

KIC 003965201

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 003965201-01 | OBS | No | 5.040586 | 135.908105 | 62.0 | 5.848 | 8.2 | 6.7 | 3.46 | 7854 | 3.19 | 7670.69 |
| 003965201-02 | OBS | No | 7.601349 | 136.616323 | 66.4 | 11.559 | 7.2 | 7.5 | 3.46 | 7854 | 3.28 | 4435.63 |
| 003965201-03 | OBS | No | 0.560035 | 131.962519 | 46.3 | 6.202 | 8.9 | 13.1 | 3.46 | 7854 | 2.39 | 143611.56 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 003965201-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 003965201-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 003965201-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—CENT_FEW_DIFFS |

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

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

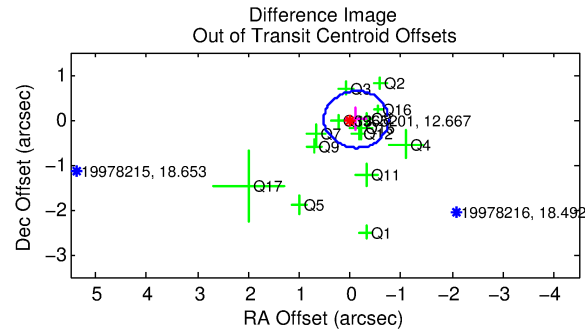
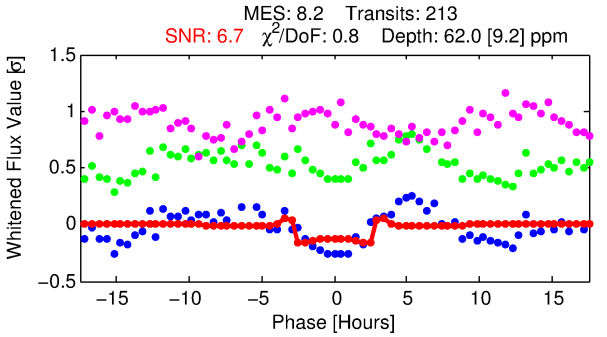
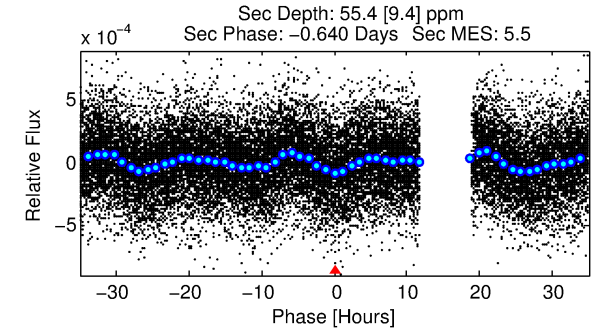
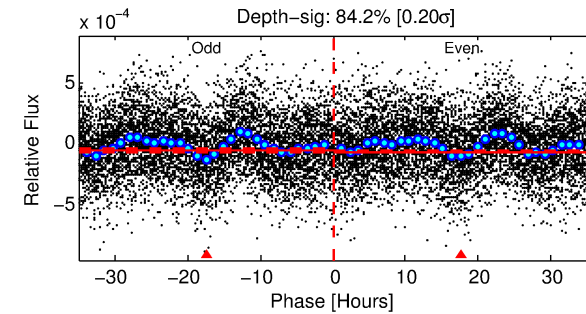
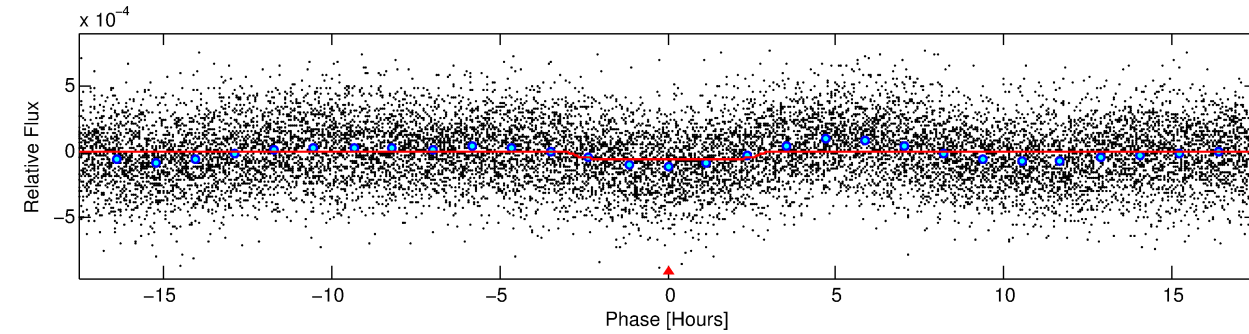
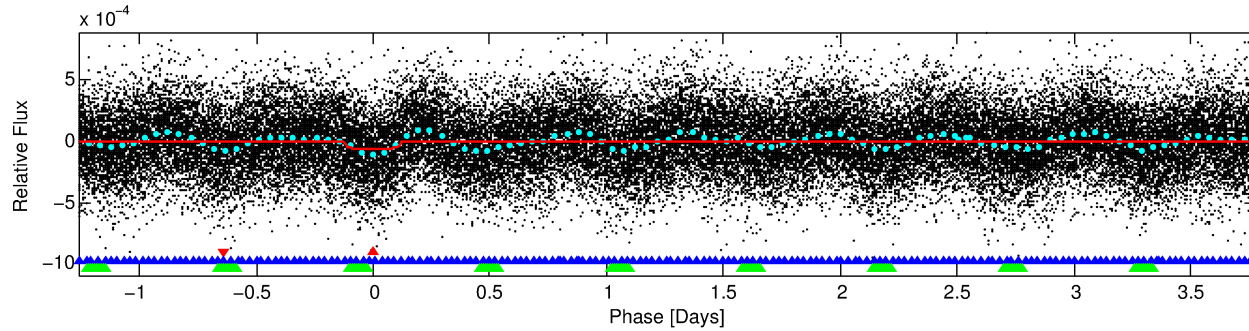
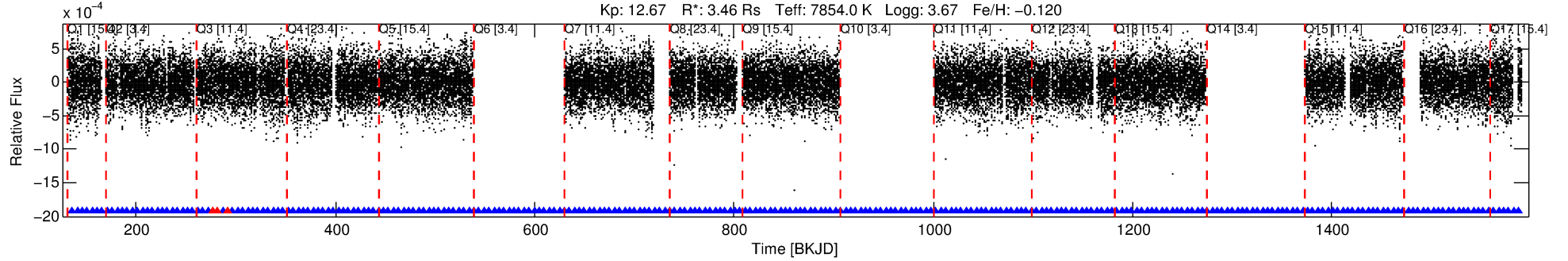
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003965201-01

No Significant Match Found

DV One-Page Summary

KIC: 3965201 Candidate: 1 of 3 Period: 5.041 d
KOI: K07546 Corr: No Ephemeris Match



DV Fit Results:

Period = 5.04059 [0.00004] d
Epoch = 135.9081 [0.0049] BKJD
Rp/R* = 0.0085 [0.0016]
a/R* = 3.04 [2.90]
b = 0.91 [0.21]
Seff = 7670.69 [6176.98]
Teq = 2386 [480] K
Rp = 3.19 [1.67] Re
a = 0.0730 [0.0353] AU
Ag = 15.90 [14.20] [1.05 σ]
Teffp = 7368 [833] K [5.18 σ]

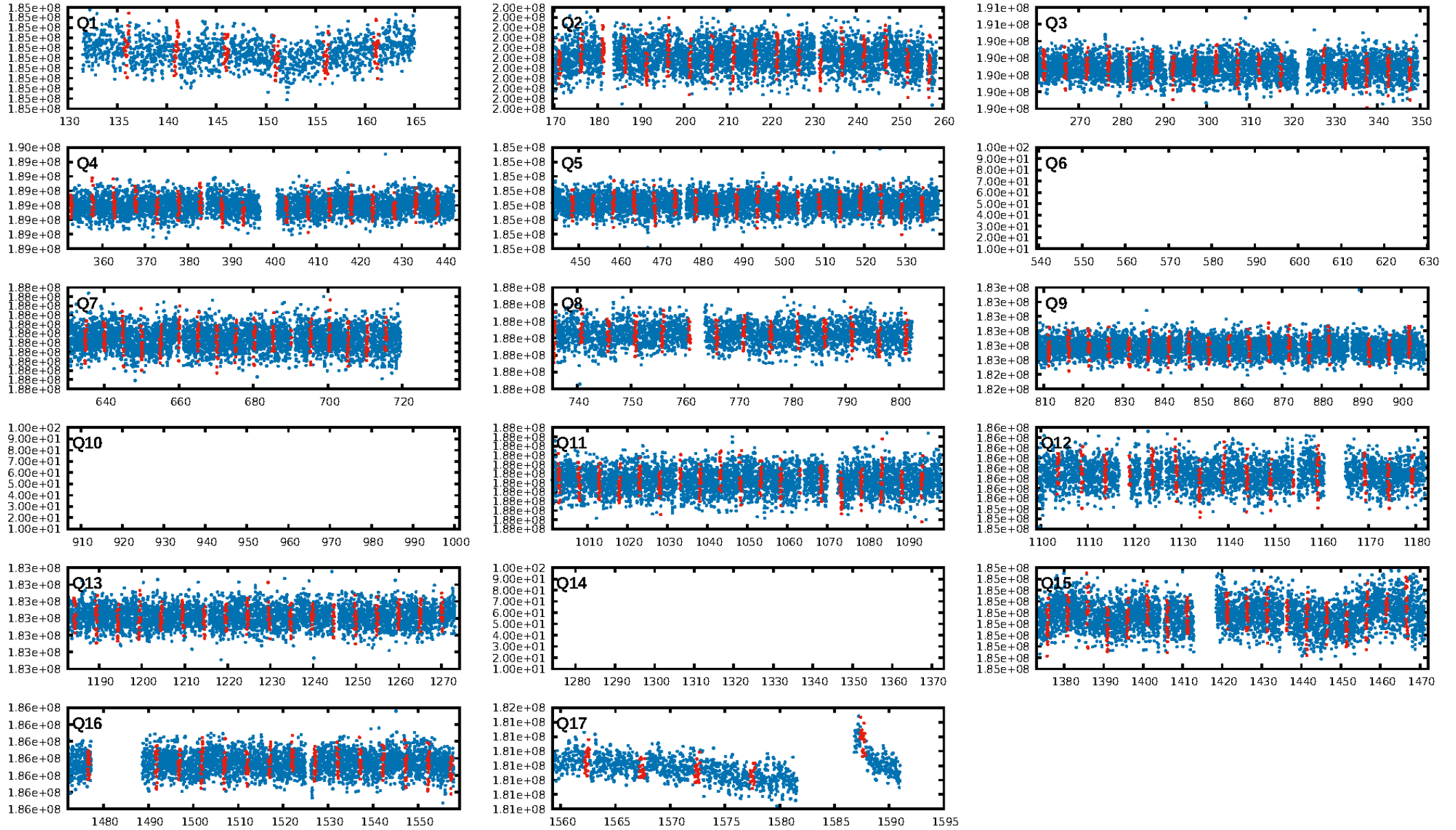
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.61 σ]
LongPeriod-sig: 100.0% [4.74 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [199/202]
GhostDiagnostic-chr: 23.55
Centroid-sig: 88.8%
Centroid-so: 0.086 arcsec [0.14 σ]
OotOffset-rm: 0.119 arcsec [0.57 σ]
KicOffset-rm: 0.192 arcsec [0.73 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

