

KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
| 010658802-02 | OBS | No | 59.182539 | 167.174818 | 1553.1 | 5.540 | 9.9 | 7.2 | 1.71 | 7700 | 7.77 | 75.96 |
| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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

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

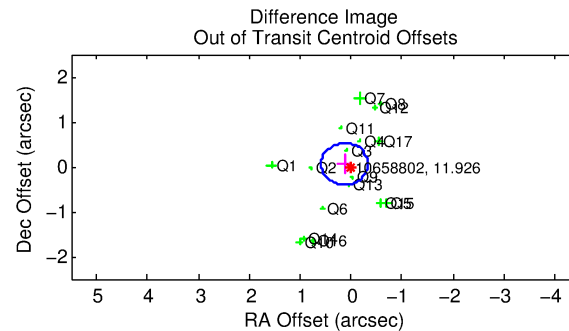
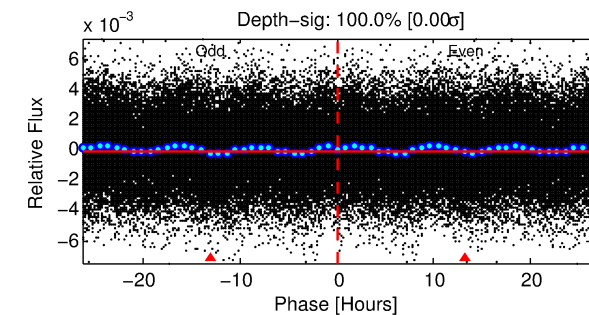
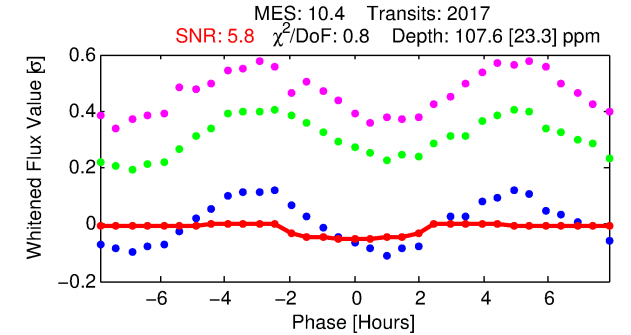
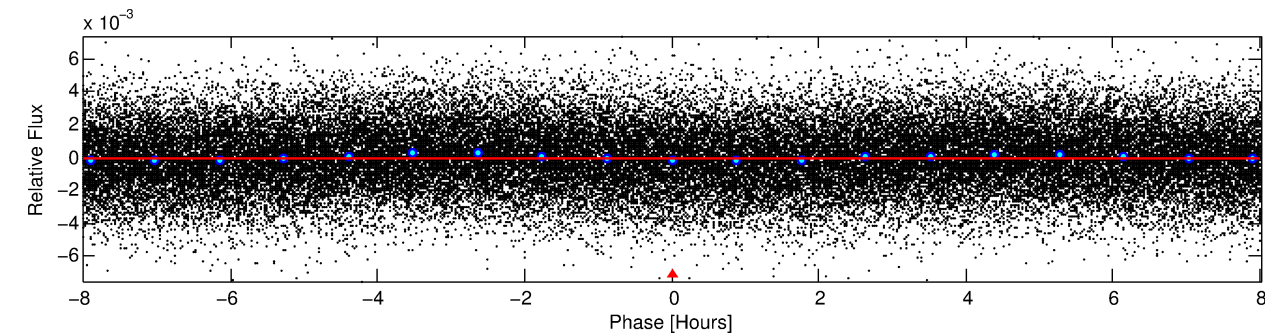
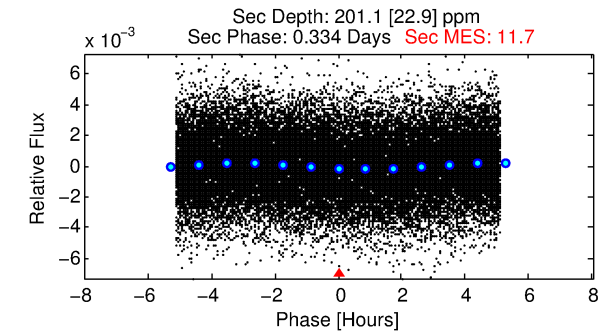
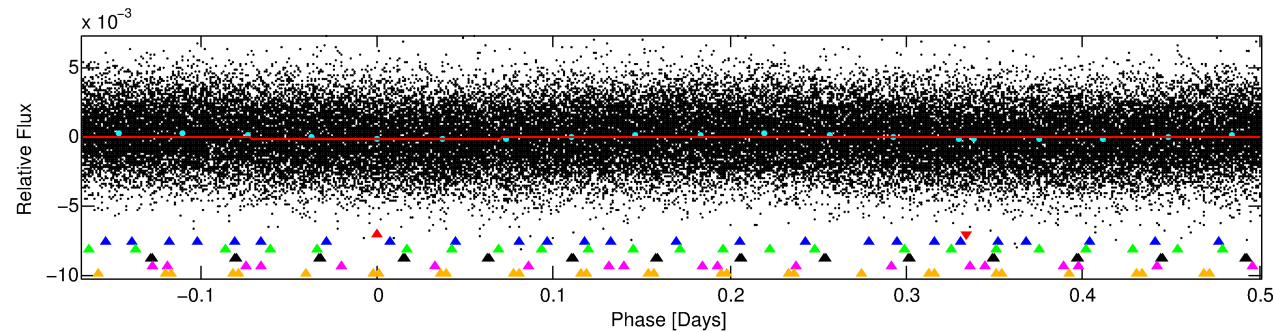
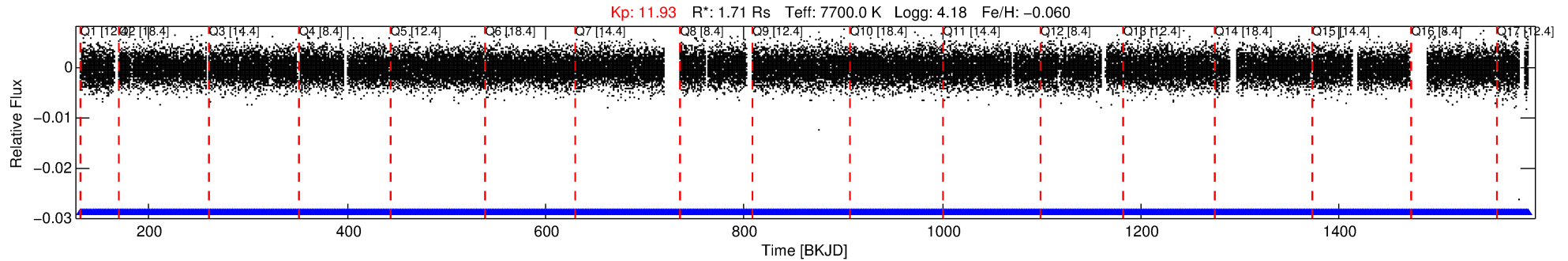
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010658802-01

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 1 of 6 Period: 0.668 d



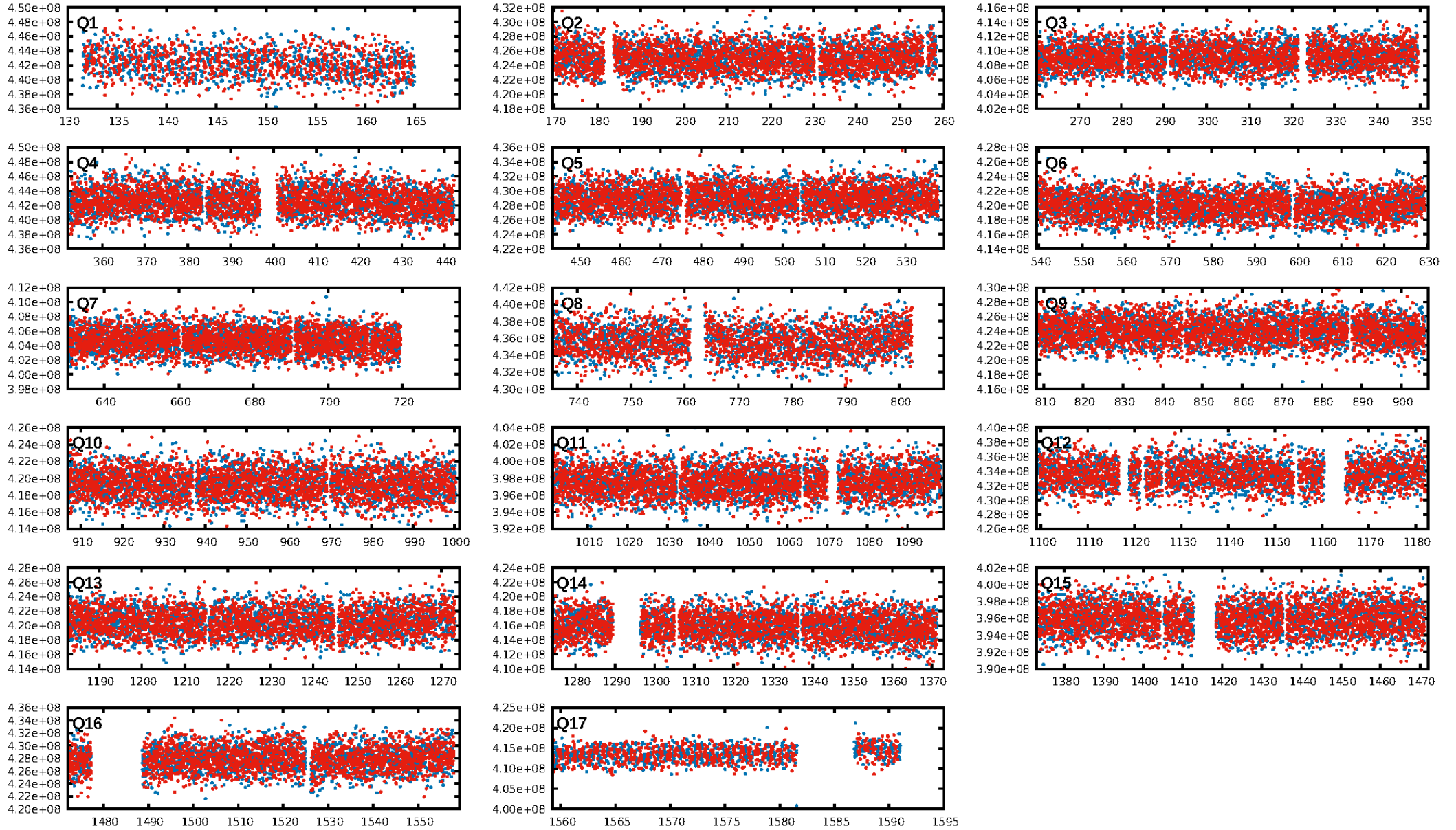
DV Fit Results:

Period = 0.66761 [0.00002] d
Epoch = 131.8723 [0.0077] BKJD
Rp/R* = 0.0099 [0.0197]
a/R* = 1.26 [5.81]
b = 0.50 [18.87]
Seff = 30025.56 [12135.94]
Teff = 3357 [339] K
Rp = 1.84 [3.72] Re
a = 0.0175 [0.0046] AU
Ag = 9.97 [39.88] [0.22 σ]
Teffp = 9222 [9189] K [0.64 σ]

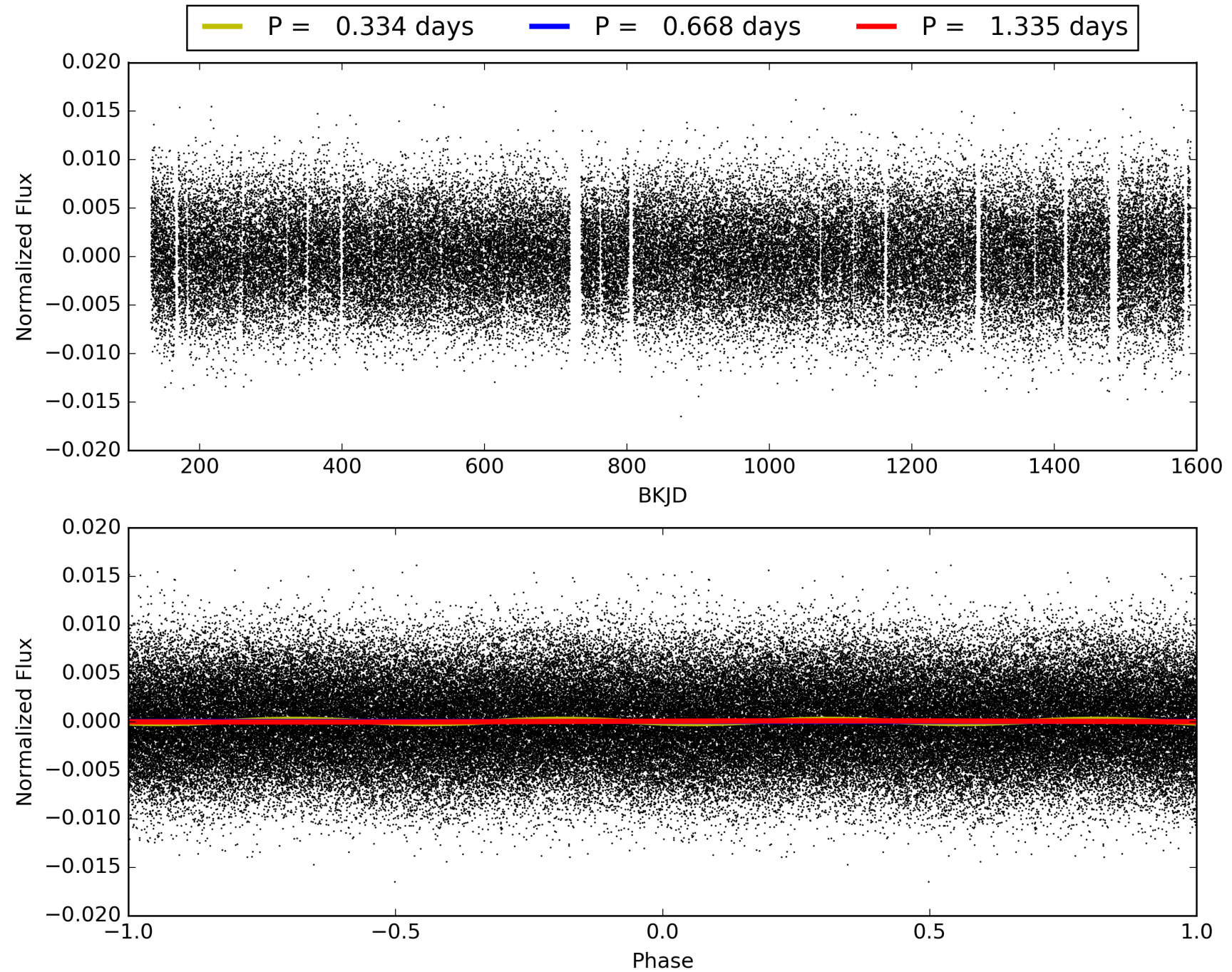
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [188.91 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.29e-13
RollingBand-fgt: 1.00 [1927/1927]
GhostDiagnostic-chr: 0.9826
Centroid-sig: 22.8%
Centroid-so: 0.152 arcsec [2.75 σ]
OotOffset-rm: 0.143 arcsec [0.93 σ]
KicOffset-rm: 0.174 arcsec [1.10 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010658802-01, PDC Light Curves

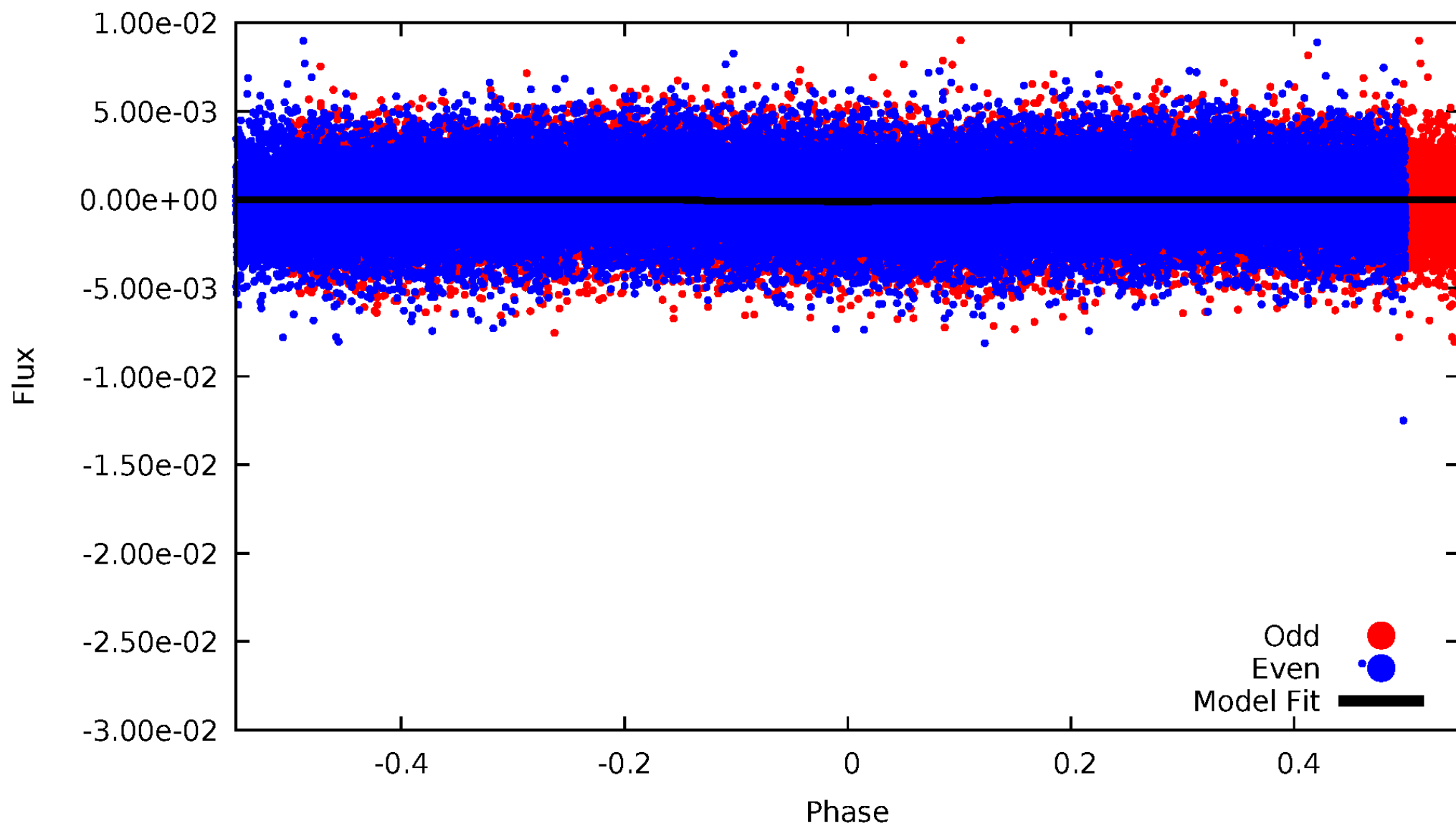


TCE 010658802-01



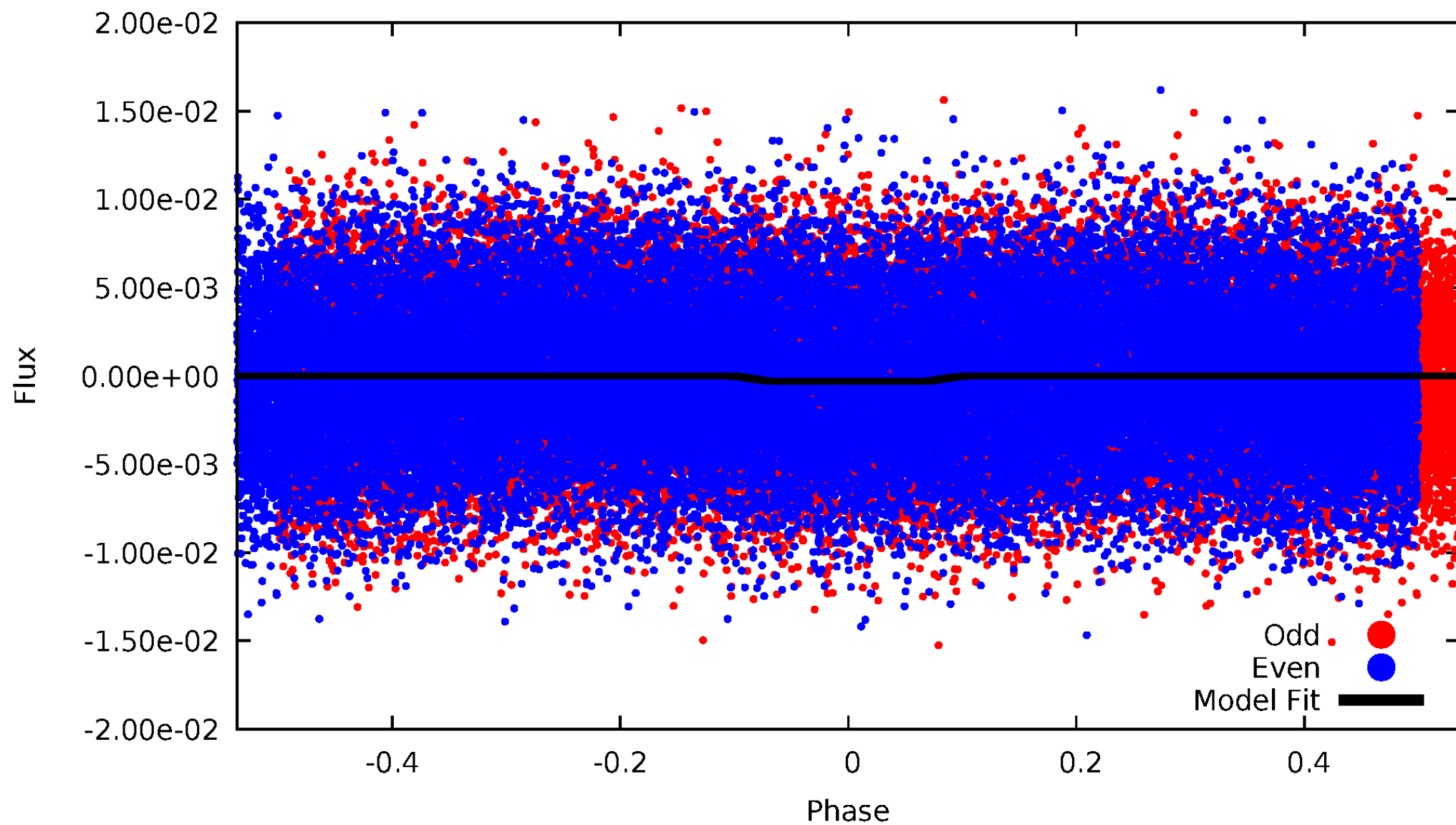
DV Odd/Even

TCE 010658802-01

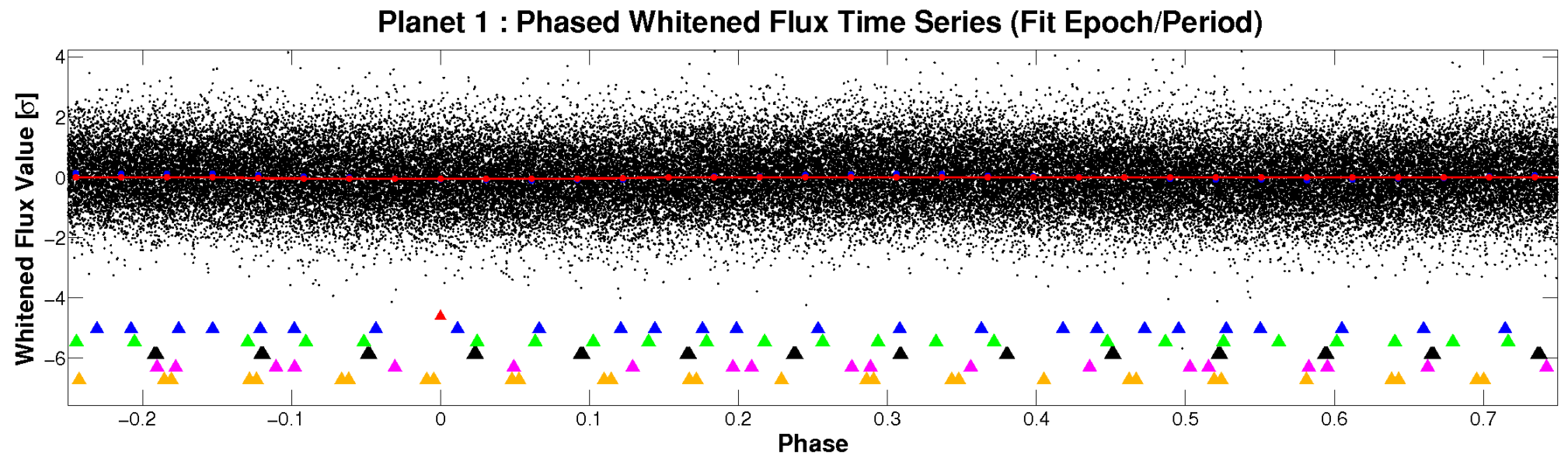
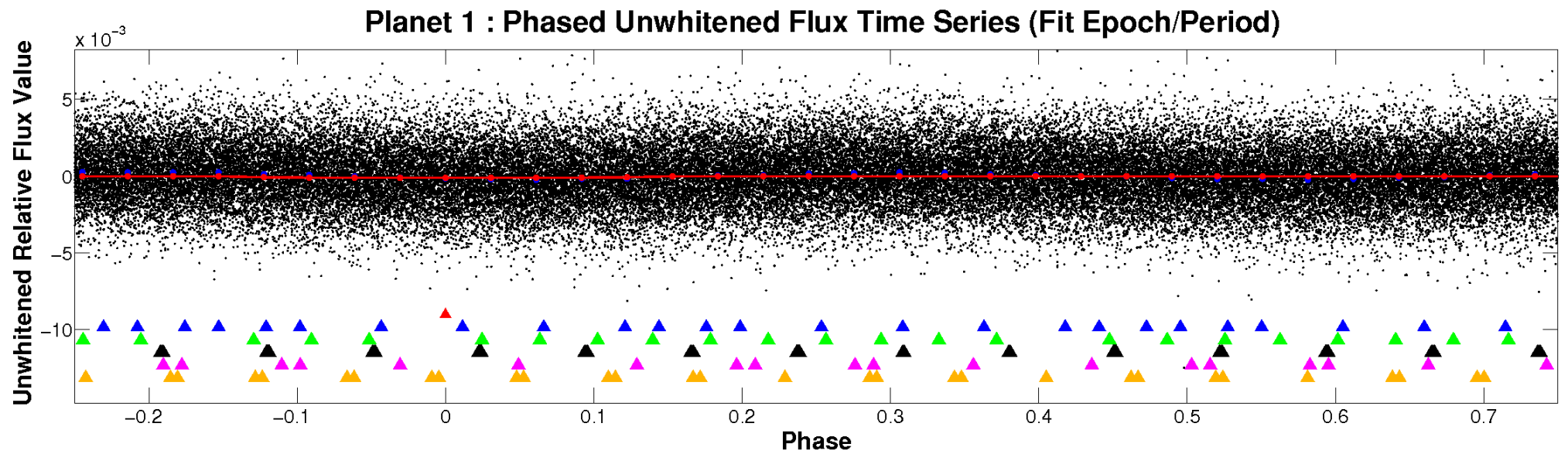


ALT Odd/Even

TCE 010658802-01

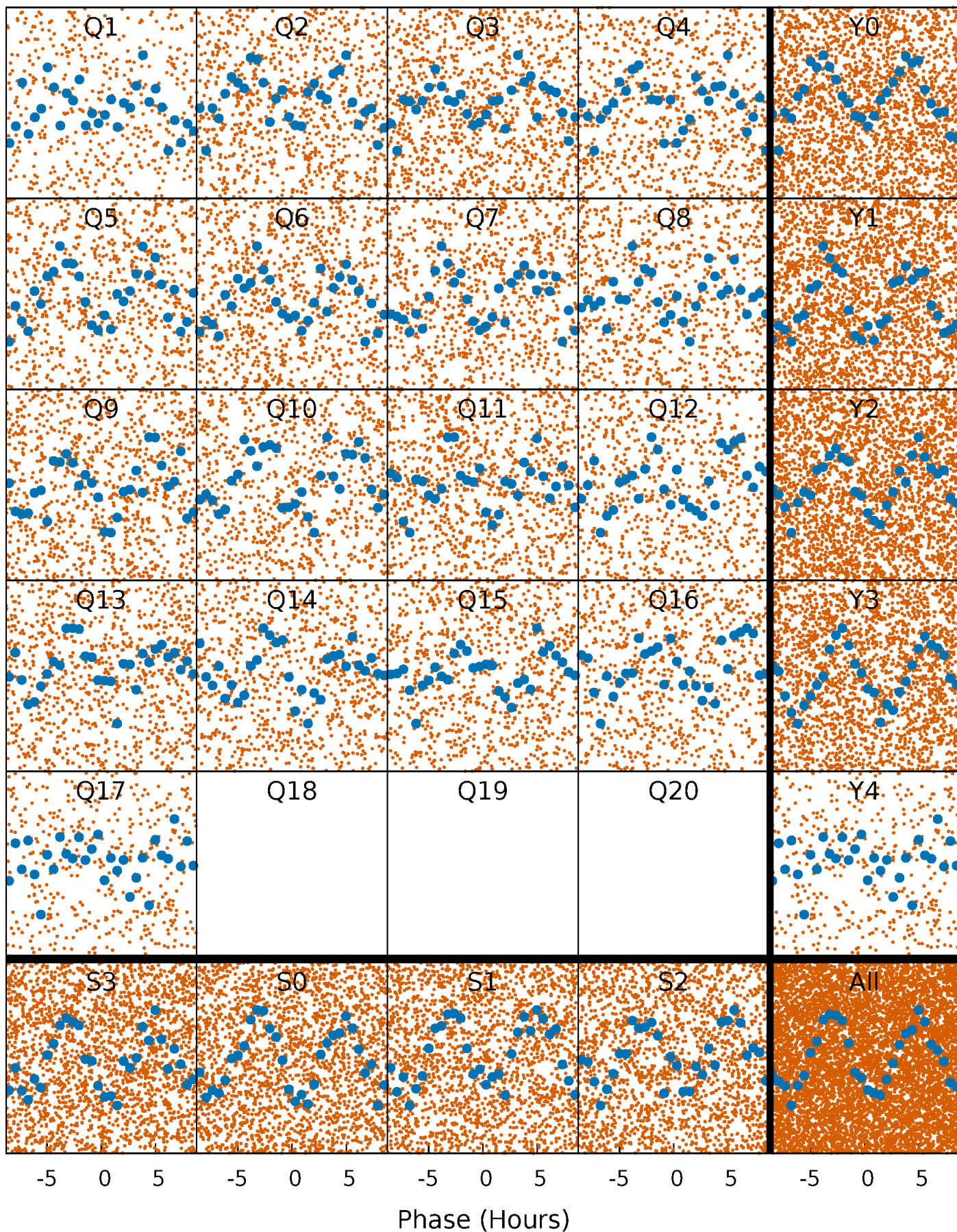


Non-Whitened Vs. Whitened Light Curve



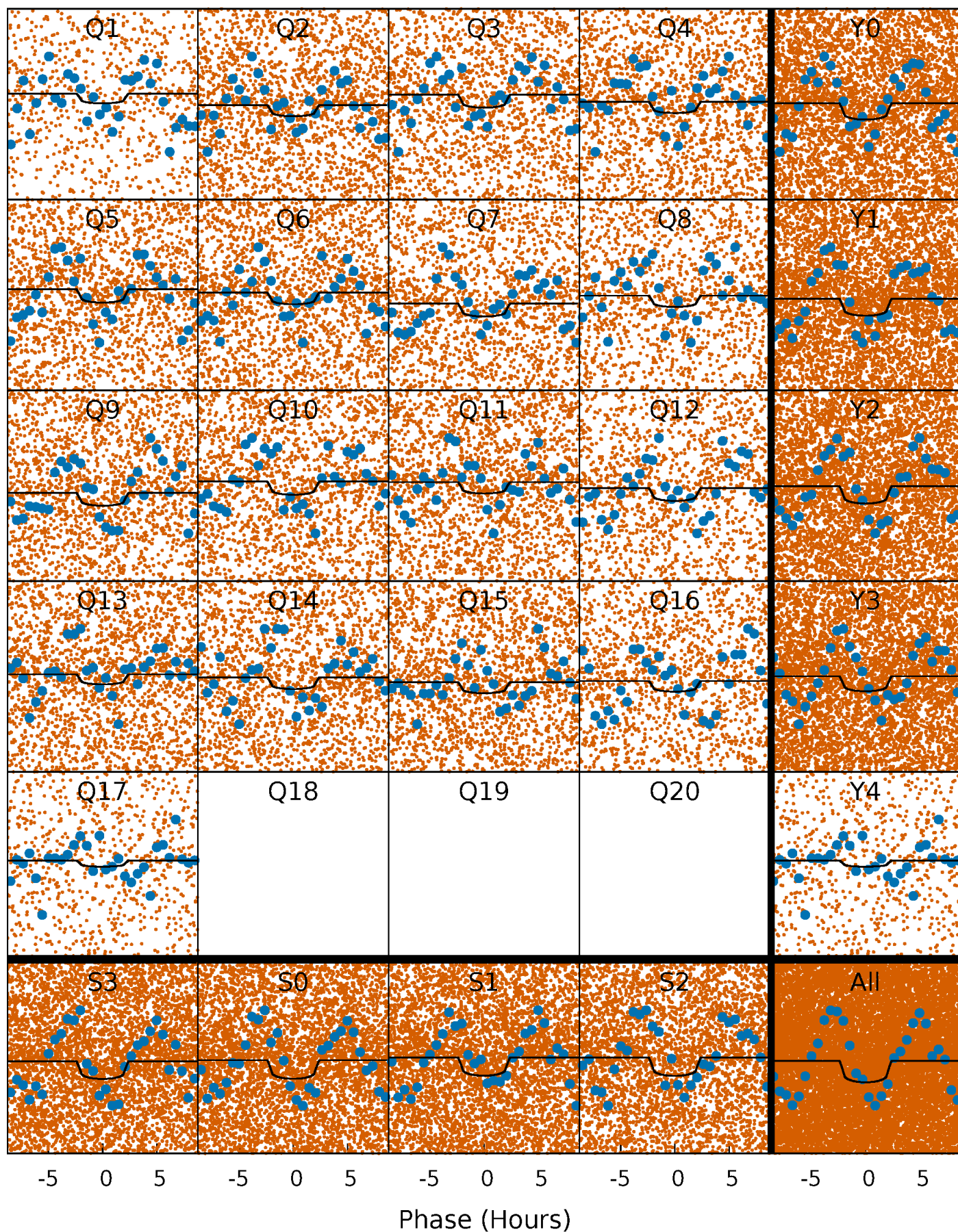
PDC Quarter-Phased Transit Curves

TCE 010658802-01 P= 0.667610 Days $T_0=131.872251$ (BKJD)



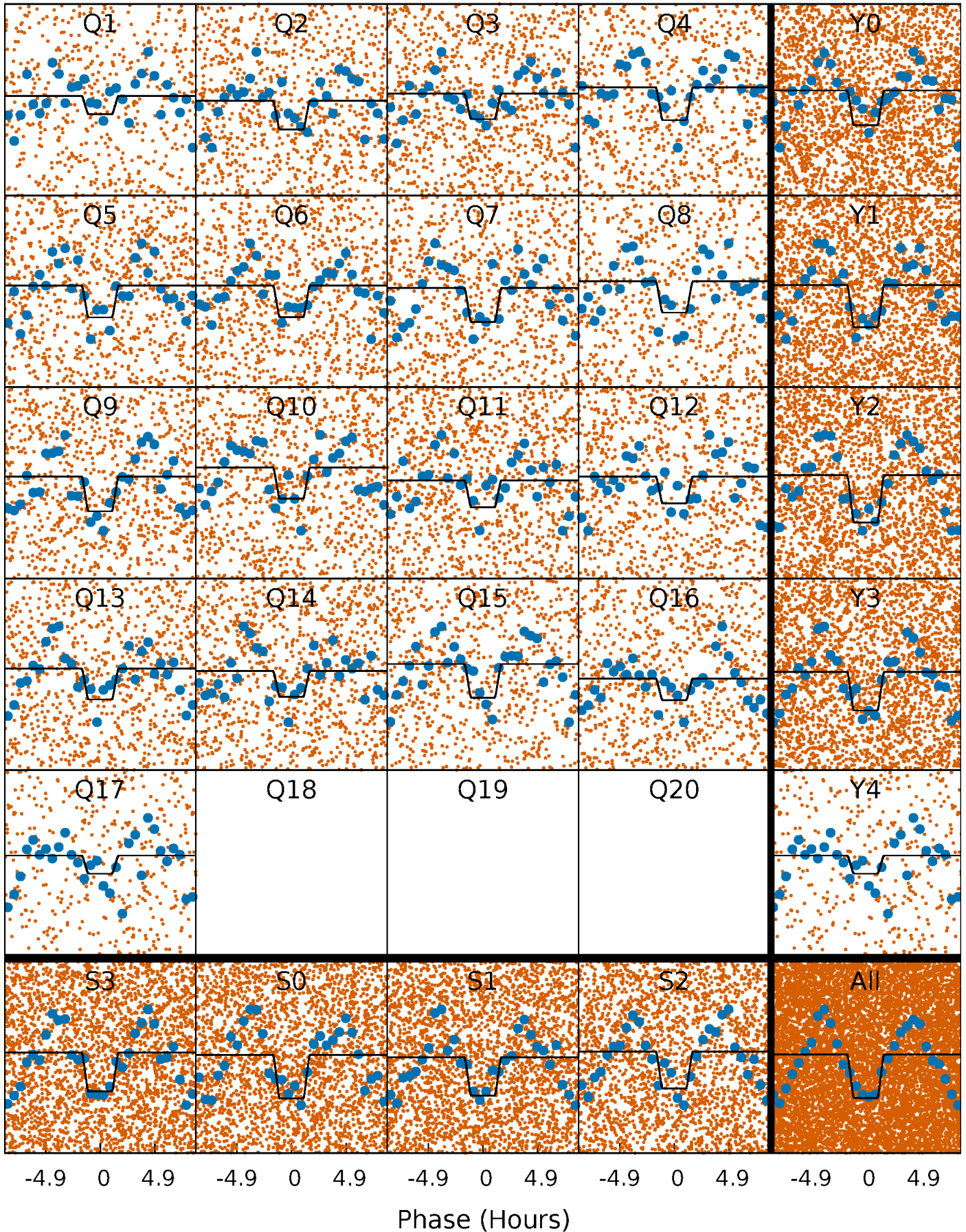
DV Quarter-Phased Transit Curves

TCE 010658802-01 P= 0.667610 Days $T_0=131.872251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

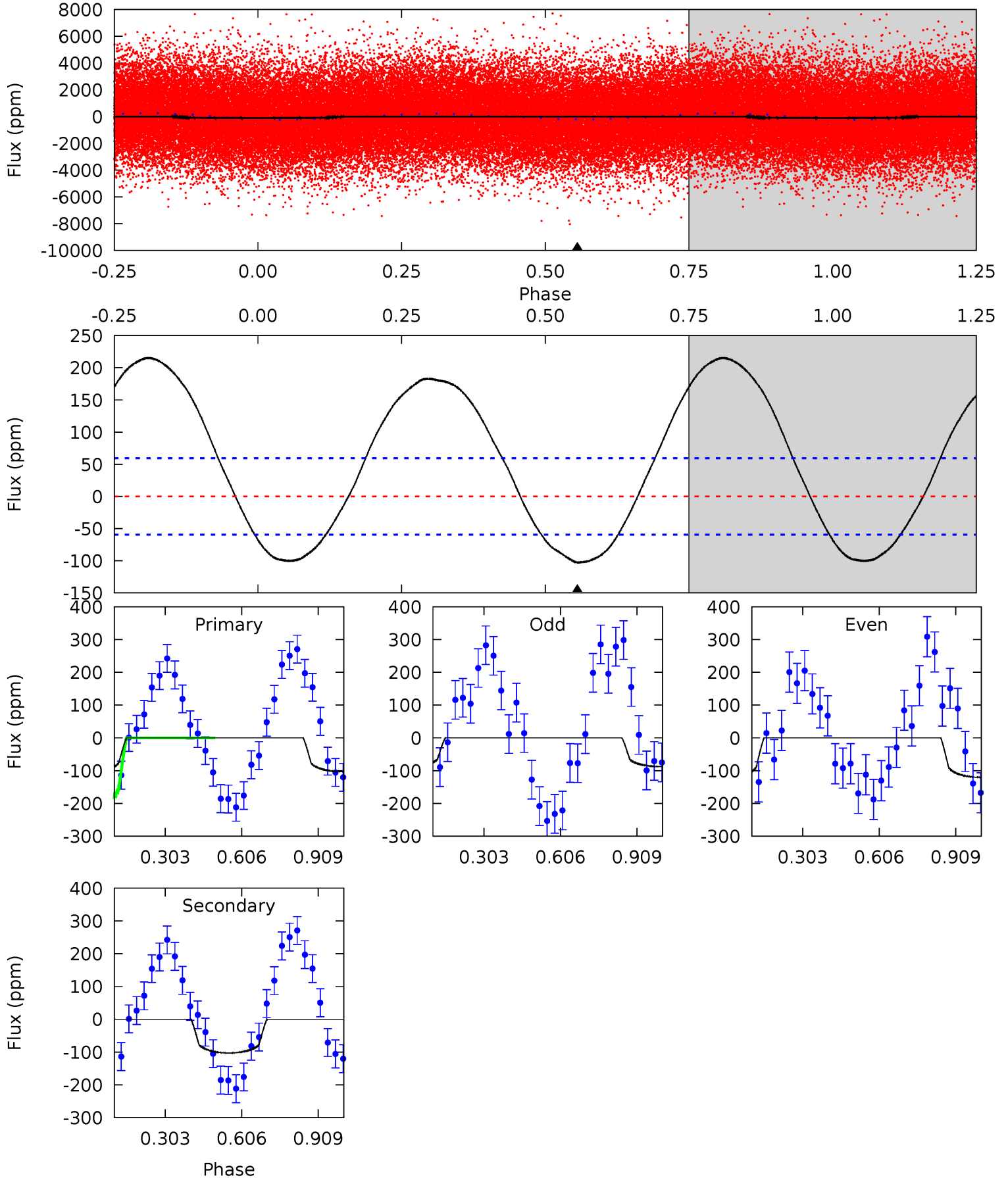
TCE 010658802-01 P= 0.667668 Days $T_0=131.845221$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-01, P = 0.667610 Days, E = 131.204641 Days

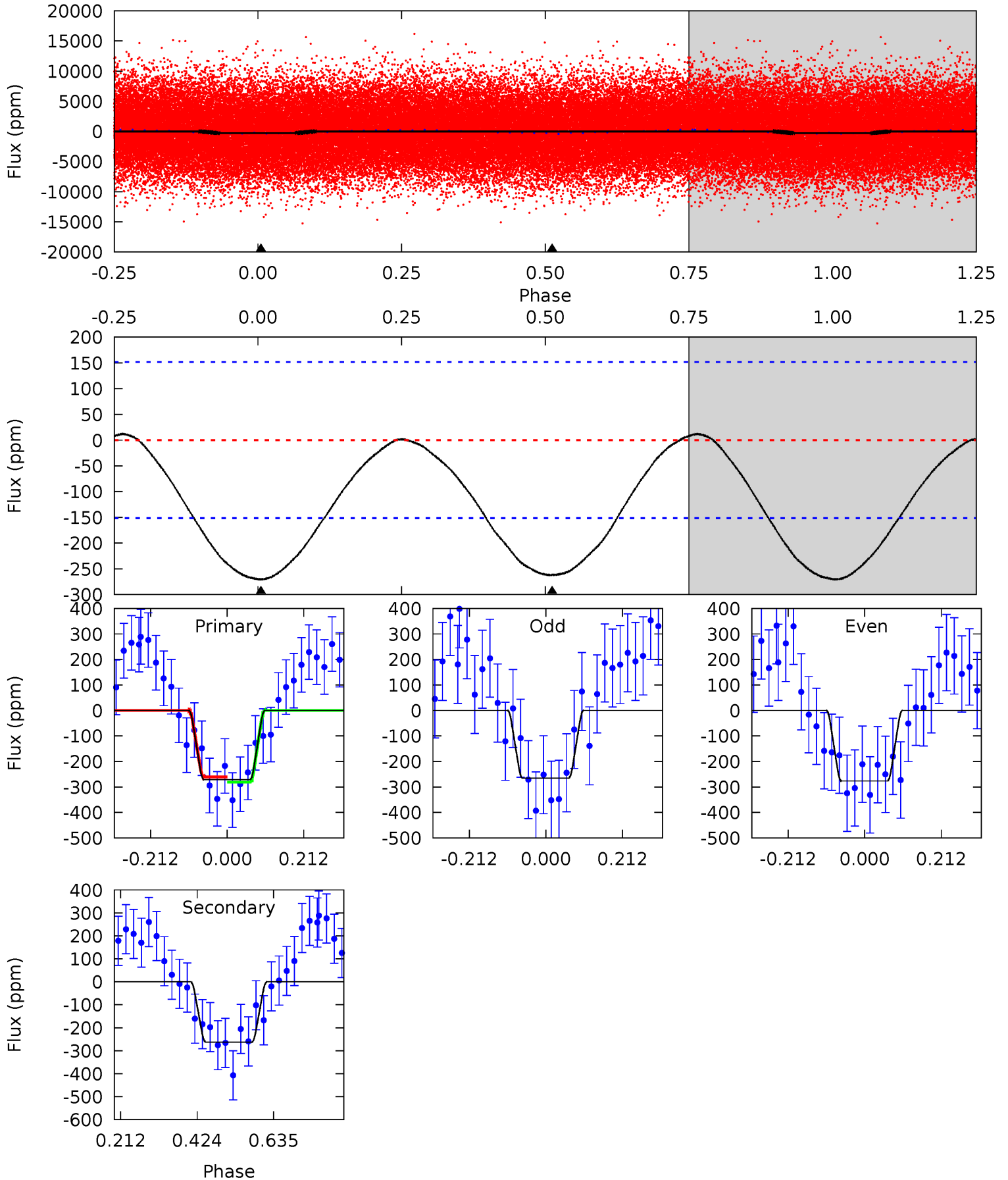
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.49 | 7.49 | 0 | 0 | 4.33 | 1.03 | 6.67 | 7.49 | 7.49 | 7.49 | 7.49 | 1.18 | 0.97 | 0.68 | 7.68 |



Alt Model-Shift Uniqueness Test

010658802-01, P = 0.667668 Days, E = 131.177553 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.87 | 7.63 | 0 | 0 | 4.40 | 1.25 | 0.25 | 7.87 | 7.87 | 7.63 | 7.63 | 0.16 | 1.13 | 0.04 | 0.29 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -103 ± 14 | $3.59^{+3.57}_{-2.41}$ | 4717^{+387}_{-265} | 5219^{+5395}_{-2253} | $1.324^{+11.625}_{-0.988}$ |
| Alt. | -263 ± 34 | $4.17^{+3.40}_{-2.54}$ | 4736^{+368}_{-290} | 6335^{+5377}_{-1817} | $2.506^{+14.090}_{-1.727}$ |

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

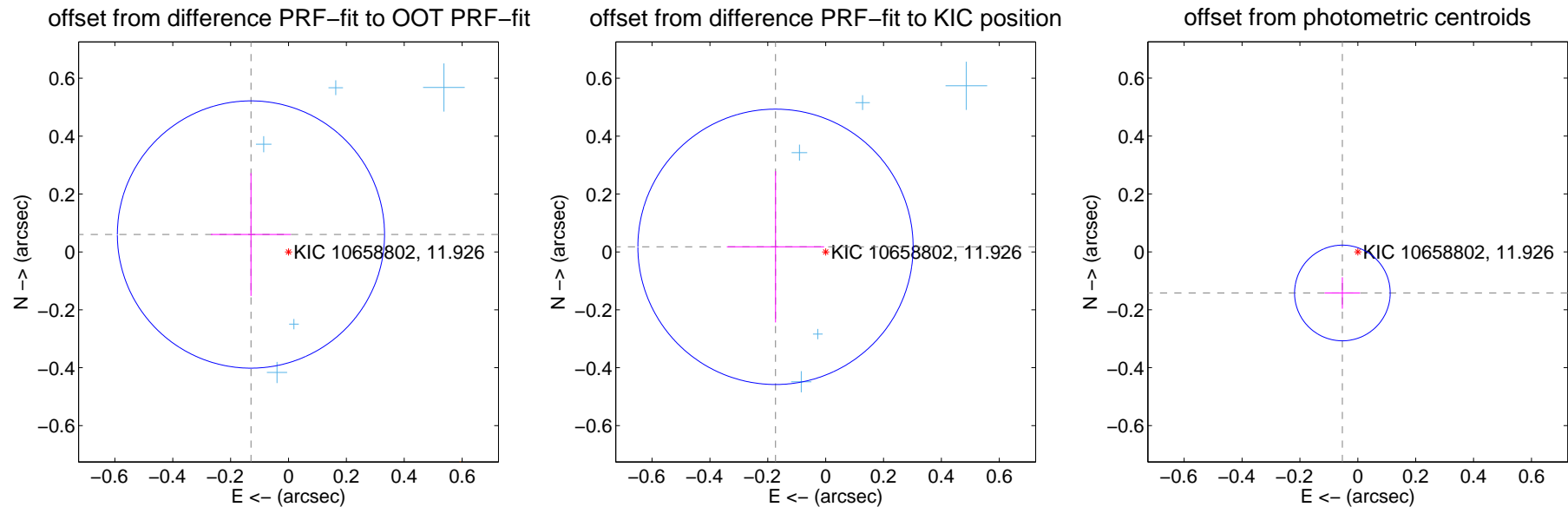
DV Centroid Data

Supplemental centroid analysis for 010658802-01. **Kepler magnitude: 11.93.** Transit SNR 5.82

There are 15 quarters with good PRF difference image offsets

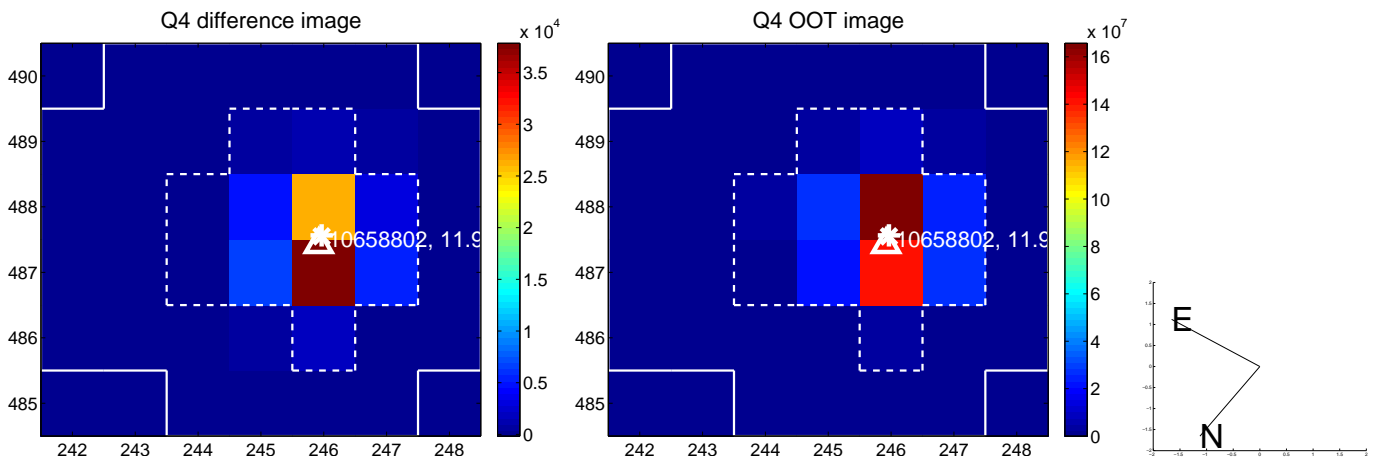
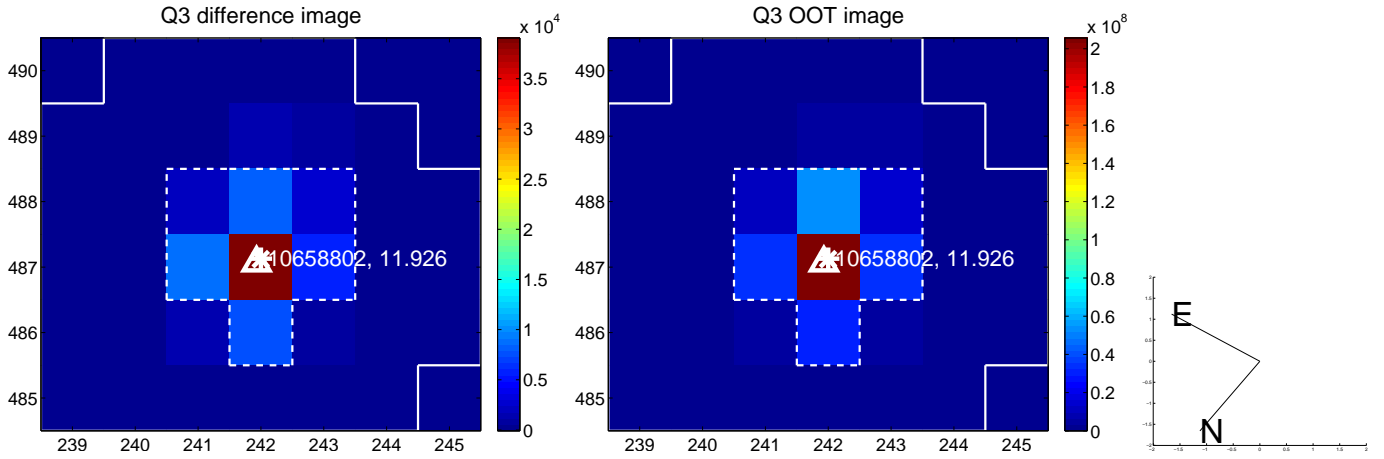
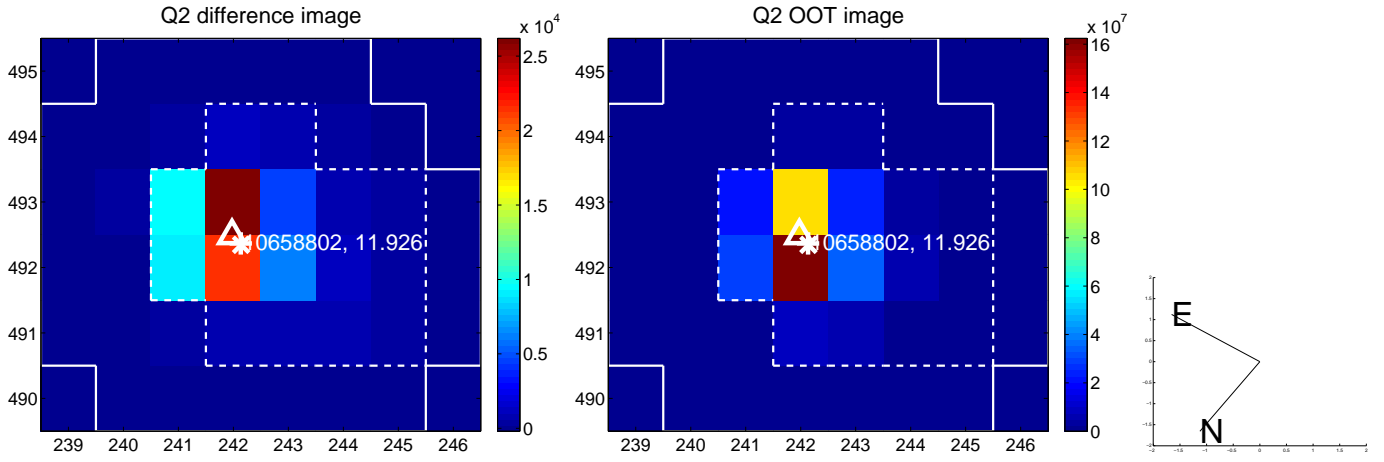
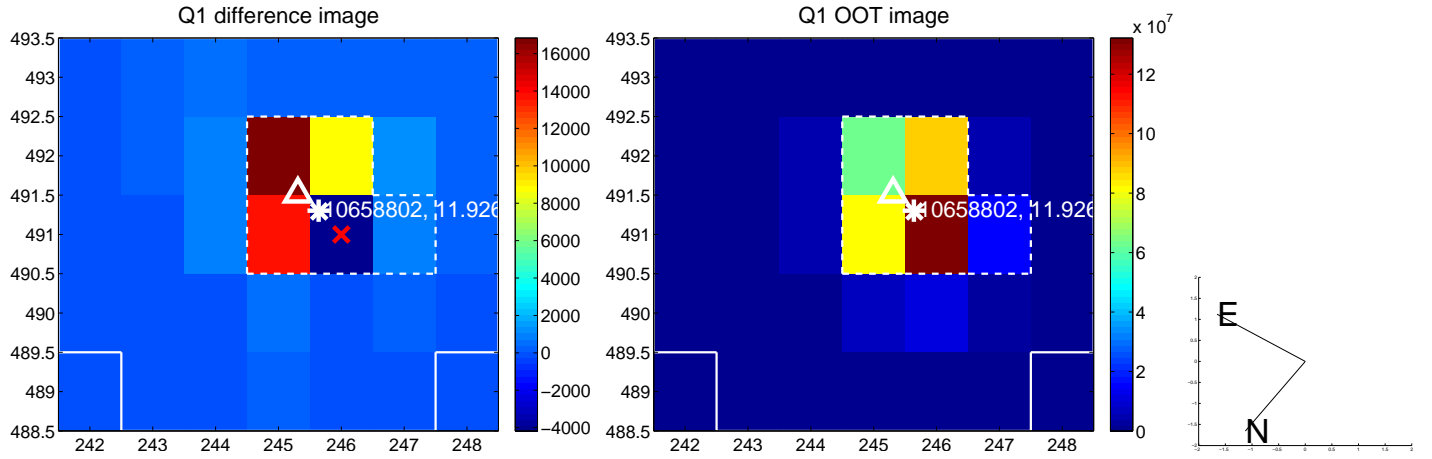
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.143 ± 0.154 | 0.93 | 0.130 ± 0.138 | 0.060 ± 0.212 |
| PRF-fit source offset from KIC position | 0.174 ± 0.159 | 1.10 | 0.173 ± 0.168 | 0.018 ± 0.261 |
| photometric centroid source offset | 0.15 ± 0.06 | 2.75 | 0.05 ± 0.06 | -0.14 ± 0.05 |

