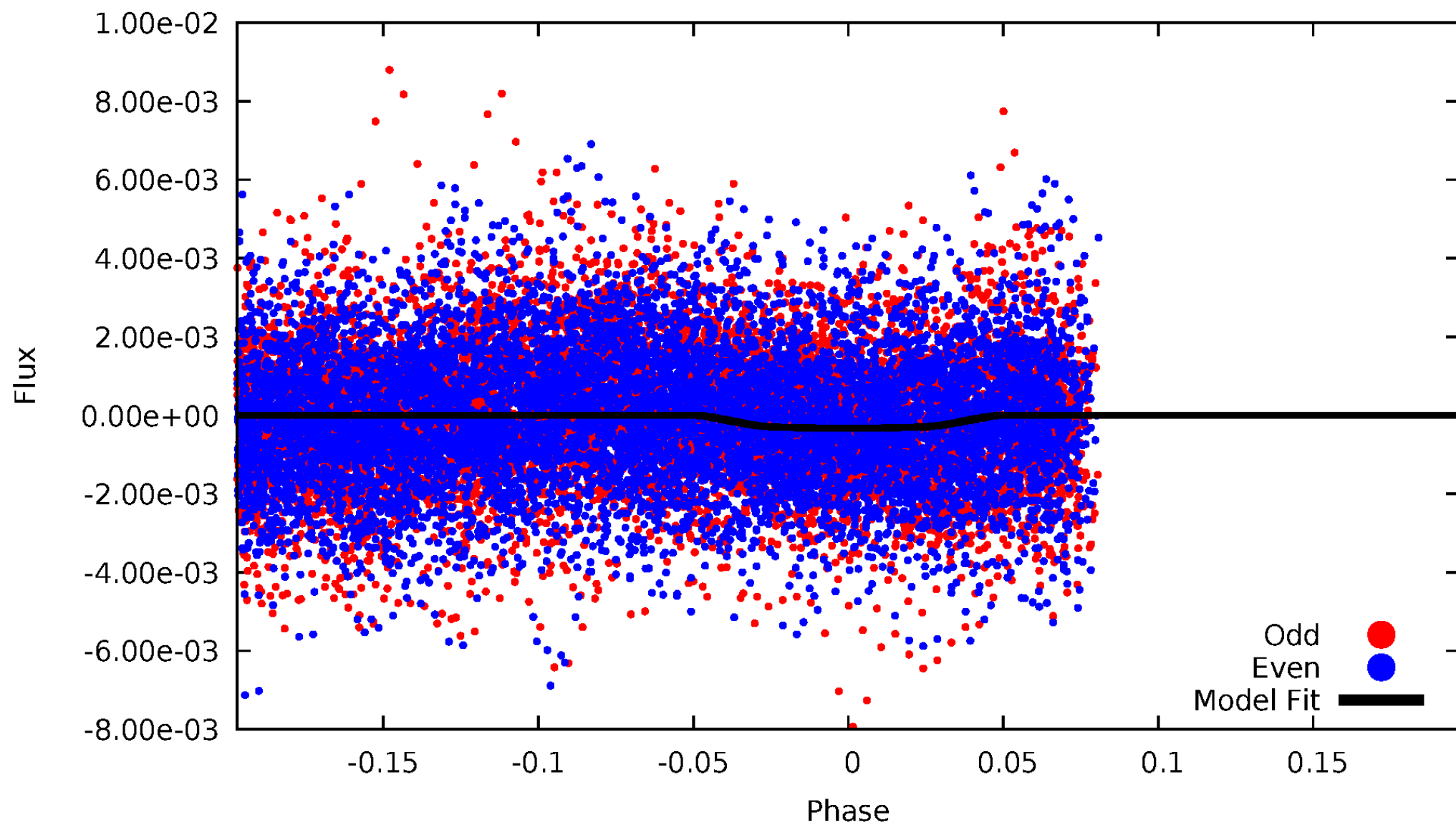


TCE 009875566-03



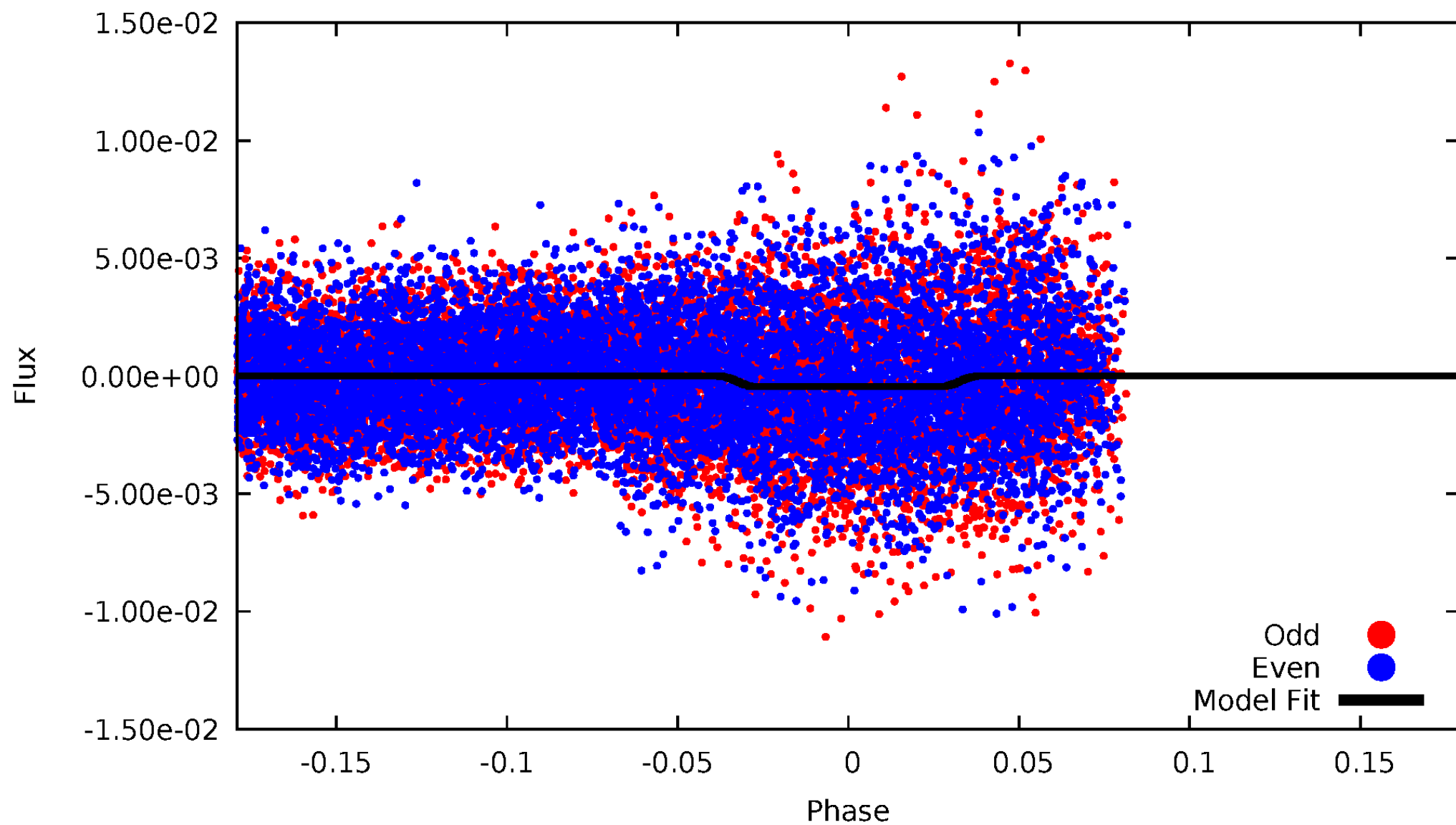
DV Odd/Even

TCE 009875566-03



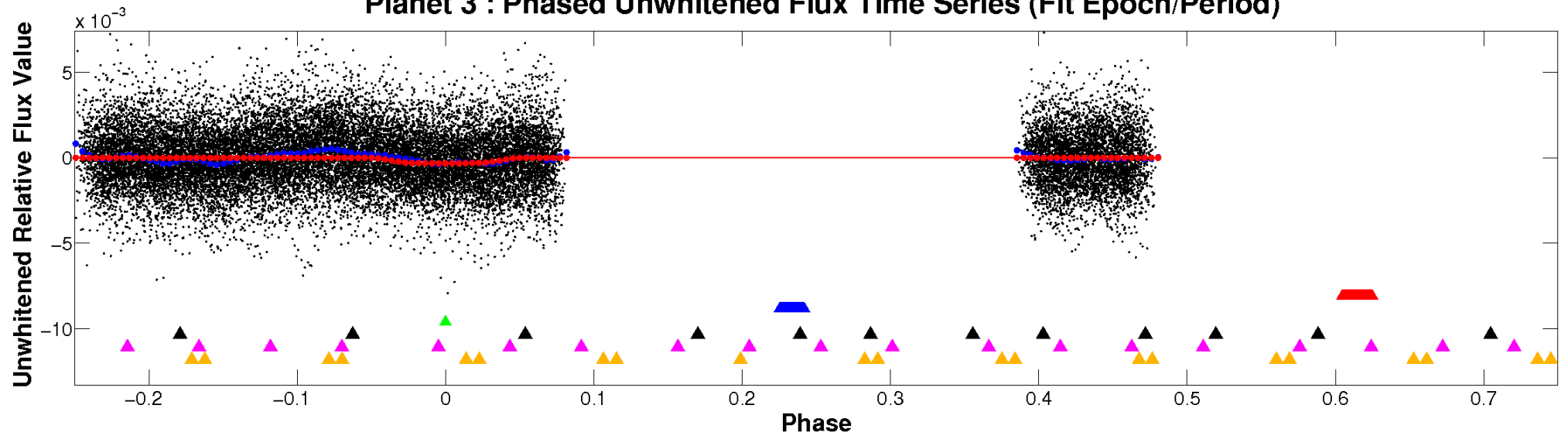
ALT Odd/Even

TCE 009875566-03

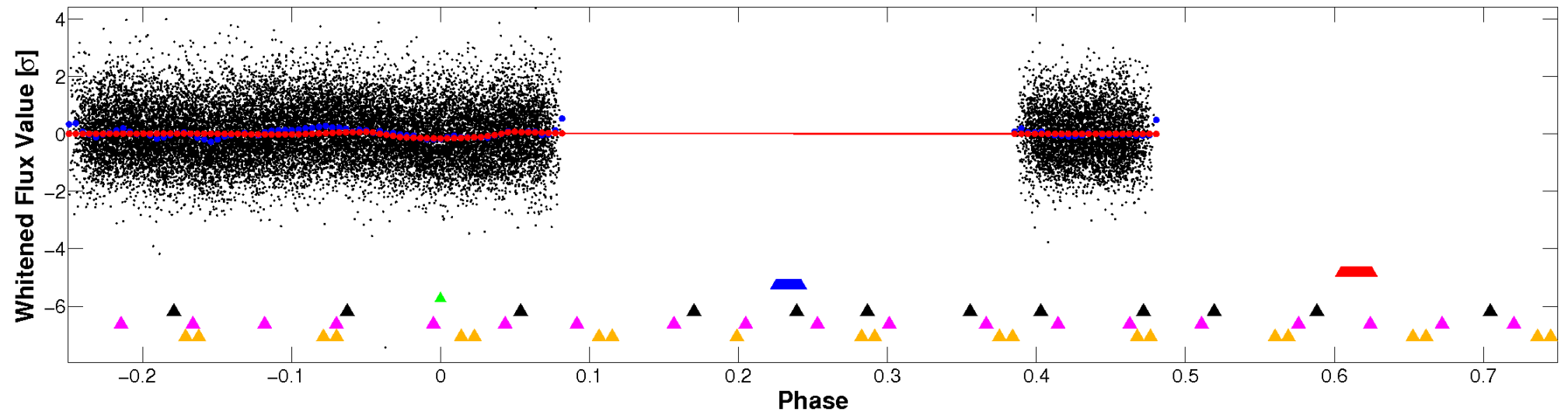


Non-Whitened Vs. Whitened Light Curve

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

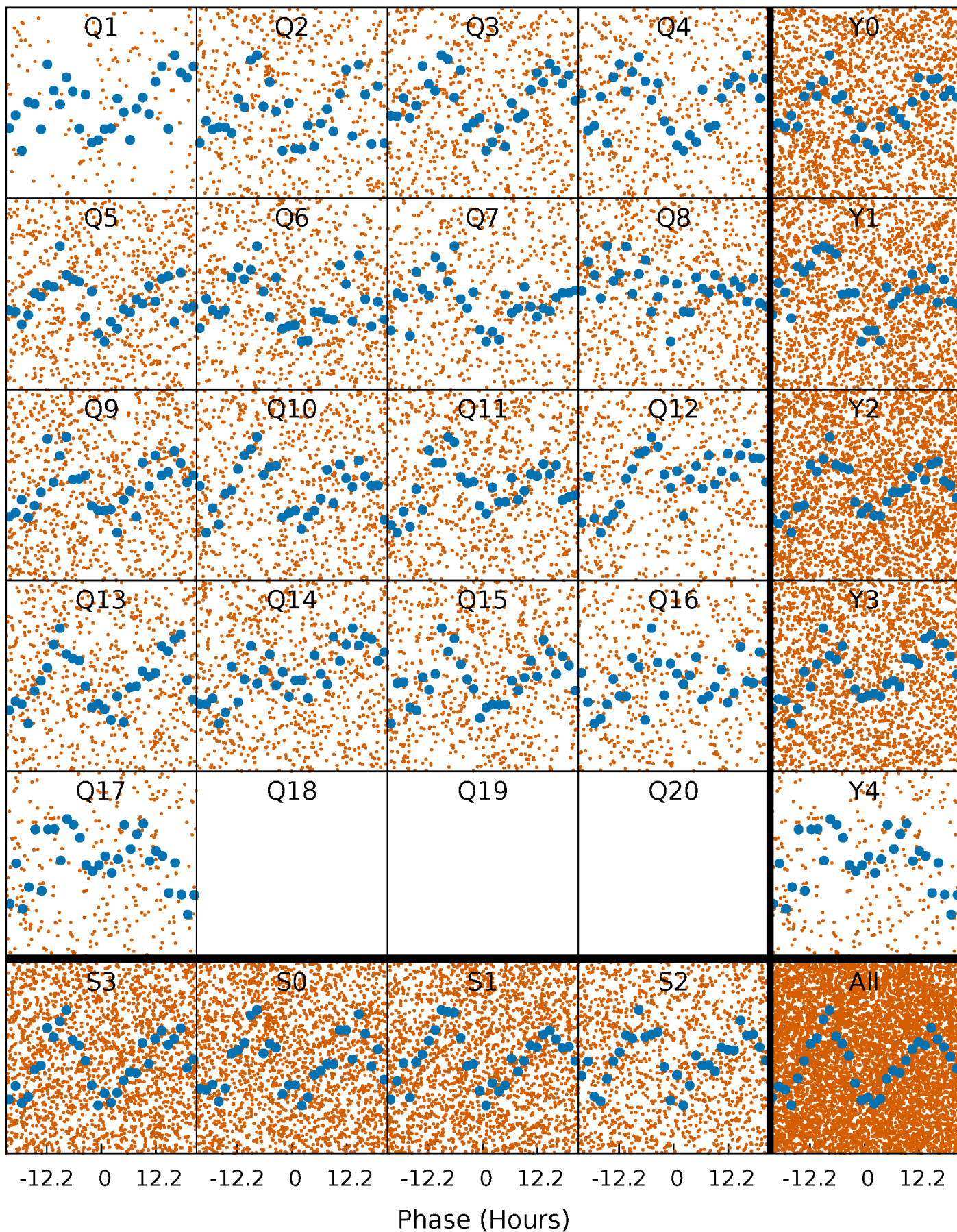


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



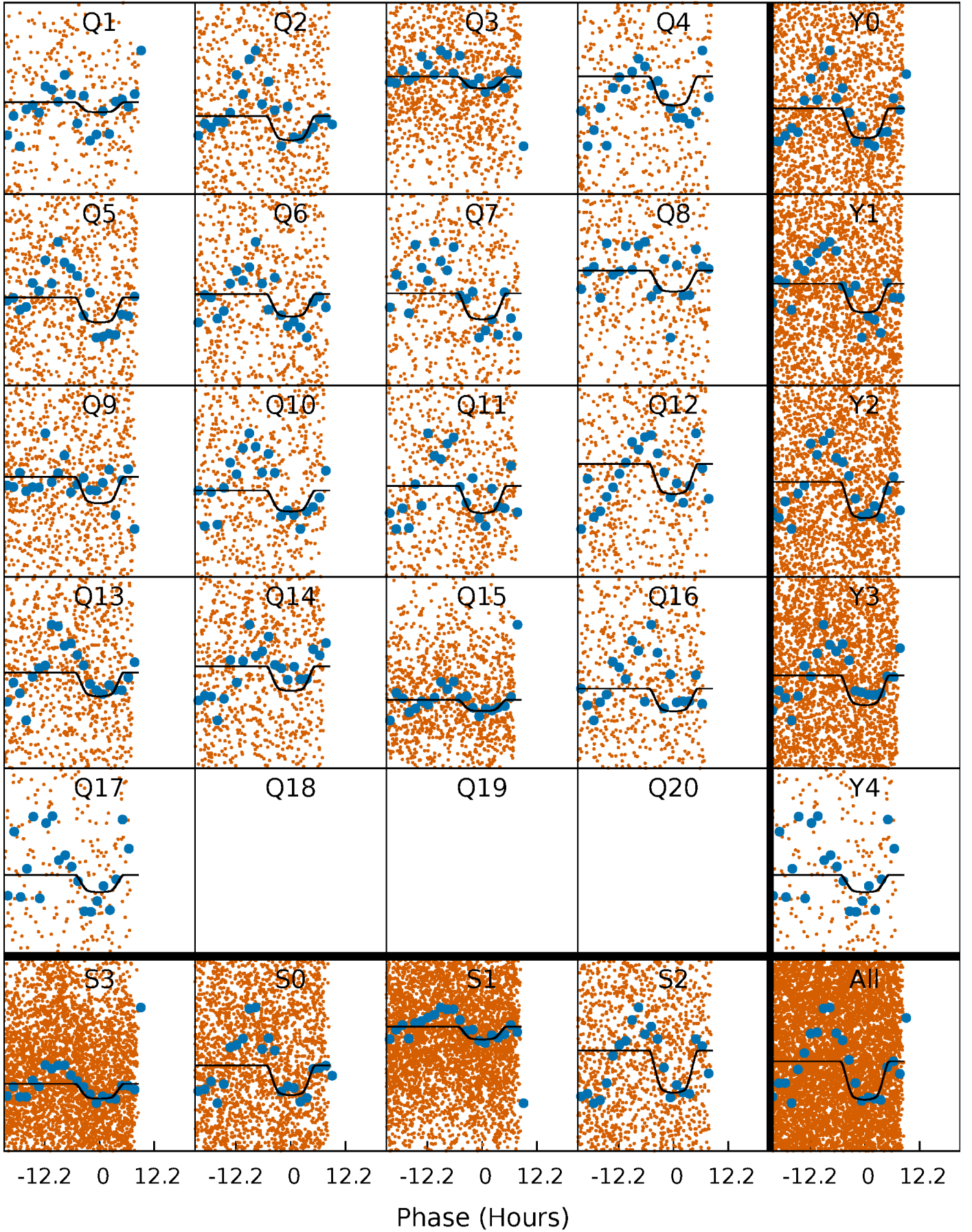
PDC Quarter-Phased Transit Curves

TCE 009875566-03 P= 4.507990 Days $T_0=135.586440$ (BKJD)



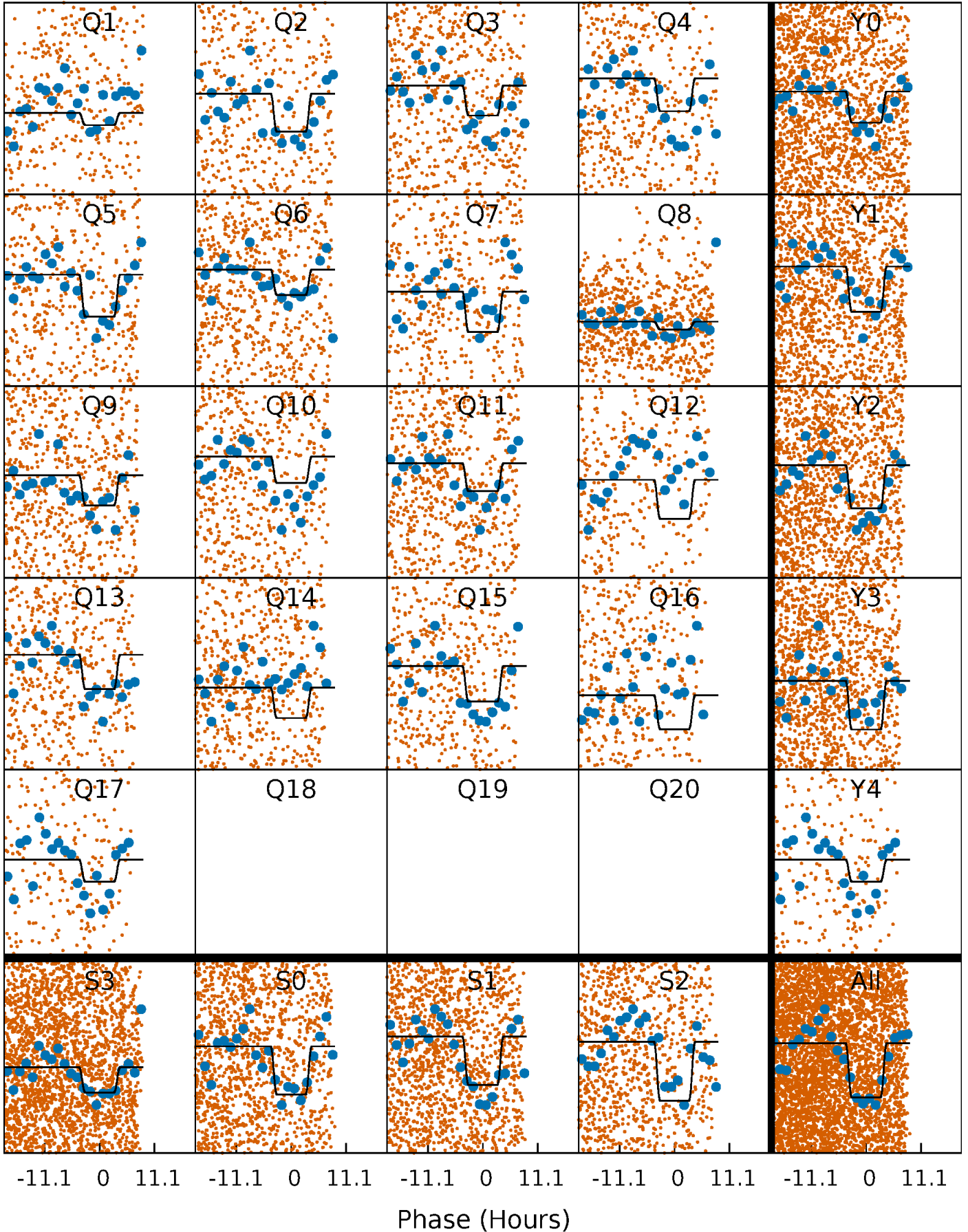
DV Quarter-Phased Transit Curves

TCE 009875566-03 P= 4.507990 Days $T_0=135.586440$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

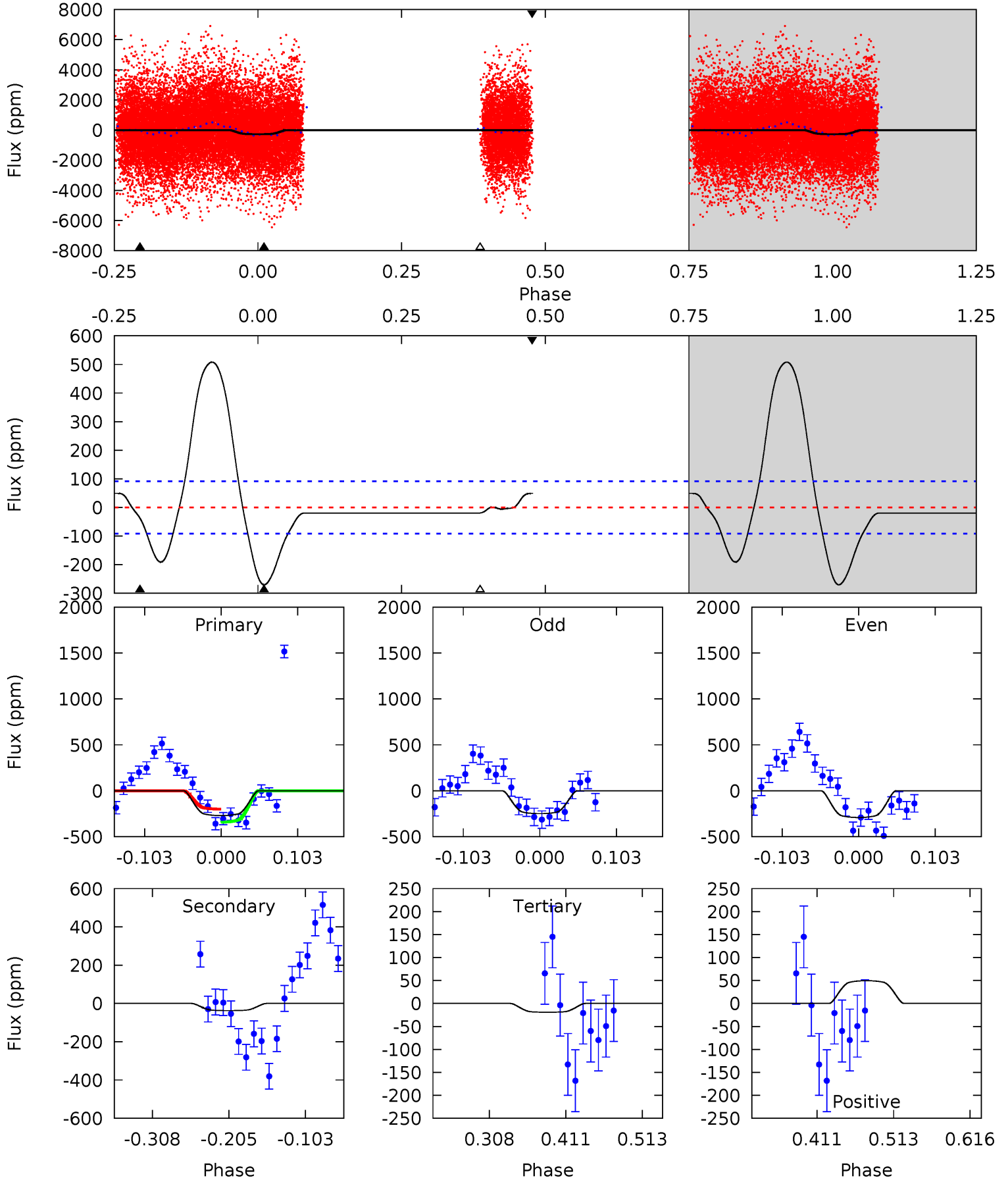
TCE 009875566-03 P= 4.508083 Days $T_0=135.581619$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-03, P = 4.507990 Days, E = 131.078450 Days

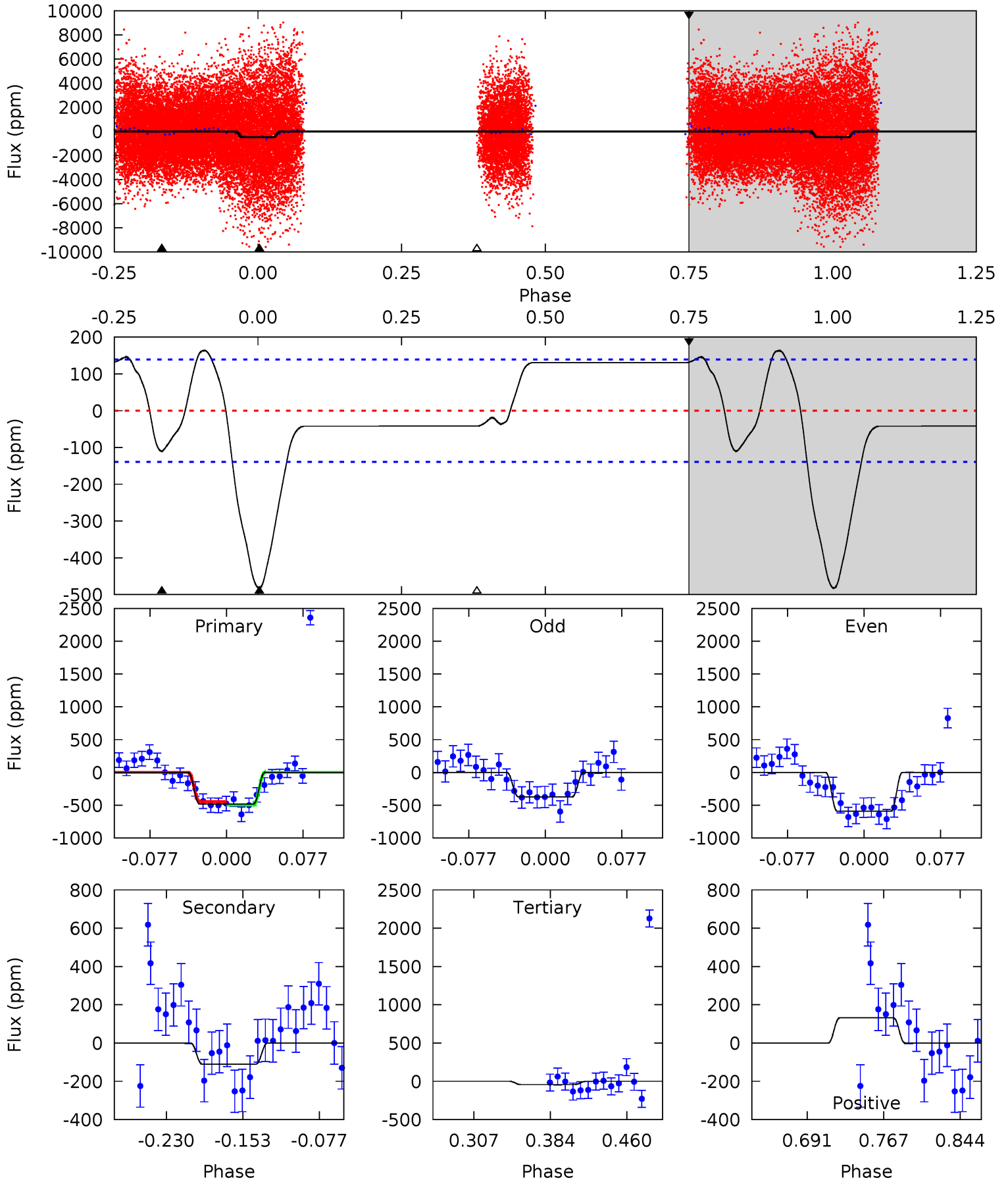
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.4 | 1.87 | 0.96 | 2.46 | 4.56 | 1.63 | 7.51 | 12.5 | 11.0 | 0.91 | -0.59 | 1.02 | 1.28 | 0.65 | 3.50 |



Alt Model-Shift Uniqueness Test

009875566-03, P = 4.508083 Days, E = 131.073536 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.0 | 3.66 | 1.39 | 4.38 | 4.62 | 1.77 | 2.38 | 14.6 | 11.6 | 2.27 | -0.72 | 3.63 | 0.88 | 0.25 | 0.87 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -38 ± 20 | $6.74^{+1.04}_{-1.94}$ | 2994^{+218}_{-406} | 3992^{+402}_{-608} | $1.959^{+1.707}_{-1.065}$ |
| Alt. | -110 ± 30 | $6.78^{+1.08}_{-1.94}$ | 2970^{+230}_{-392} | 4988^{+357}_{-351} | $5.516^{+4.615}_{-1.943}$ |

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

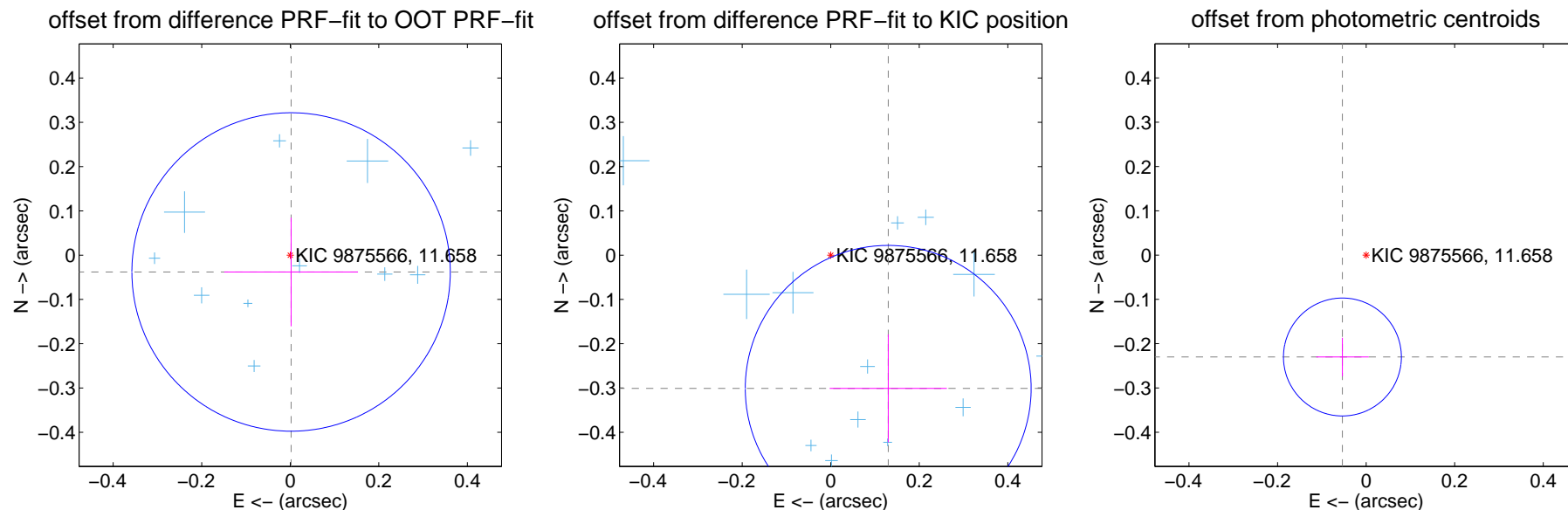
DV Centroid Data

Supplemental centroid analysis for 009875566-03. **Kepler magnitude: 11.66.** Transit SNR 9.34

There are 17 quarters with good PRF difference image offsets

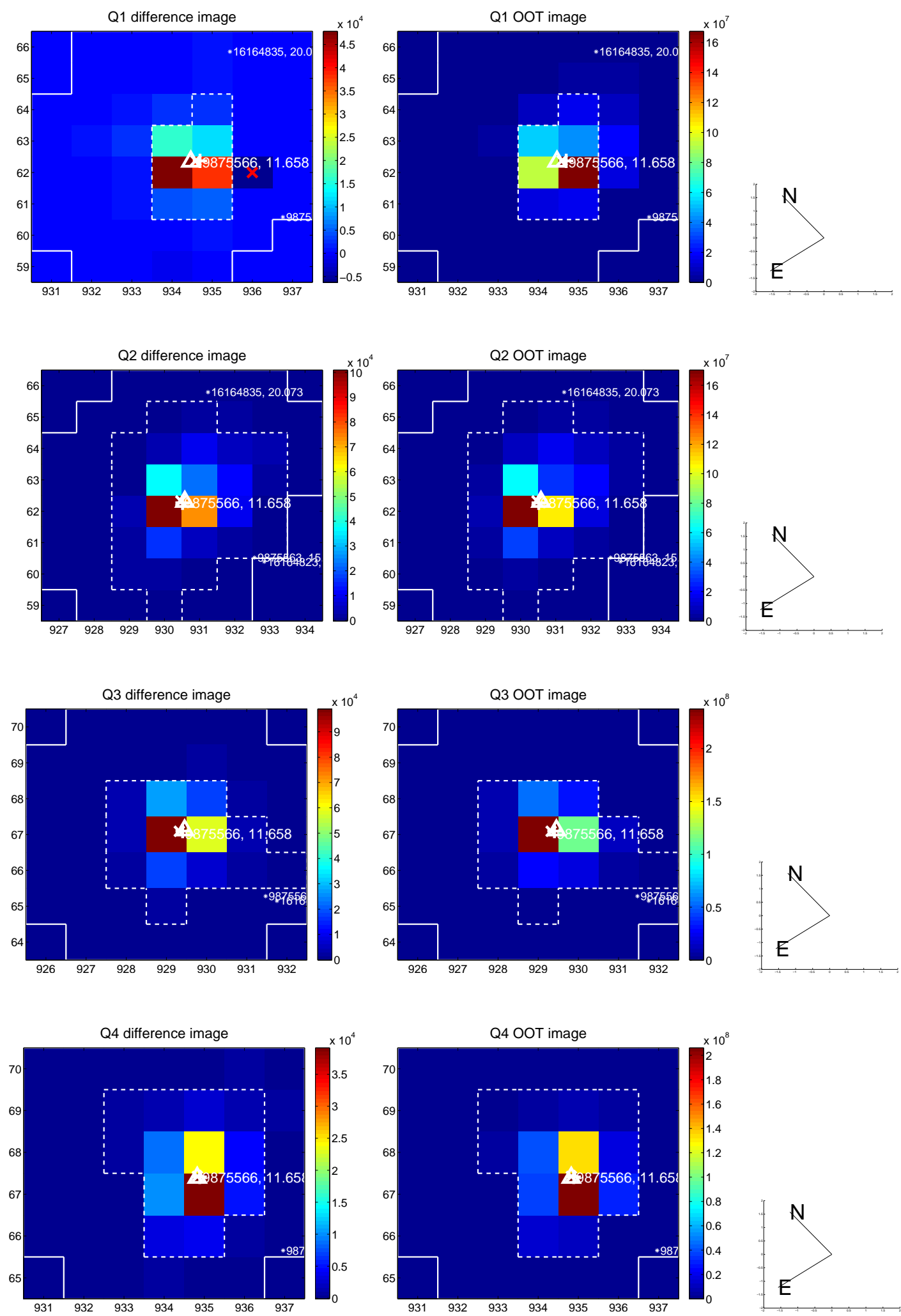
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.038 ± 0.120 | 0.32 | -0.002 ± 0.151 | -0.038 ± 0.123 |
| PRF-fit source offset from KIC position | 0.328 ± 0.108 | 3.05 | -0.130 ± 0.132 | -0.301 ± 0.122 |
| photometric centroid source offset | 0.24 ± 0.04 | 5.32 | 0.05 ± 0.06 | -0.23 ± 0.04 |