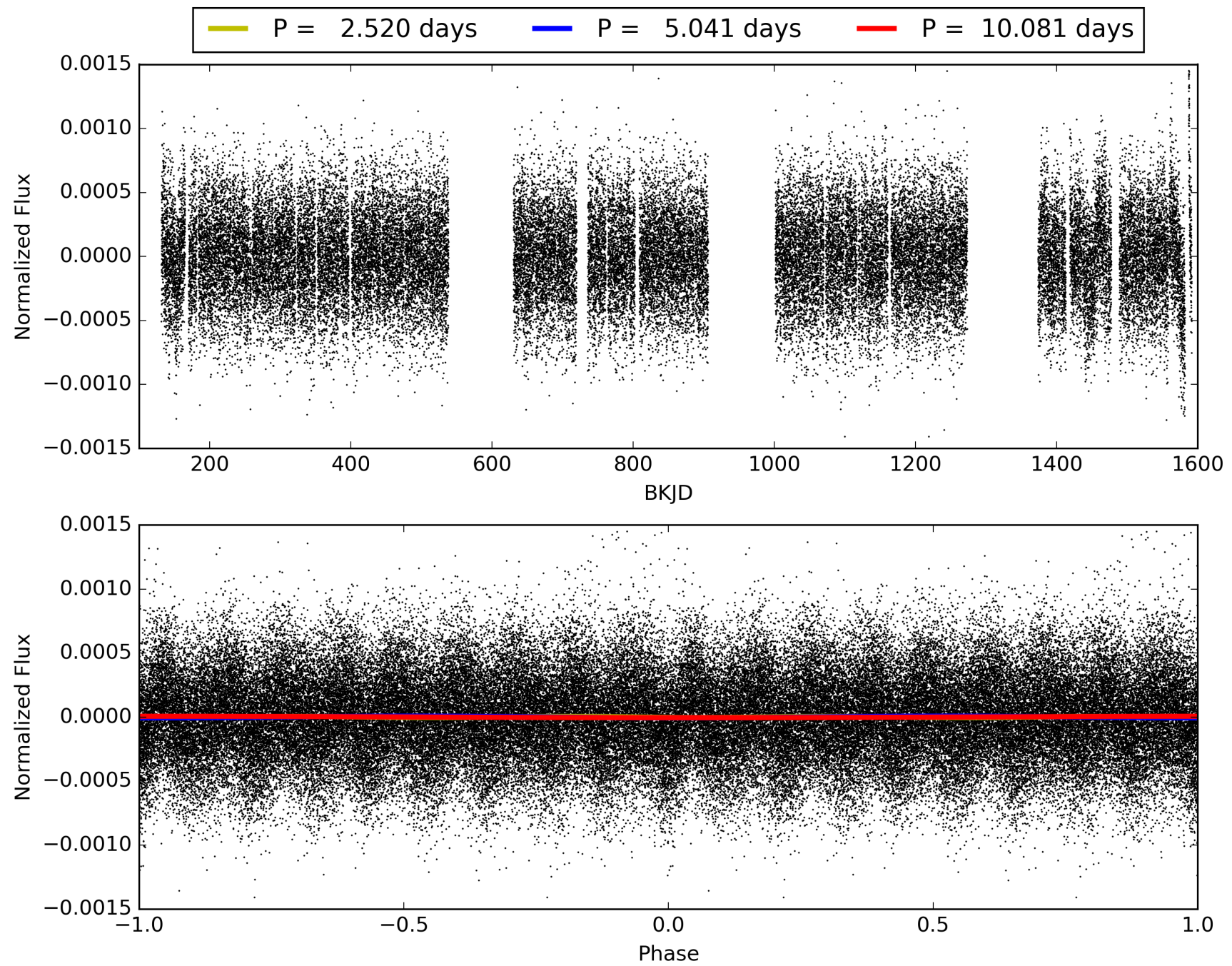
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:41:33 Z