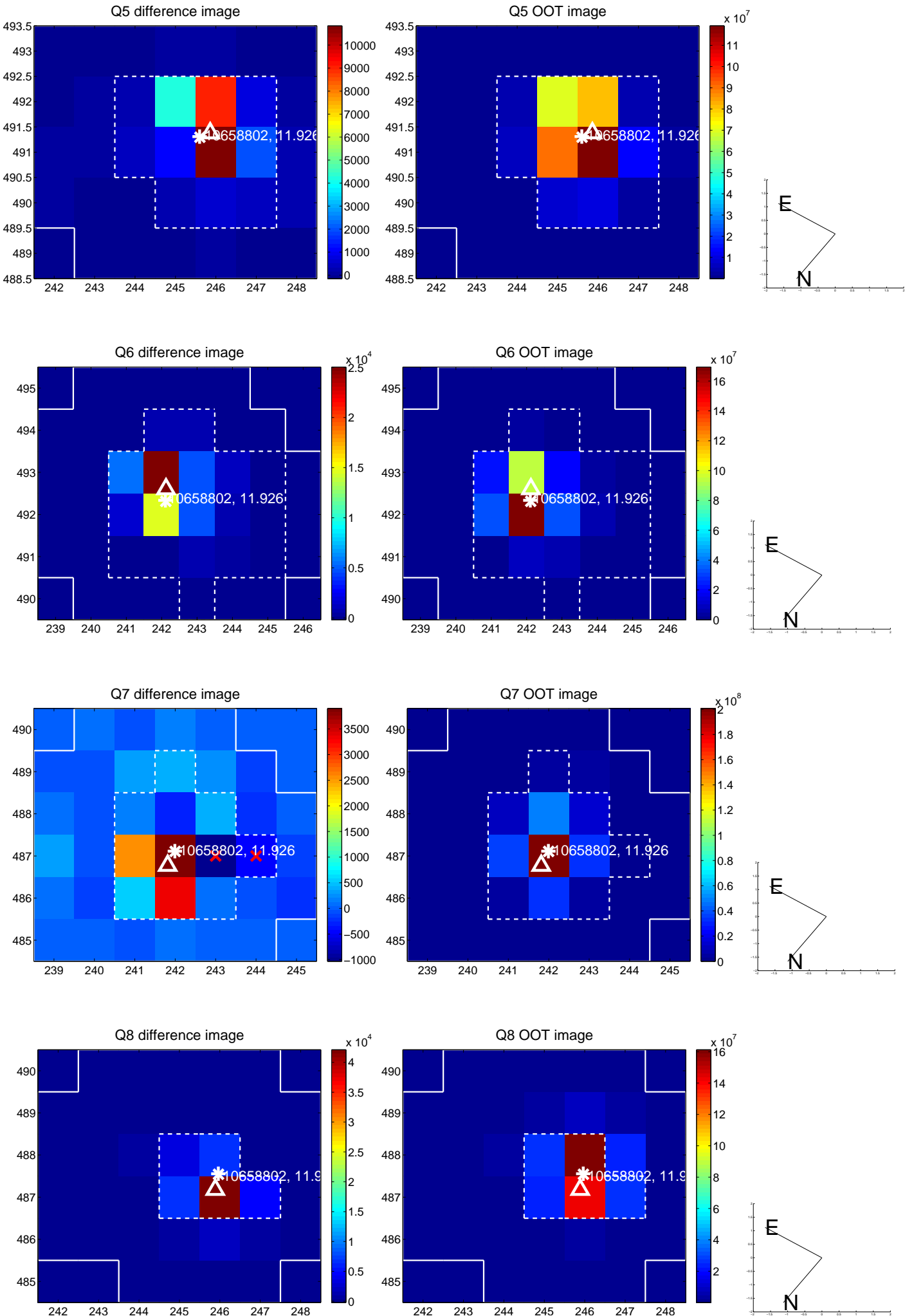


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

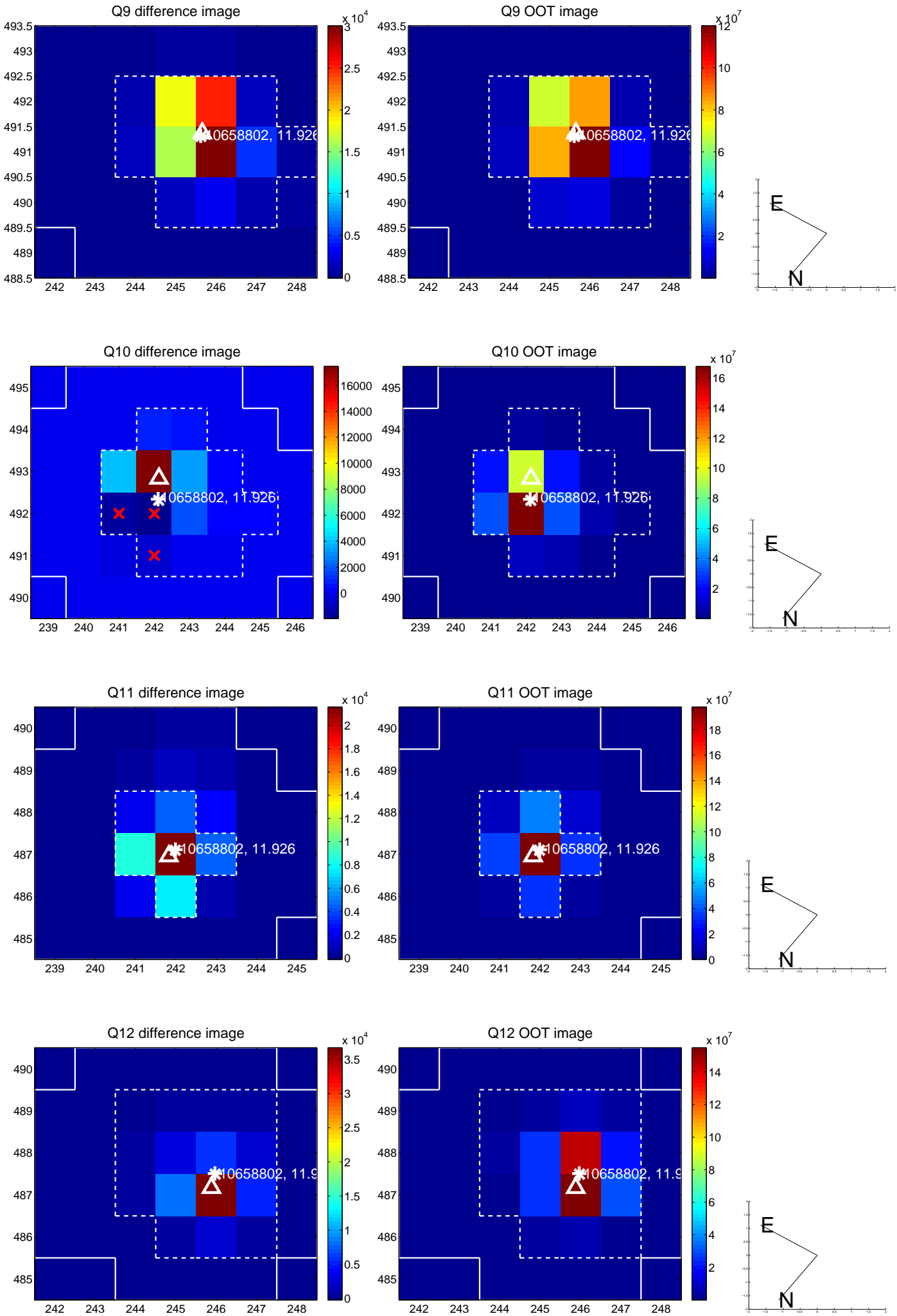
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



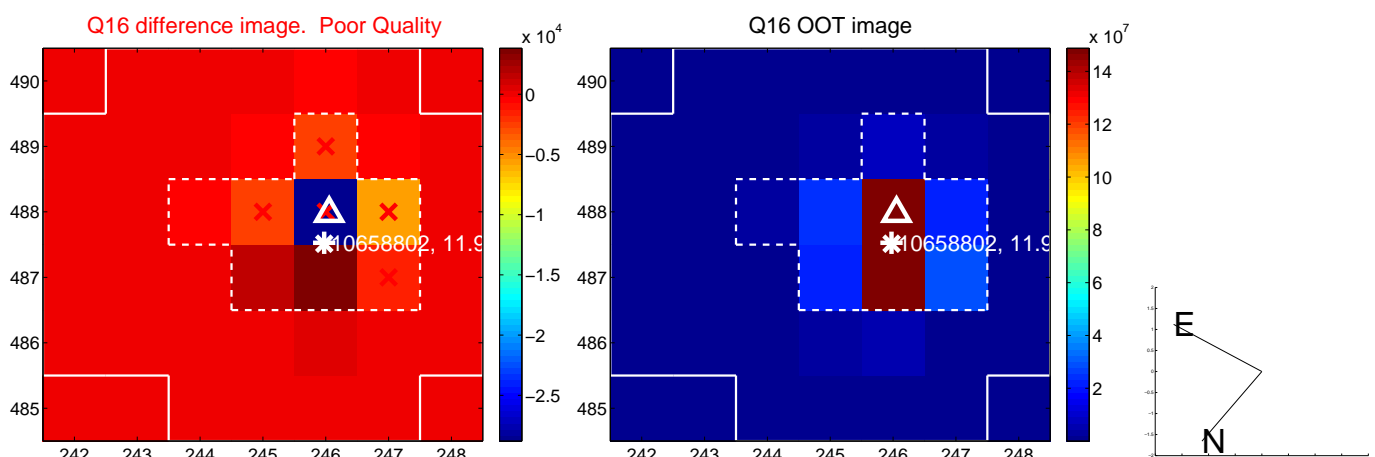
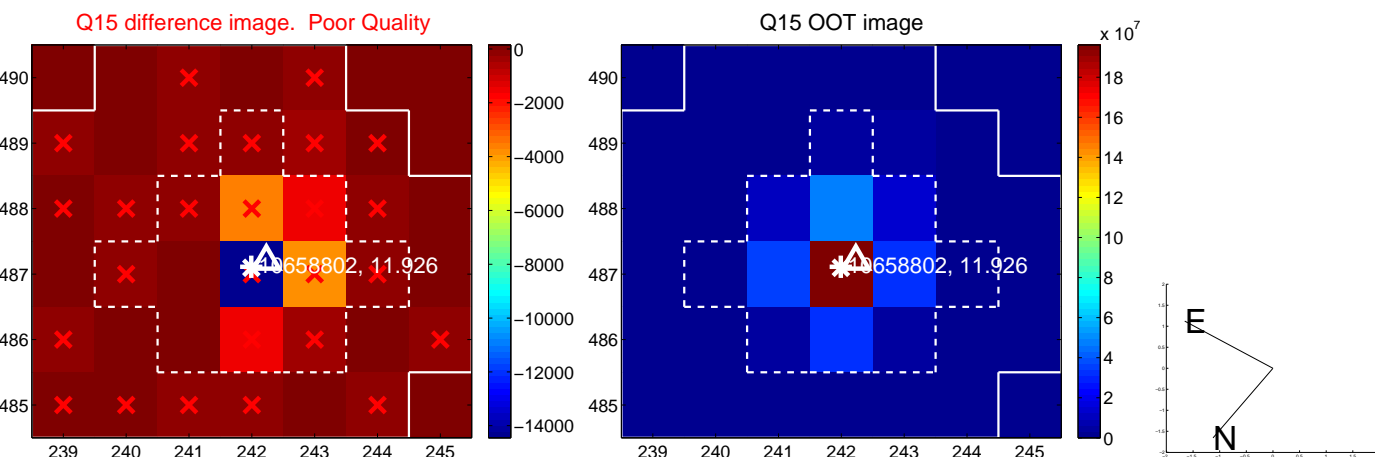
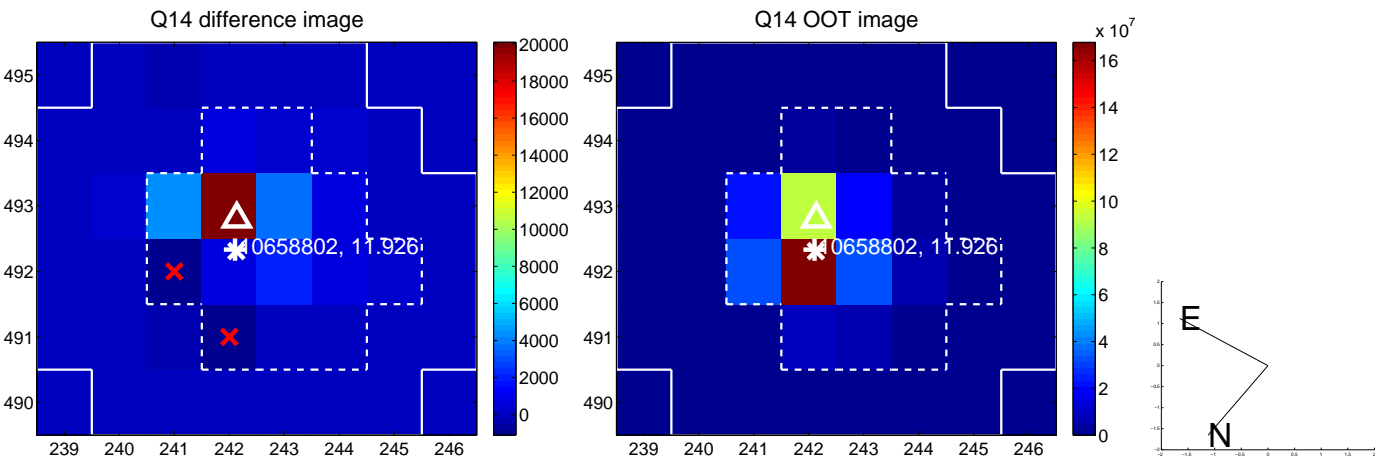
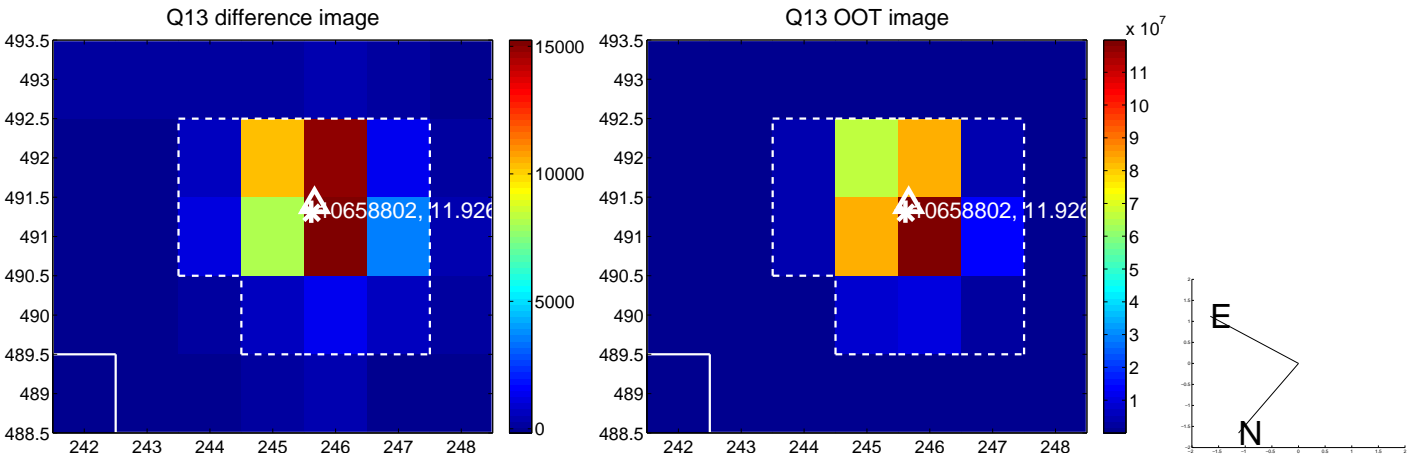
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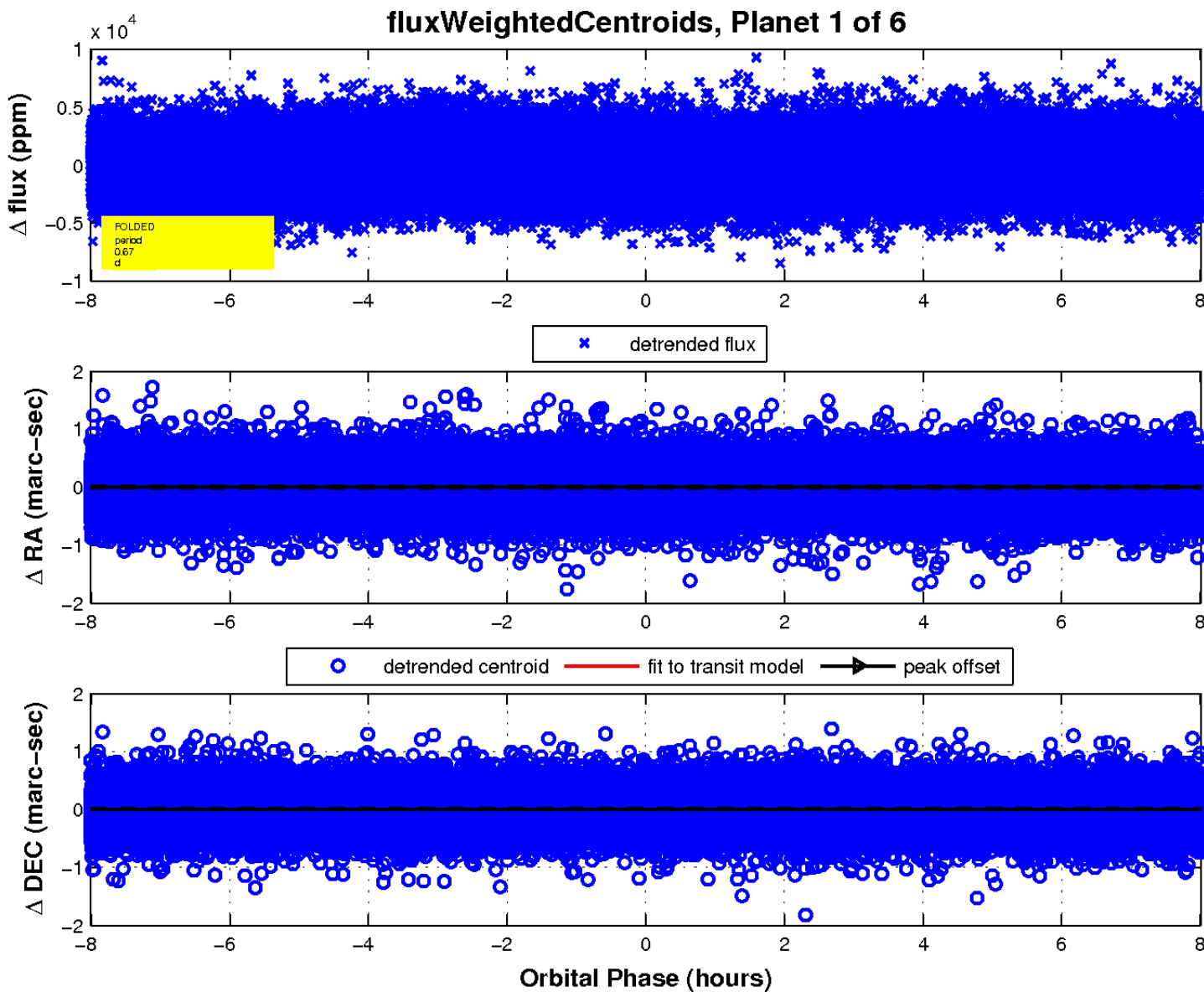
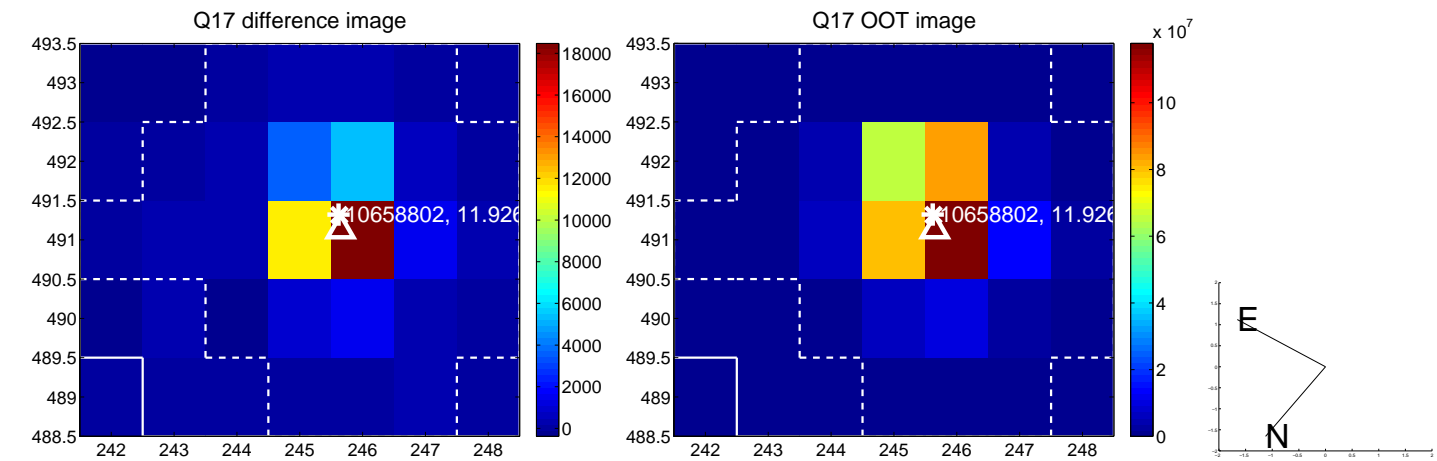
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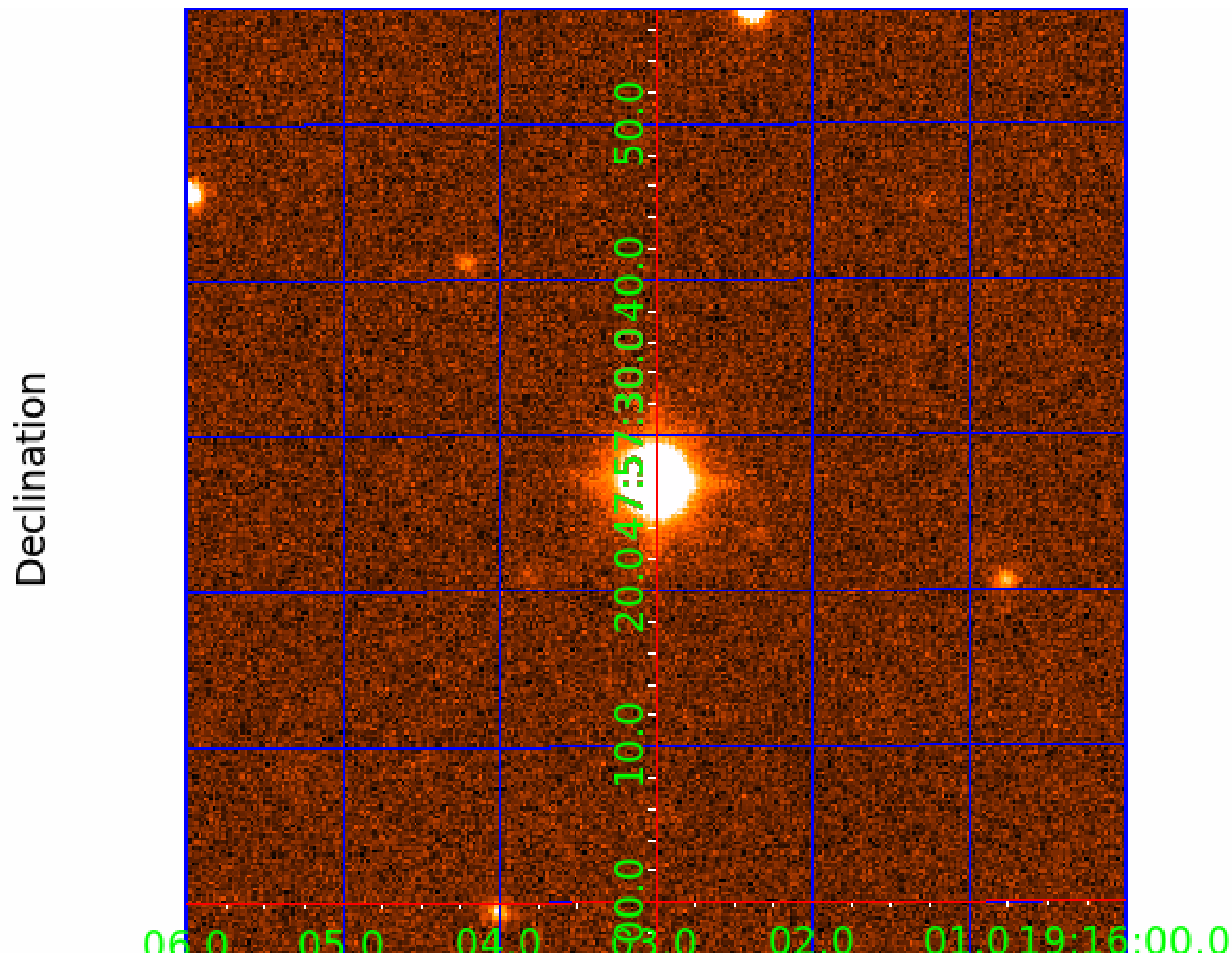
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
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| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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

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

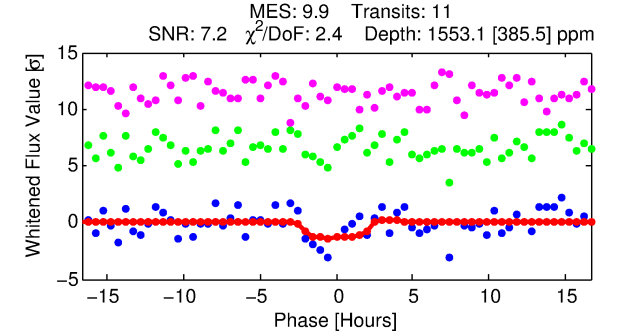
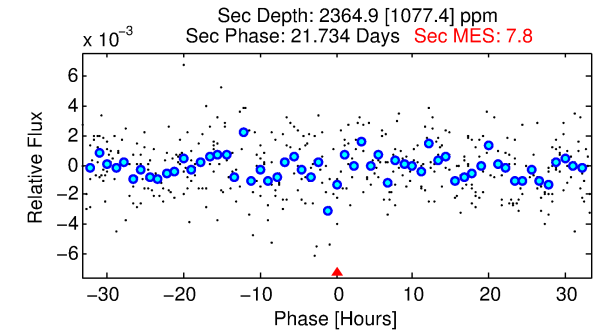
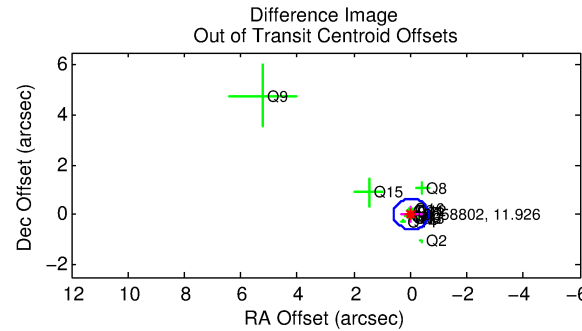
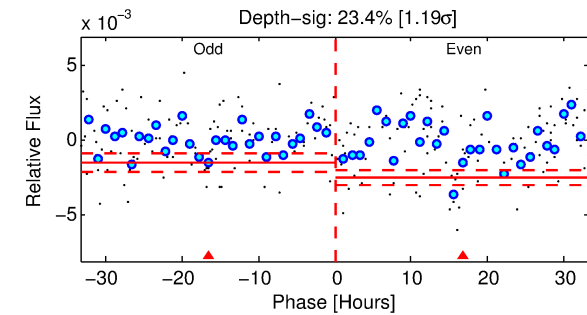
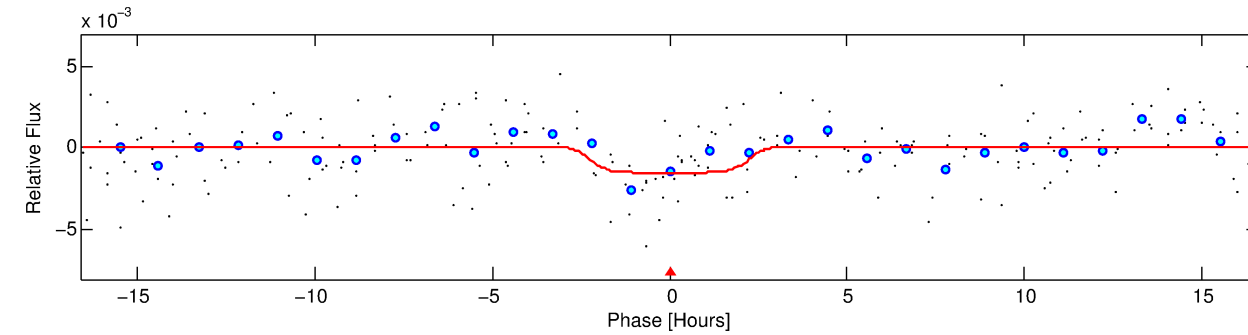
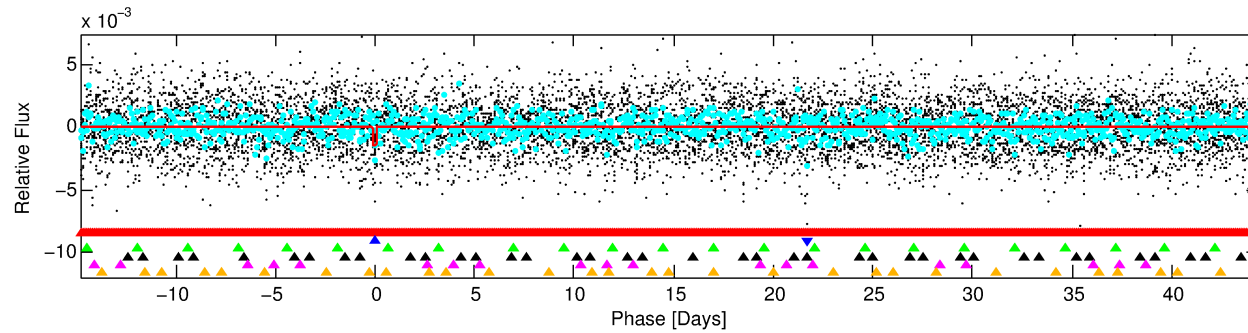
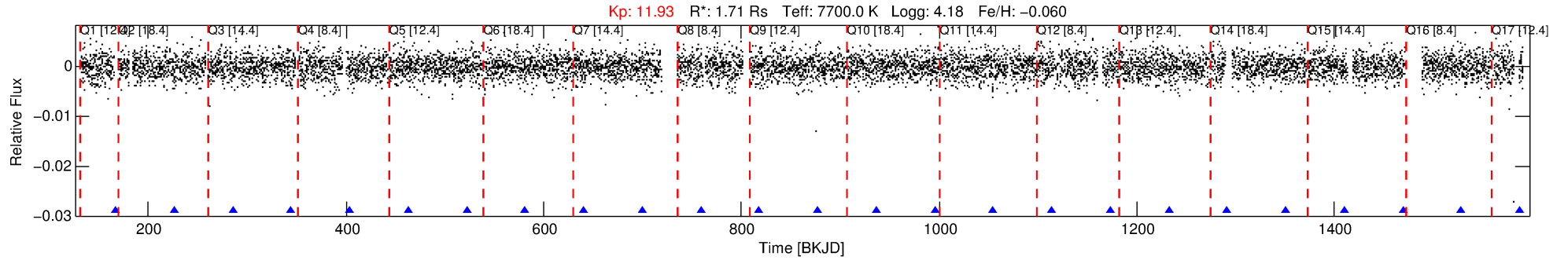
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010658802-02

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 2 of 6 Period: 59.183 d



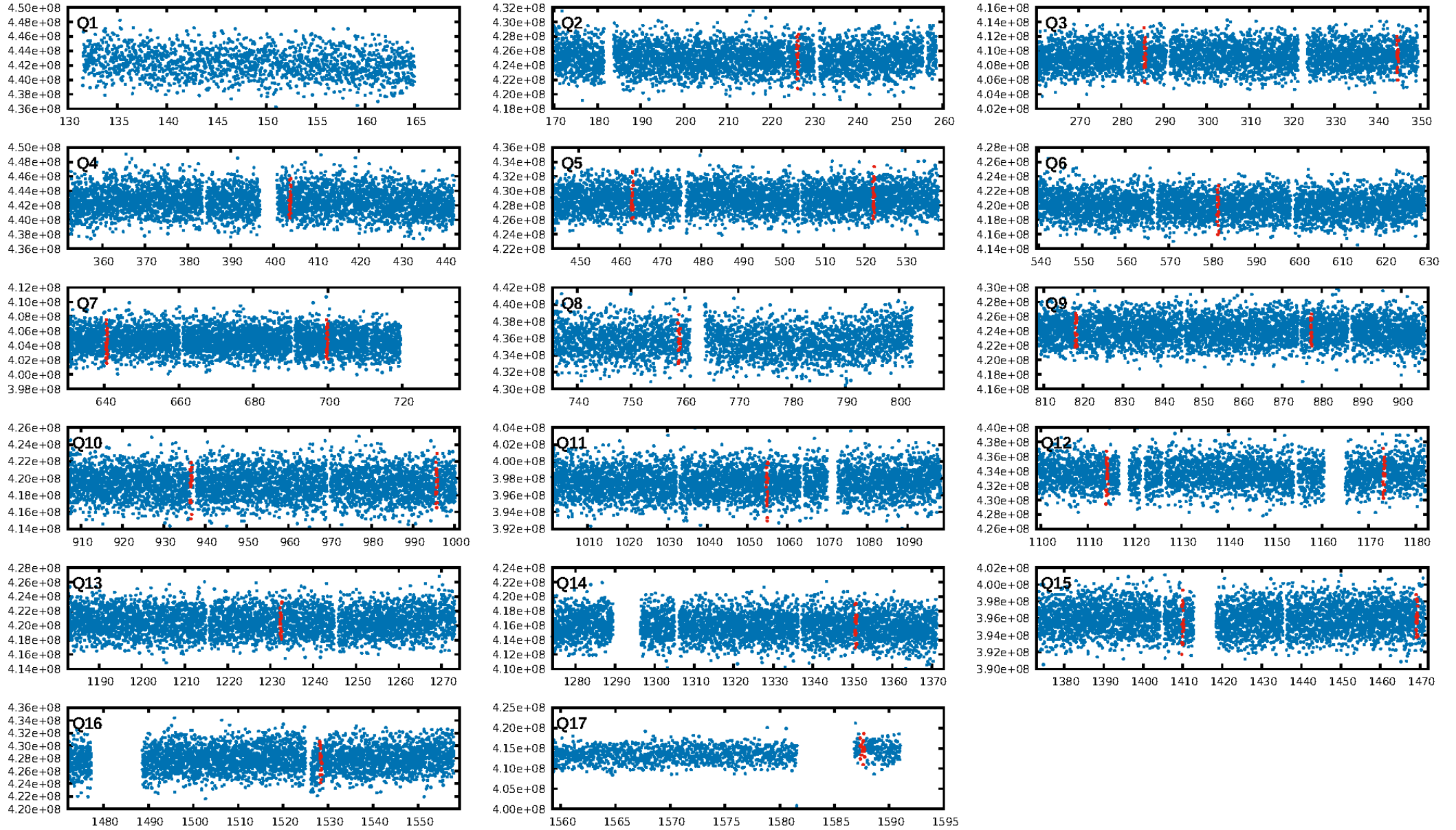
DV Fit Results:

Period = 59.18254 [0.00674] d
Epoch = 167.1748 [0.0842] BKJD
Rp/R* = 0.0417 [0.0110]
a/R* = 43.50 [59.50]
b = 0.90 [0.30]
Seff = 75.96 [30.70]
Teq = 753 [76] K
Rp = 7.77 [3.25] Re
a = 0.3482 [0.0916] AU
Ag = 2609.84 [2057.08] [1.27σ]
Teffp = 8319 [1488] K [5.08σ]

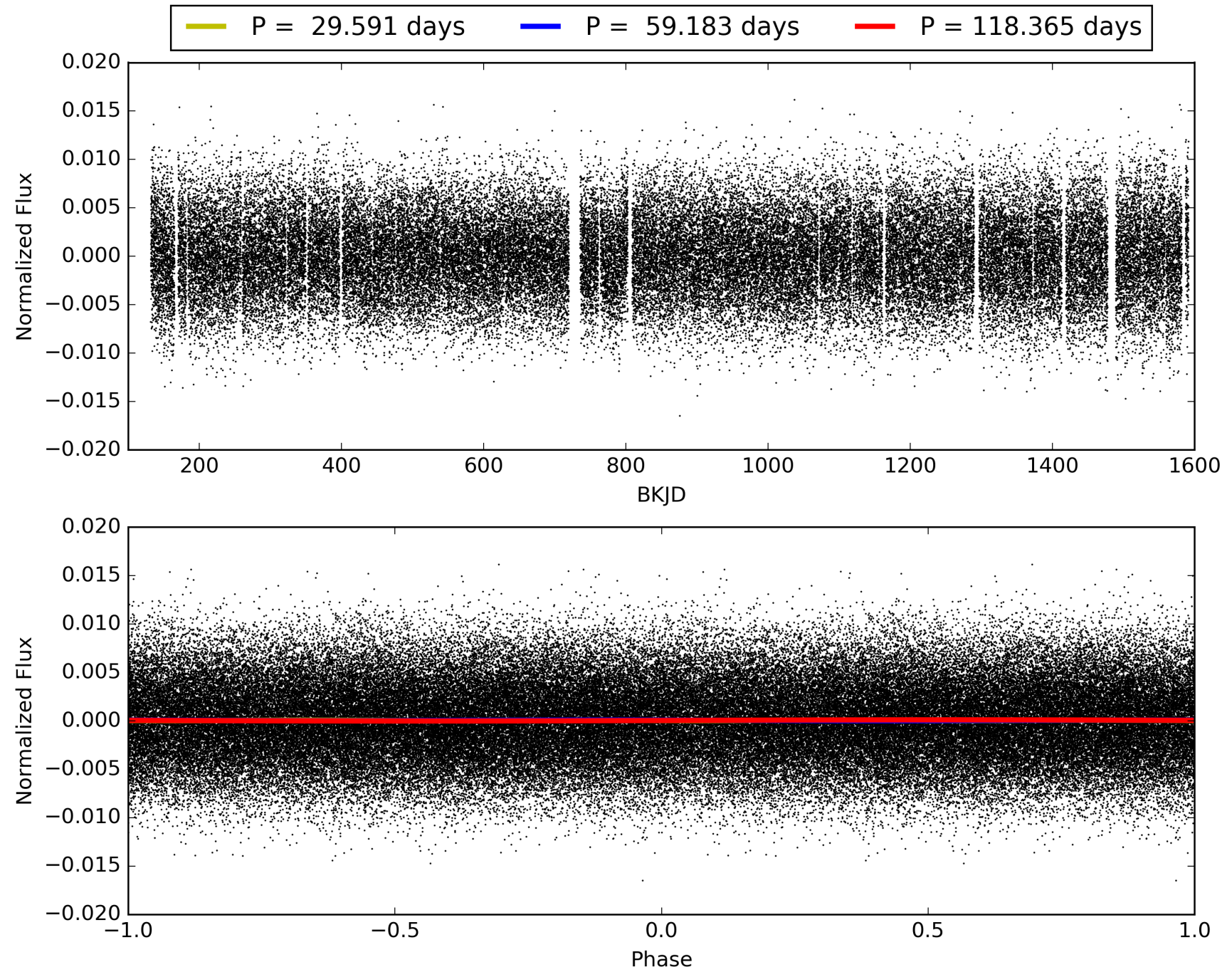
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.36σ]
LongPeriod-sig: 100.0% [8.93σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.02e-10
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -6.51
Centroid-sig: 5.1%
Centroid-so: 0.060 arcsec [1.52σ]
OotOffset-rm: 0.037 arcsec [0.18σ]
OotOffset-st: 4/4/4/2 [14]
KicOffset-rm: 0.024 arcsec [0.12σ]
KicOffset-st: 4/4/4/2 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/15]

TCE 010658802-02, PDC Light Curves

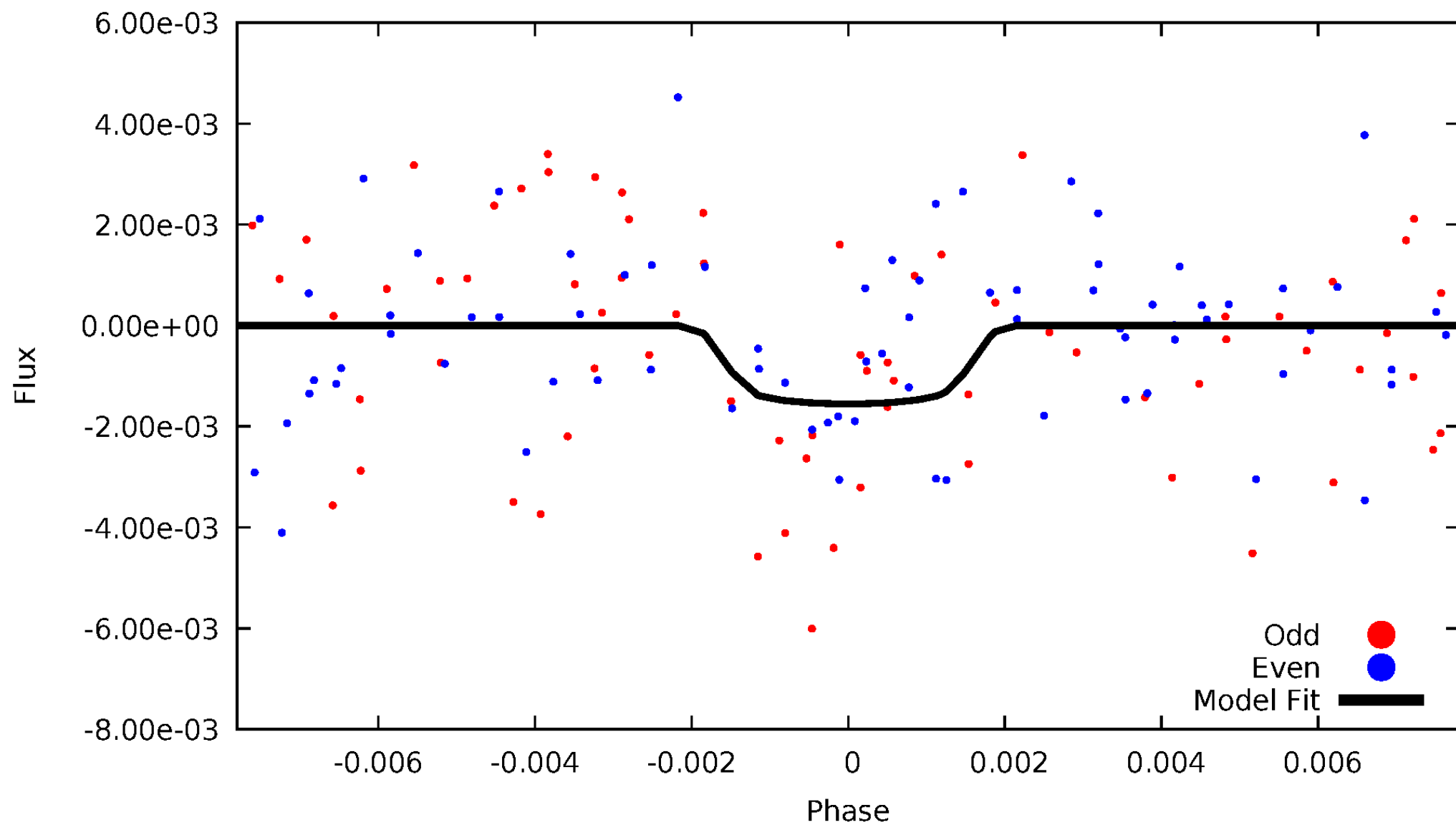


TCE 010658802-02



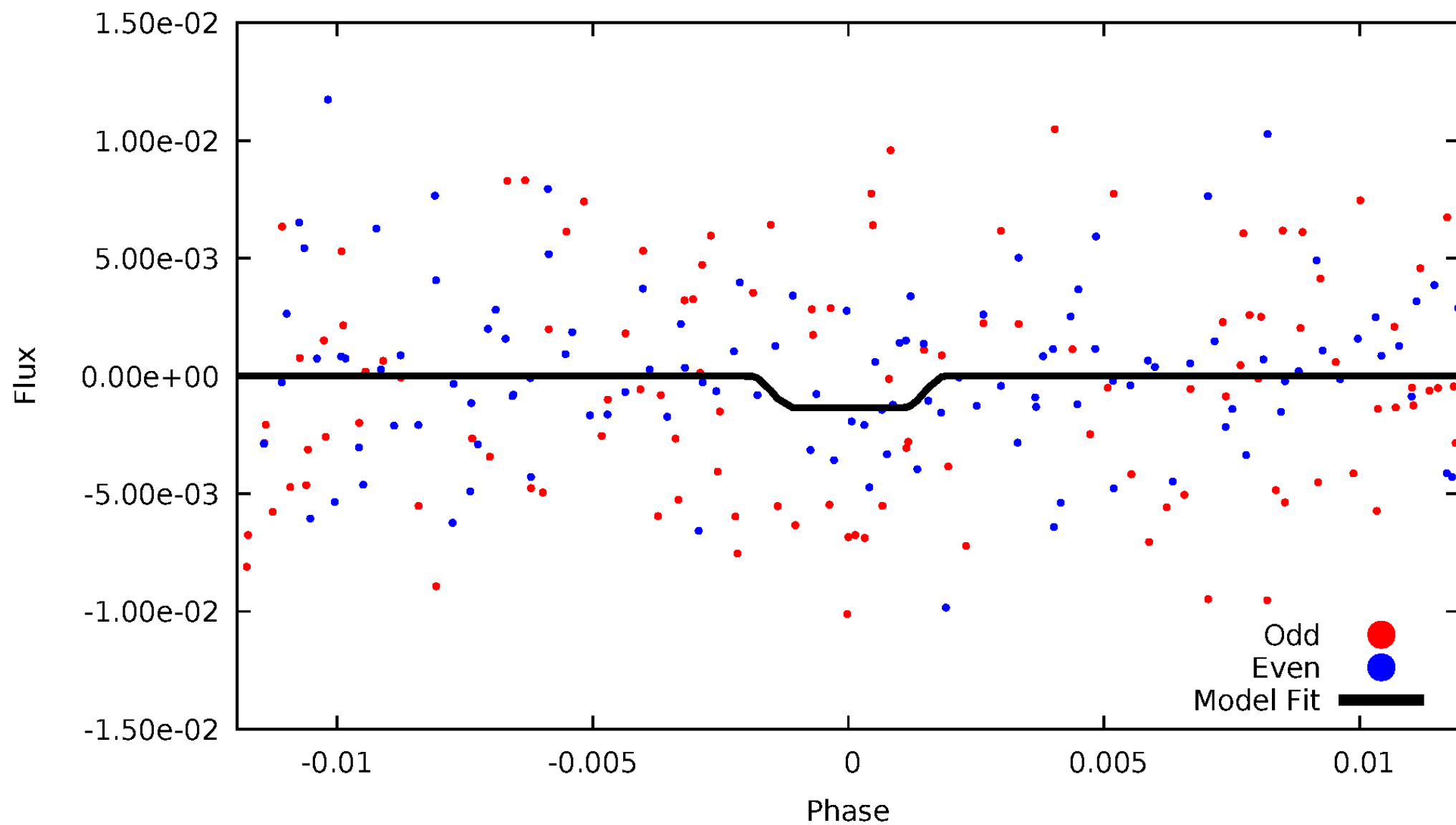
DV Odd/Even

TCE 010658802-02



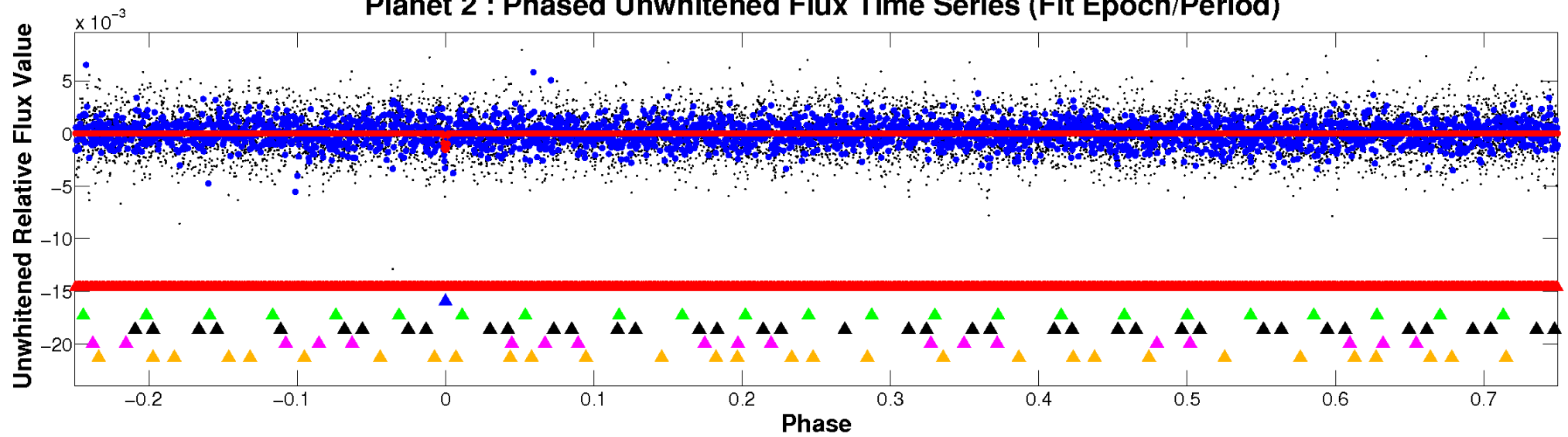
ALT Odd/Even

TCE 010658802-02

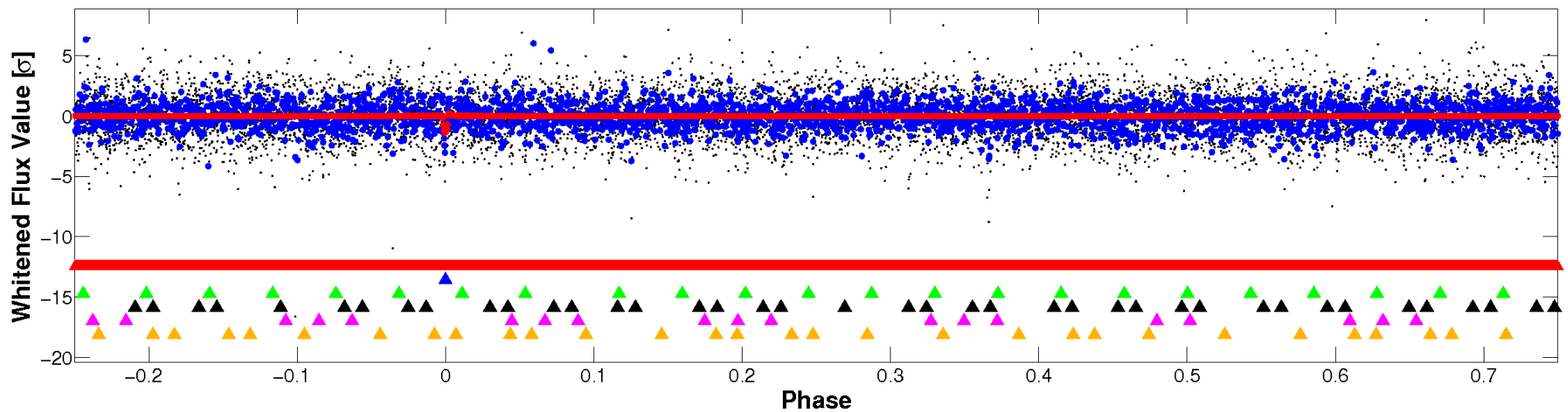


Non-Whitened Vs. Whitened Light Curve

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

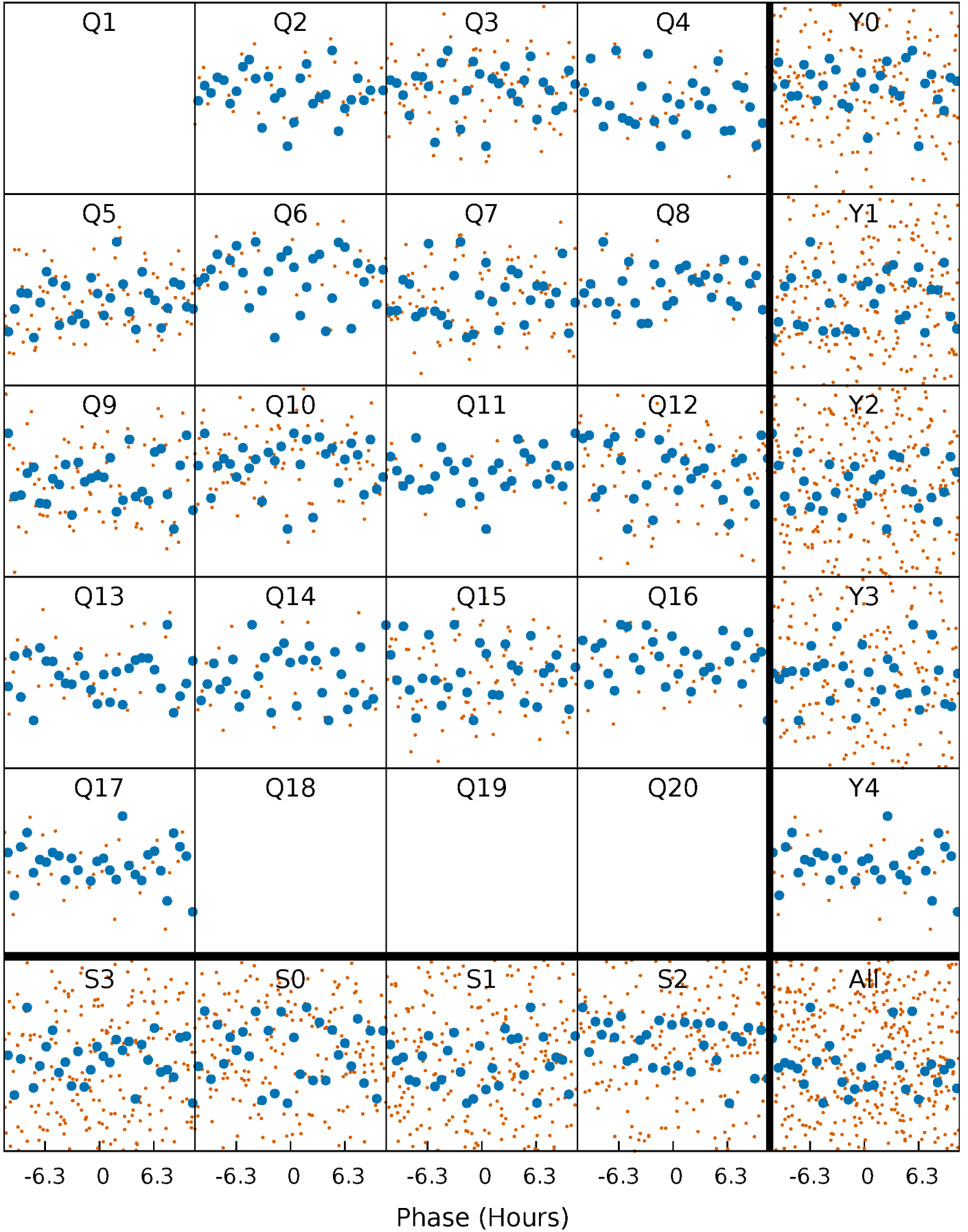


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



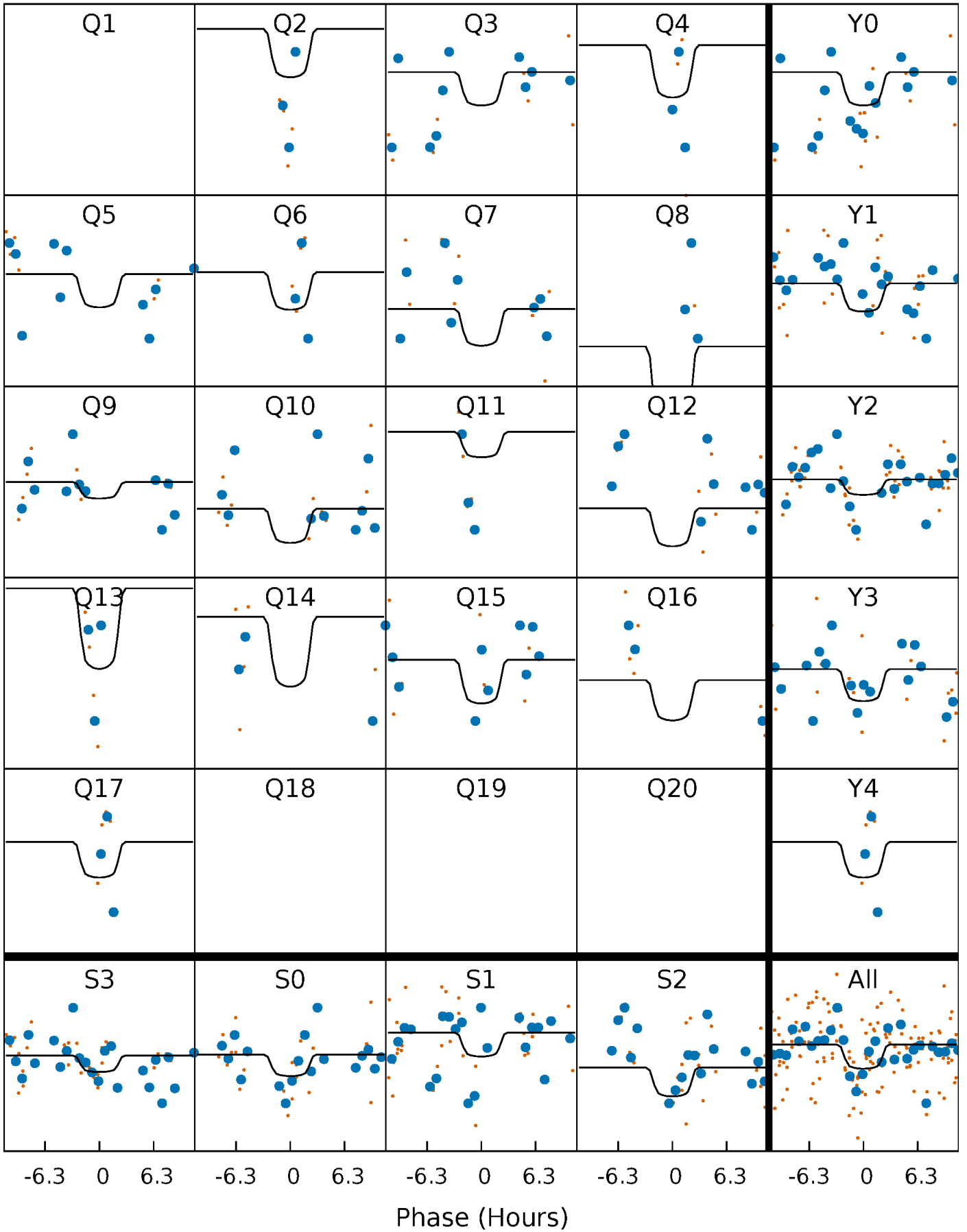
PDC Quarter-Phased Transit Curves

TCE 010658802-02 P= 59.182539 Days $T_0=167.174818$ (BKJD)



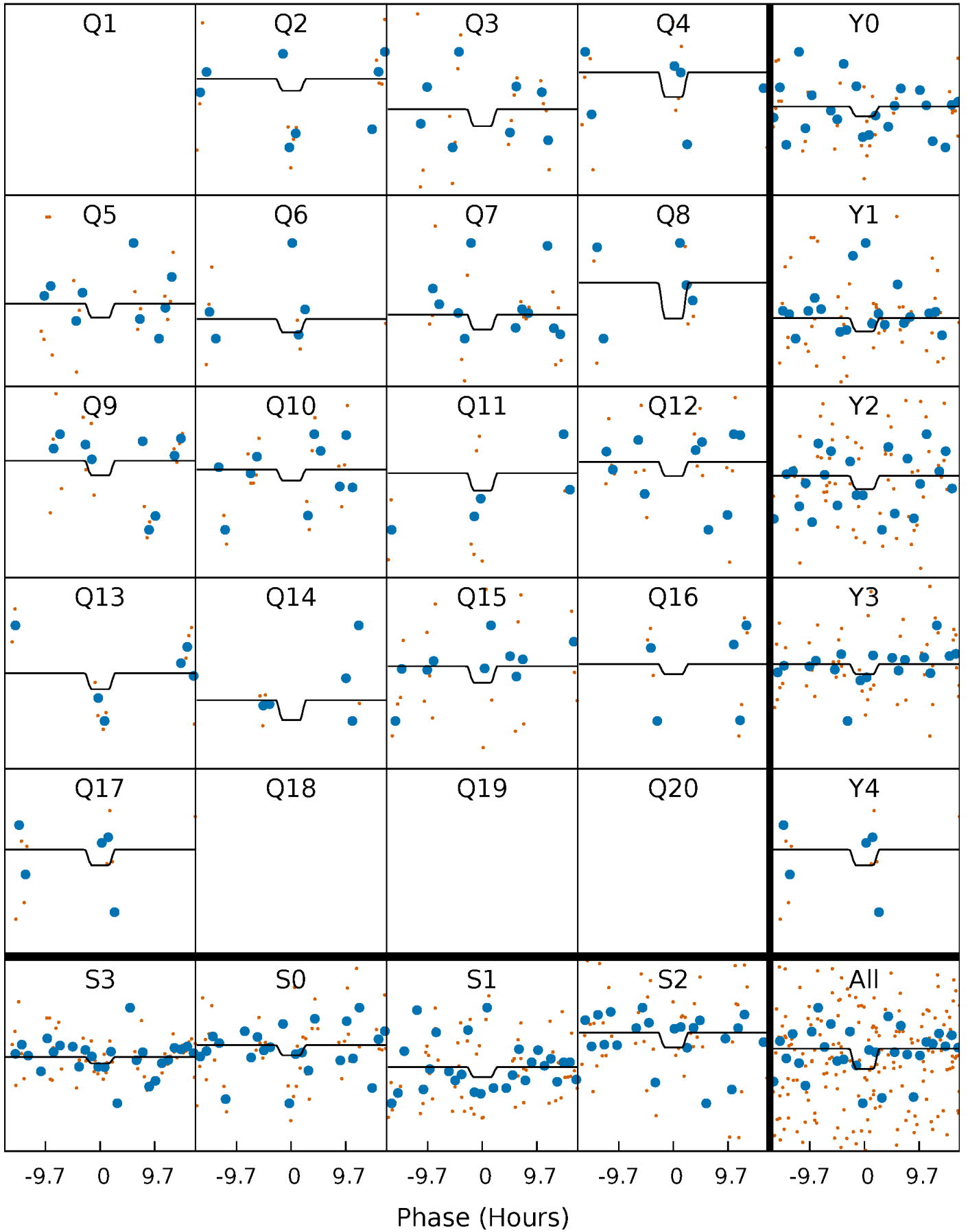
DV Quarter-Phased Transit Curves

TCE 010658802-02 P= 59.182539 Days $T_0=167.174818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

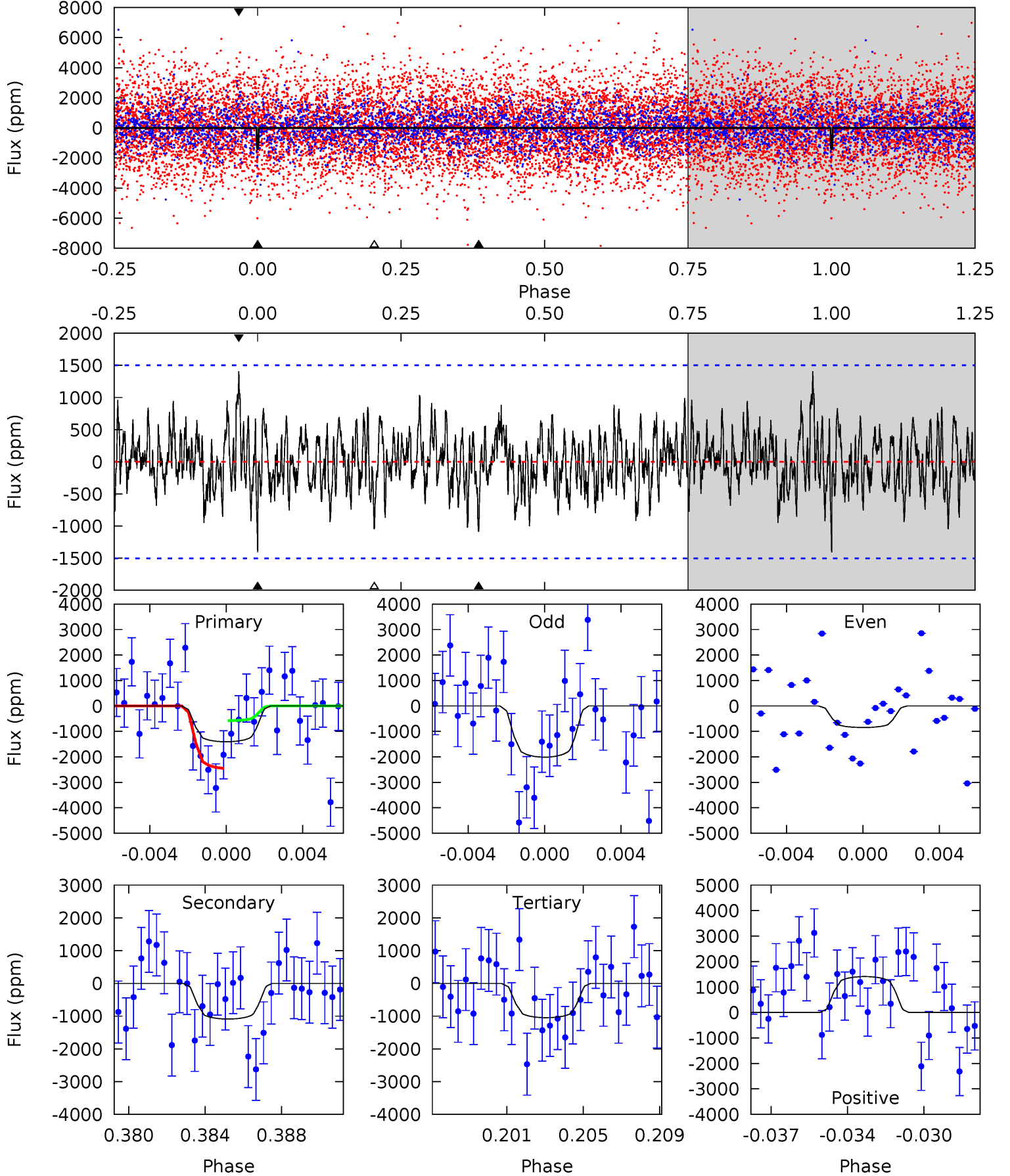
TCE 010658802-02 P= 59.181271 Days $T_0=167.166417$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-02, P = 59.182539 Days, E = 107.992279 Days