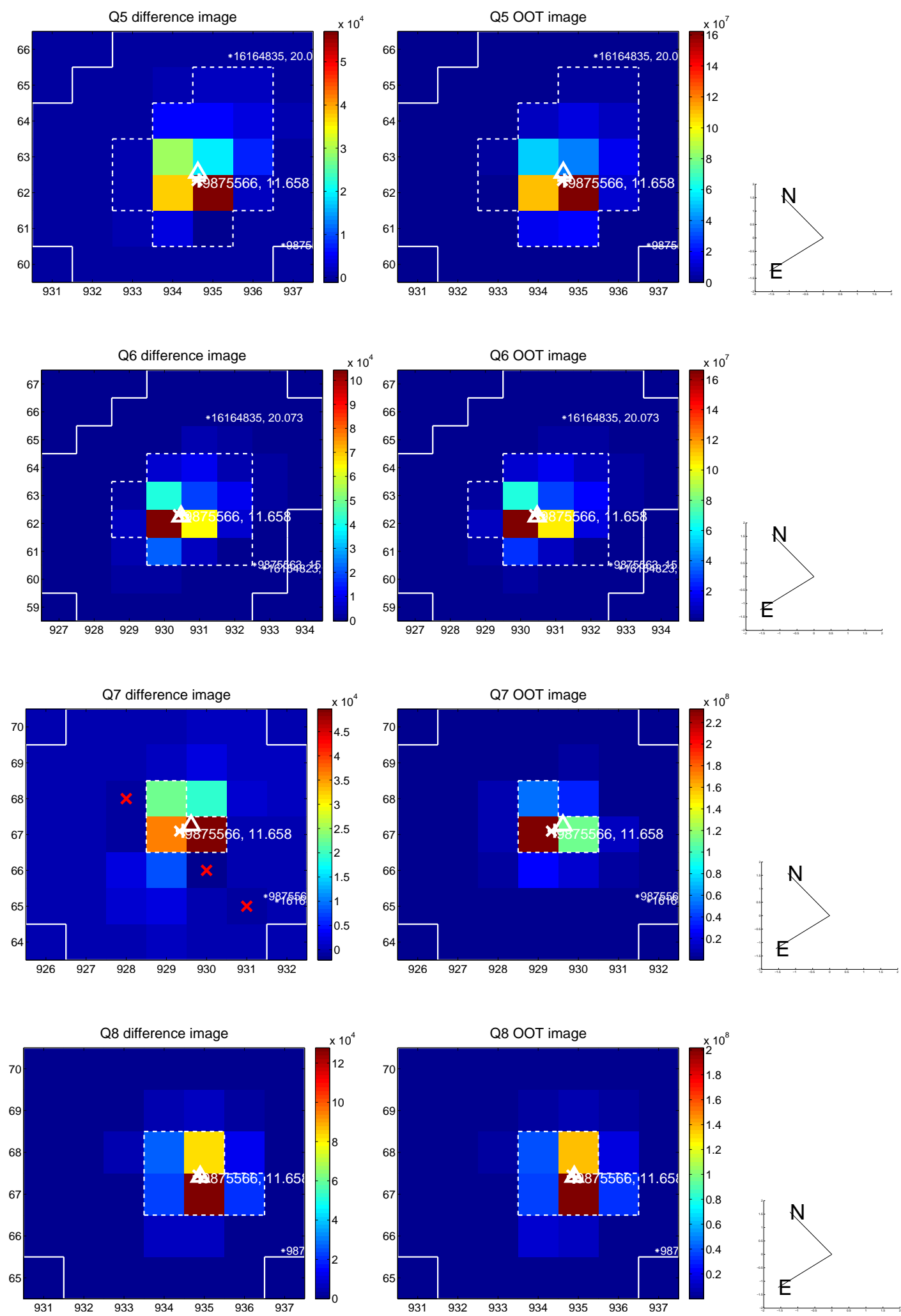


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

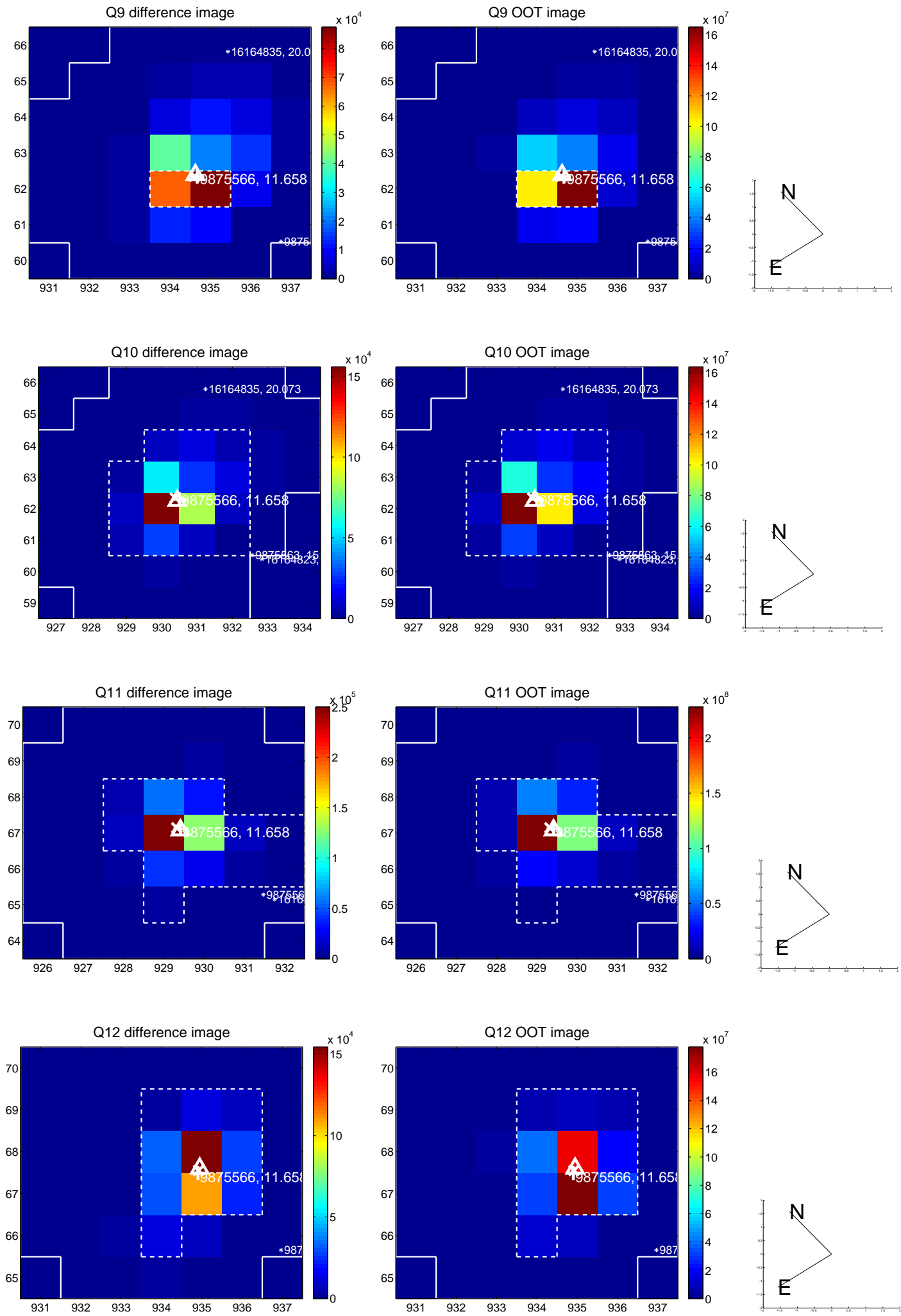
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



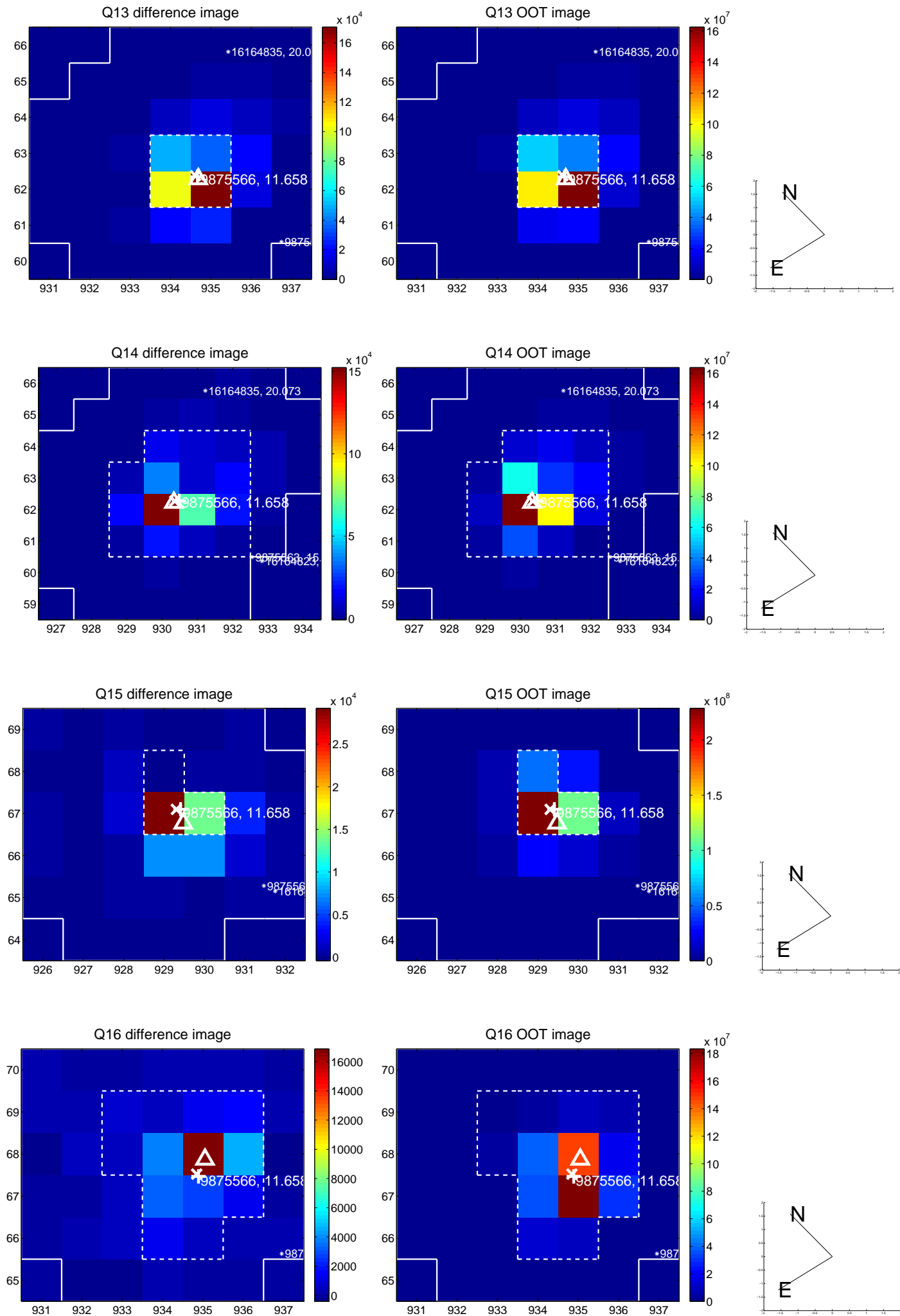
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



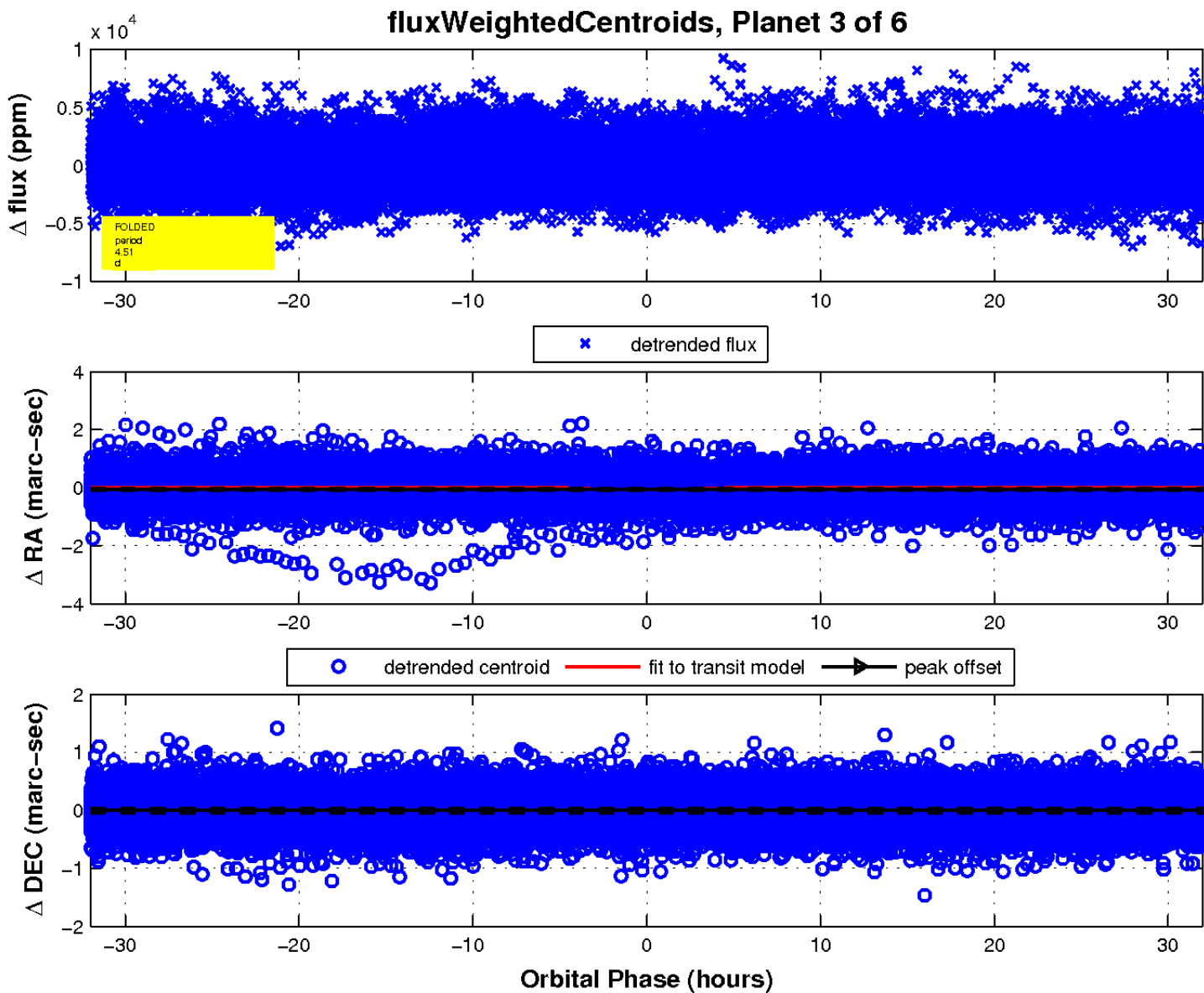
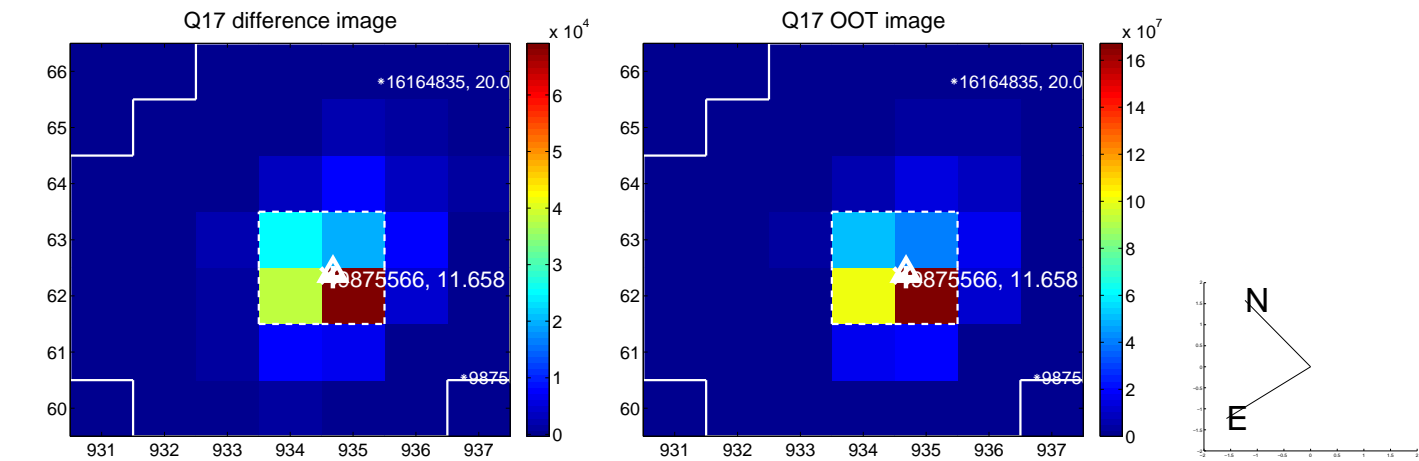
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

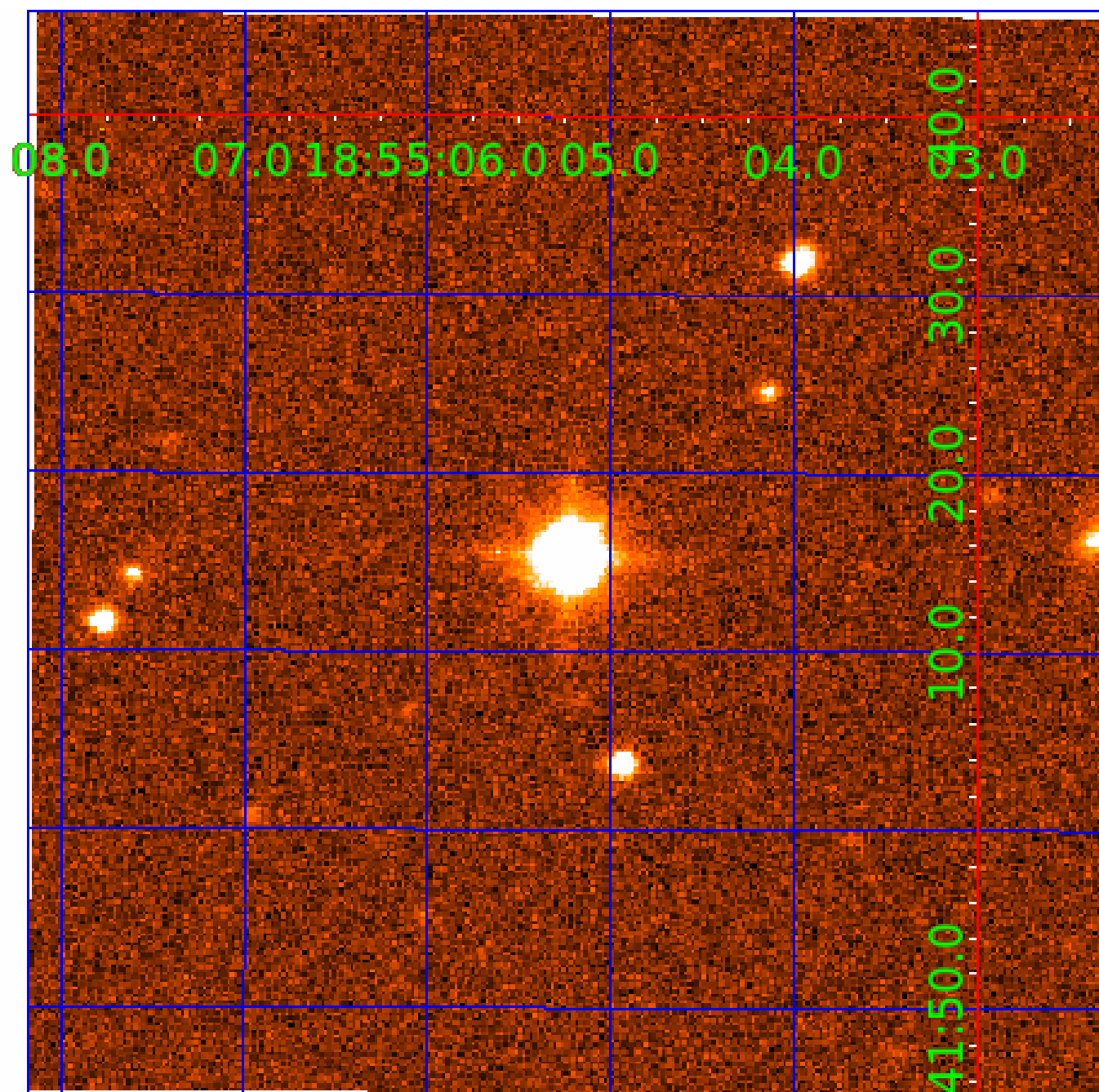


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

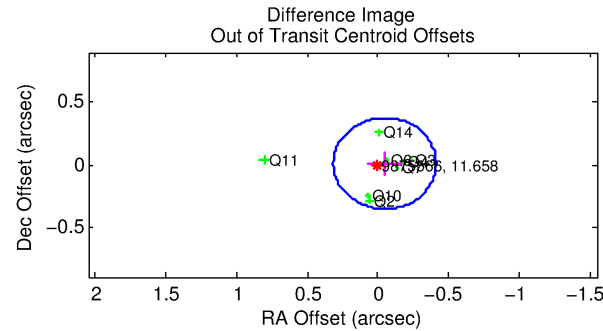
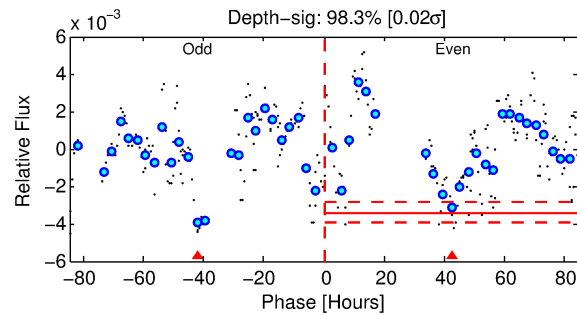
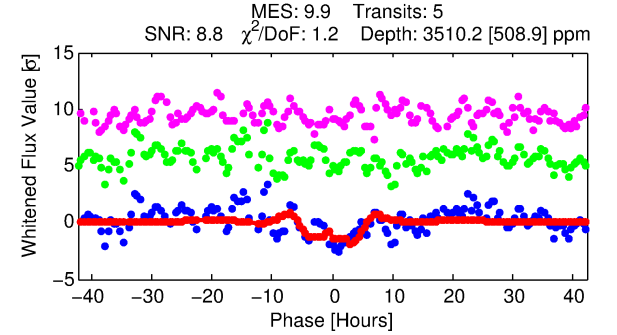
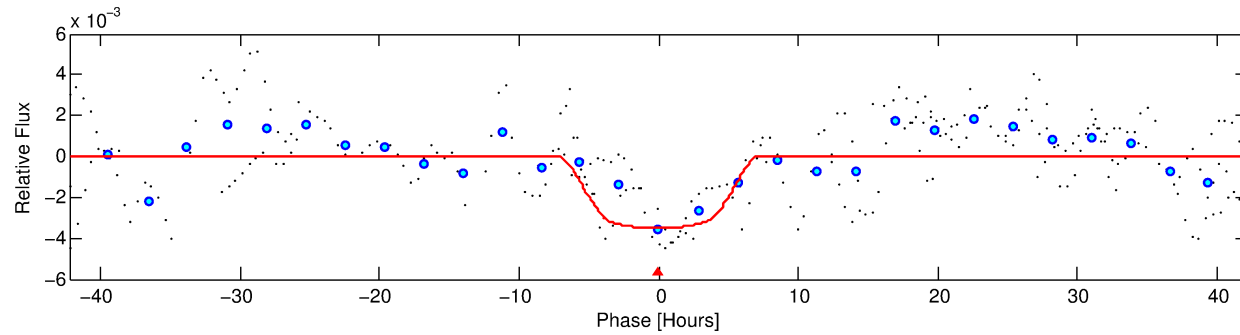
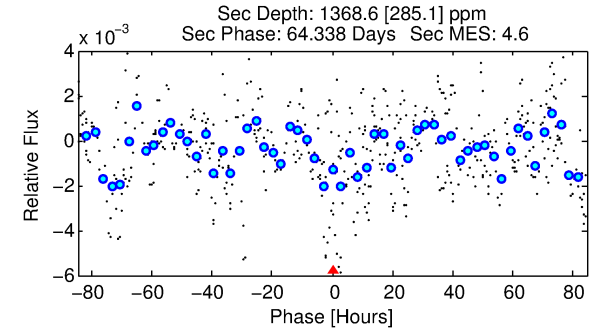
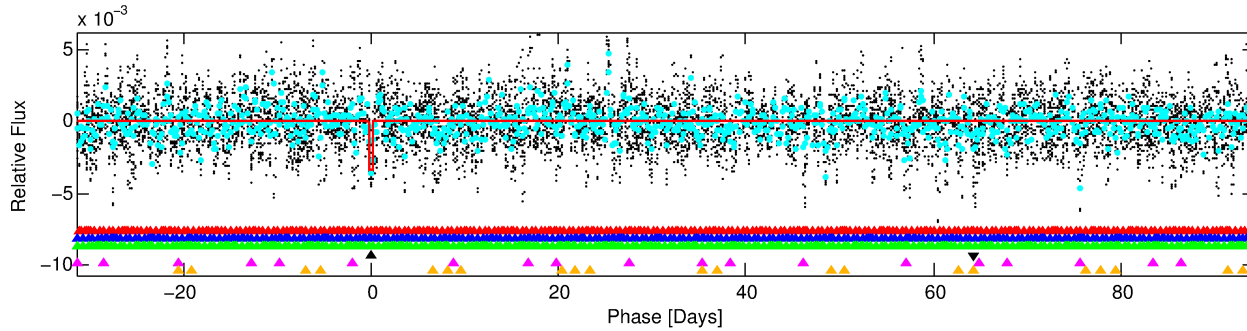
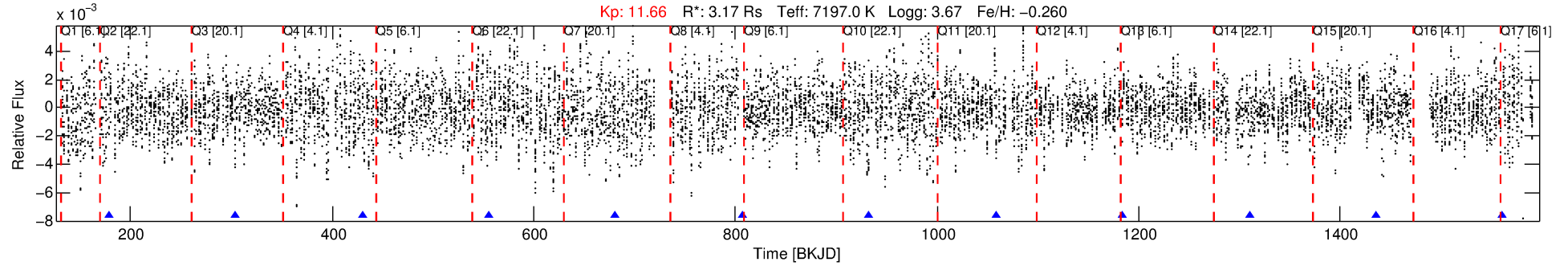
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-04

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 4 of 6 Period: 125.699 d



DV Fit Results:

Period = 125.69908 [0.00391] d
Epoch = 178.4996 [0.0209] BKJD
Rp/R* = 0.0631 [0.0055]
a/R* = 39.73 [7.39]
b = 0.89 [0.05]
Seff = 69.84 [61.94]
Teq = 737 [163] K
Rp = 21.85 [11.33] Re
a = 0.5888 [0.3098] AU
Ag = 546.94 [498.87] [1.09σ]
Teffp = 5512 [440] K [10.18σ]

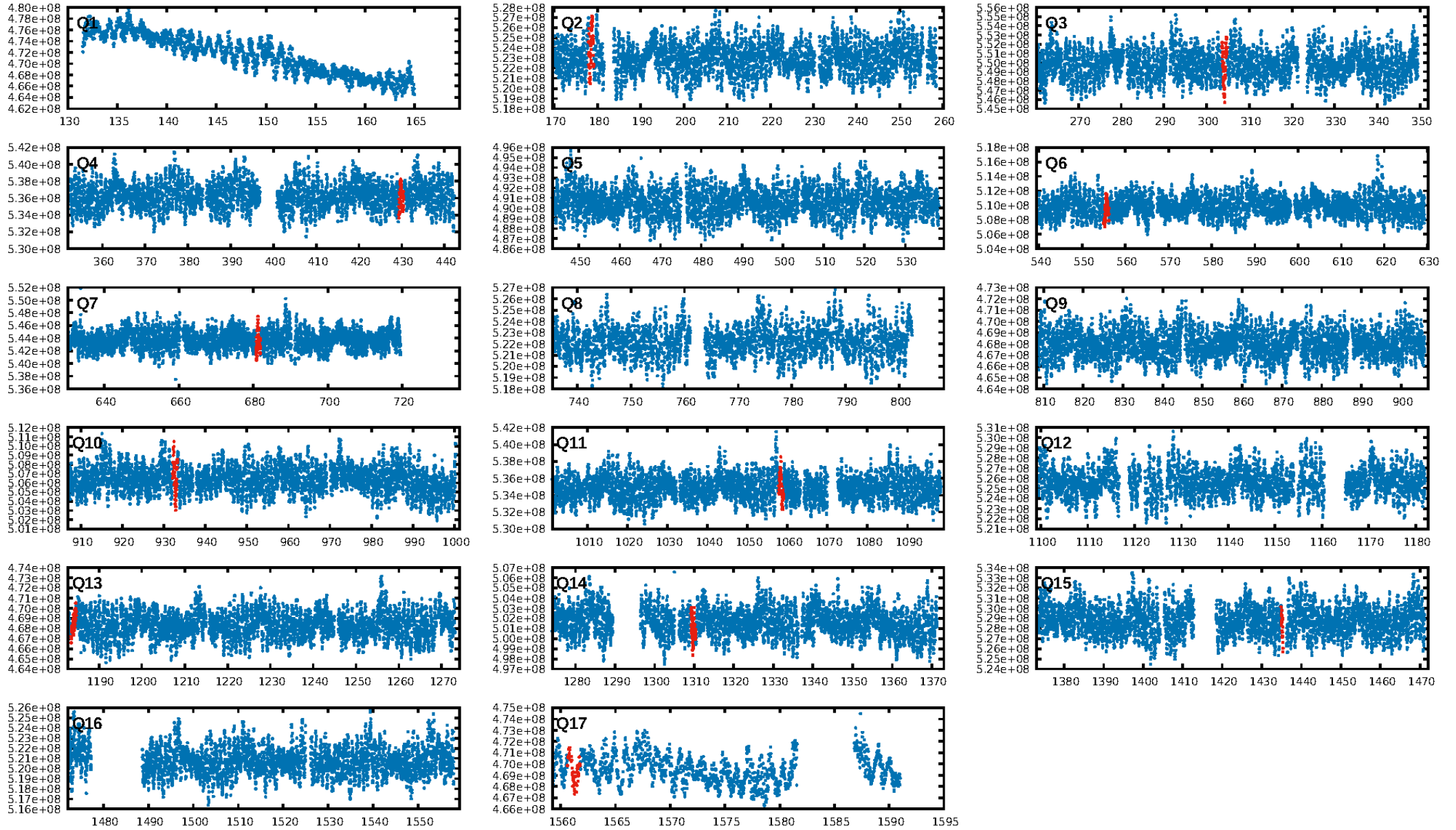
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [62.28σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 41.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.51e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.2272
Centroid-sig: 0.9%
Centroid-so: 0.232 arcsec [9.75σ]
OotOffset-rm: 0.048 arcsec [0.40σ]
KicOffset-rm: 0.428 arcsec [3.09σ]
OotOffset-st: 4/3/1/0 [8]
KicOffset-st: 4/3/1/0 [8]
DiffImageQuality-fgm: 0.38 [3/8]
DiffImageOverlap-fno: 0.00 [0/8]

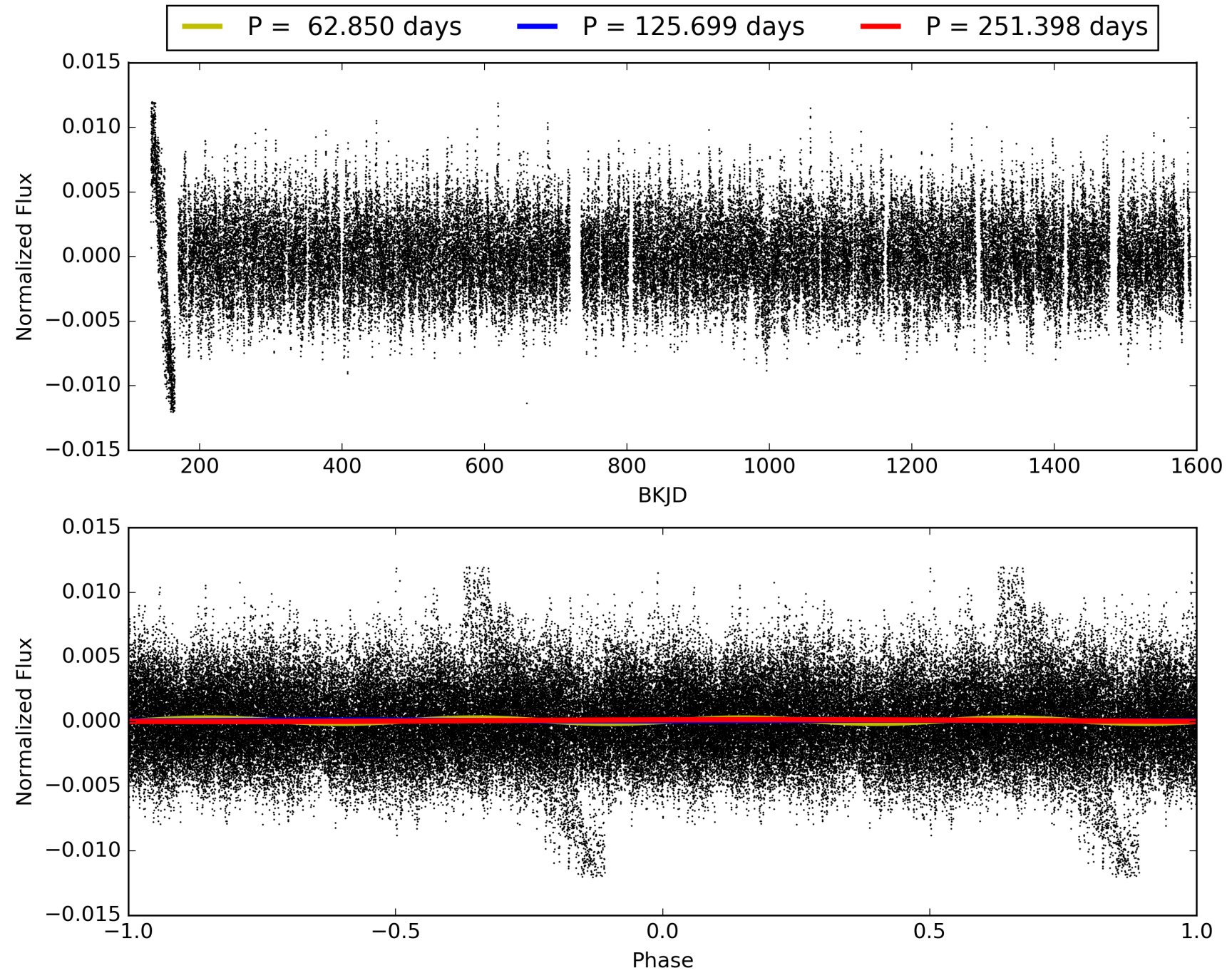
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:43 Z