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

TCE 003965201-01, PDC Light Curves

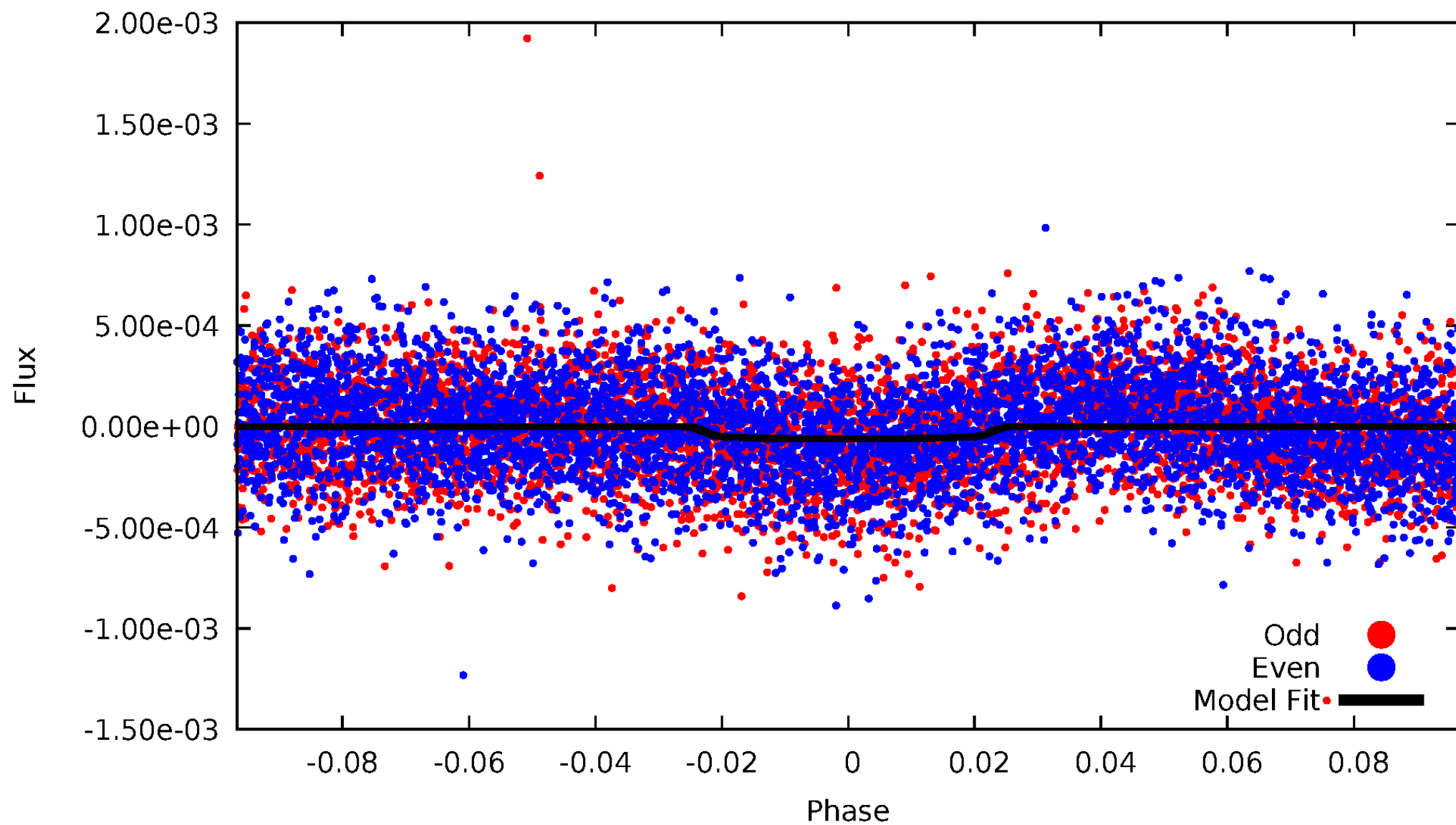


TCE 003965201-01



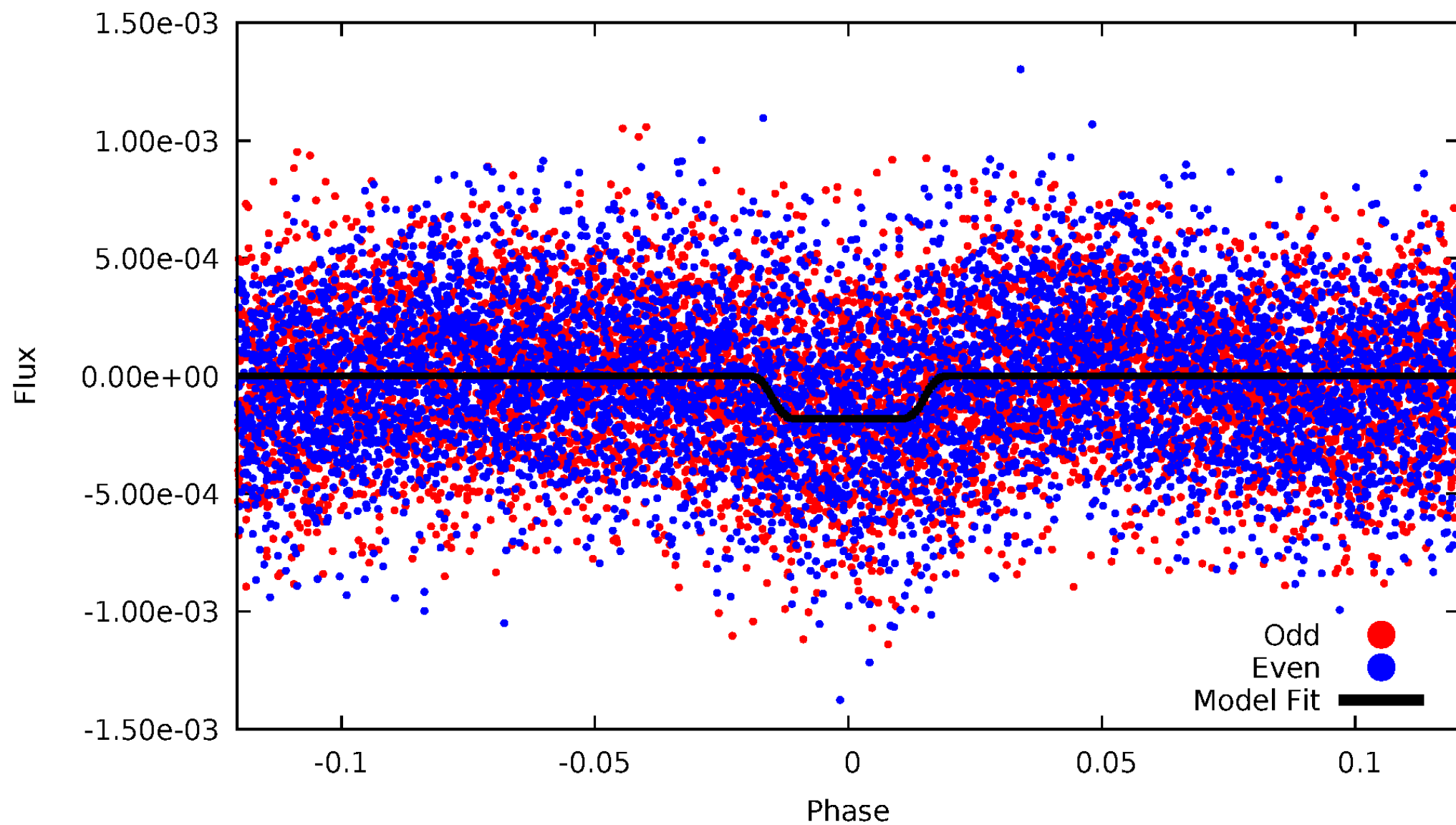
DV Odd/Even

TCE 003965201-01

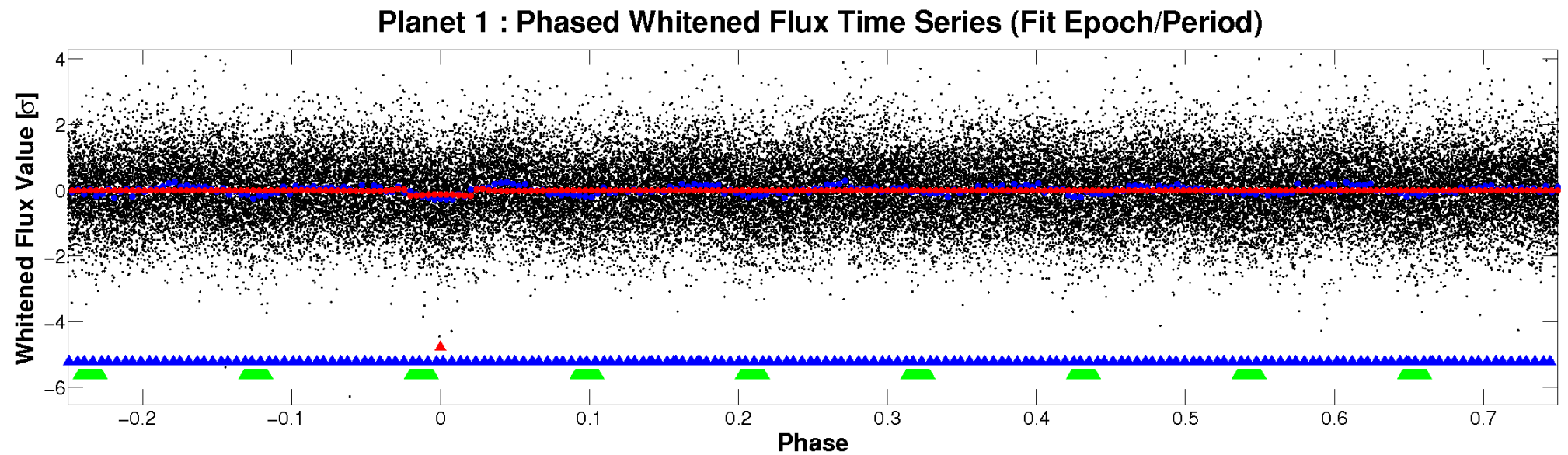
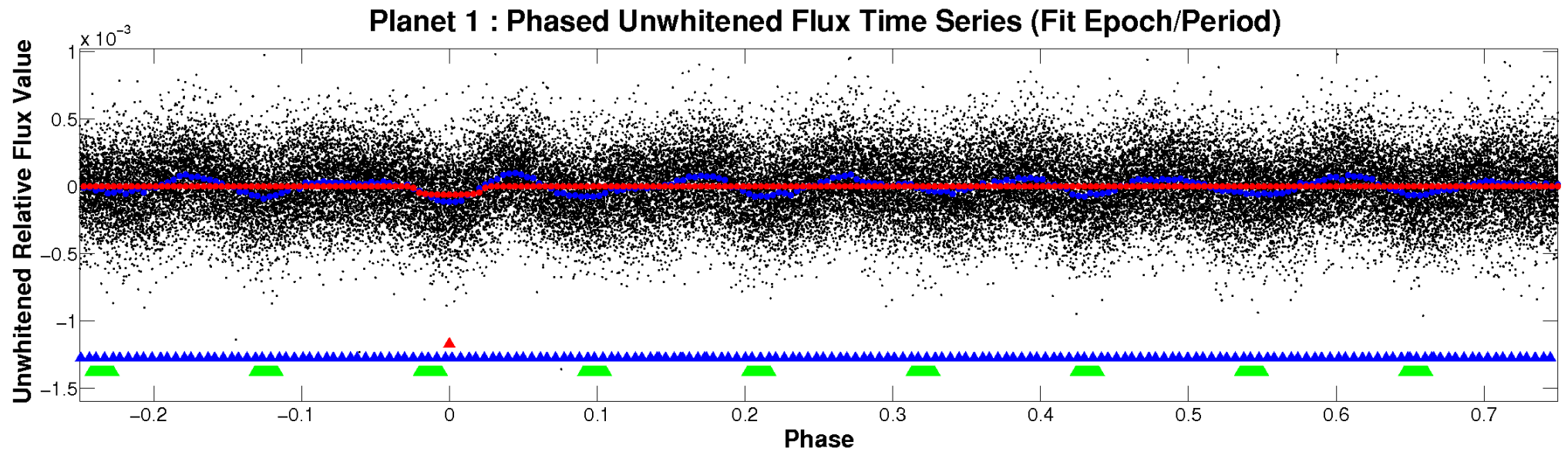


ALT Odd/Even

TCE 003965201-01

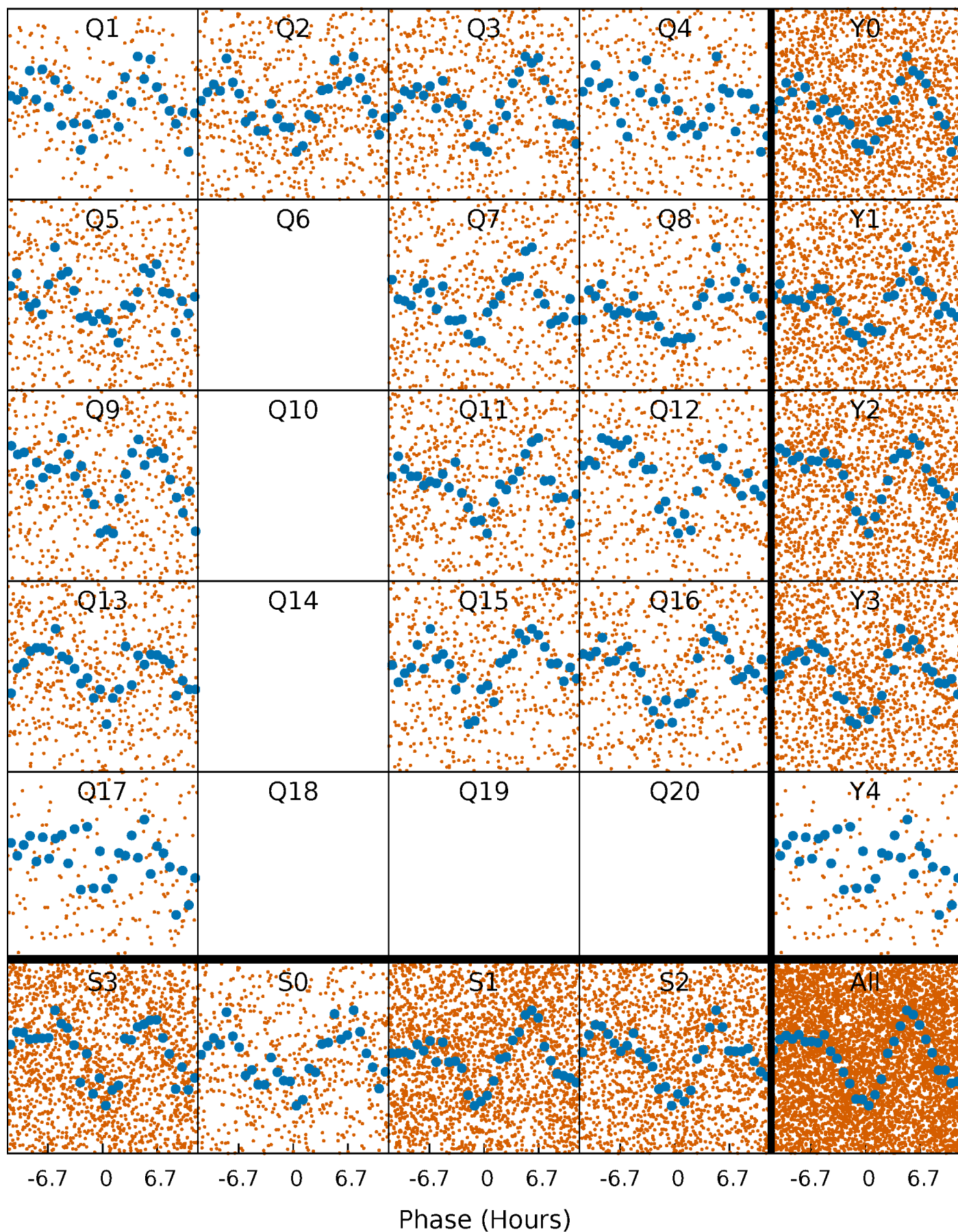


Non-Whitened Vs. Whitened Light Curve



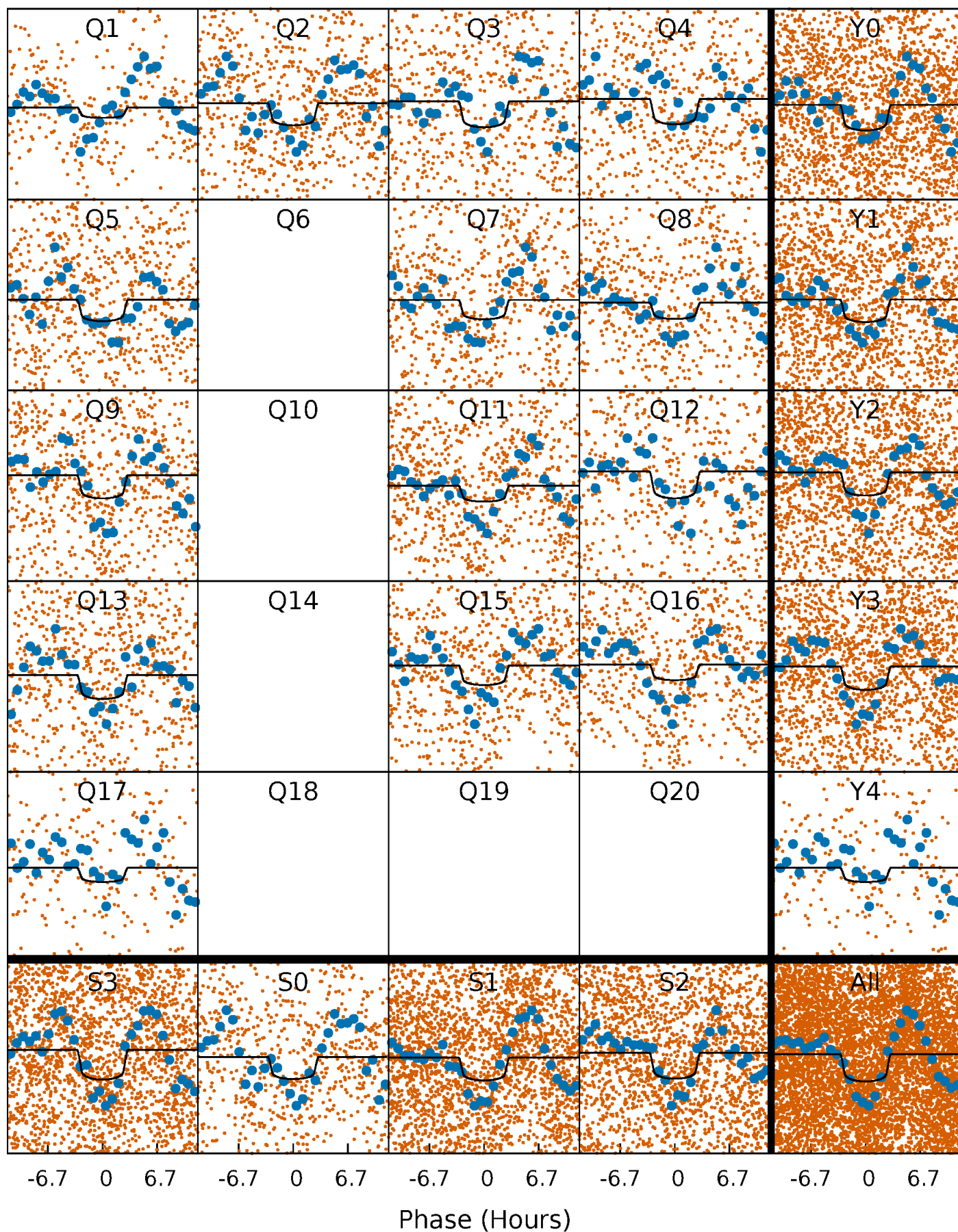
PDC Quarter-Phased Transit Curves

TCE 003965201-01 P= 5.040586 Days $T_0=135.908105$ (BKJD)