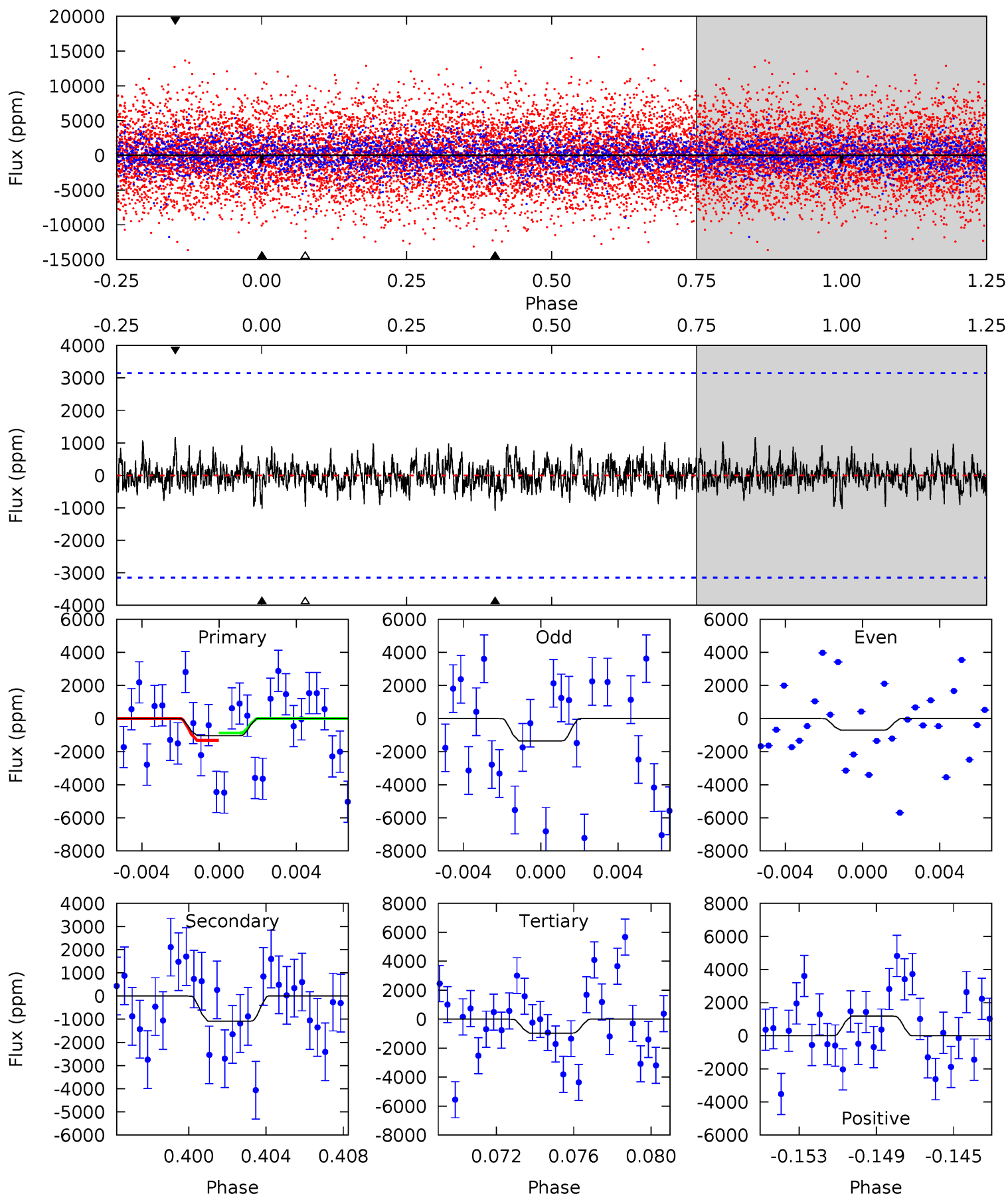
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.88 | 3.78 | 3.63 | 4.89 | 5.21 | 2.90 | 1.31 | 1.25 | -0.01 | 0.15 | -1.11 | 2.02 | 1.01 | 0.50 | 3.23 |



Alt Model-Shift Uniqueness Test

010658802-02, P = 59.181271 Days, E = 107.985146 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.71 | 1.80 | 1.59 | 1.95 | 5.21 | 2.89 | 0.54 | 0.12 | -0.24 | 0.21 | -0.16 | 0.54 | 1.65 | 0.52 | 0.36 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|------------------------|----------------------|------------------------|-----------------------|
| DV | -1089 ± 288 | $7.90^{+2.53}_{-2.09}$ | 1056^{+86}_{-64} | 6748^{+1363}_{-940} | 1121^{+1136}_{-501} |
| Alt. | -1088 ± 605 | $6.89^{+2.44}_{-1.91}$ | 1057^{+89}_{-65} | 7170^{+2070}_{-1545} | 1428^{+1945}_{-898} |

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

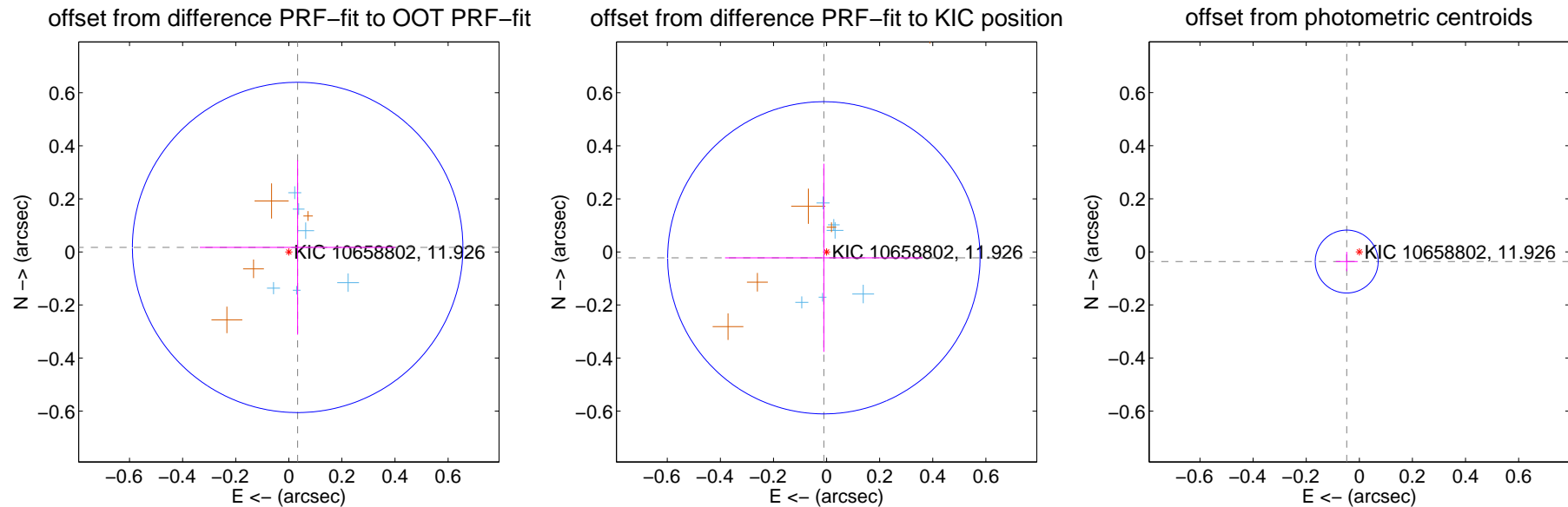
DV Centroid Data

Supplemental centroid analysis for 010658802-02. **Kepler magnitude: 11.93.** Transit SNR 7.23

There are 7 quarters with good PRF difference image offsets

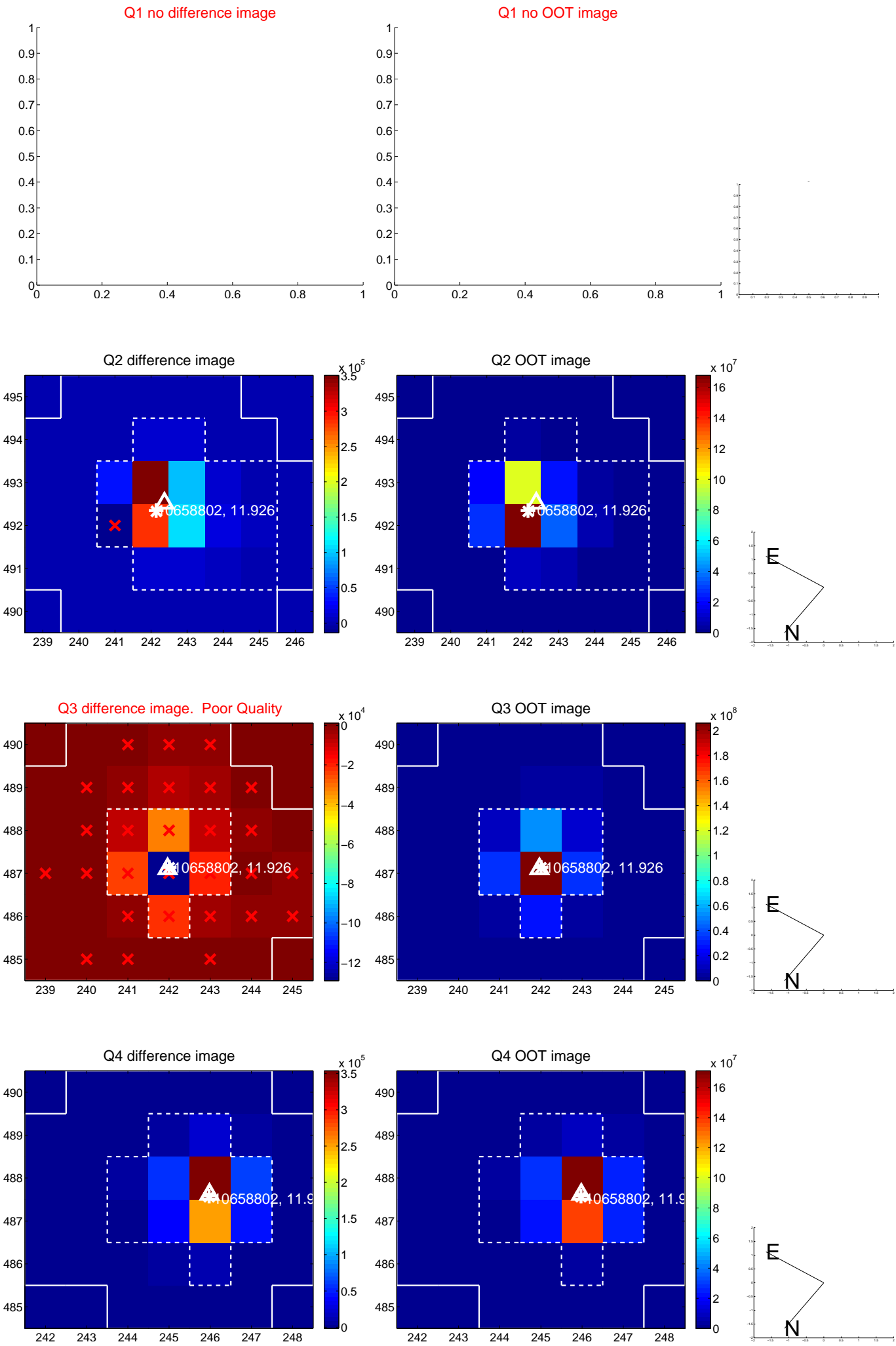
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.037 ± 0.207 | 0.18 | -0.033 ± 0.369 | 0.017 ± 0.329 |
| PRF-fit source offset from KIC position | 0.024 ± 0.196 | 0.12 | 0.010 ± 0.372 | -0.022 ± 0.355 |
| photometric centroid source offset | 0.06 ± 0.04 | 1.52 | 0.05 ± 0.04 | -0.04 ± 0.04 |

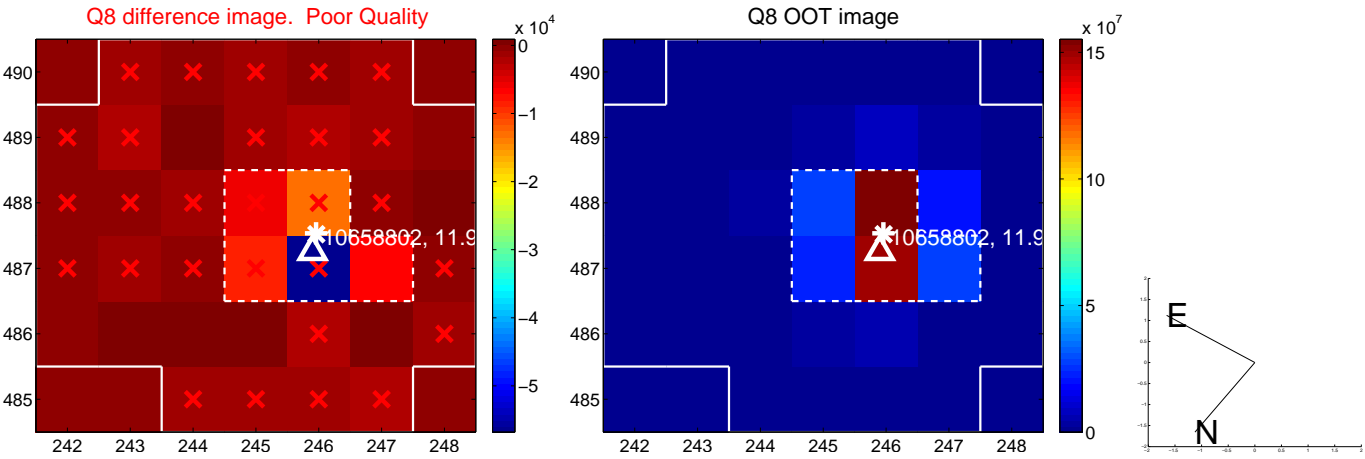
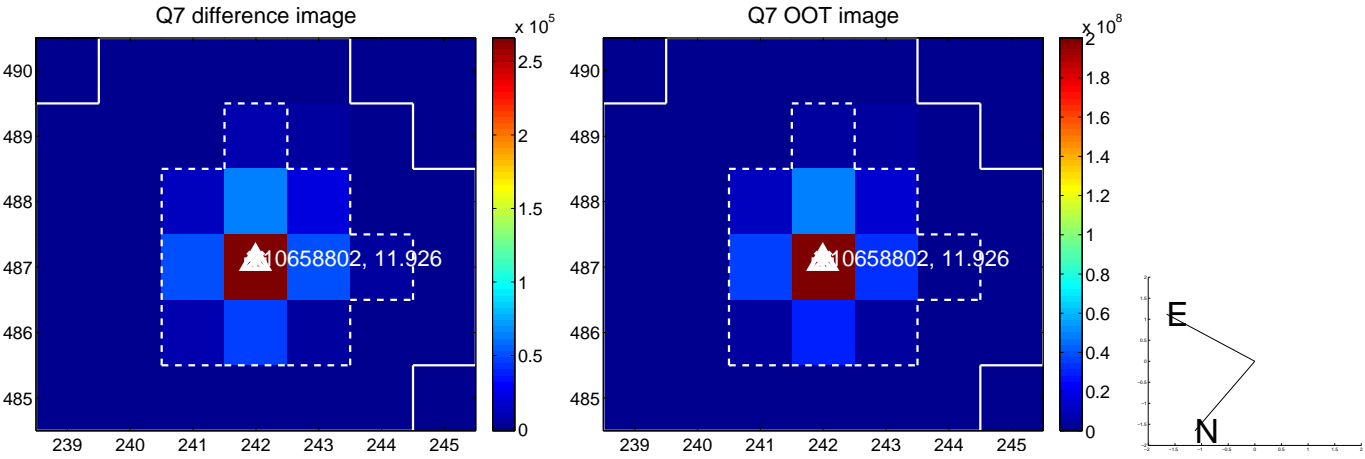
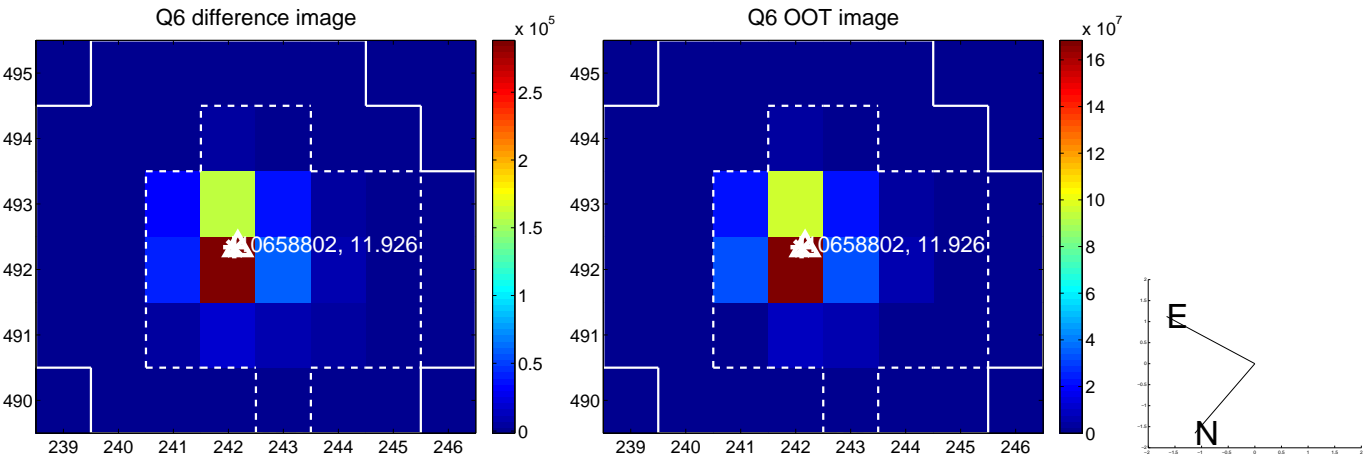
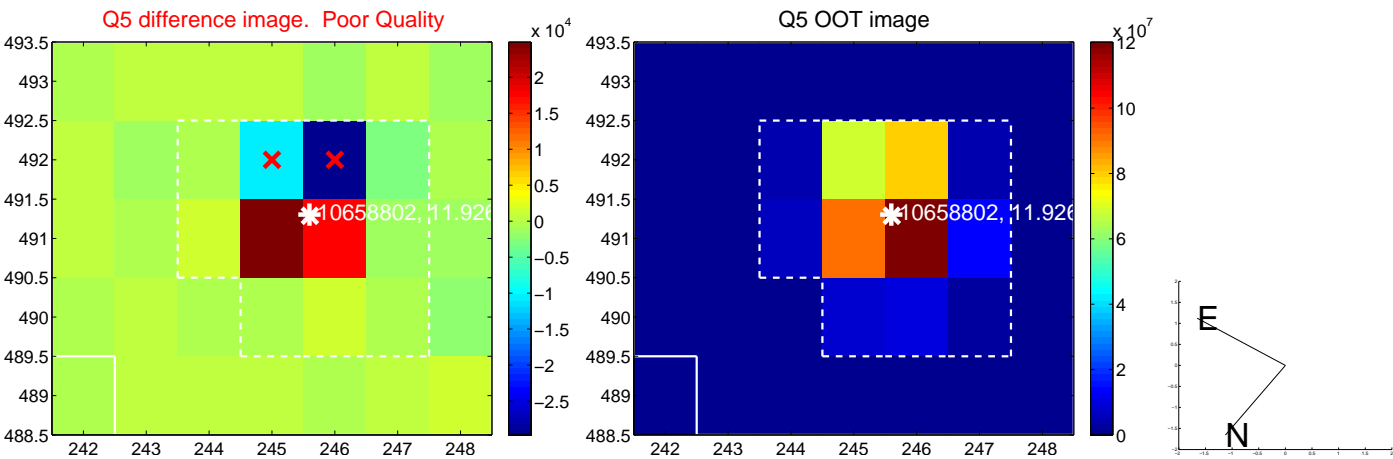


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

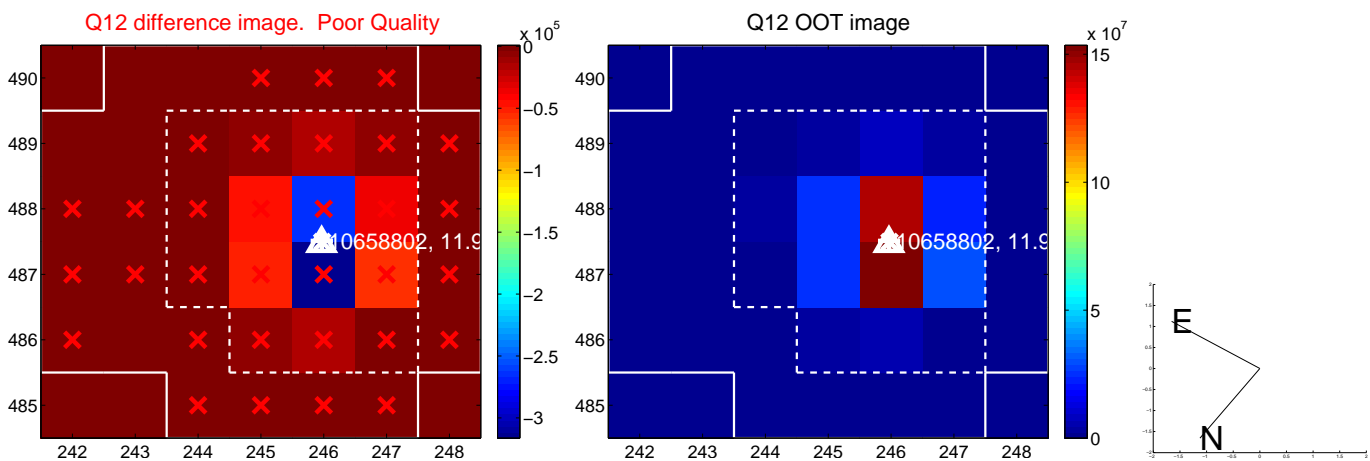
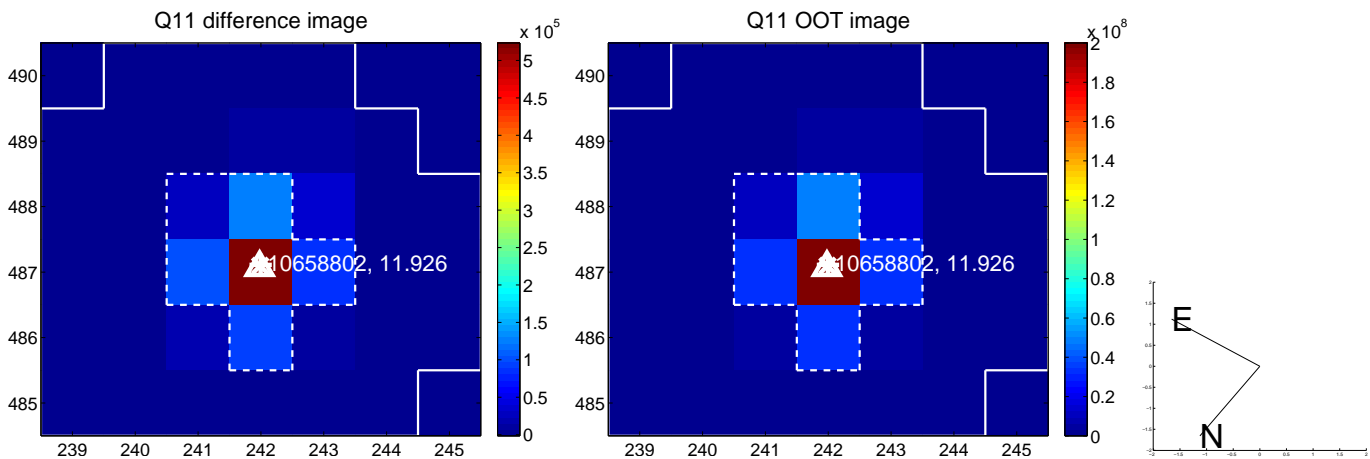
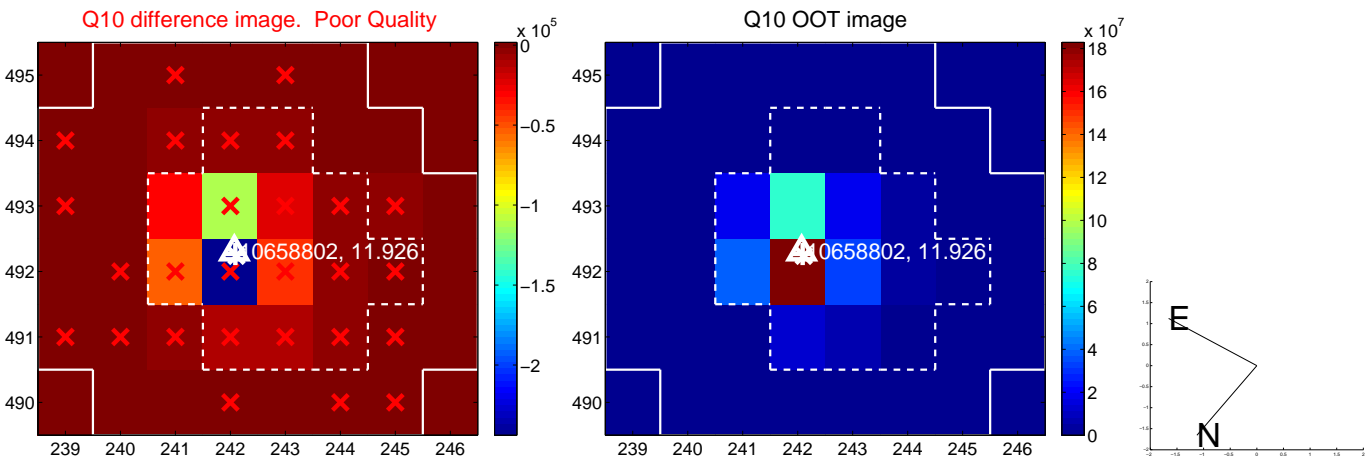
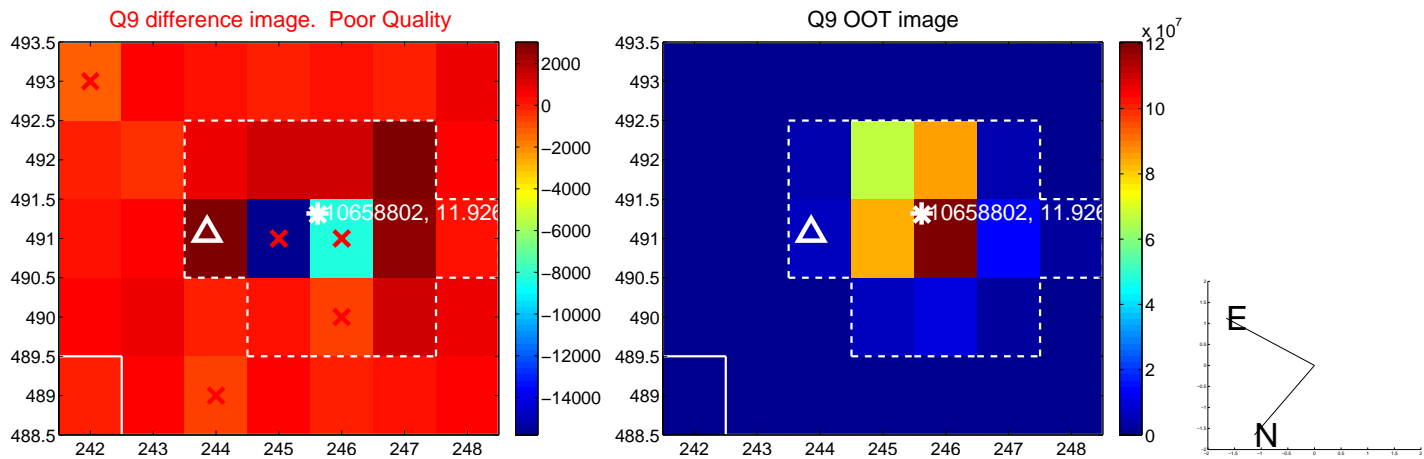
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



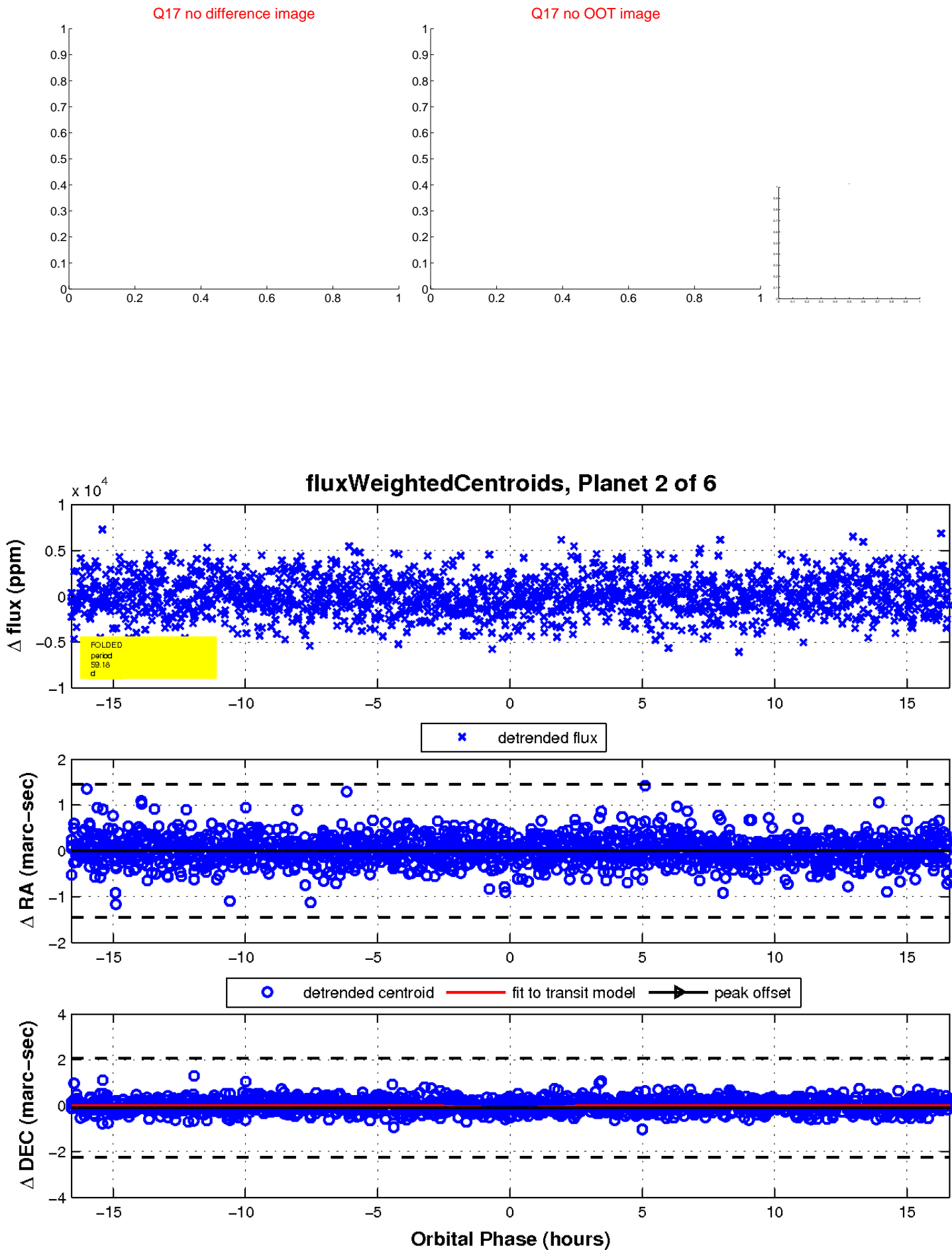
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



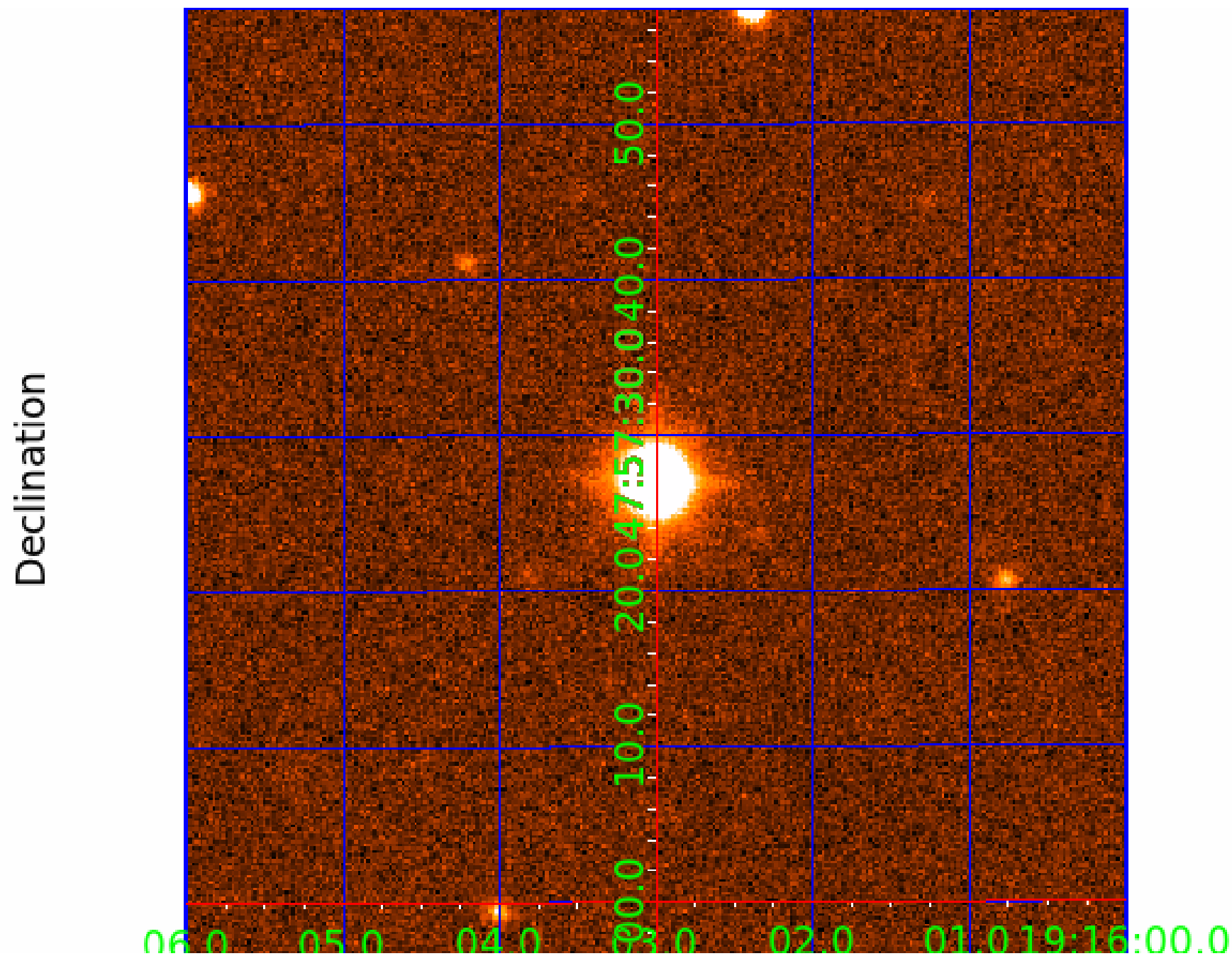
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
| 010658802-02 | OBS | No | 59.182539 | 167.174818 | 1553.1 | 5.540 | 9.9 | 7.2 | 1.71 | 7700 | 7.77 | 75.96 |
| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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

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

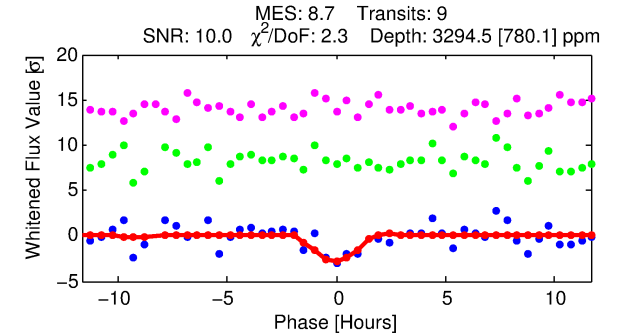
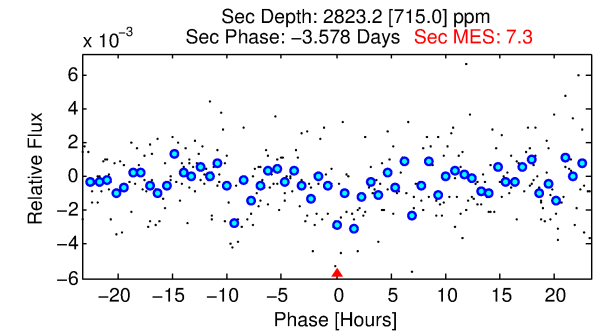
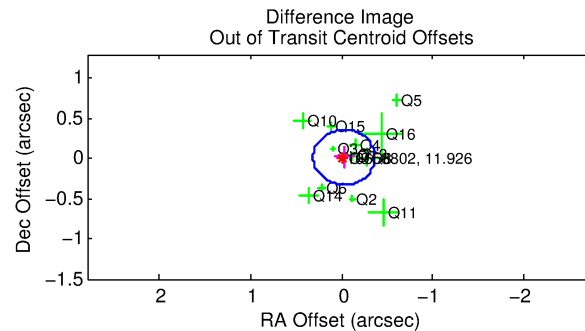
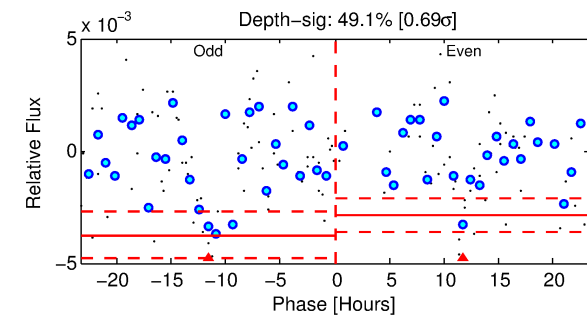
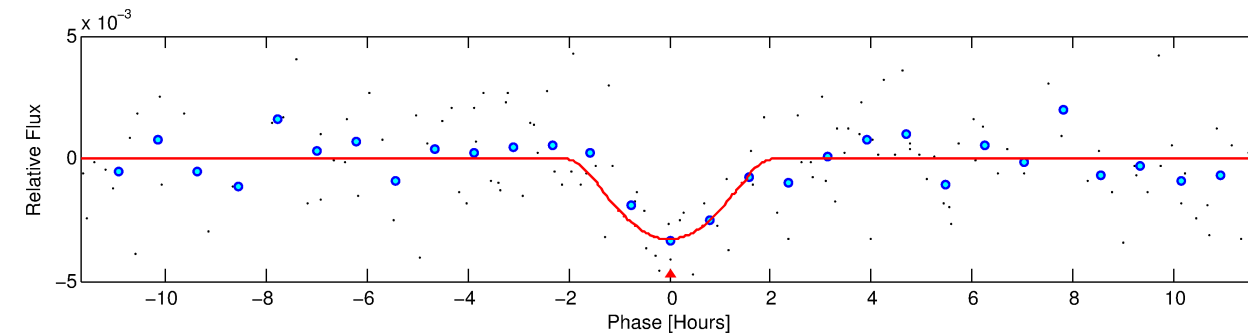
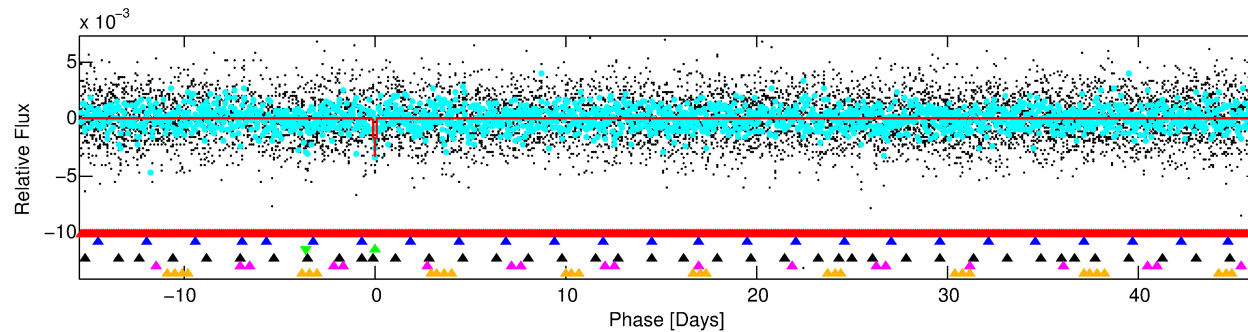
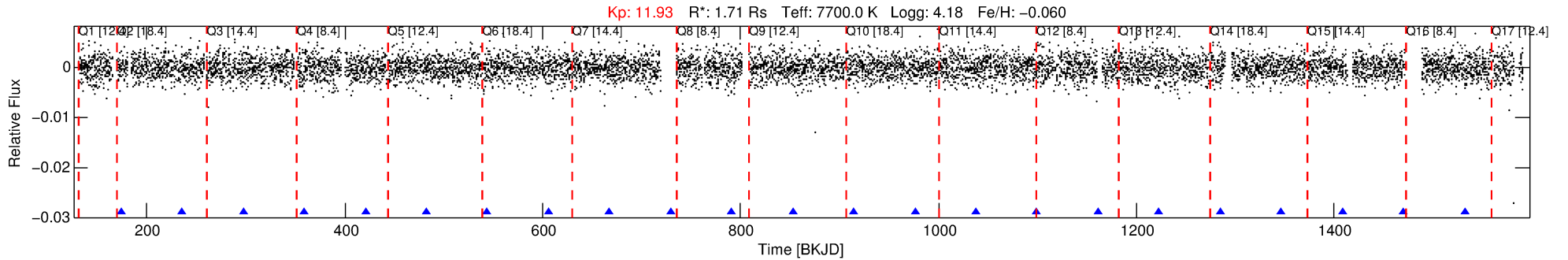
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010658802-03

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 3 of 6 Period: 61.703 d



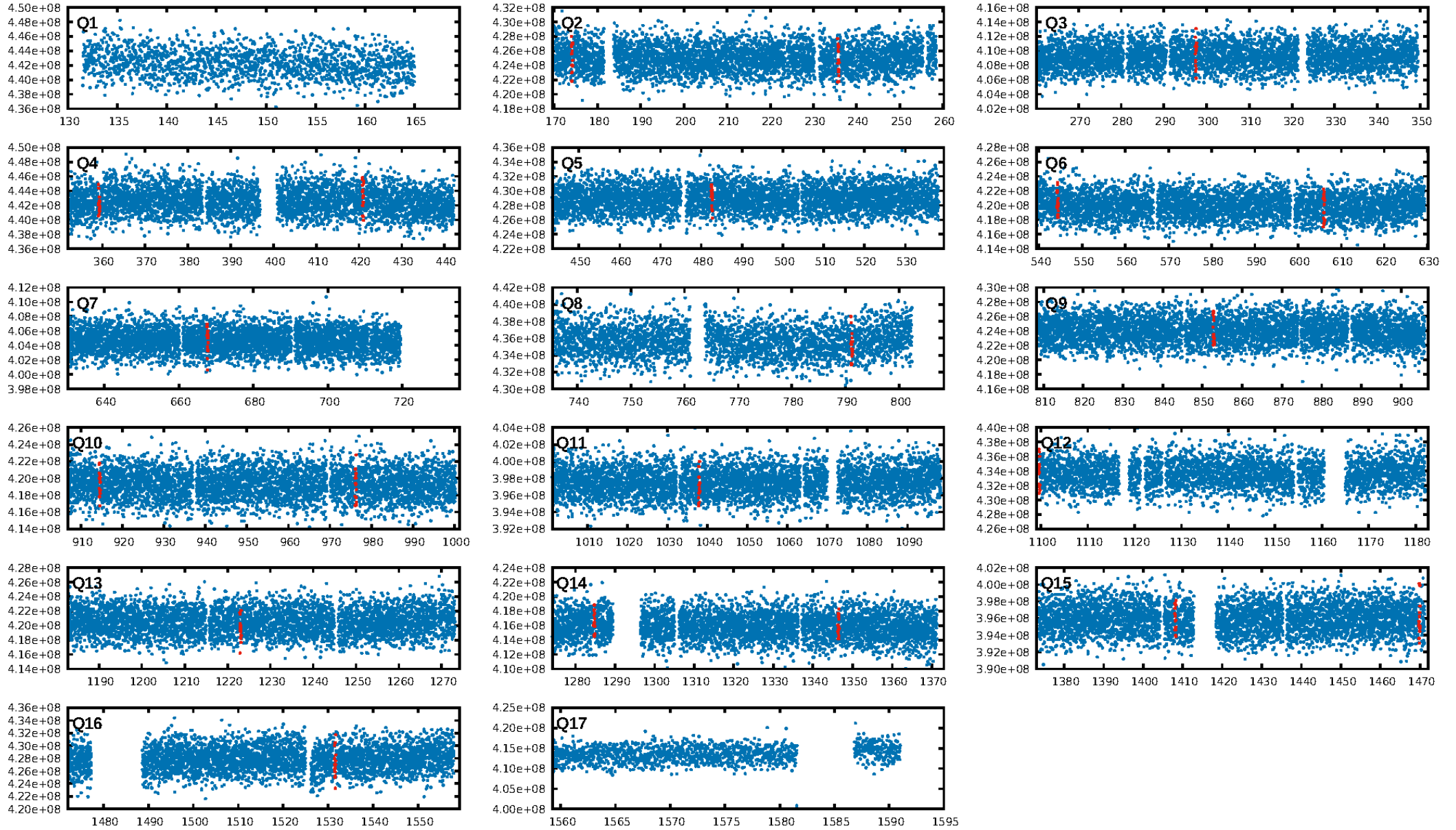
DV Fit Results:

Period = 61.70250 [0.00131] d
Epoch = 174.1029 [0.0192] BKJD
Rp/R* = 0.0776 [0.2610]
a/R* = 55.94 [61.50]
b = 0.97 [0.47]
Seff = 71.85 [29.04]
Teq = 742 [75] K
Rp = 14.48 [48.93] Re
a = 0.3580 [0.0942] AU
Ag = 949.48 [6401.41] [0.15σ]
Teffp = 6372 [10726] K [0.52σ]

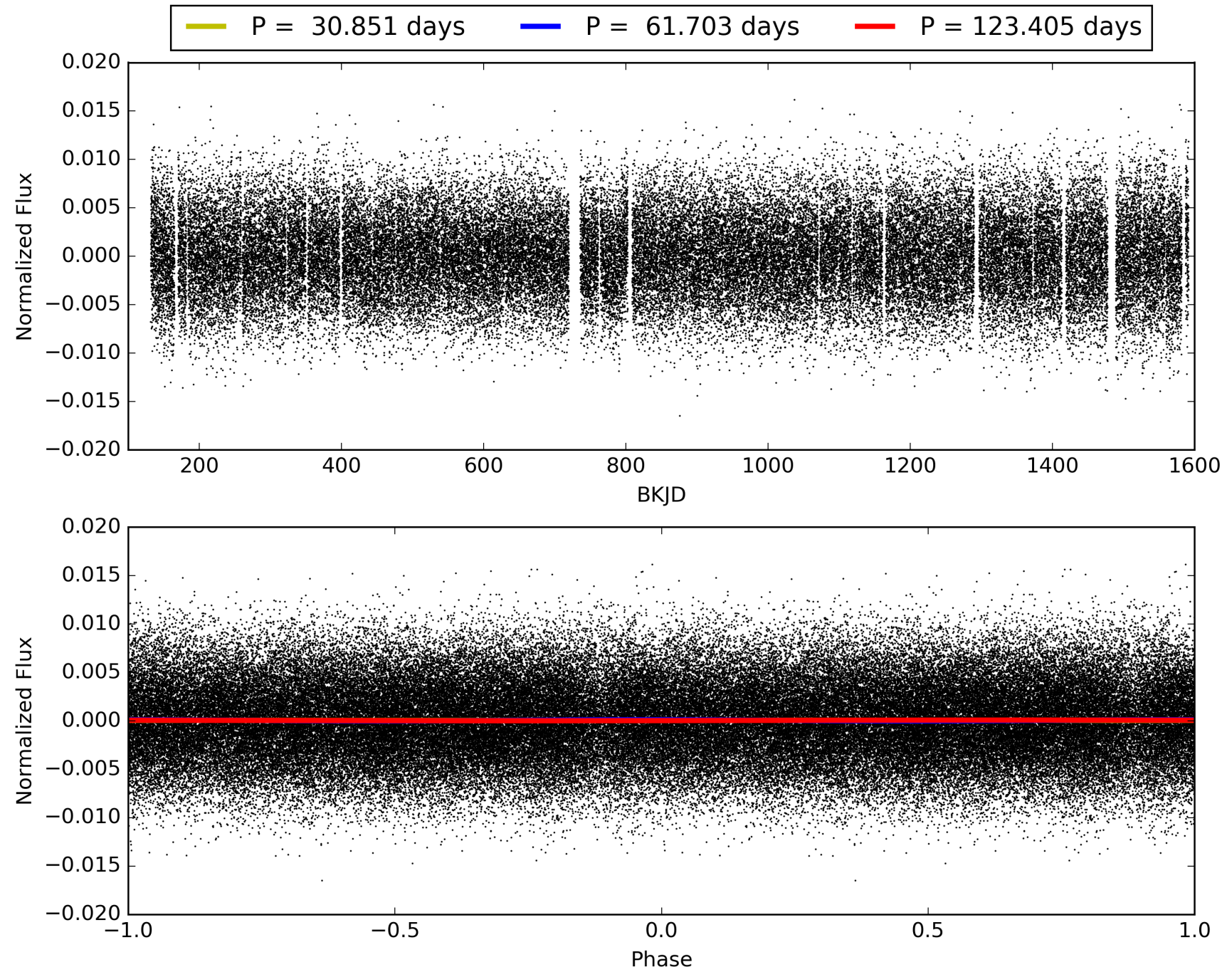
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.93σ]
LongPeriod-sig: 100.0% [82.02σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.29e-08
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -31.89
Centroid-sig: 86.7%
Centroid-so: 0.093 arcsec [3.67σ]
OotOffset-rm: 0.033 arcsec [0.29σ]
KicOffset-rm: 0.015 arcsec [0.13σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 010658802-03, PDC Light Curves

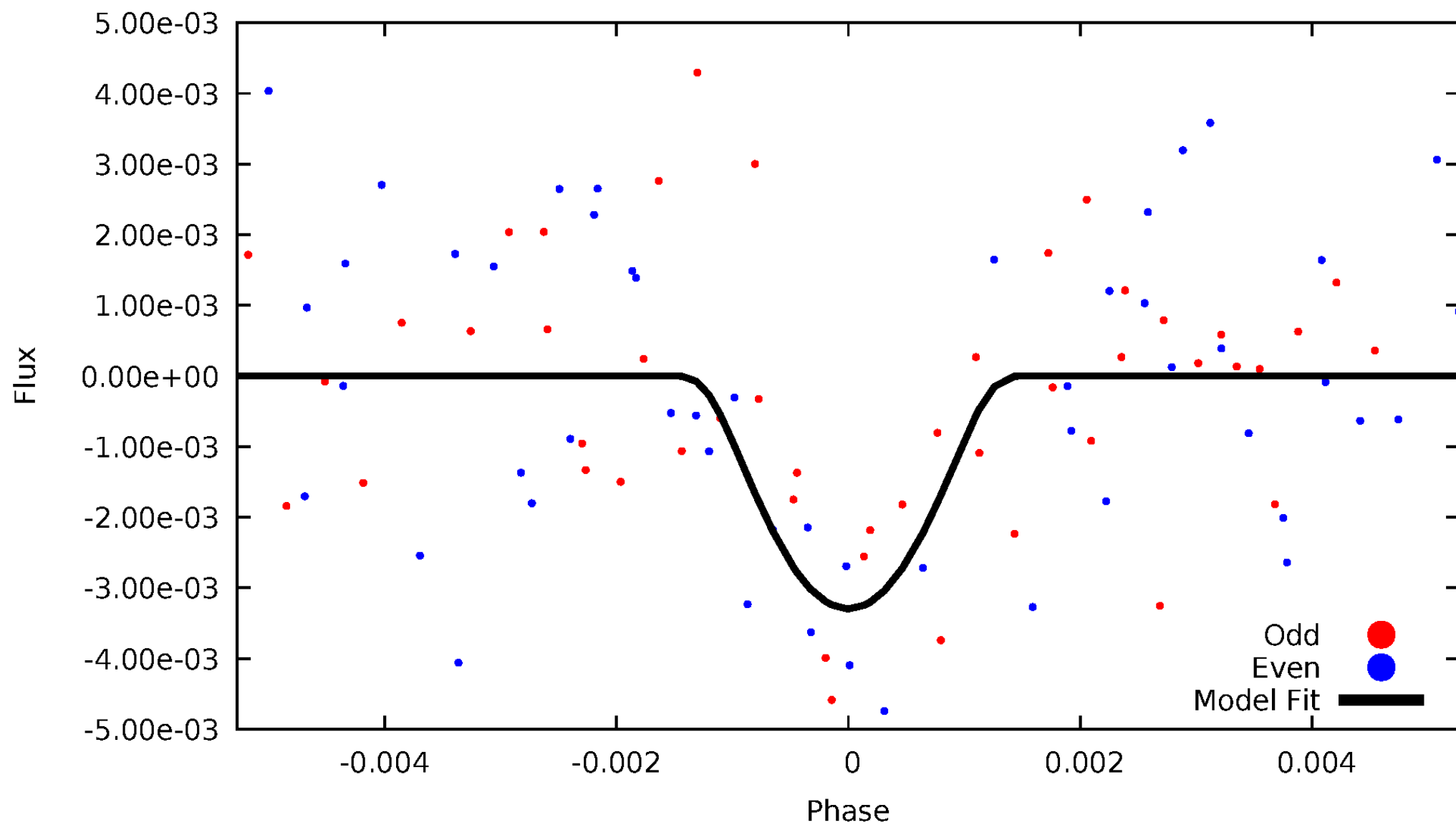


TCE 010658802-03



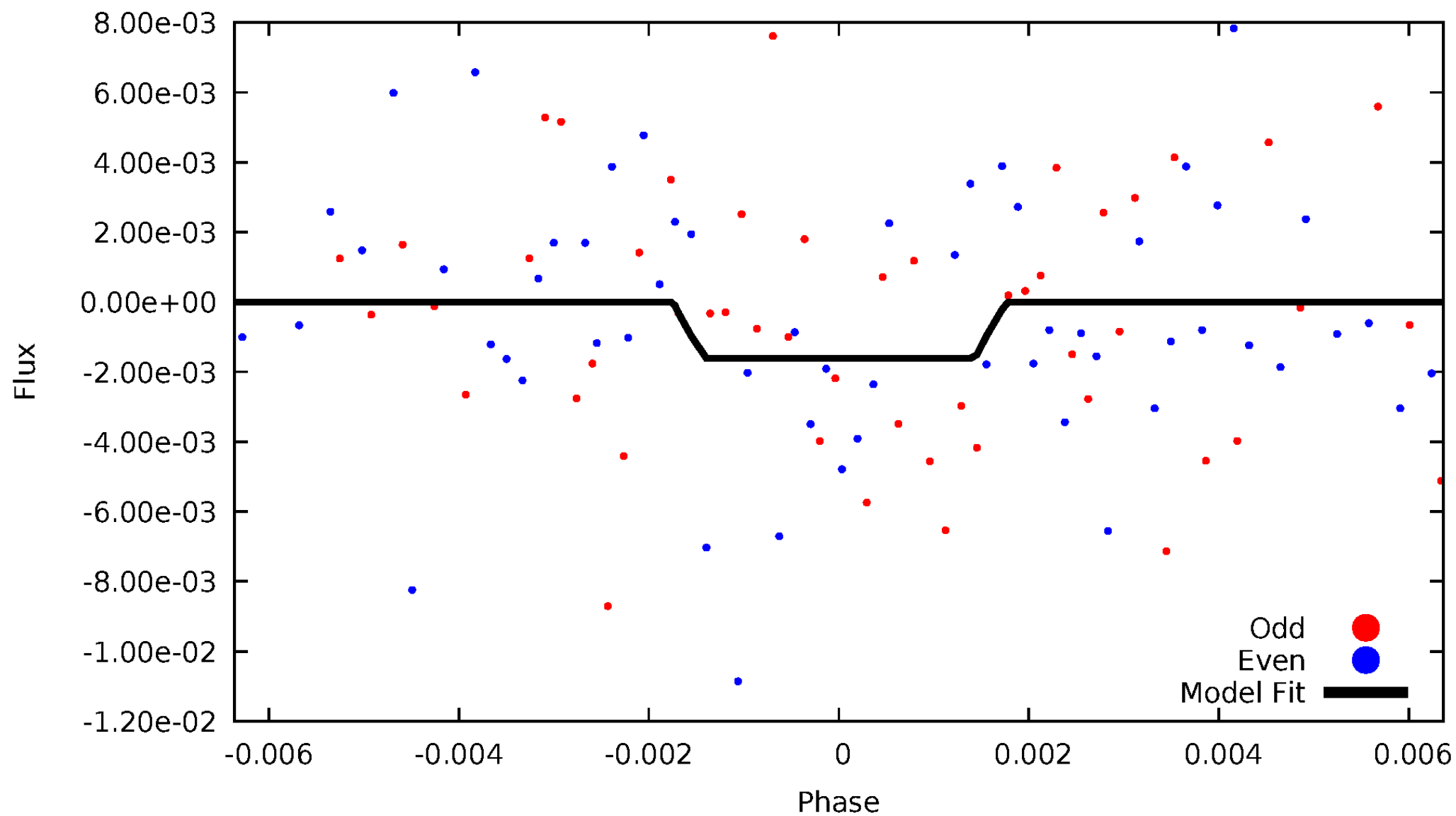
DV Odd/Even

TCE 010658802-03



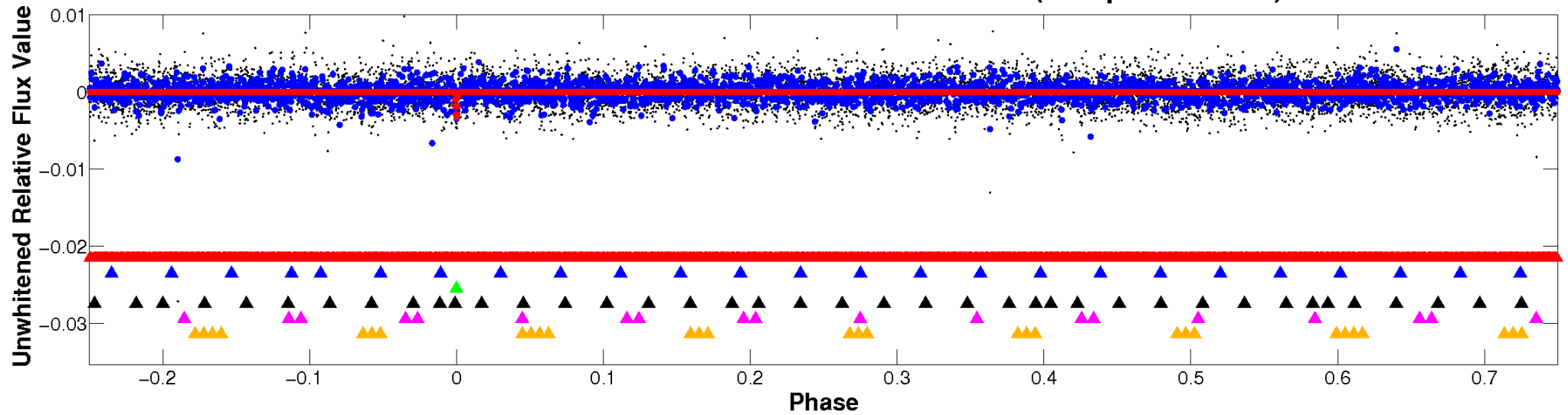
ALT Odd/Even

TCE 010658802-03

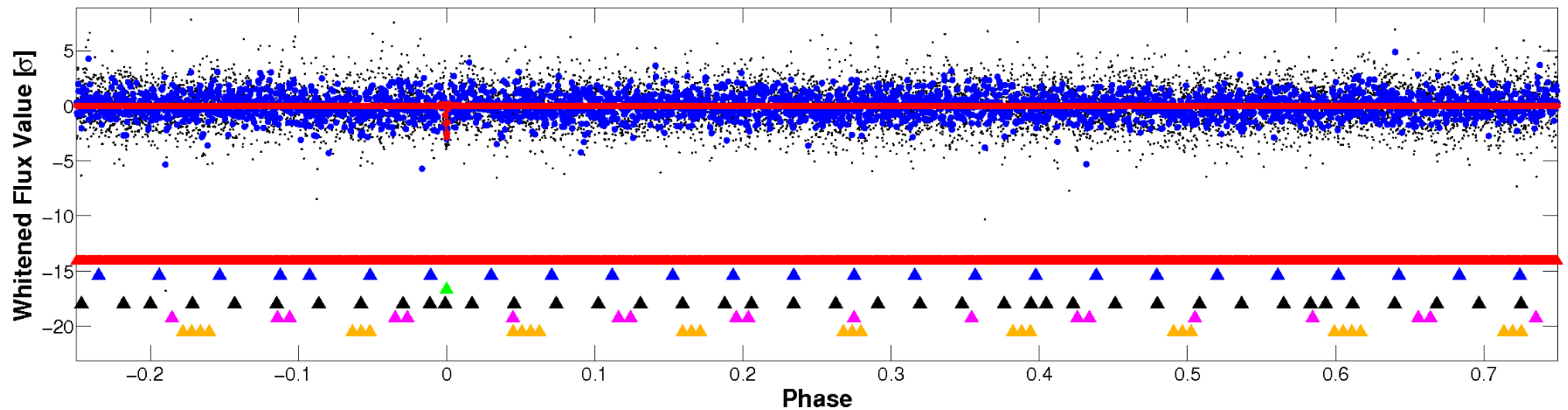


Non-Whitened Vs. Whitened Light Curve

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

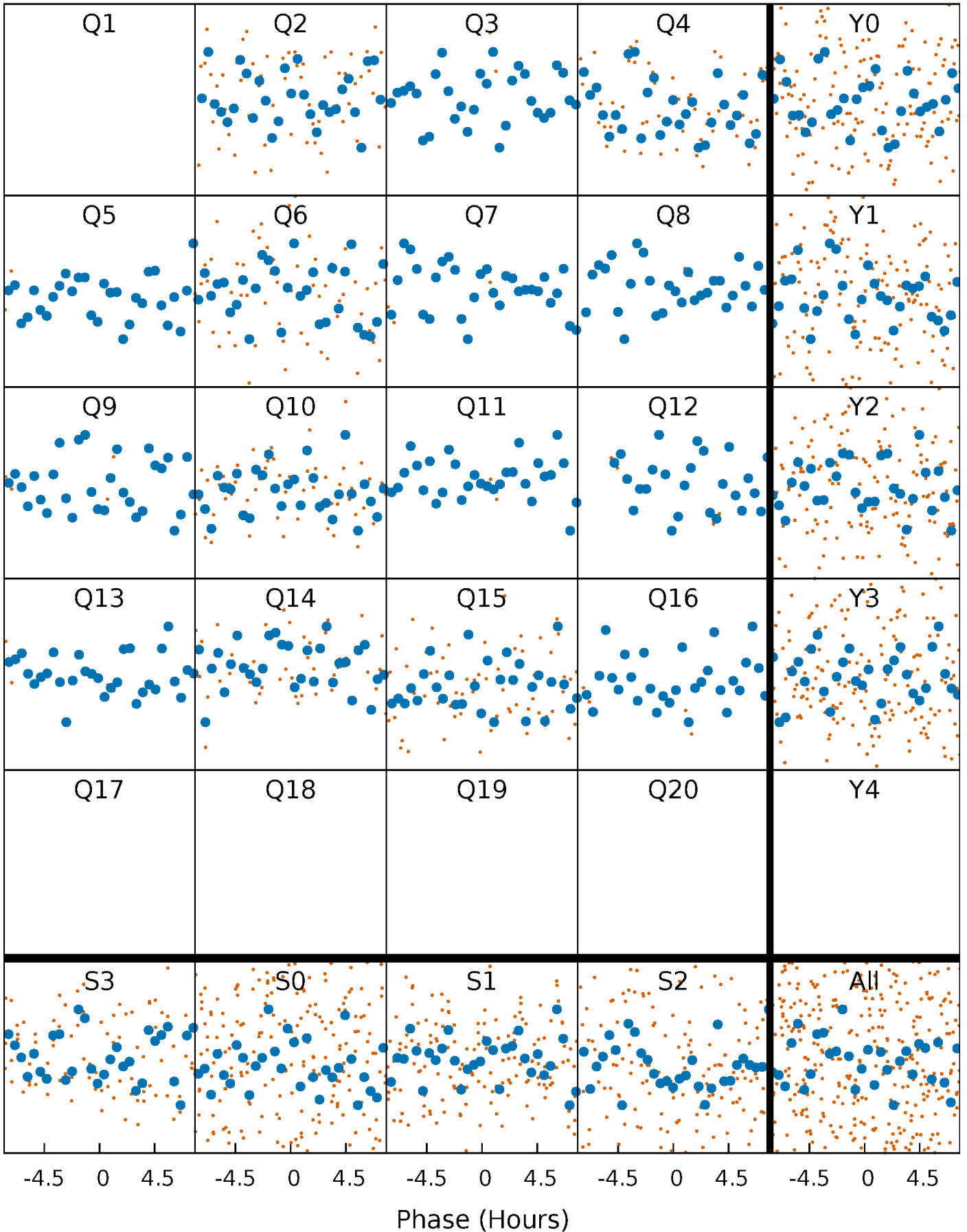


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



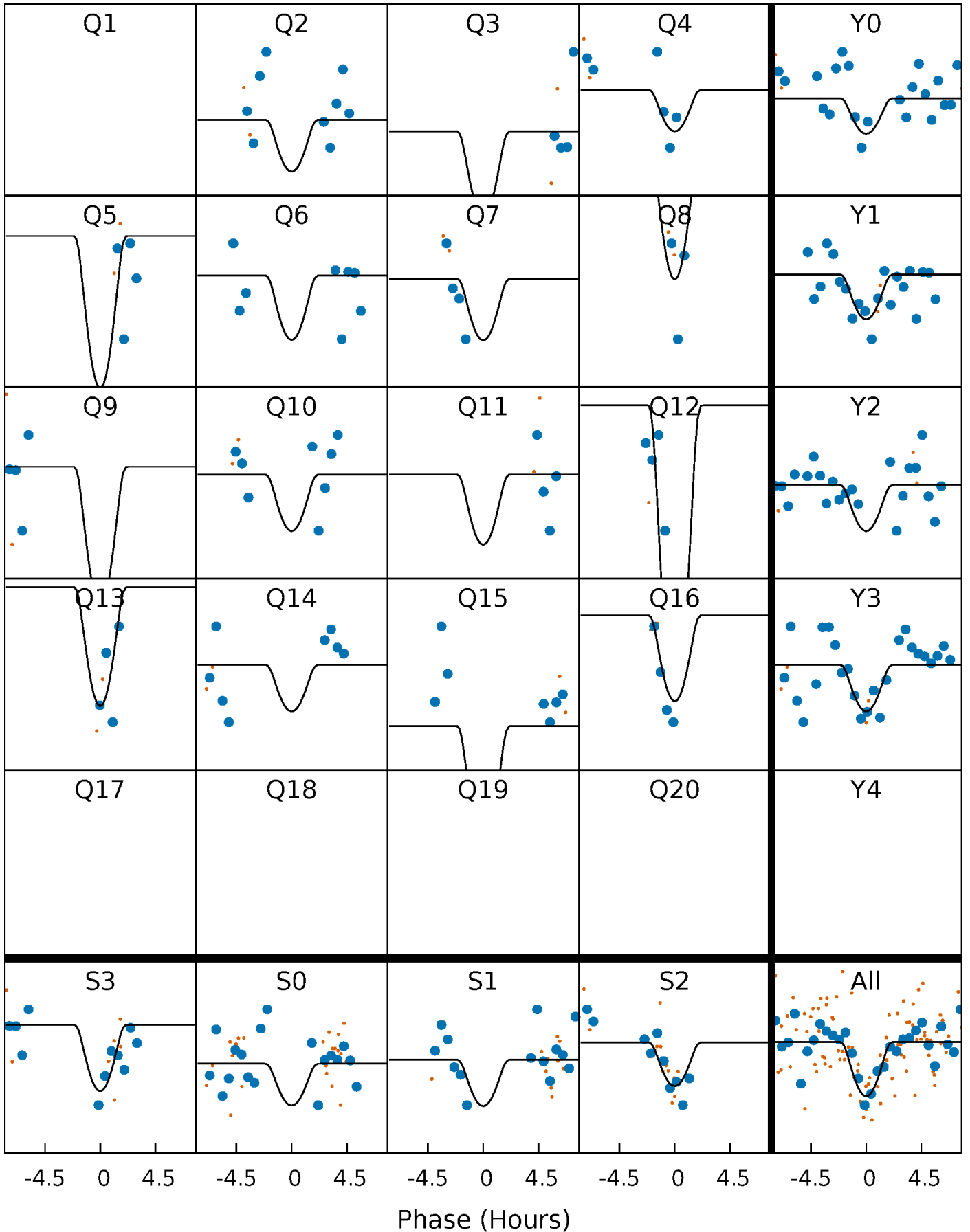
PDC Quarter-Phased Transit Curves

TCE 010658802-03 $P = 61.702502$ Days $T_0 = 174.102936$ (BKJD)