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

TCE 009875566-04, PDC Light Curves

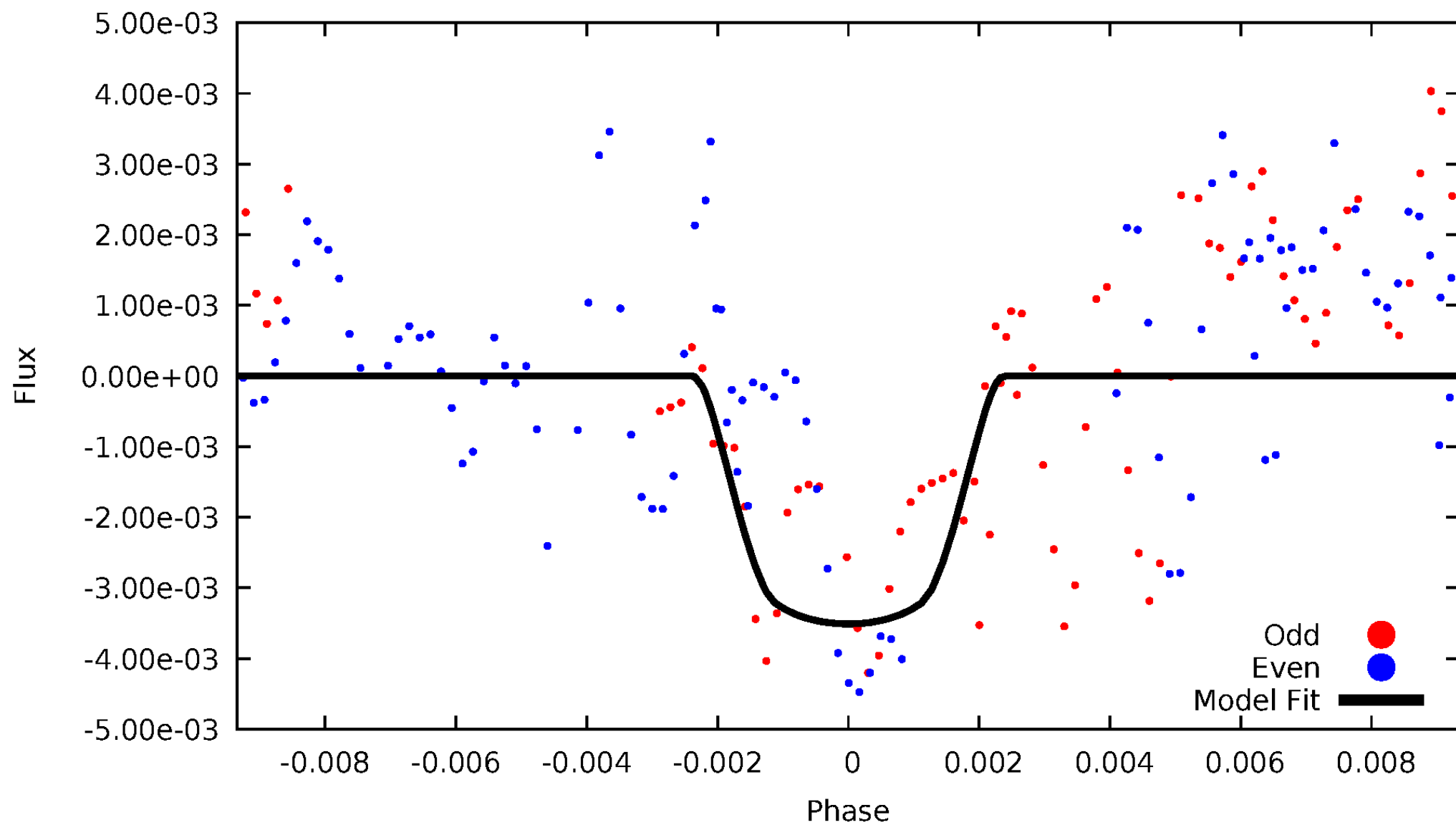


TCE 009875566-04



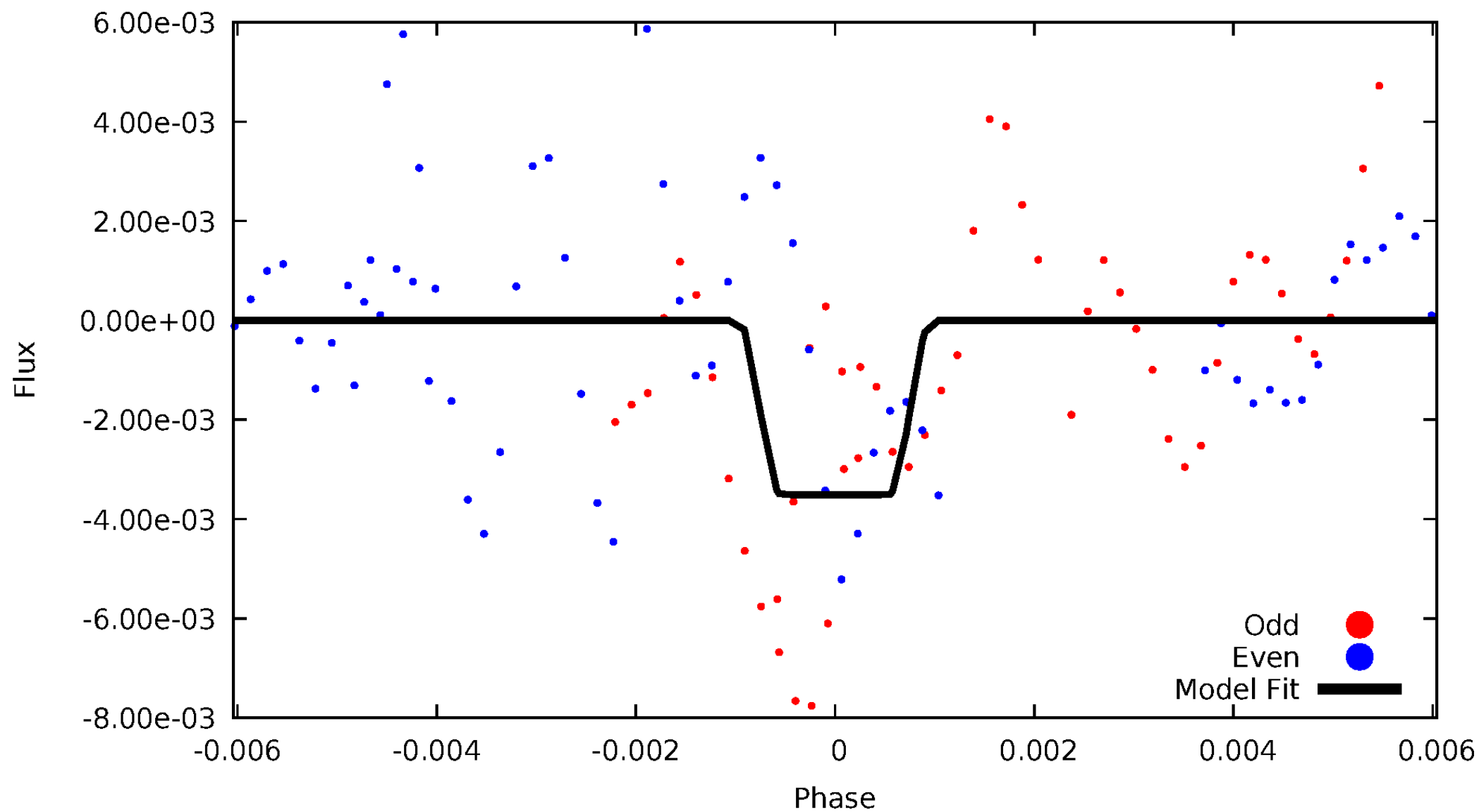
DV Odd/Even

TCE 009875566-04



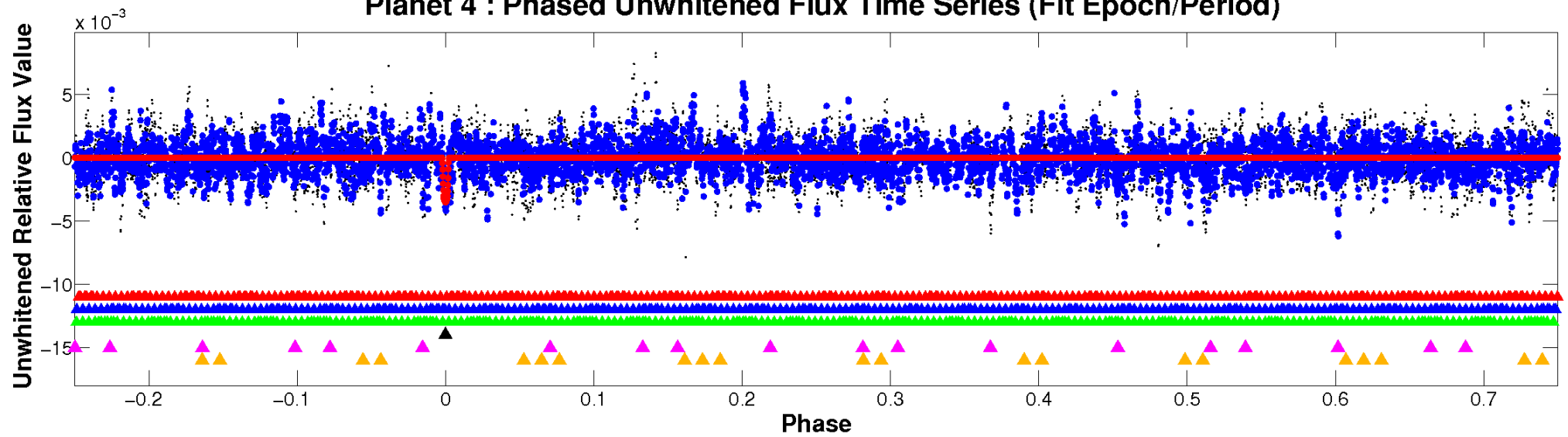
ALT Odd/Even

TCE 009875566-04

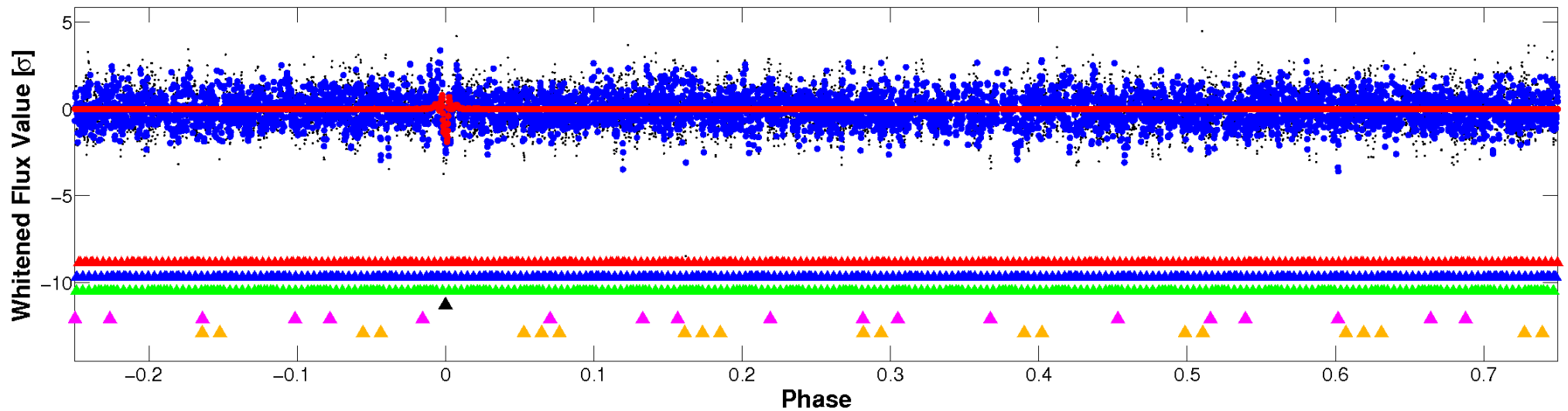


Non-Whitened Vs. Whitened Light Curve

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

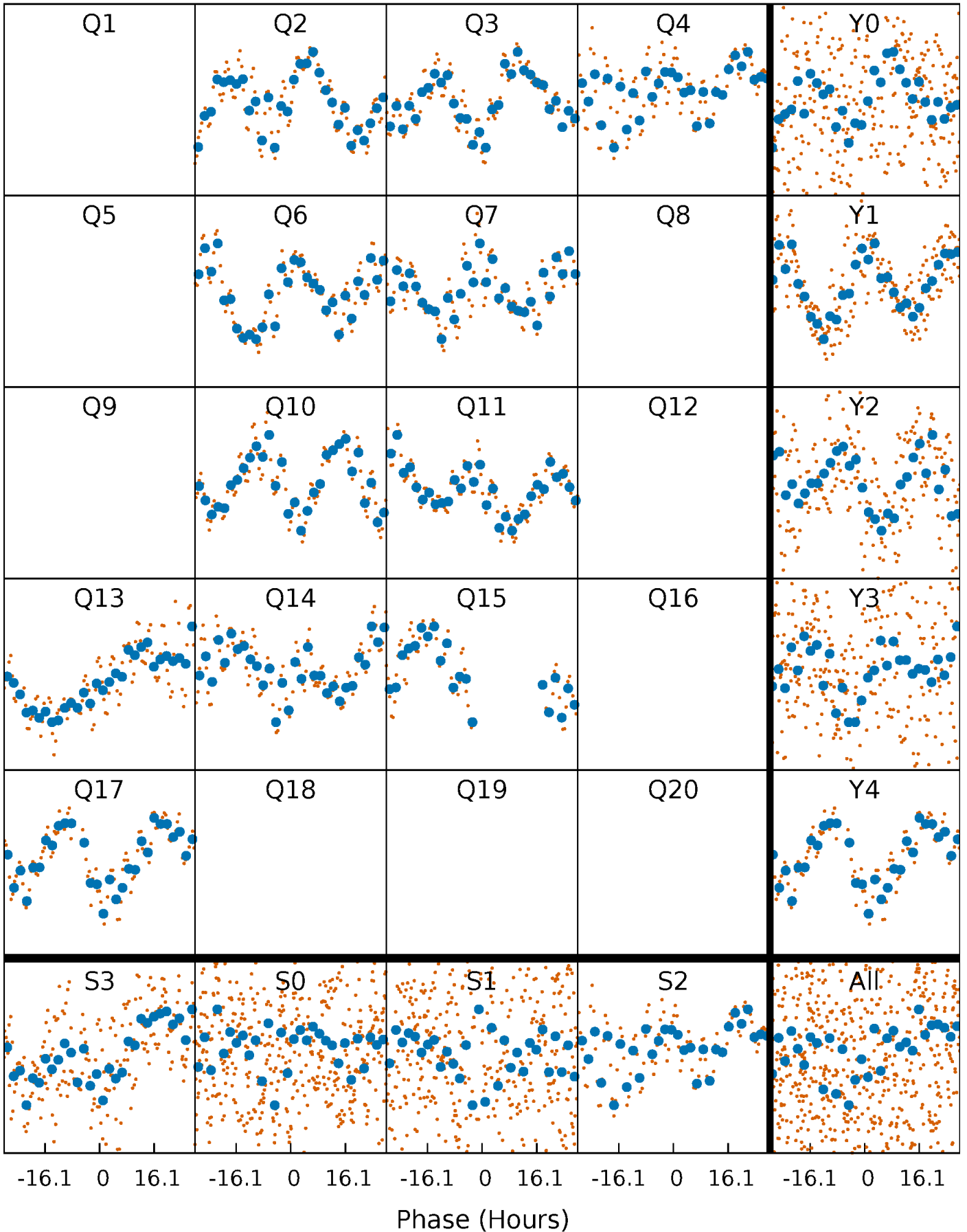


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



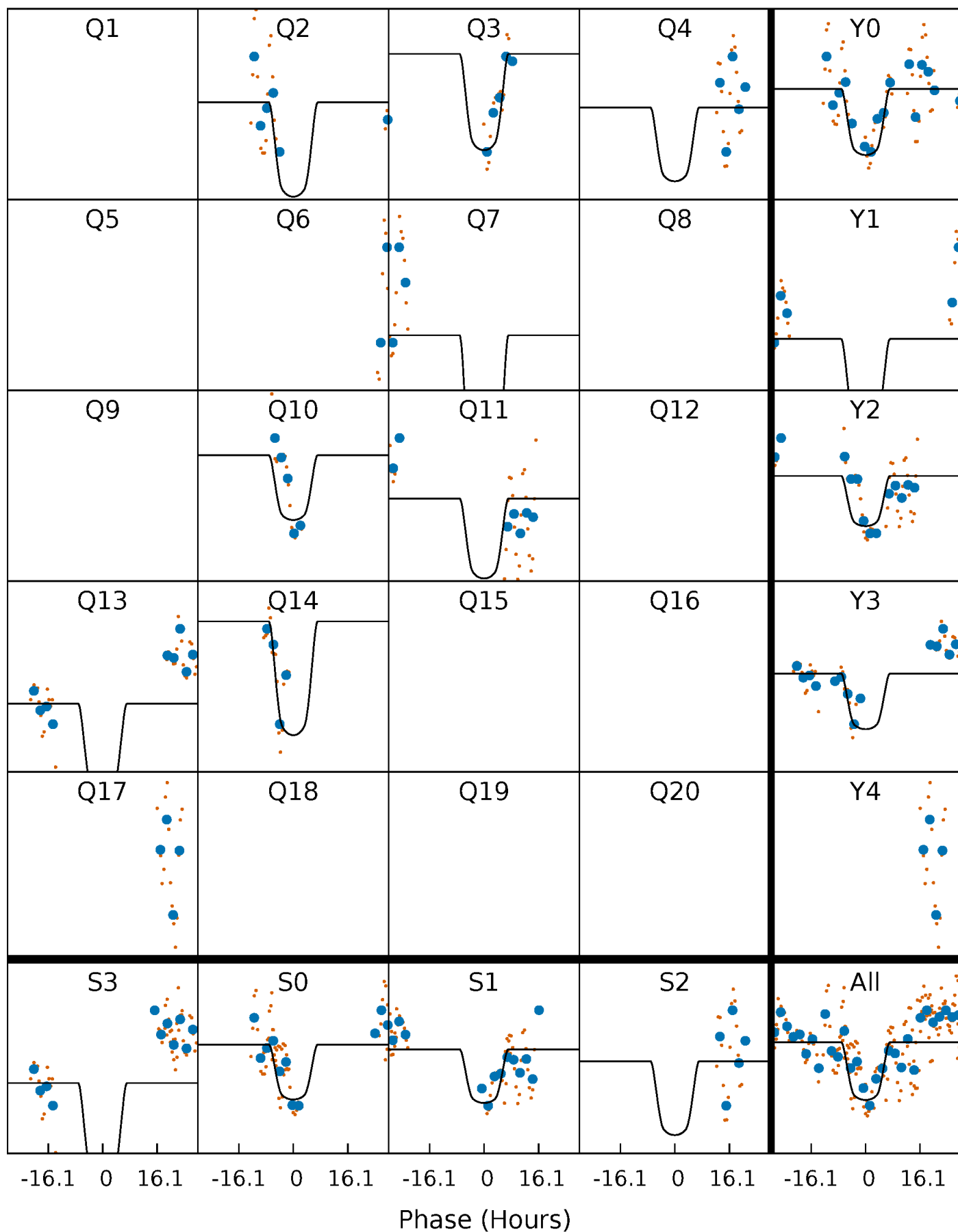
PDC Quarter-Phased Transit Curves

TCE 009875566-04 P=125.699080 Days $T_0=178.499564$ (BKJD)



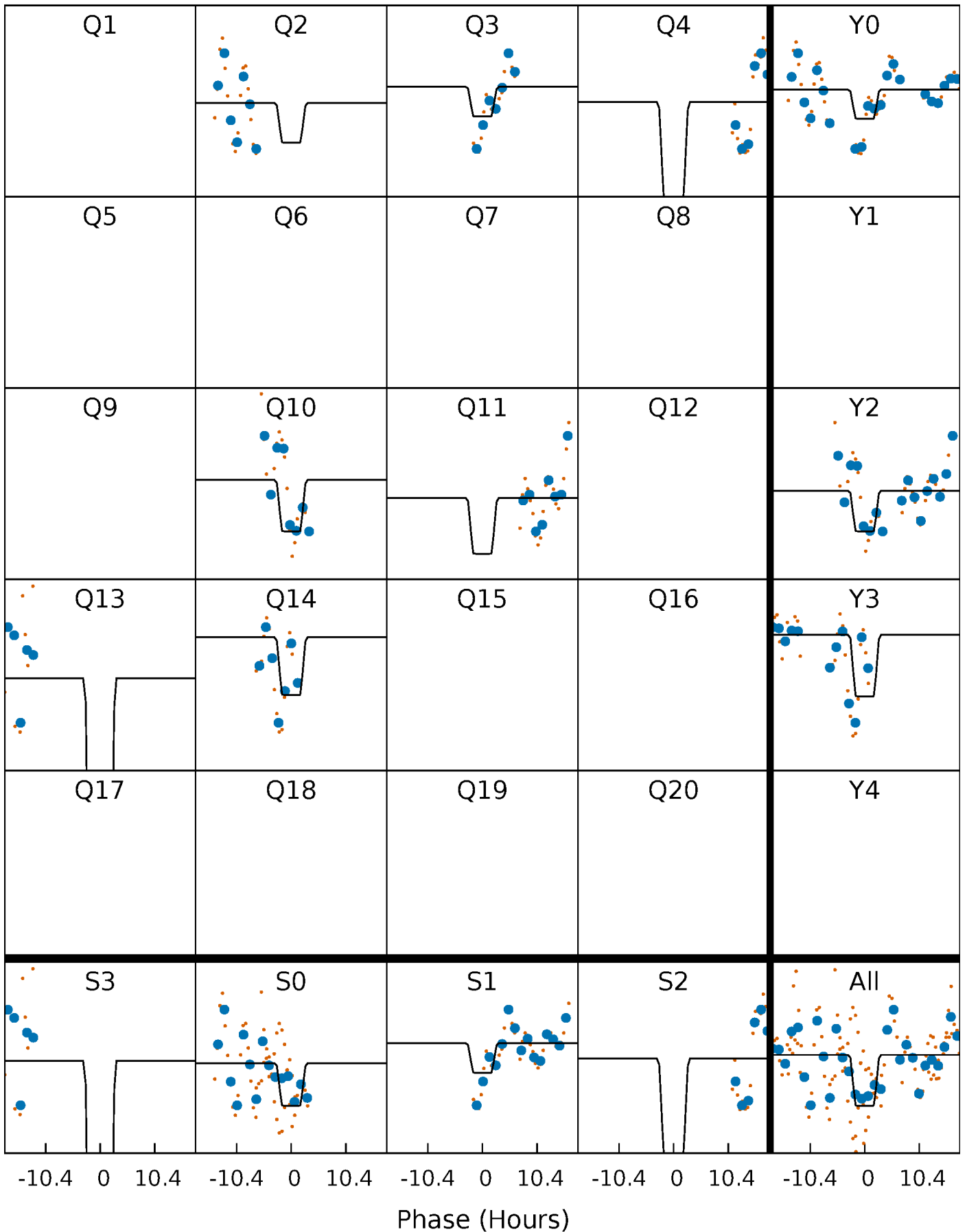
DV Quarter-Phased Transit Curves

TCE 009875566-04 P=125.699080 Days $T_0=178.499564$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

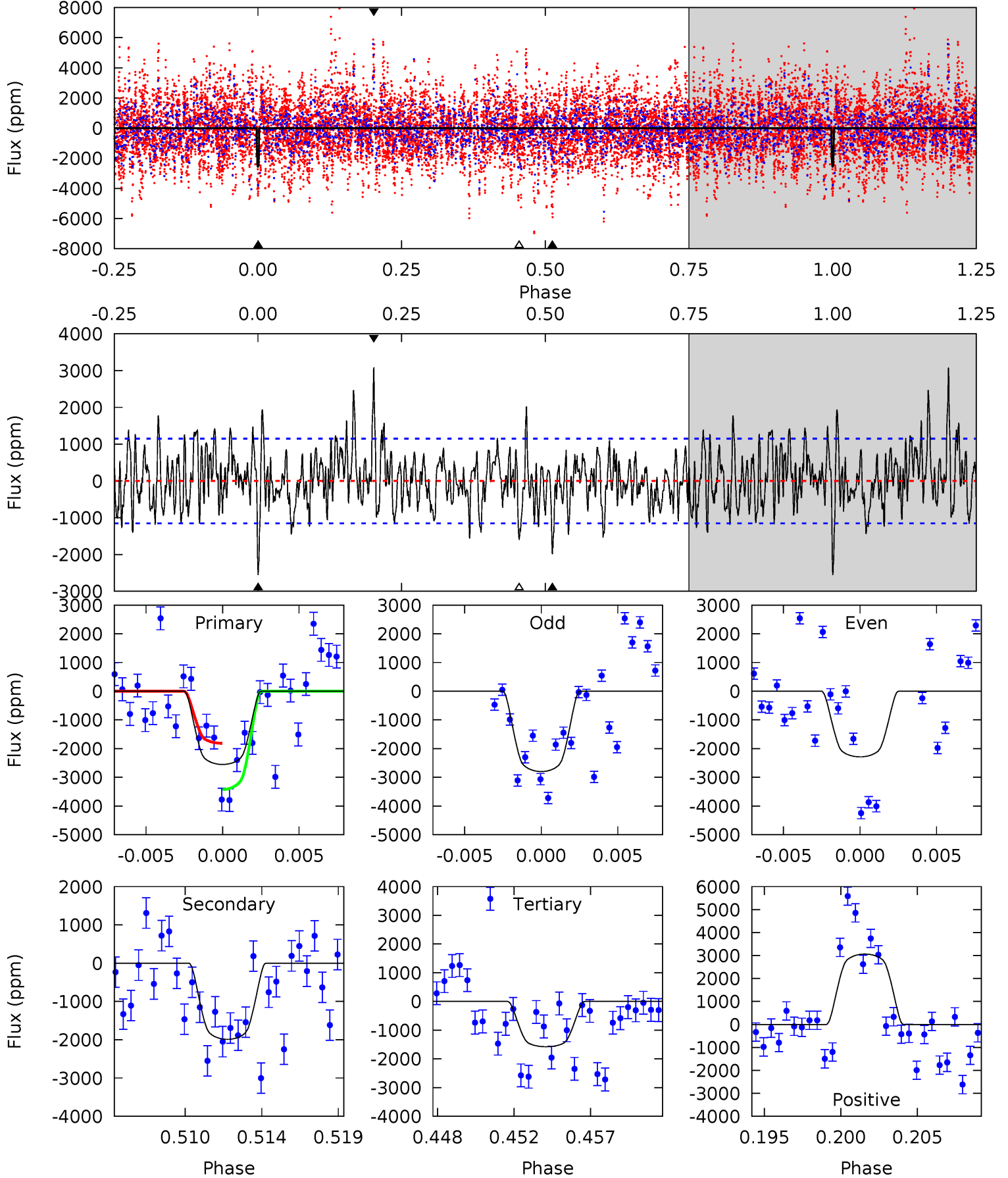
TCE 009875566-04 P=125.680021 Days $T_0=178.586209$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-04, P = 125.699080 Days, E = 52.800484 Days

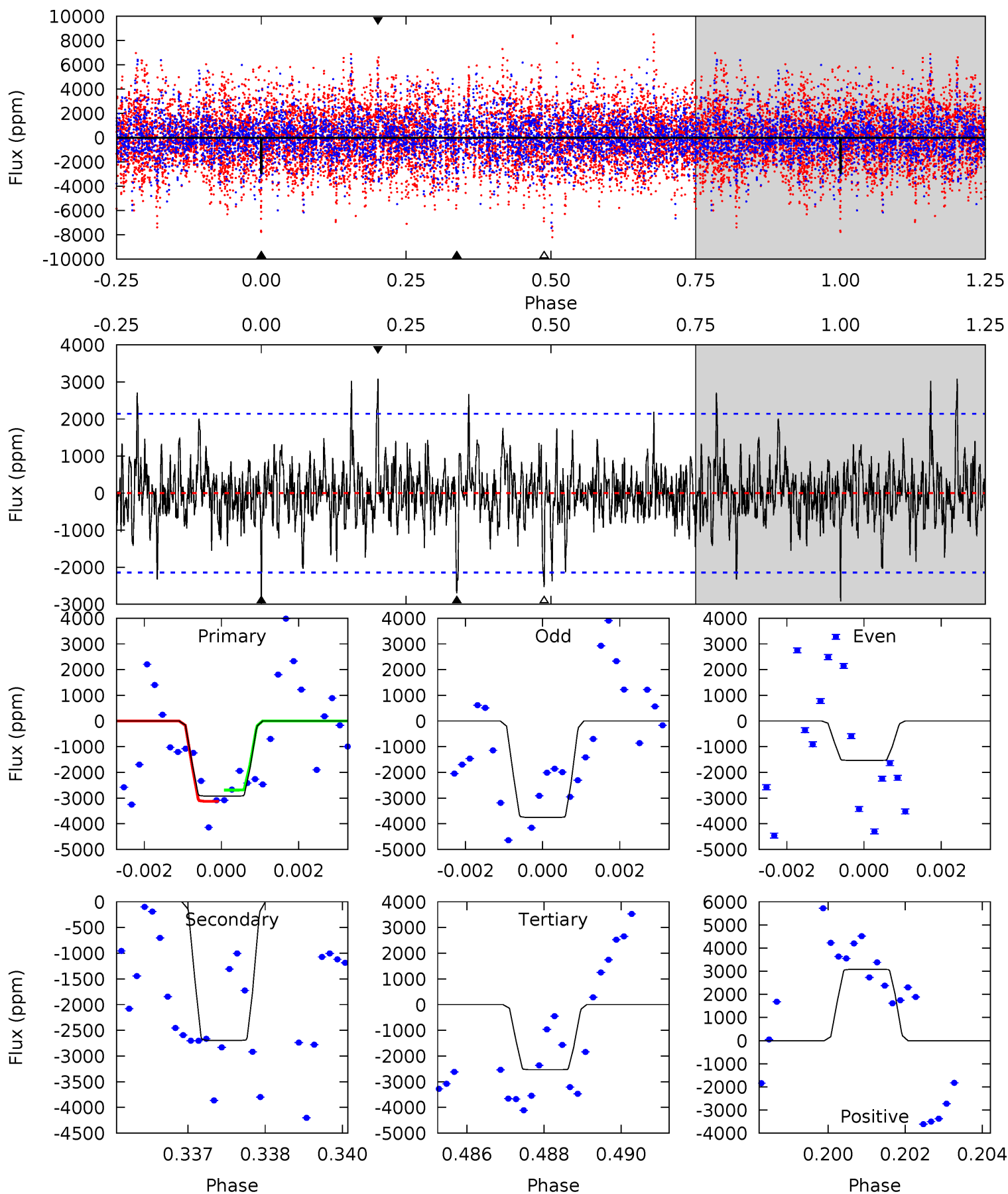
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.4 | 8.92 | 7.07 | 13.7 | 5.17 | 2.82 | 2.80 | 4.37 | -2.29 | 1.85 | -4.81 | 1.14 | 2.03 | 0.55 | 3.56 |



Alt Model-Shift Uniqueness Test

009875566-04, P = 125.680021 Days, E = 52.906188 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.27 | 6.71 | 6.30 | 7.66 | 5.33 | 3.10 | 1.61 | 0.97 | -0.39 | 0.41 | -0.95 | 2.72 | 1.10 | 0.51 | 0.54 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-04 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|--------------------|----------------------|-----------------------|
| DV | -1990 ± 223 | $20.09^{+3.66}_{-5.66}$ | 985^{+72}_{-128} | 5977^{+355}_{-352} | 950^{+751}_{-272} |
| Alt. | -2698 ± 402 | $18.67^{+3.51}_{-5.05}$ | 987^{+70}_{-129} | 6683^{+506}_{-471} | 1500^{+1177}_{-478} |

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 $A_{obs} \gg 1.0$

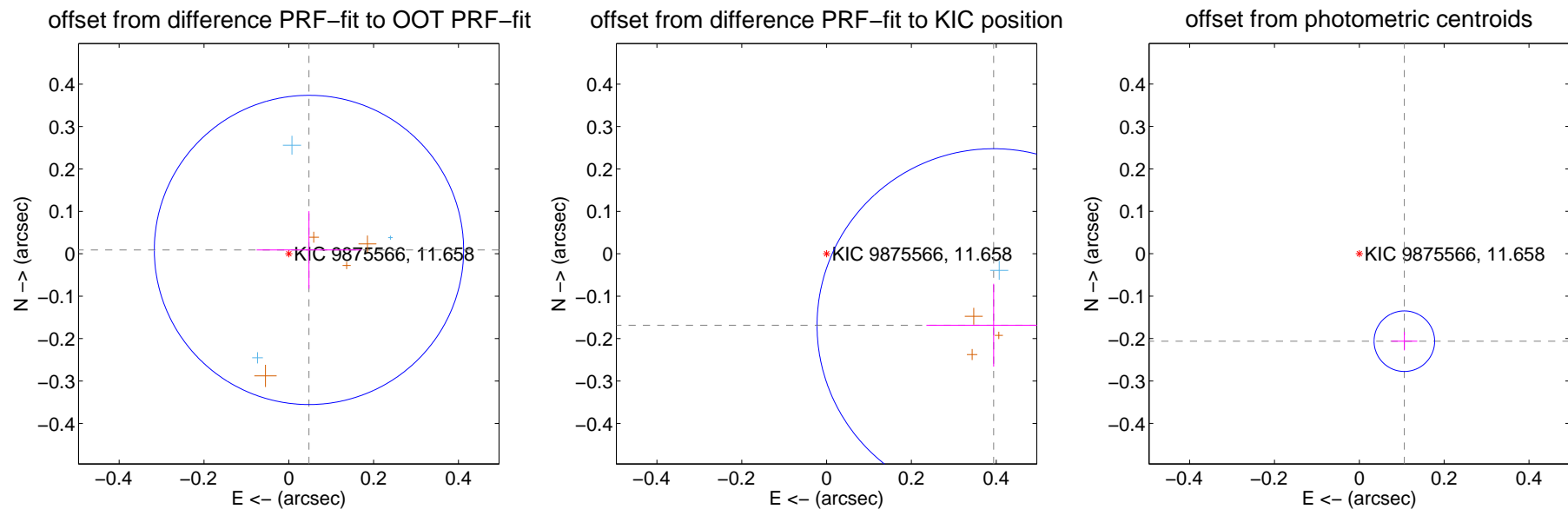
DV Centroid Data

Supplemental centroid analysis for 009875566-04. **Kepler magnitude: 11.66.** Transit SNR 8.79