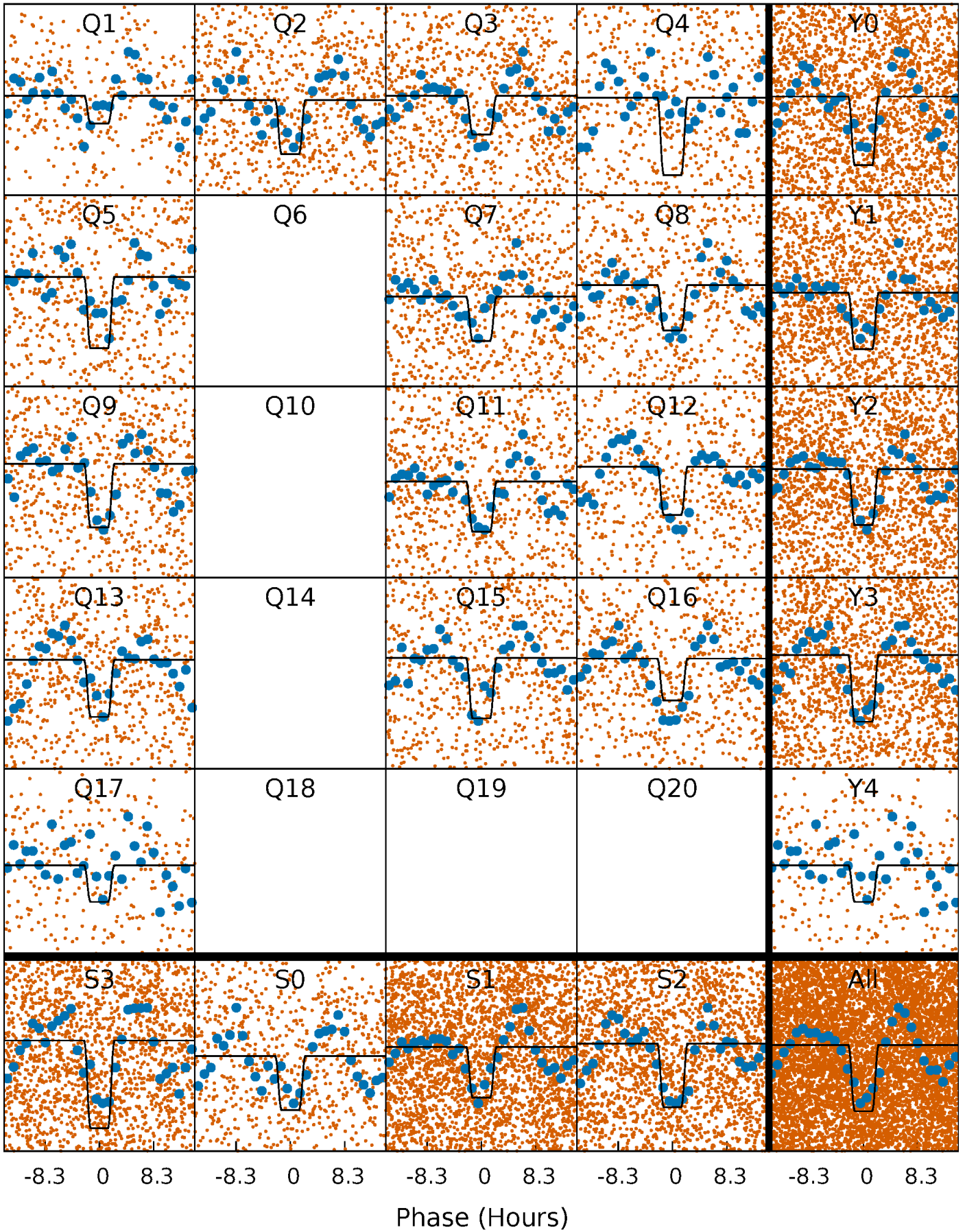
DV Quarter-Phased Transit Curves

TCE 003965201-01 P= 5.040586 Days $T_0=135.908105$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

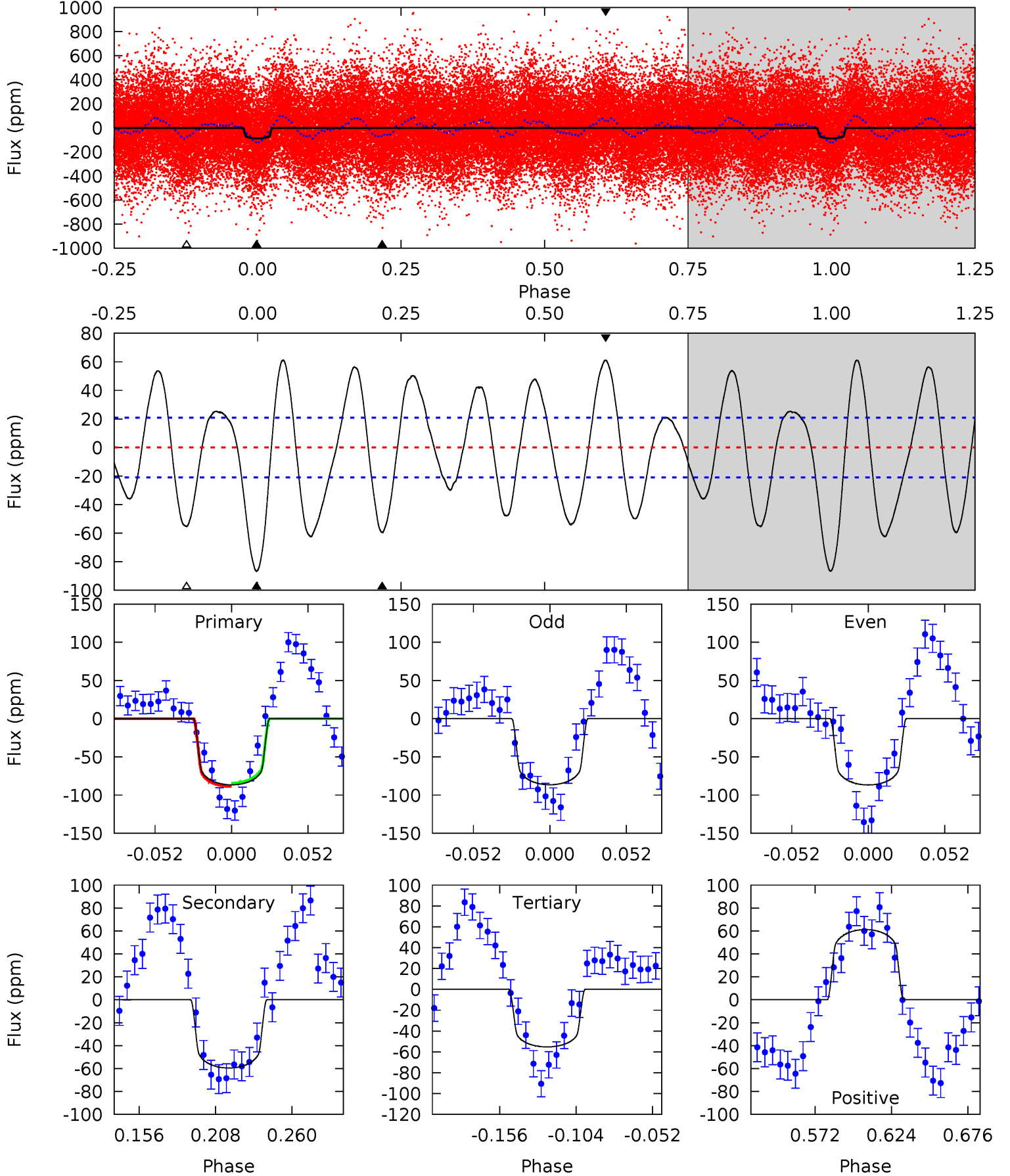
TCE 003965201-01 P= 5.040503 Days $T_0=135.909815$ (BKJD)



DV Model-Shift Uniqueness Test

003965201-01, P = 5.040586 Days, E = 130.867519 Days

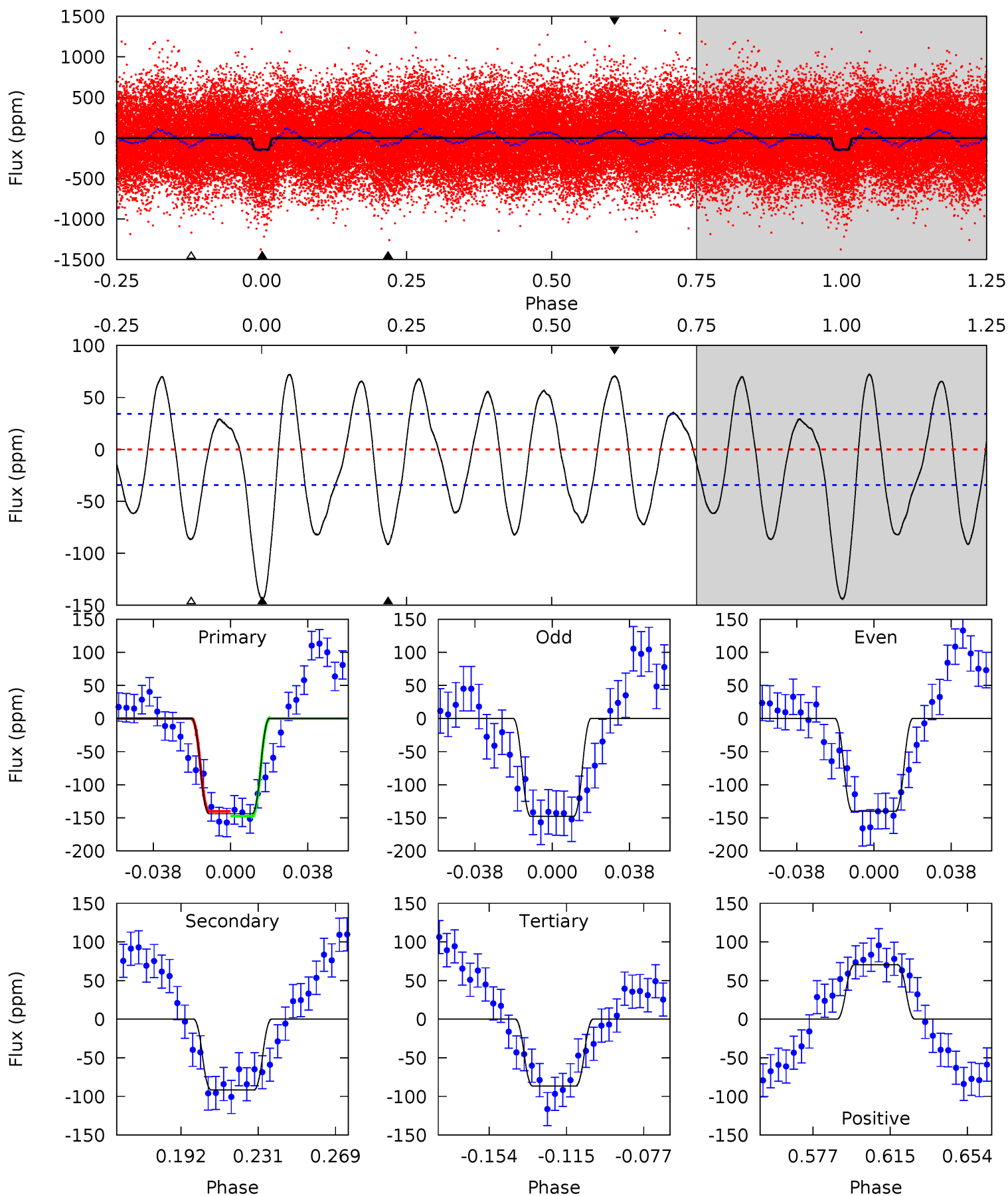
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.5 | 13.4 | 12.4 | 13.7 | 4.70 | 1.94 | 7.49 | 7.05 | 5.71 | 0.97 | -0.37 | 0.03 | 0.87 | 0.41 | 0.49 |