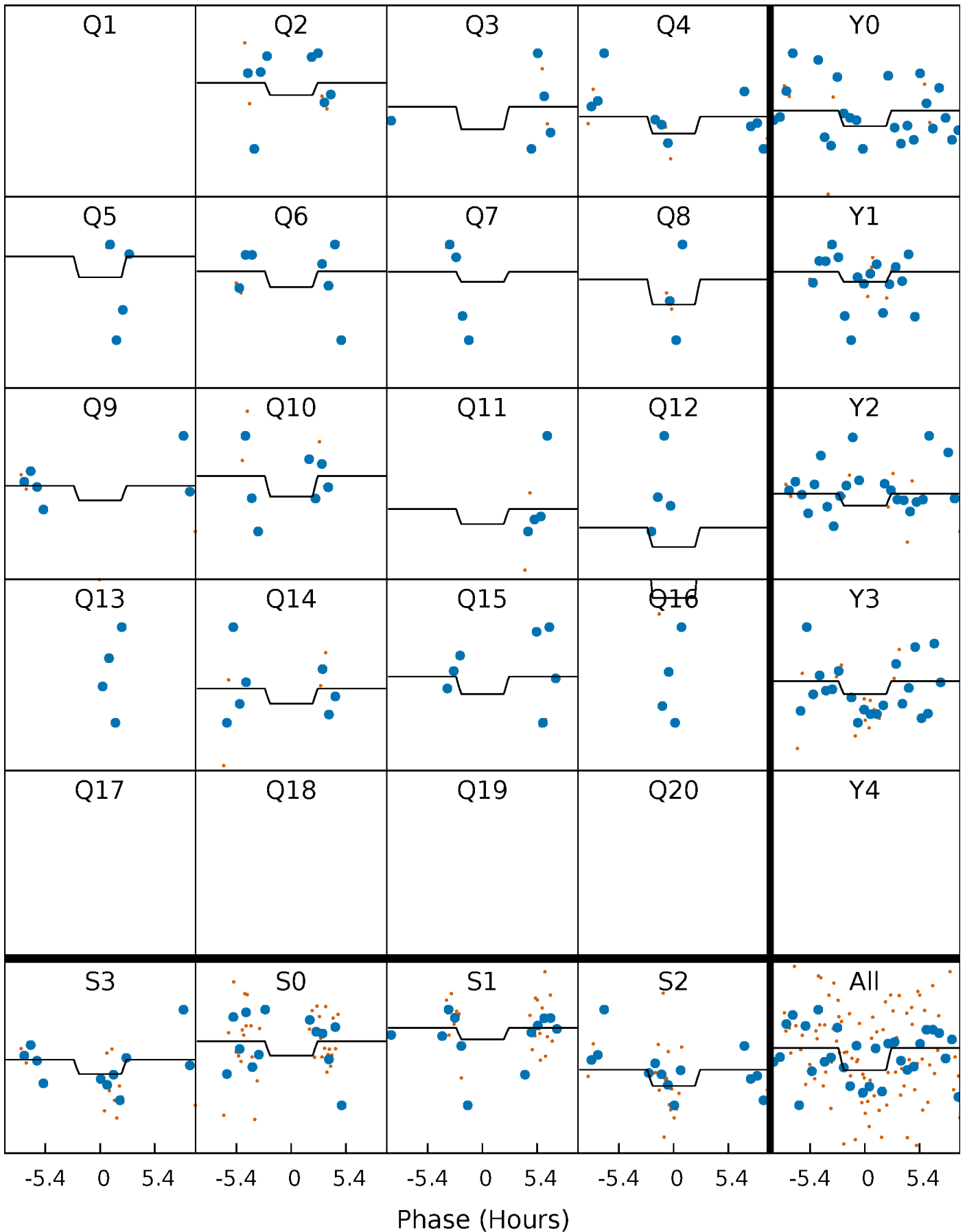
DV Quarter-Phased Transit Curves

TCE 010658802-03 $P = 61.702502$ Days $T_0 = 174.102936$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

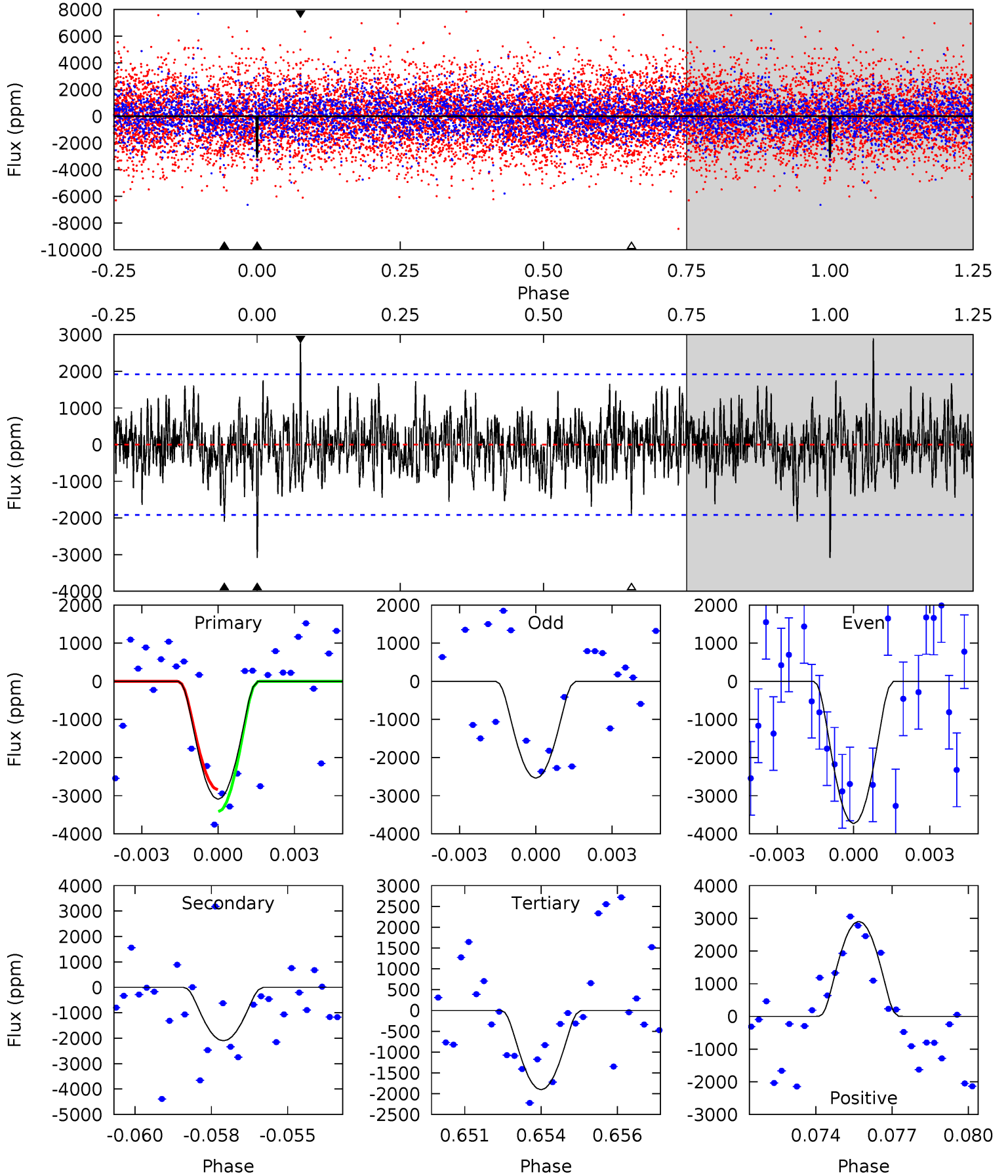
TCE 010658802-03 $P = 61.700091$ Days $T_0 = 174.134151$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-03, P = 61.702502 Days, E = 112.400434 Days

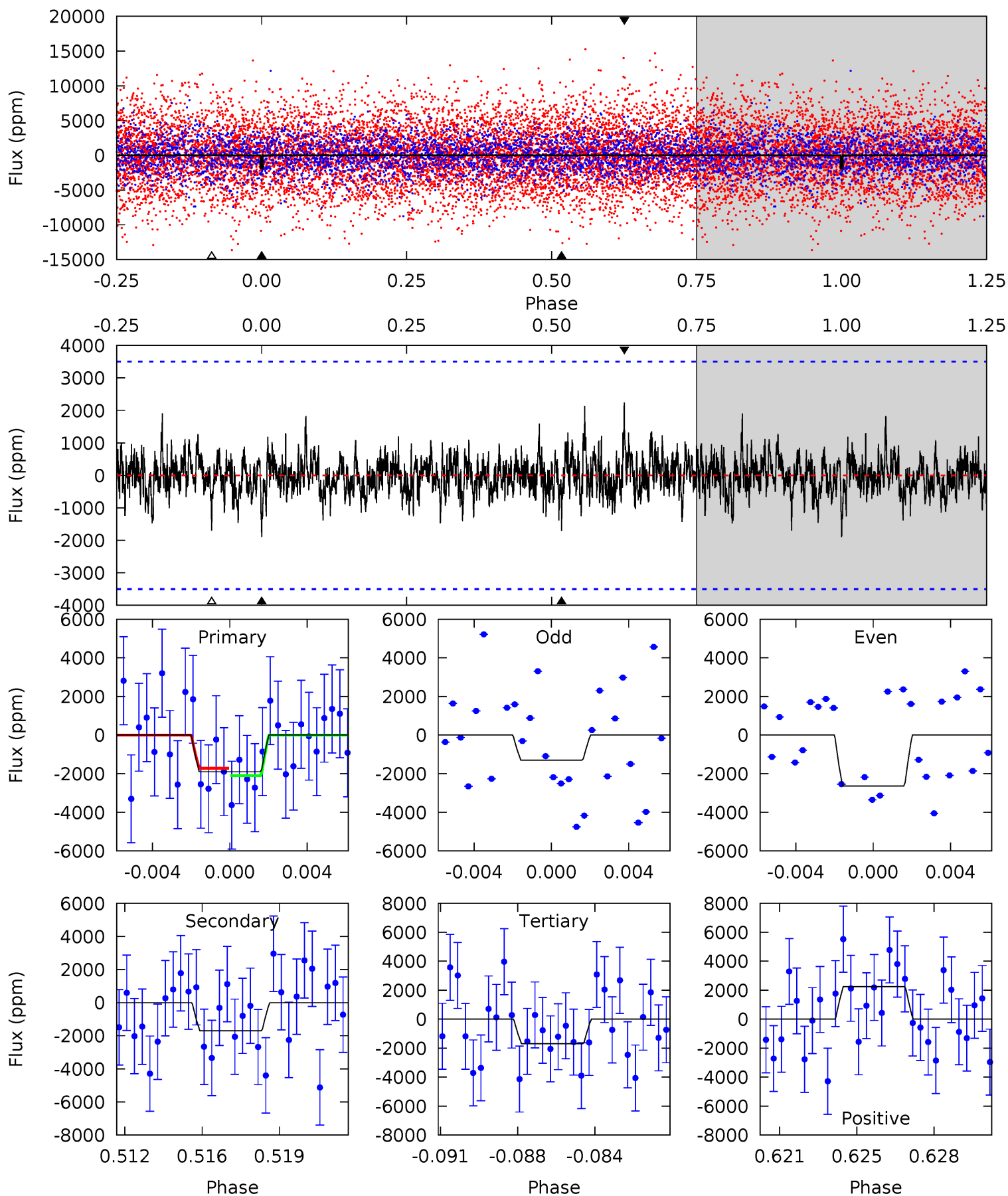
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.48 | 5.76 | 5.22 | 7.97 | 5.27 | 2.99 | 1.59 | 3.26 | 0.51 | 0.54 | -2.21 | 1.62 | 0.96 | 0.48 | 0.78 |



Alt Model-Shift Uniqueness Test

010658802-03, P = 61.700091 Days, E = 112.434060 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.83 | 2.54 | 2.53 | 3.34 | 5.22 | 2.92 | 0.73 | 0.30 | -0.52 | 0.01 | -0.80 | 0.99 | 1.06 | 0.54 | 0.28 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|---------------------------|--------------------|-----------------------|-------------------|
| DV | -2098 ± 364 | $40.02^{+38.82}_{-27.30}$ | 1043^{+79}_{-65} | 3866^{+2443}_{-754} | 93^{+843}_{-70} |
| Alt. | -1704 ± 671 | $33.93^{+45.19}_{-23.12}$ | 1049^{+82}_{-64} | 3918^{+2459}_{-933} | 93^{+895}_{-77} |

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 $A_{obs} \gg 1.0$

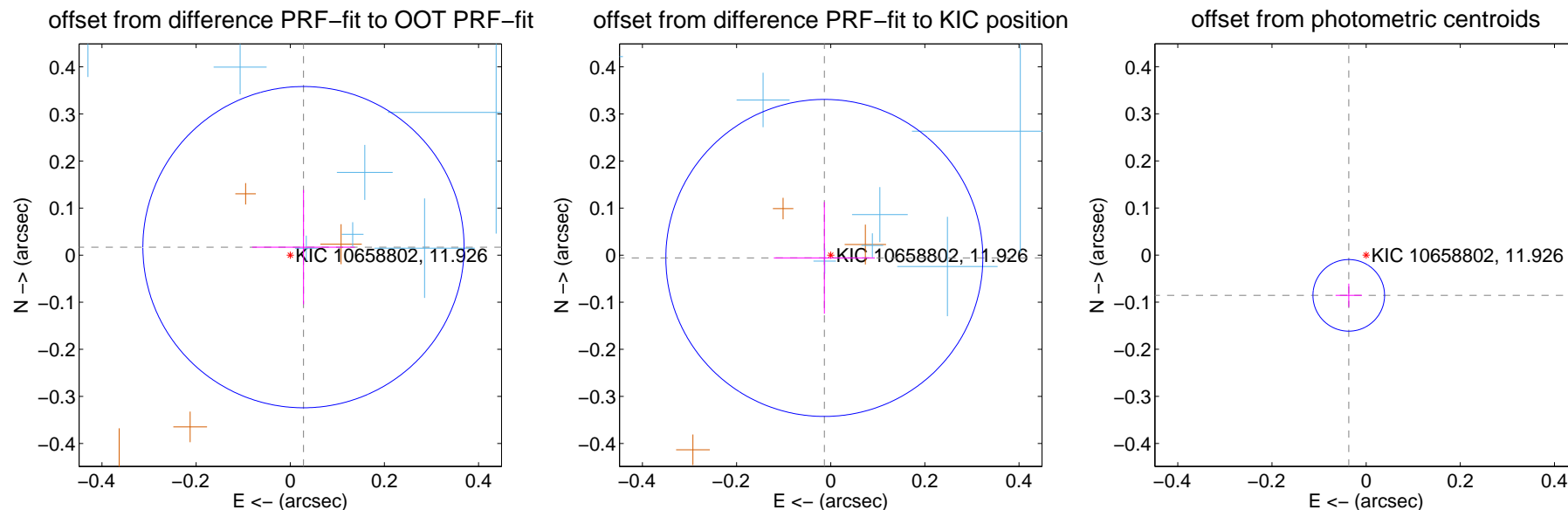
DV Centroid Data

Supplemental centroid analysis for 010658802-03. **Kepler magnitude: 11.93**. Transit SNR 9.97

There are 9 quarters with good PRF difference image offsets

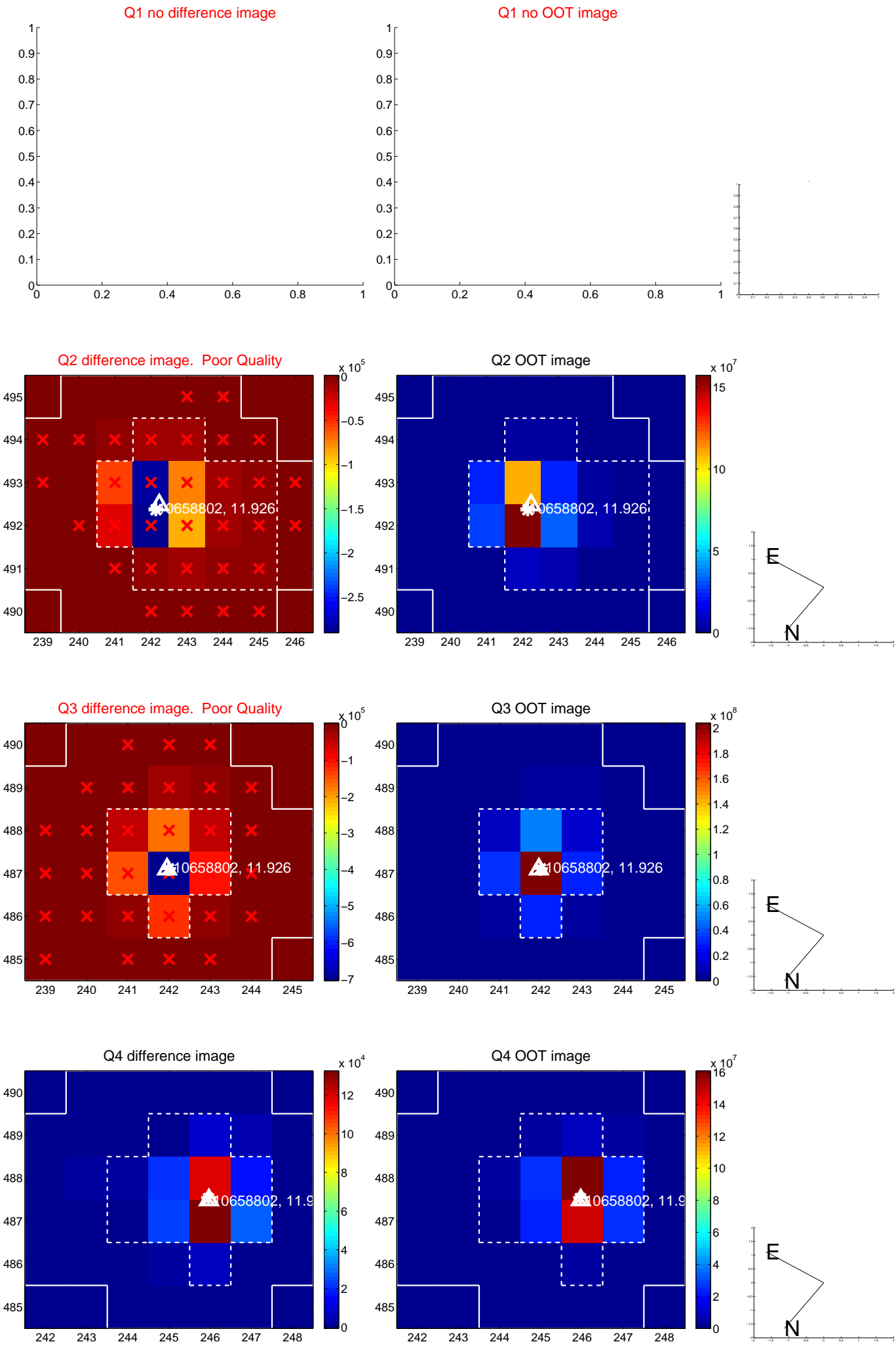
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-----------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.033 ± 0.114 | 0.29 | -0.028 ± 0.109 | 0.017 ± 0.121 |
| PRF-fit source offset from KIC position | 0.015 ± 0.112 | 0.13 | 0.014 ± 0.107 | -0.006 ± 0.118 |
| photometric centroid source offset | 0.09 ± 0.03 | 3.67 | 0.04 ± 0.03 | -0.09 ± 0.02 |

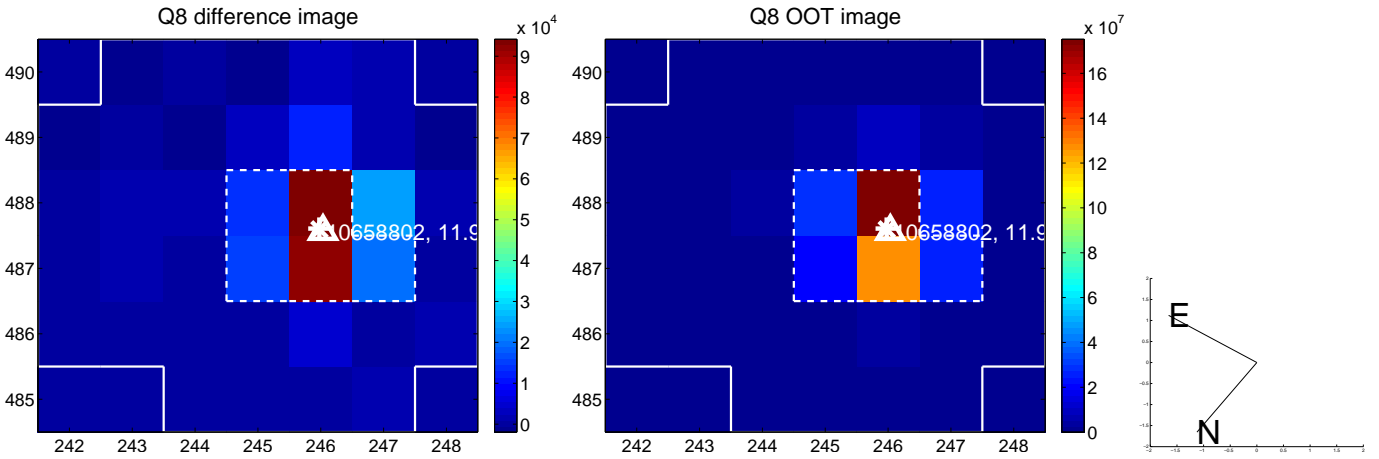
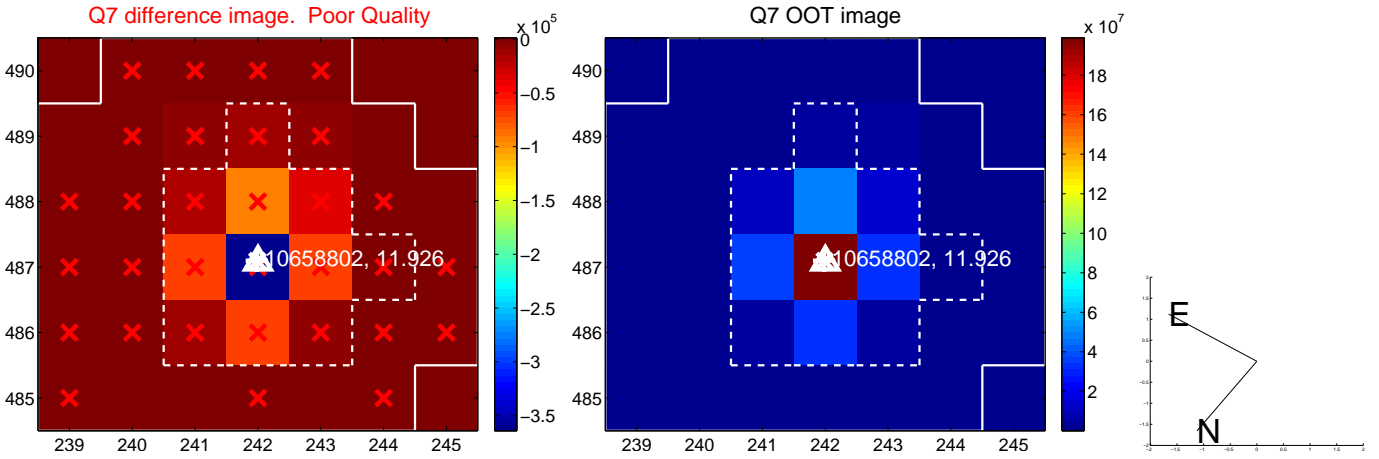
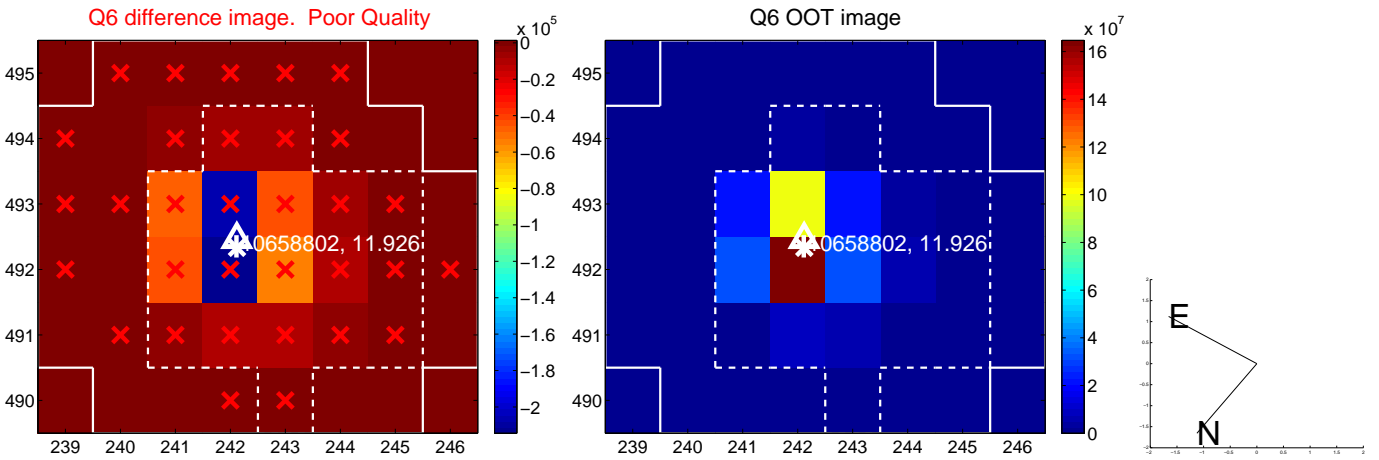
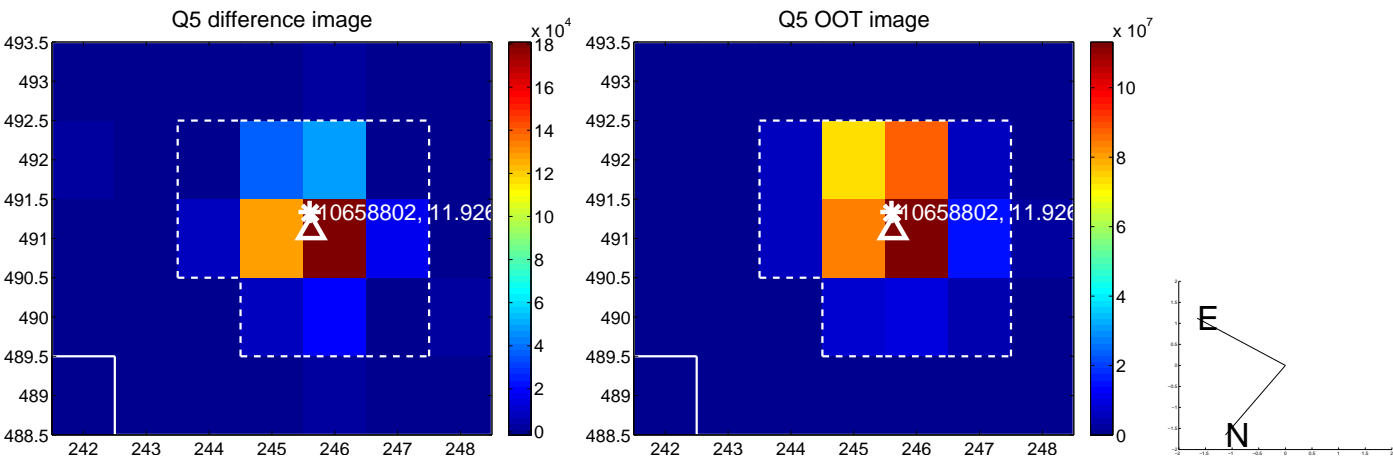


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

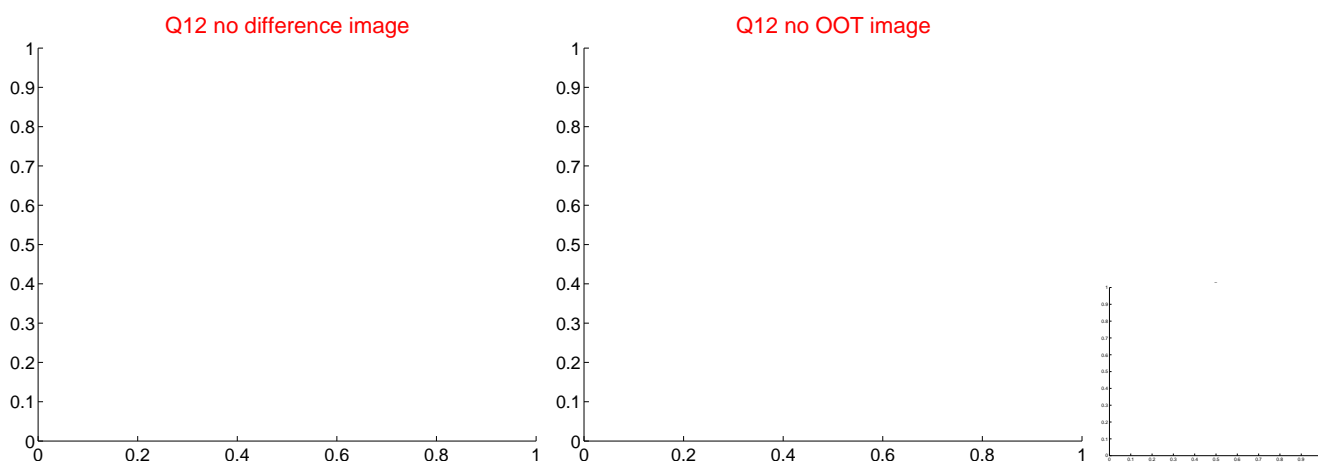
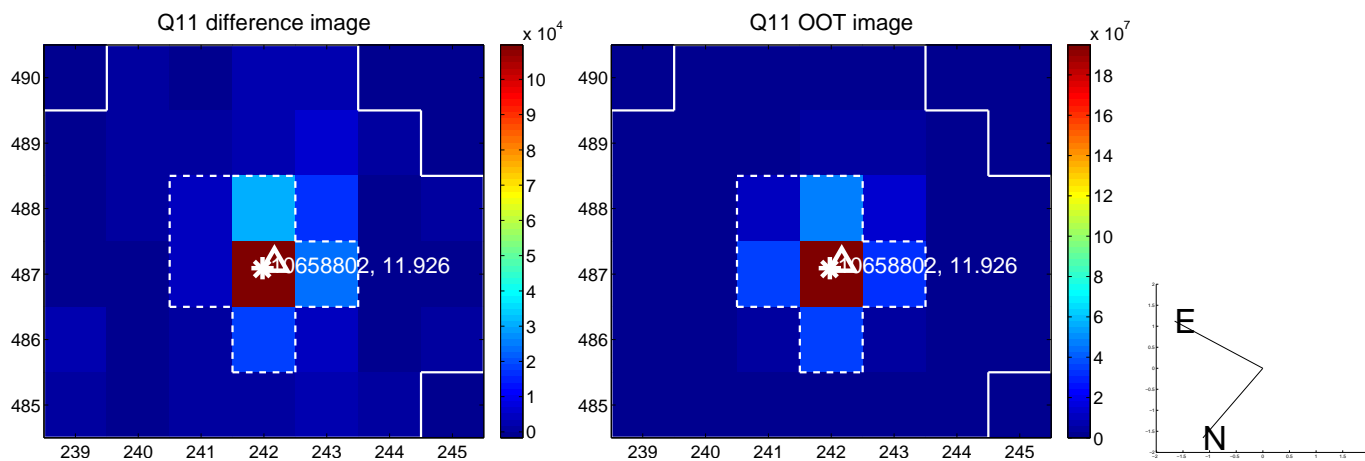
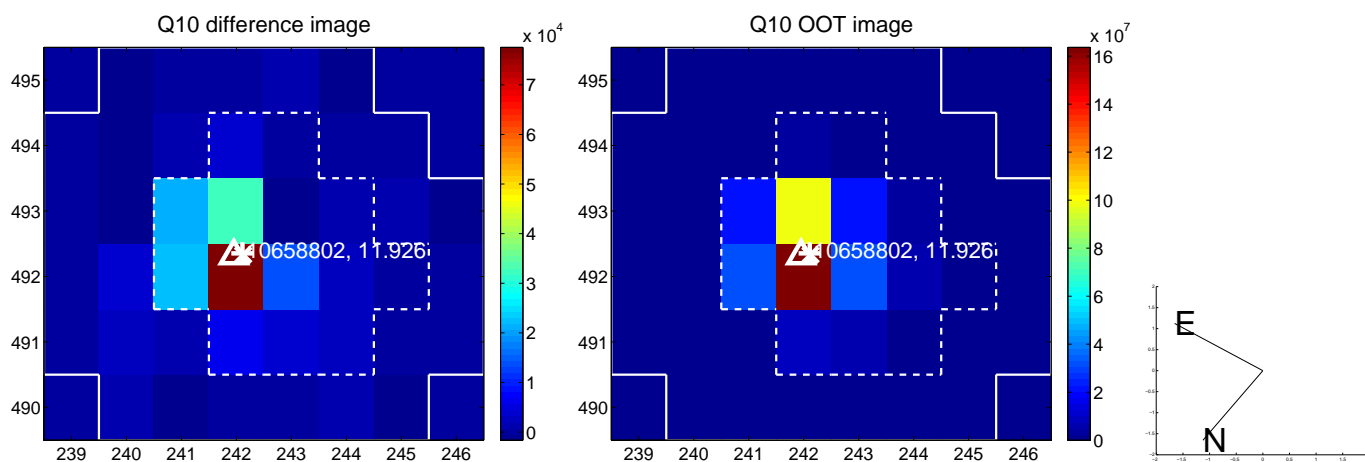
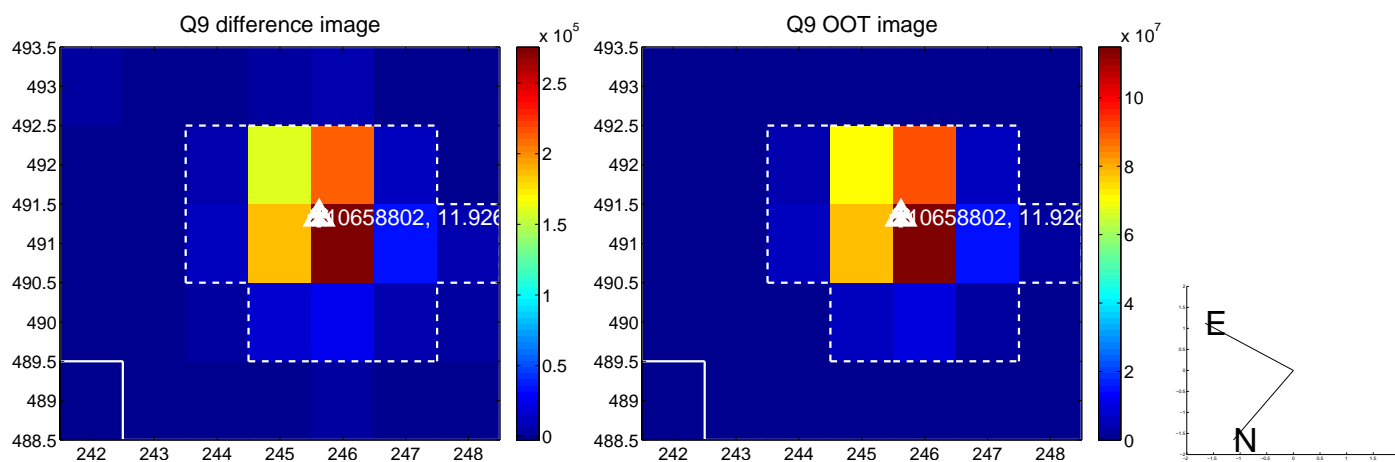
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



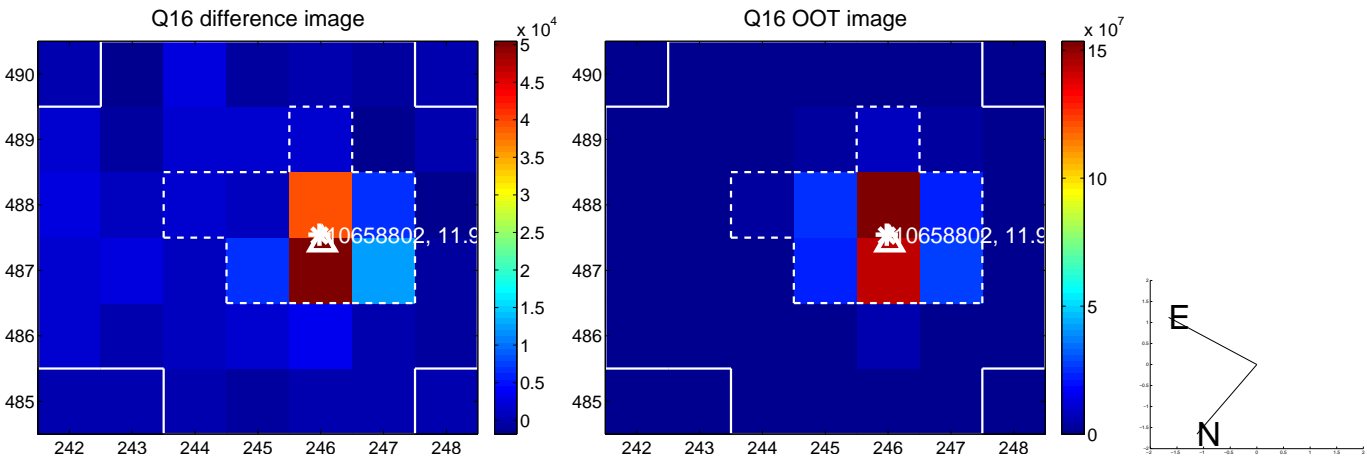
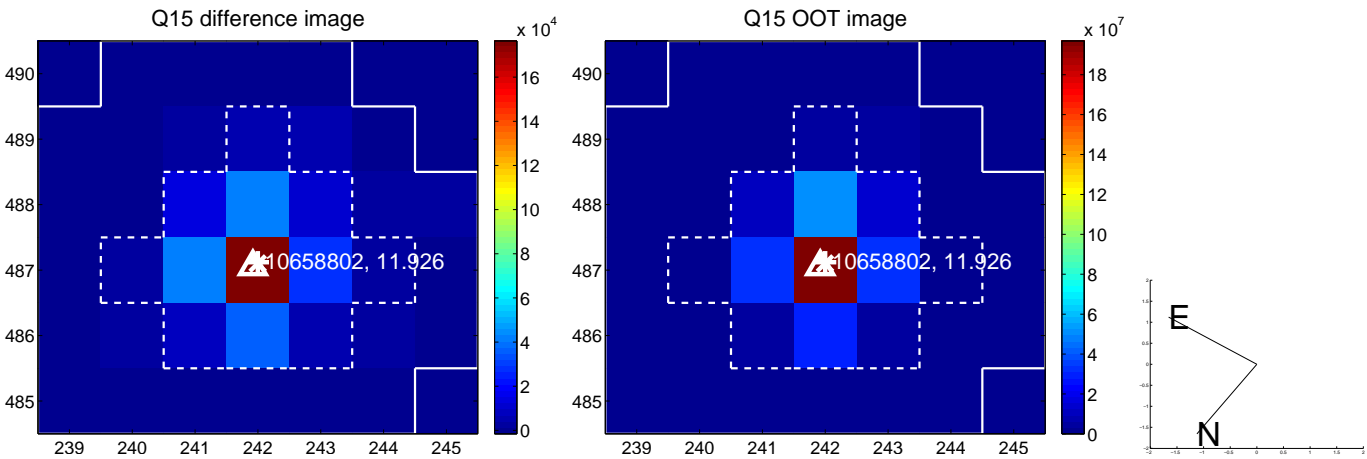
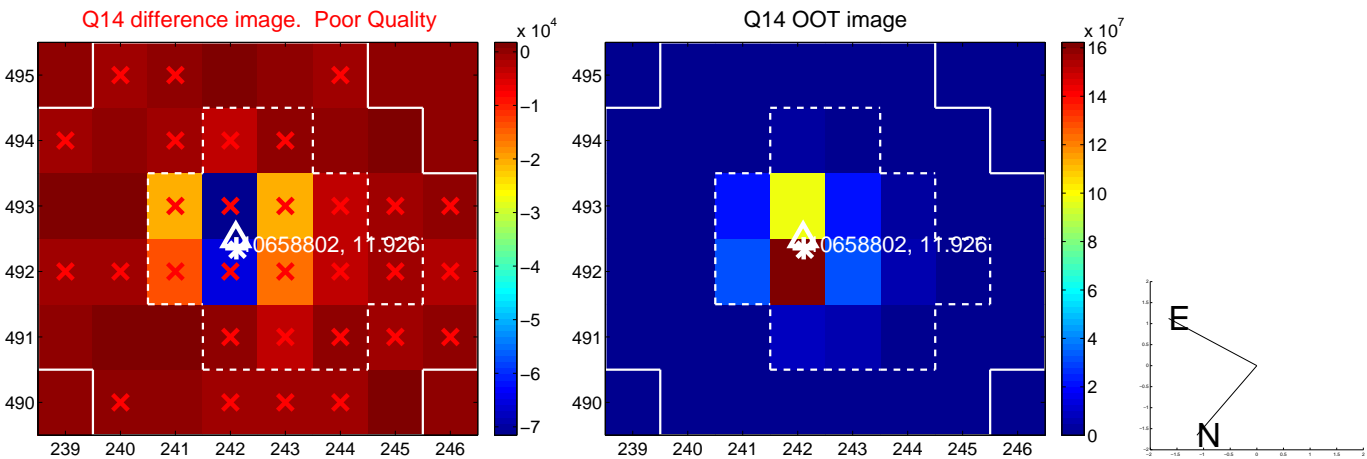
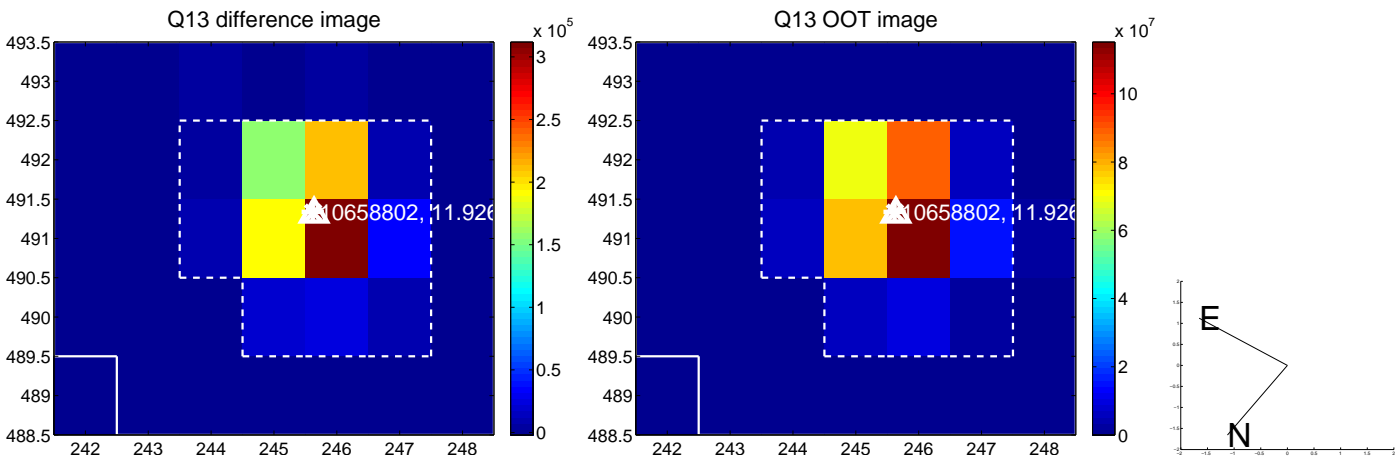
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



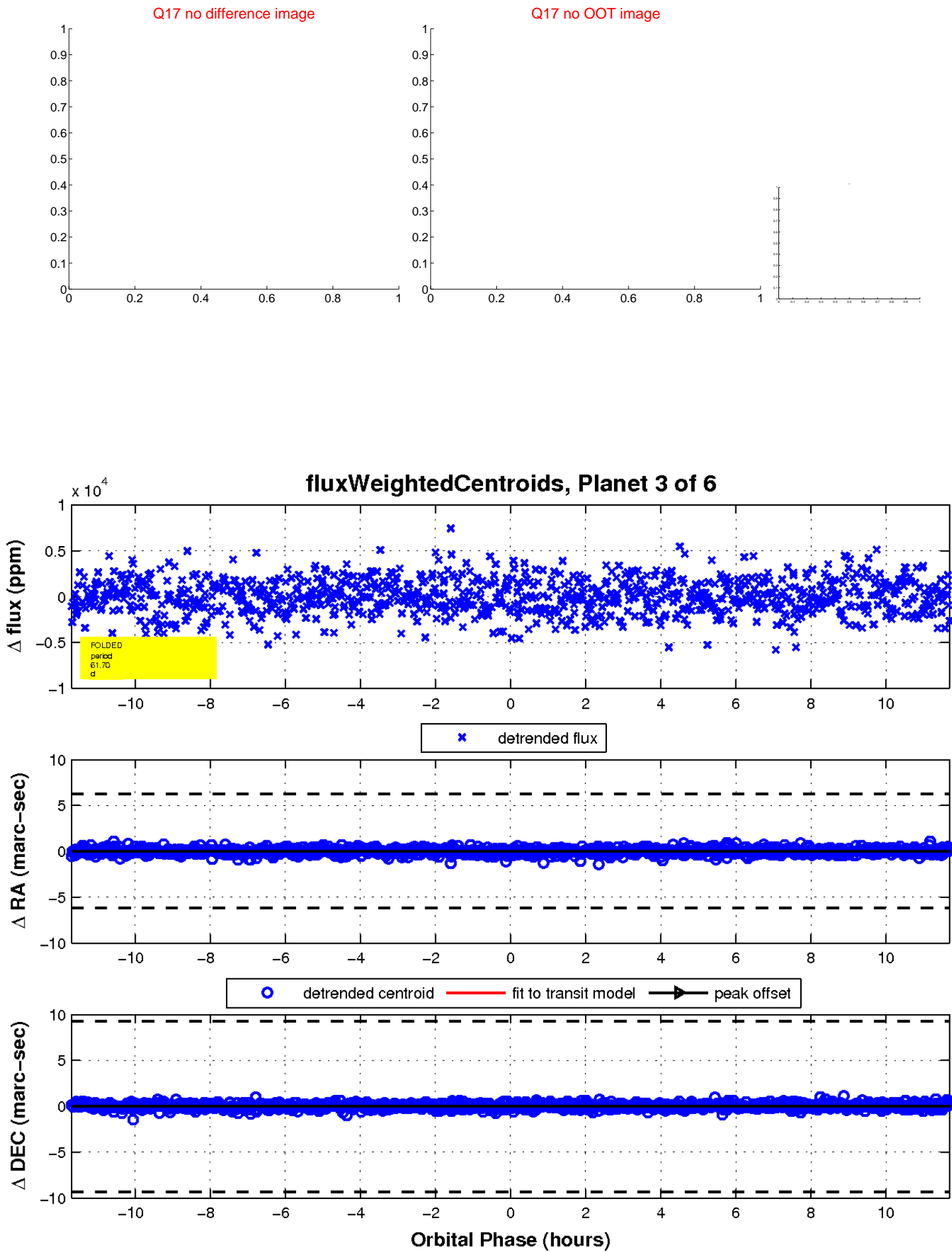
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



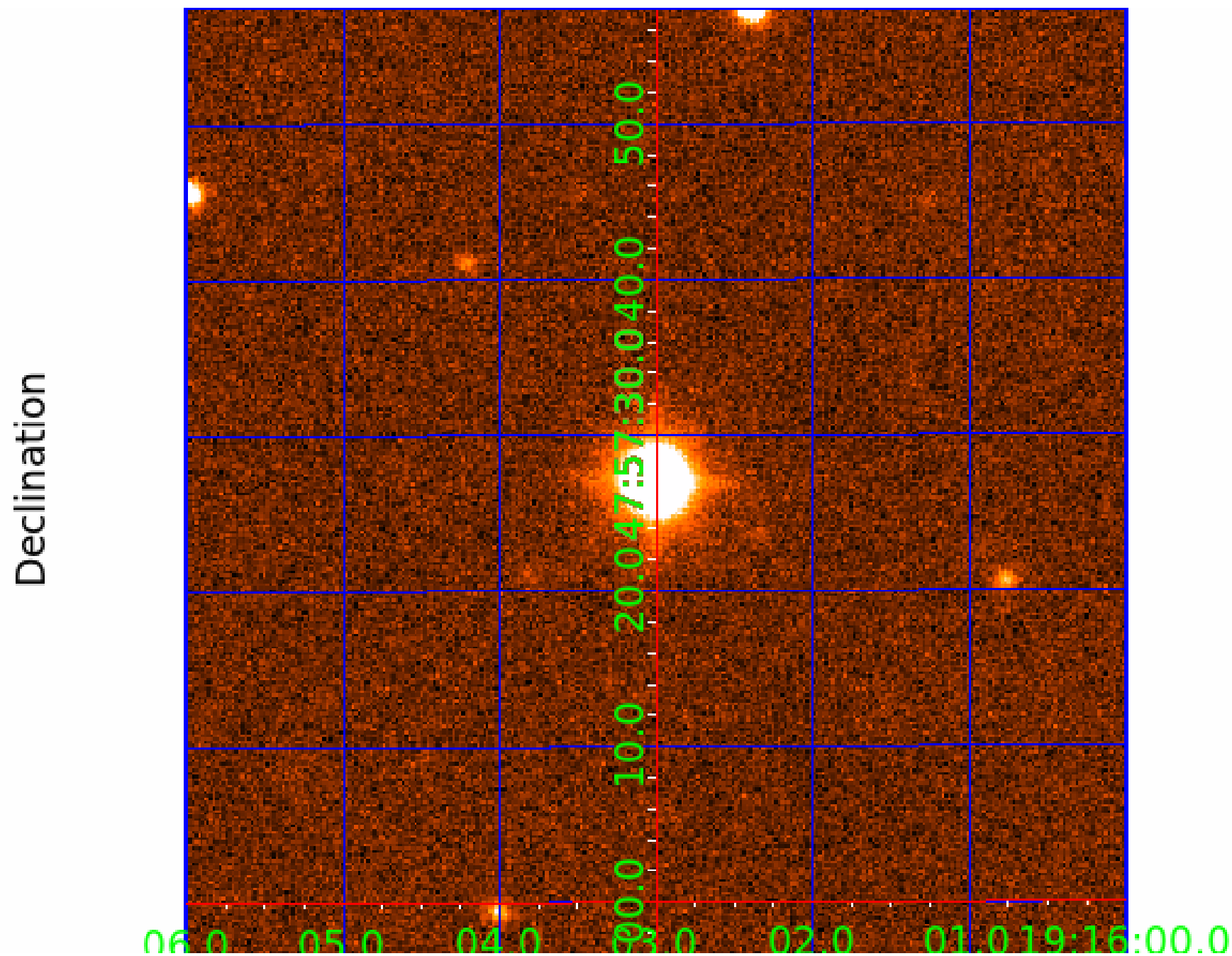
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
| 010658802-02 | OBS | No | 59.182539 | 167.174818 | 1553.1 | 5.540 | 9.9 | 7.2 | 1.71 | 7700 | 7.77 | 75.96 |
| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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