There are 3 quarters with good PRF difference image offsets

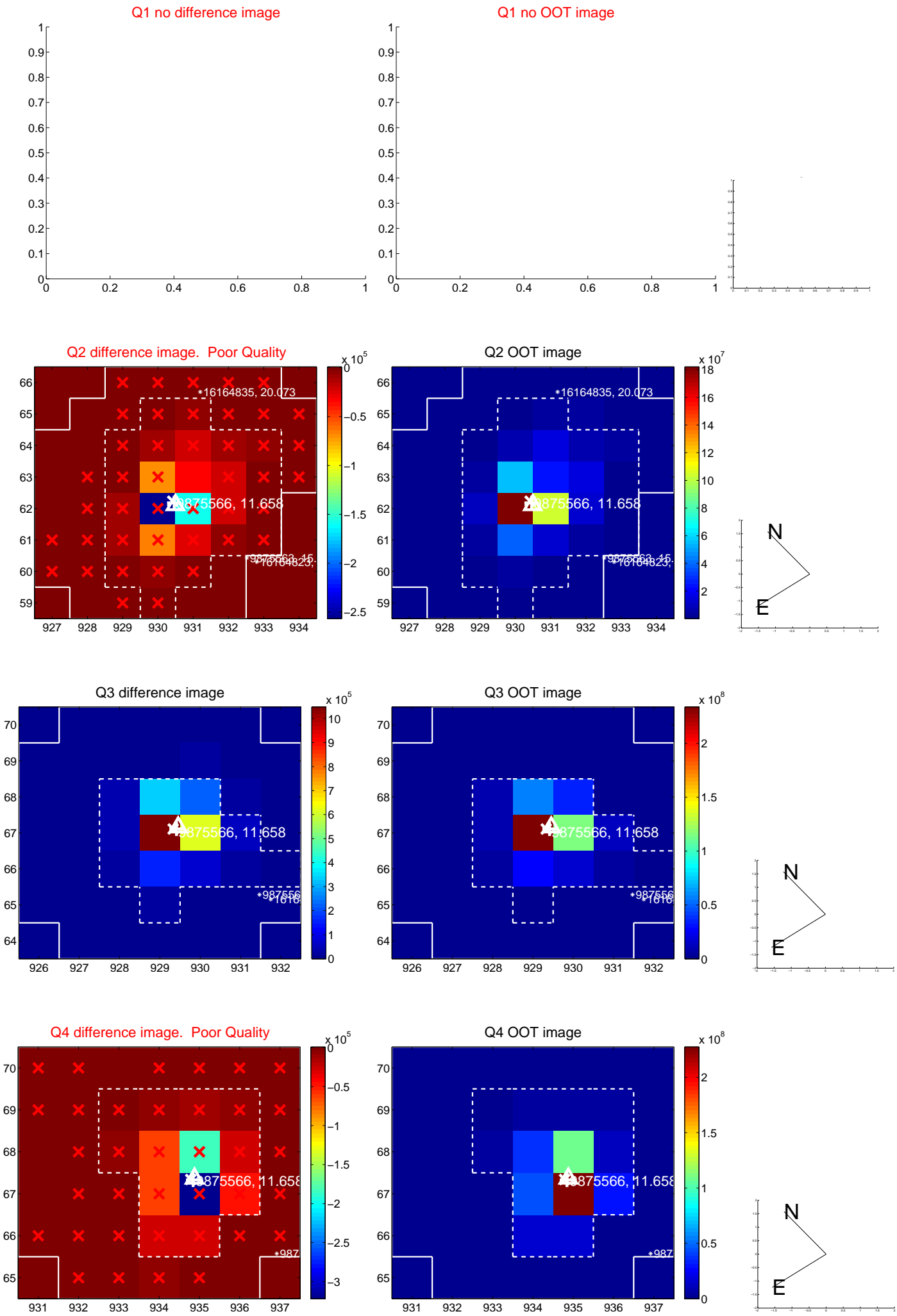
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.048 ± 0.122 | 0.40 | -0.048 ± 0.124 | 0.009 ± 0.091 |
| PRF-fit source offset from KIC position | 0.428 ± 0.139 | 3.09 | -0.394 ± 0.159 | -0.169 ± 0.098 |
| photometric centroid source offset | 0.23 ± 0.02 | 9.75 | -0.11 ± 0.03 | -0.21 ± 0.02 |

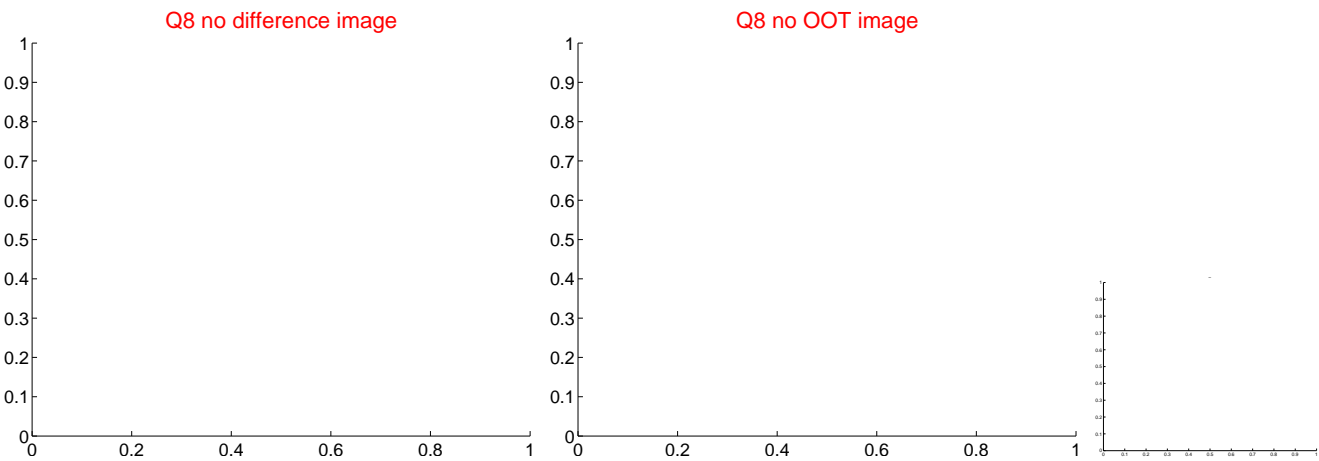
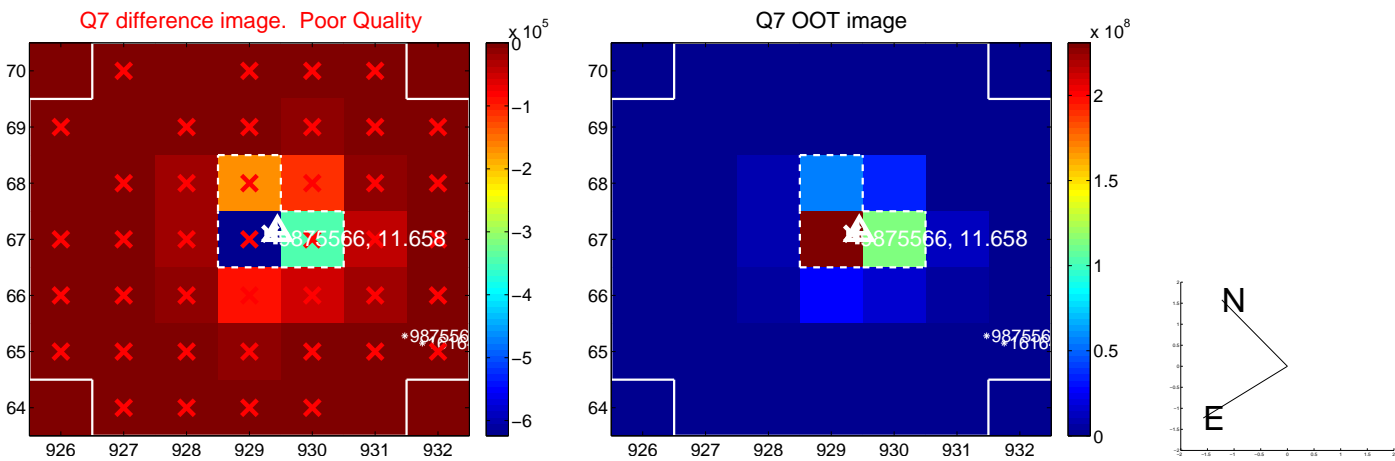
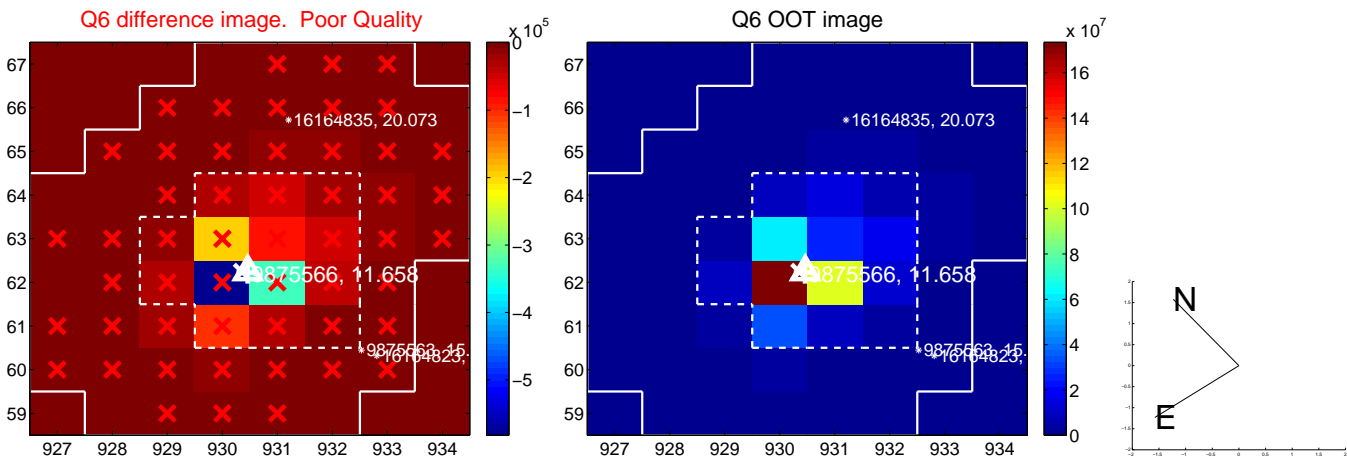
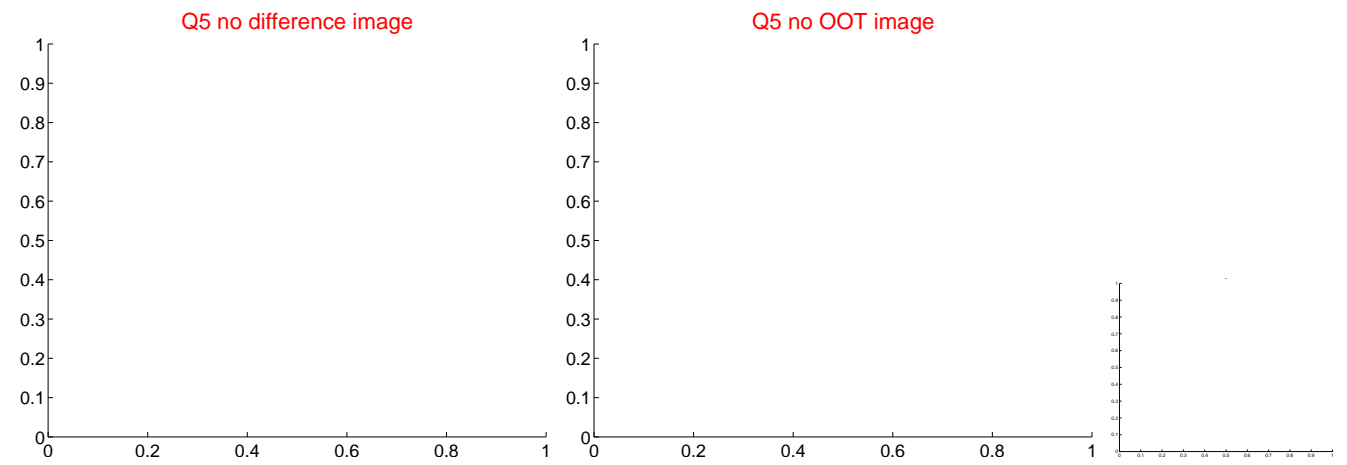


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

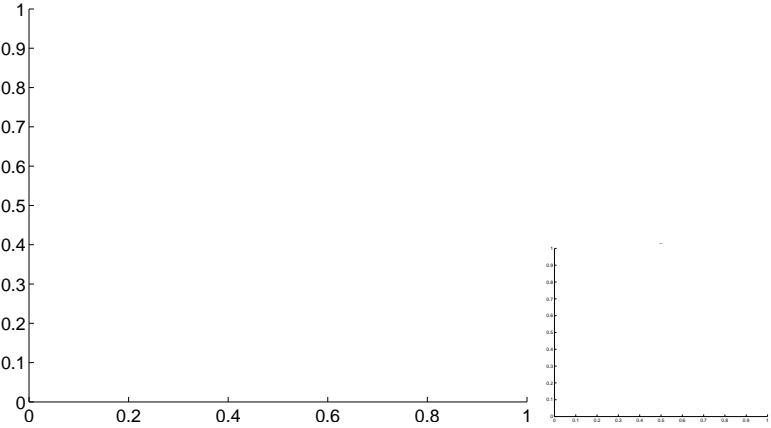


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

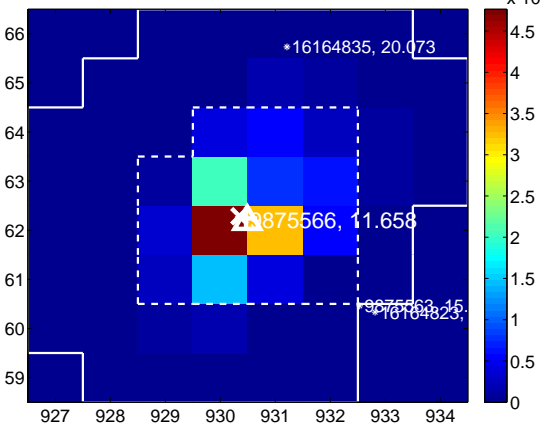
Q9 no difference image



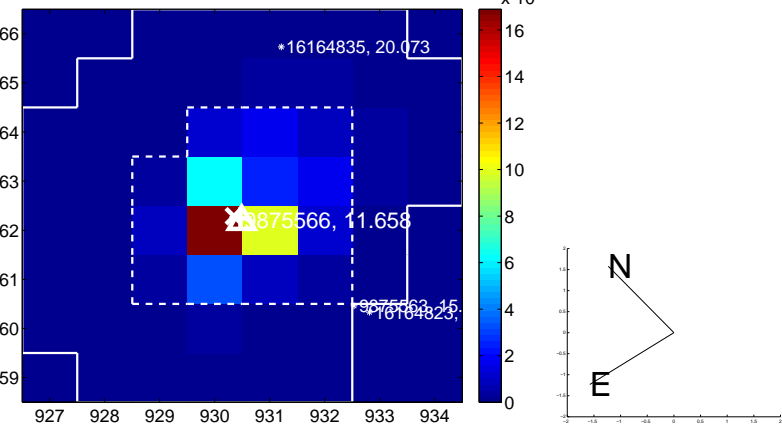
Q9 no OOT image



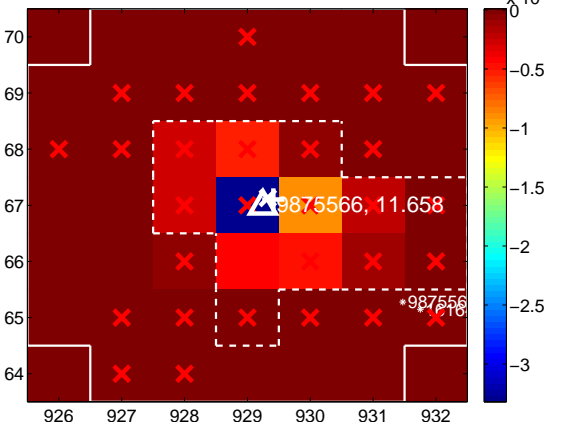
Q10 difference image



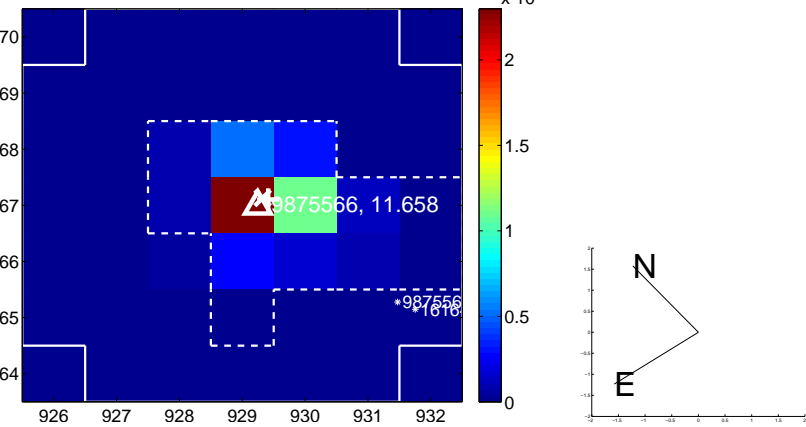
Q10 OOT image



Q11 difference image. Poor Quality



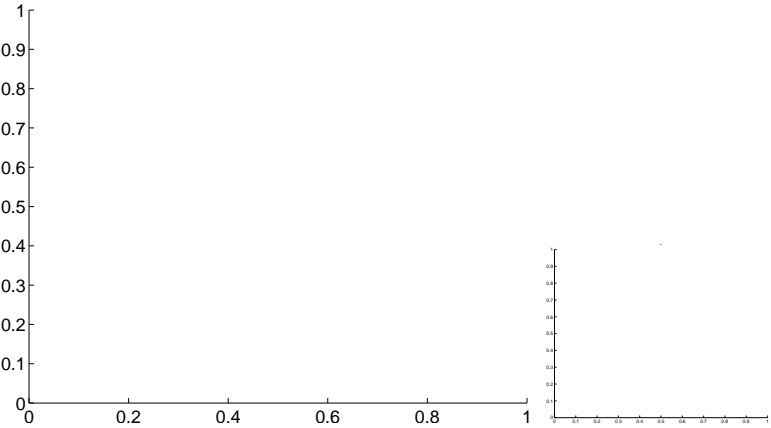
Q11 OOT image



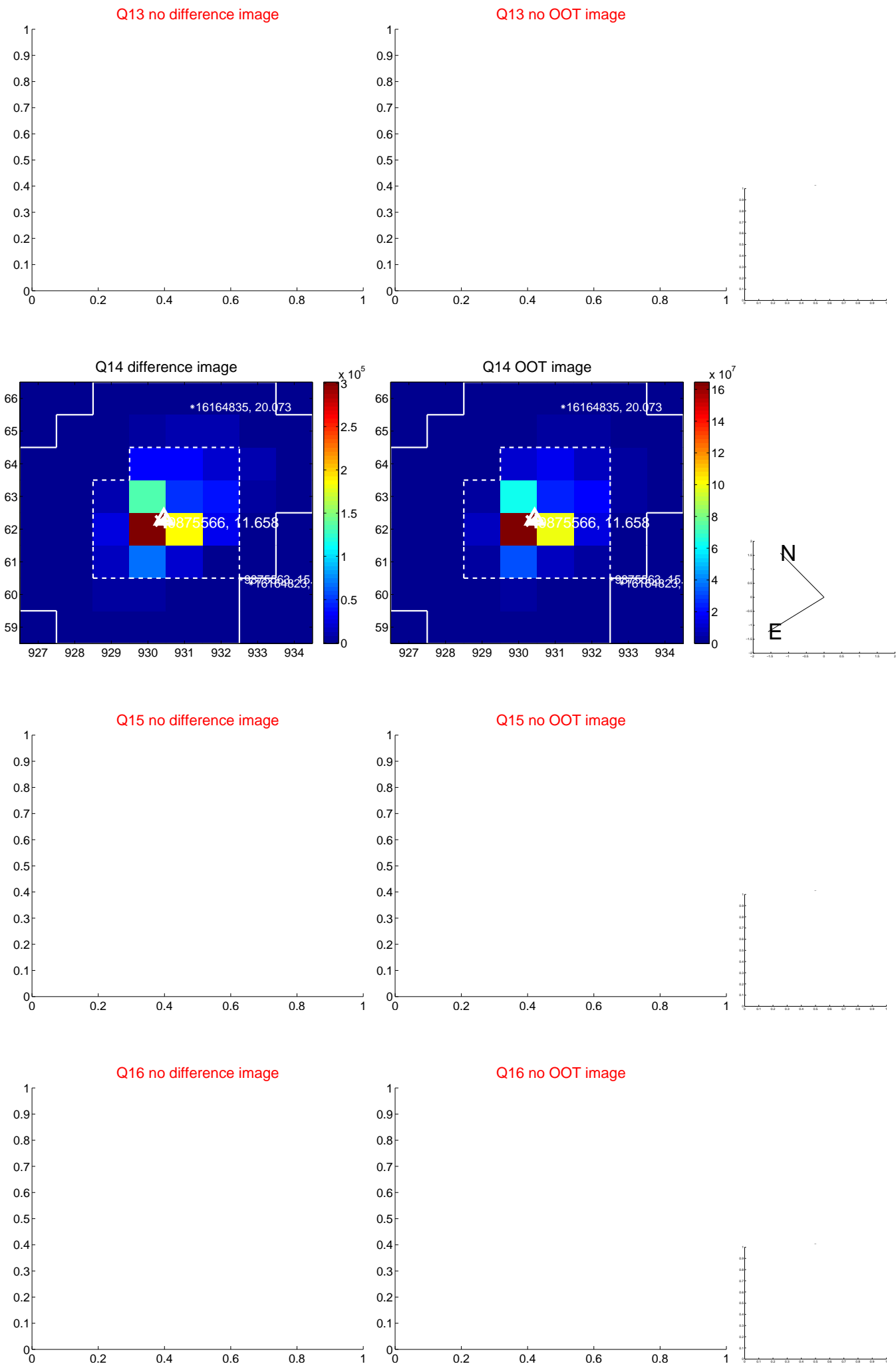
Q12 no difference image



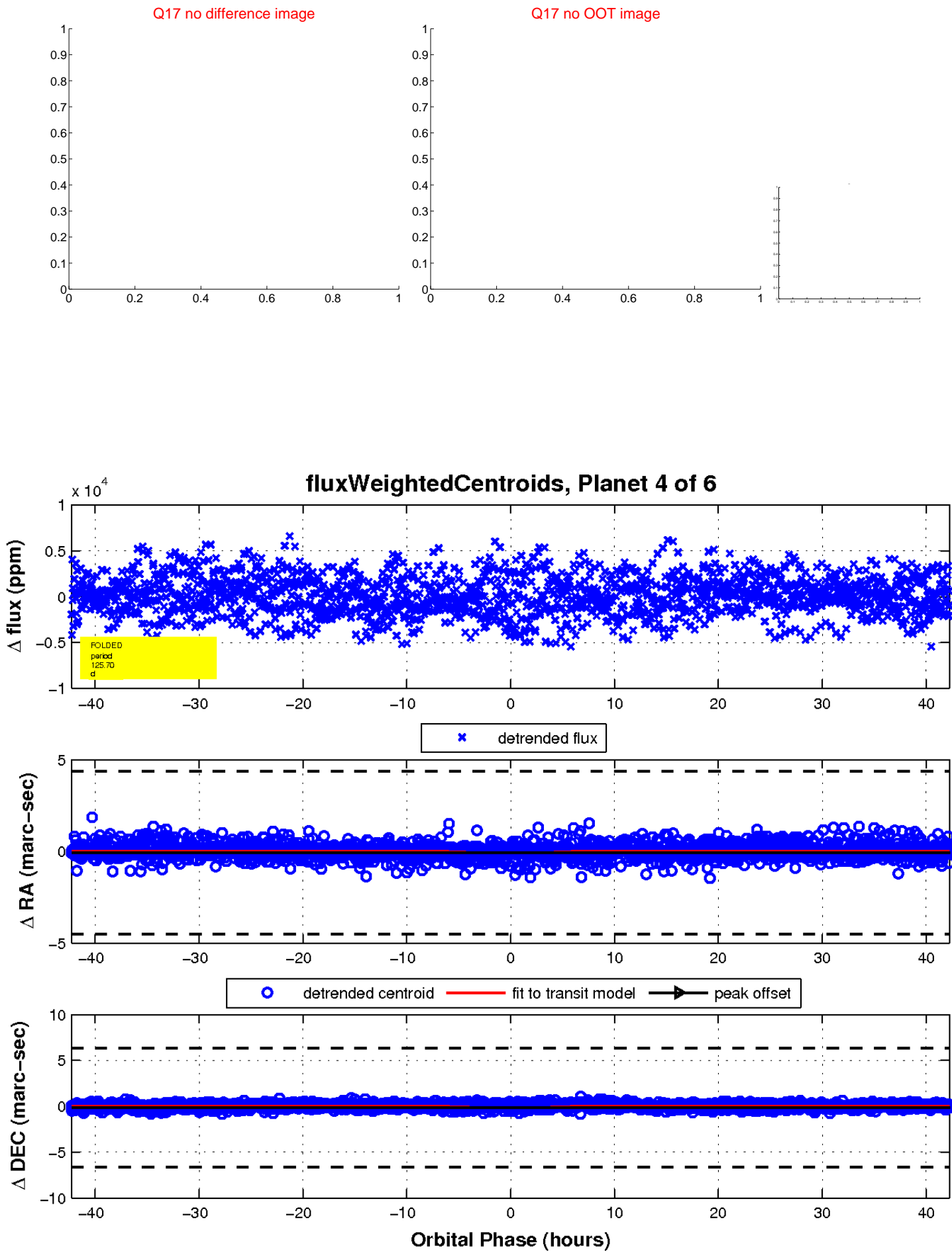
Q12 no OOT image



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

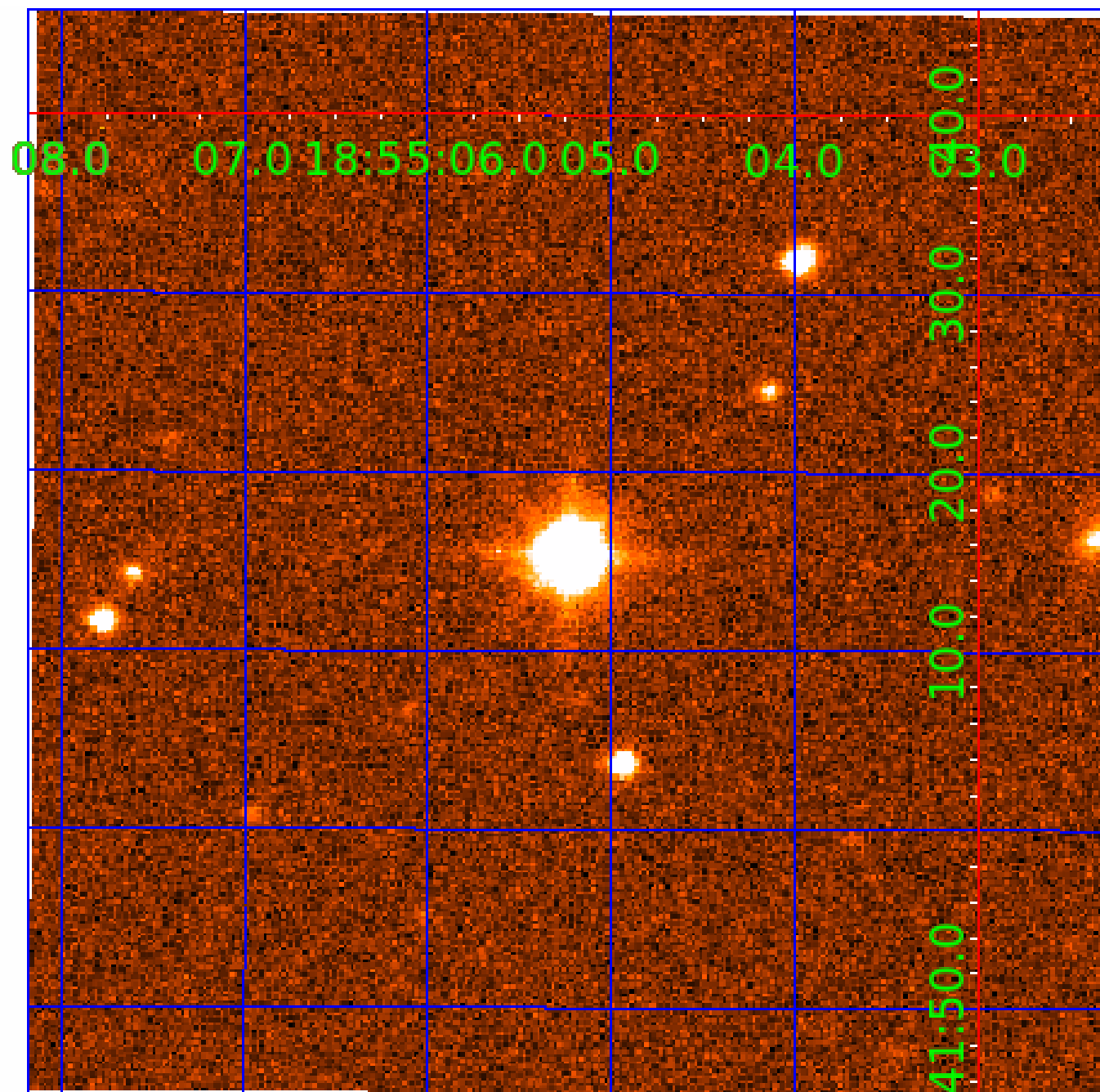


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

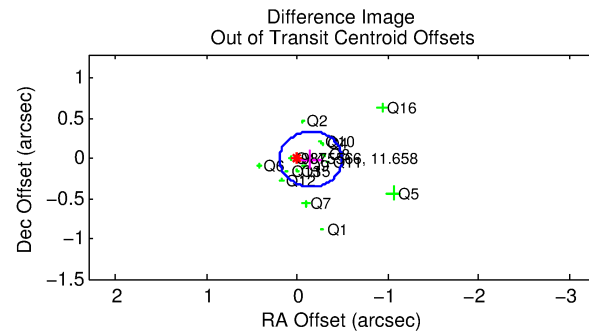
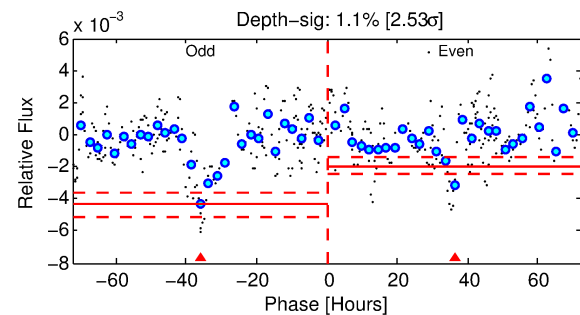
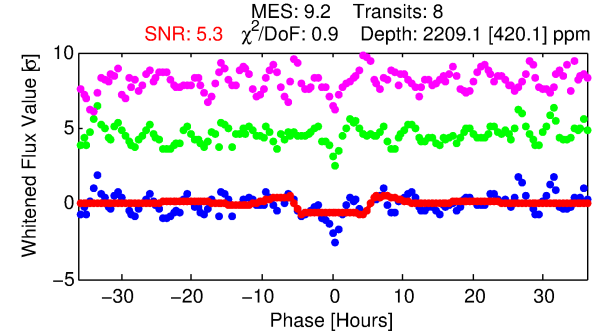
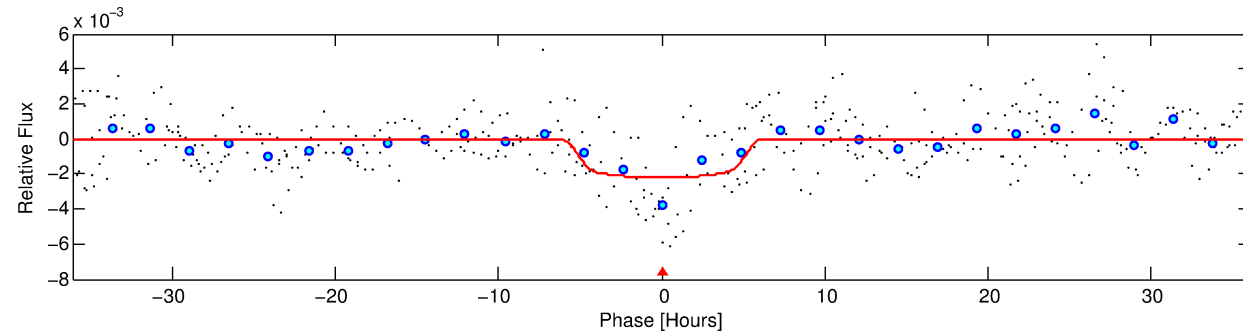
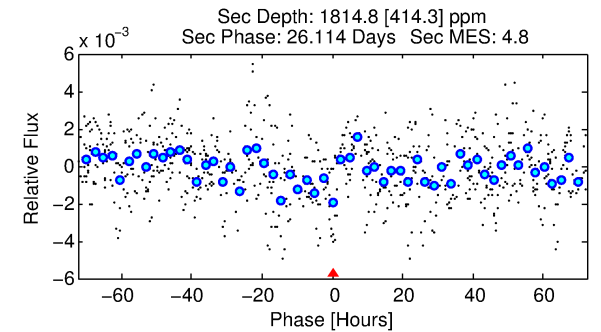
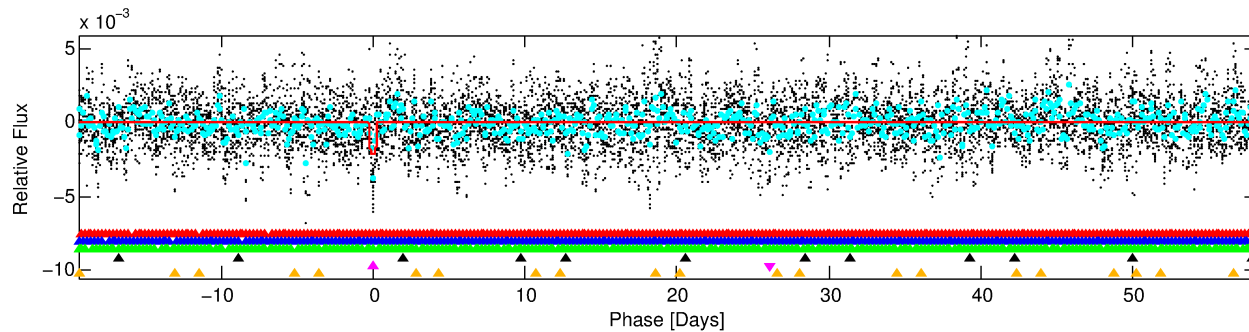
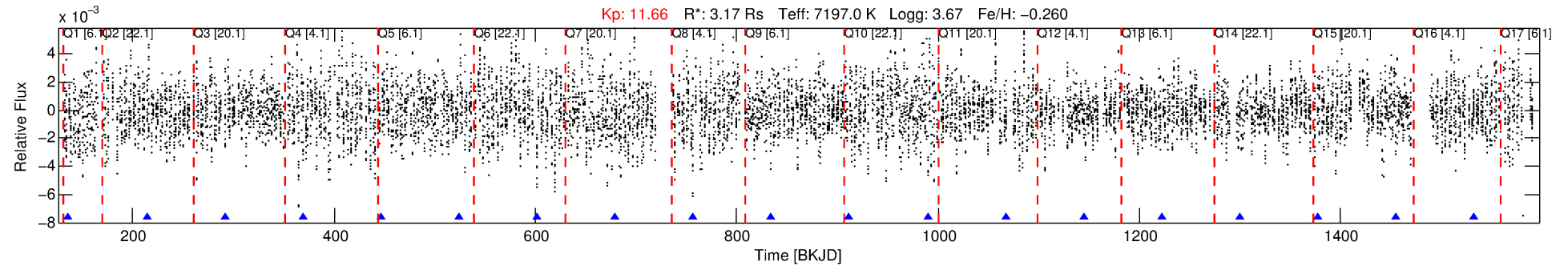
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-05

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 5 of 6 Period: 77.581 d



DV Fit Results:

Period = 77.58088 [0.00207] d
Epoch = 136.2928 [0.0230] BKJD
 $R_p/R^* = 0.0483$ [0.0052]
 $a/R^* = 31.44$ [7.42]
 $b = 0.83$ [0.09]
 $S_{\text{eff}} = 132.91$ [117.87]
 $T_{\text{eq}} = 866$ [192] K
 $R_p = 16.72$ [8.74] R_e
 $a = 0.4268$ [0.2245] AU
 $A_g = 650.97$ [602.73] [1.08σ]
 $T_{\text{effp}} = 6762$ [603] K [9.32σ]