Alt Model-Shift Uniqueness Test

003965201-01, P = 5.040503 Days, E = 130.869312 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.0 | 12.7 | 12.0 | 9.81 | 4.76 | 2.07 | 6.46 | 7.98 | 10.2 | 0.69 | 2.92 | 0.52 | 1.04 | 0.33 | 0.51 |



Stellar Parameters For KIC 003965201

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7854^{+217}_{-326} | $3.669^{+0.468}_{-0.110}$ | $-0.120^{+0.200}_{-0.350}$ | $3.462^{+0.720}_{-1.681}$ | $2.039^{+0.343}_{-0.514}$ | $0.069^{+0.321}_{-0.025}$ |
| | +3%/-4% | +13%/-3% | +167%/-292% | +21%/-49% | +17%/-25% | +464%/-36% |
| 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 003965201-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|------------------|
| DV | -60 ± 4 | $2.90^{+0.85}_{-0.82}$ | 3207^{+262}_{-401} | 7405^{+1075}_{-849} | 21^{+20}_{-8} |
| Alt. | -91 ± 7 | $4.73^{+1.04}_{-1.19}$ | 3238^{+241}_{-383} | 6430^{+528}_{-428} | 12^{+9}_{-4} |

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

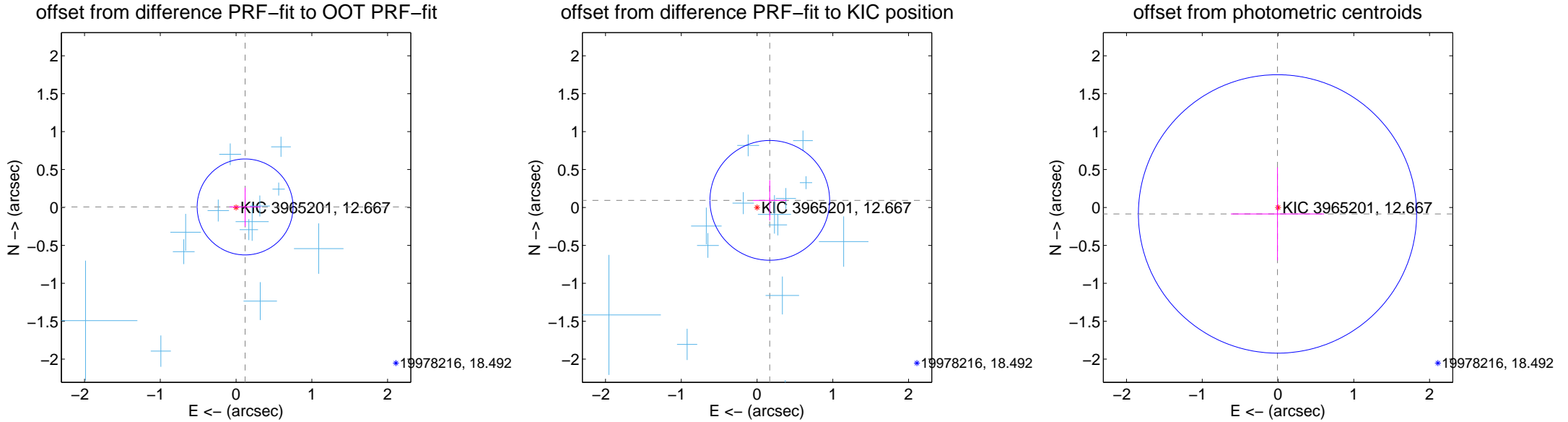
DV Centroid Data

Supplemental centroid analysis for 003965201-01. Kepler magnitude: 12.67. Transit SNR 6.75

There are 14 quarters with good PRF difference image offsets

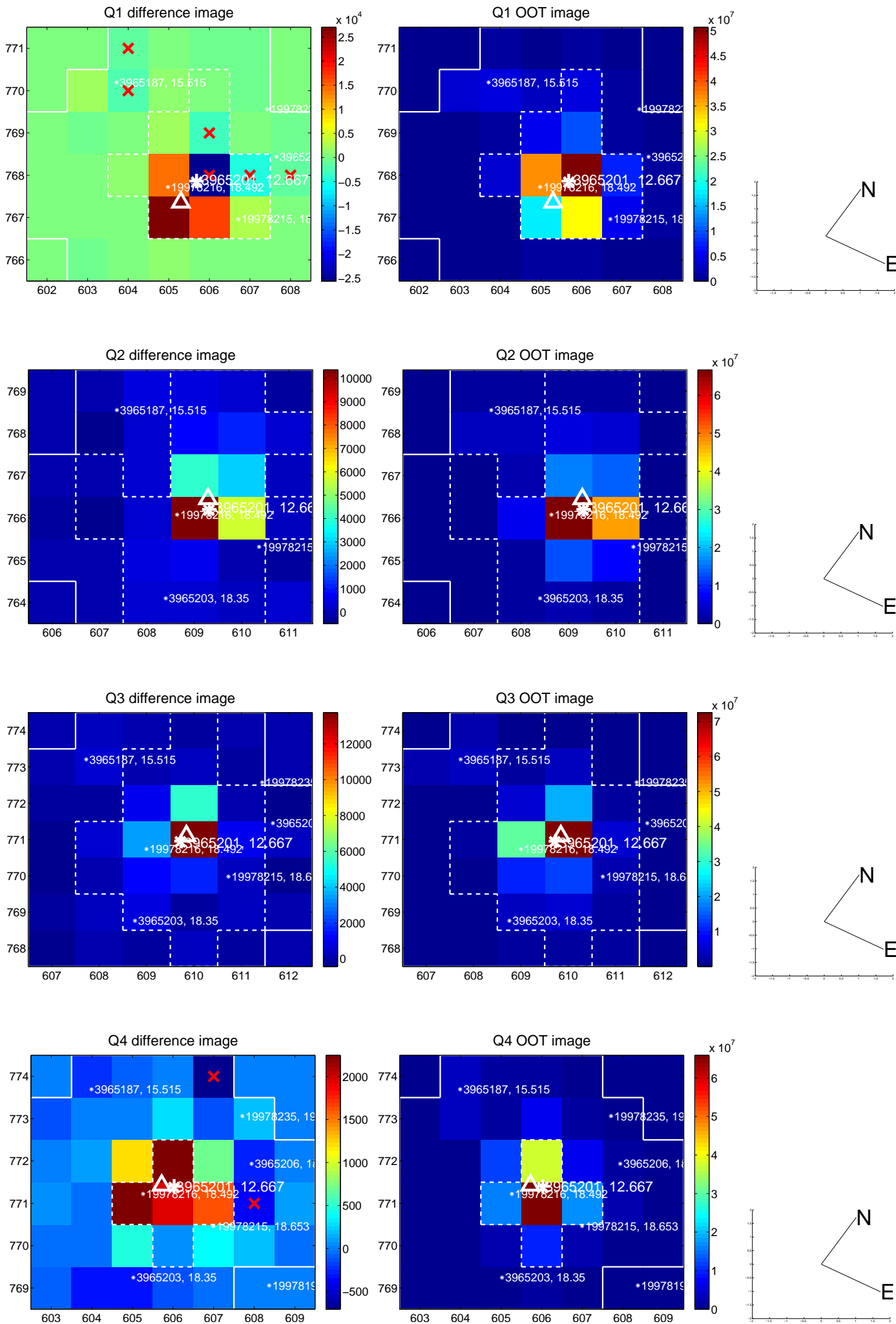
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.119 ± 0.211 | 0.57 | -0.119 ± 0.206 | 0.007 ± 0.255 |
| PRF-fit source offset from KIC position | 0.192 ± 0.263 | 0.73 | -0.168 ± 0.221 | 0.094 ± 0.266 |
| photometric centroid source offset | 0.09 ± 0.61 | 0.14 | 0.01 ± 0.62 | -0.09 ± 0.61 |

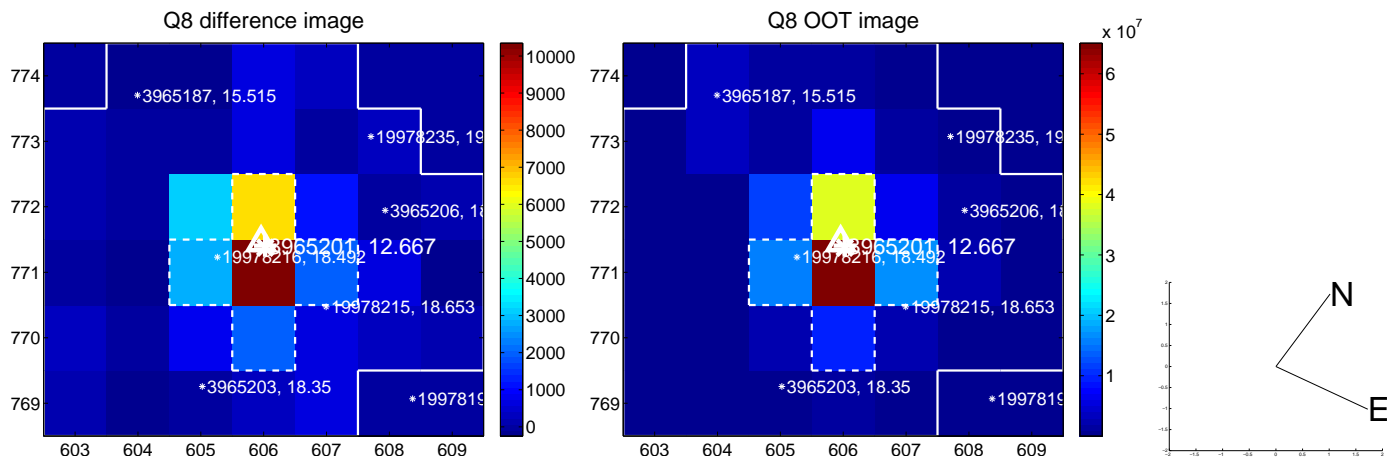
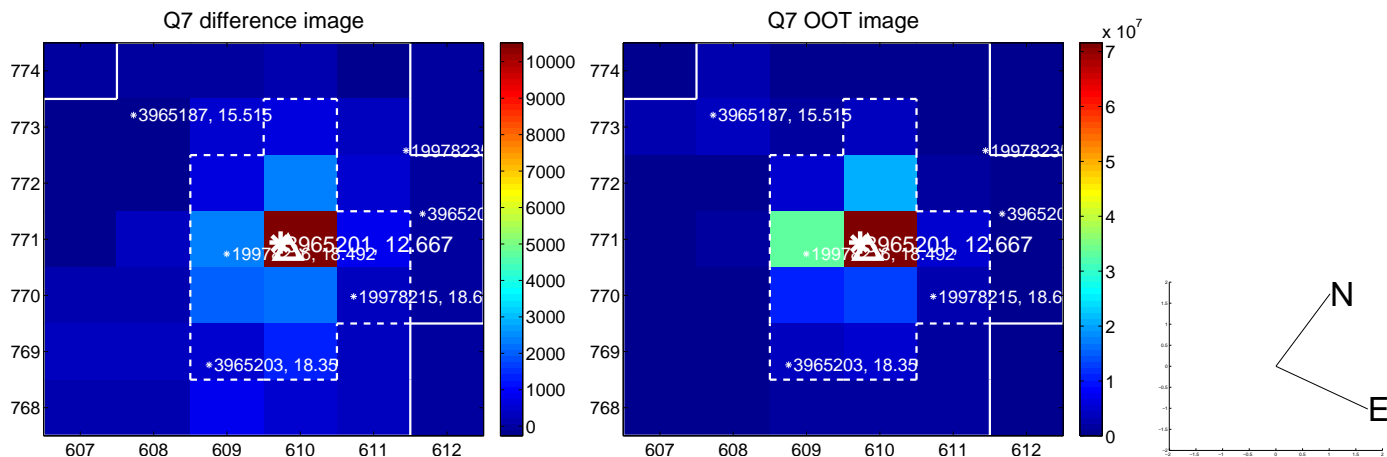
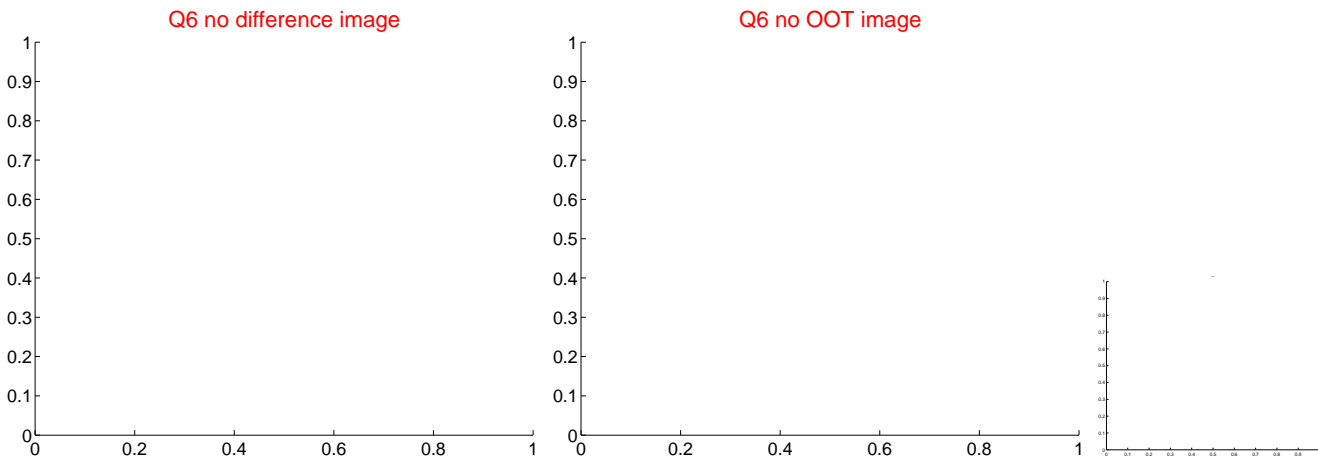
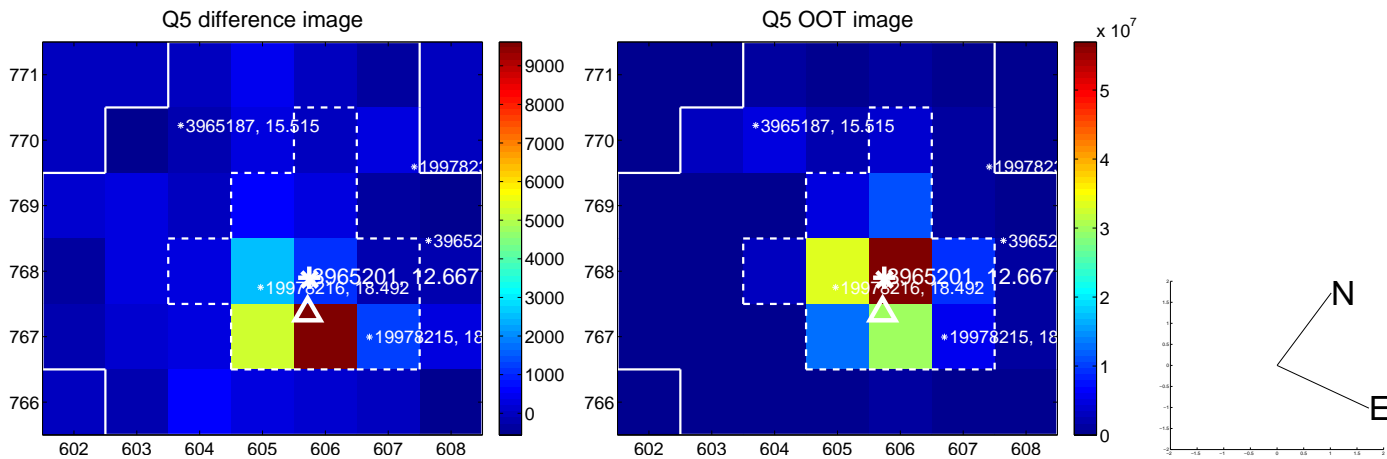