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

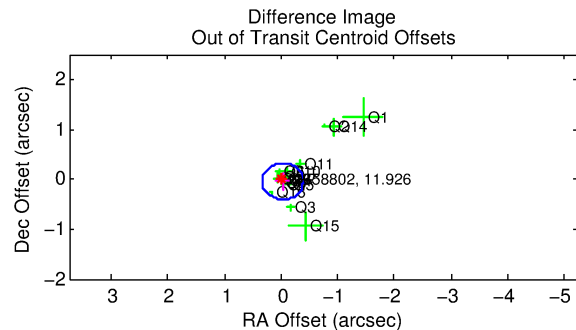
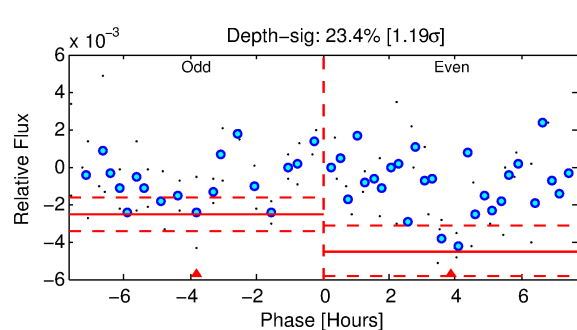
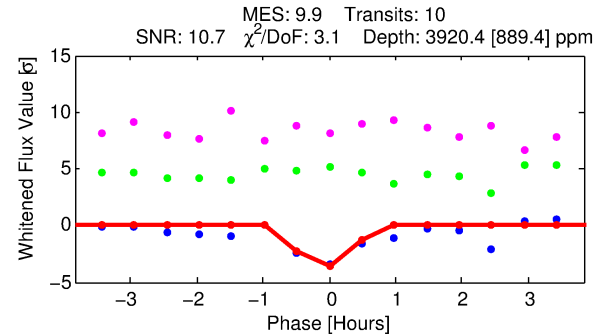
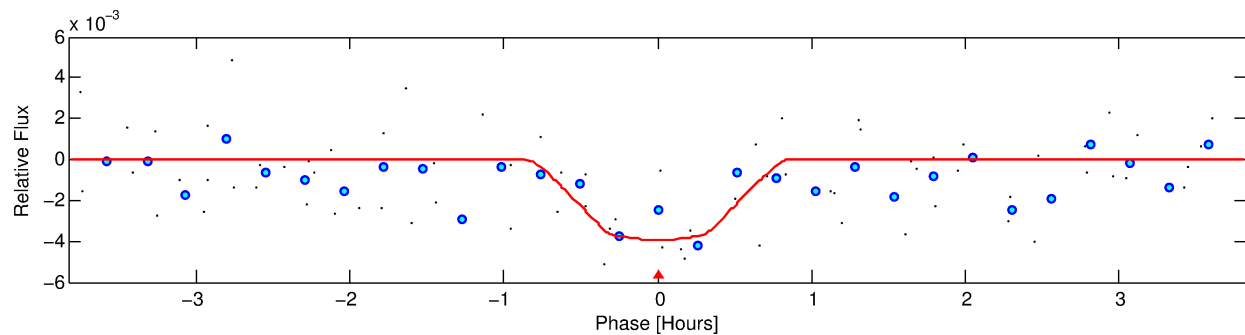
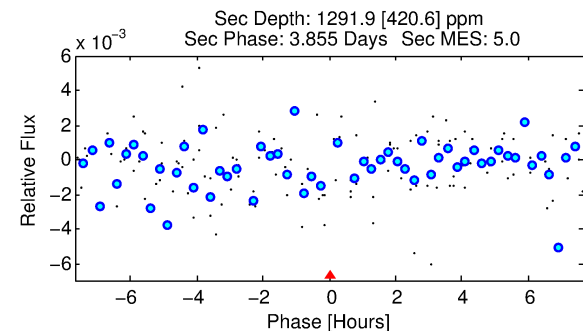
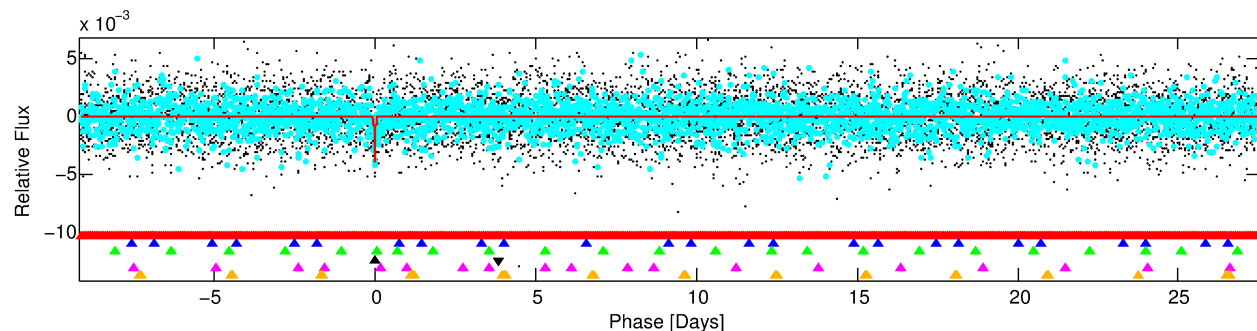
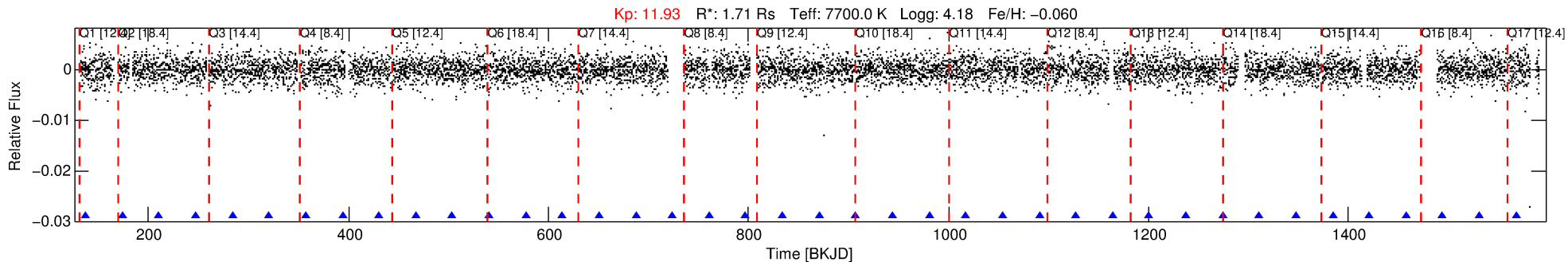
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010658802-04

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 4 of 6 Period: 36.671 d



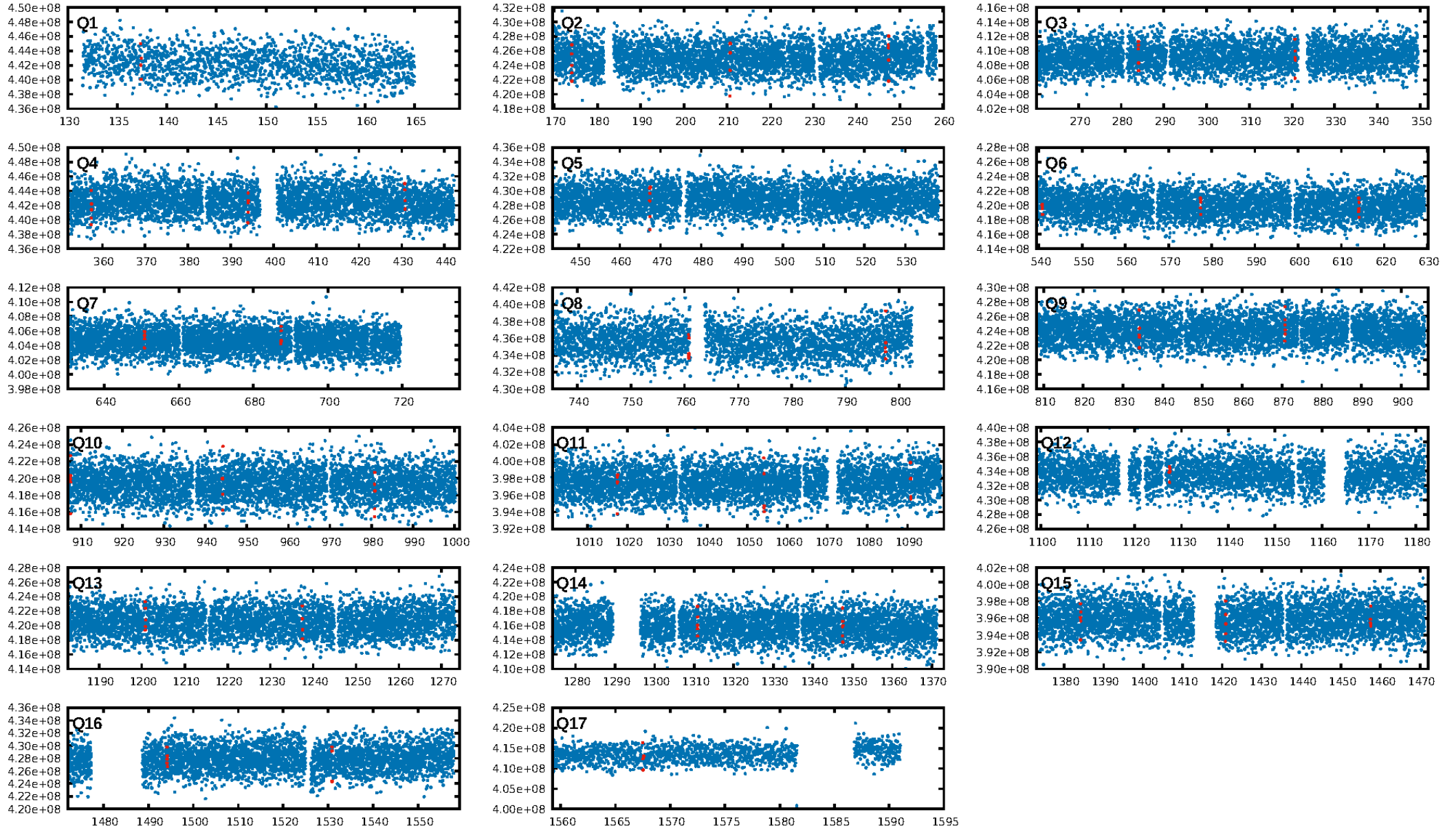
DV Fit Results:

Period = 36.67081 [0.00039] d
Epoch = 137.3725 [0.0113] BKJD
Rp/R* = 0.0611 [0.0875]
a/R* = 185.97 [1604.36]
b = 0.64 [8.15]
Seff = 143.80 [58.12]
Teq = 883 [89] K
Rp = 11.40 [16.74] Re
a = 0.2531 [0.0666] AU
Ag = 350.32 [1018.31] [0.34σ]
Teffp = 5906 [4264] K [1.18σ]

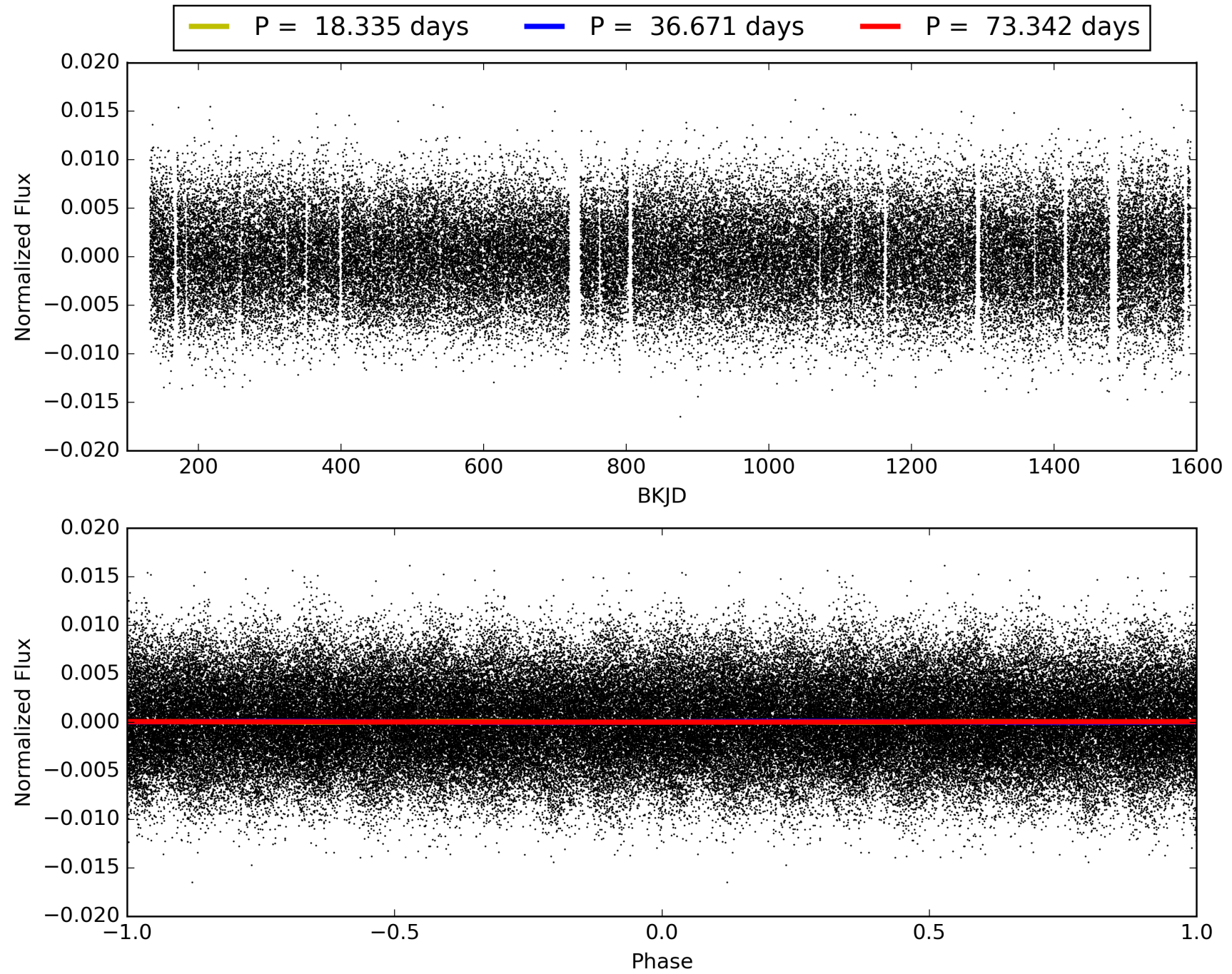
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [188.91σ]
LongPeriod-sig: 100.0% [96.40σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 76.4%
Bootstrap-pfa: 2.64e-12
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 5.615
Centroid-sig: 88.9%
Centroid-so: 0.094 arcsec [4.27σ]
OotOffset-rm: 0.051 arcsec [0.42σ]
KicOffset-rm: 0.066 arcsec [0.41σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-figm: 0.56 [9/16]
DiffImageOverlap-fno: 0.00 [0/16]

TCE 010658802-04, PDC Light Curves

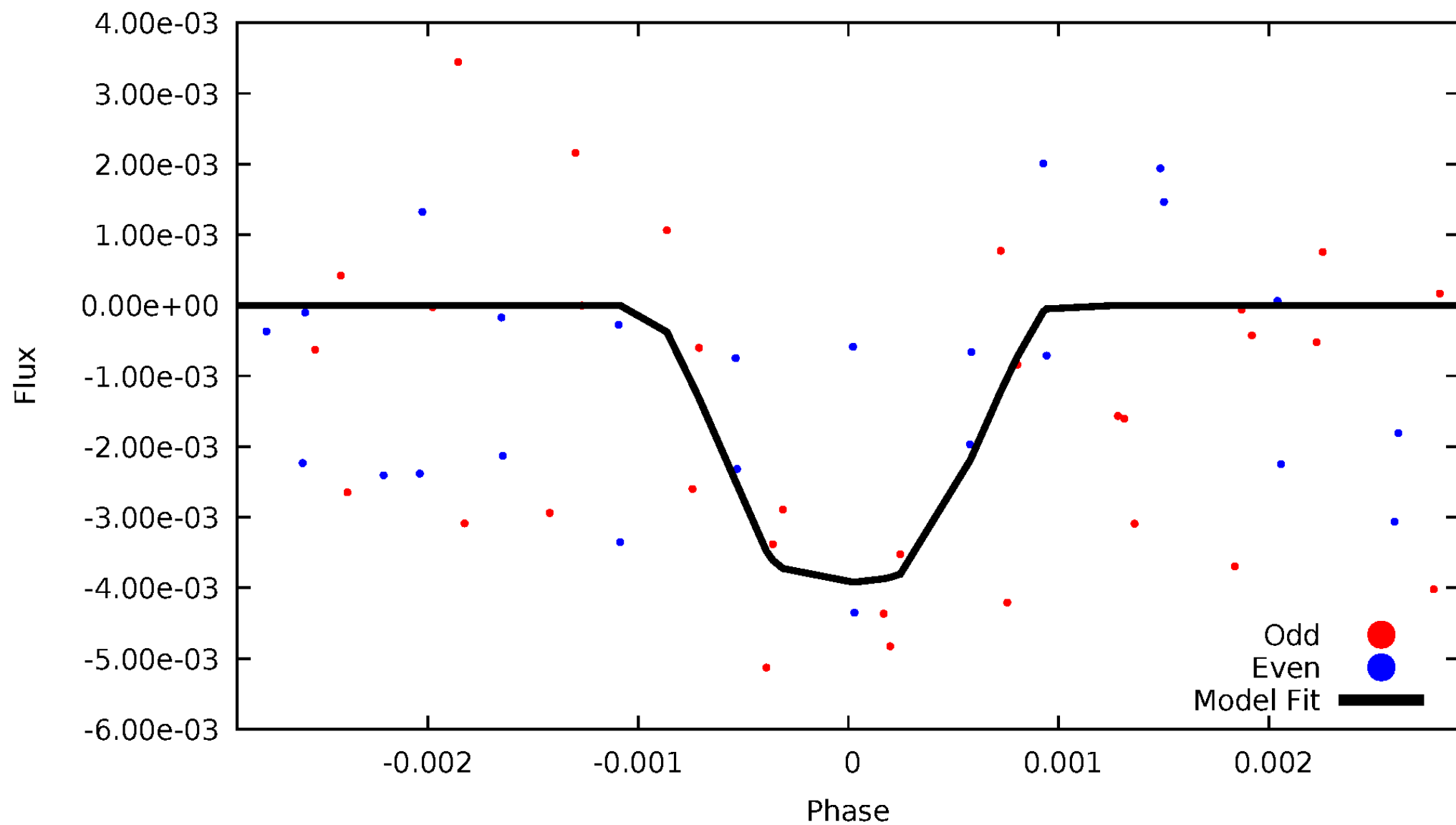


TCE 010658802-04



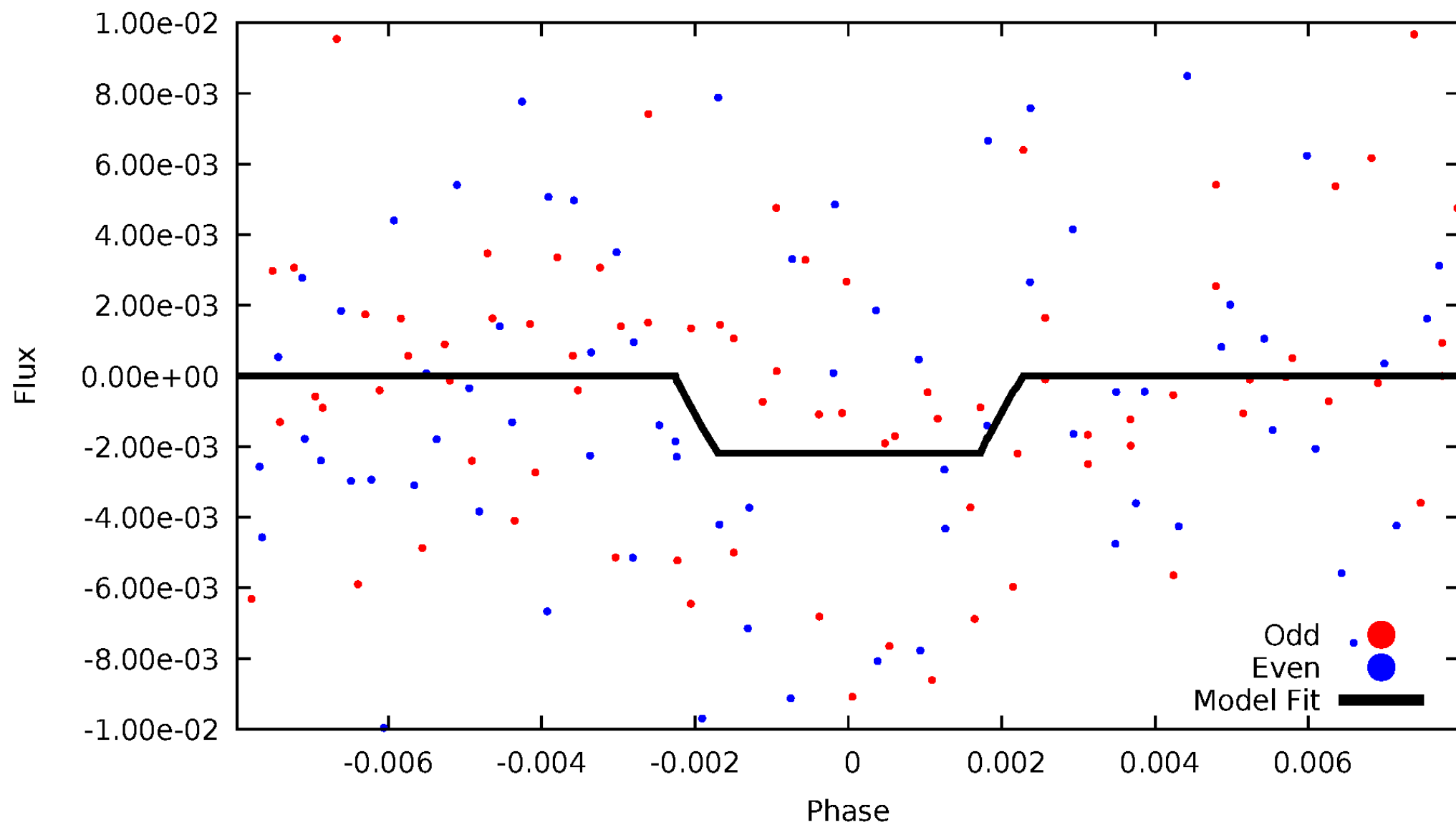
DV Odd/Even

TCE 010658802-04



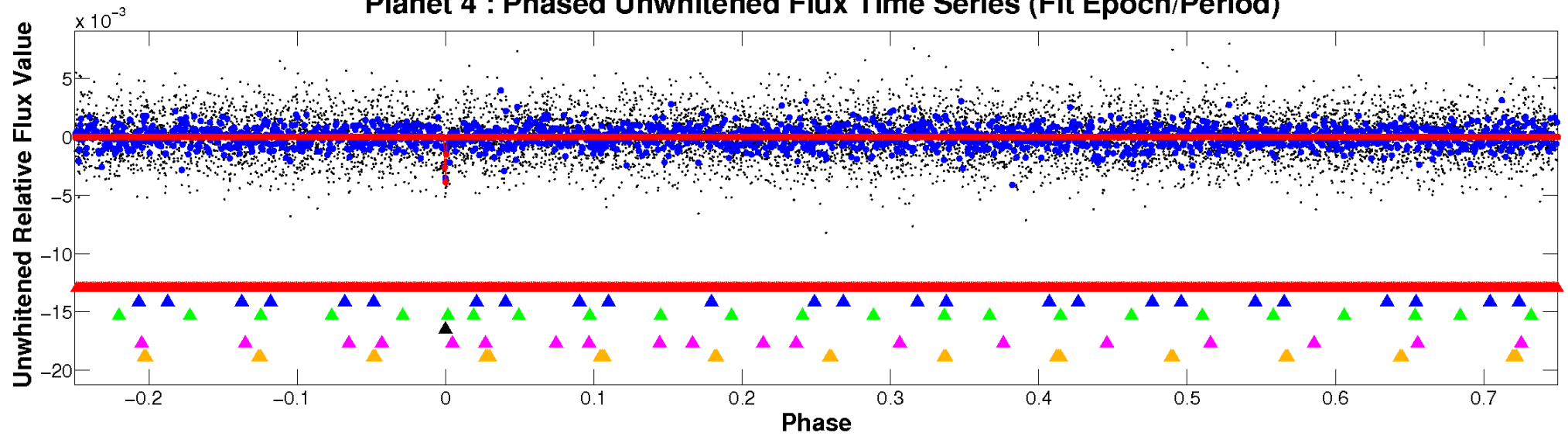
ALT Odd/Even

TCE 010658802-04

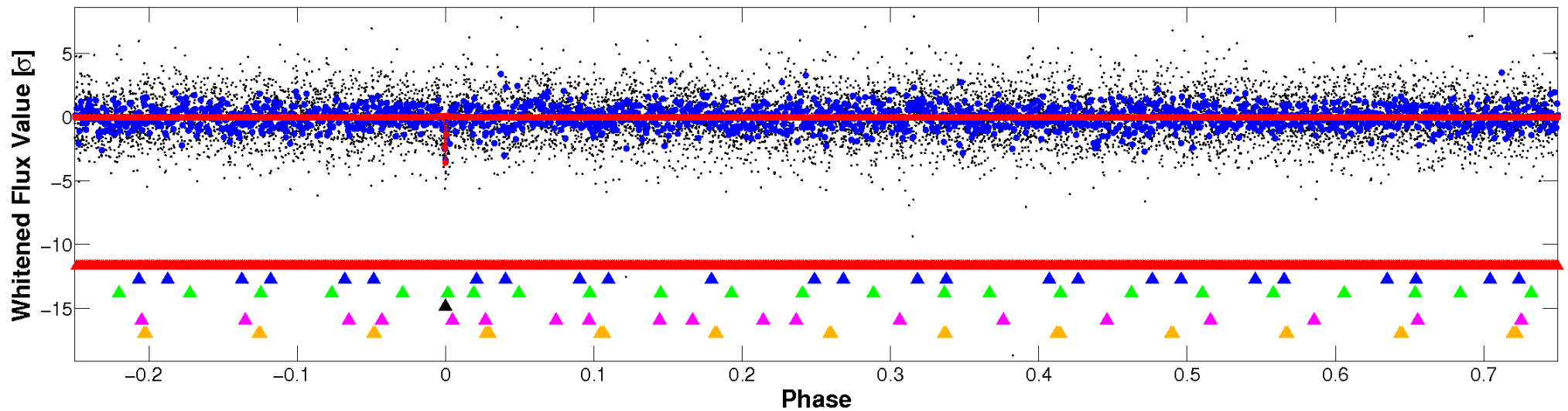


Non-Whitened Vs. Whitened Light Curve

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

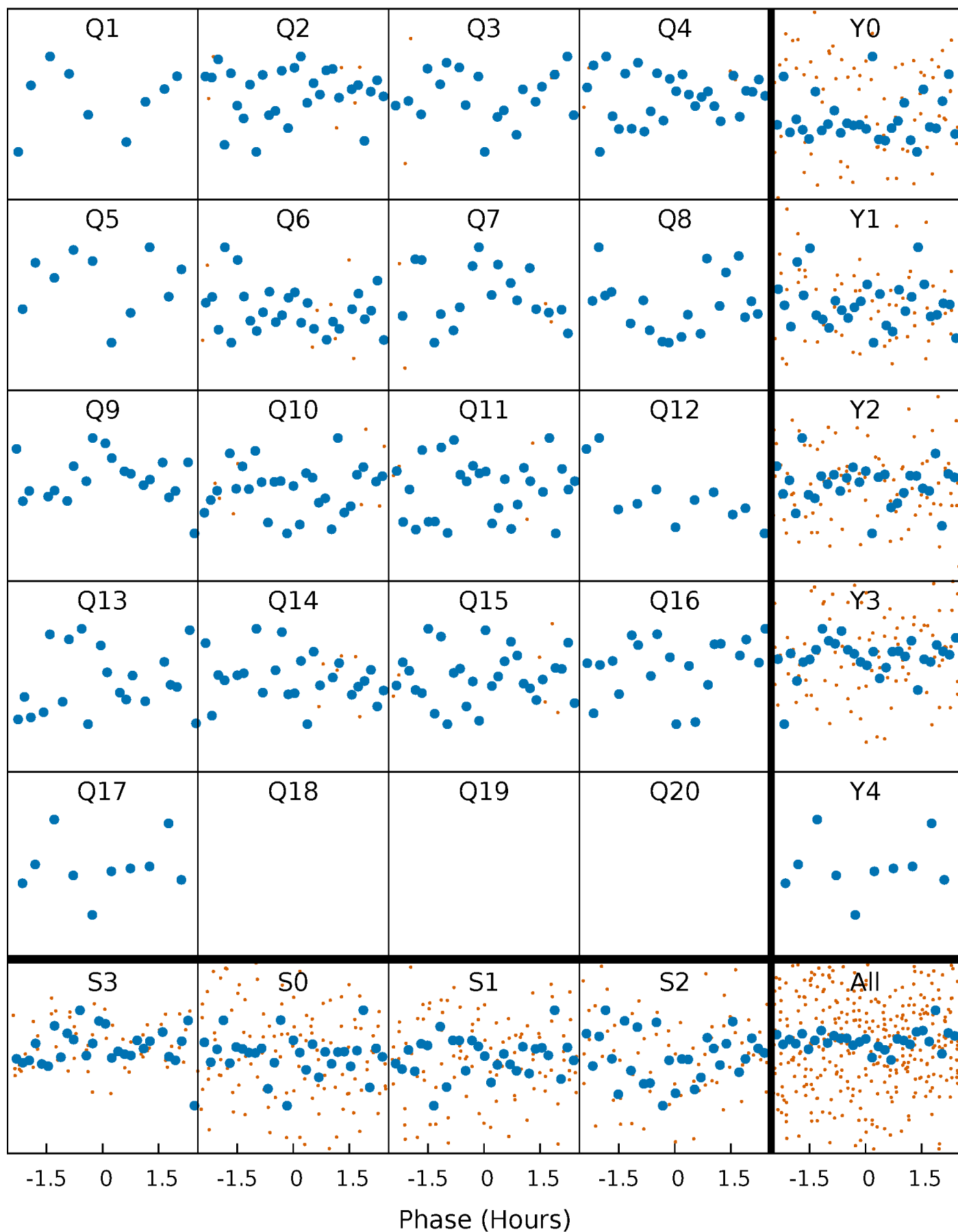


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



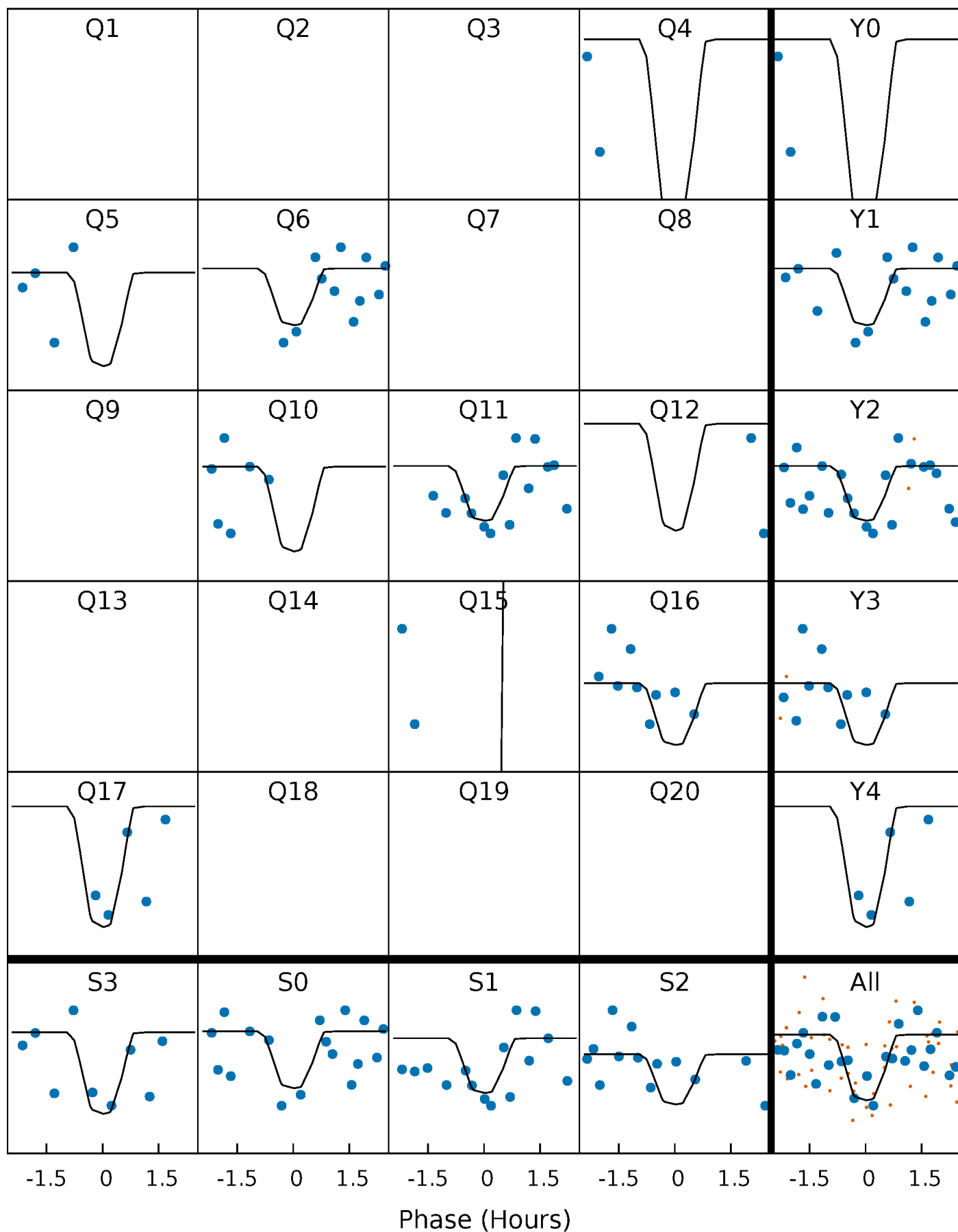
PDC Quarter-Phased Transit Curves

TCE 010658802-04 P= 36.670806 Days $T_0=137.372482$ (BKJD)



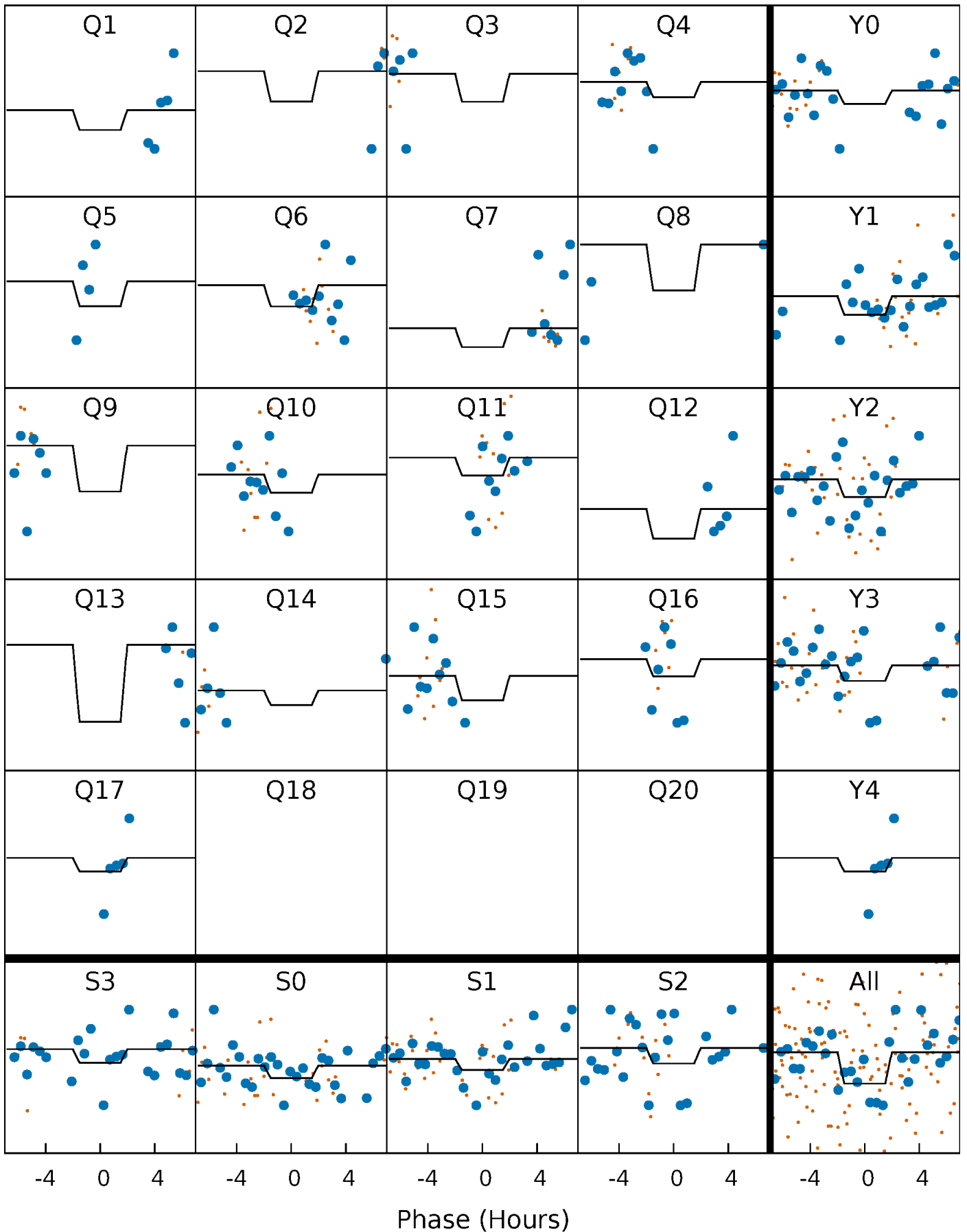
DV Quarter-Phased Transit Curves

TCE 010658802-04 P= 36.670806 Days $T_0=137.372482$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

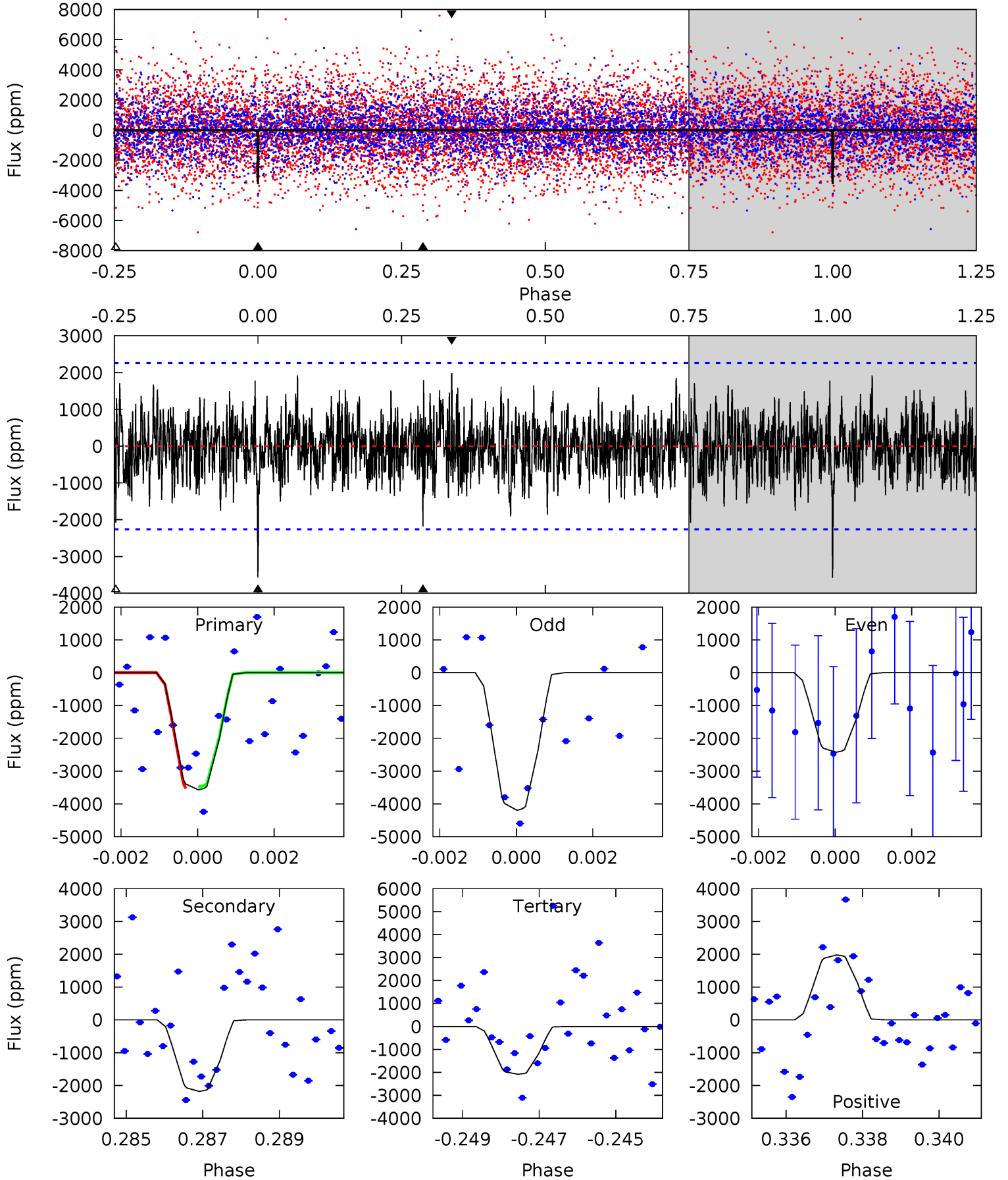
TCE 010658802-04 P= 36.670736 Days $T_0=137.361933$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-04, P = 36.670806 Days, E = 100.701676 Days

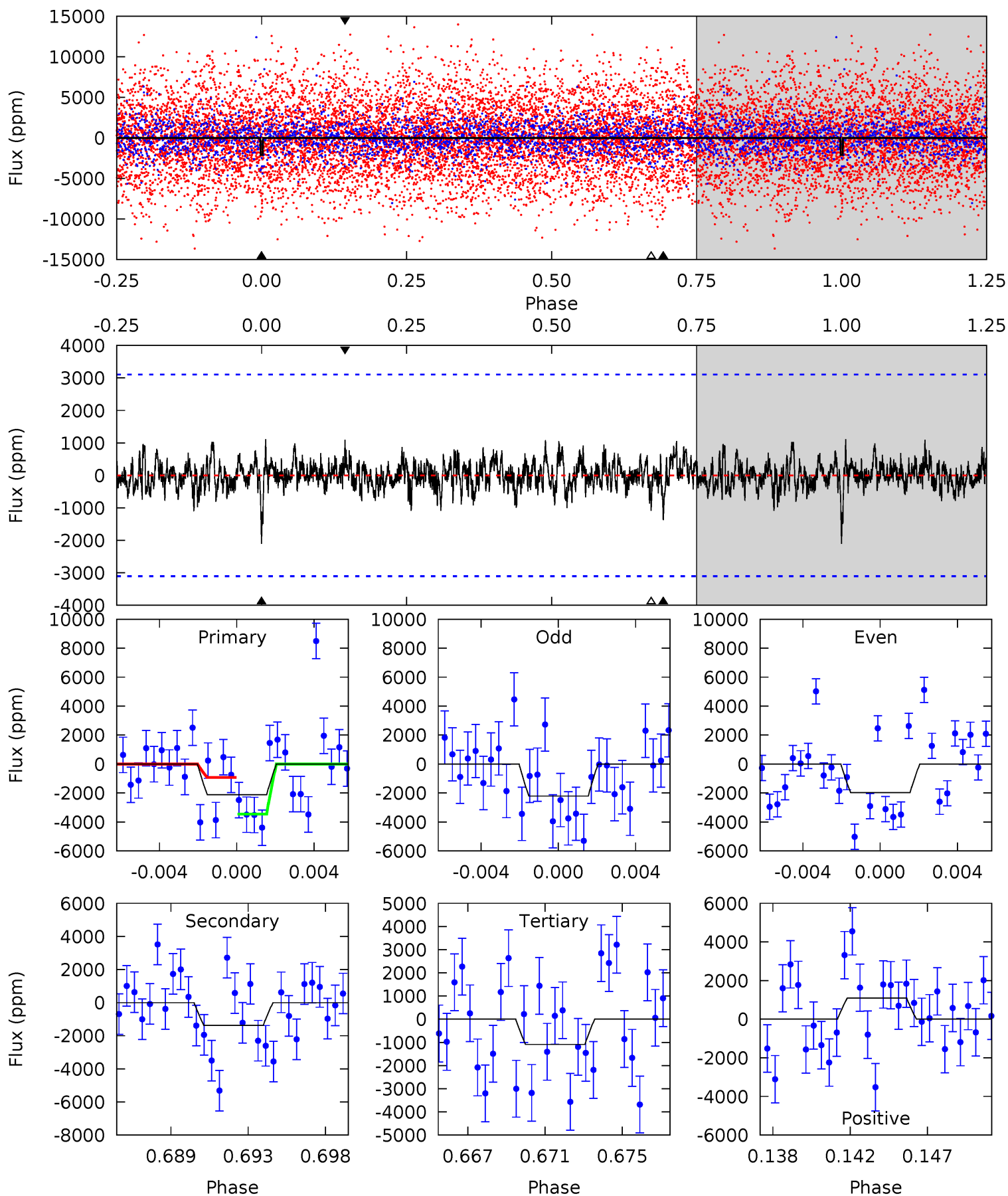
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.40 | 5.13 | 4.90 | 4.65 | 5.32 | 3.09 | 1.45 | 3.50 | 3.75 | 0.23 | 0.48 | 2.07 | 0.98 | 0.36 | 0.04 |



Alt Model-Shift Uniqueness Test

010658802-04, P = 36.670736 Days, E = 100.691197 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.52 | 2.30 | 1.82 | 1.82 | 5.18 | 2.84 | 0.59 | 1.70 | 1.70 | 0.48 | 0.48 | 0.20 | 0.91 | 0.34 | 2.10 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-04 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|---------------------------|---------------------|------------------------|----------------------|
| DV | -2180 ± 425 | $17.51^{+15.39}_{-11.83}$ | 1247^{+101}_{-77} | 5513^{+4575}_{-1324} | 252^{+1901}_{-181} |
| Alt. | -1378 ± 600 | $16.59^{+14.50}_{-11.09}$ | 1245^{+86}_{-75} | 4991^{+4298}_{-1134} | 168^{+1500}_{-126} |

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 $A_{obs} \gg 1.0$

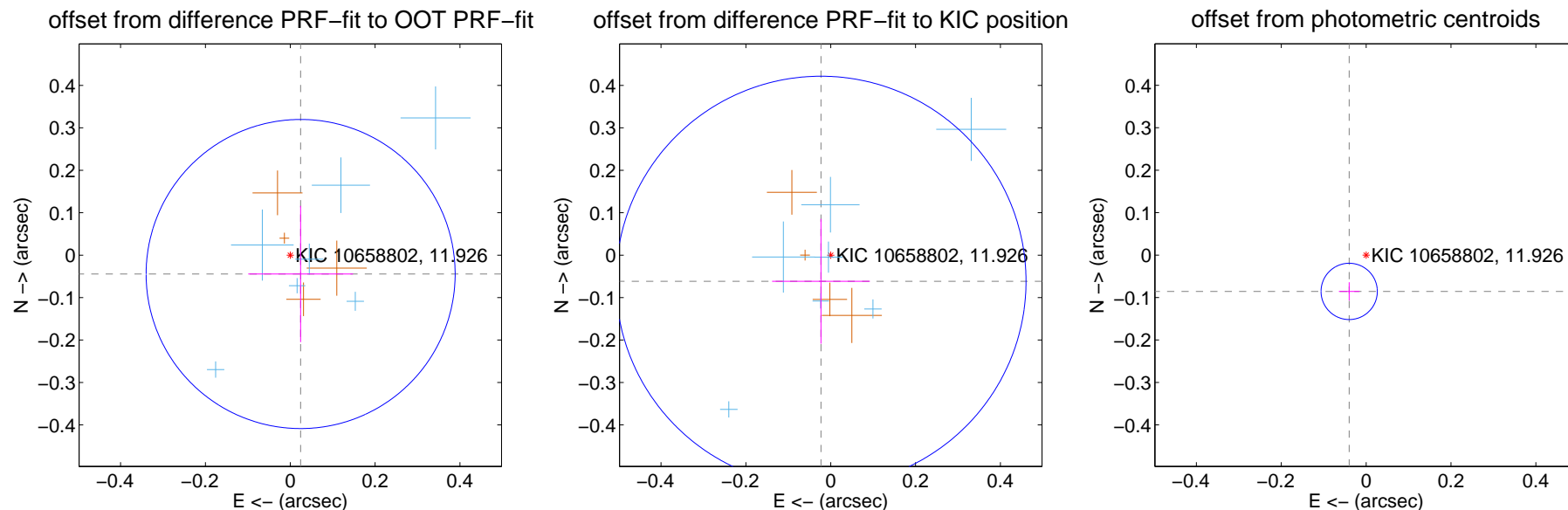
DV Centroid Data

Supplemental centroid analysis for 010658802-04. **Kepler magnitude: 11.93.** Transit SNR 10.69

There are 9 quarters with good PRF difference image offsets

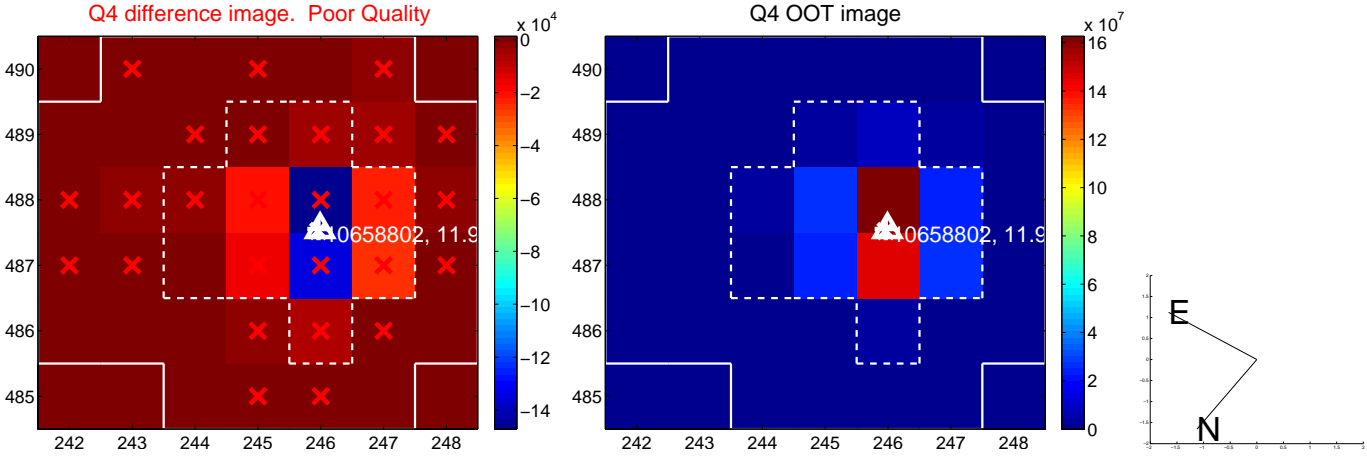
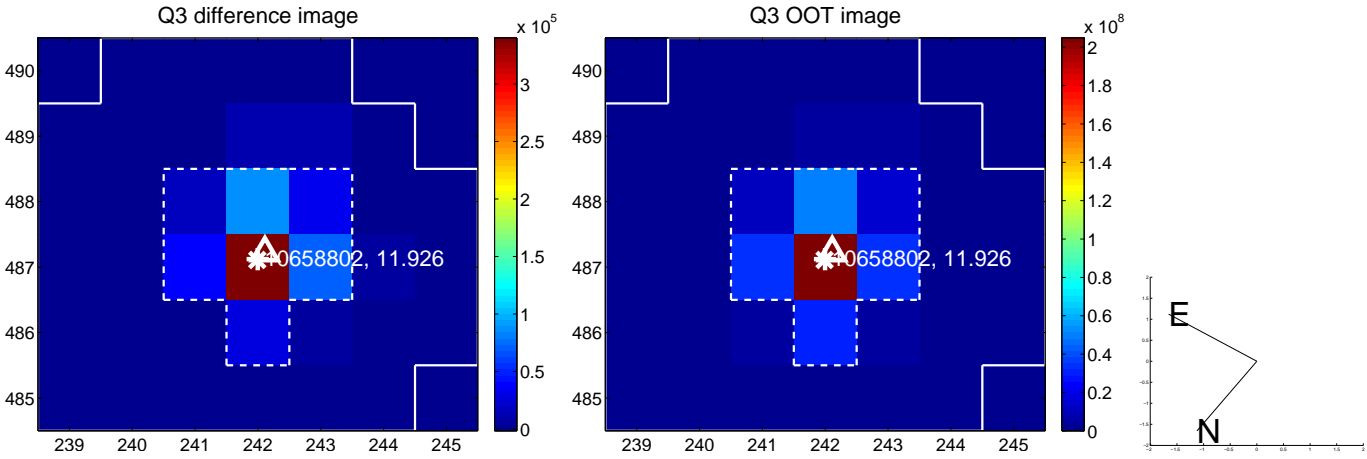
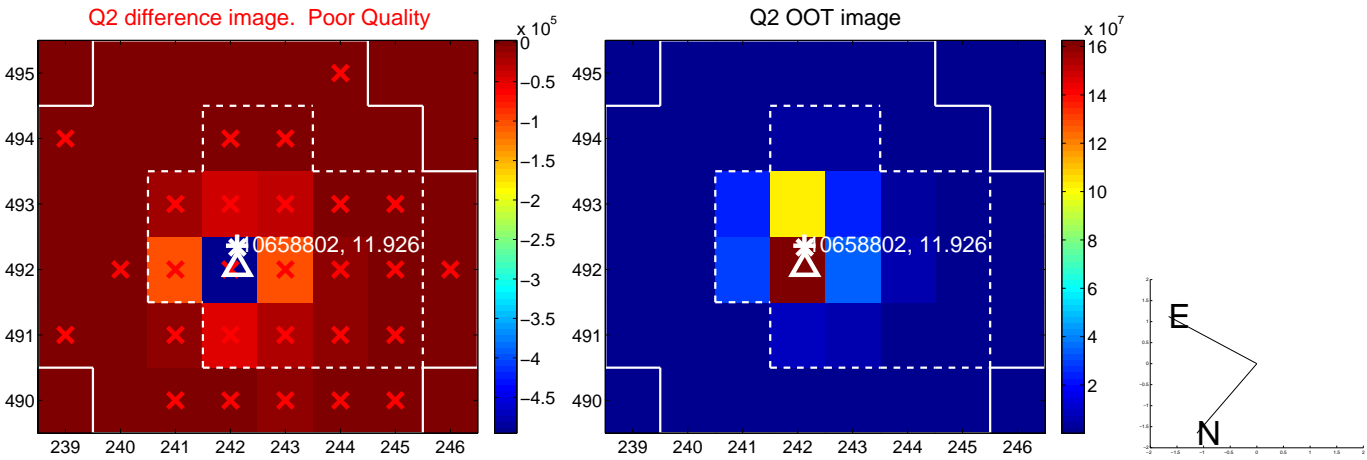
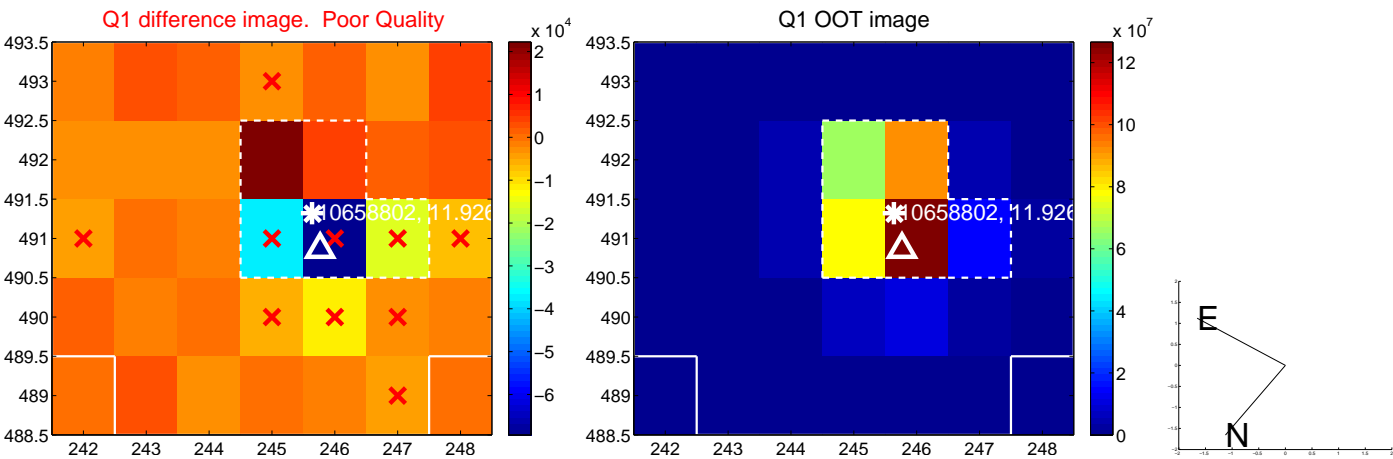
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-----------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.051 ± 0.121 | 0.42 | -0.024 ± 0.123 | -0.044 ± 0.161 |
| PRF-fit source offset from KIC position | 0.066 ± 0.161 | 0.41 | 0.023 ± 0.115 | -0.062 ± 0.147 |
| photometric centroid source offset | 0.09 ± 0.02 | 4.27 | 0.04 ± 0.02 | -0.09 ± 0.02 |

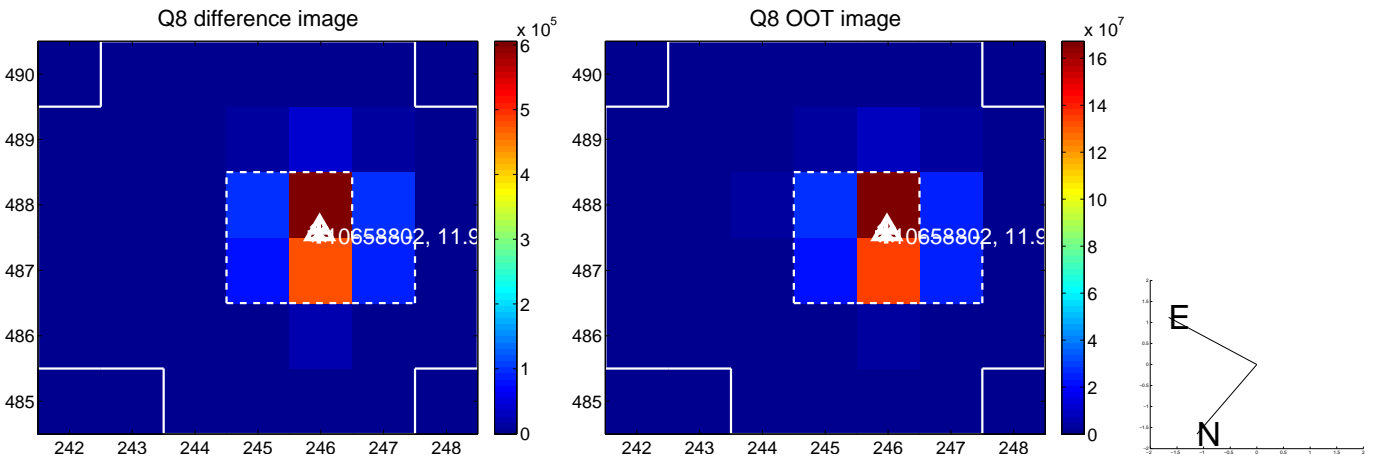
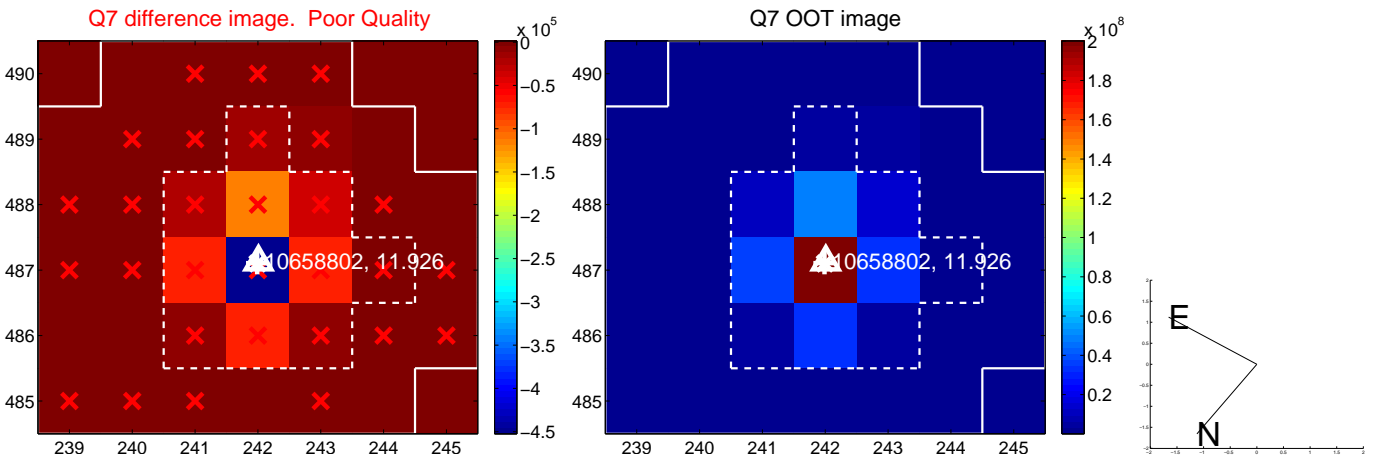
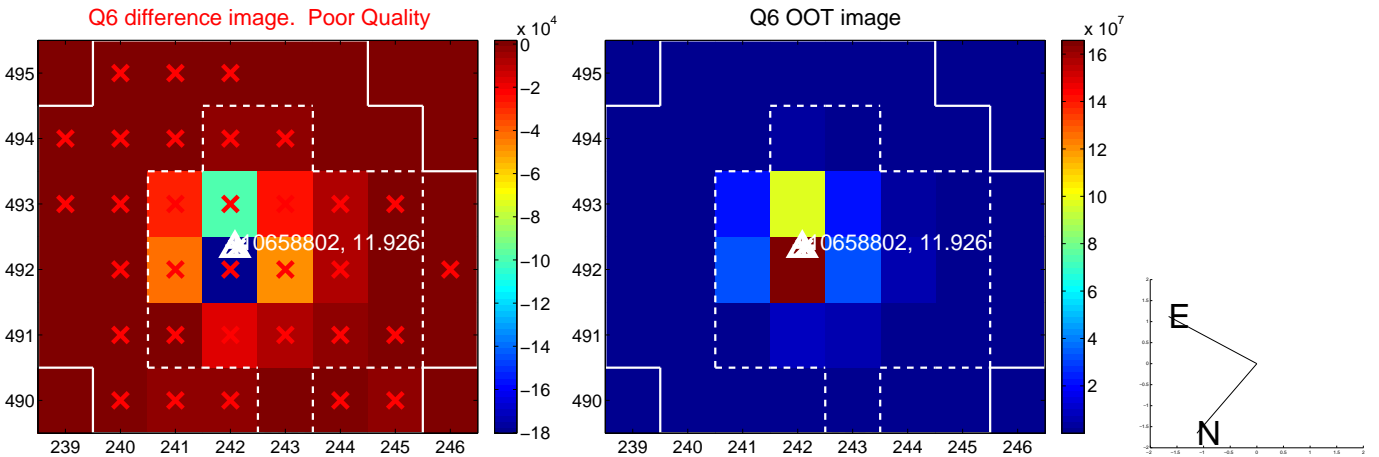
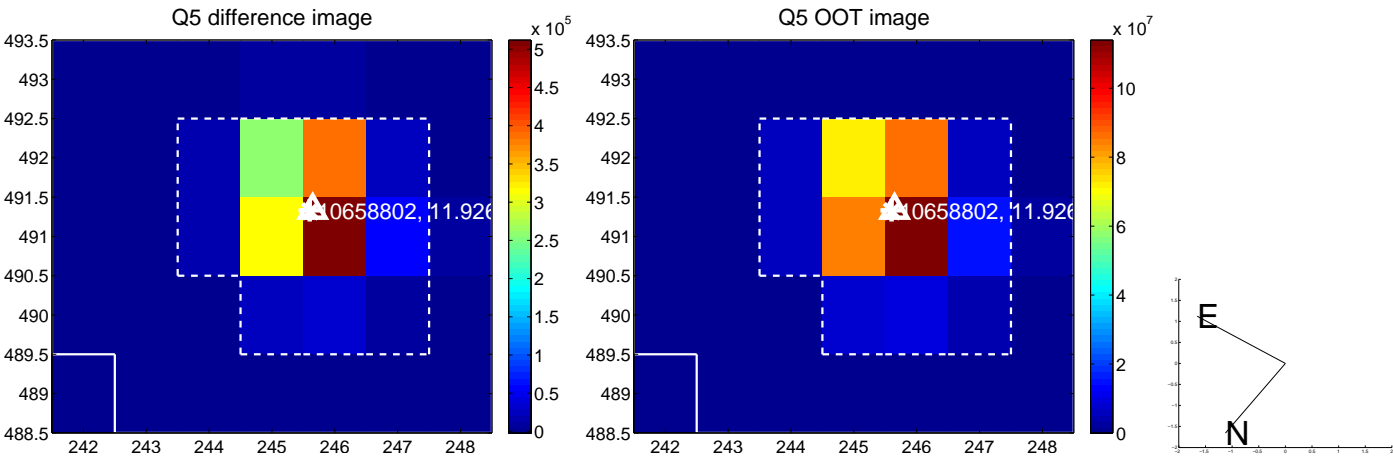