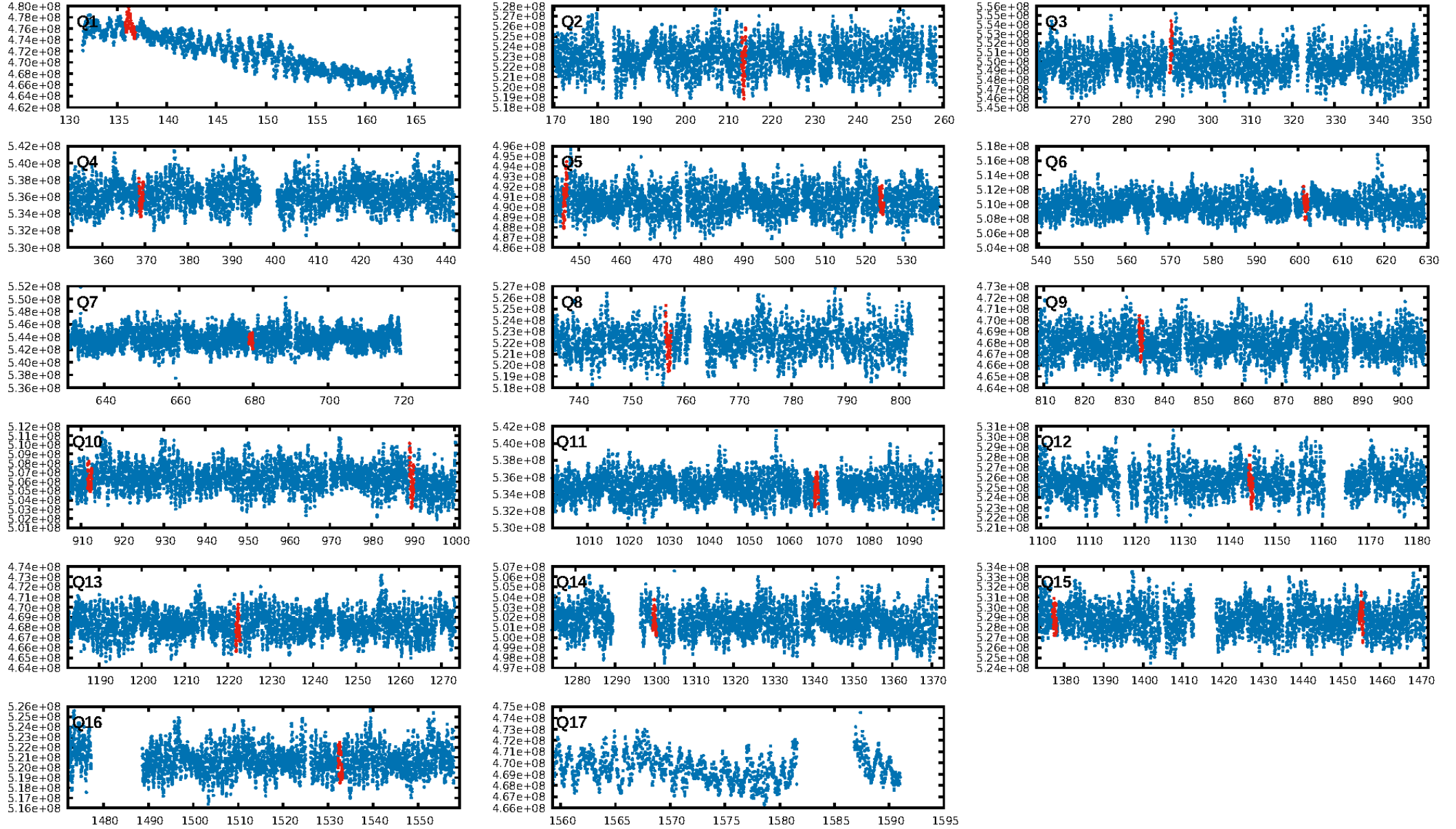
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.59σ]
LongPeriod-sig: 100.0% [62.28σ]
ModelChiSquare2-sig: 57.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.63e-10
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -14.62
Centroid-sig: 78.5%
Centroid-so: 0.265 arcsec [9.95σ]
OotOffset-rm: 0.148 arcsec [1.29σ]
KicOffset-rm: 0.449 arcsec [3.87σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.00 [0/15]

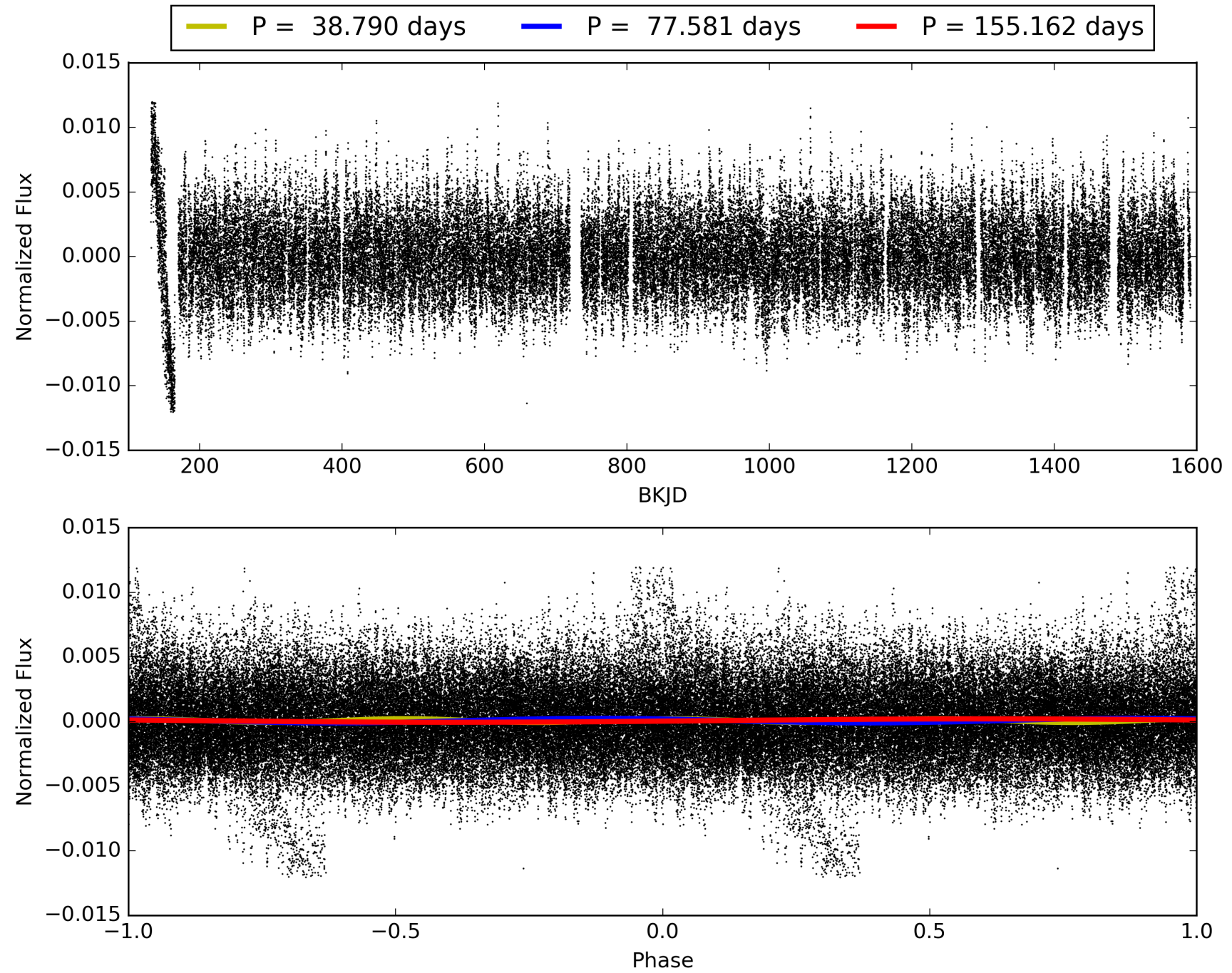
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:46 Z

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

TCE 009875566-05, PDC Light Curves

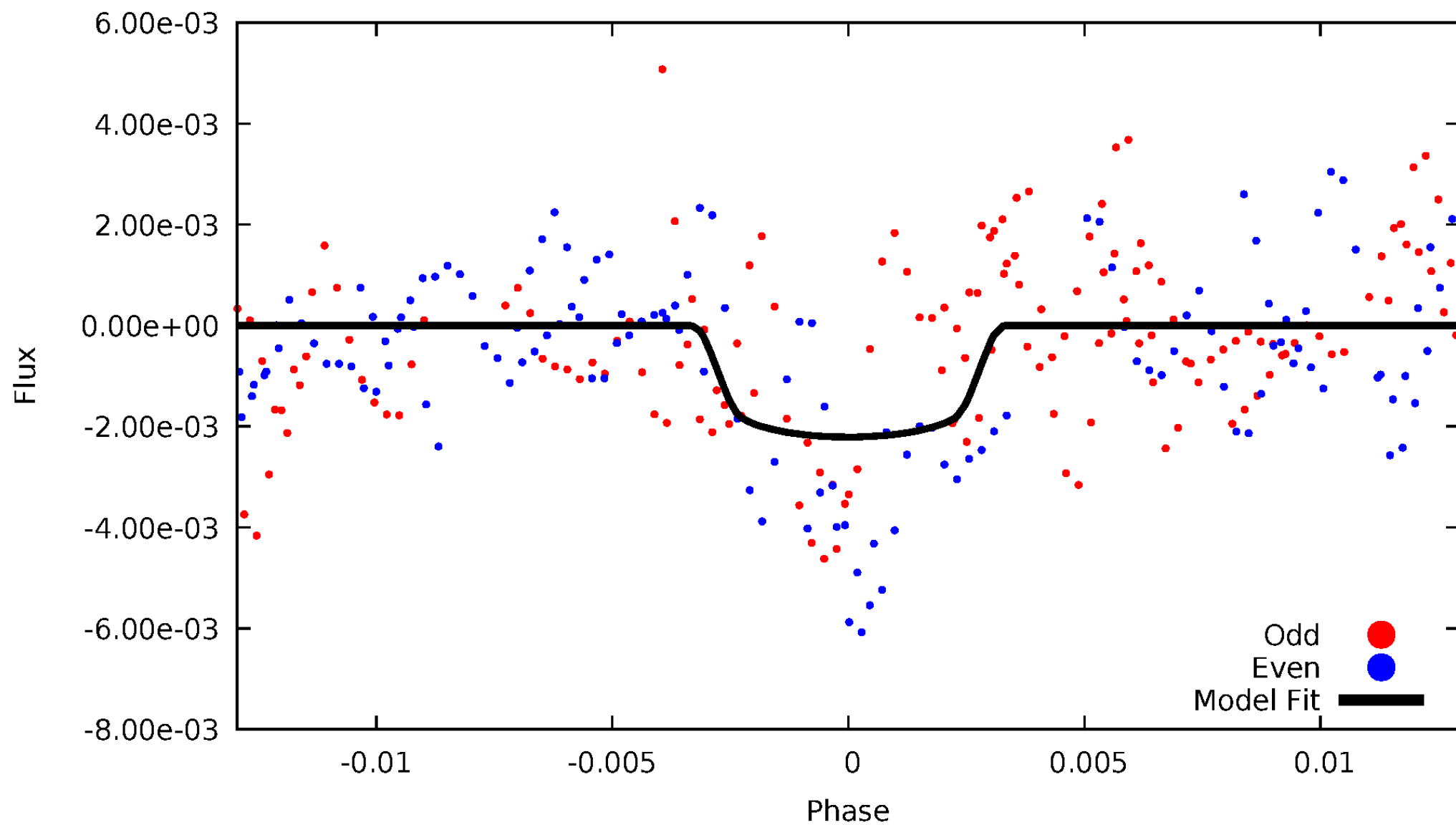


TCE 009875566-05



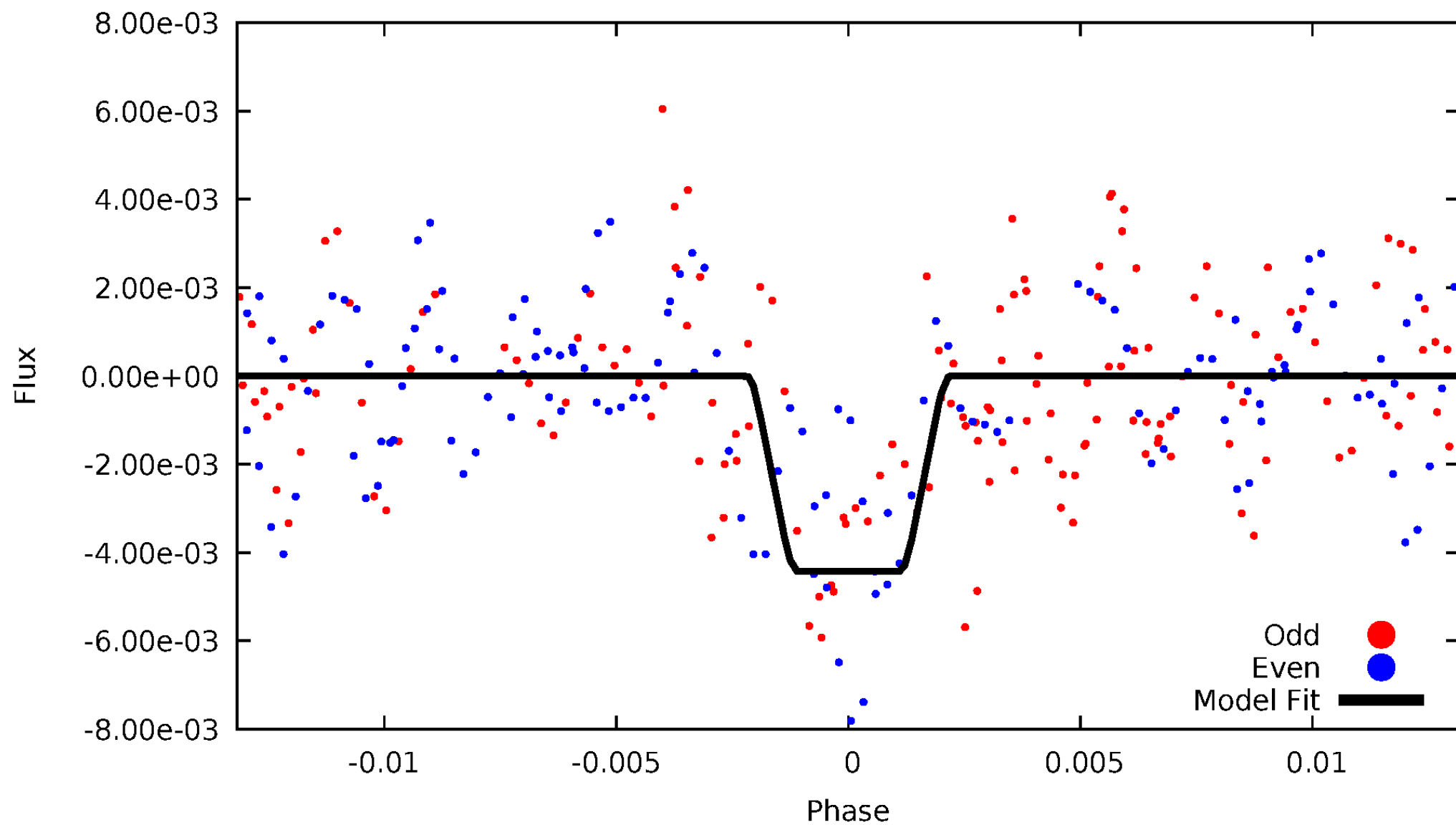
DV Odd/Even

TCE 009875566-05



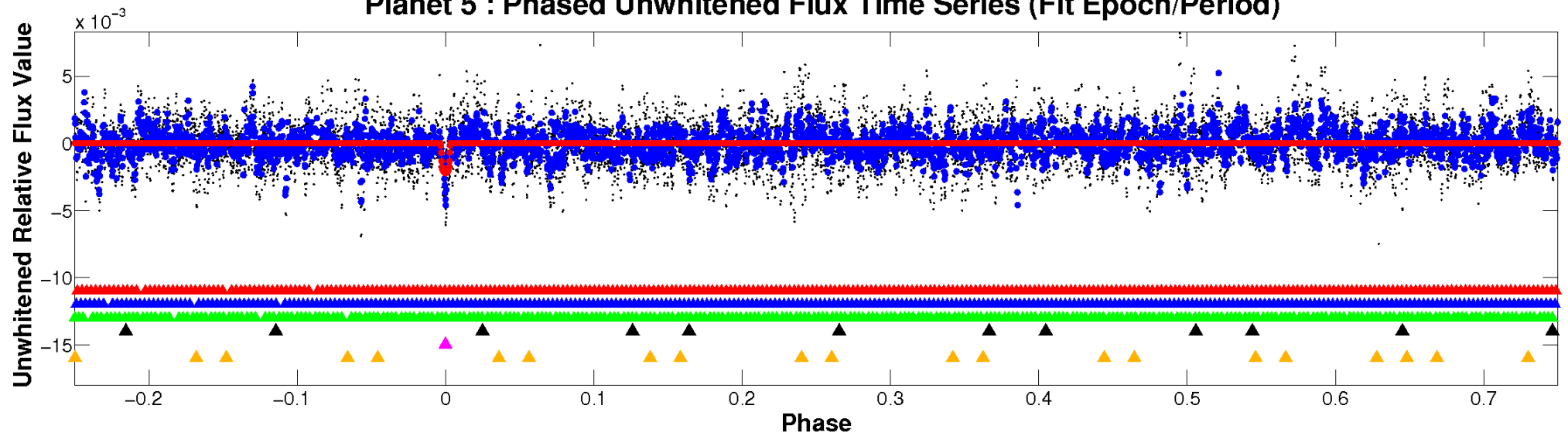
ALT Odd/Even

TCE 009875566-05

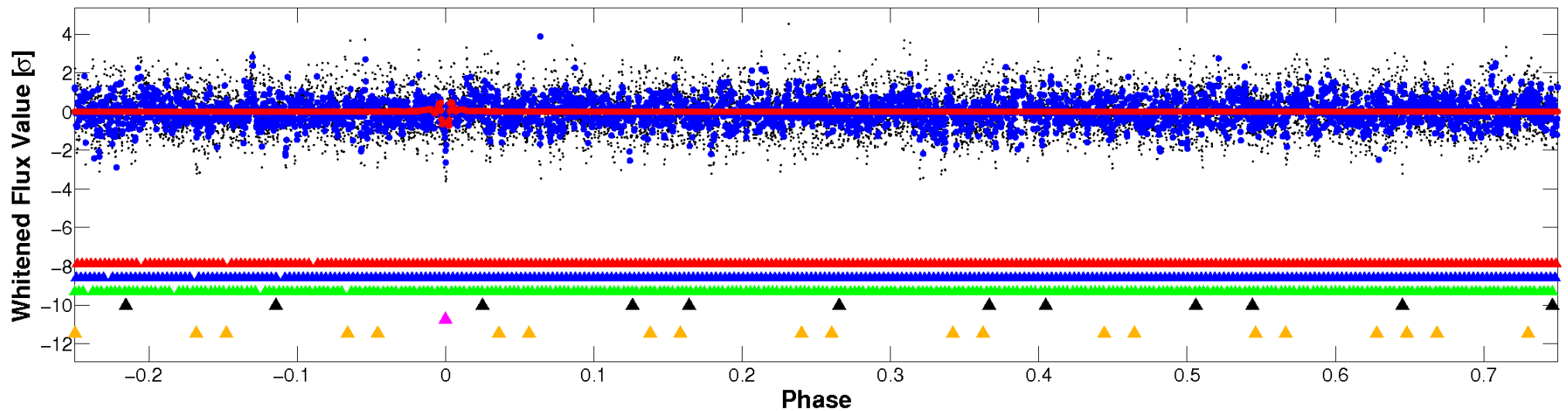


Non-Whitened Vs. Whitened Light Curve

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

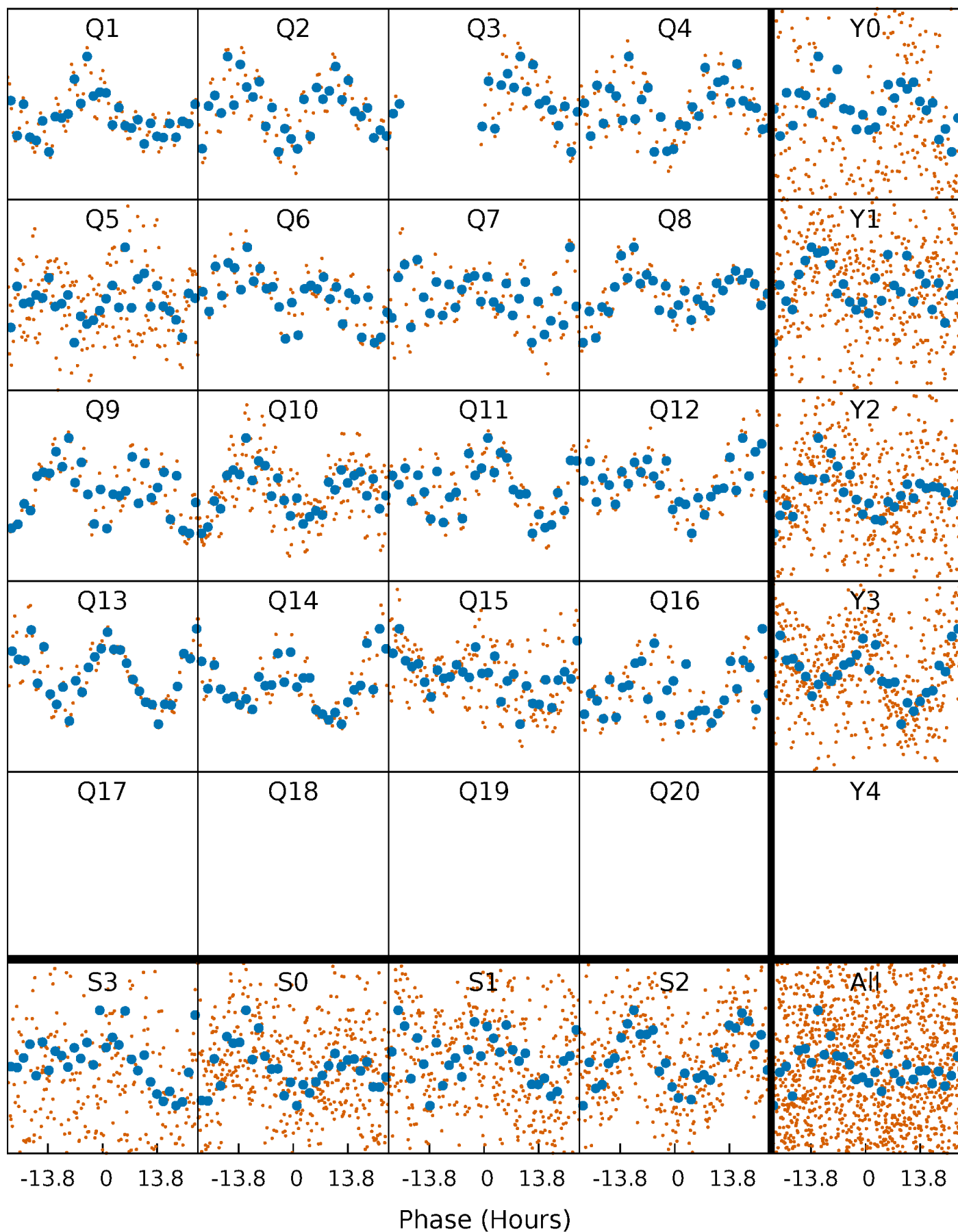


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



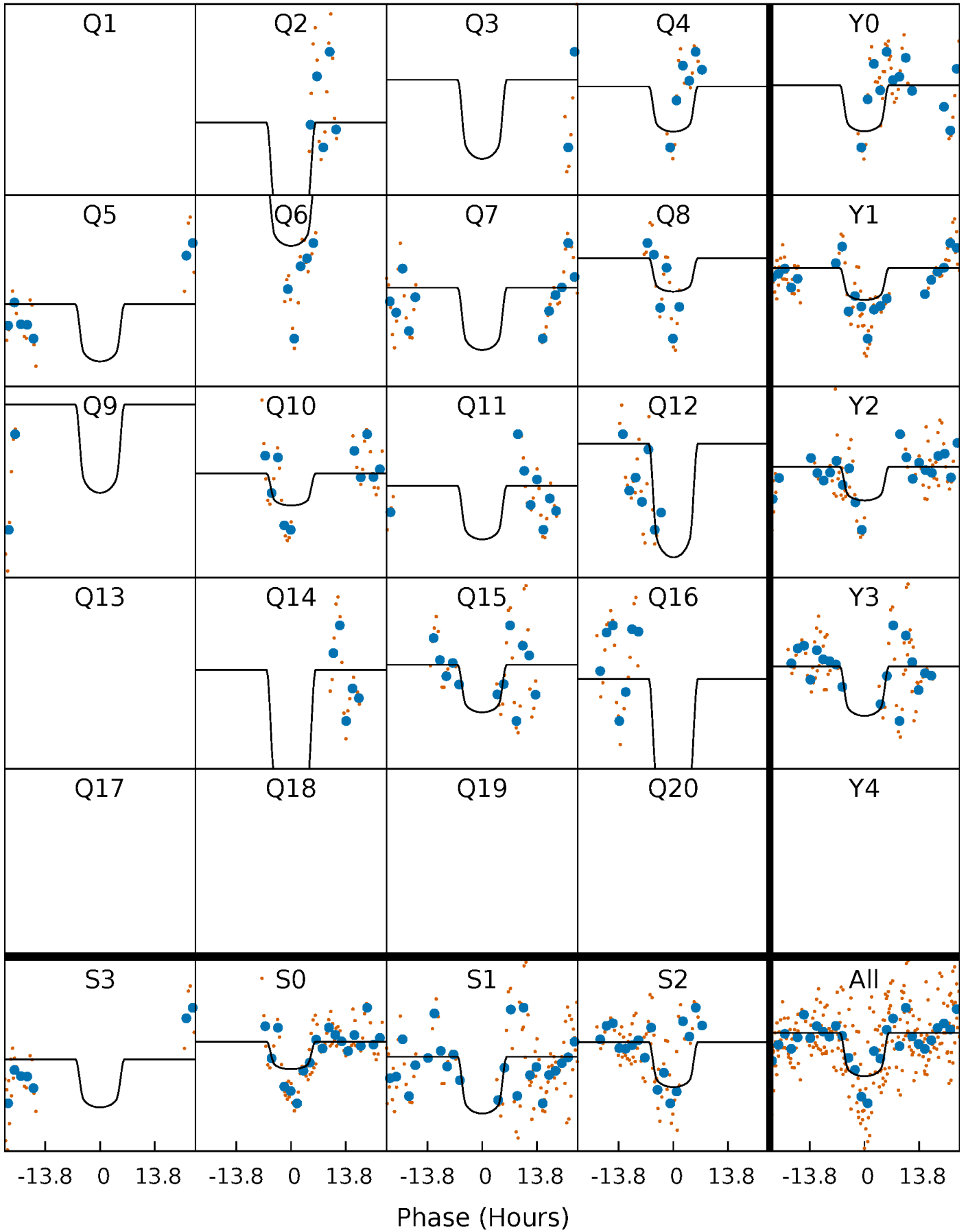
PDC Quarter-Phased Transit Curves

TCE 009875566-05 $P = 77.580878$ Days $T_0 = 136.292842$ (BKJD)



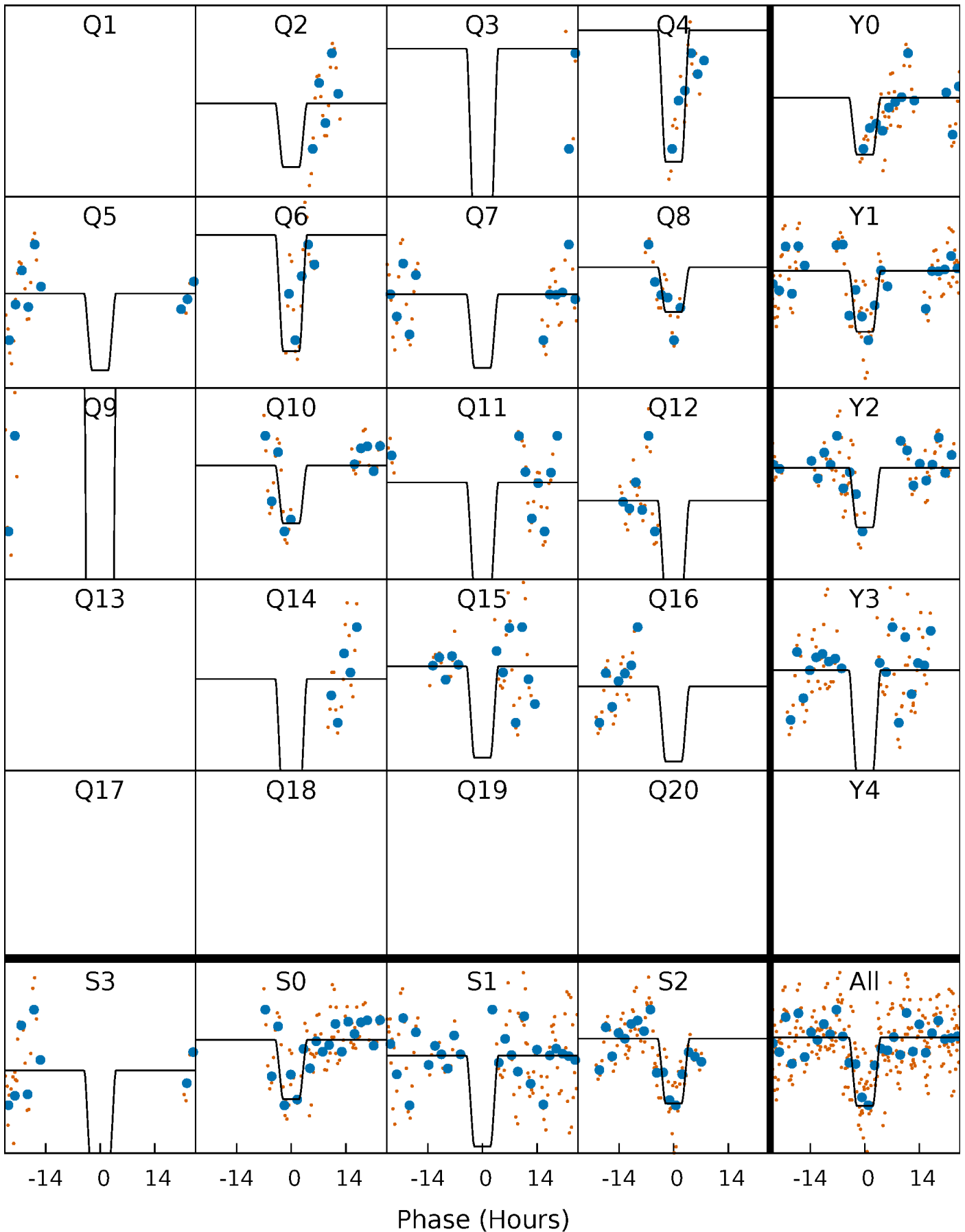
DV Quarter-Phased Transit Curves

TCE 009875566-05 $P = 77.580878$ Days $T_0 = 136.292842$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

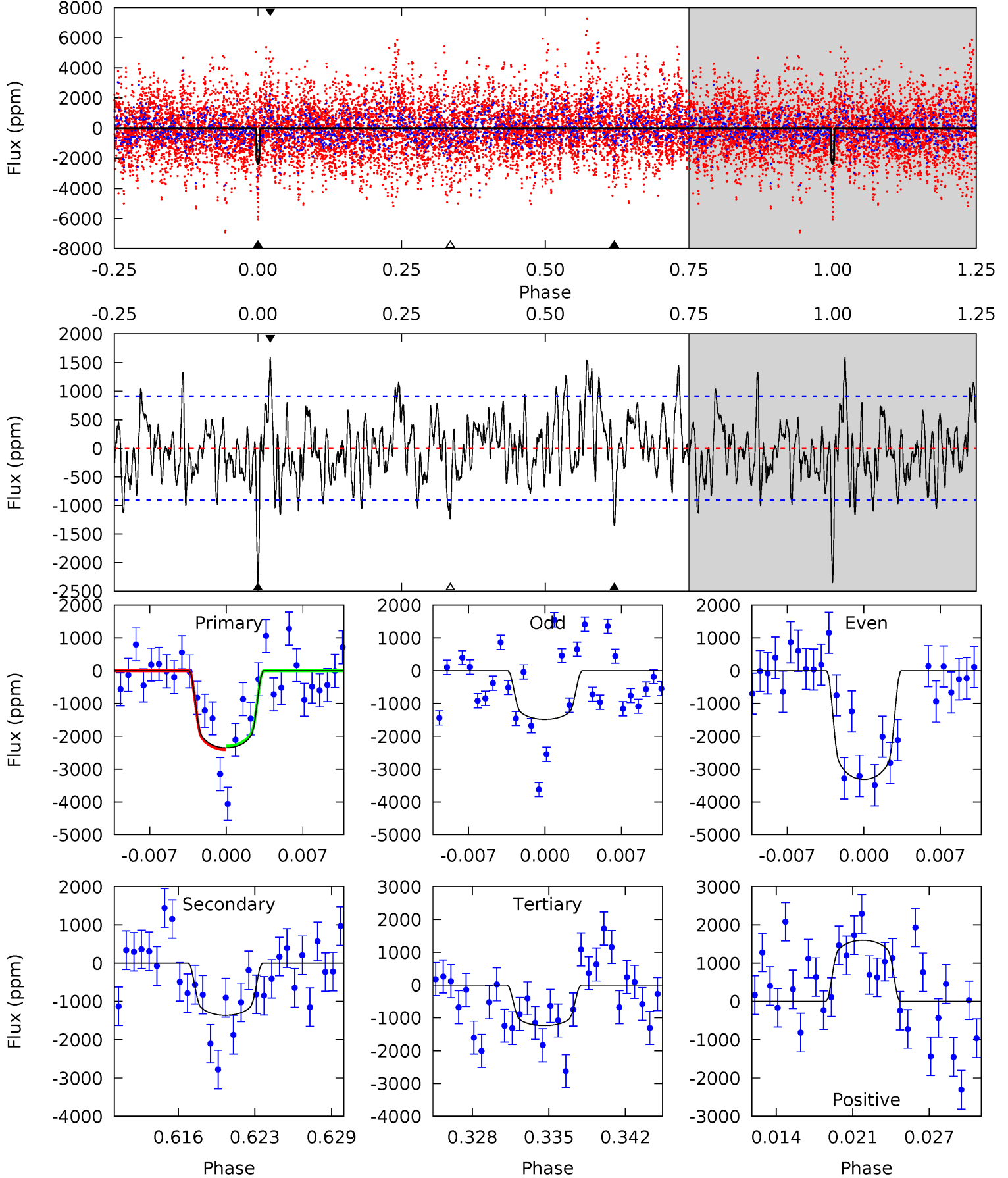
TCE 009875566-05 P= 77.583788 Days $T_0=136.266199$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-05, P = 77.580878 Days, E = 58.711964 Days

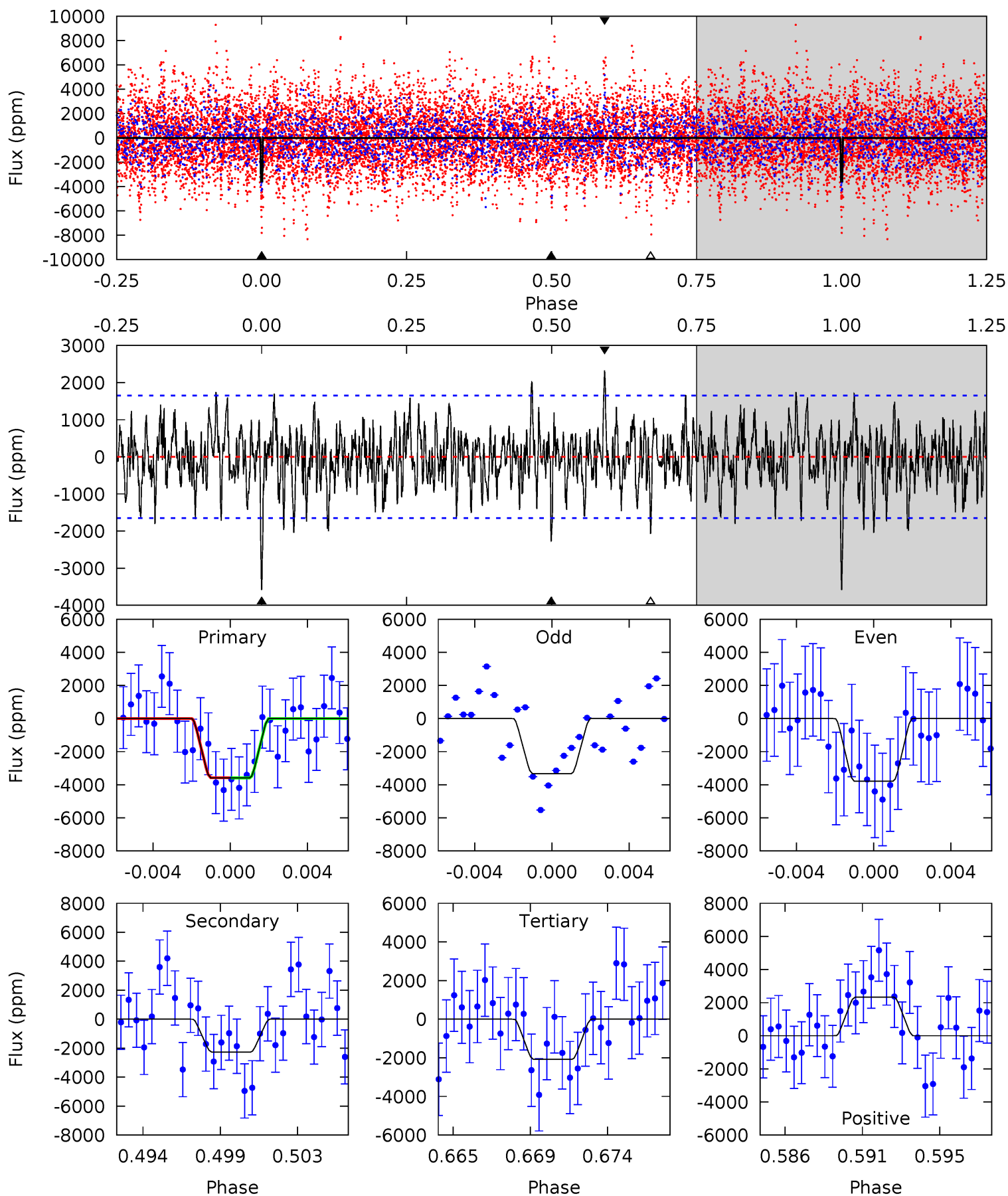
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.2 | 7.64 | 6.94 | 8.96 | 5.10 | 2.70 | 2.79 | 6.26 | 4.23 | 0.70 | -1.33 | 5.05 | 0.97 | 0.40 | 0.32 |