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

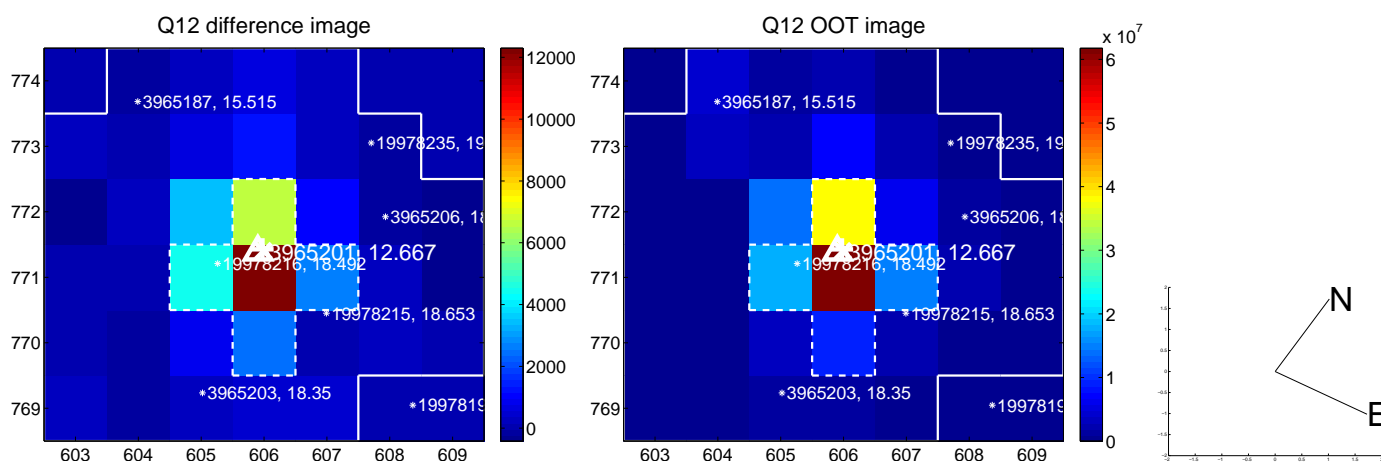
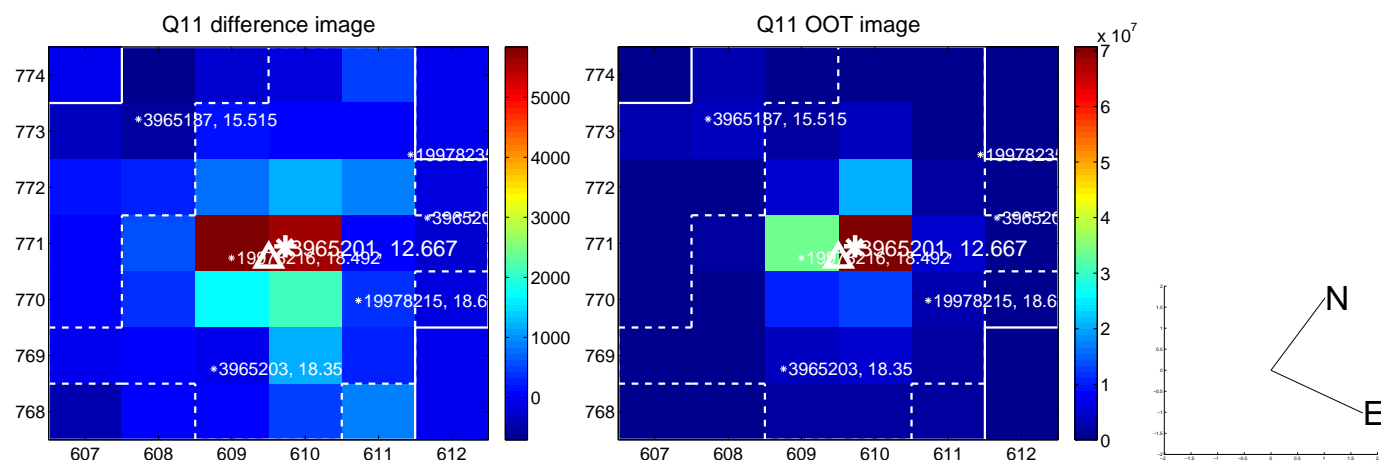
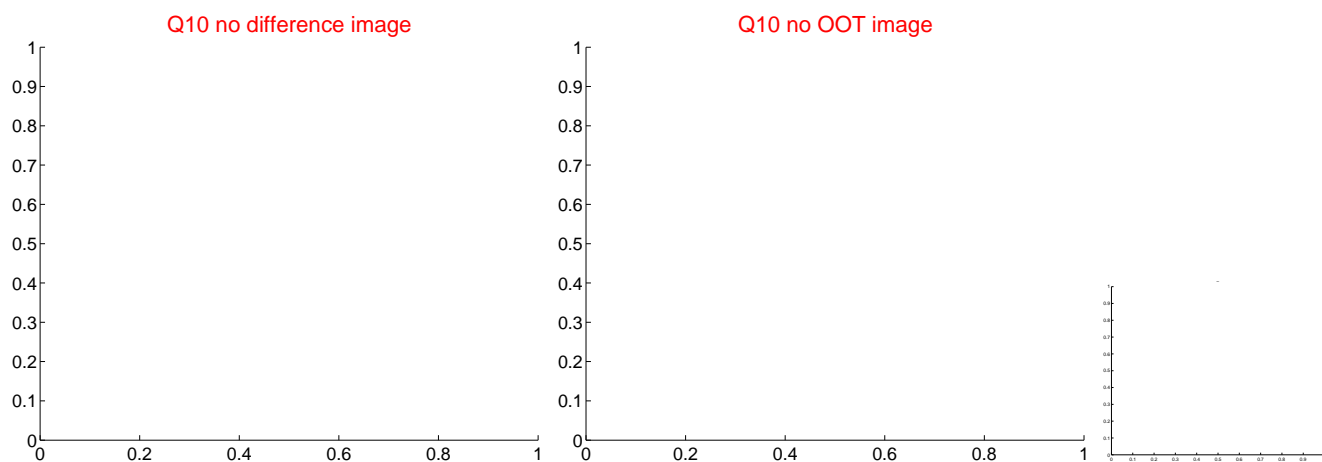
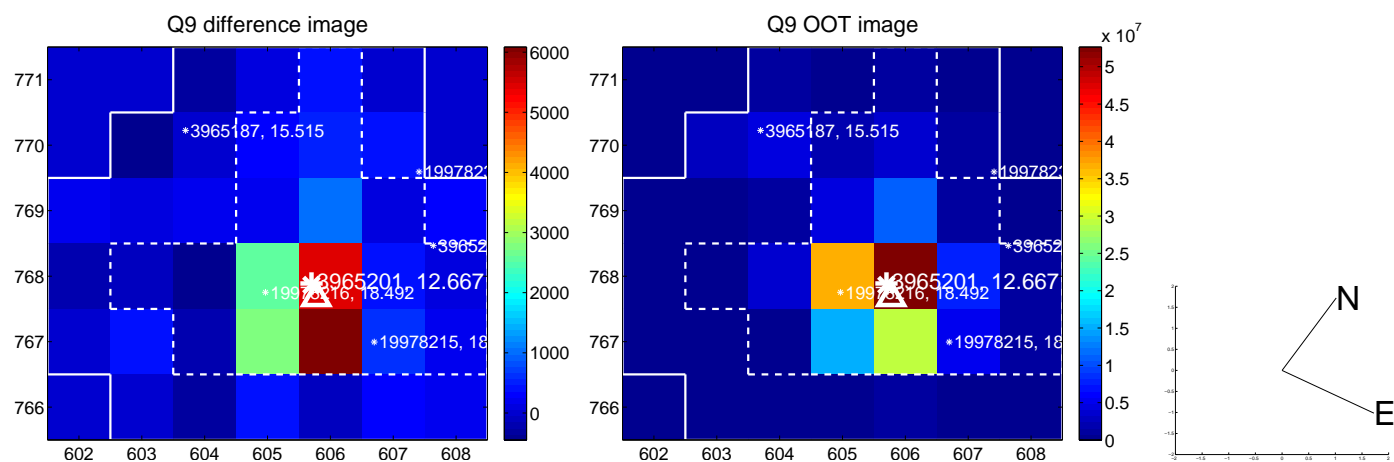
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