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

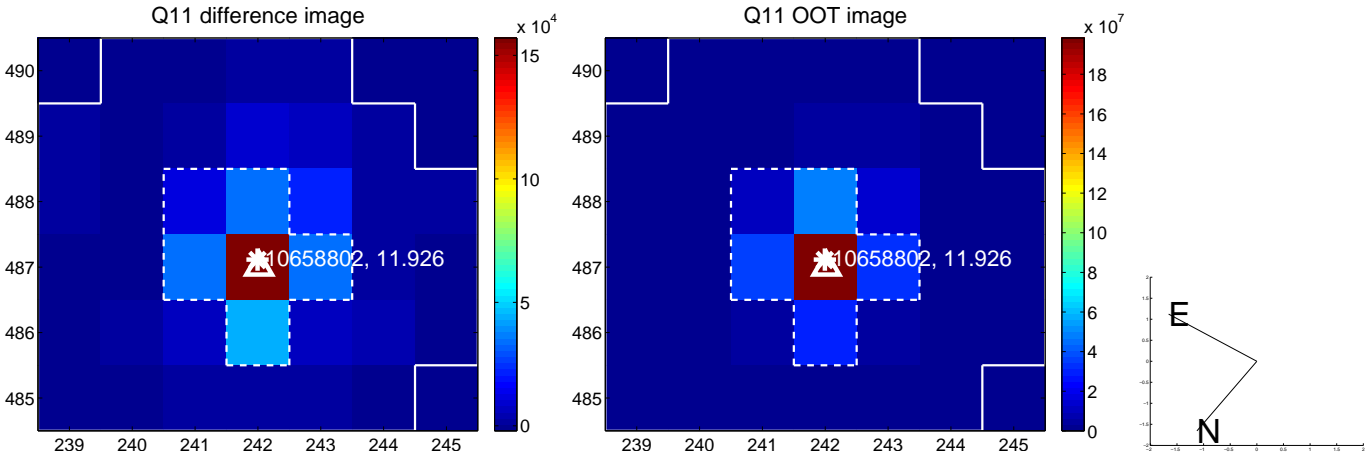
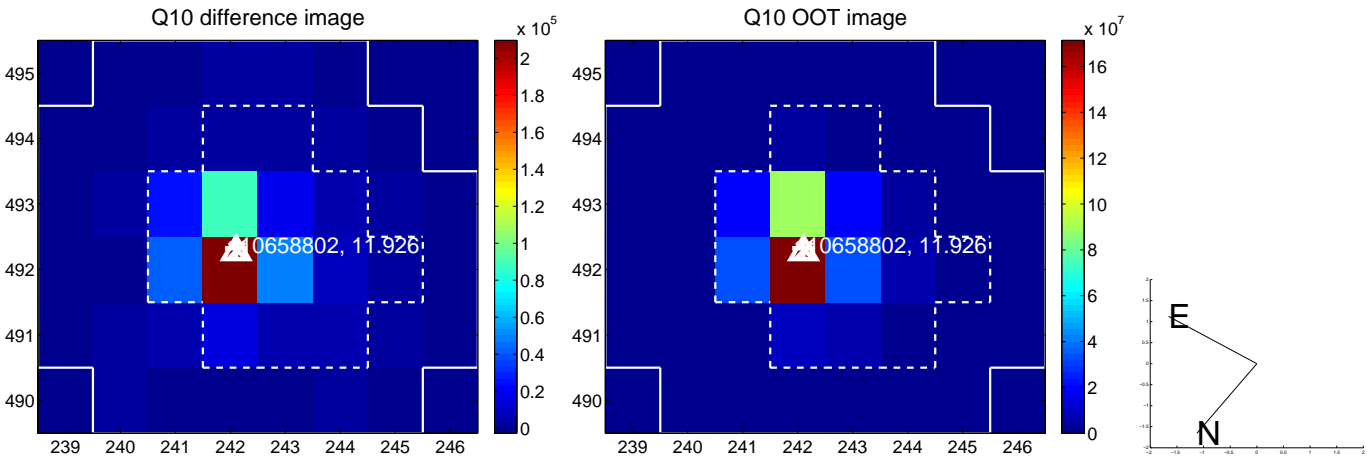
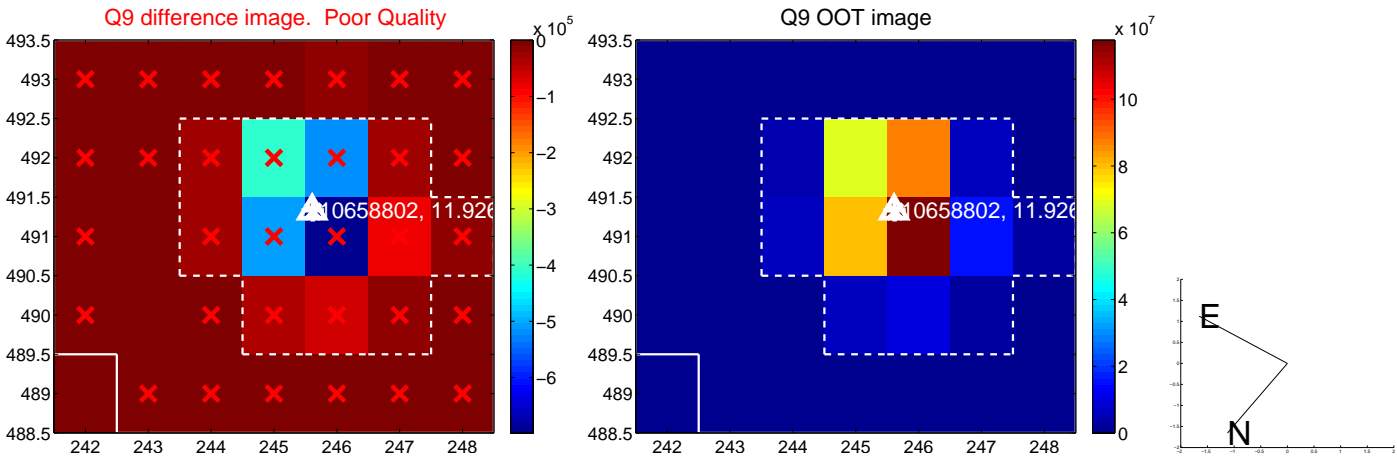
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



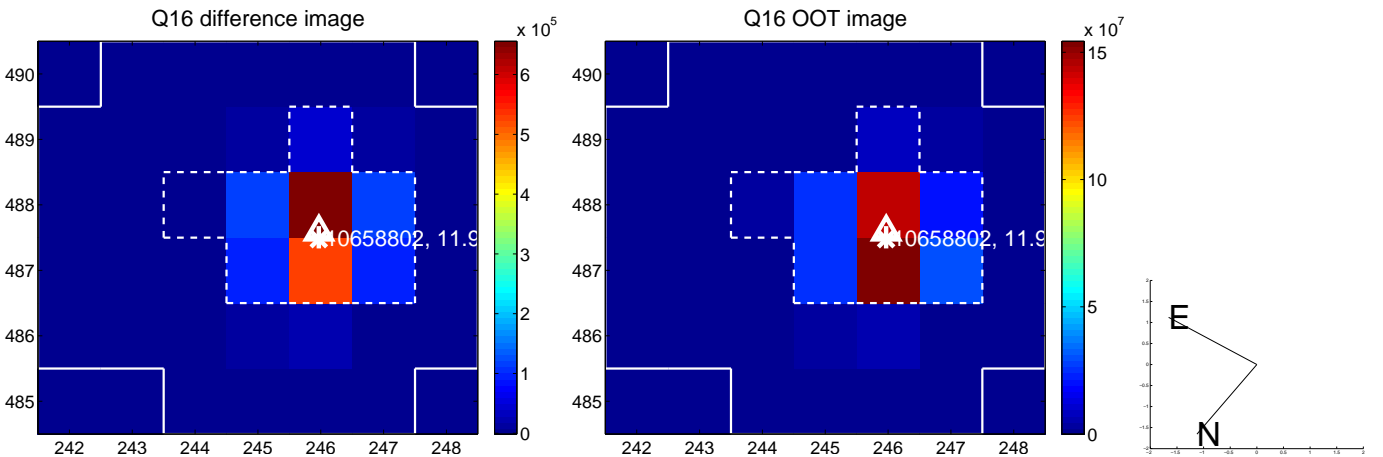
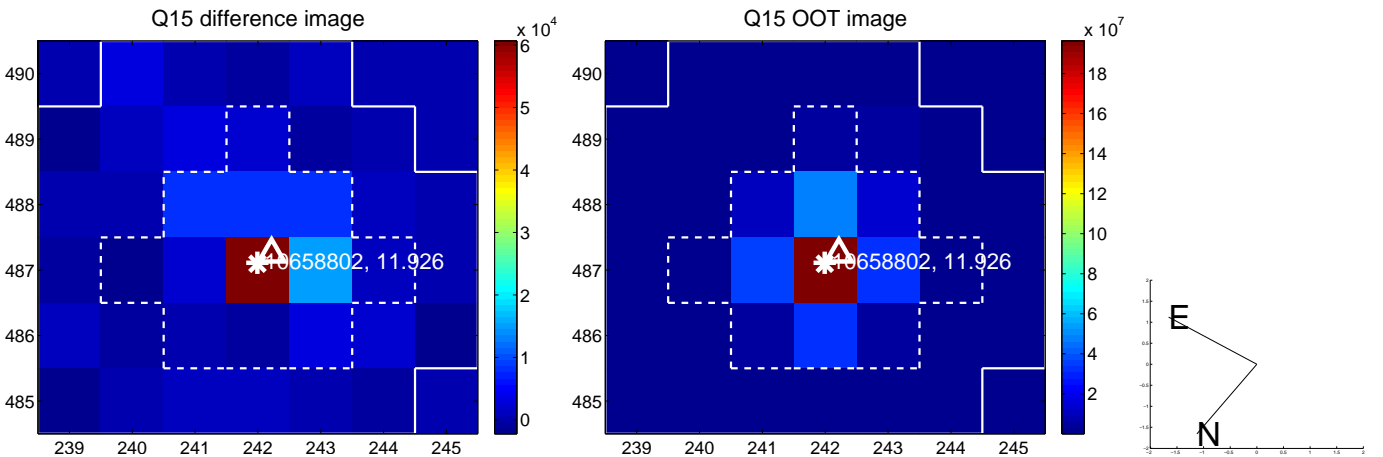
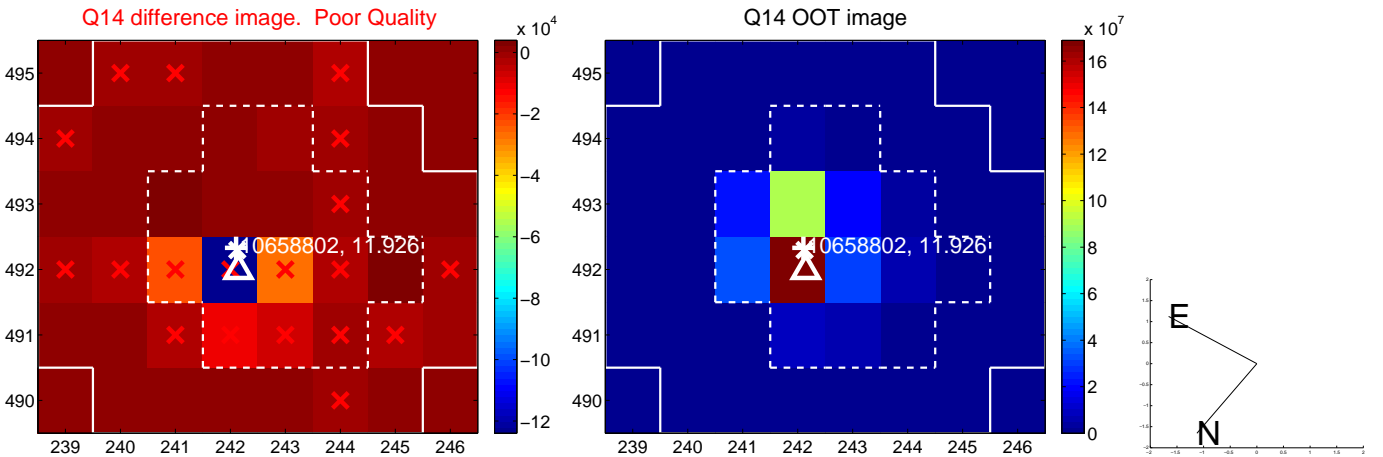
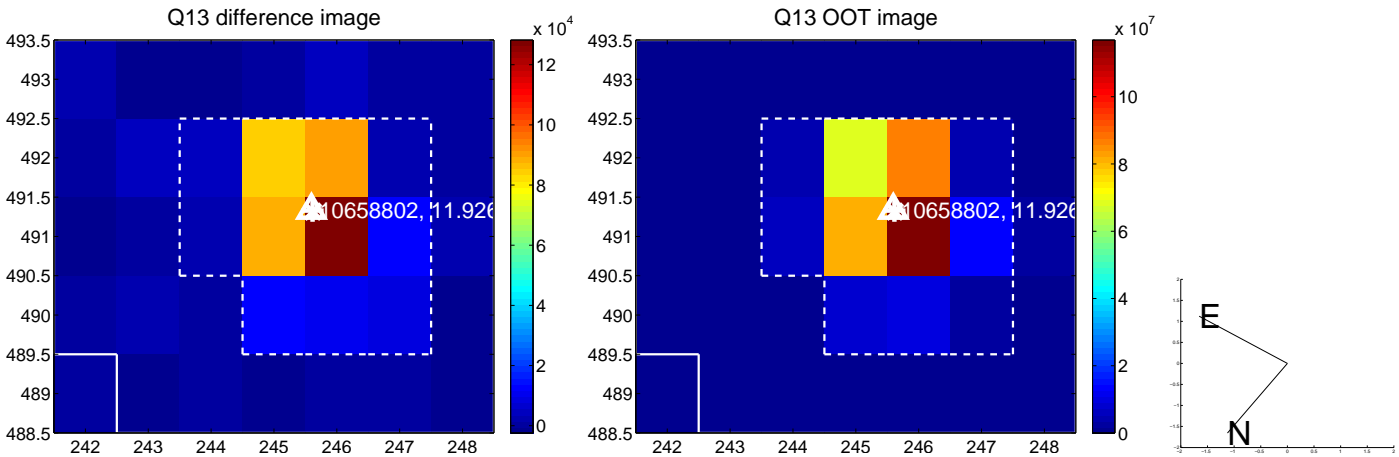
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



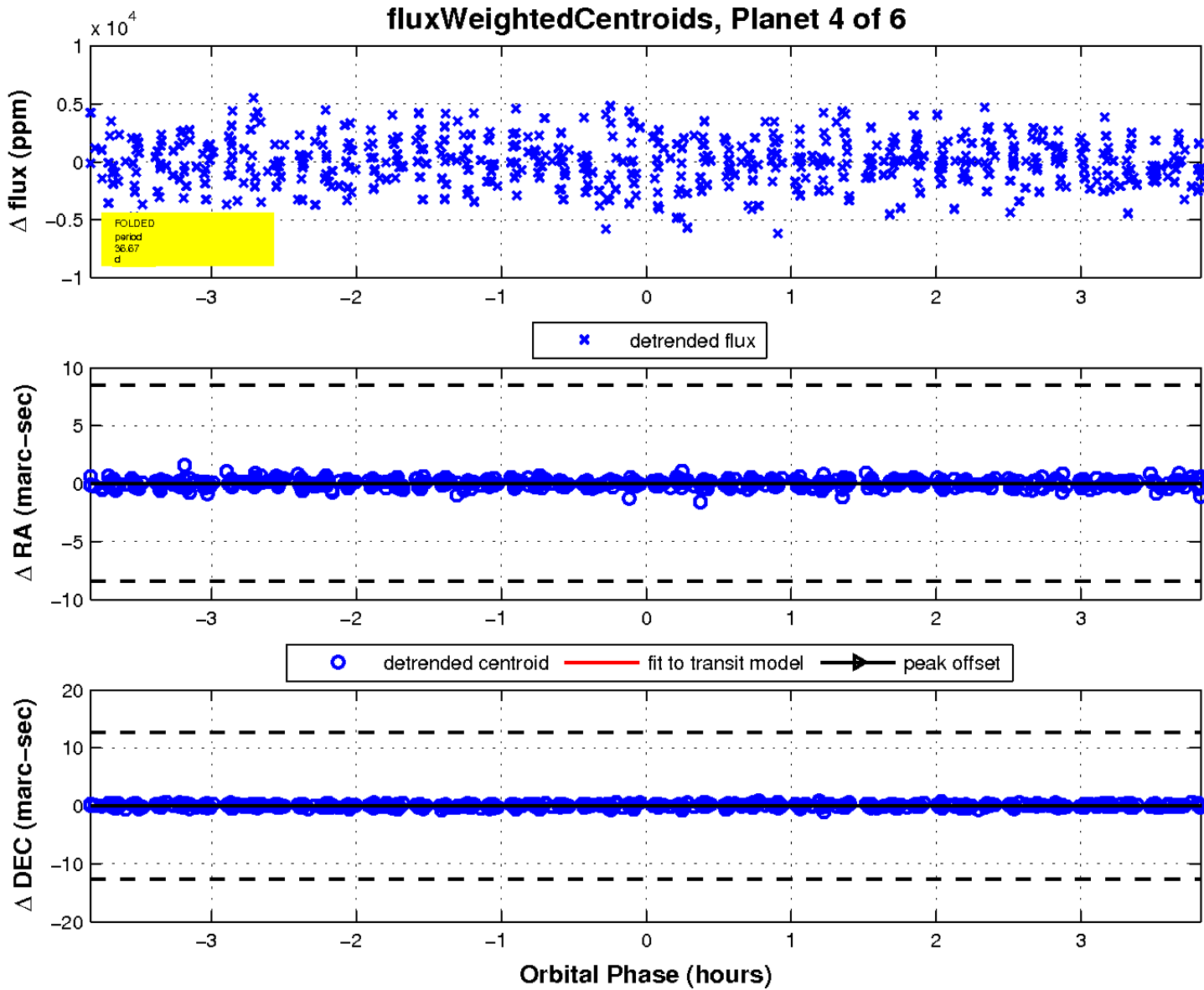
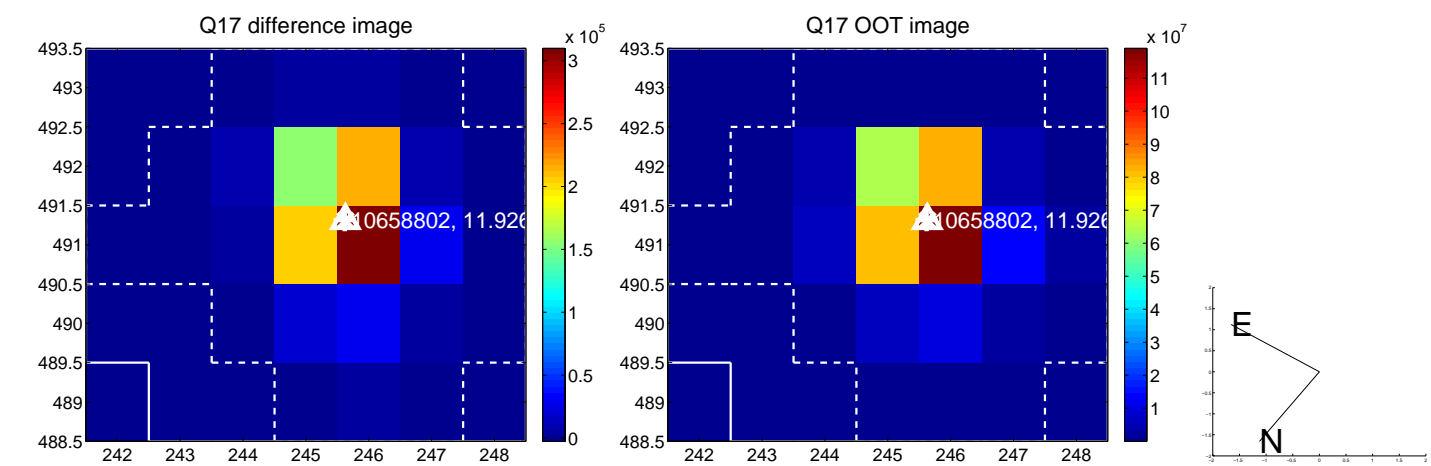
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



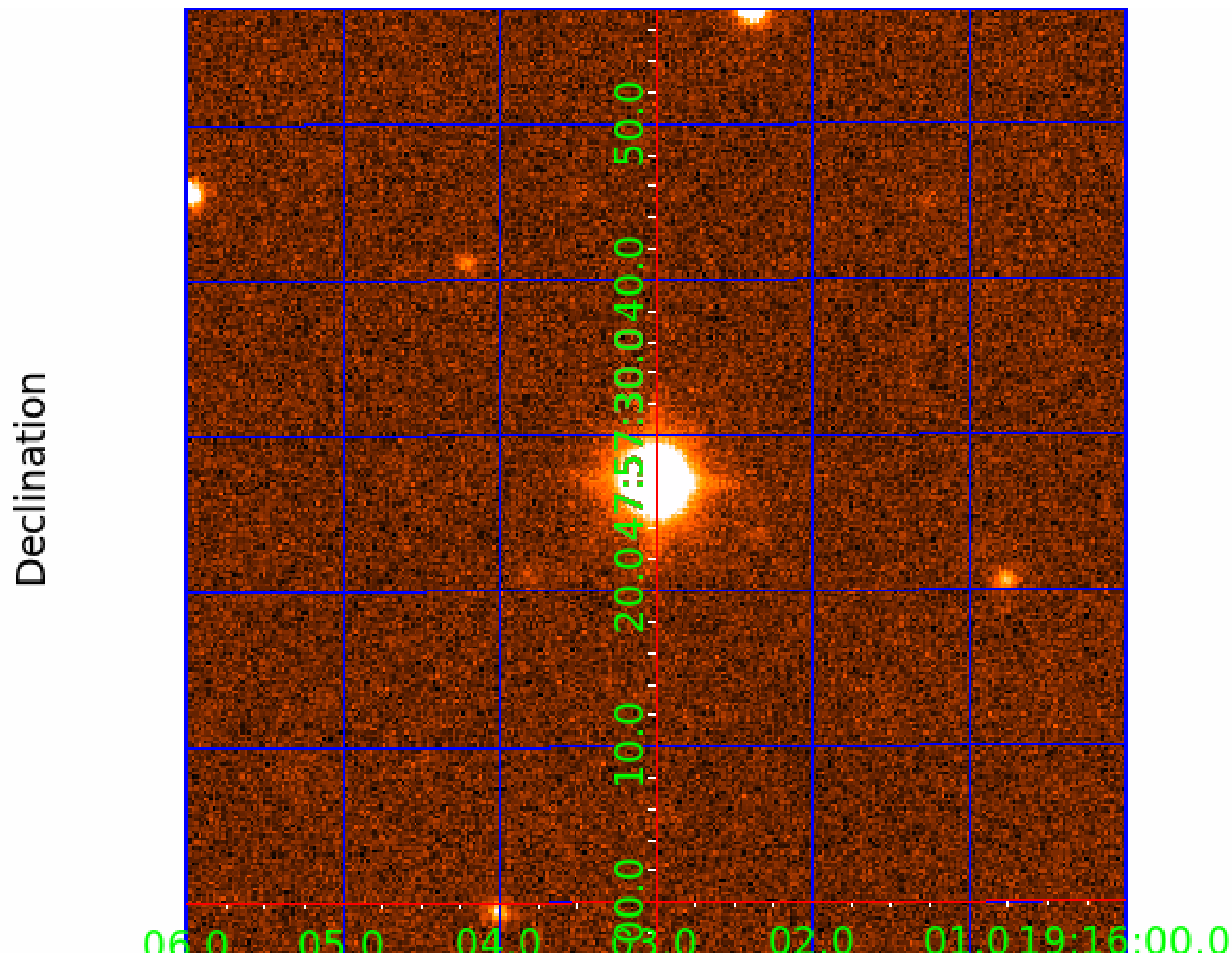
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
| 010658802-02 | OBS | No | 59.182539 | 167.174818 | 1553.1 | 5.540 | 9.9 | 7.2 | 1.71 | 7700 | 7.77 | 75.96 |
| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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

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

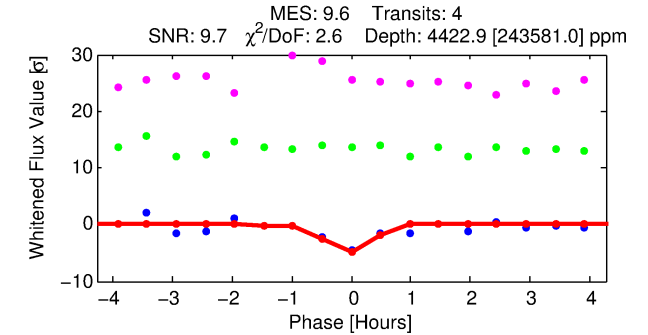
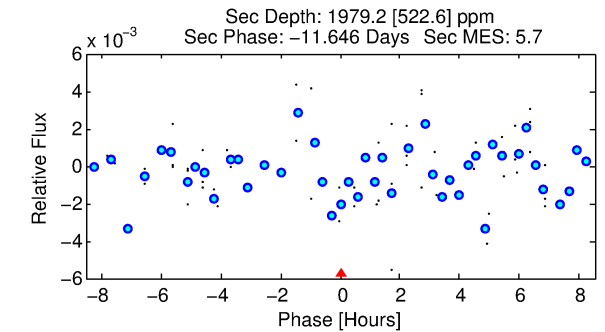
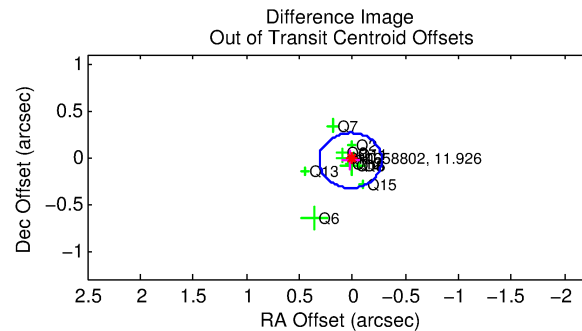
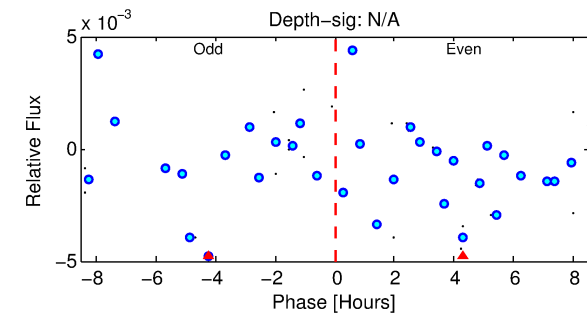
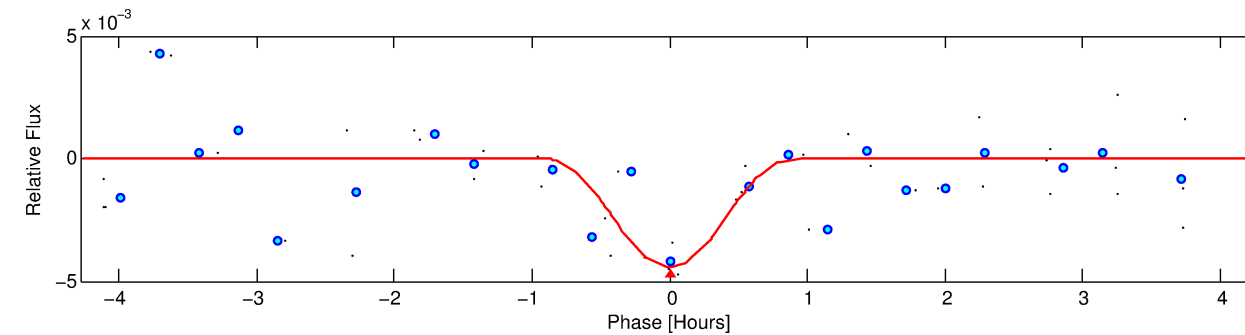
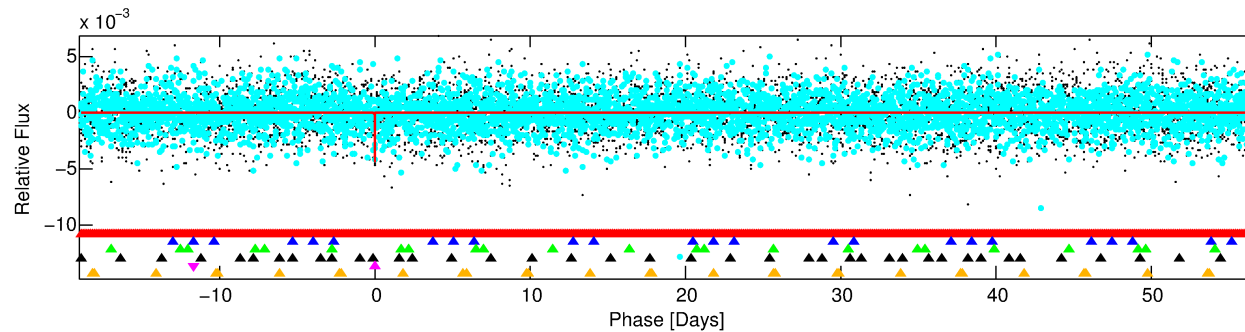
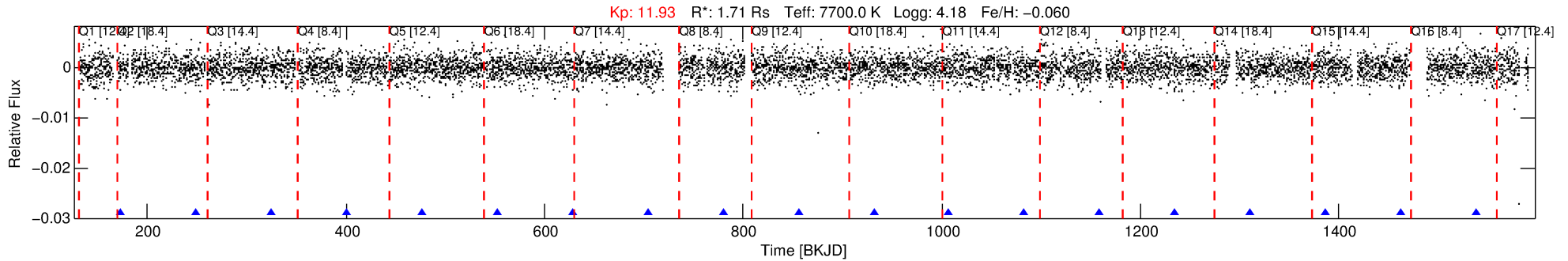
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010658802-05

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 5 of 6 Period: 75.903 d



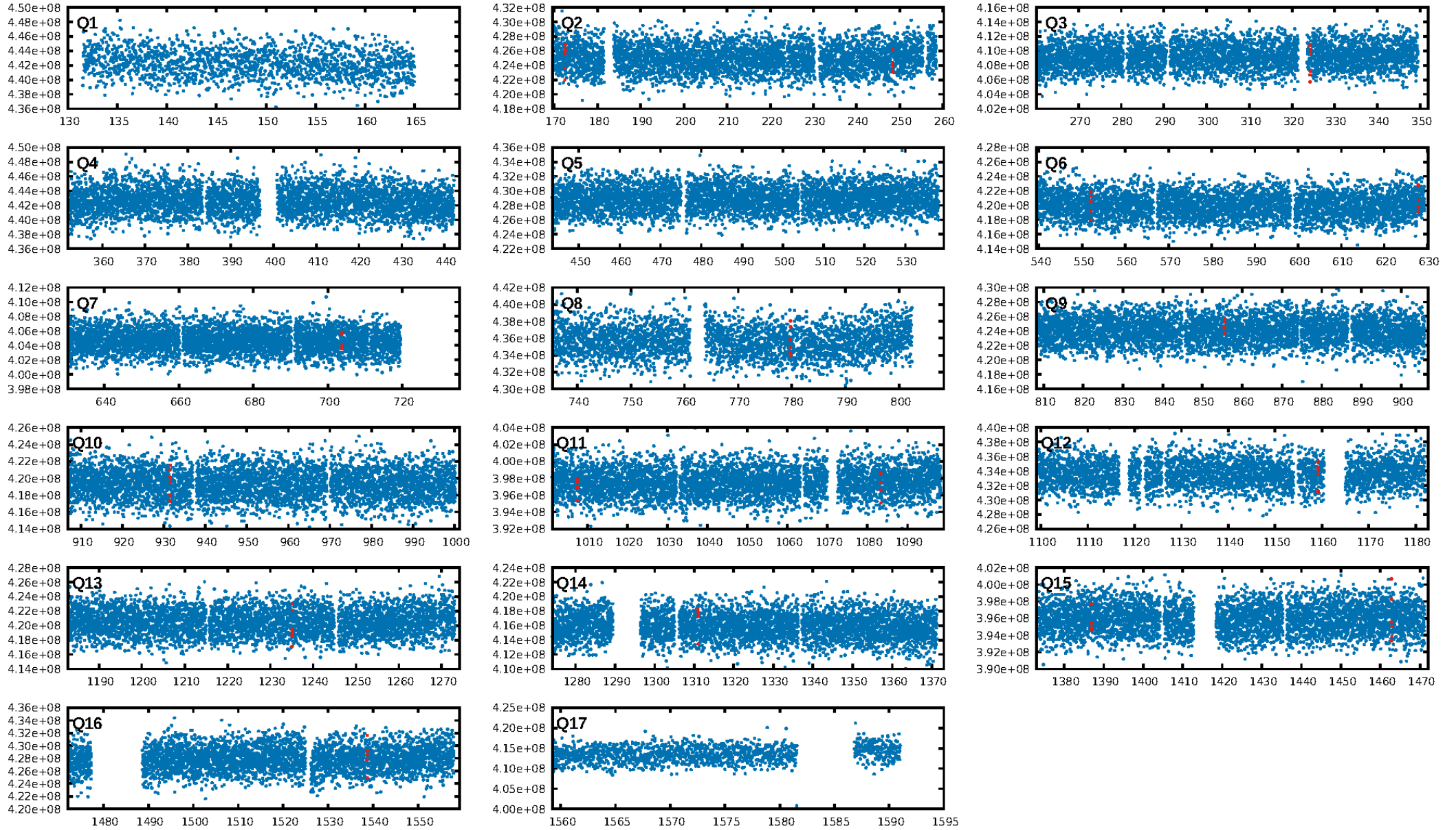
DV Fit Results:

Period = 75.90274 [0.00062] d
Epoch = 172.4695 [0.0068] BKJD
Rp/R* = 0.1113 [5.7912]
a/R* = 196.88 [2099.59]
b = 1.00 [4.24]
Seff = 54.51 [22.03]
Teq = 693 [70] K
Rp = 20.76 [1080.66] Re
a = 0.4110 [0.1081] AU
Ag = 426.82 [44435.77] [0.01σ]
Teffp = 4869 [126731] K [0.03σ]

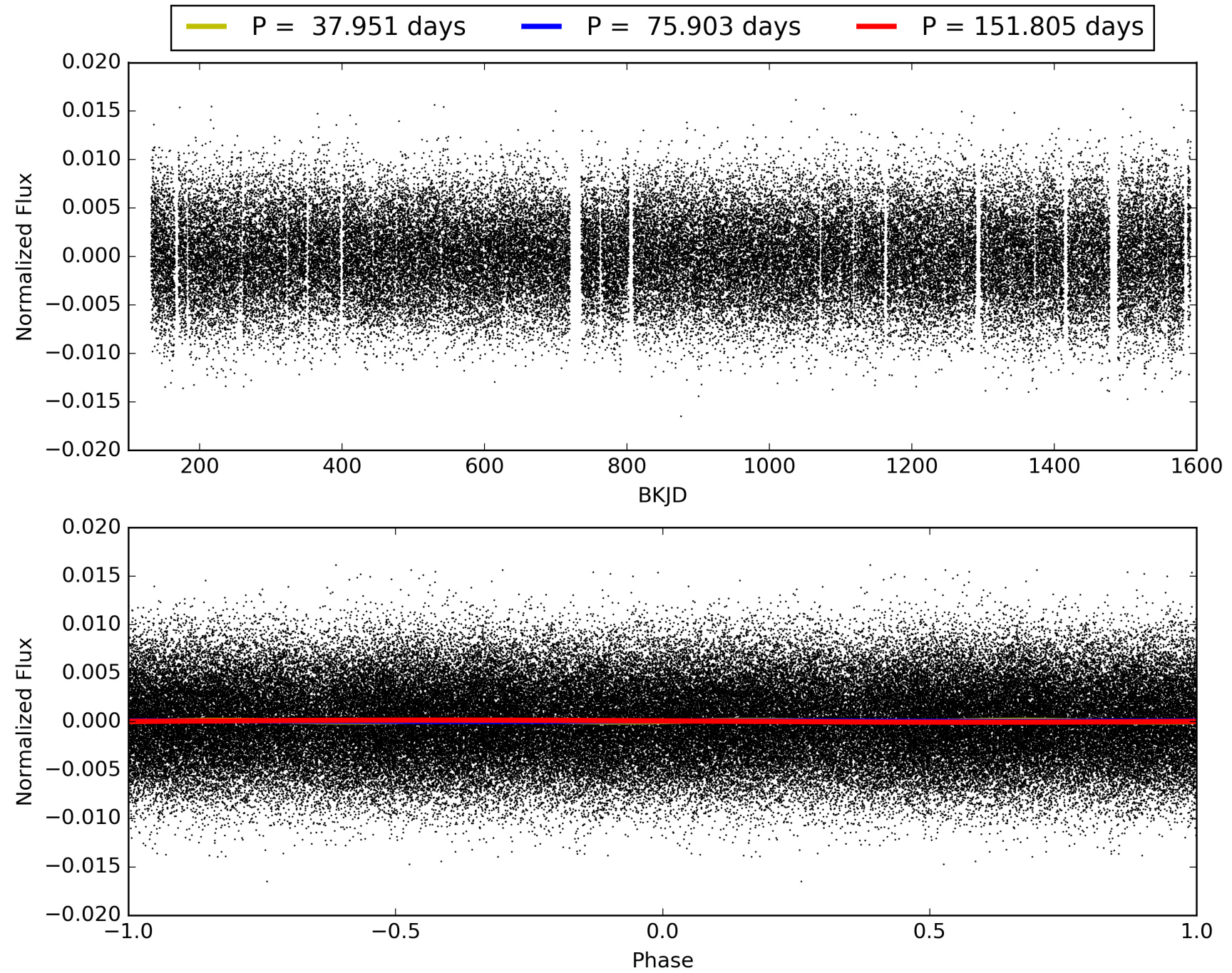
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [82.02σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 19.9%
ModelChiSquareGof-sig: 89.0%
Bootstrap-pfa: 2.19e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 21.55
Centroid-sig: 6.7%
Centroid-so: 0.098 arcsec [2.99σ]
OotOffset-rm: 0.038 arcsec [0.39σ]
KicOffset-rm: 0.104 arcsec [1.09σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 0.18 [2/11]

TCE 010658802-05, PDC Light Curves

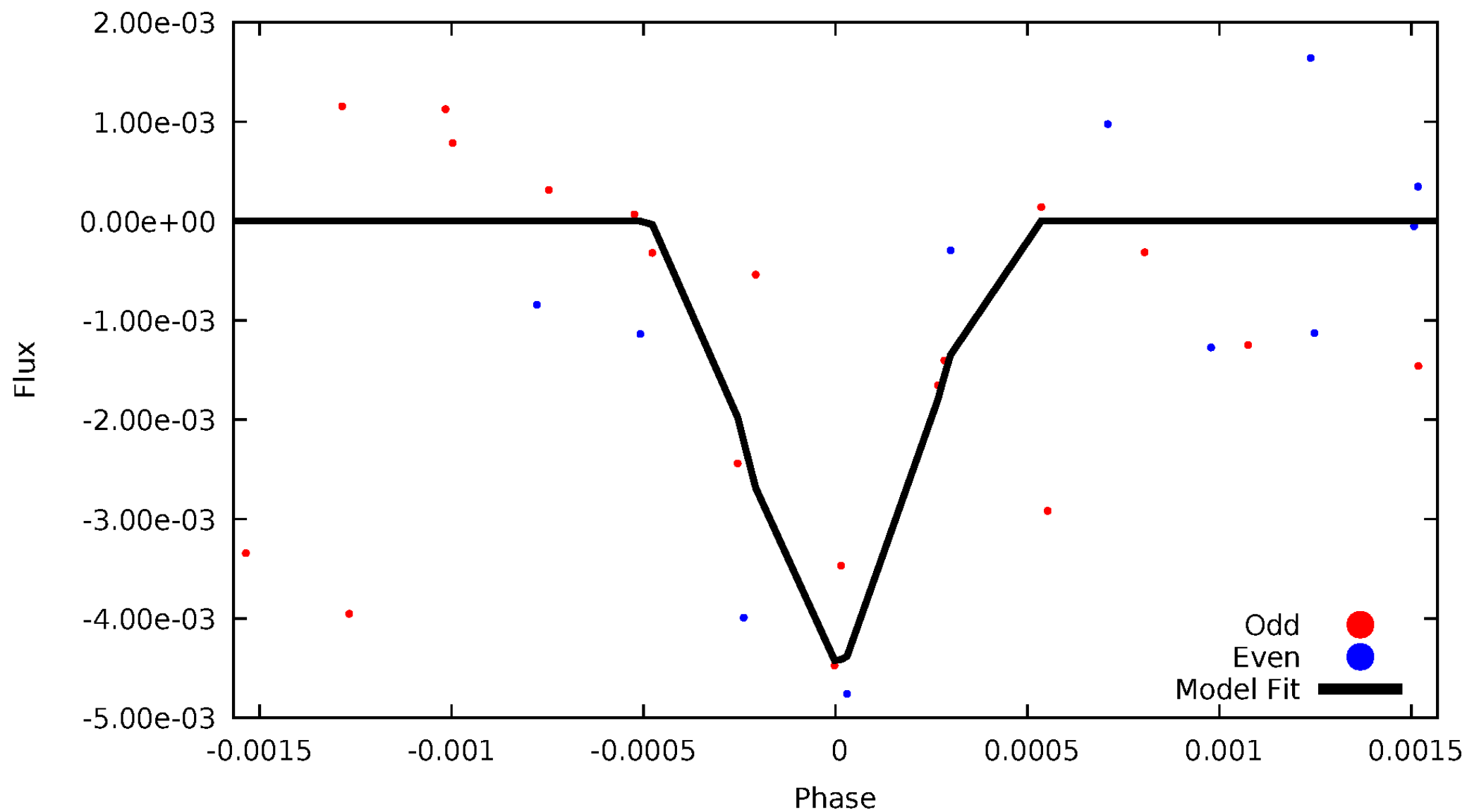


TCE 010658802-05



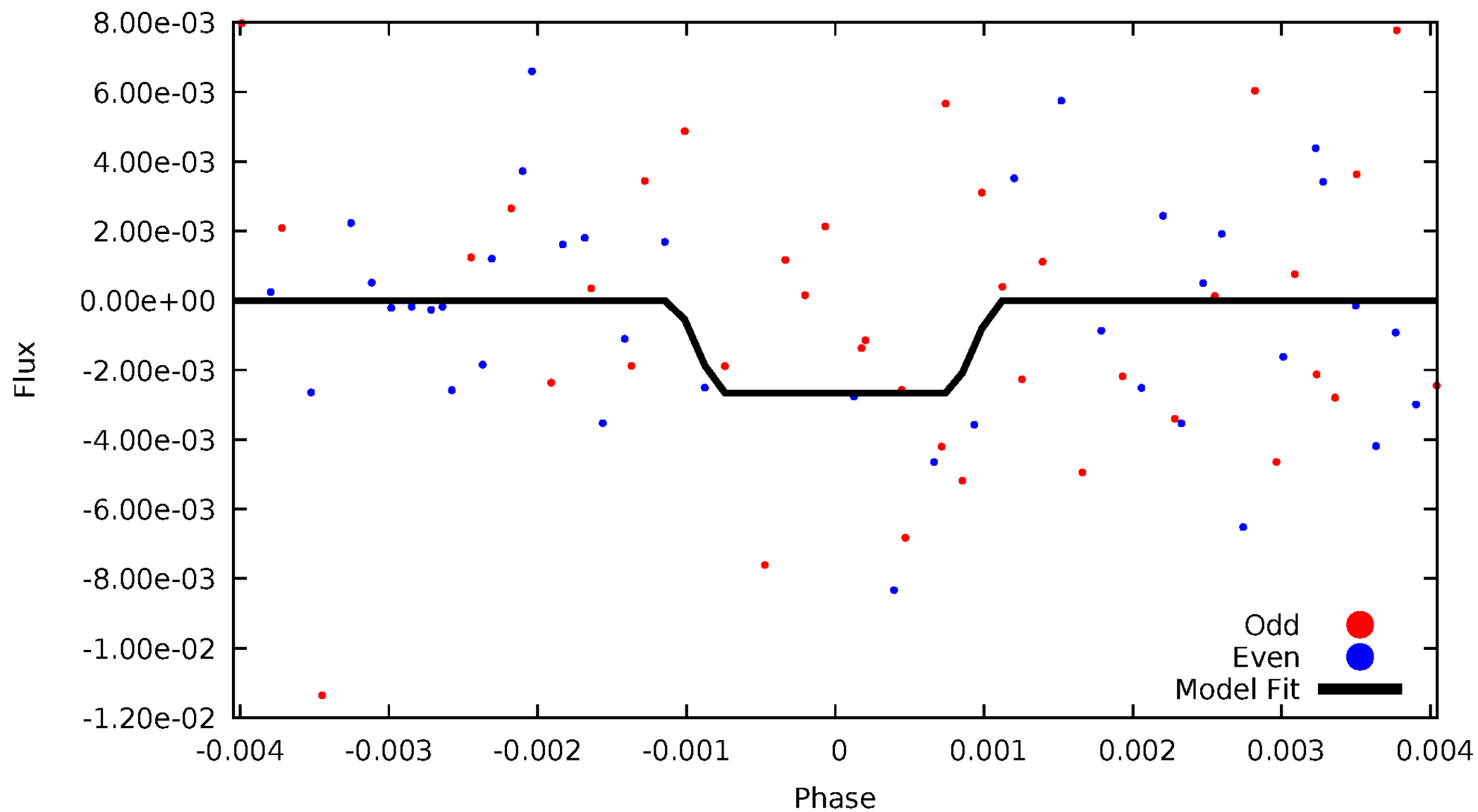
DV Odd/Even

TCE 010658802-05



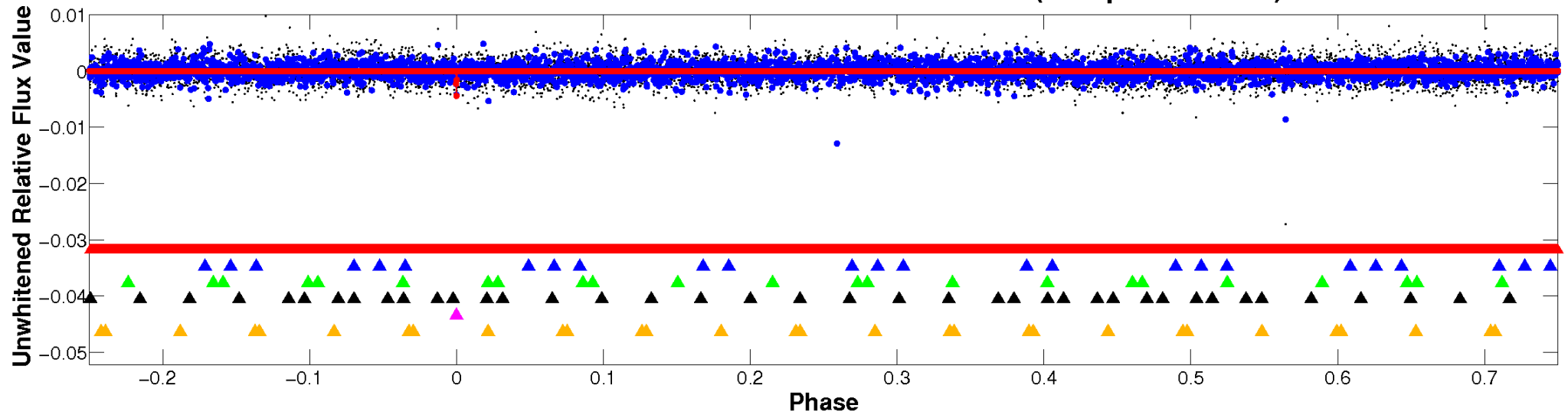
ALT Odd/Even

TCE 010658802-05

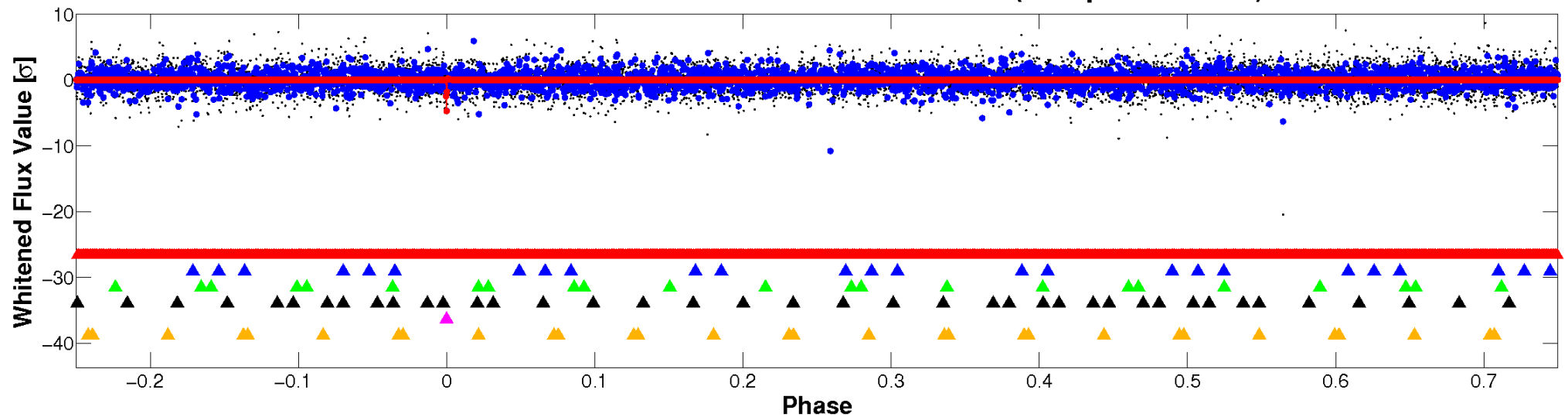


Non-Whitened Vs. Whitened Light Curve

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

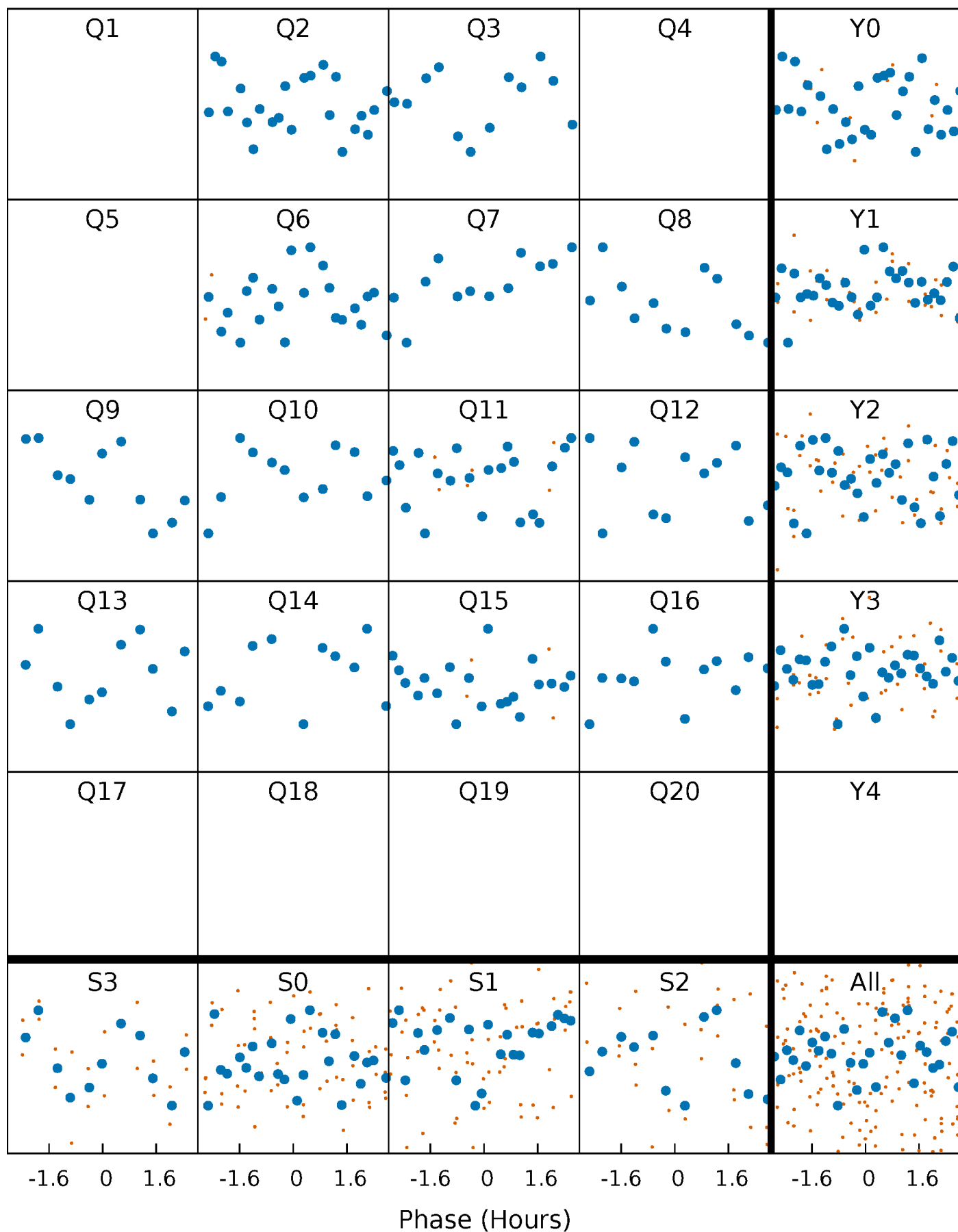


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



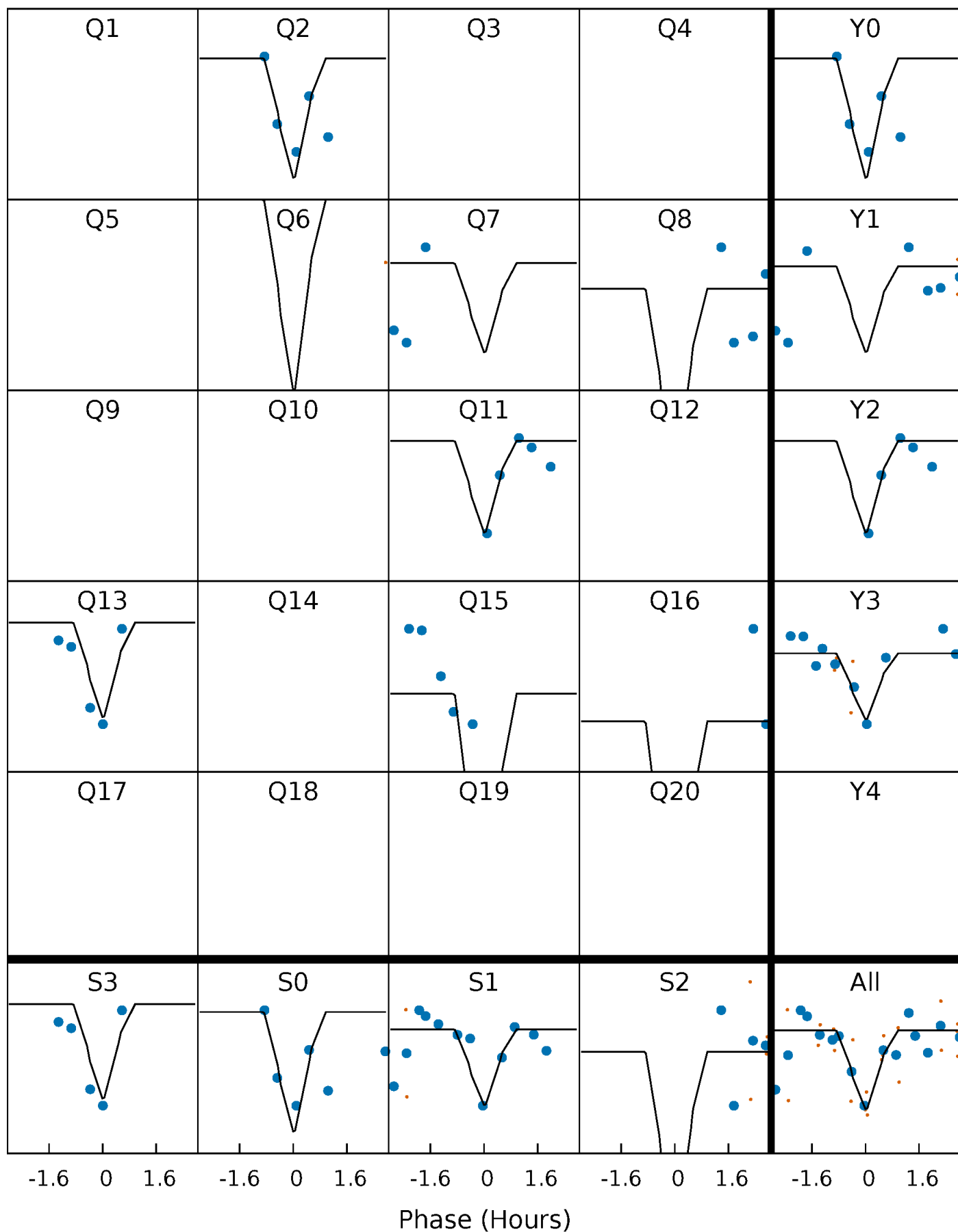
PDC Quarter-Phased Transit Curves

TCE 010658802-05 $P = 75.902738$ Days $T_0 = 172.469453$ (BKJD)



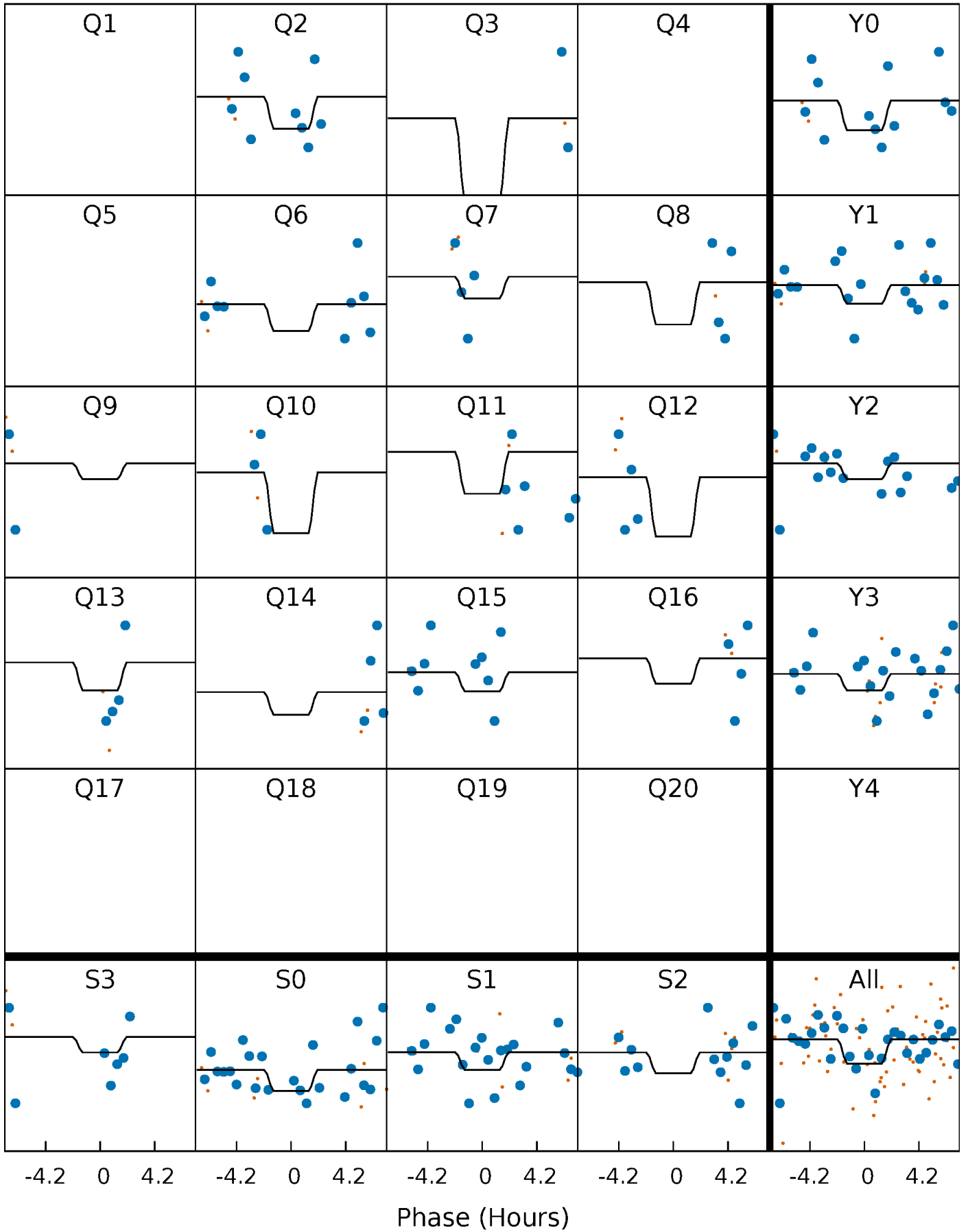
DV Quarter-Phased Transit Curves

TCE 010658802-05 $P = 75.902738$ Days $T_0 = 172.469453$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