Alt Model-Shift Uniqueness Test

009875566-05, P = 77.583788 Days, E = 58.682411 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.3 | 7.12 | 6.51 | 7.30 | 5.18 | 2.85 | 2.01 | 4.75 | 3.95 | 0.62 | -0.18 | 0.71 | 0.59 | 0.39 | 0.02 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-05 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|-------------------------|----------------------|----------------------|---------------------|
| DV | -1362 ± 178 | $15.08^{+3.21}_{-4.13}$ | 1148^{+93}_{-152} | 6192^{+513}_{-415} | 604^{+455}_{-194} |
| Alt. | -2269 ± 318 | $21.00^{+3.76}_{-5.95}$ | 1154^{+90}_{-154} | 6007^{+406}_{-353} | 521^{+402}_{-161} |

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

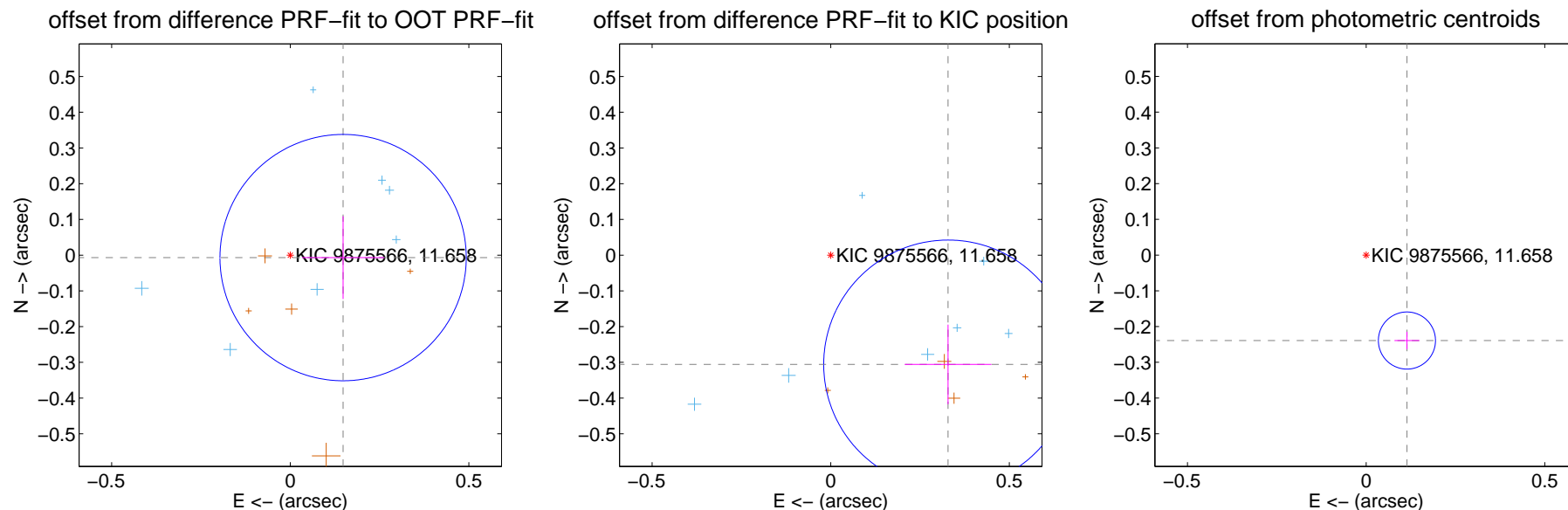
DV Centroid Data

Supplemental centroid analysis for 009875566-05. **Kepler magnitude: 11.66.** Transit SNR 5.30

There are 9 quarters with good PRF difference image offsets

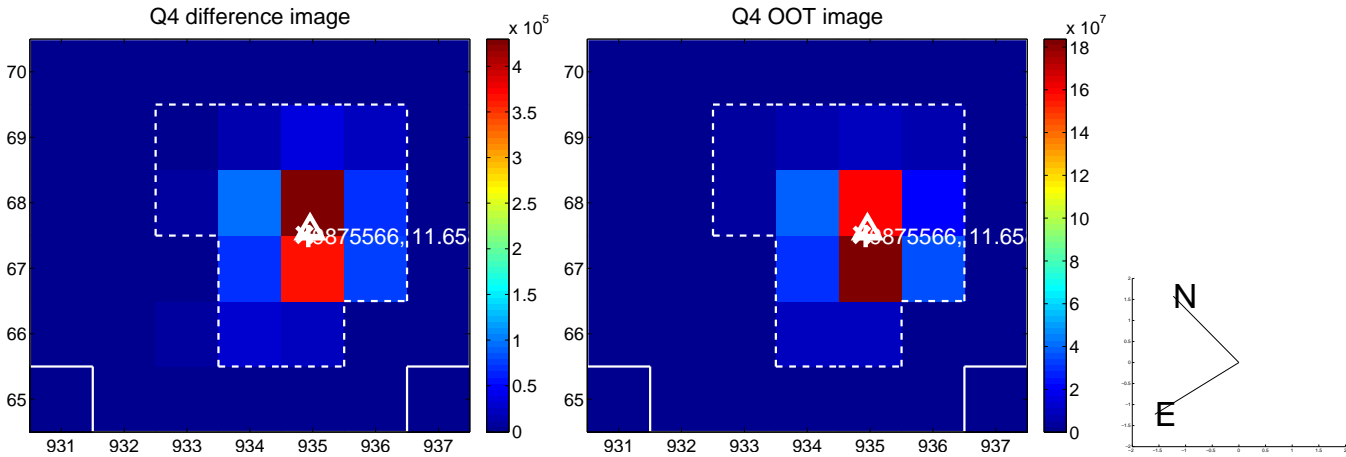
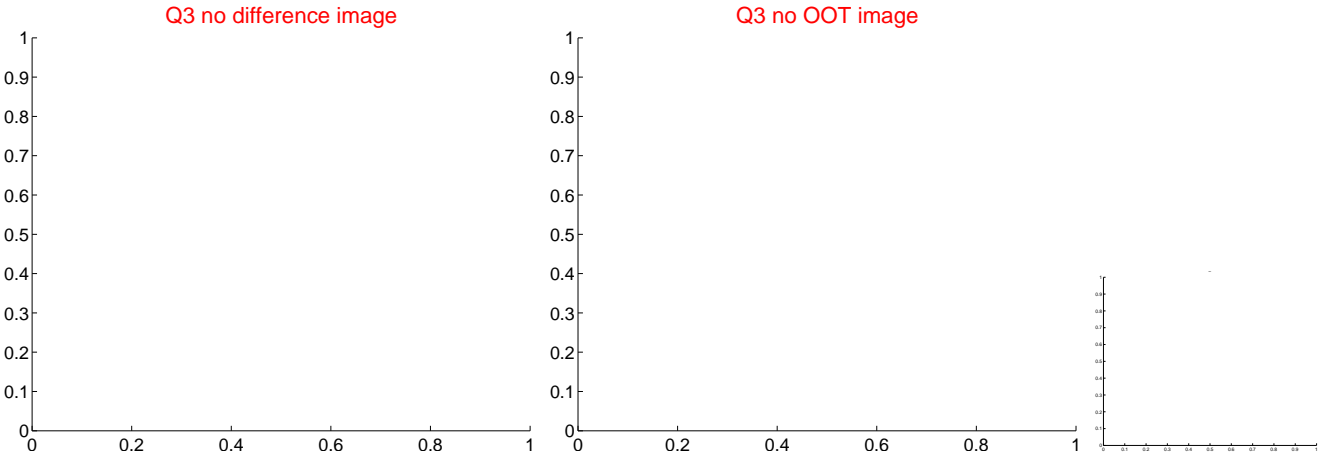
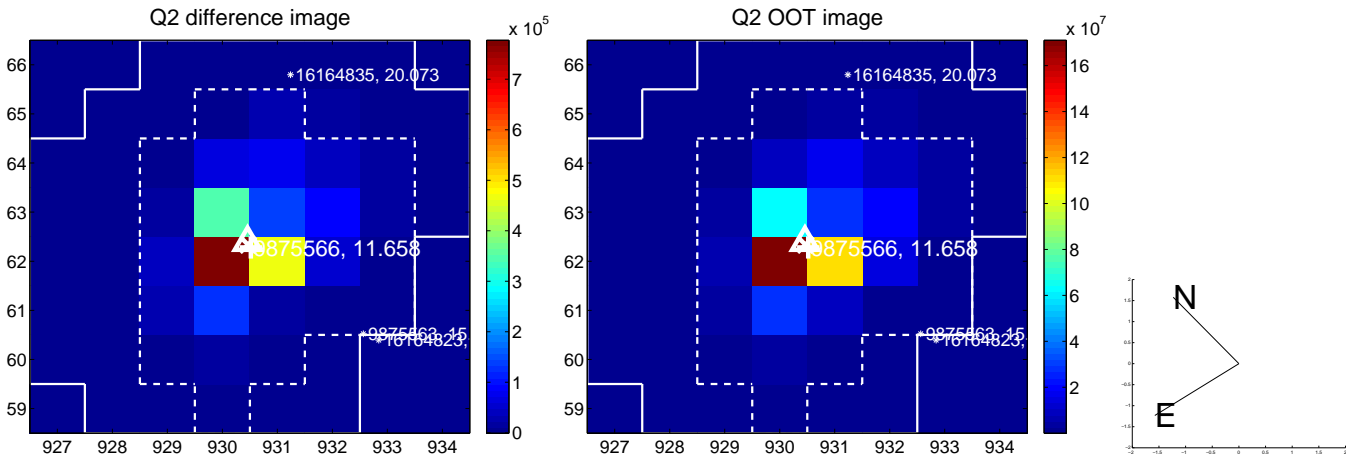
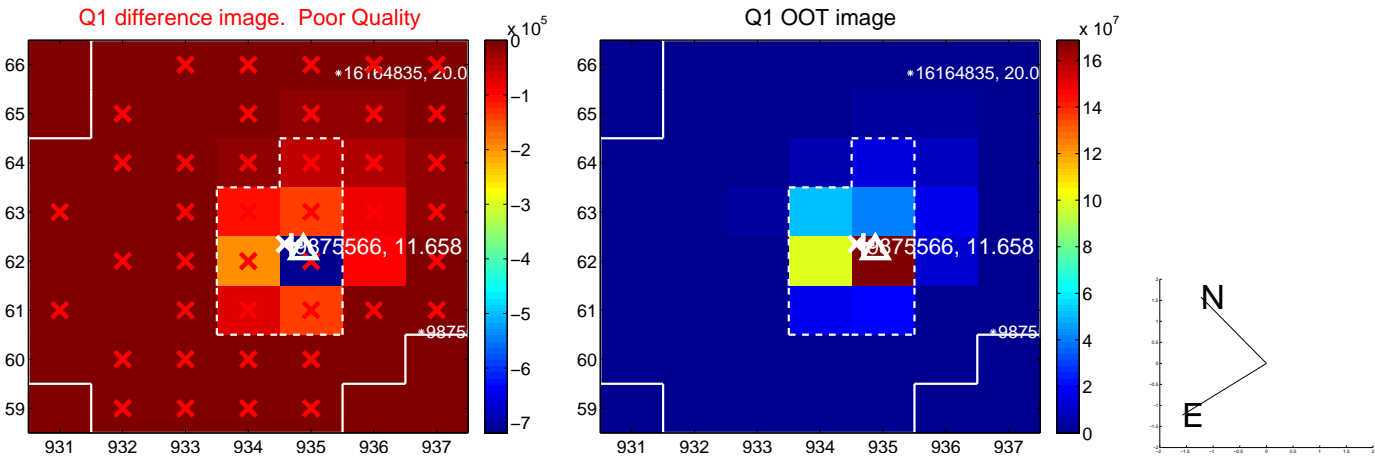
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.148 ± 0.115 | 1.29 | -0.148 ± 0.115 | -0.007 ± 0.116 |
| PRF-fit source offset from KIC position | 0.449 ± 0.116 | 3.87 | -0.328 ± 0.121 | -0.306 ± 0.111 |
| photometric centroid source offset | 0.27 ± 0.03 | 9.95 | -0.11 ± 0.03 | -0.24 ± 0.02 |

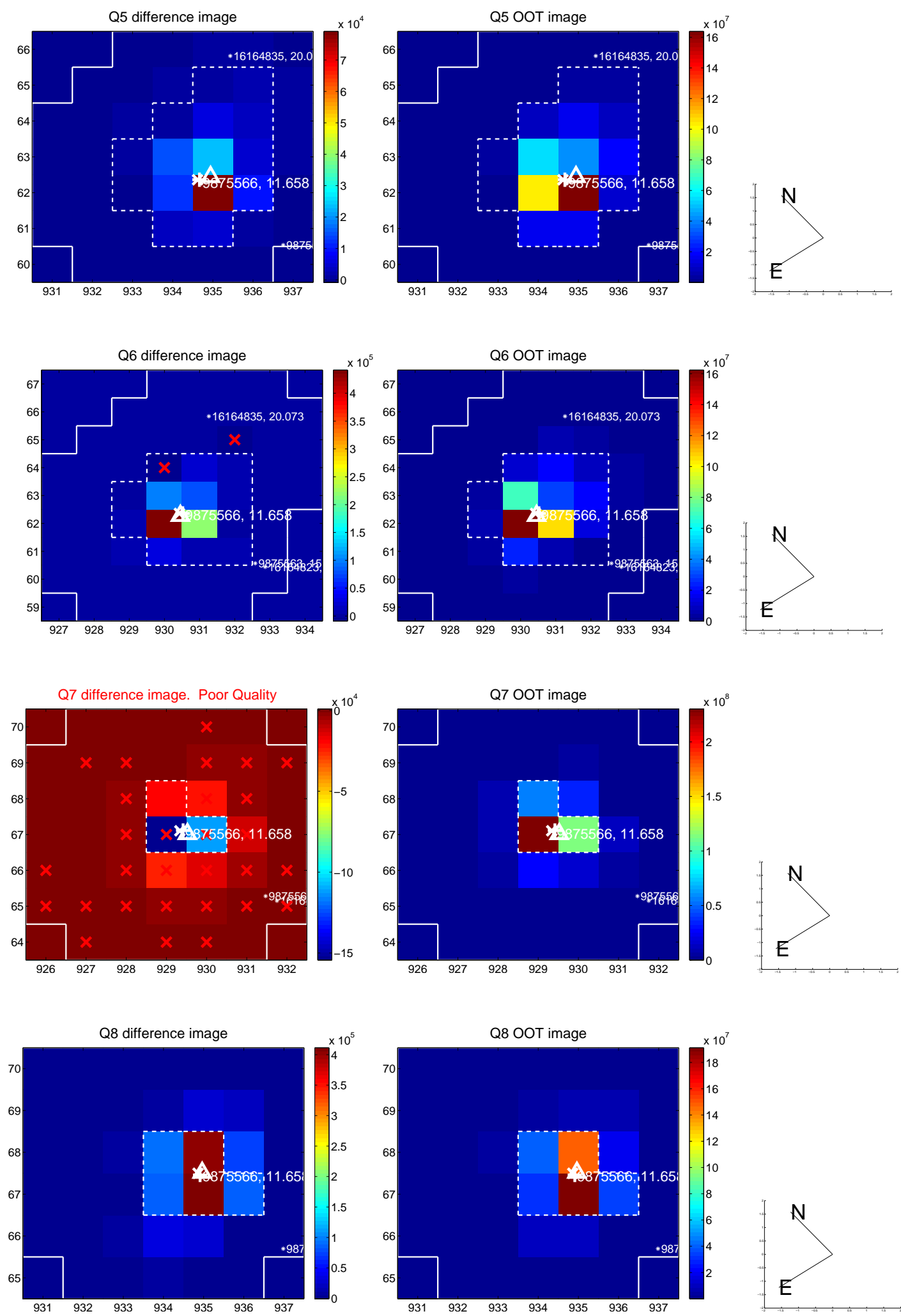


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

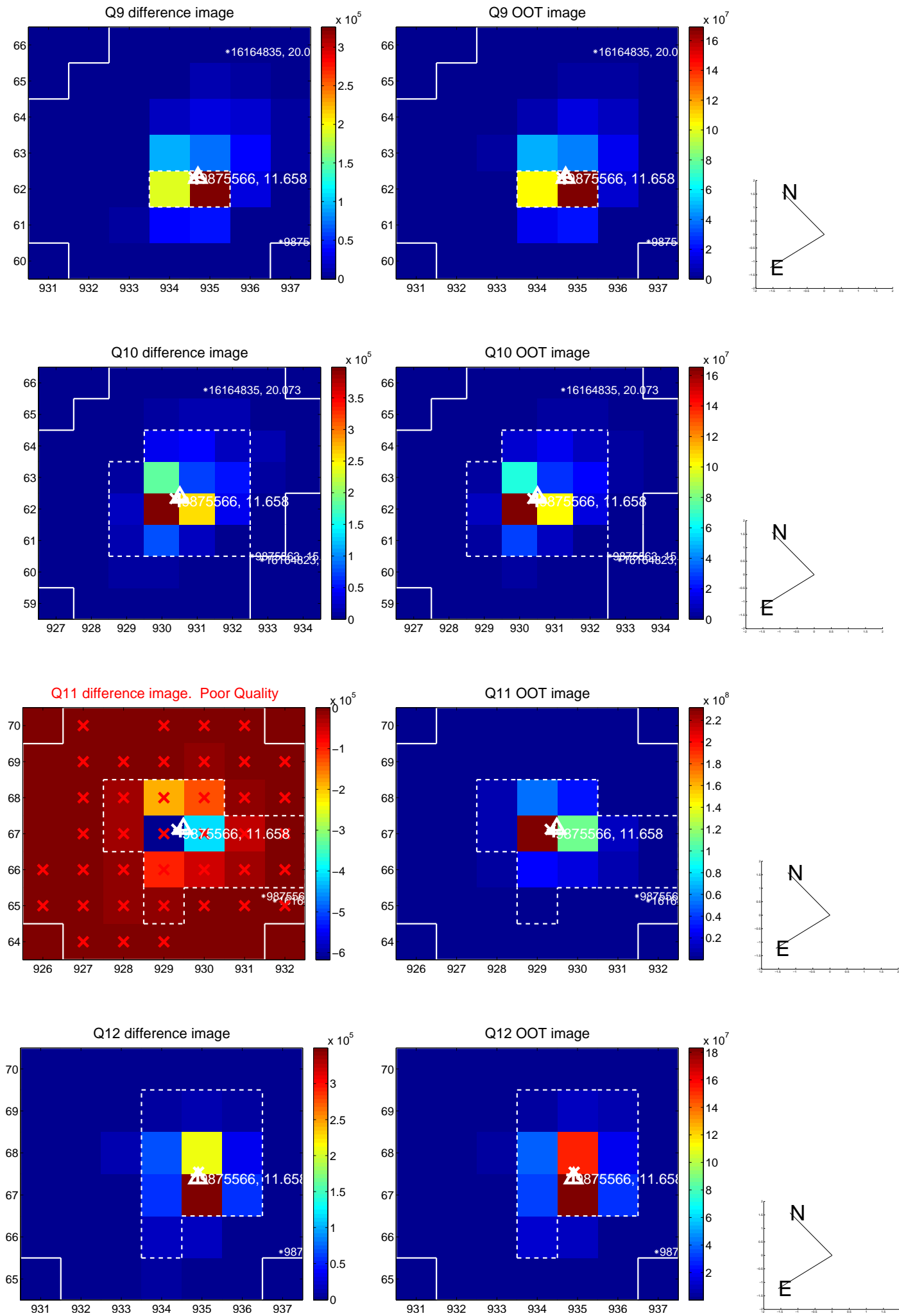
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



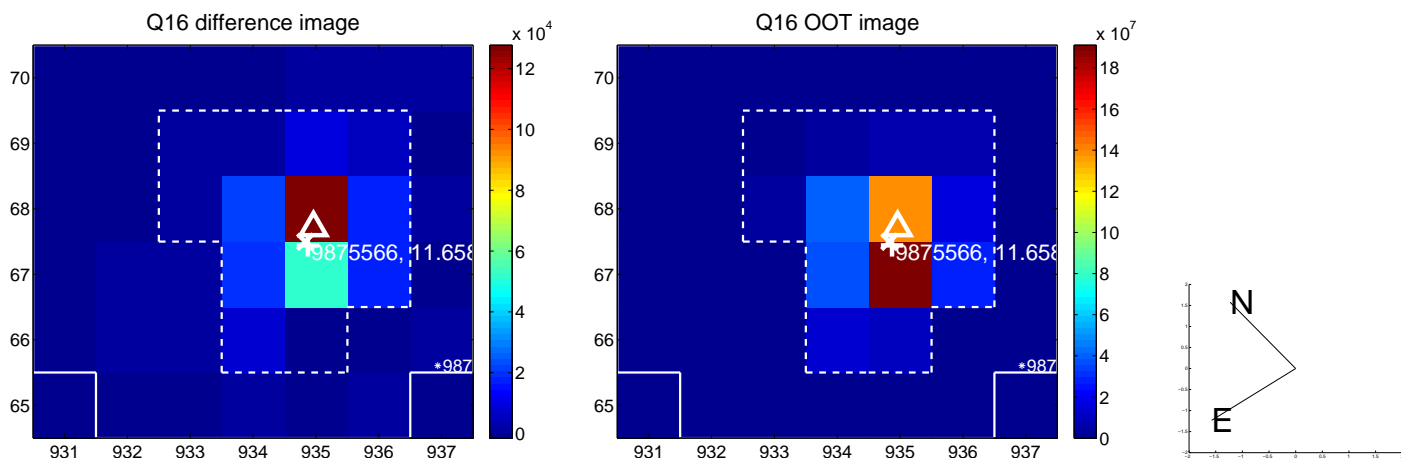
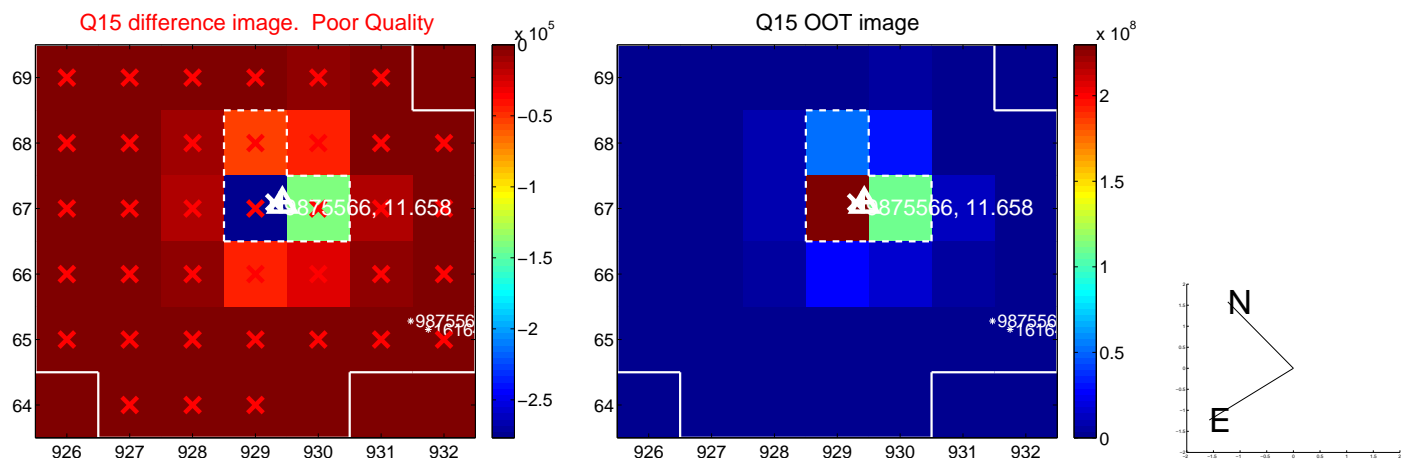
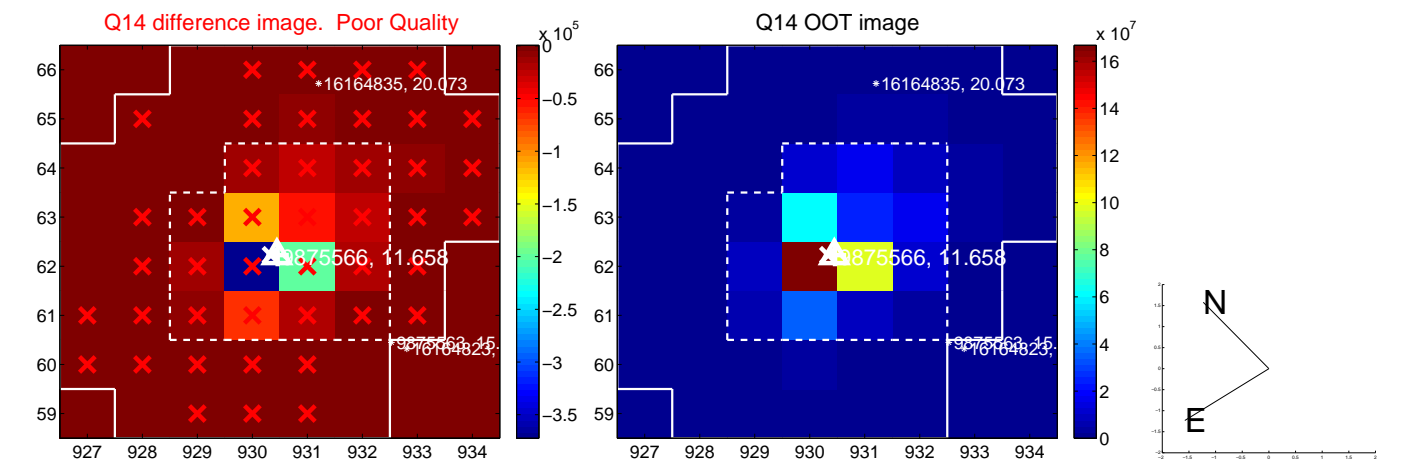
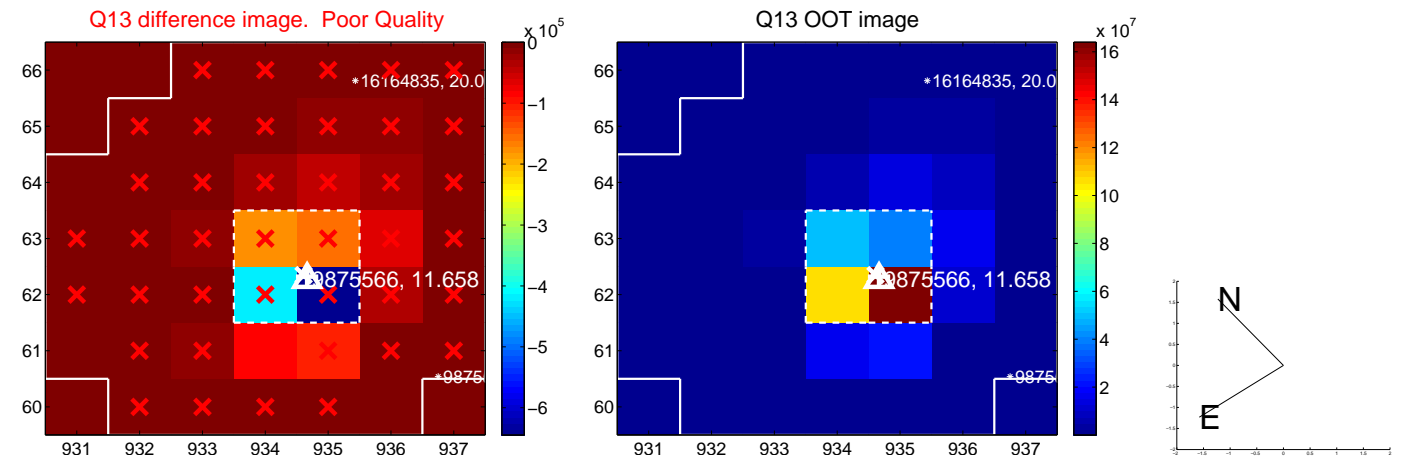
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



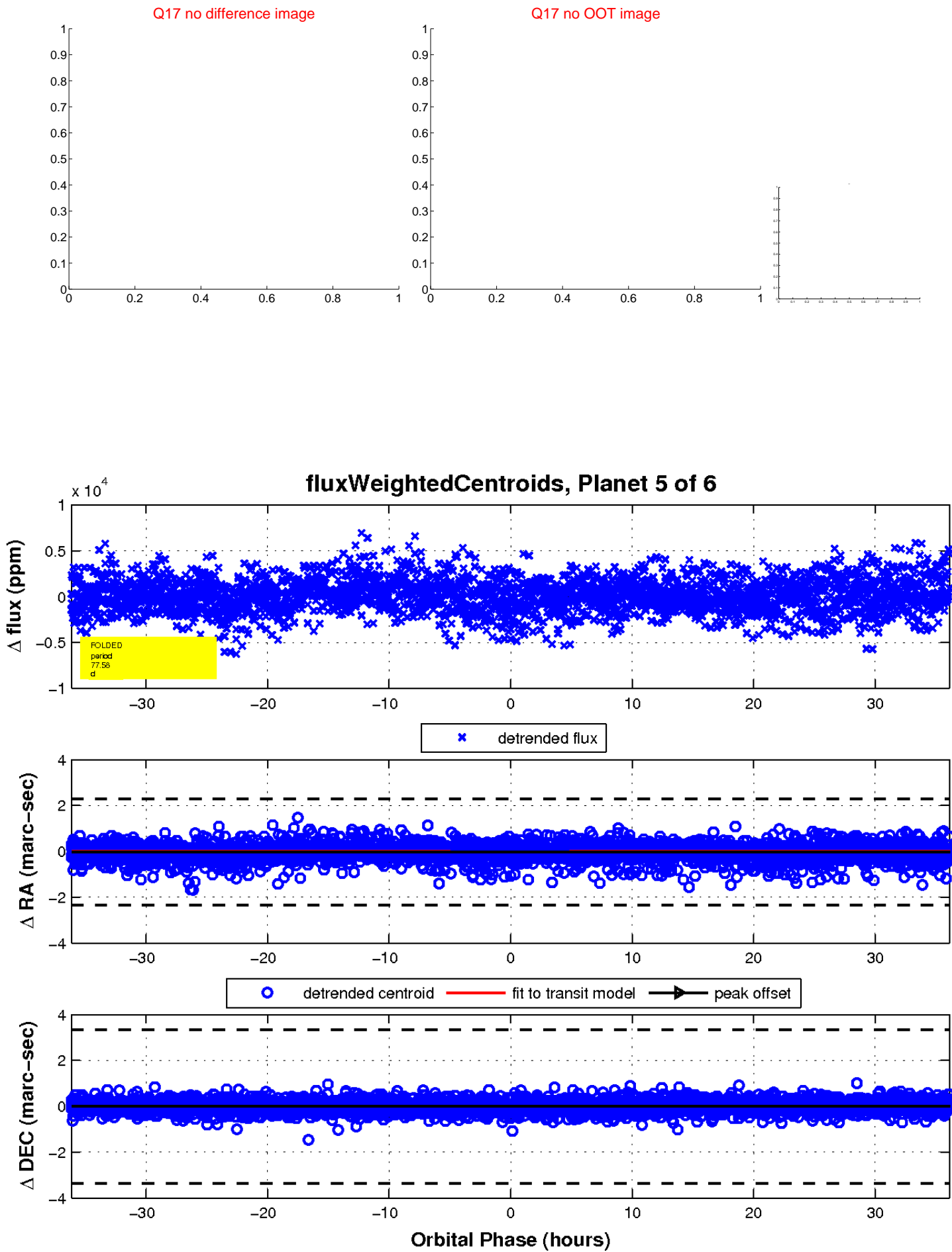
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

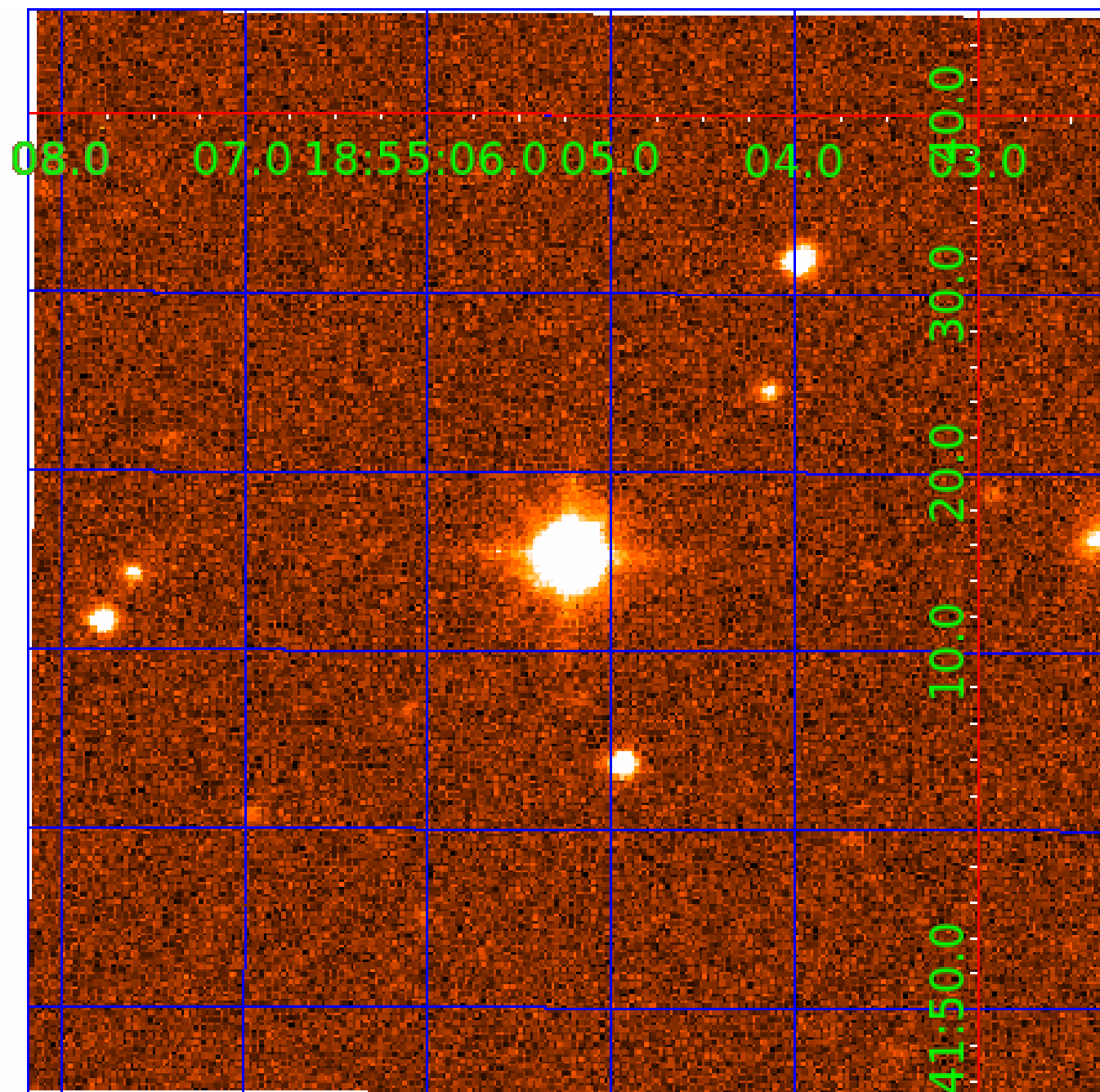


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009875566

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009875566-01 | OBS | No | 4.507702 | 133.896366 | 310.9 | 10.361 | 7.9 | 7.1 | 3.17 | 7197 | 7.19 | 5906.06 |
| 009875566-02 | OBS | No | 4.507755 | 132.169700 | 409.7 | 11.437 | 8.9 | 9.7 | 3.17 | 7197 | 8.27 | 5905.97 |
| 009875566-03 | OBS | No | 4.507990 | 135.586440 | 326.4 | 10.666 | 9.2 | 9.3 | 3.17 | 7197 | 7.27 | 5905.56 |
| 009875566-04 | OBS | No | 125.699080 | 178.499564 | 3510.2 | 14.094 | 9.9 | 8.8 | 3.17 | 7197 | 21.85 | 69.84 |
| 009875566-05 | OBS | No | 77.580878 | 136.292842 | 2209.1 | 12.049 | 9.2 | 5.3 | 3.17 | 7197 | 16.72 | 132.91 |
| 009875566-06 | OBS | No | 69.665324 | 188.156661 | 3248.3 | 1.804 | 7.5 | 6.7 | 3.17 | 7197 | 19.20 | 153.42 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 009875566-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 009875566-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD |
| 009875566-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD |
| 009875566-04 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS—HALO_GHOST |
| 009875566-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 009875566-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |