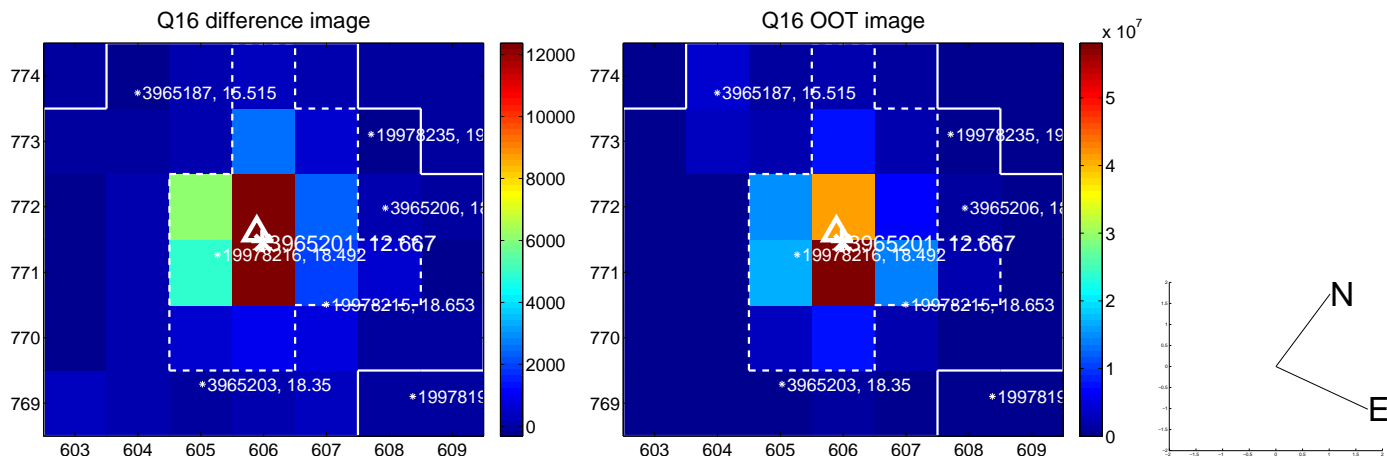
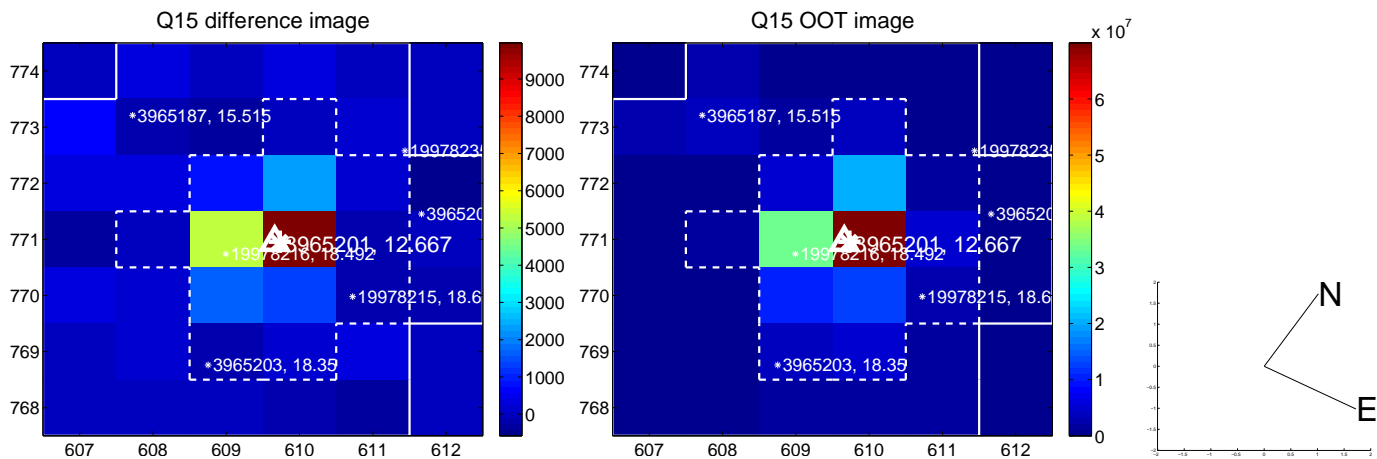
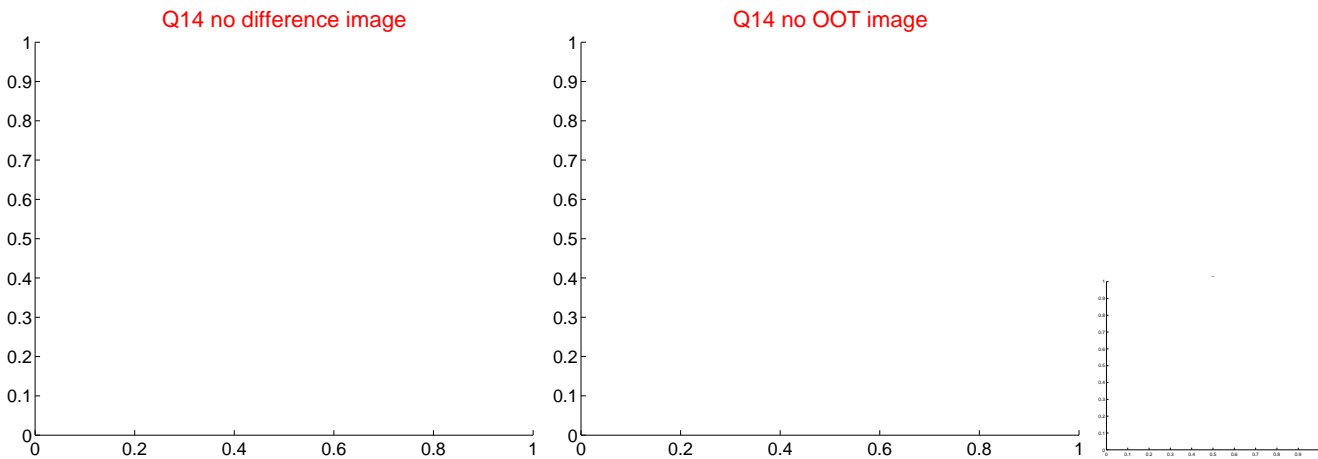
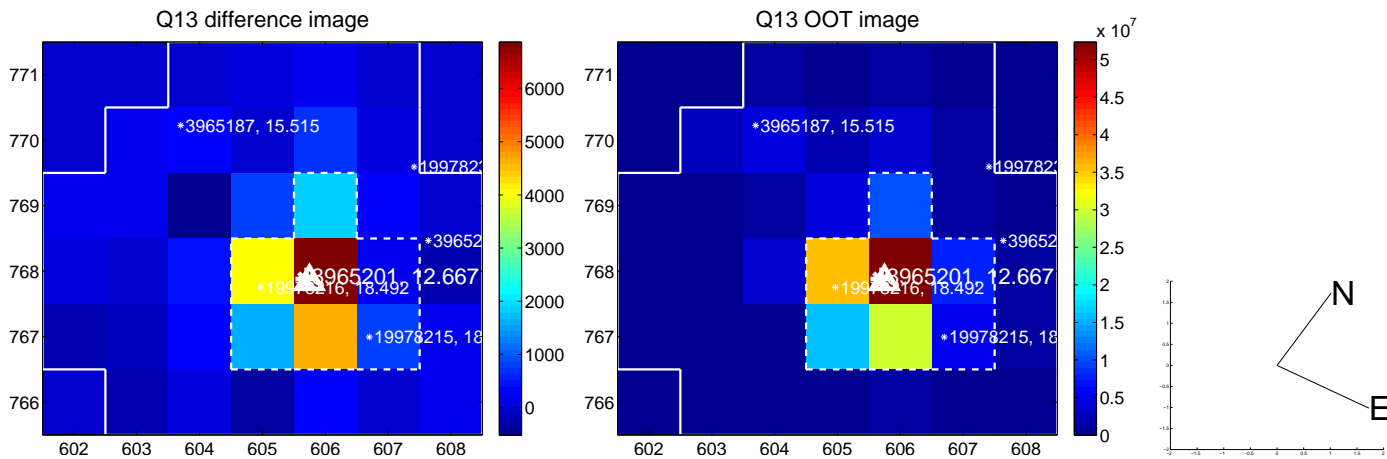
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



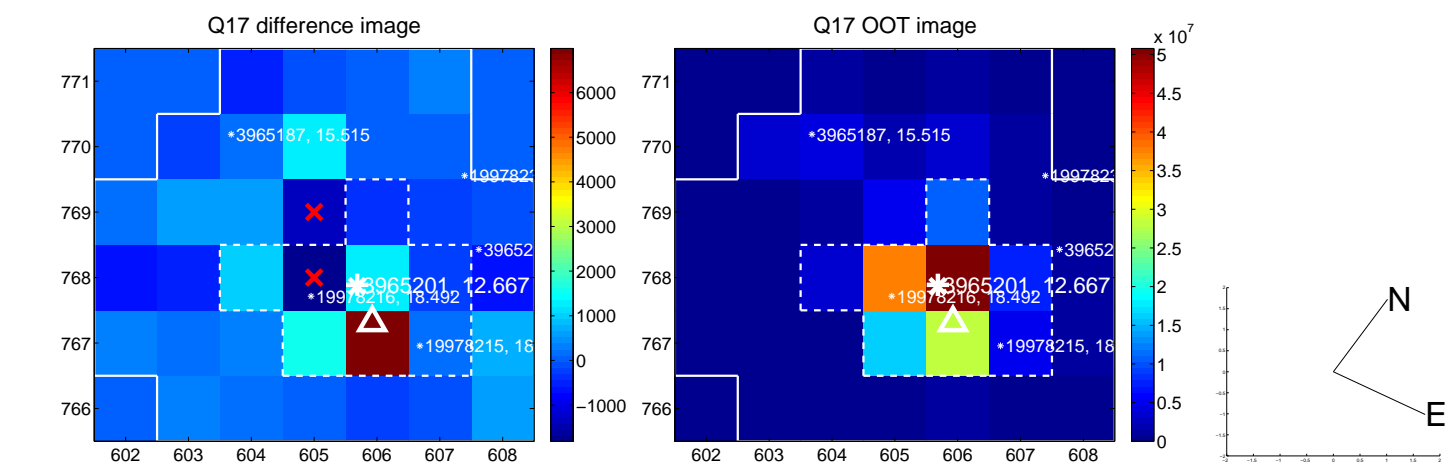
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