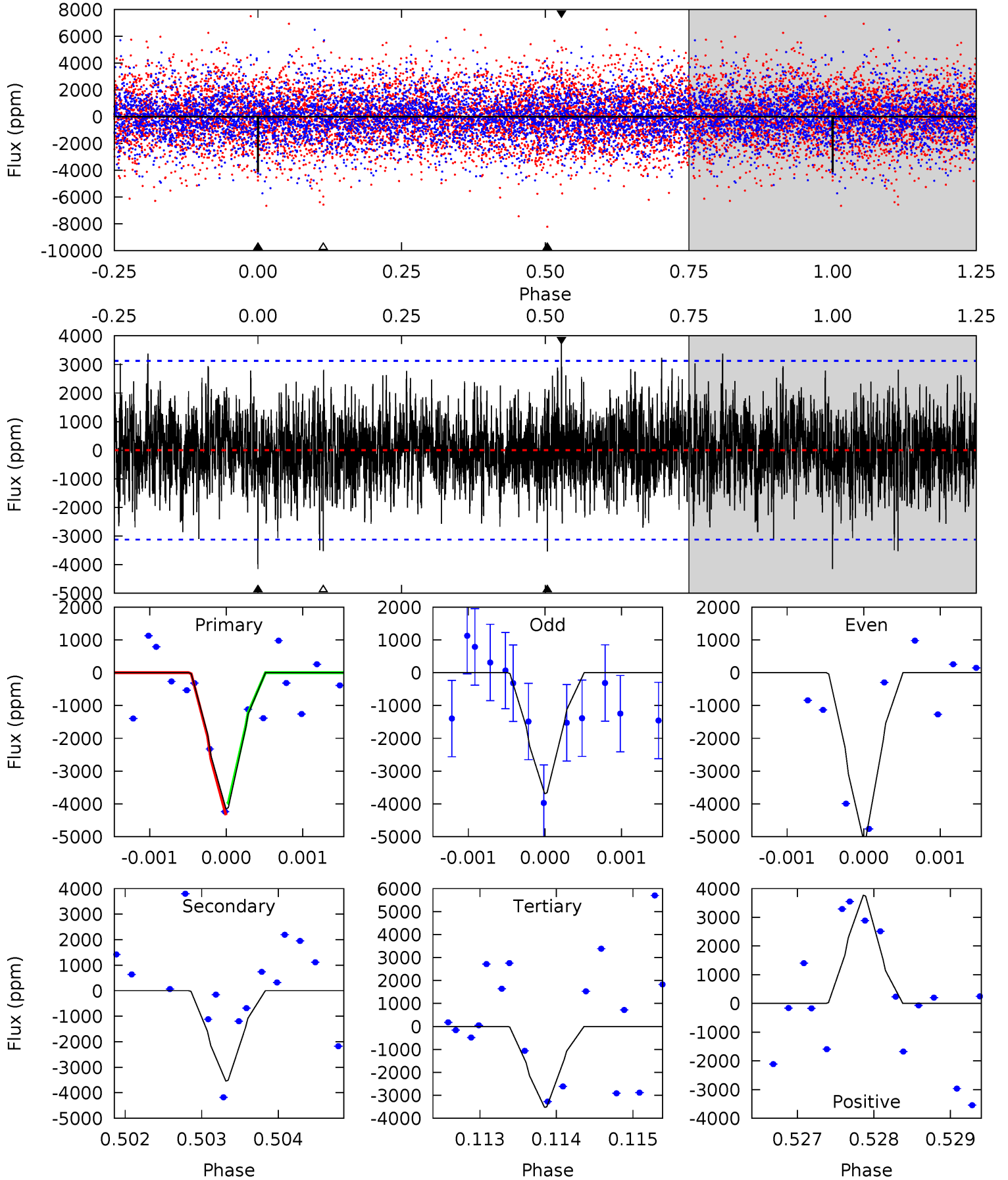
TCE 010658802-05 $P = 75.901560$ Days $T_0 = 172.417433$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-05, P = 75.902738 Days, E = 96.566715 Days

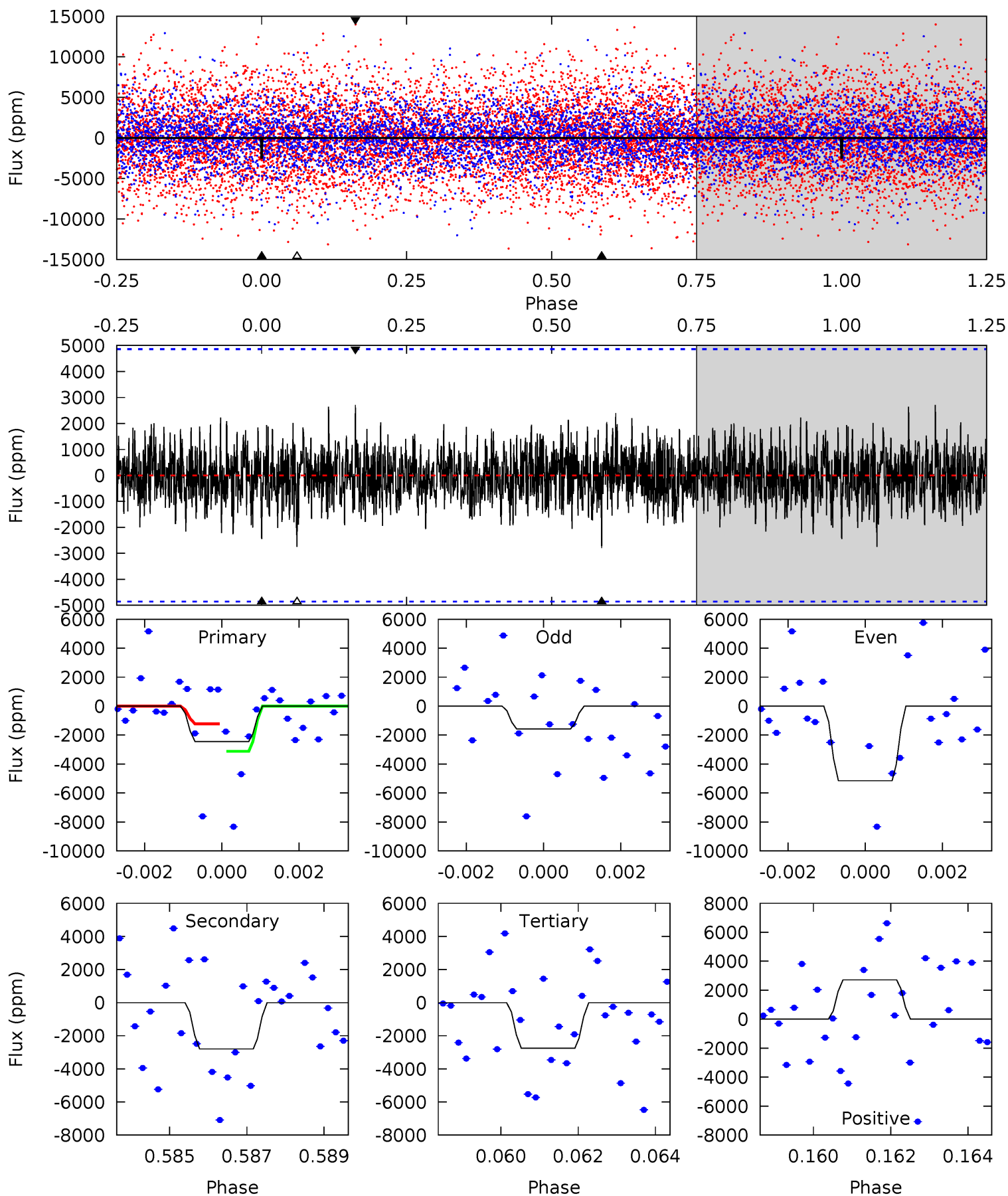
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.23 | 6.16 | 6.14 | 6.56 | 5.44 | 3.28 | 1.62 | 1.09 | 0.67 | 0.03 | -0.40 | 1.12 | 0.87 | 0.48 | 0.31 |



Alt Model-Shift Uniqueness Test

010658802-05, P = 75.901560 Days, E = 96.515873 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.68 | 3.06 | 3.01 | 2.97 | 5.31 | 3.07 | 0.86 | -0.33 | -0.29 | 0.05 | 0.09 | 1.75 | 1.01 | 0.49 | 0.98 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-05 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|------------------------------|-------------------|-----------------------|---------------------------|
| DV | -3537 ± 574 | $775.33^{+902.55}_{-552.68}$ | 974^{+75}_{-60} | 1789^{+721}_{-3528} | $0.537^{+6.003}_{-0.423}$ |
| Alt. | -2798 ± 914 | $742.64^{+786.30}_{-504.68}$ | 976^{+76}_{-60} | 1703^{+693}_{-3458} | $0.452^{+3.918}_{-0.348}$ |

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 $A_{obs} \gg 1.0$

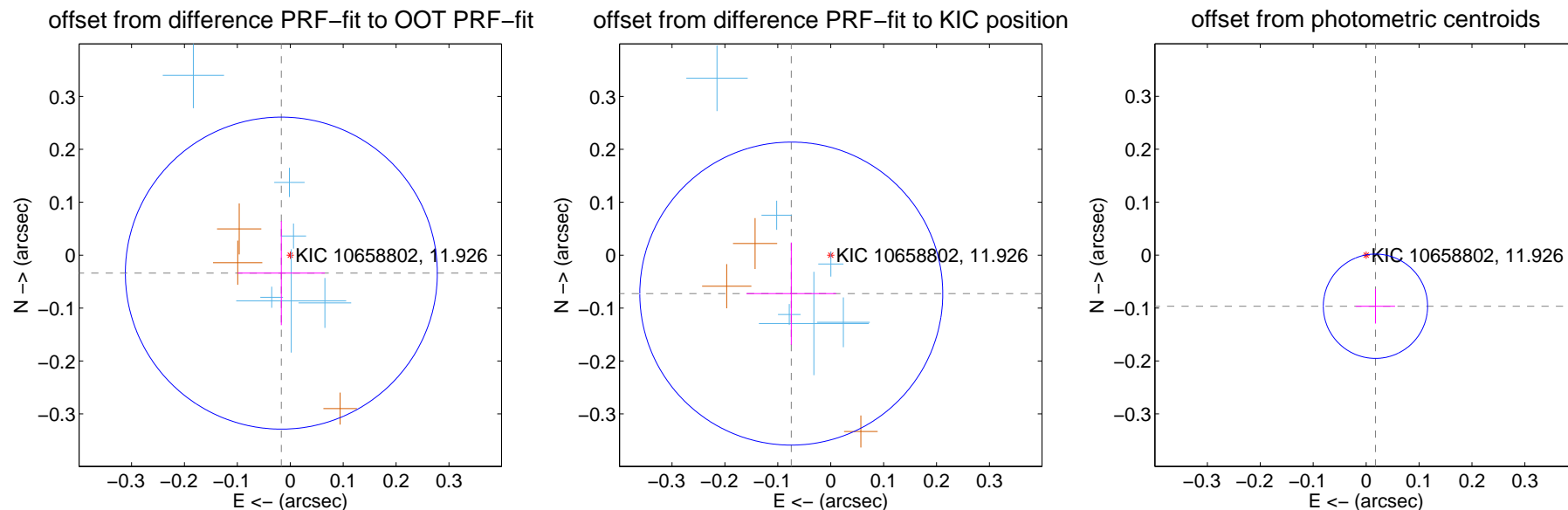
DV Centroid Data

Supplemental centroid analysis for 010658802-05. **Kepler magnitude: 11.93.** Transit SNR 9.66

There are 8 quarters with good PRF difference image offsets

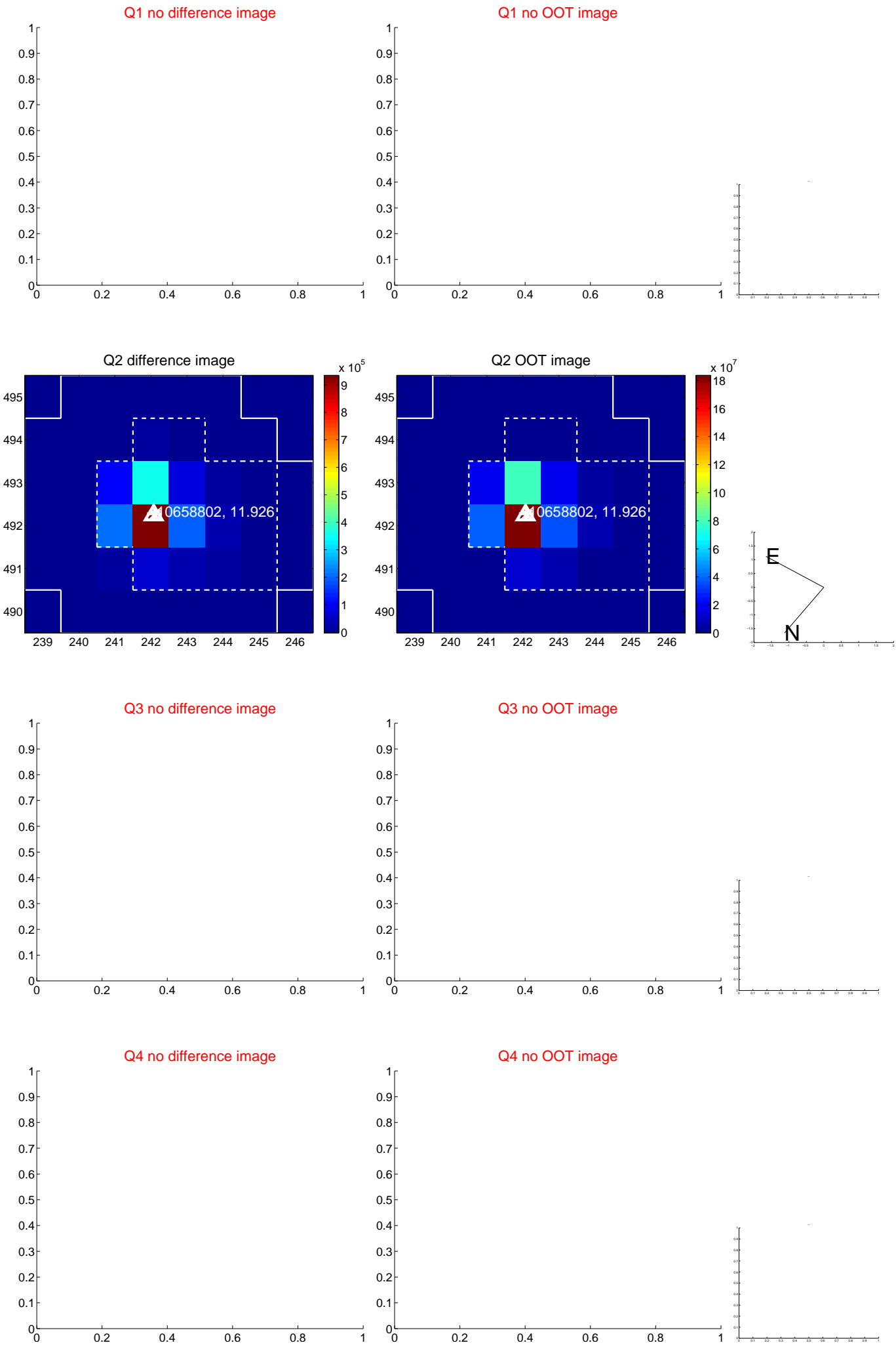
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.038 ± 0.098 | 0.39 | 0.017 ± 0.082 | -0.034 ± 0.098 |
| PRF-fit source offset from KIC position | 0.104 ± 0.095 | 1.09 | 0.075 ± 0.085 | -0.073 ± 0.097 |
| photometric centroid source offset | 0.10 ± 0.03 | 2.99 | -0.02 ± 0.04 | -0.10 ± 0.03 |

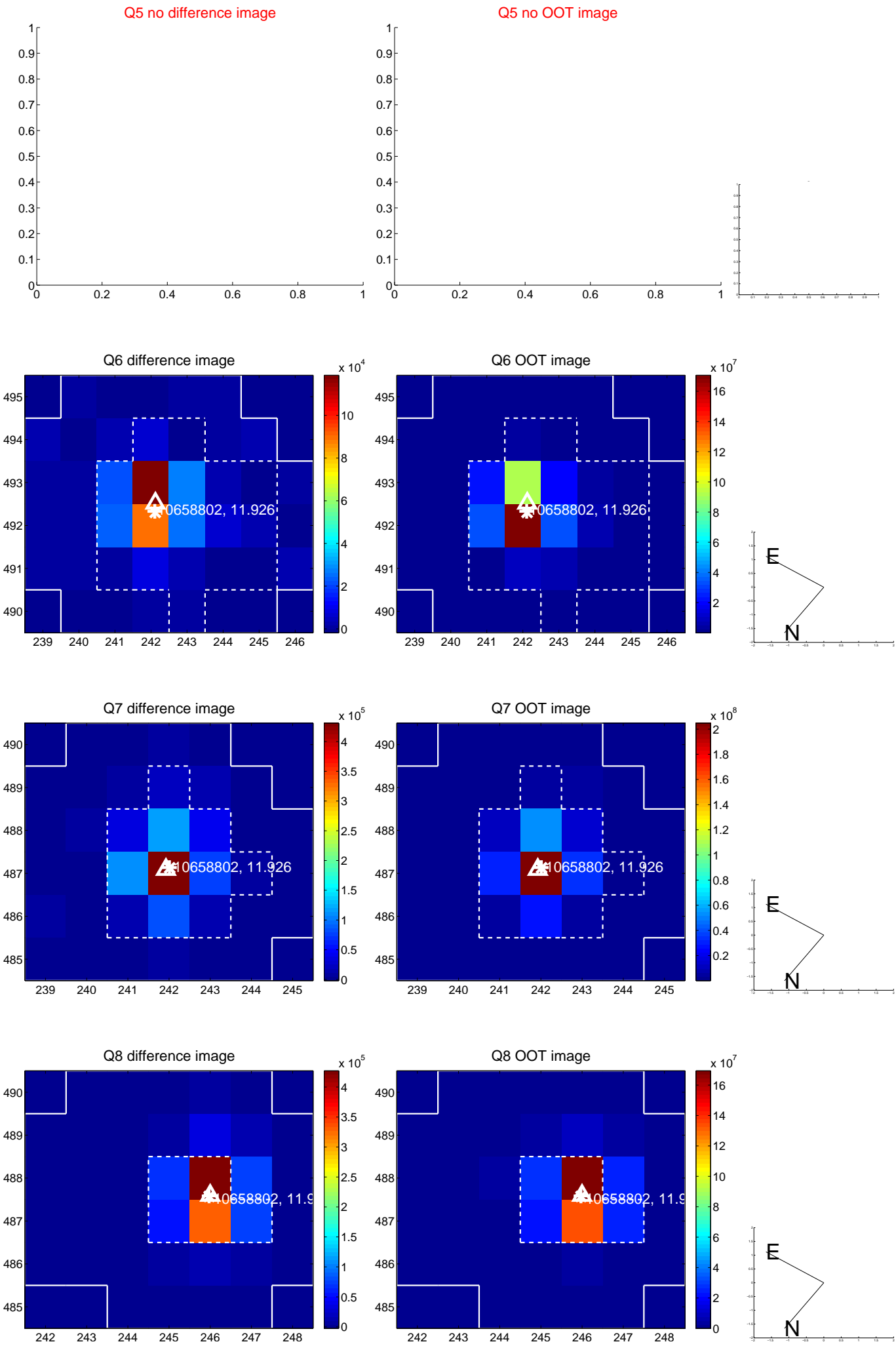


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

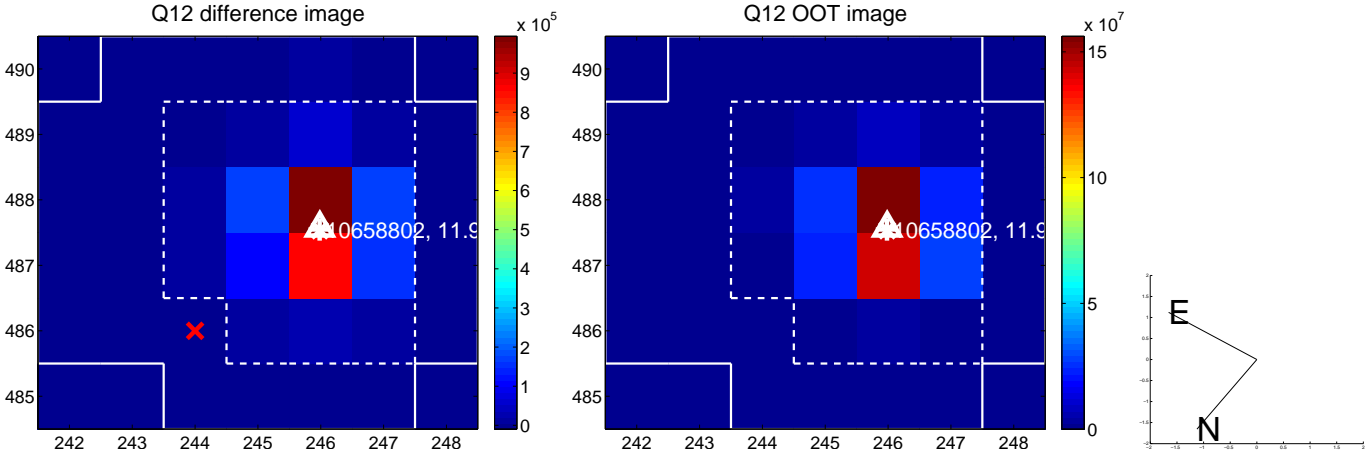
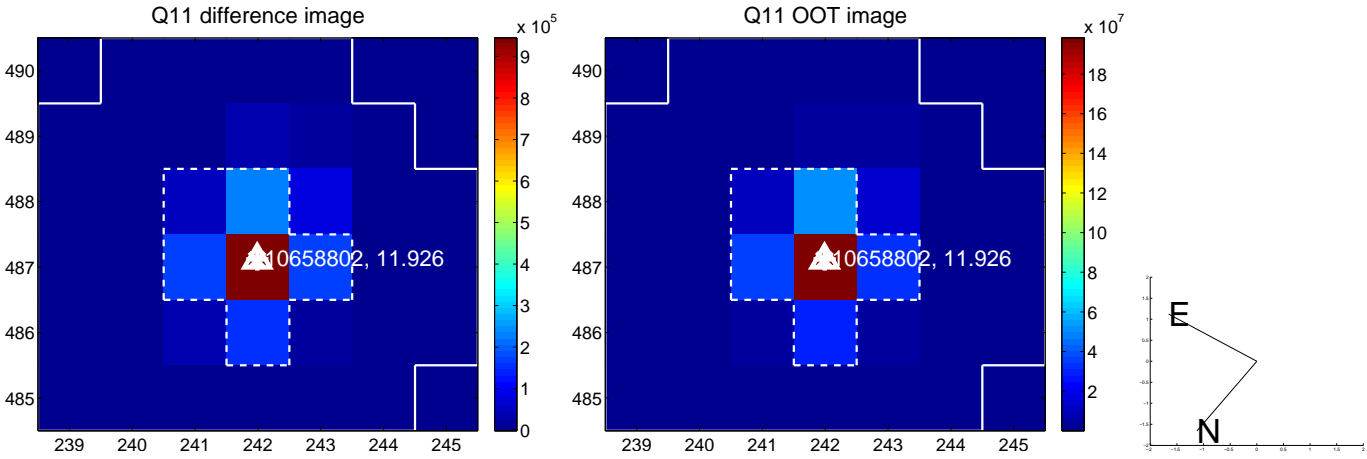
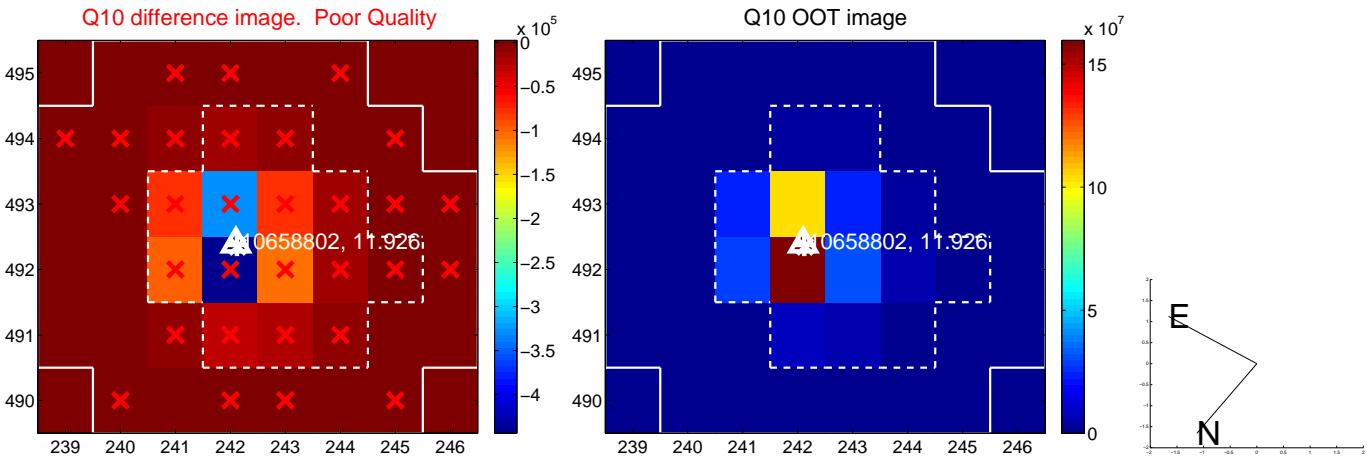
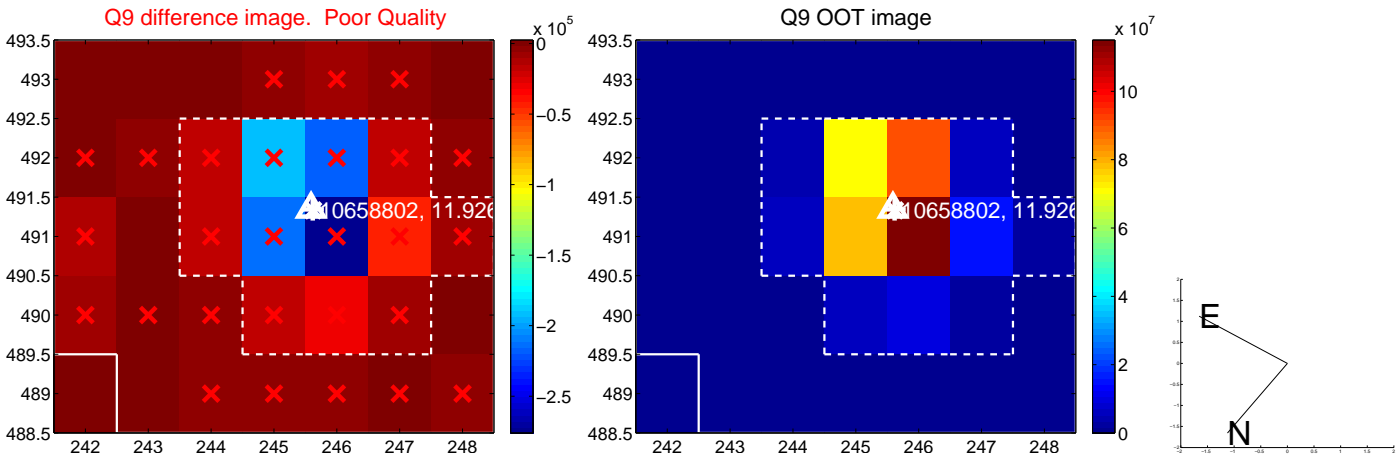
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



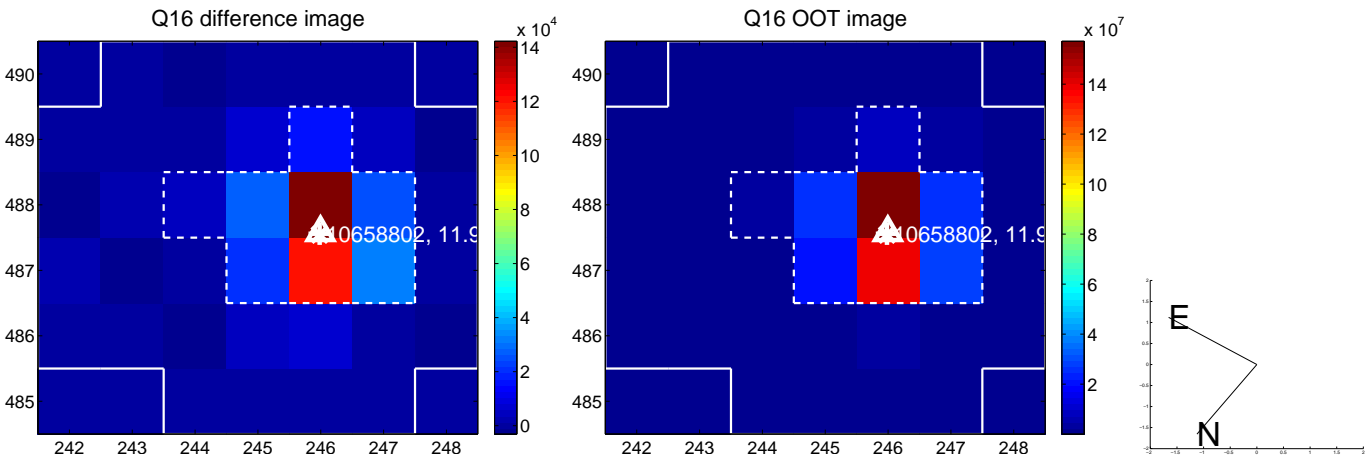
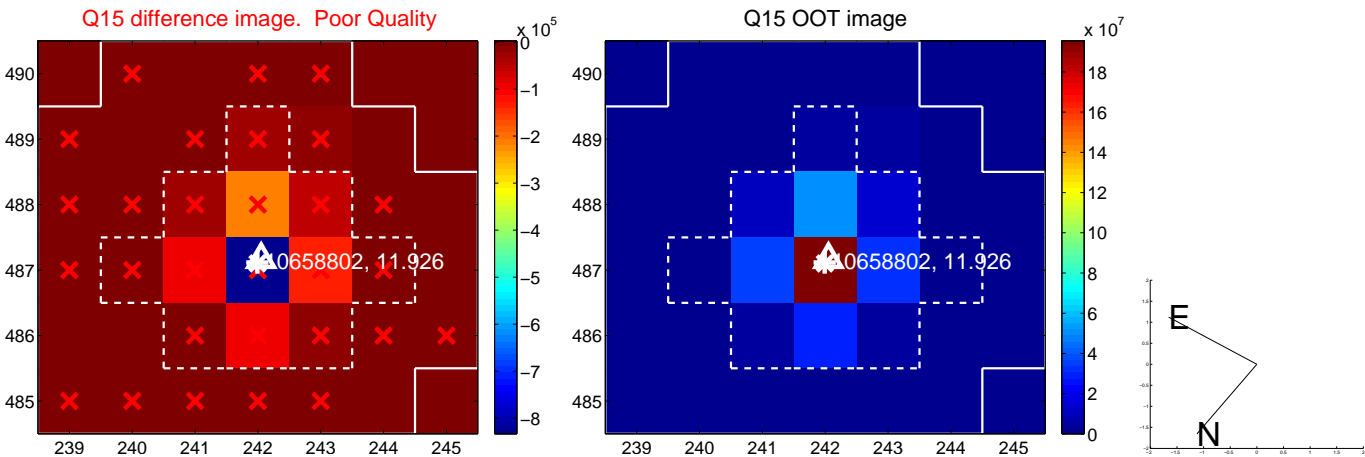
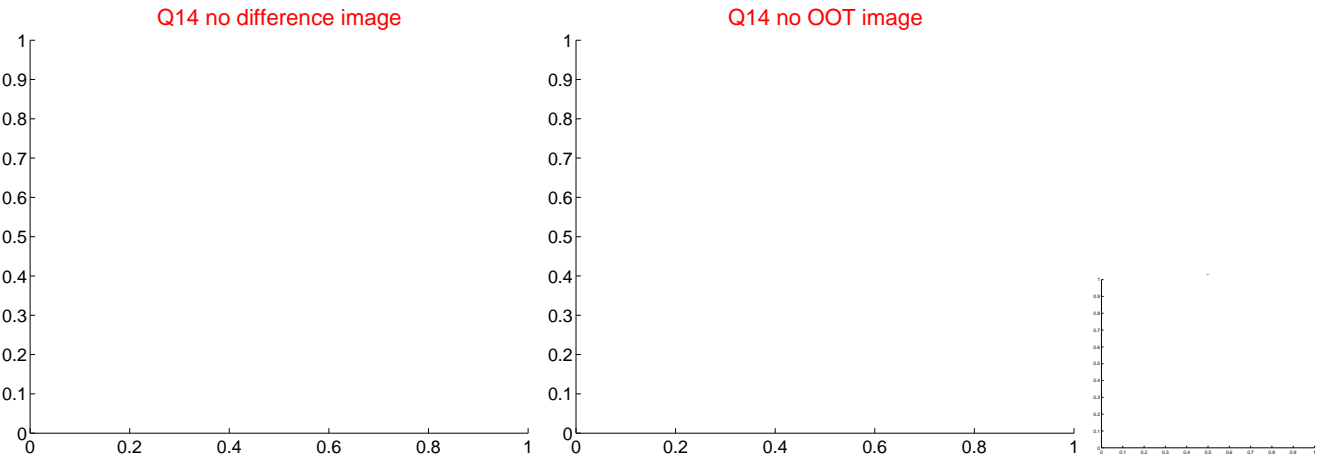
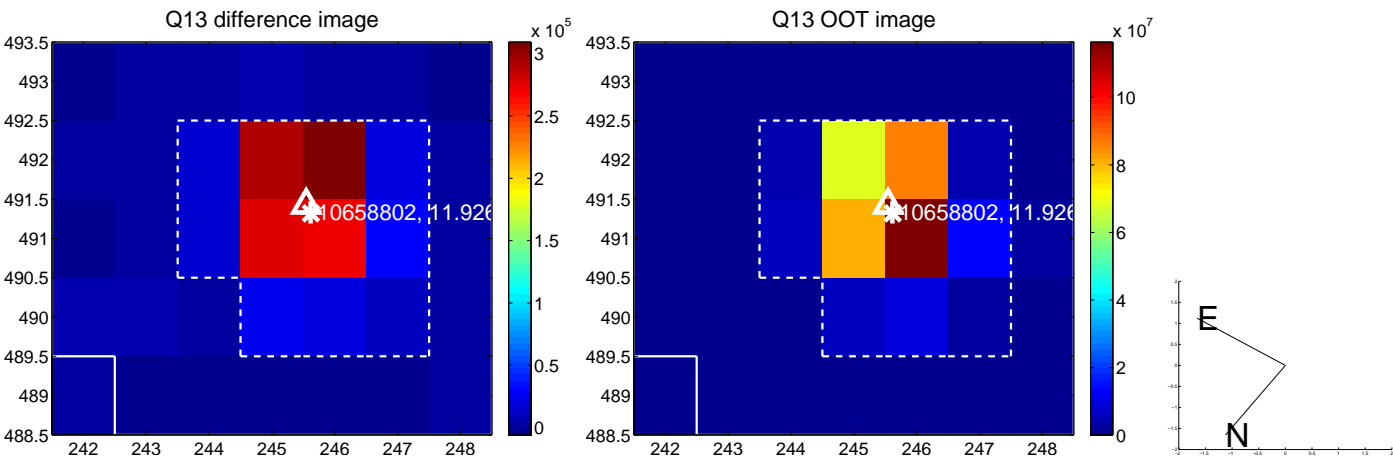
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

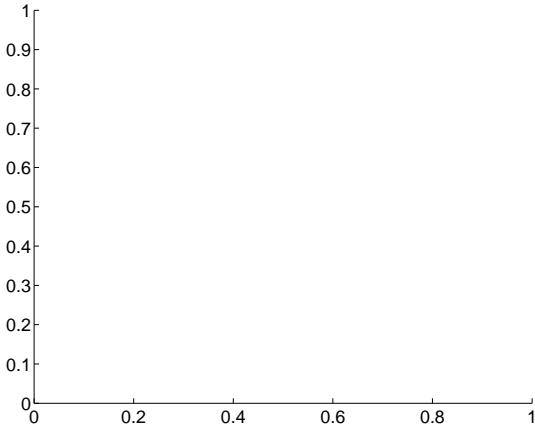


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

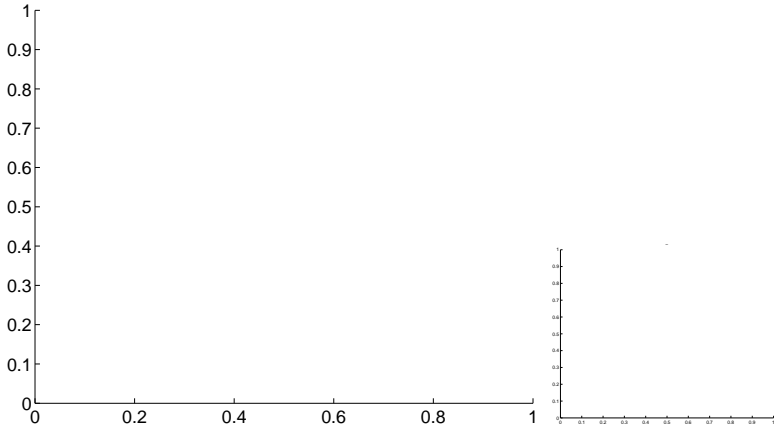


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

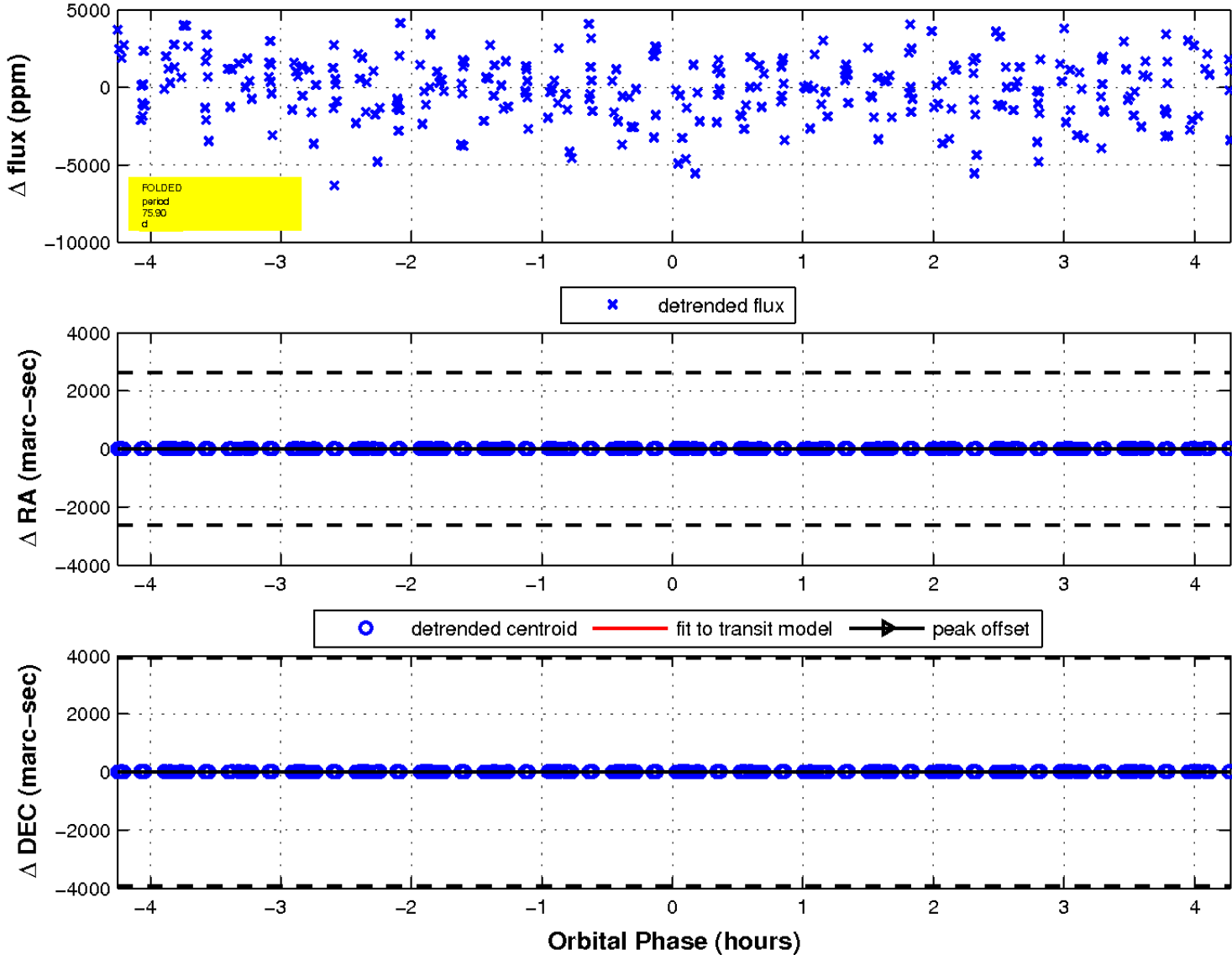
Q17 no difference image



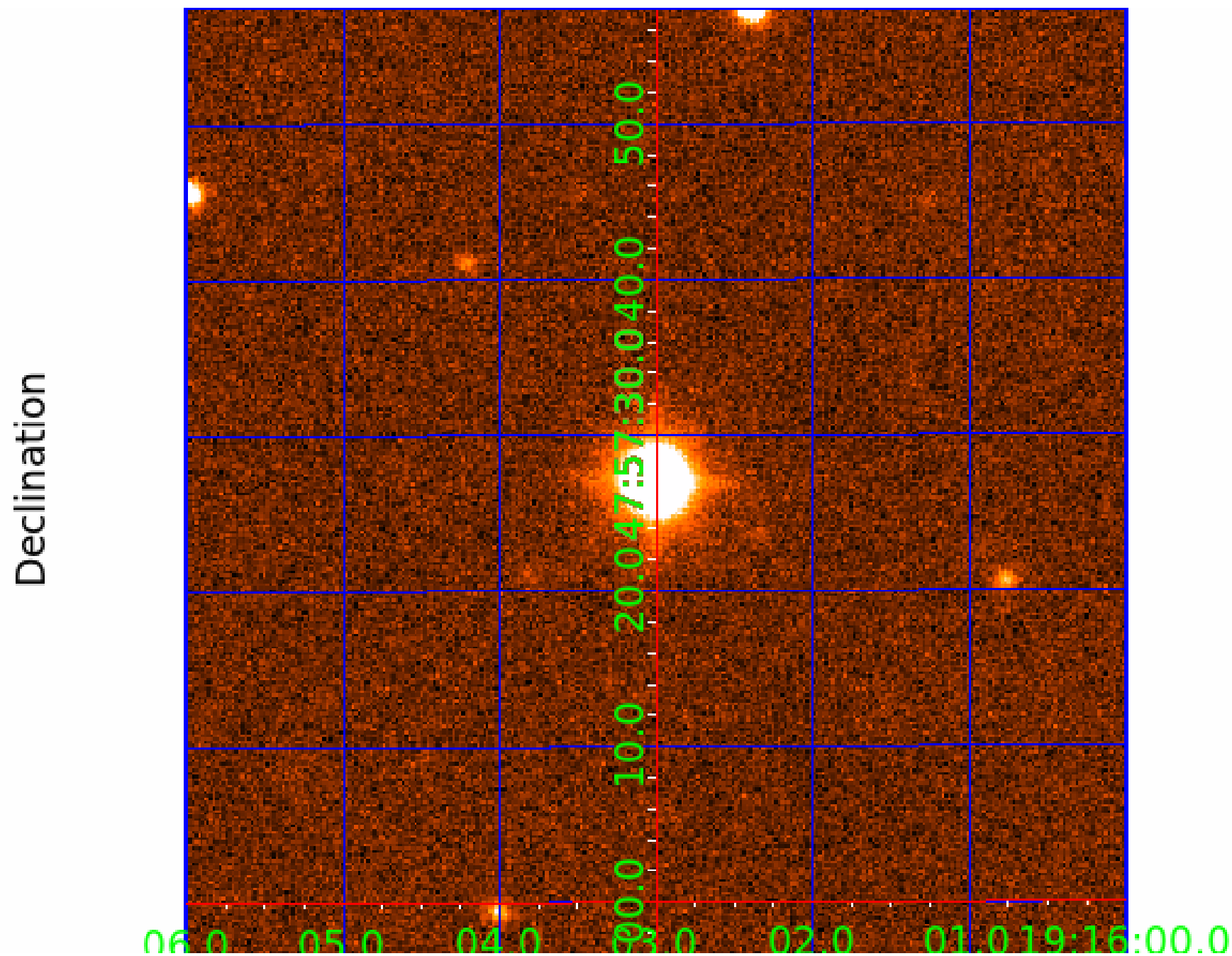
Q17 no OOT image



fluxWeightedCentroids, Planet 5 of 6



UKIRT Image



KIC 010658802

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010658802-01 | OBS | No | 0.667610 | 131.872251 | 107.6 | 4.392 | 10.4 | 5.8 | 1.71 | 7700 | 1.84 | 30025.56 |
| 010658802-02 | OBS | No | 59.182539 | 167.174818 | 1553.1 | 5.540 | 9.9 | 7.2 | 1.71 | 7700 | 7.77 | 75.96 |
| 010658802-03 | OBS | No | 61.702502 | 174.102936 | 3294.5 | 3.902 | 8.7 | 10.0 | 1.71 | 7700 | 14.48 | 71.85 |
| 010658802-04 | OBS | No | 36.670806 | 137.372482 | 3920.4 | 1.279 | 9.9 | 10.7 | 1.71 | 7700 | 11.40 | 143.80 |
| 010658802-05 | OBS | No | 75.902738 | 172.469453 | 4422.9 | 1.427 | 9.6 | 9.7 | 1.71 | 7700 | 20.76 | 54.51 |
| 010658802-06 | OBS | No | 47.950275 | 177.969338 | 153.0 | 2.500 | 8.4 | -1.0 | 1.71 | 7700 | 2.15 | 100.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 010658802-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV |
| 010658802-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 010658802-06 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS—HALO_GHOST |

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.

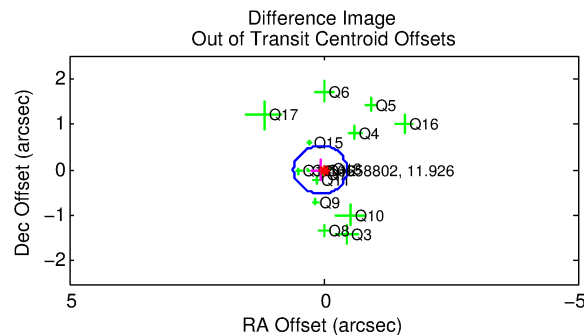
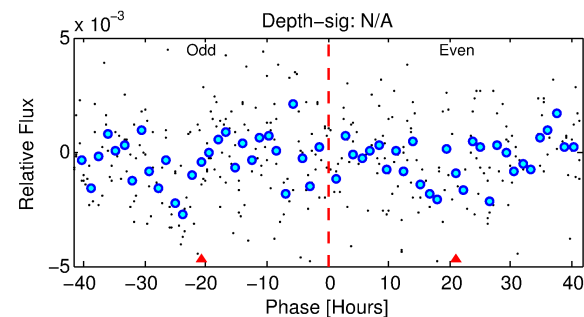
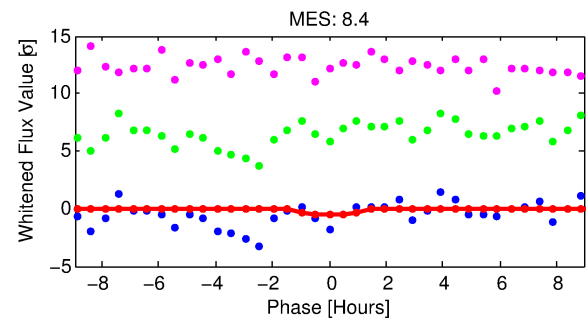
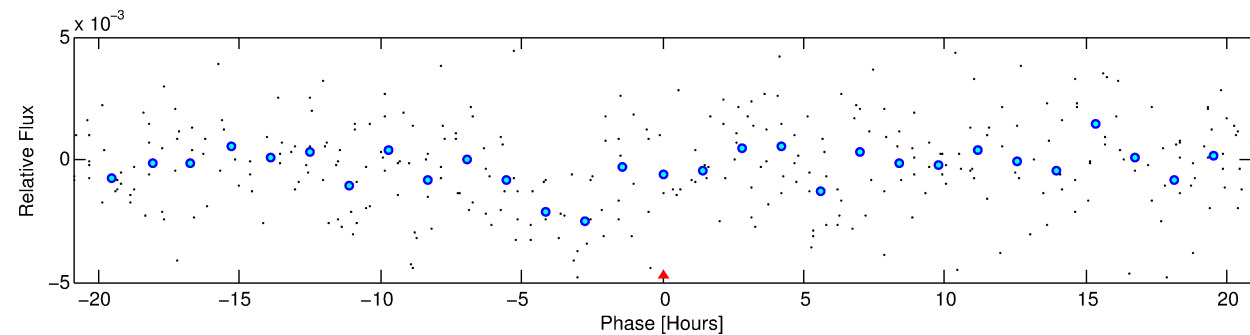
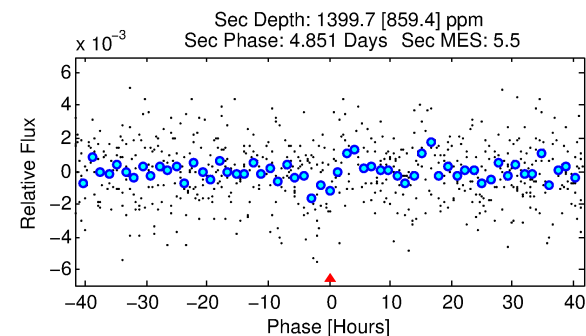
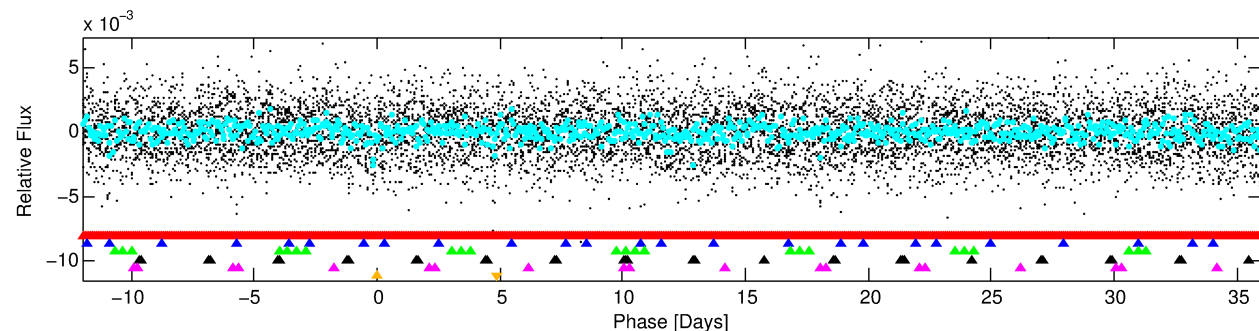
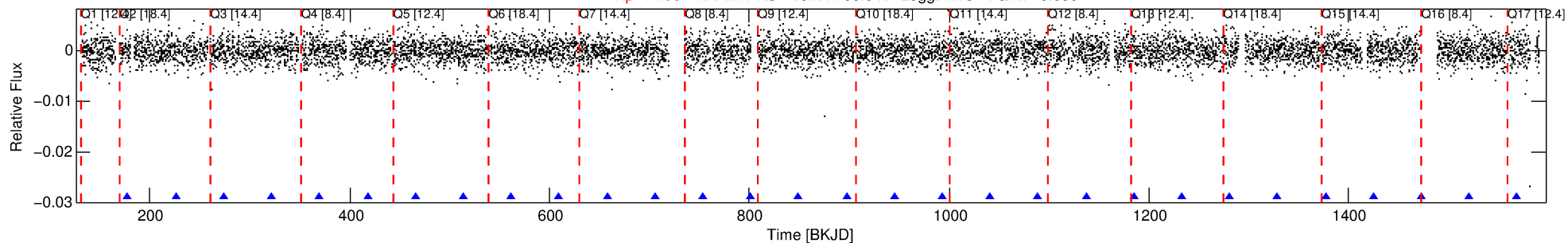
Ephemeris Match Information For 010658802-06

No Significant Match Found

DV One-Page Summary

KIC: 10658802 Candidate: 6 of 6 Period: 47.950 d

Kp: 11.93 R*: 1.71 Rs Teff: 7700.0 K Logg: 4.18 Fe/H: -0.060



TPS TCE Results:

Period = 47.95028 d
Epoch = 177.9693 BKJD

DV fit results are unavailable

DV Diagnostic Results:

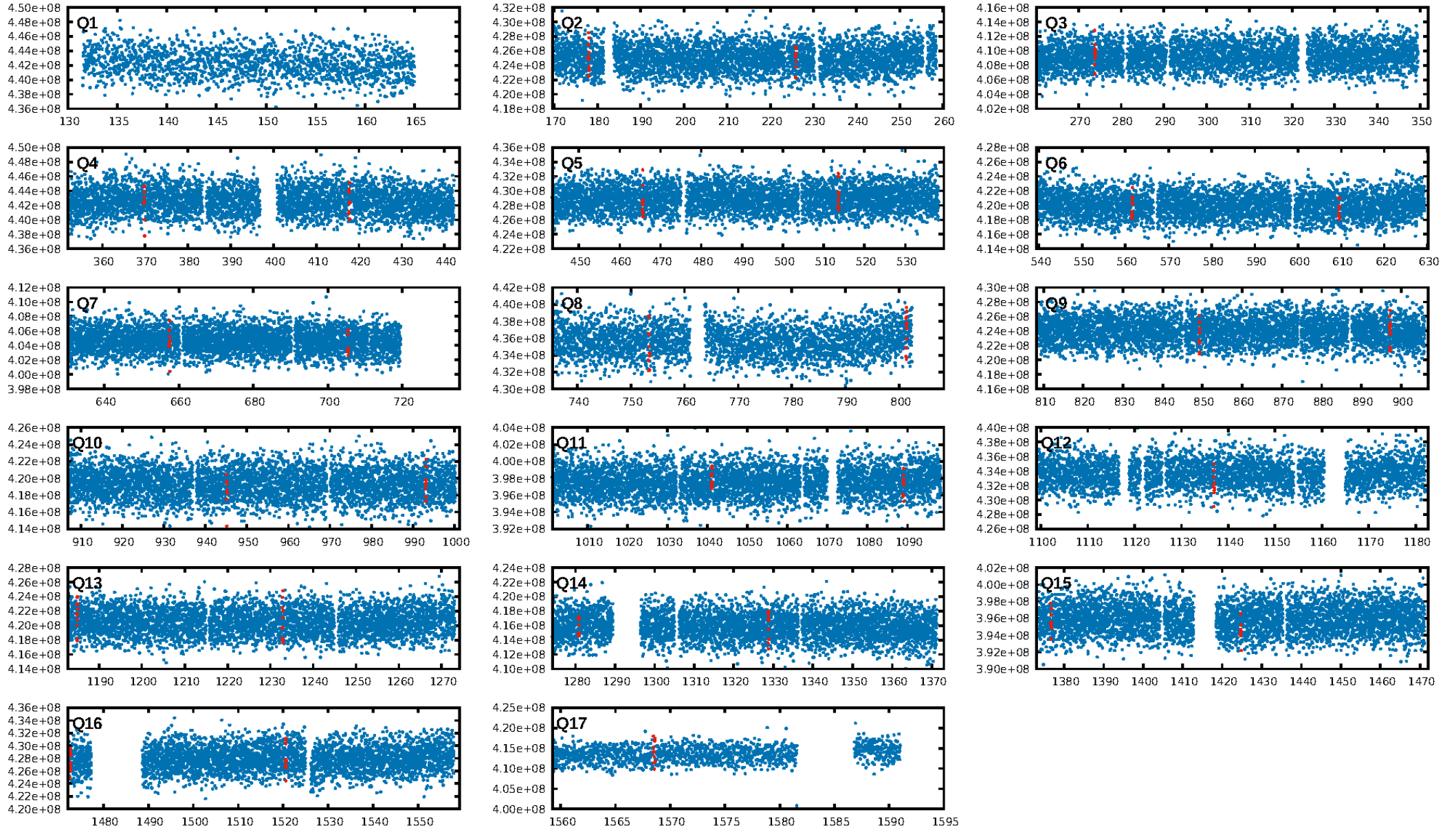
ShortPeriod-sig: 100.0% [96.40σ]
LongPeriod-sig: 100.0% [44.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.51e-08
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 0.2212

Centroid-sig: 46.4%
Centroid-so: 0.075 arcsec [2.11σ]
OotOffset-rm: 0.065 arcsec [0.37σ]
KicOffset-rm: 0.118 arcsec [0.64σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.00 [0/16]

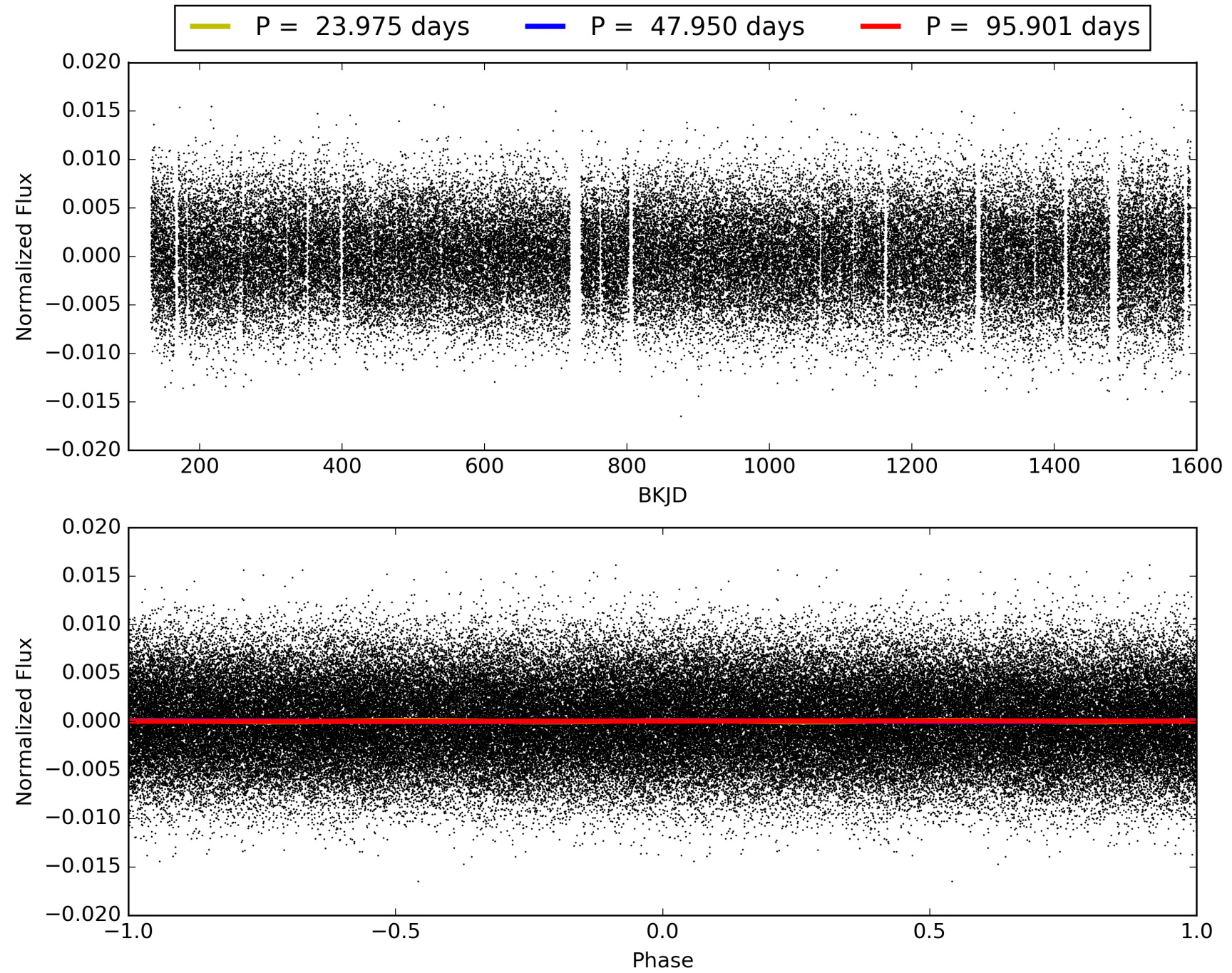
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:29:06 Z