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

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

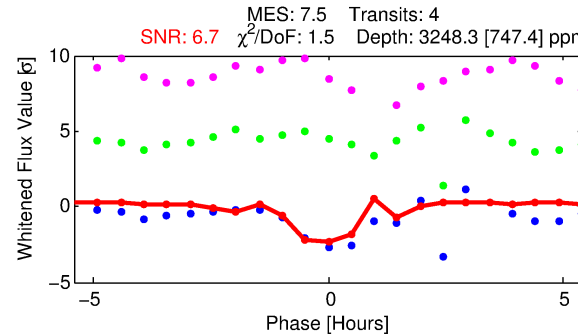
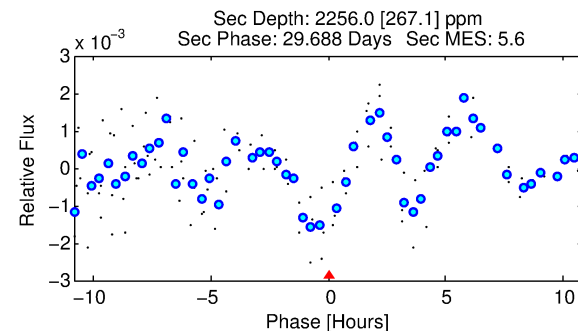
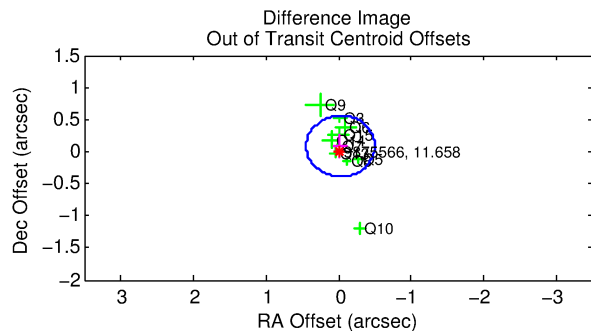
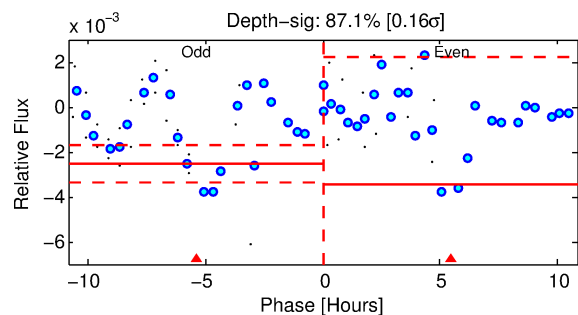
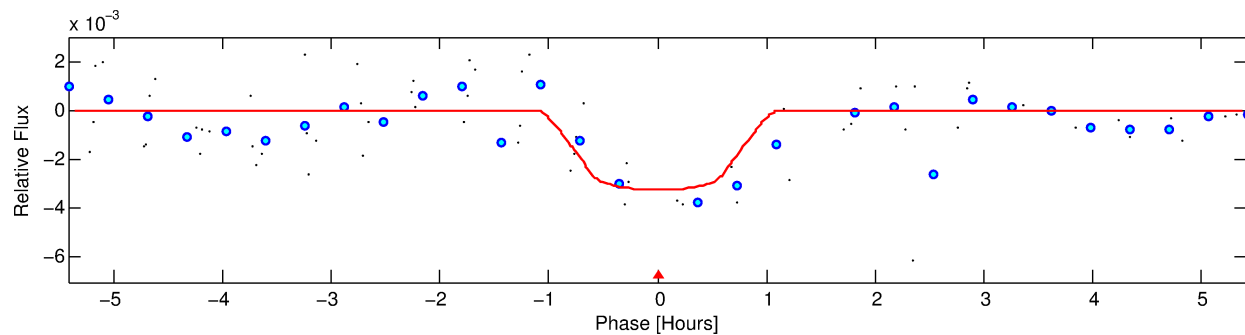
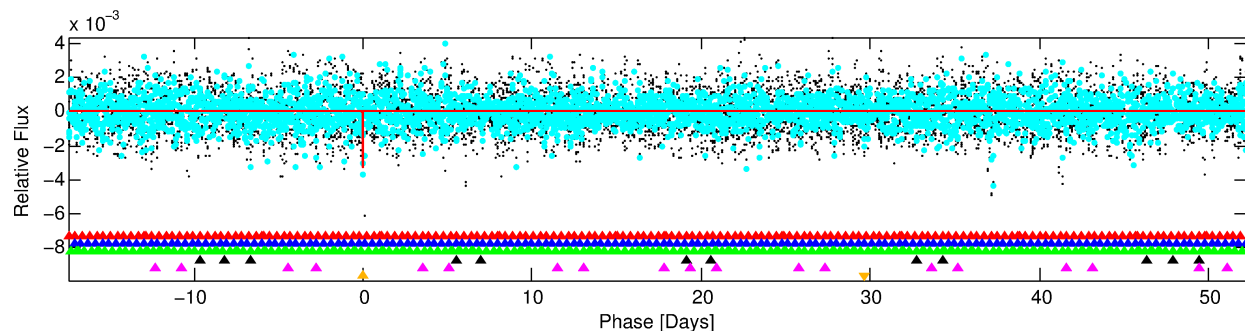
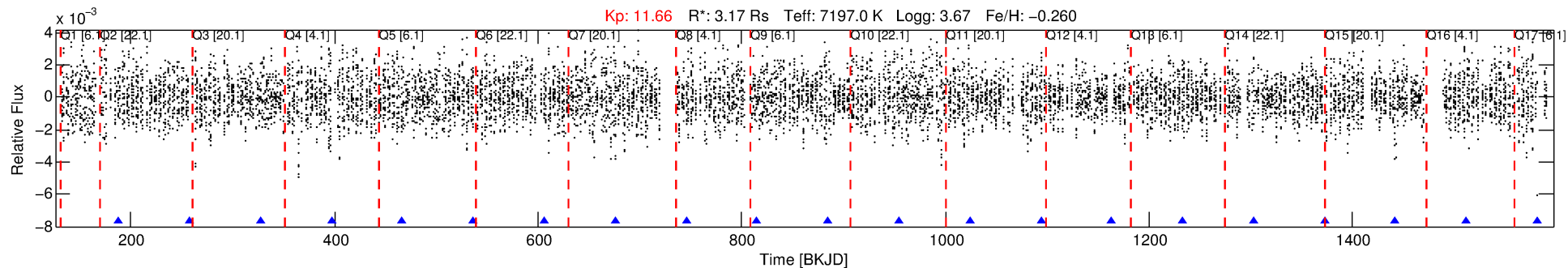
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009875566-06

No Significant Match Found

DV One-Page Summary

KIC: 9875566 Candidate: 6 of 6 Period: 69.665 d



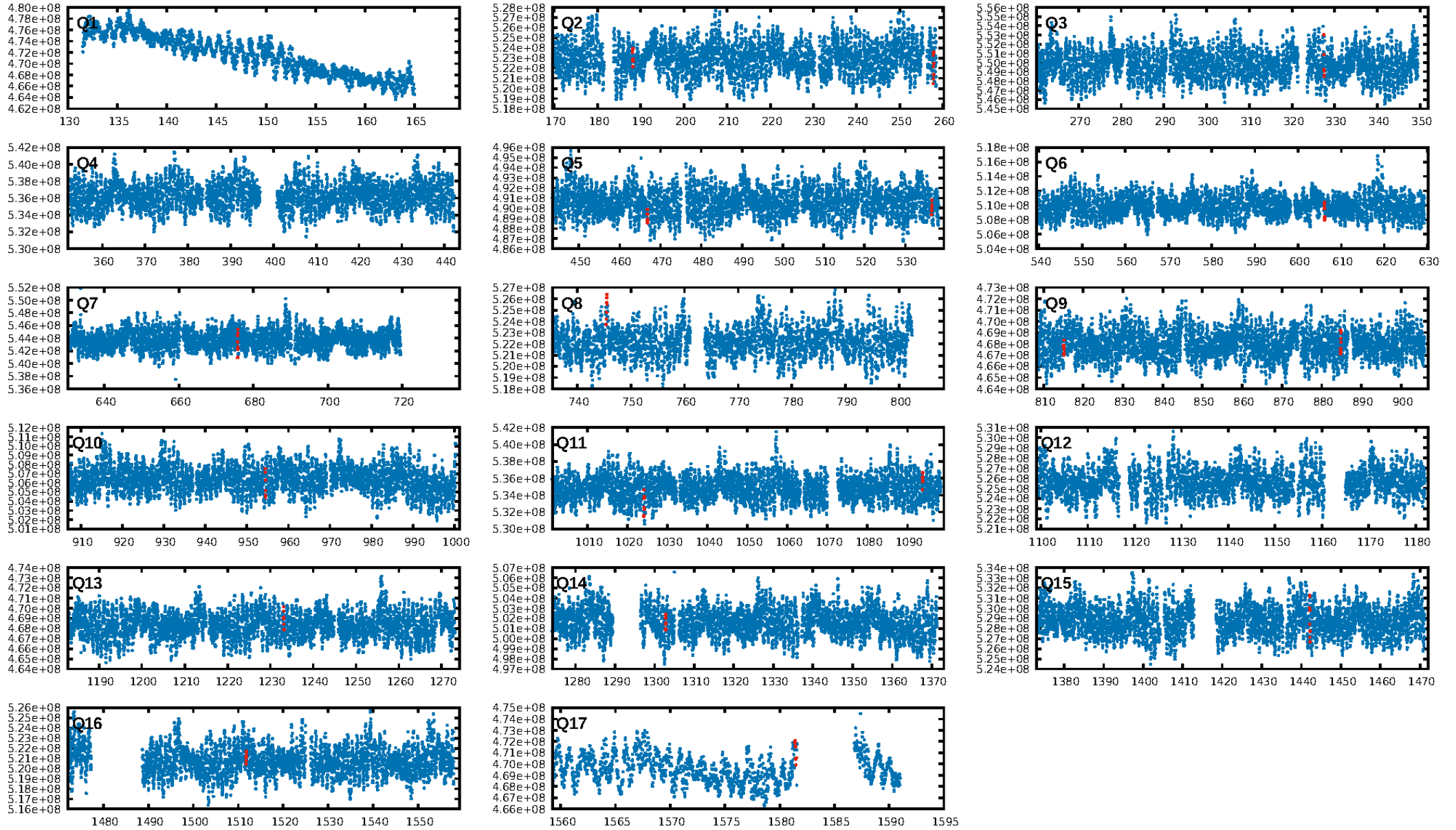
DV Fit Results:

Period = 69.66532 [0.00066] d
Epoch = 188.1567 [0.0097] BKJD
Rp/R* = 0.0554 [0.3778]
a/R* = 245.42 [8934.13]
b = 0.65 [32.78]
Seff = 153.42 [136.06]
Teq = 897 [199] K
Rp = 19.20 [131.23] Re
a = 0.3973 [0.2090] AU
Ag = 531.51 [7260.94] [0.07σ]
Teffp = 6662 [22708] K [0.25σ]

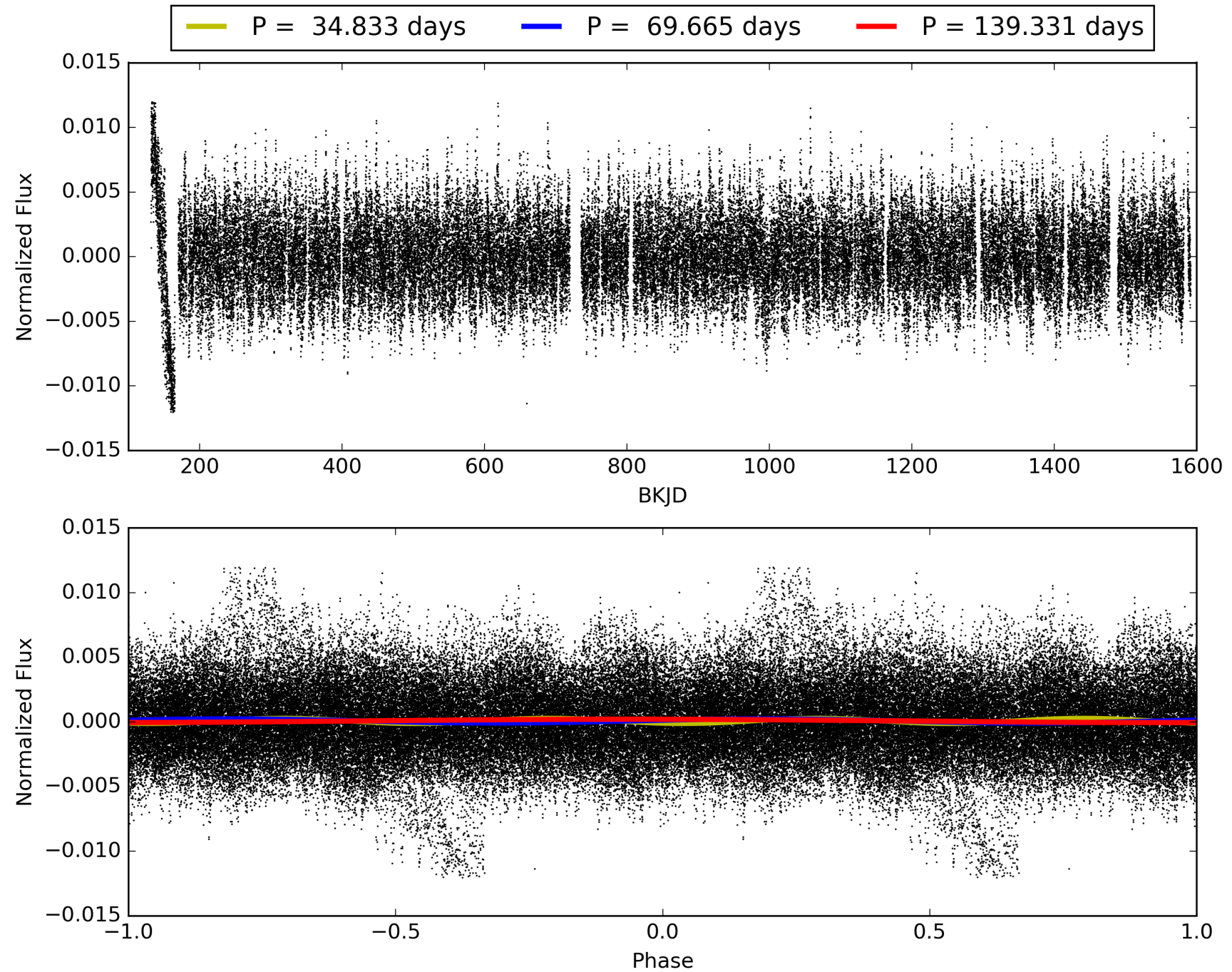
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [144.55σ]
LongPeriod-sig: 100.0% [15.59σ]
ModelChiSquare2-sig: 56.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.64e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 12.74
Centroid-sig: 17.3%
Centroid-so: 0.266 arcsec [8.20σ]
OotOffset-rm: 0.088 arcsec [0.56σ]
KicOffset-rm: 0.266 arcsec [2.42σ]
OotOffset-st: 3/3/1/3 [10]
KicOffset-st: 3/3/1/3 [10]
DiffImageQuality-fgm: 0.70 [7/10]
DiffImageOverlap-fno: 0.62 [8/13]

TCE 009875566-06, PDC Light Curves

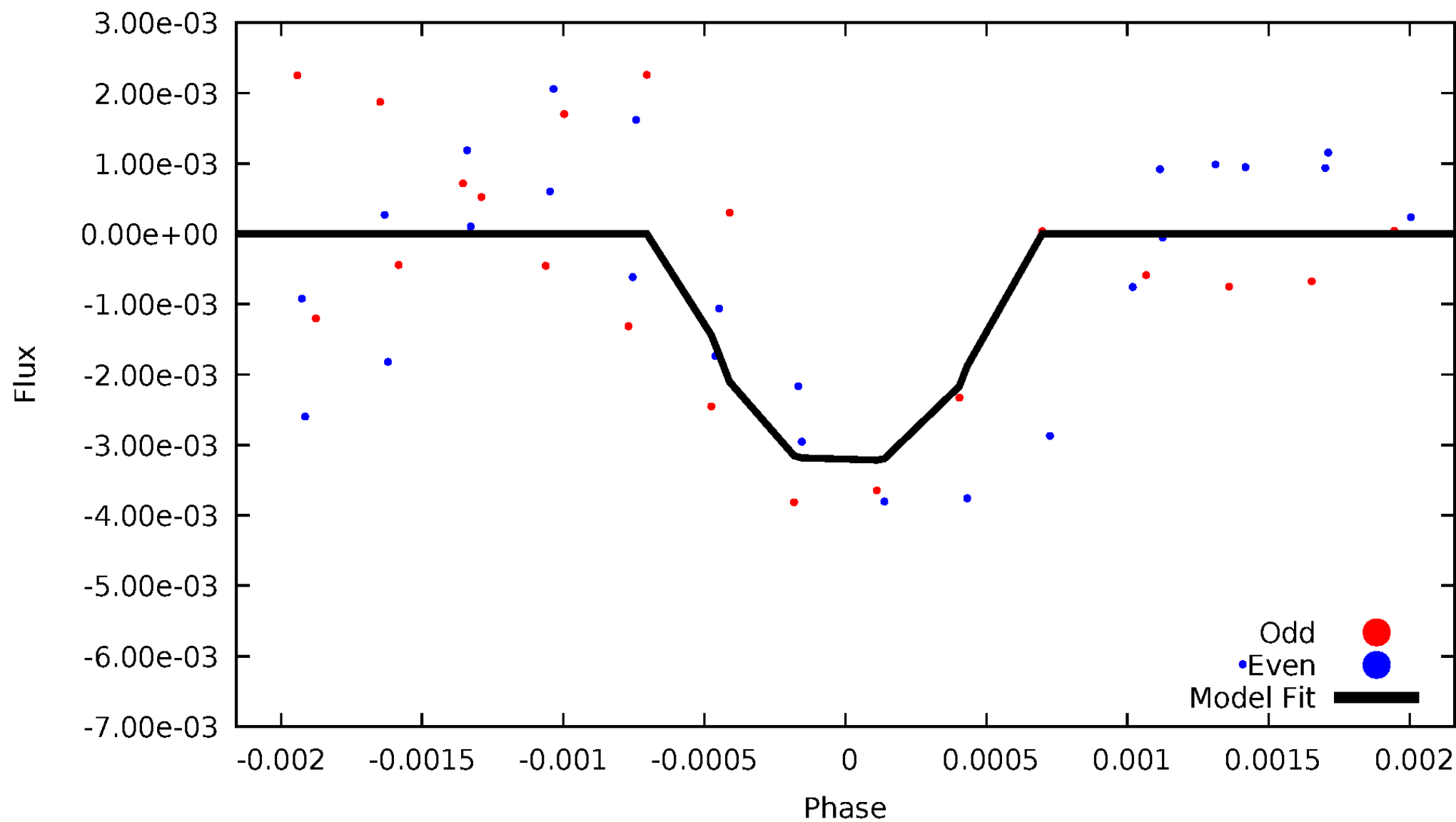


TCE 009875566-06



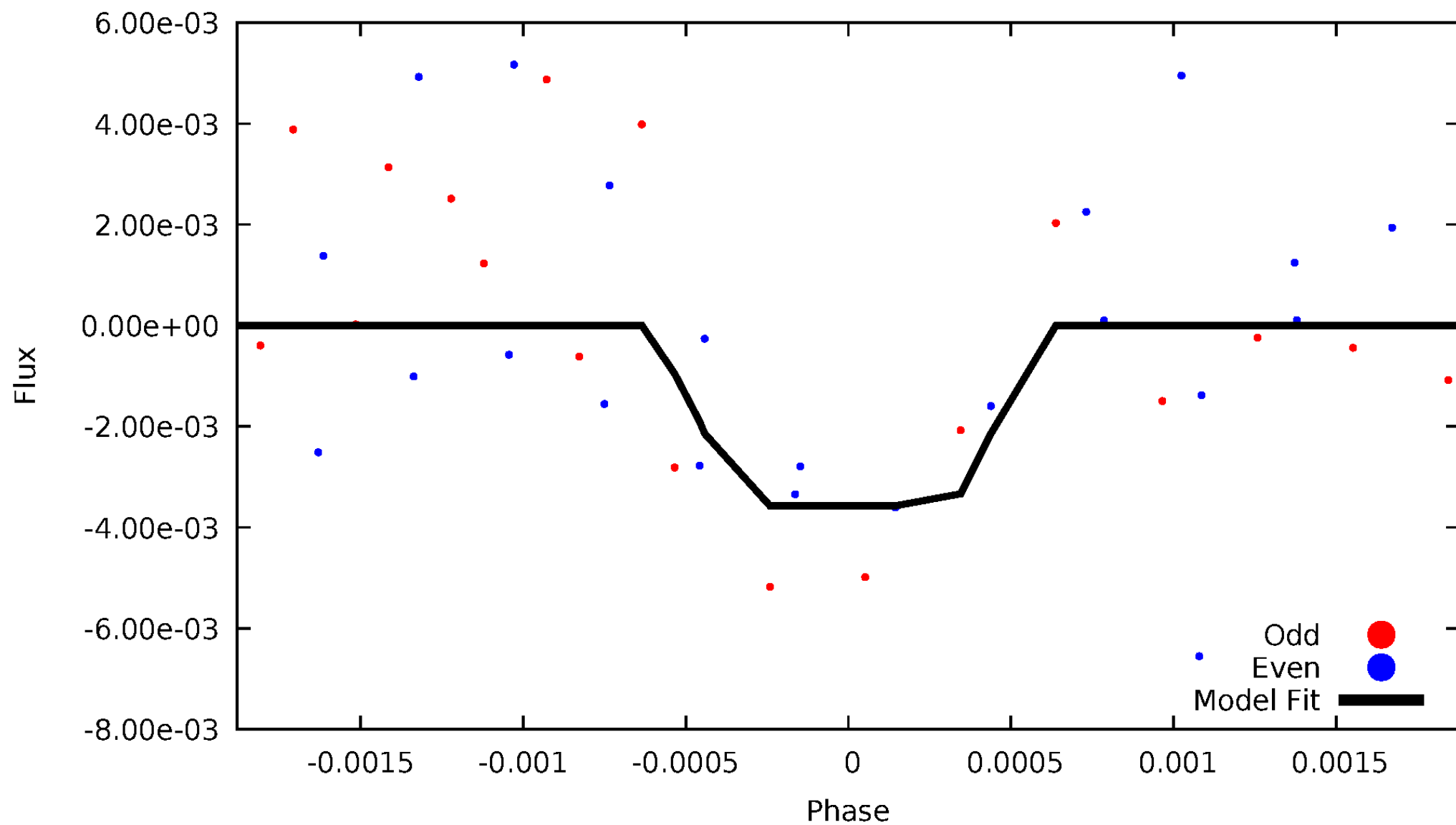
DV Odd/Even

TCE 009875566-06



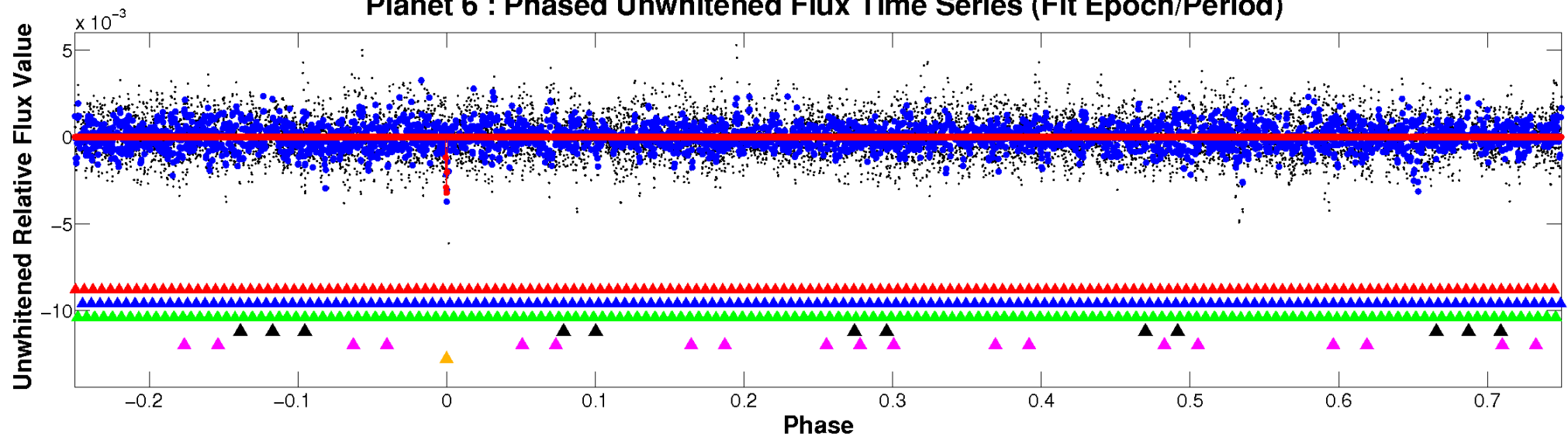
ALT Odd/Even

TCE 009875566-06

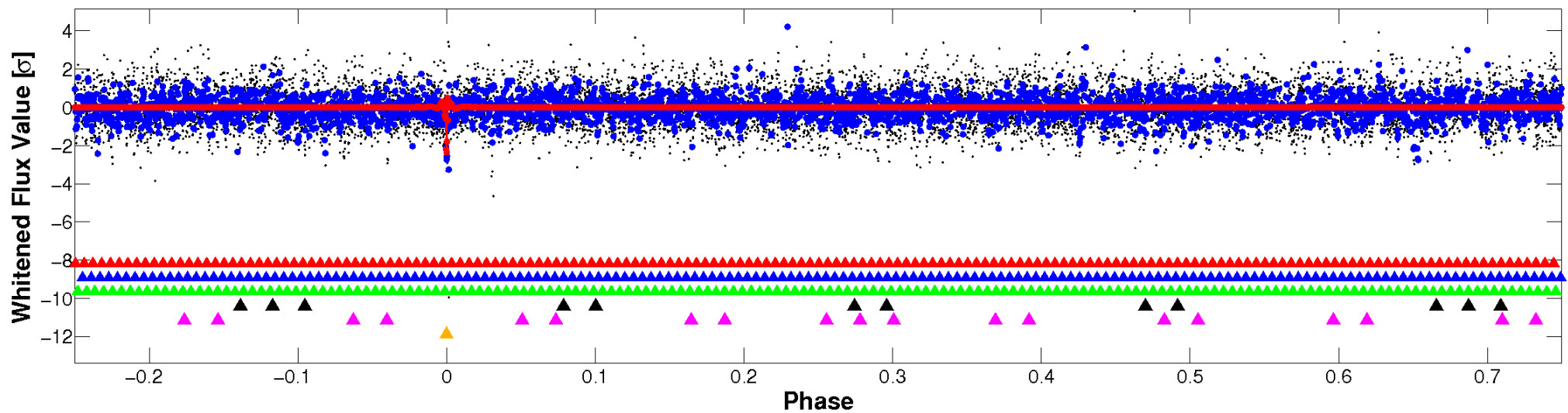


Non-Whitened Vs. Whitened Light Curve

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

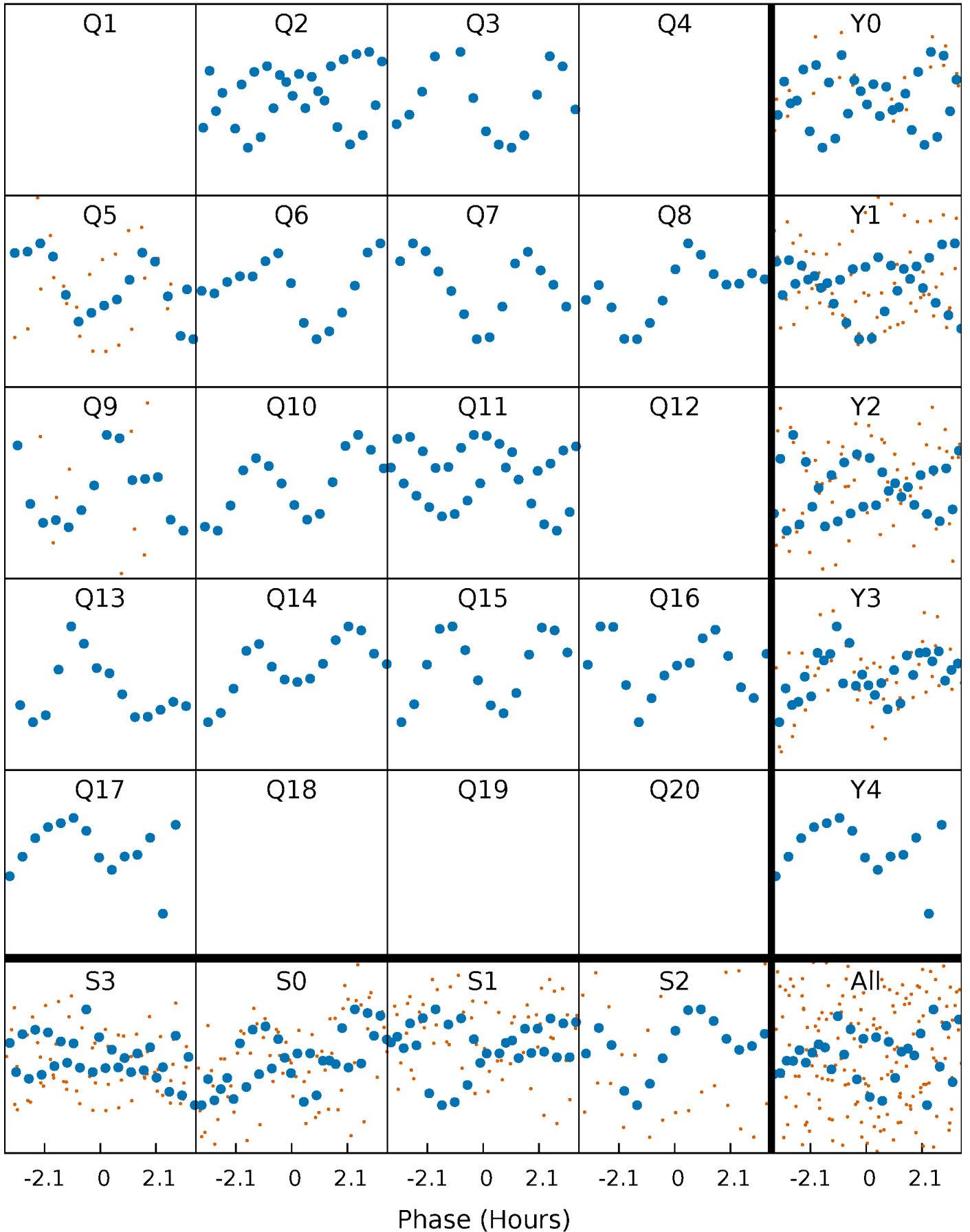


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



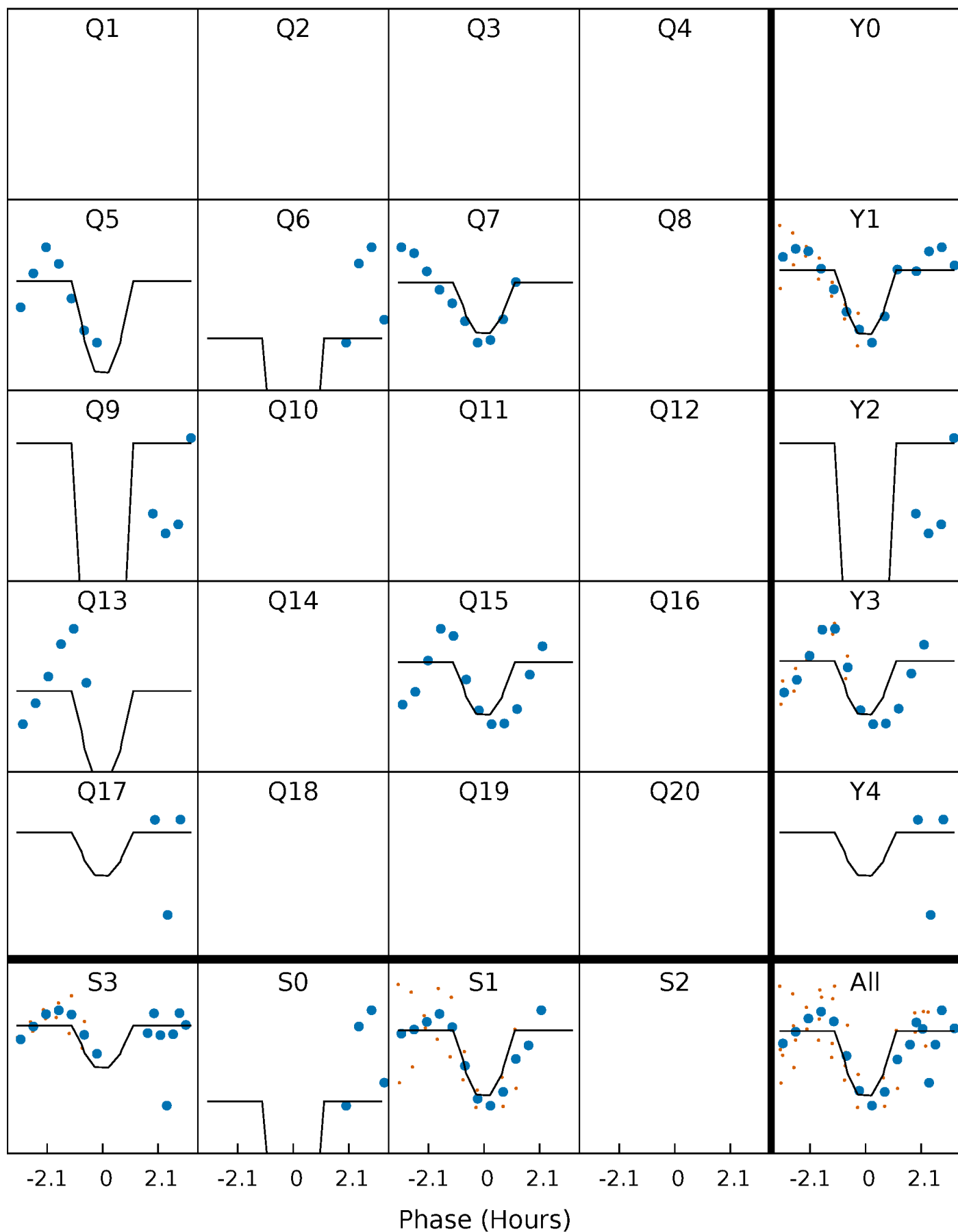
PDC Quarter-Phased Transit Curves

TCE 009875566-06 P= 69.665324 Days $T_0=188.156661$ (BKJD)



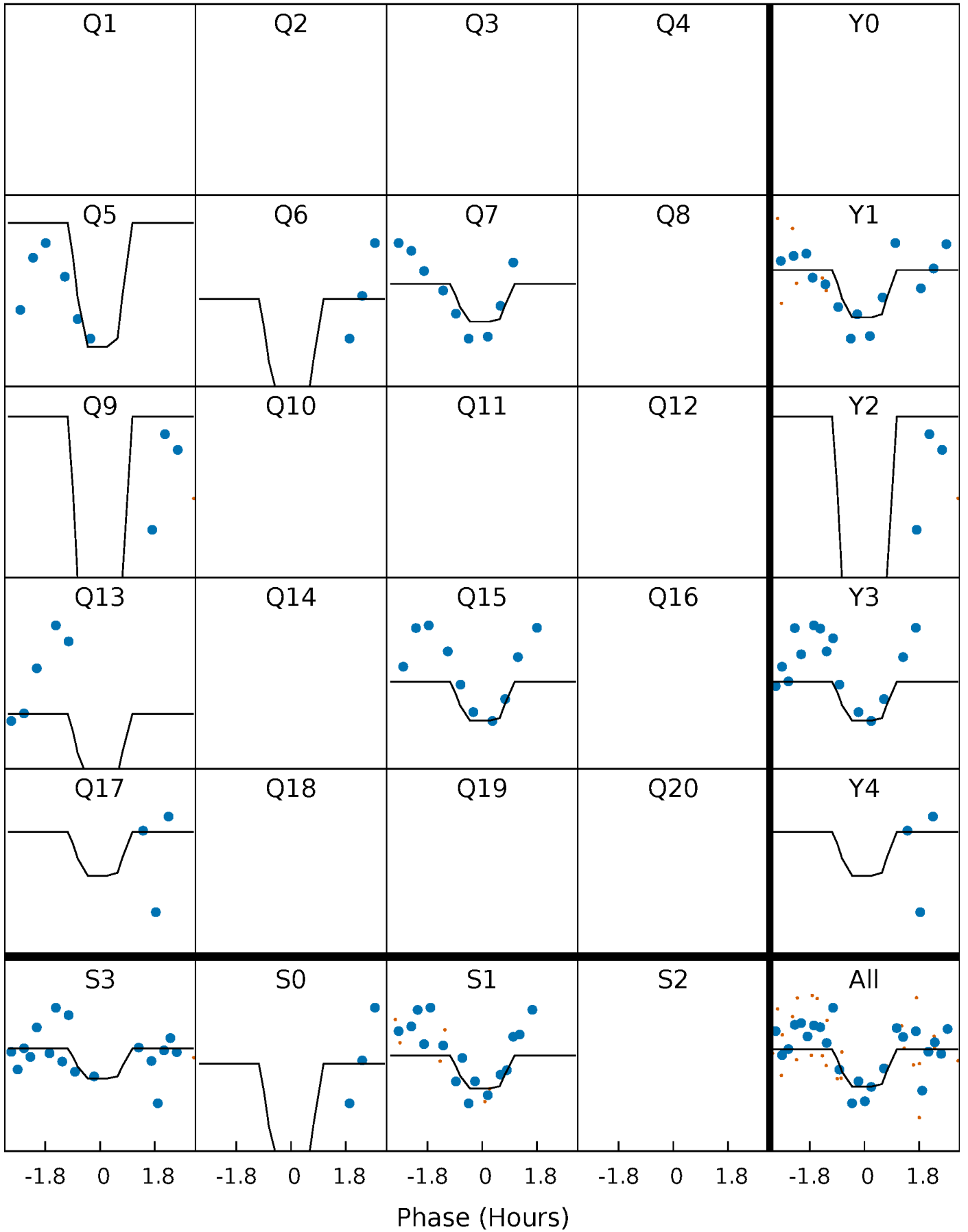
DV Quarter-Phased Transit Curves

TCE 009875566-06 P= 69.665324 Days $T_0=188.156661$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