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

TCE 010658802-06, PDC Light Curves

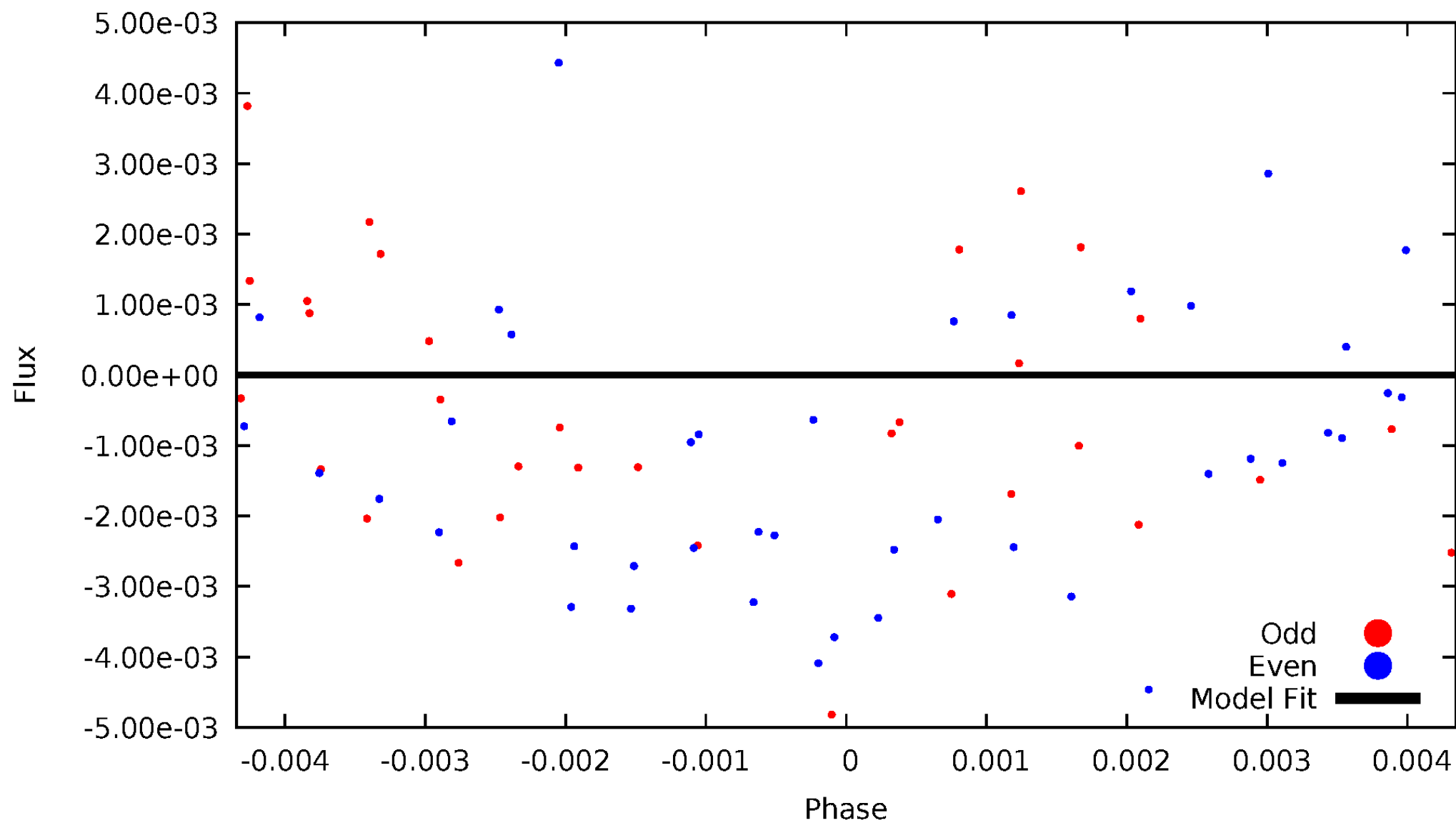


TCE 010658802-06



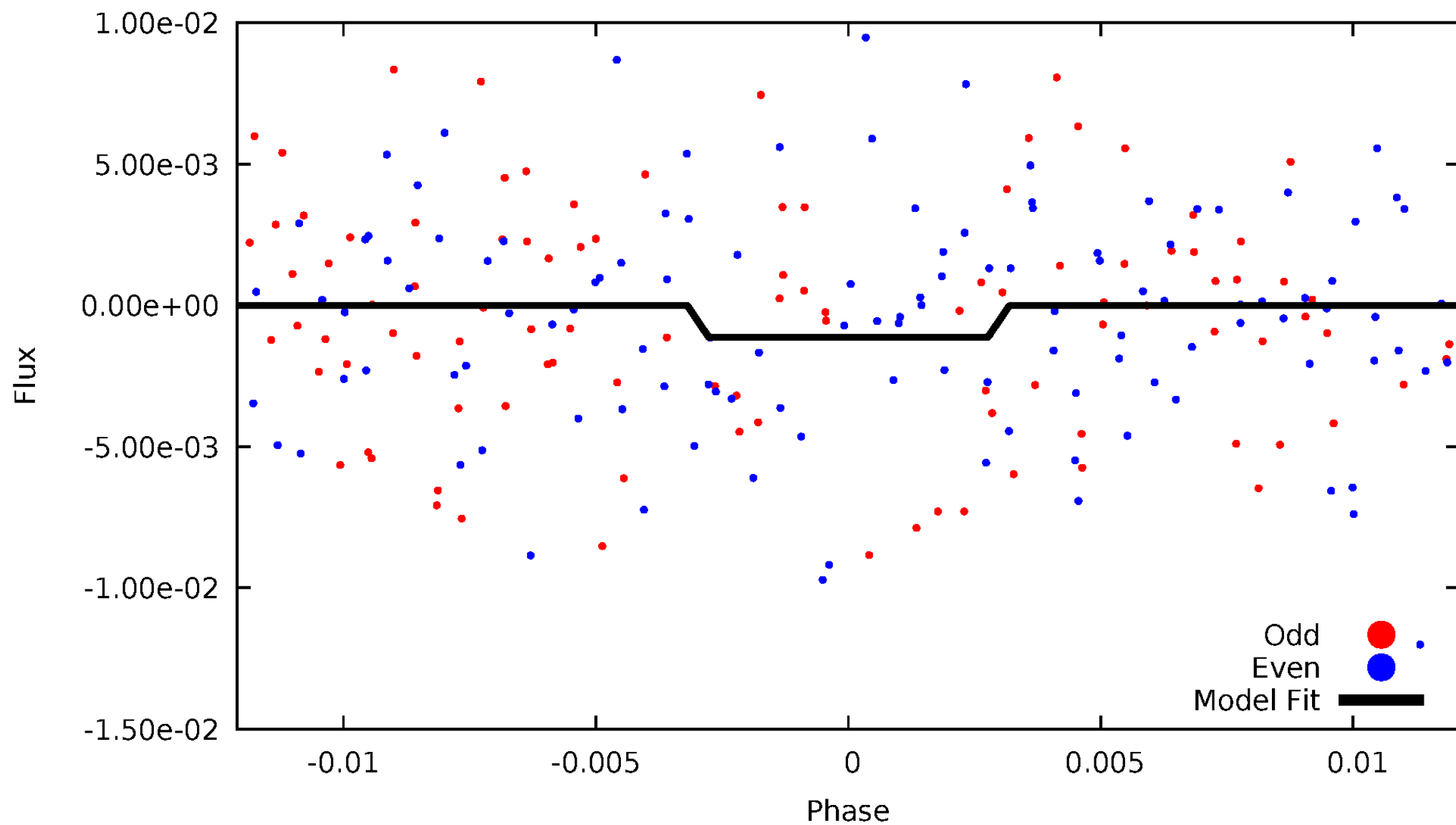
DV Odd/Even

TCE 010658802-06



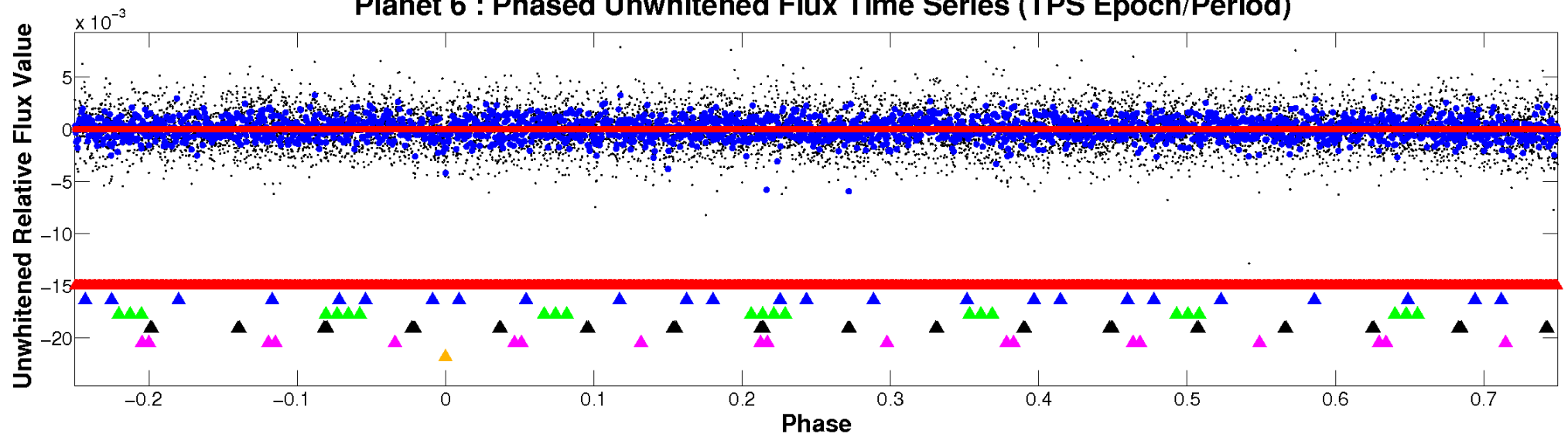
ALT Odd/Even

TCE 010658802-06



Non-Whitened Vs. Whitened Light Curve

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

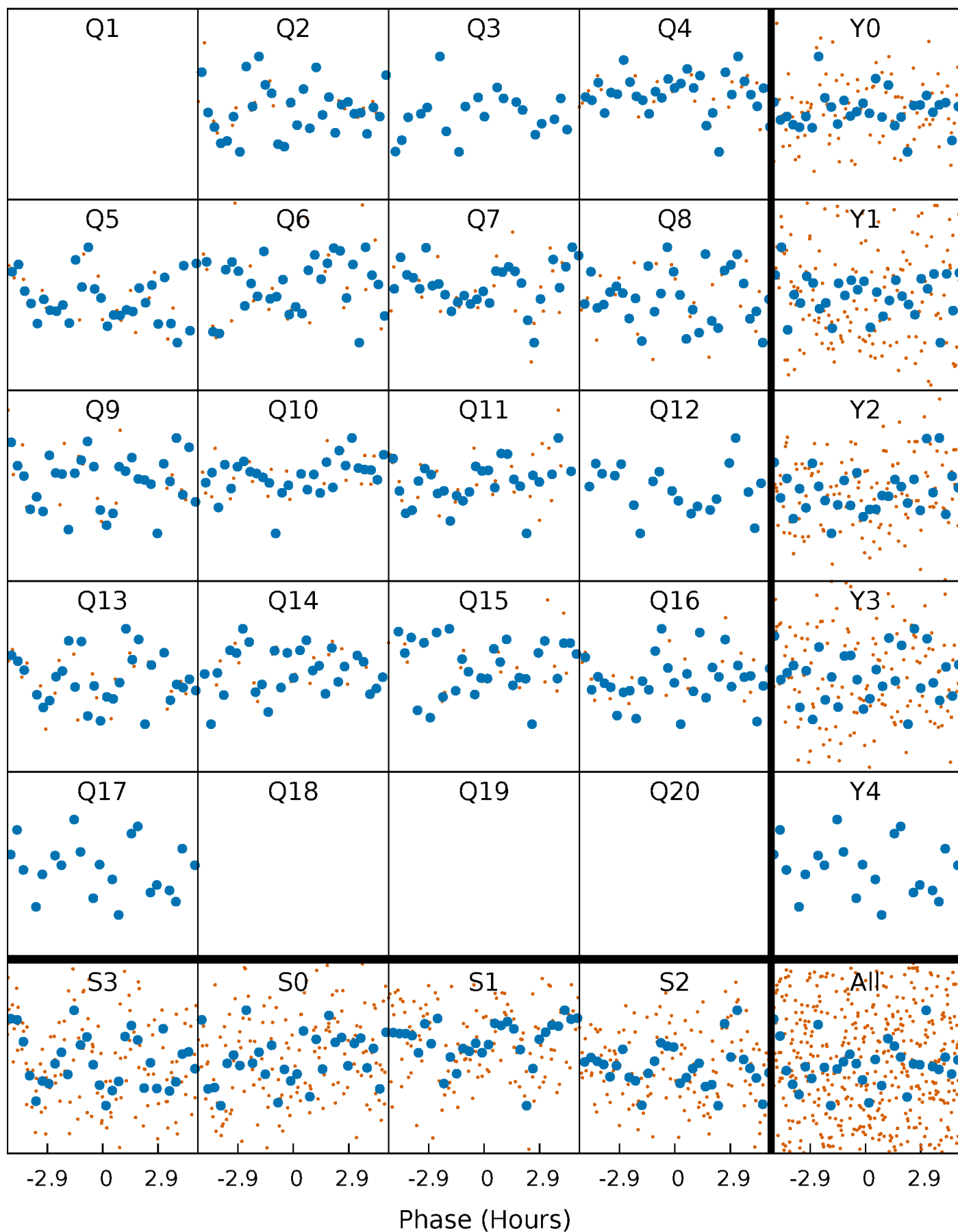


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



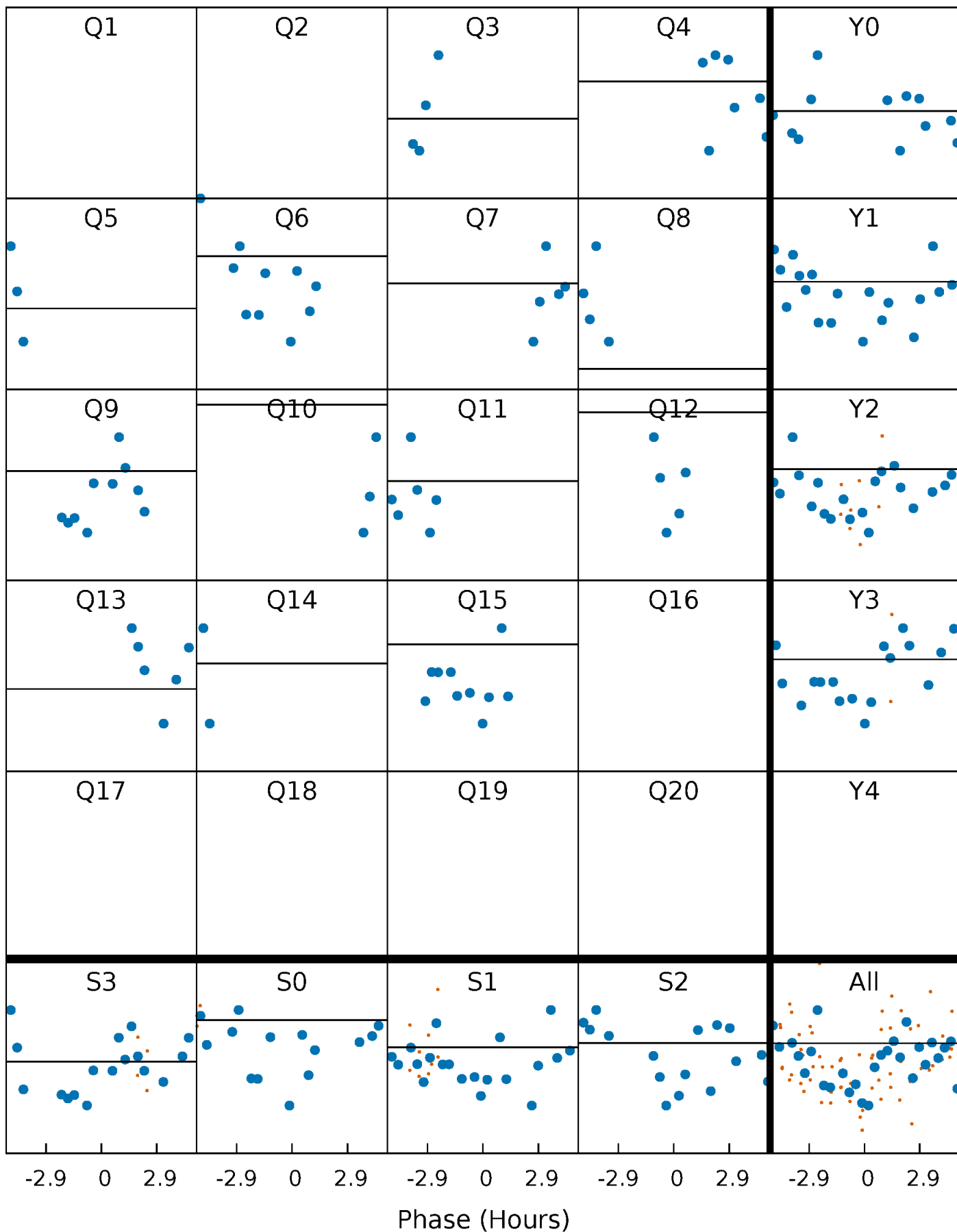
PDC Quarter-Phased Transit Curves

TCE 010658802-06 P= 47.950275 Days $T_0=177.969338$ (BKJD)



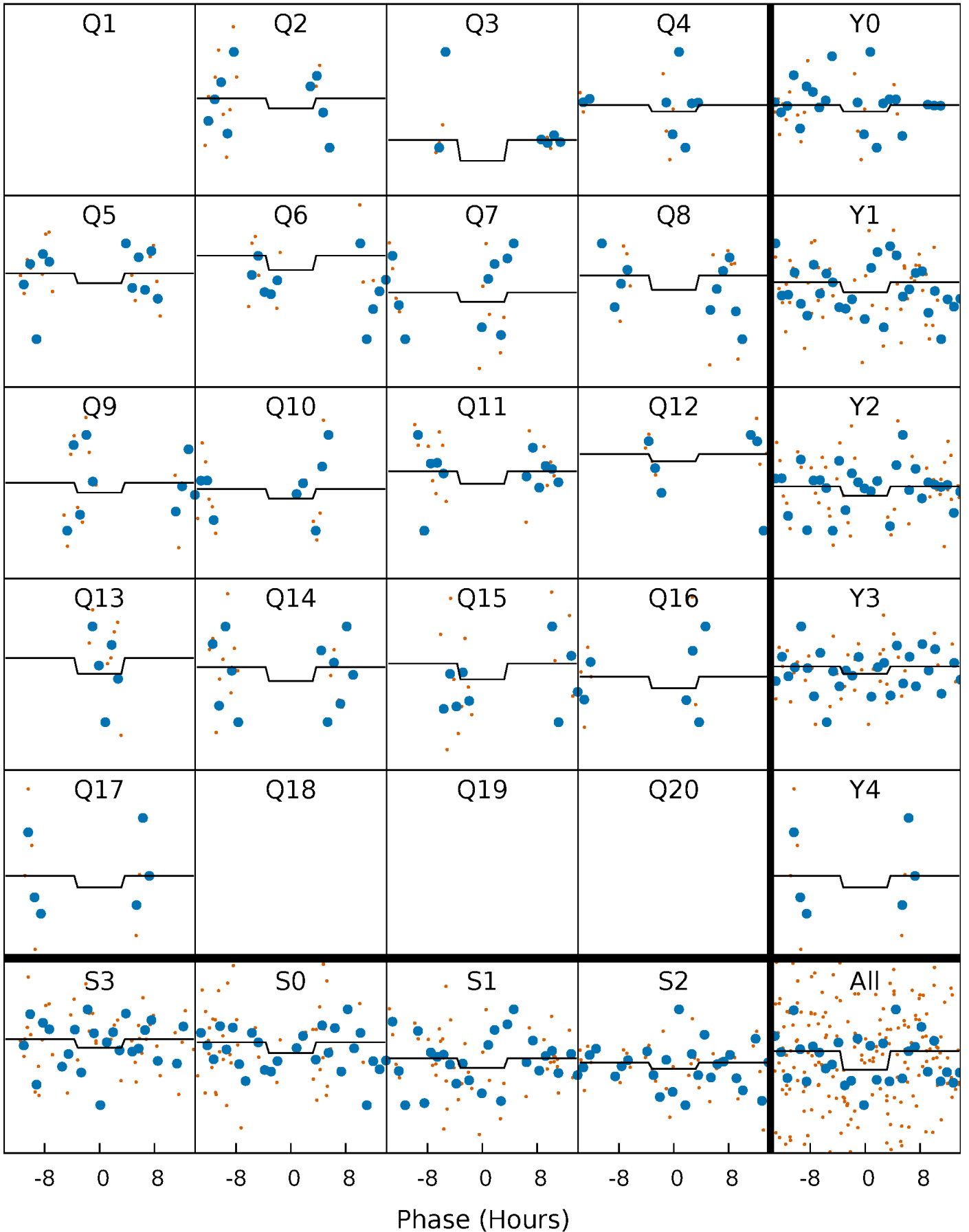
DV Quarter-Phased Transit Curves

TCE 010658802-06 P= 47.950275 Days $T_0=177.969338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

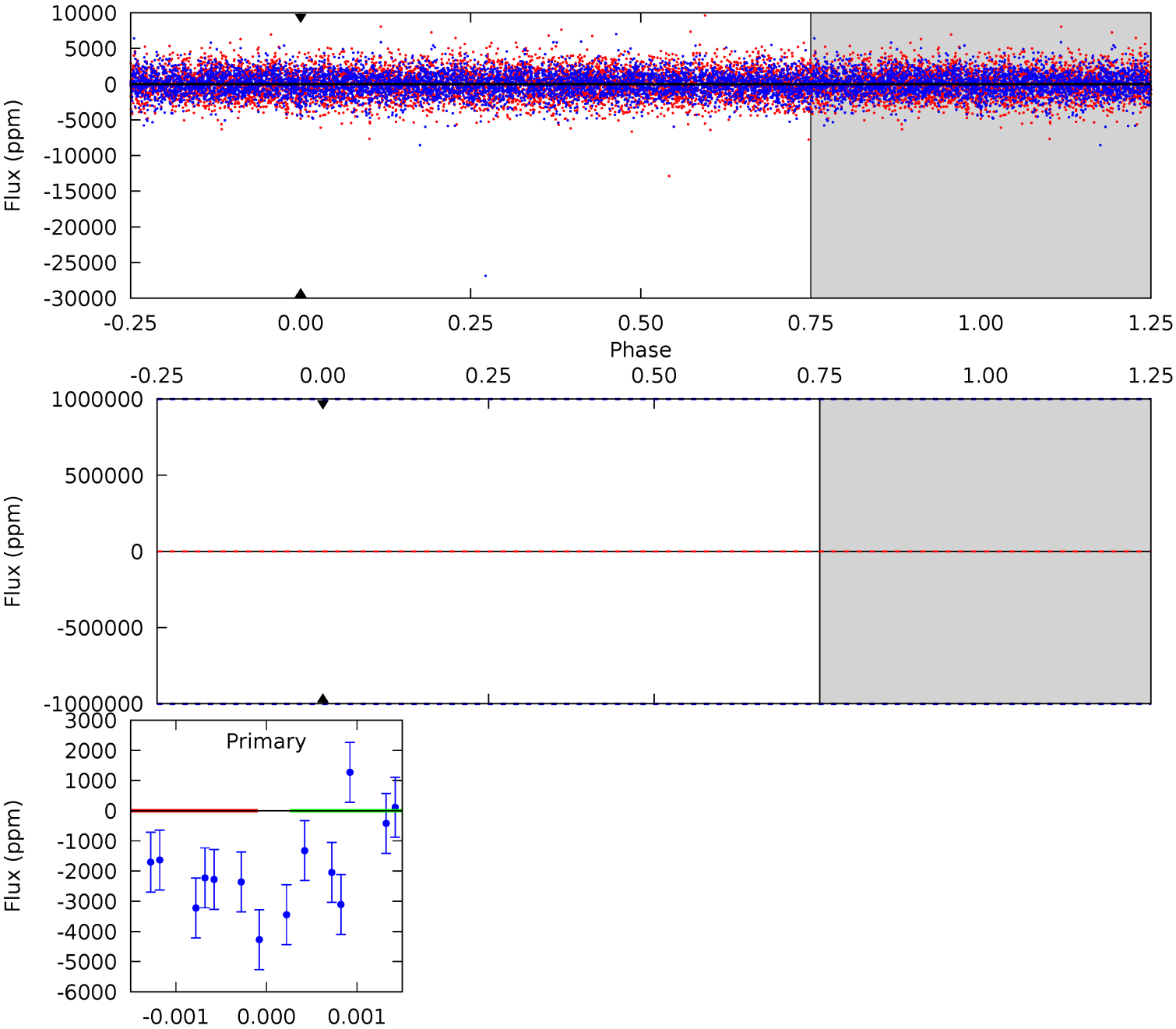
TCE 010658802-06 P= 47.950275 Days $T_0=178.091020$ (BKJD)



DV Model-Shift Uniqueness Test

010658802-06, P = 47.950275 Days, E = 130.019063 Days

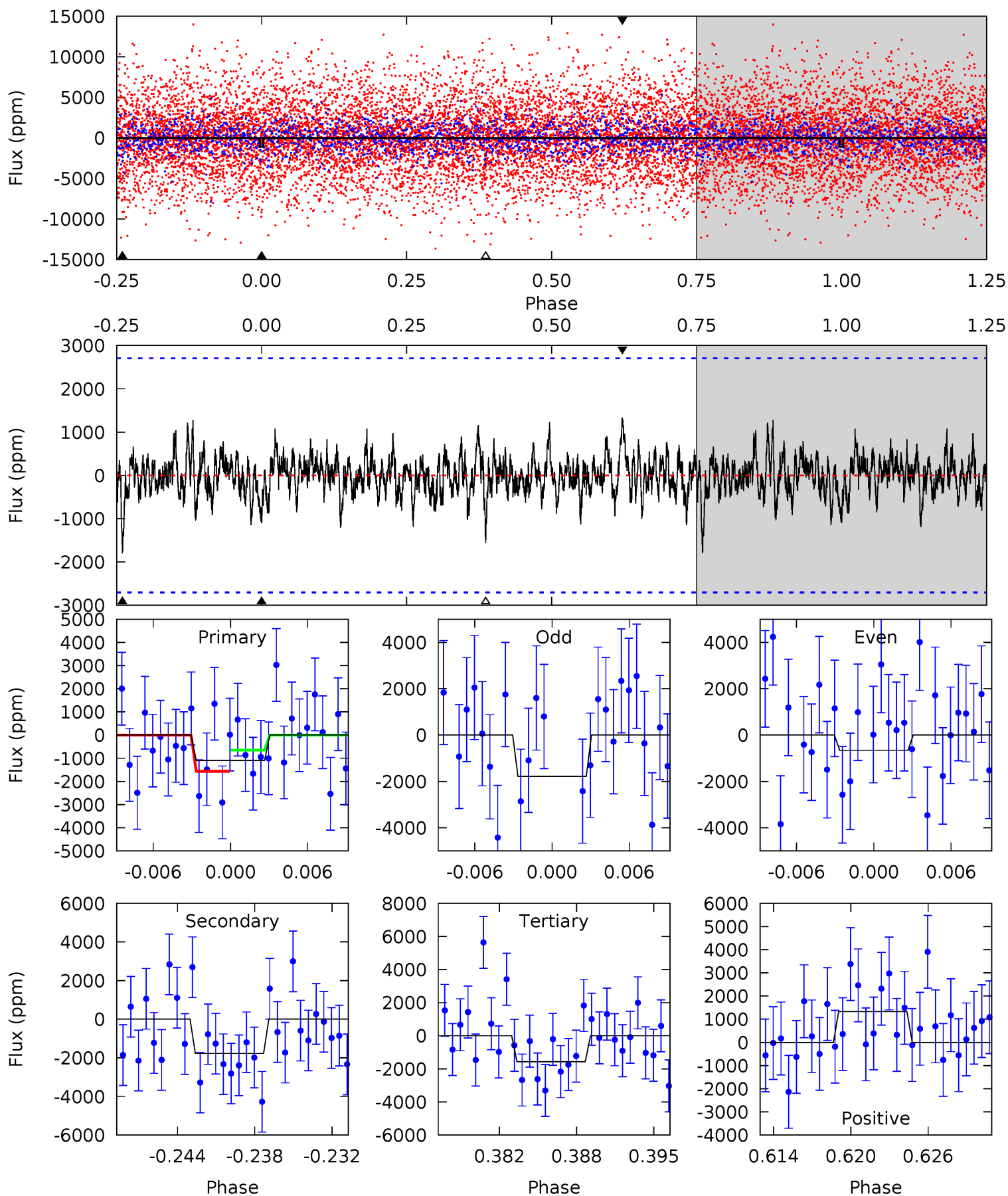
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

010658802-06, P = 47.950275 Days, E = 130.140745 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.08 | 3.36 | 2.97 | 2.52 | 5.12 | 2.73 | 0.75 | -0.88 | -0.44 | 0.39 | 0.84 | 1.04 | 1.70 | 0.43 | 0.86 |



Stellar Parameters For KIC 010658802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7700^{+211}_{-316} | $4.178^{+0.105}_{-0.195}$ | $-0.060^{+0.200}_{-0.350}$ | $1.710^{+0.555}_{-0.299}$ | $1.606^{+0.219}_{-0.219}$ | $0.453^{+0.219}_{-0.235}$ |
| | +3%/-4% | +3%/-5% | +333%/-583% | +32%/-17% | +14%/-14% | +48%/-52% |
| 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 010658802-06 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|---------------------------|----------------------|---------------------------|--------------------------------------|
| DV | 0 ± 1000000 | $14.16^{+15.46}_{-10.02}$ | 1141^{+85}_{-73} | -5729^{+56998}_{-30386} | $-492.542^{+56268.380}_{-35345.891}$ |
| Alt. | -1775 ± 528 | $15.17^{+16.09}_{-10.59}$ | 1139^{+81}_{-67} | 5409^{+5327}_{-1307} | 350^{+3481}_{-264} |

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

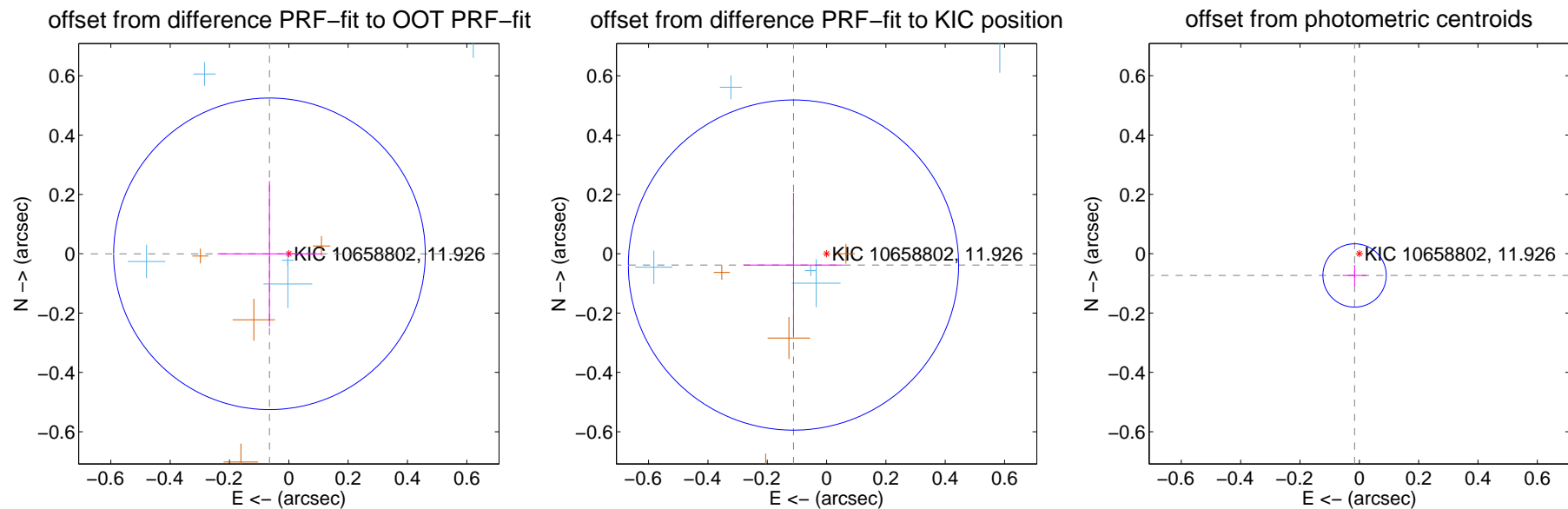
DV Centroid Data

Supplemental centroid analysis for 010658802-06. **Kepler magnitude: 11.93.** Transit SNR -1.00

There are 10 quarters with good PRF difference image offsets

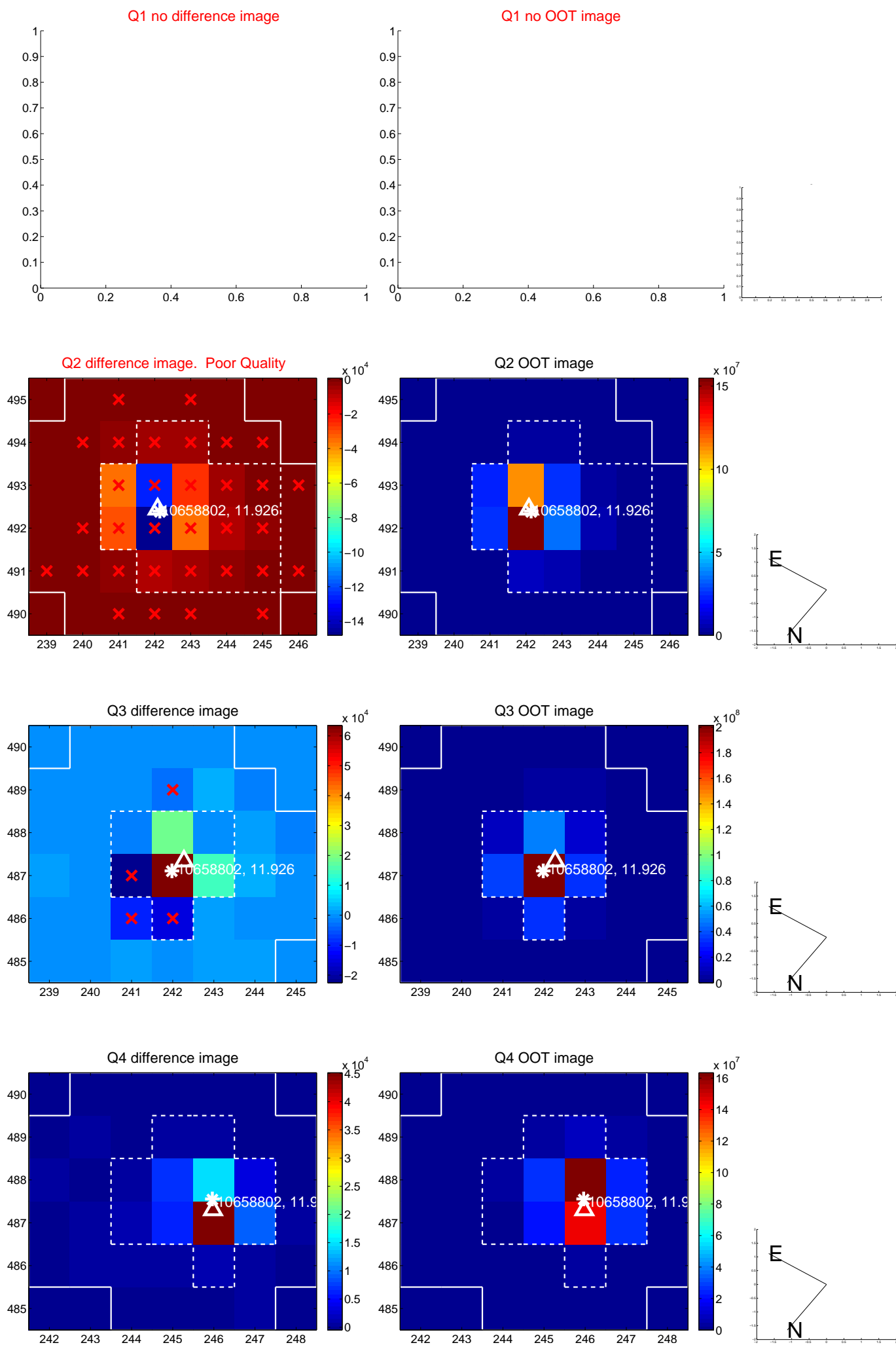
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.065 ± 0.175 | 0.37 | 0.065 ± 0.175 | -0.000 ± 0.245 |
| PRF-fit source offset from KIC position | 0.118 ± 0.186 | 0.64 | 0.112 ± 0.168 | -0.038 ± 0.244 |
| photometric centroid source offset | 0.08 ± 0.04 | 2.11 | 0.02 ± 0.04 | -0.07 ± 0.04 |

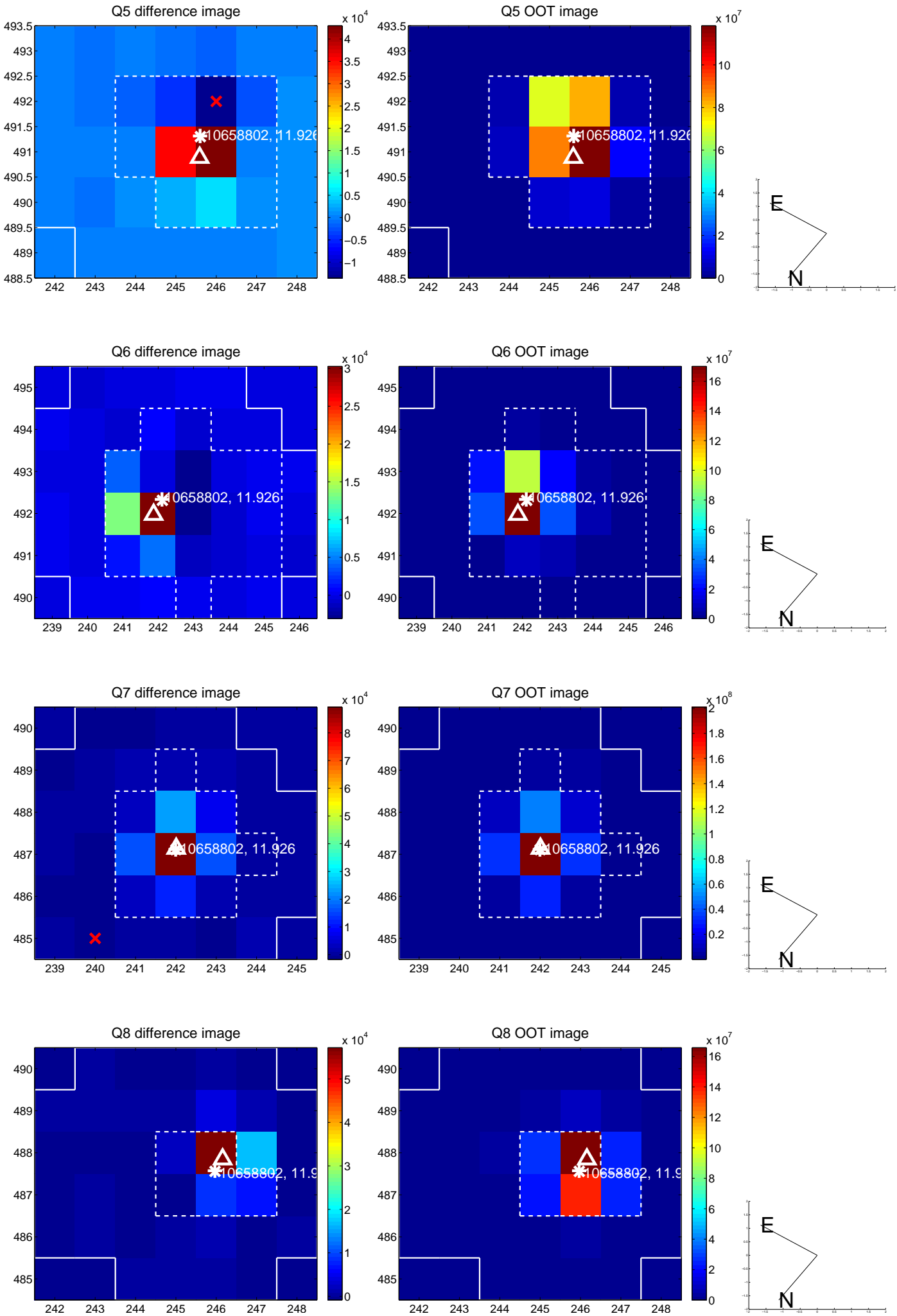


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

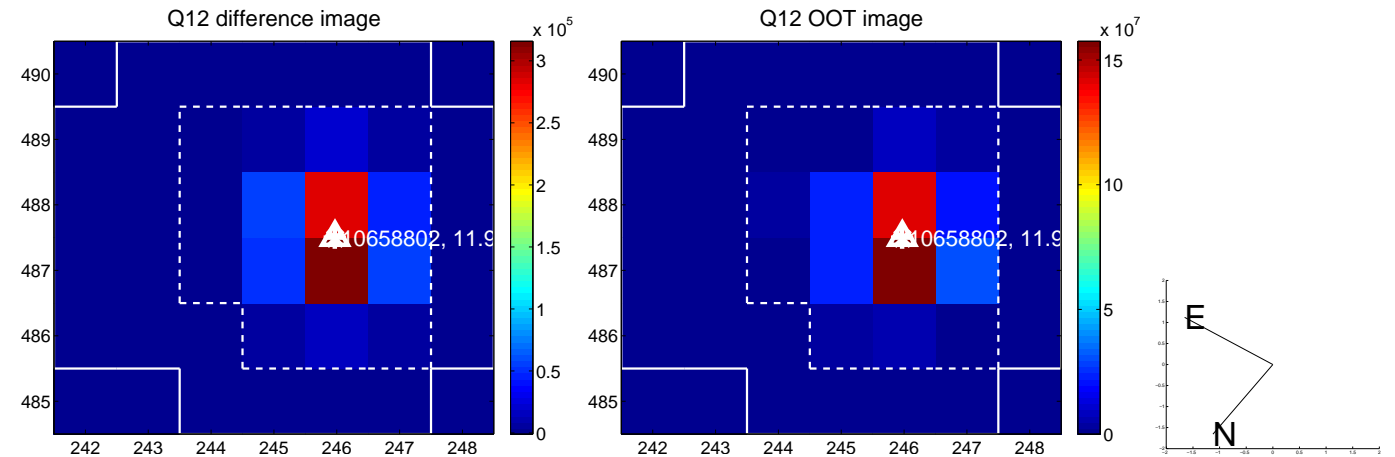
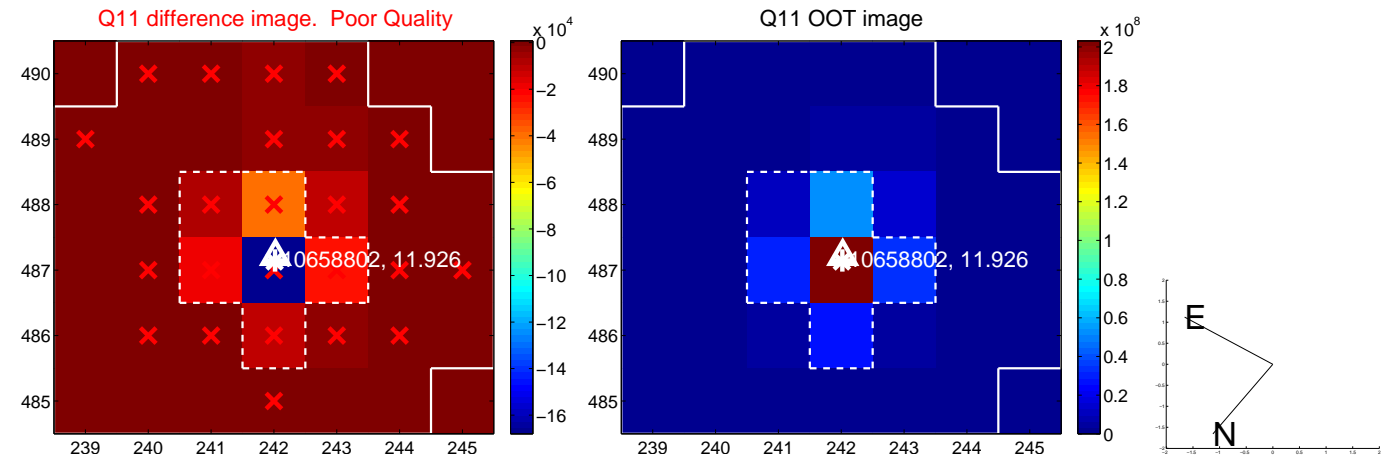
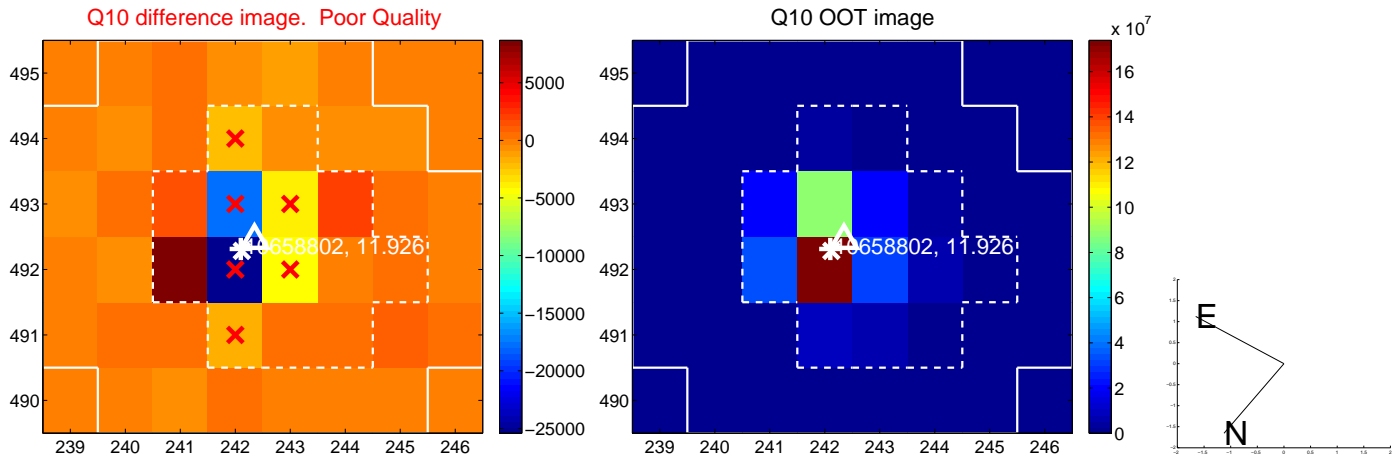
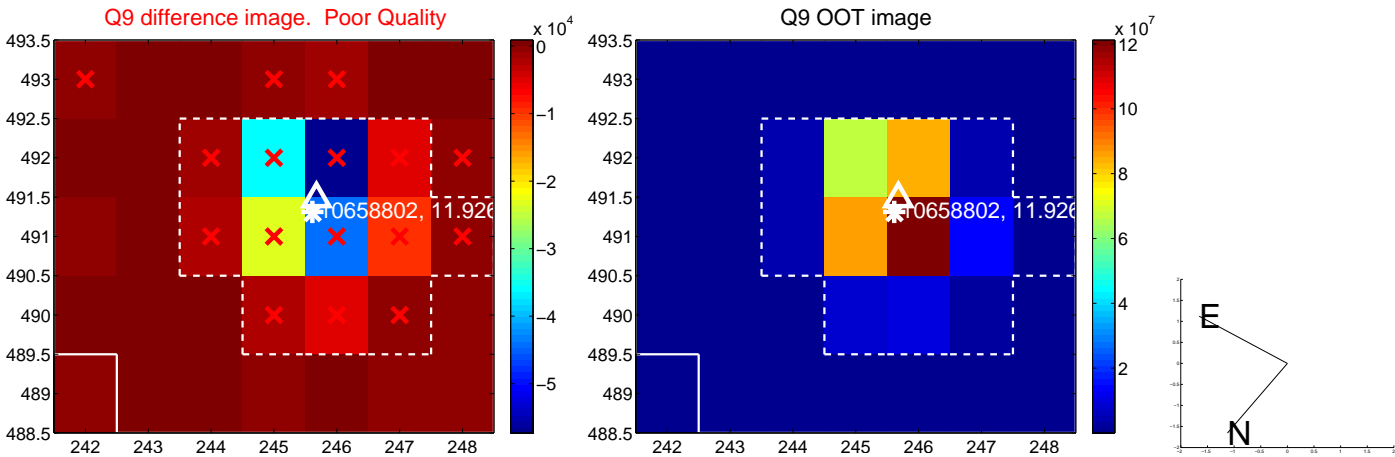
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



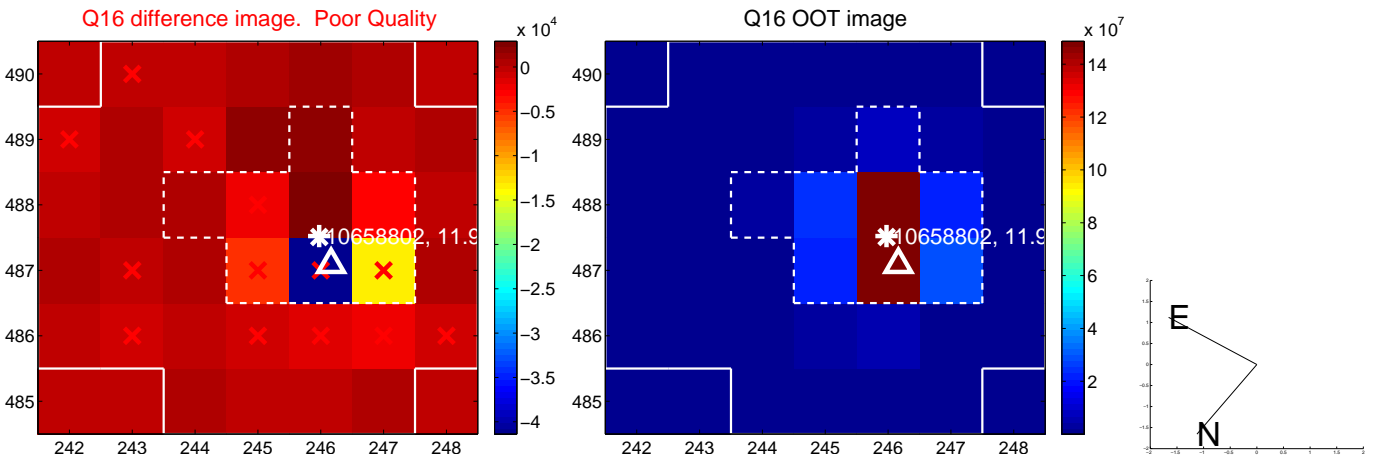
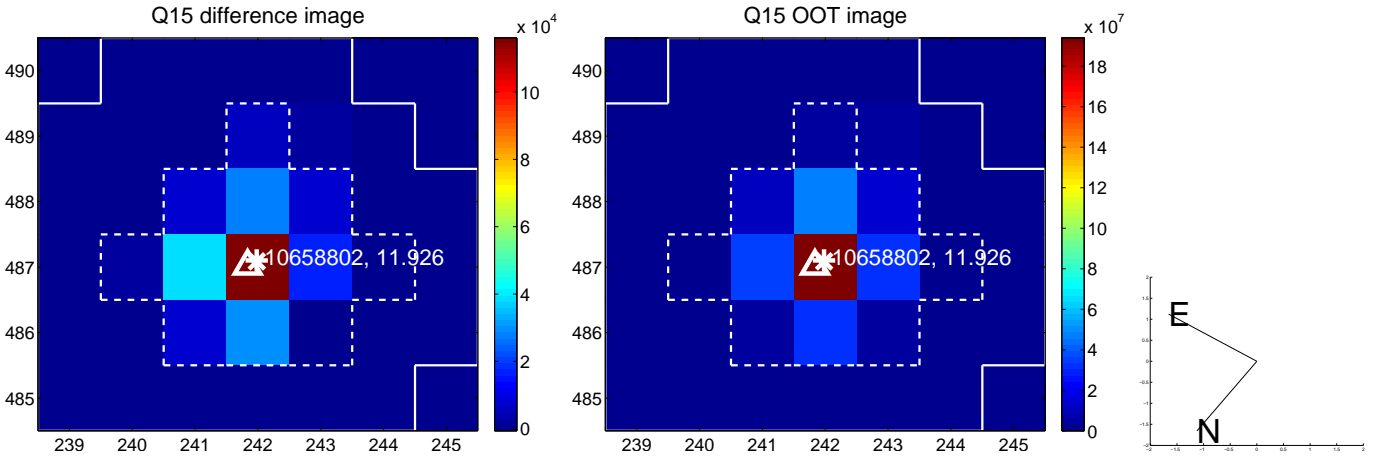
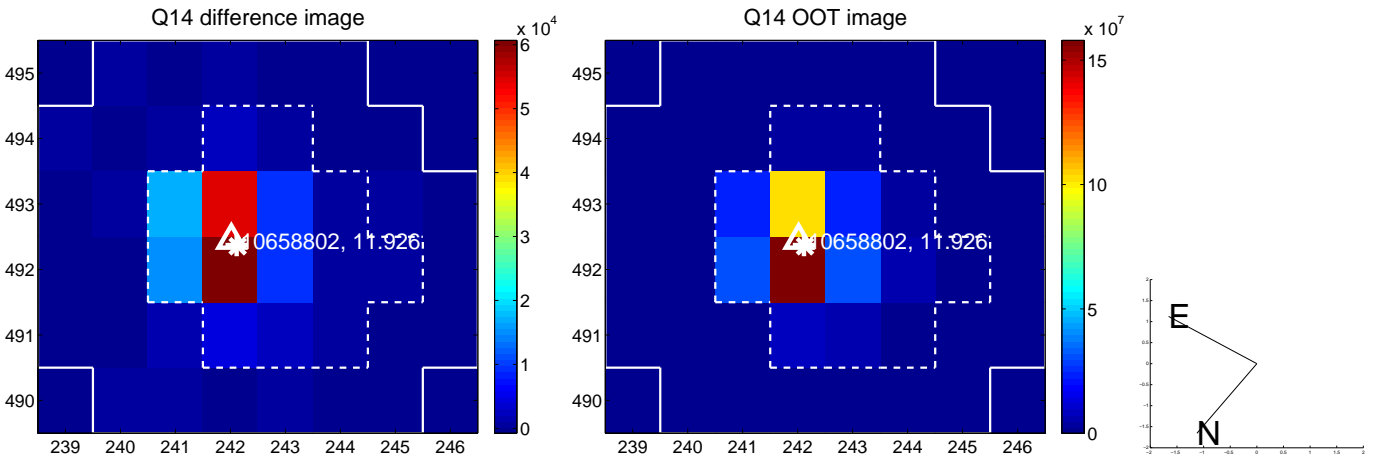
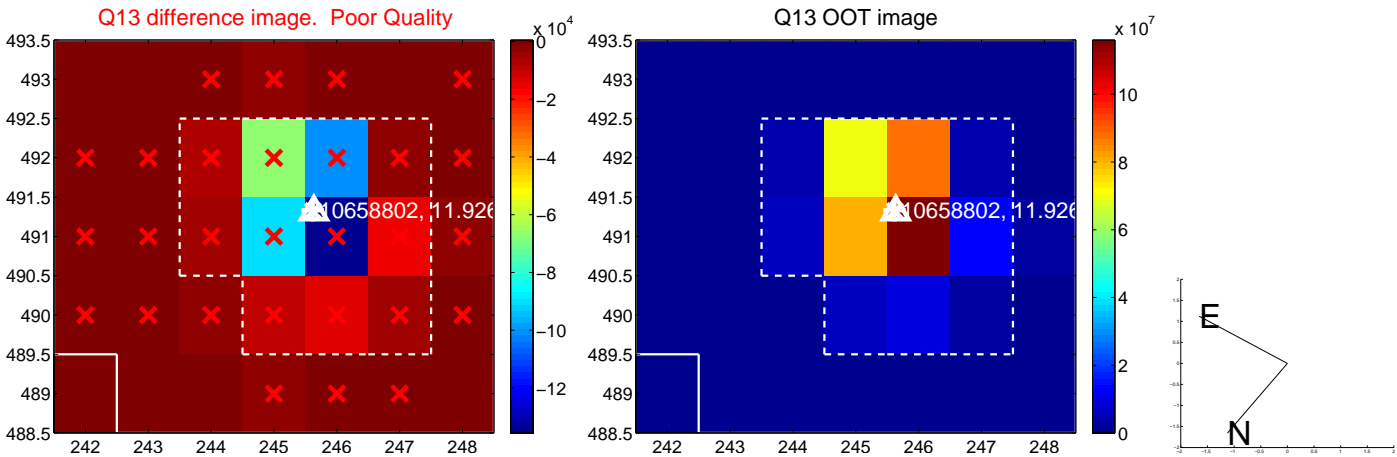
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



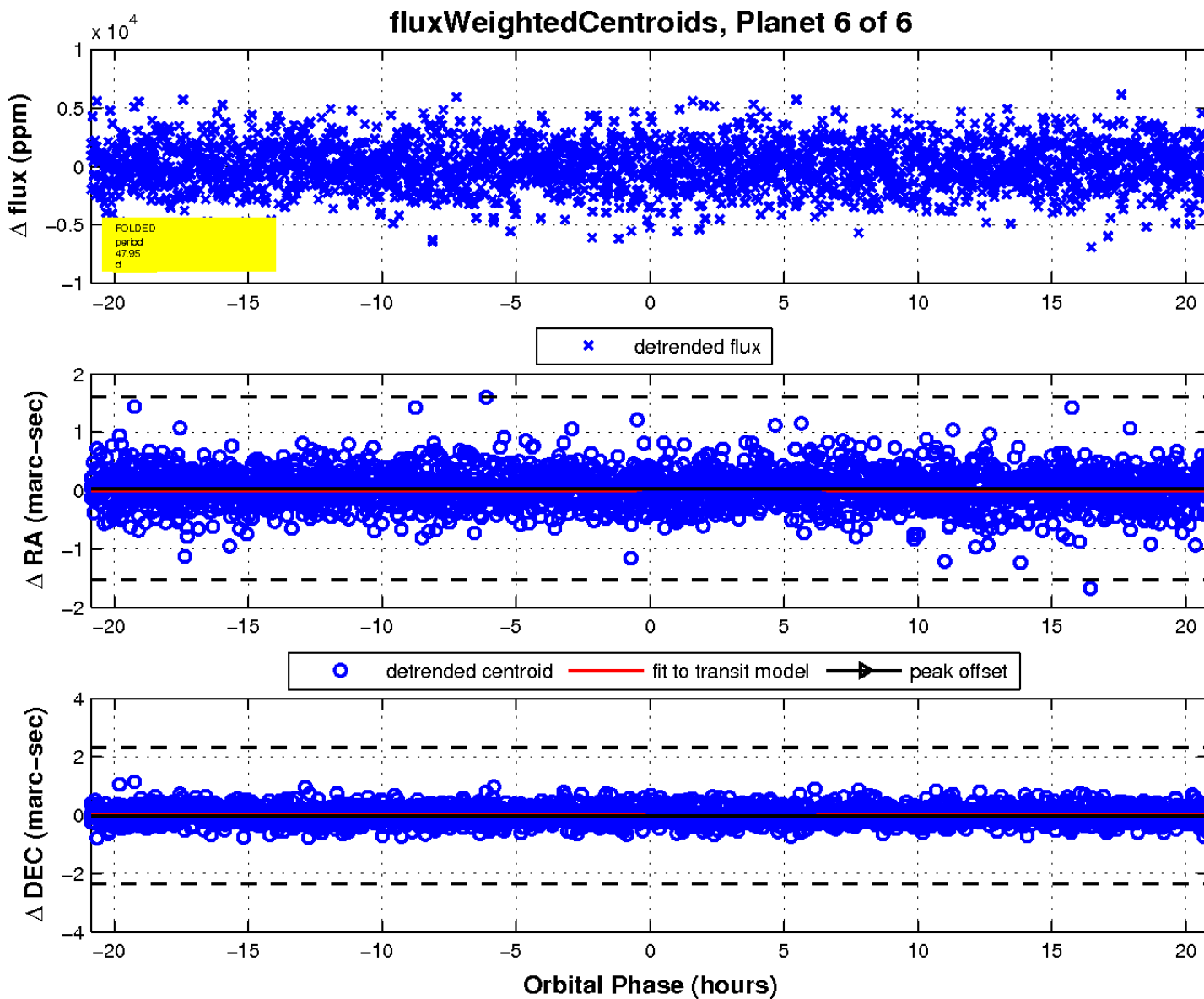
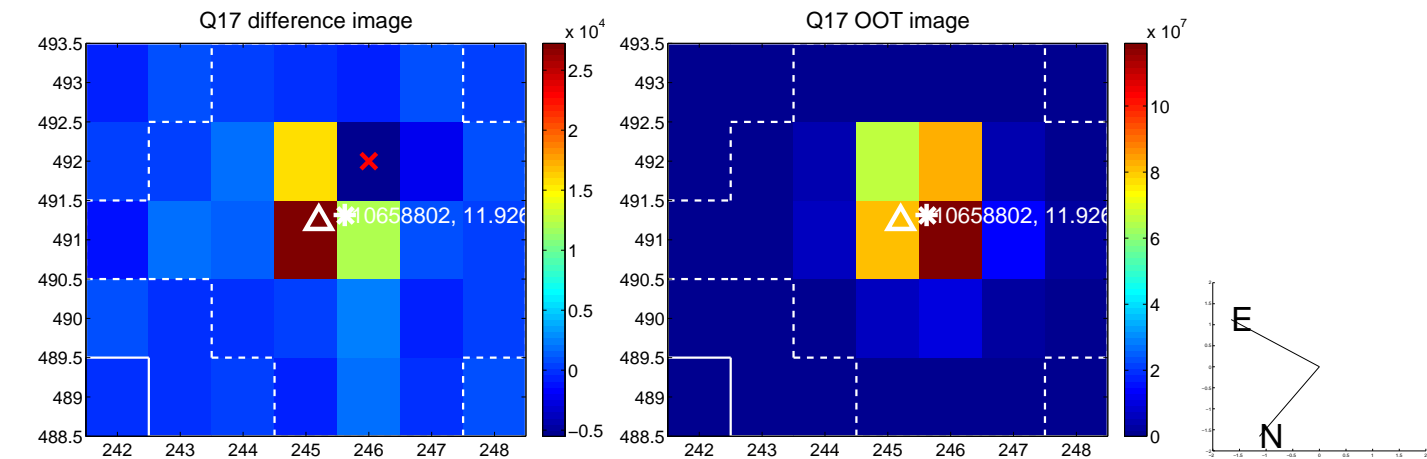
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