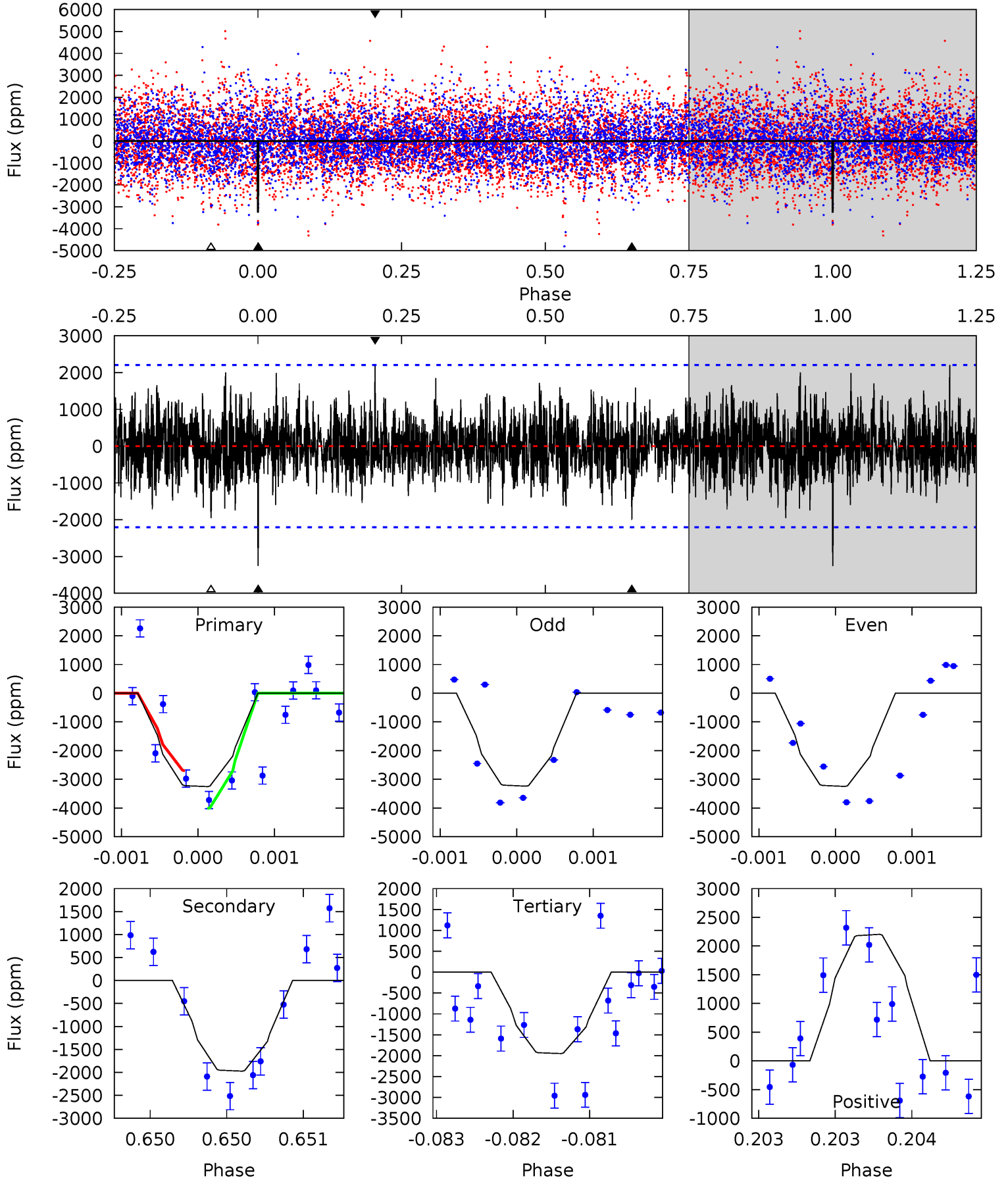
TCE 009875566-06 P= 69.666767 Days $T_0=188.150673$ (BKJD)



DV Model-Shift Uniqueness Test

009875566-06, P = 69.665324 Days, E = 118.491337 Days

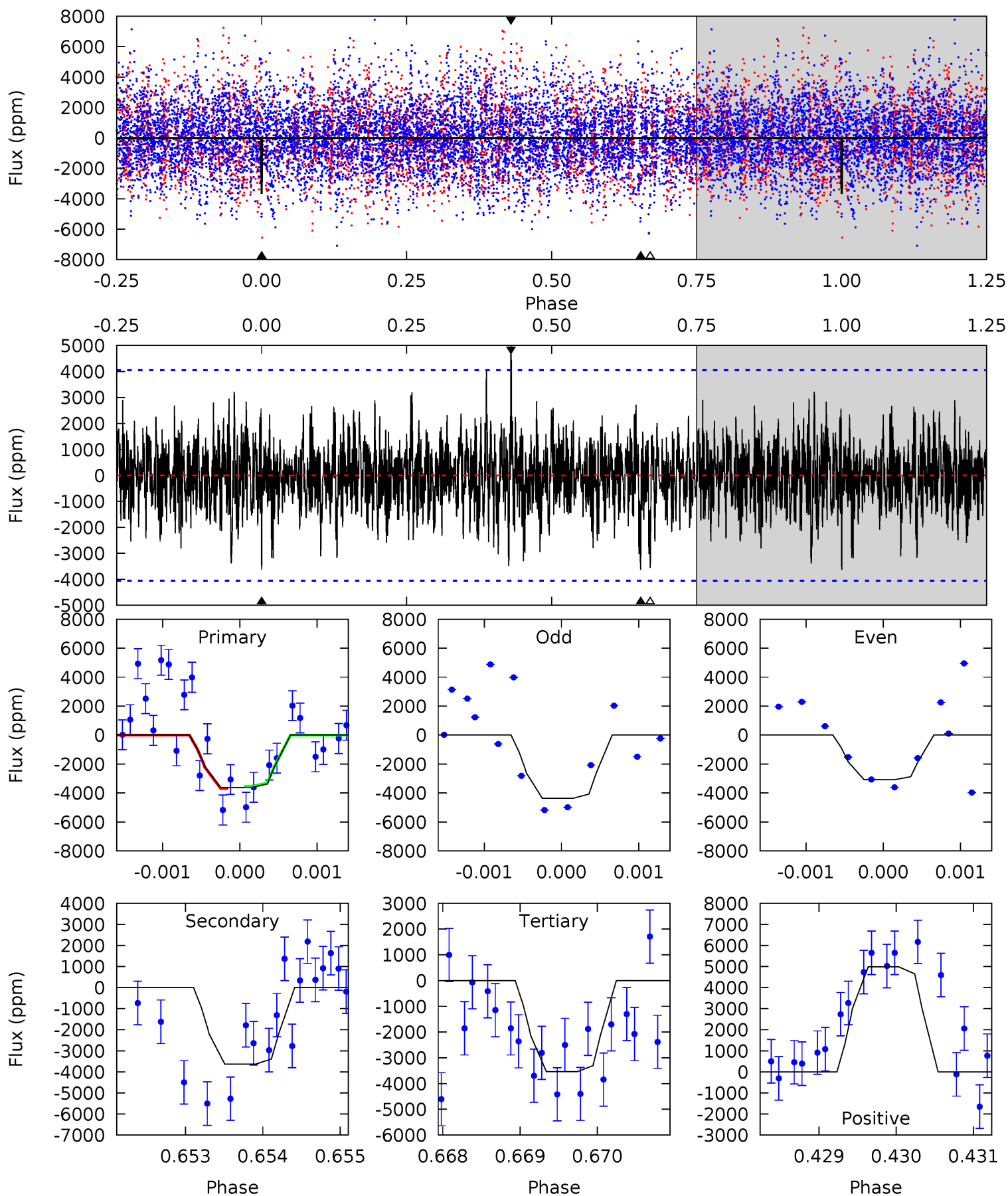
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.08 | 4.90 | 4.84 | 5.47 | 5.47 | 3.32 | 1.43 | 3.24 | 2.61 | 0.06 | -0.57 | 0.01 | 0.91 | 0.40 | 1.60 |



Alt Model-Shift Uniqueness Test

009875566-06, P = 69.666767 Days, E = 118.483906 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.88 | 4.89 | 4.77 | 6.71 | 5.46 | 3.30 | 1.40 | 0.11 | -1.82 | 0.12 | -1.81 | 0.87 | 0.97 | 0.58 | 0.09 |



Stellar Parameters For KIC 009875566

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7197^{+226}_{-302} | $3.671^{+0.522}_{-0.058}$ | $-0.260^{+0.250}_{-0.300}$ | $3.174^{+0.406}_{-1.623}$ | $1.722^{+0.157}_{-0.440}$ | $0.076^{+0.409}_{-0.022}$ |
| | +3%/-4% | +14%/-2% | +96%/-115% | +13%/-51% | +9%/-26% | +539%/-29% |
| 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 009875566-06 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|---------------------------|----------------------|-----------------------|-------------------|
| DV | -1974 ± 403 | $82.11^{+88.91}_{-57.85}$ | 1193^{+90}_{-170} | 3354^{+1798}_{-629} | 25^{+244}_{-19} |
| Alt. | -3635 ± 743 | $79.73^{+89.83}_{-56.61}$ | 1200^{+83}_{-153} | 3731^{+2555}_{-740} | 48^{+593}_{-38} |

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

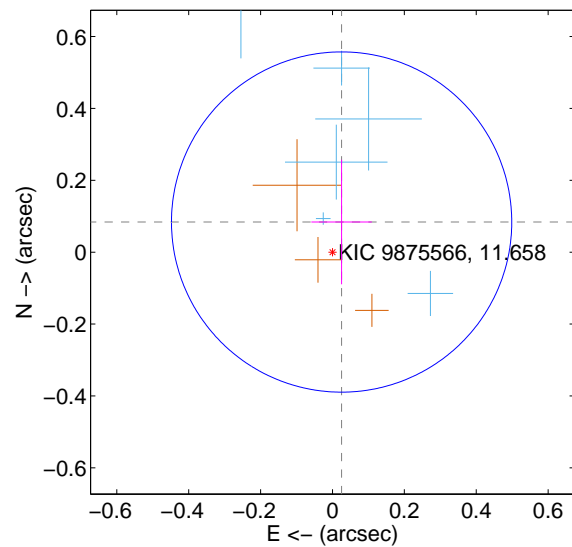
Supplemental centroid analysis for 009875566-06. **Kepler magnitude: 11.66.** Transit SNR 6.67

There are 7 quarters with good PRF difference image offsets

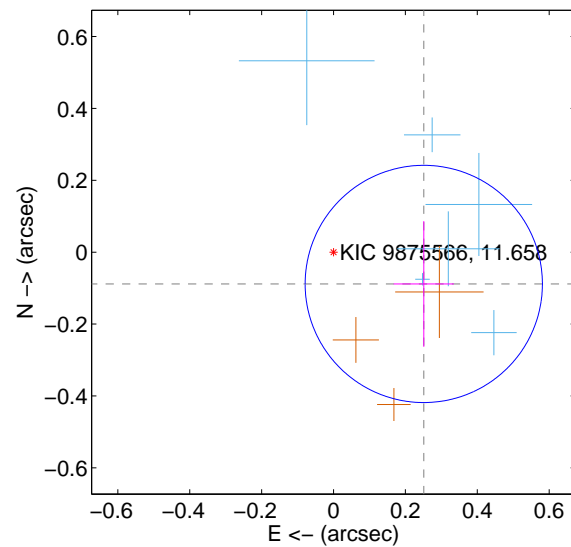
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-----------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.088 ± 0.158 | 0.56 | -0.025 ± 0.084 | 0.084 ± 0.173 |
| PRF-fit source offset from KIC position | 0.266 ± 0.110 | 2.42 | -0.251 ± 0.084 | -0.088 ± 0.175 |
| photometric centroid source offset | 0.27 ± 0.03 | 8.20 | -0.15 ± 0.04 | -0.22 ± 0.03 |

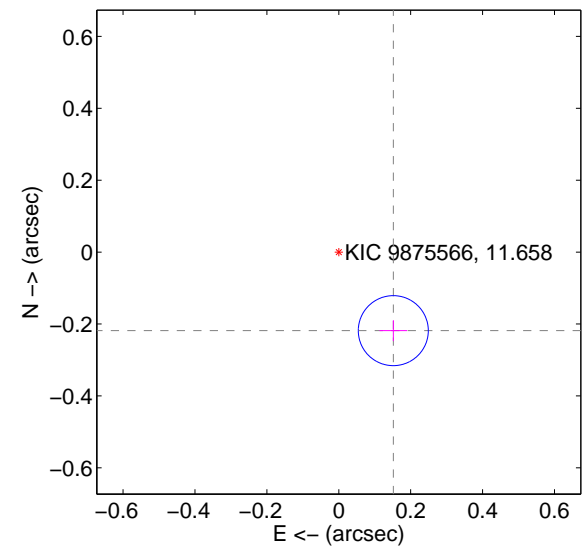
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

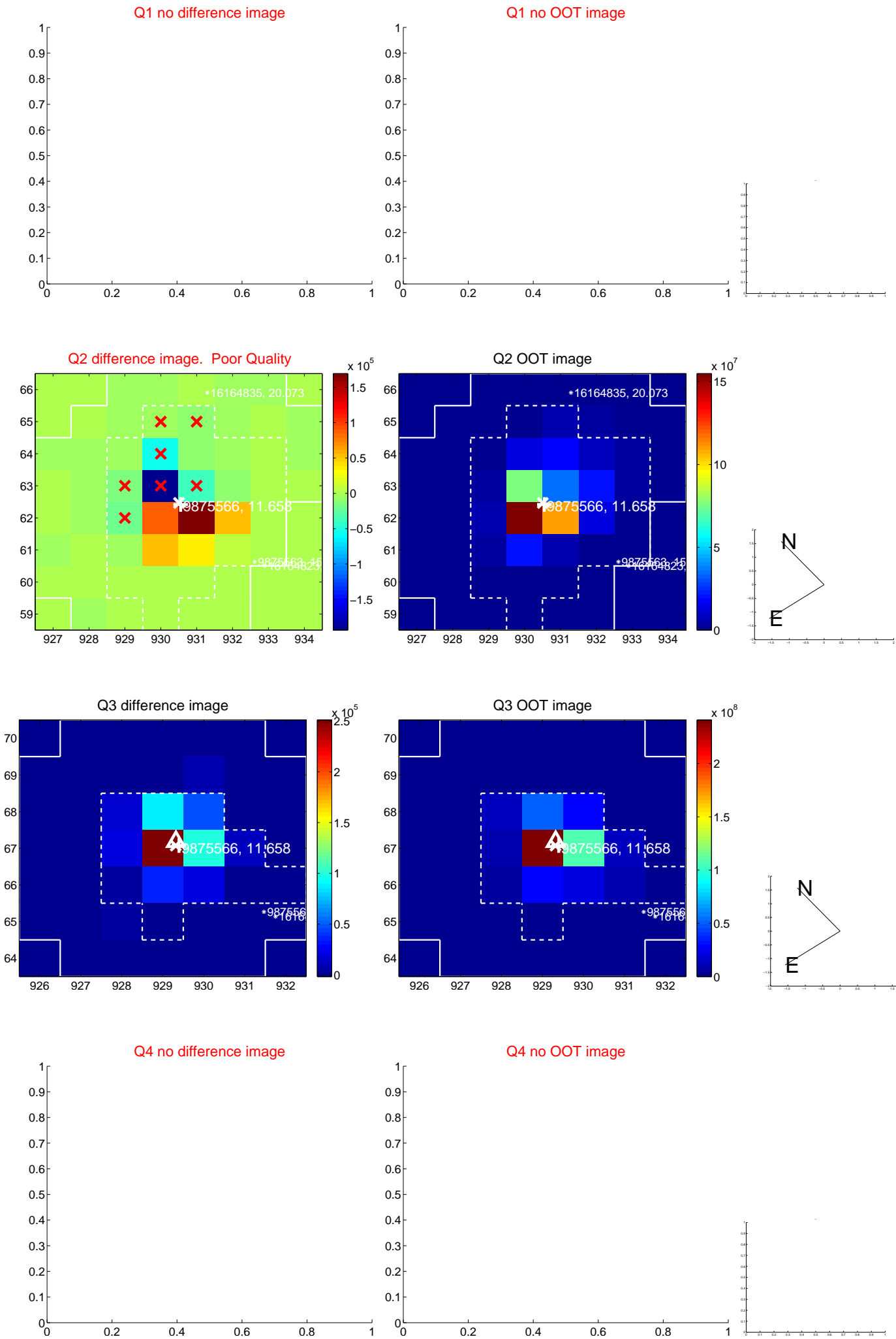


offset from photometric centroids

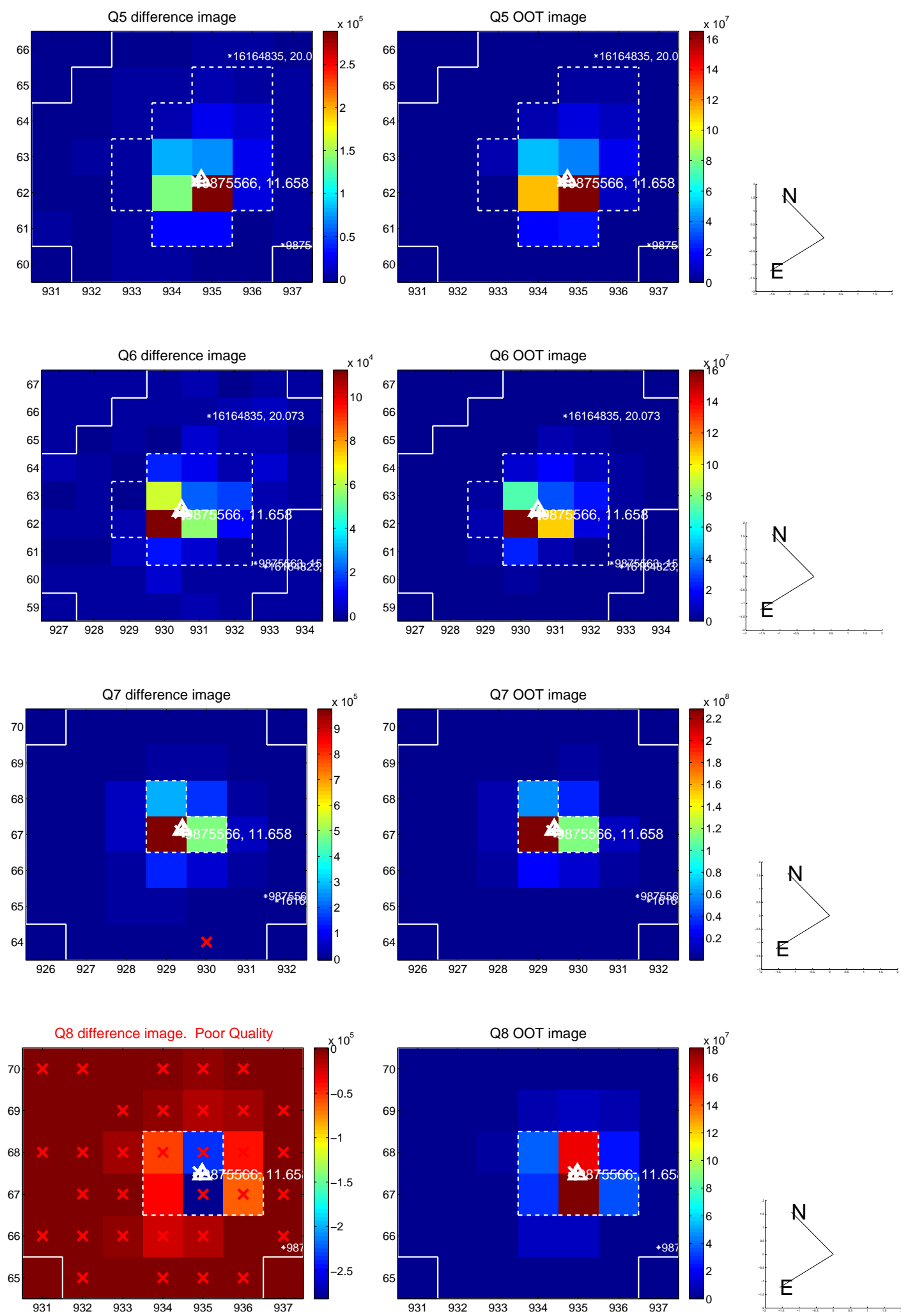


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

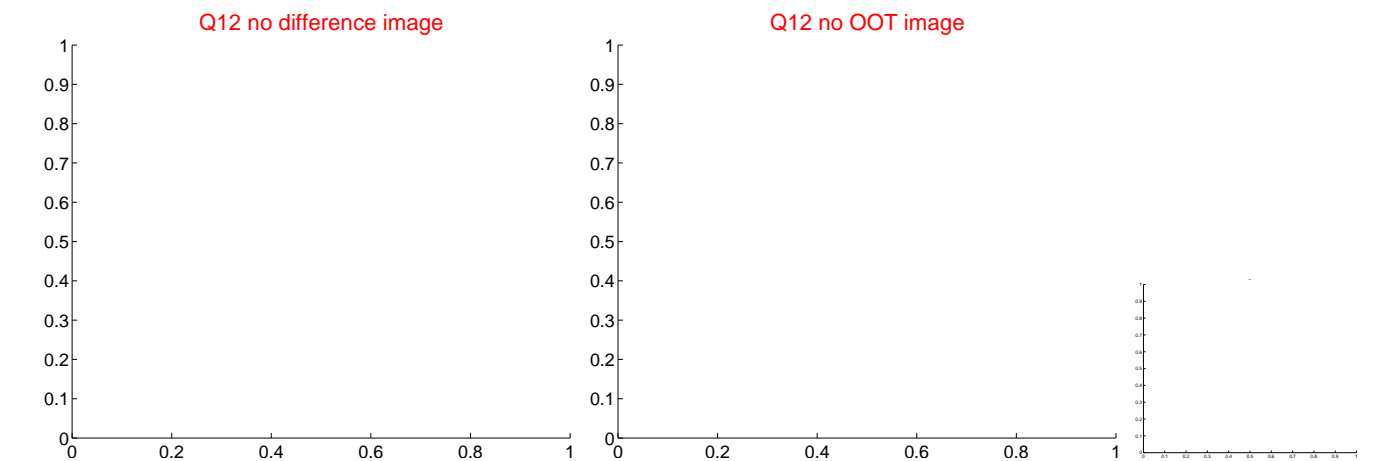
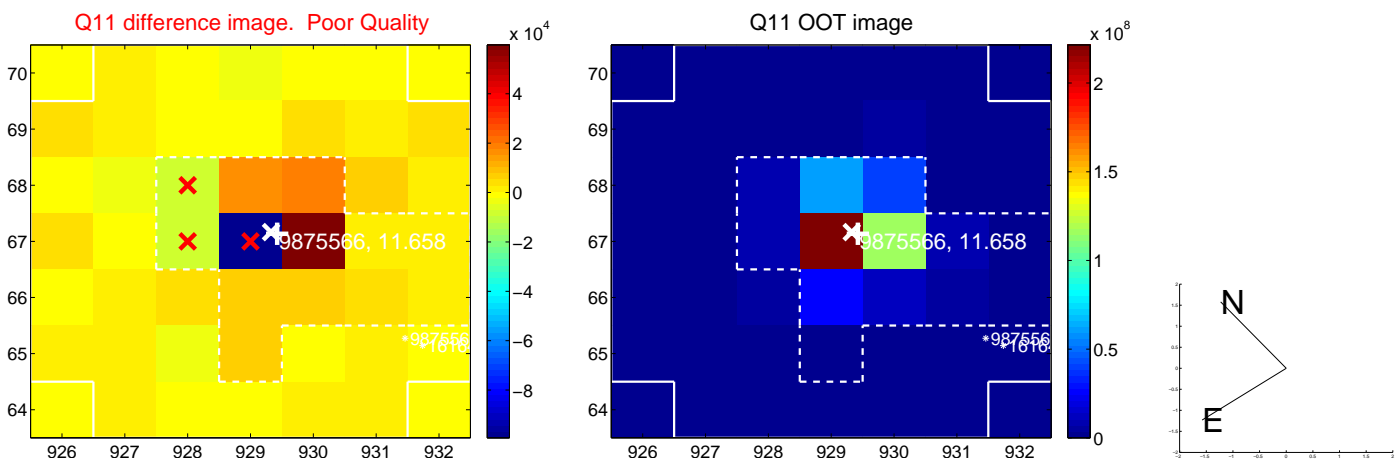
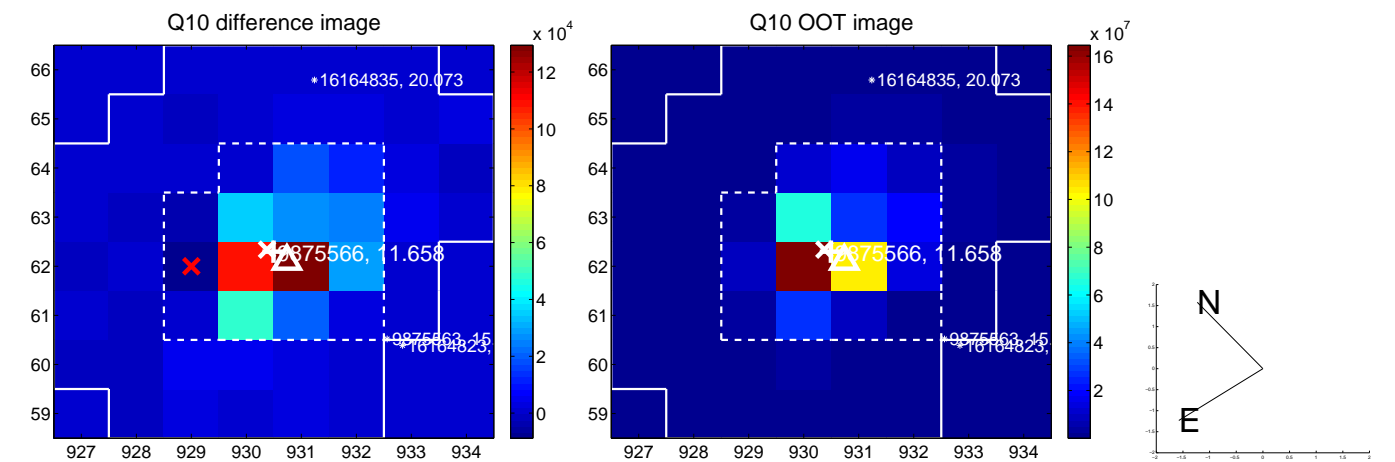
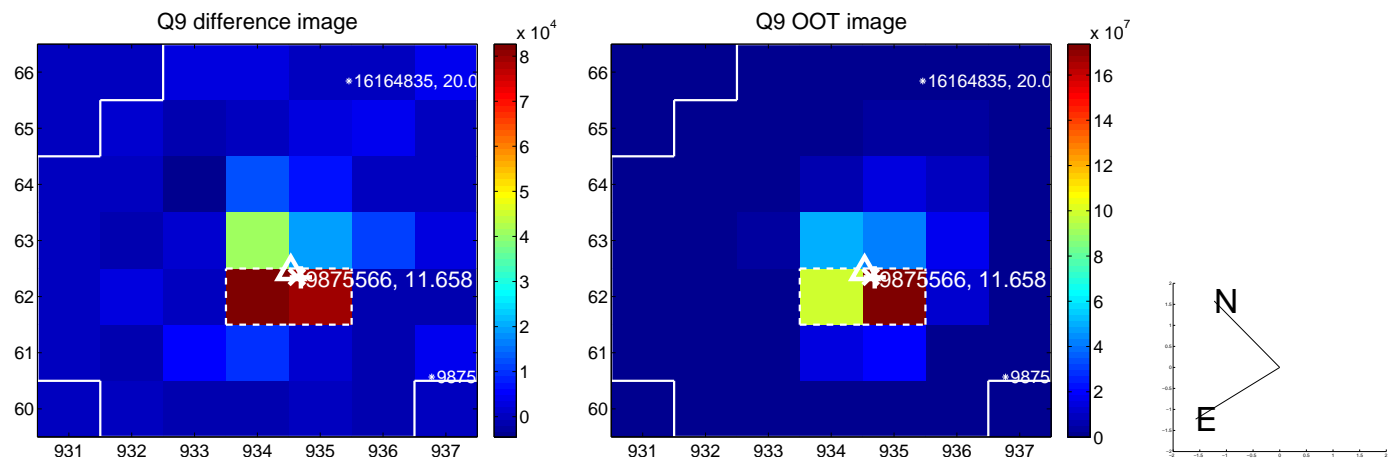
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



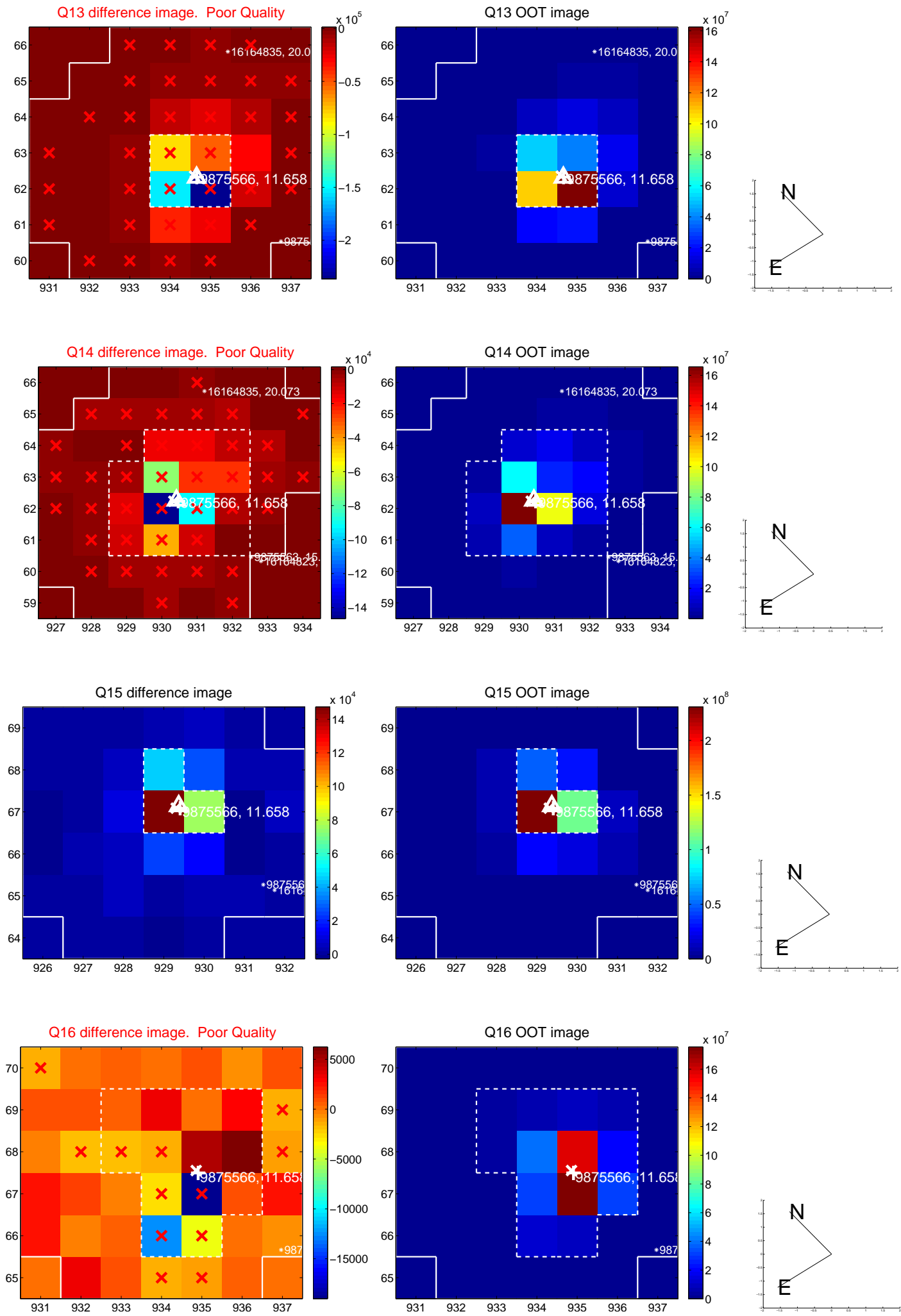
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



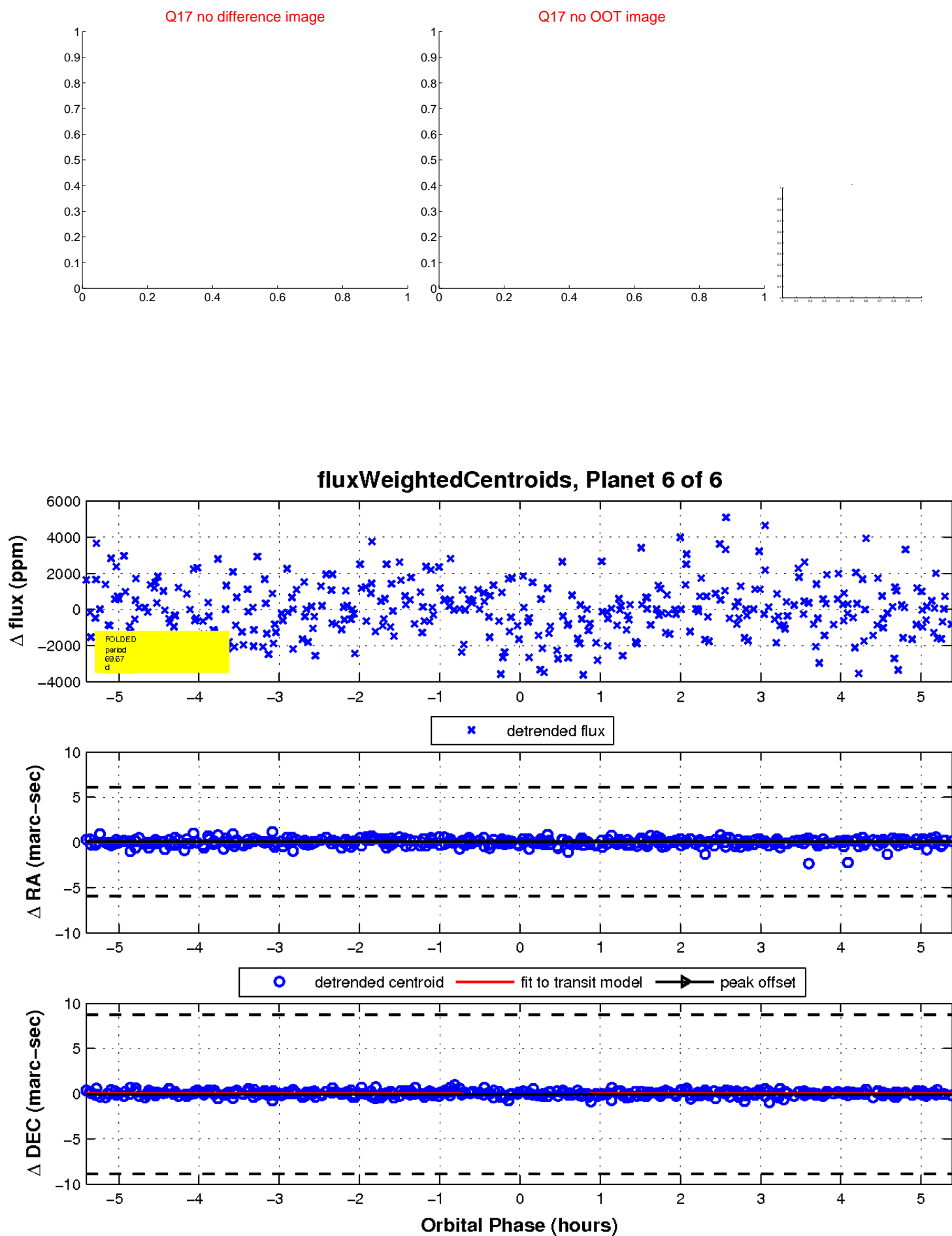
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