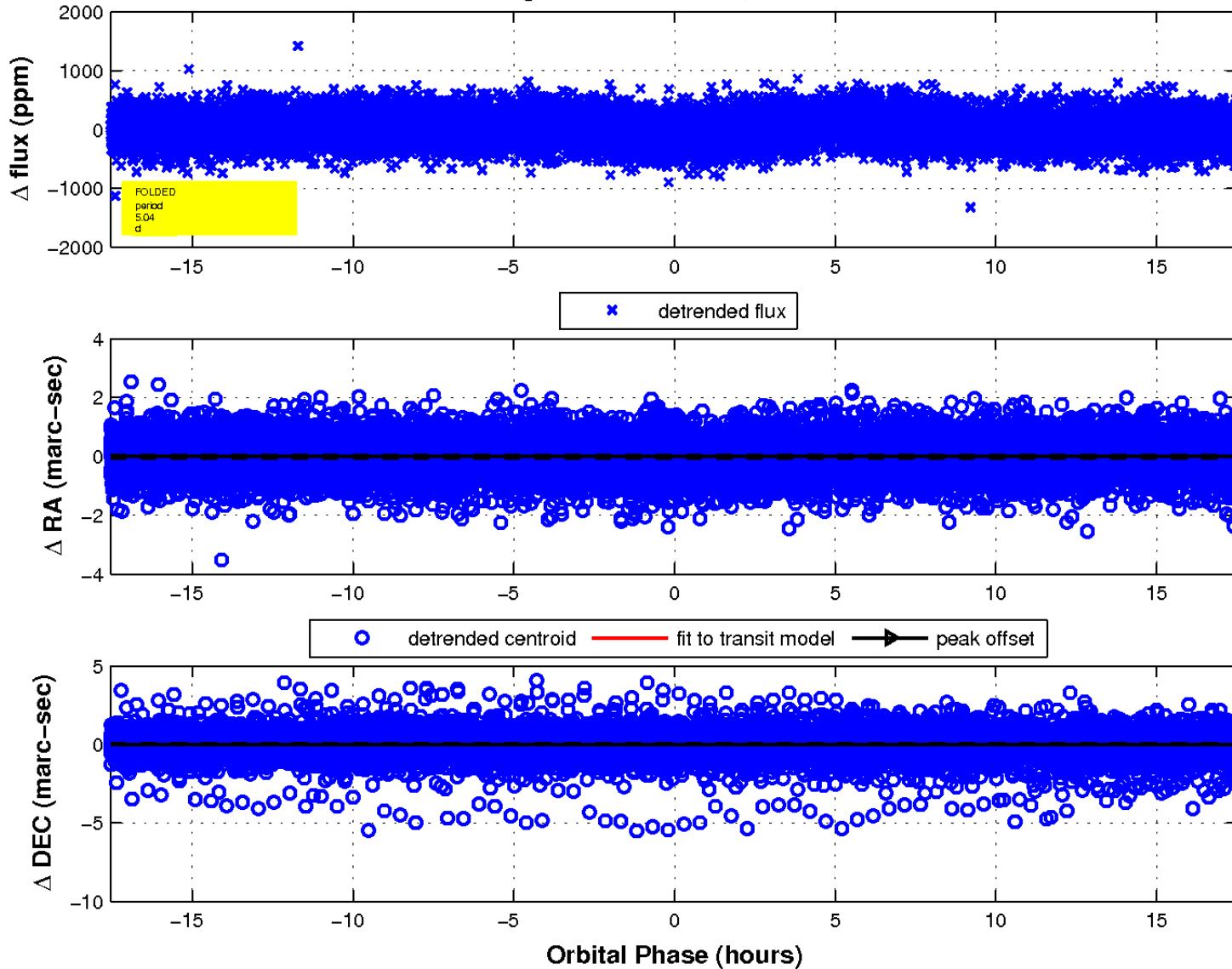
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



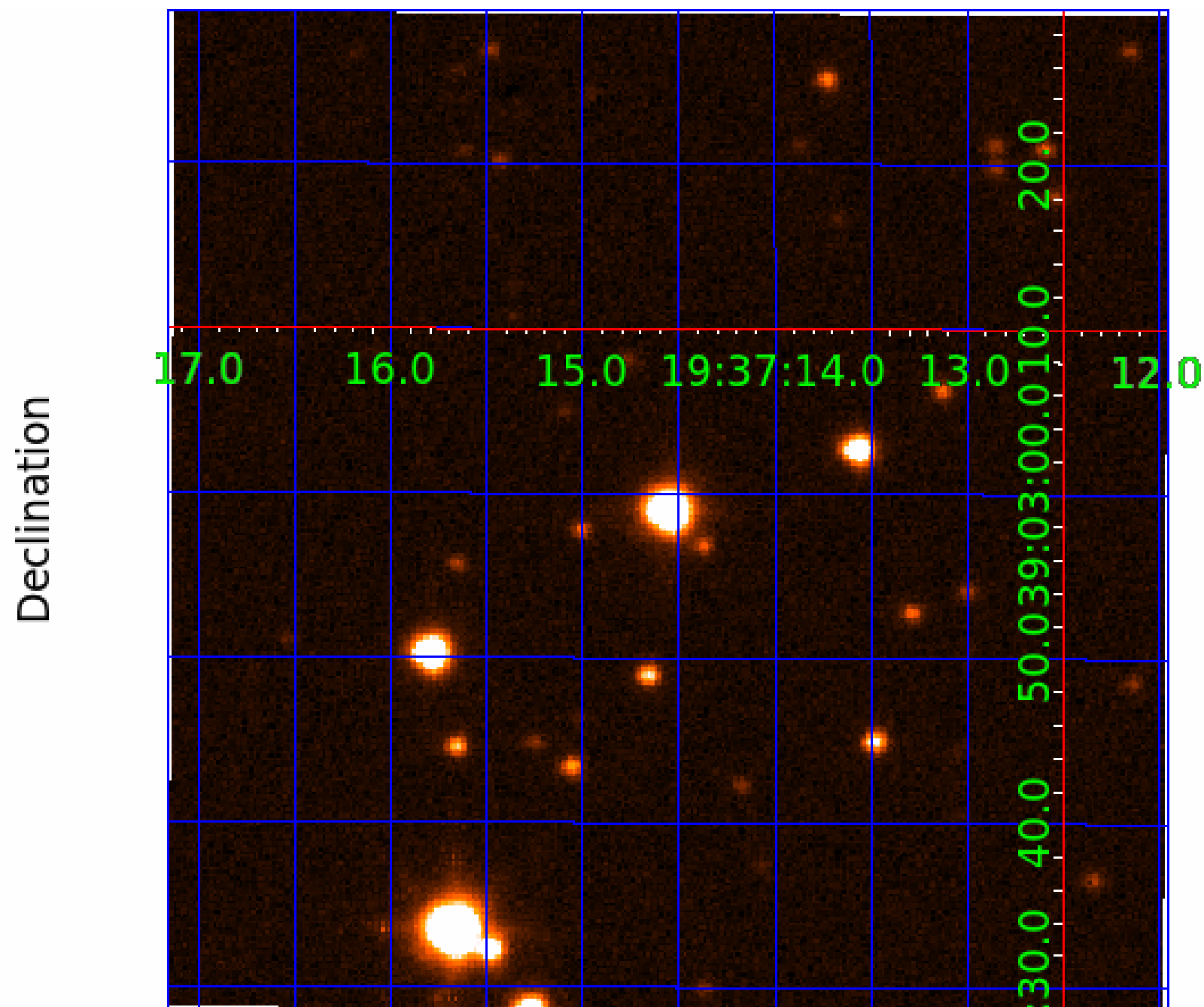
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 3



UKIRT Image



KIC 003965201

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 003965201-01 | OBS | No | 5.040586 | 135.908105 | 62.0 | 5.848 | 8.2 | 6.7 | 3.46 | 7854 | 3.19 | 7670.69 |
| 003965201-02 | OBS | No | 7.601349 | 136.616323 | 66.4 | 11.559 | 7.2 | 7.5 | 3.46 | 7854 | 3.28 | 4435.63 |
| 003965201-03 | OBS | No | 0.560035 | 131.962519 | 46.3 | 6.202 | 8.9 | 13.1 | 3.46 | 7854 | 2.39 | 143611.56 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 003965201-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 003965201-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 003965201-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—CENT_FEW_DIFFS |

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

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

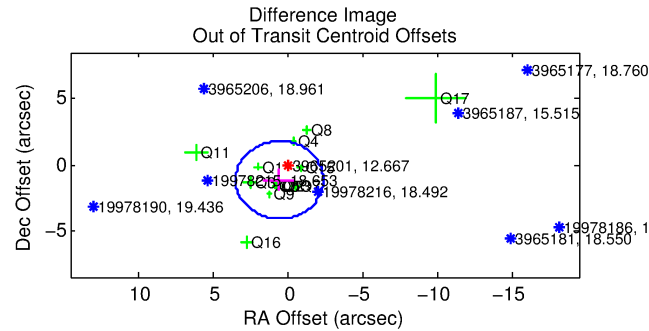
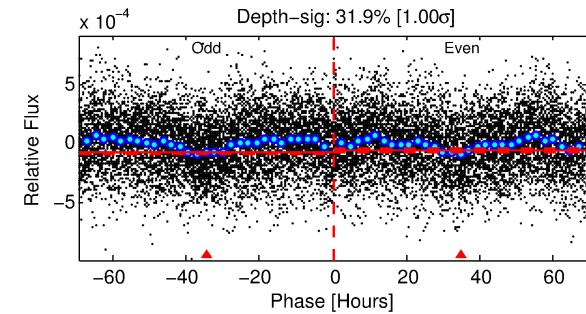
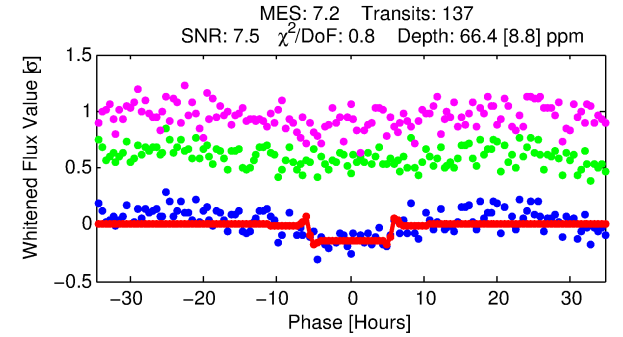
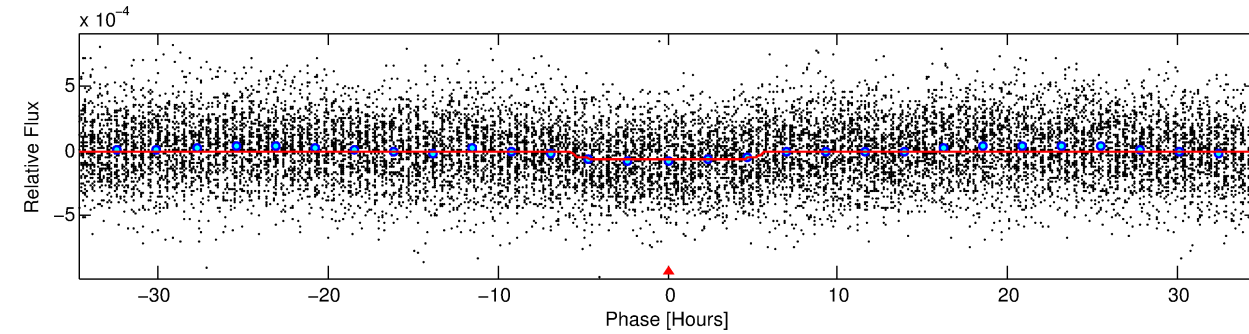
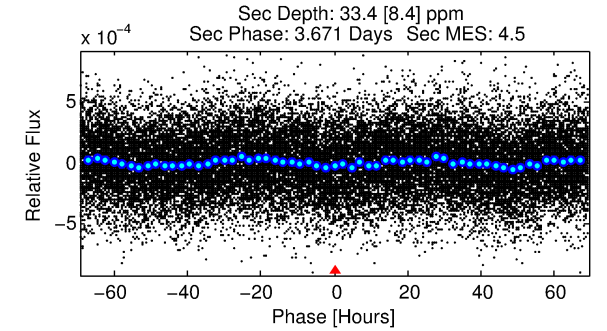
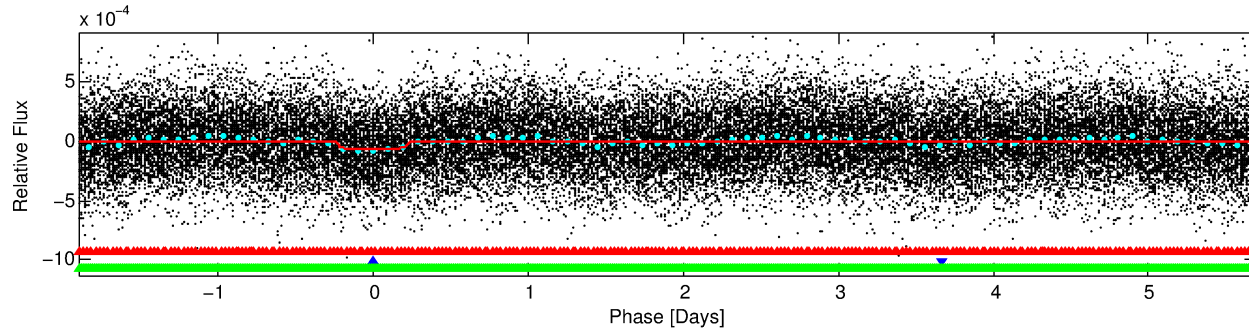
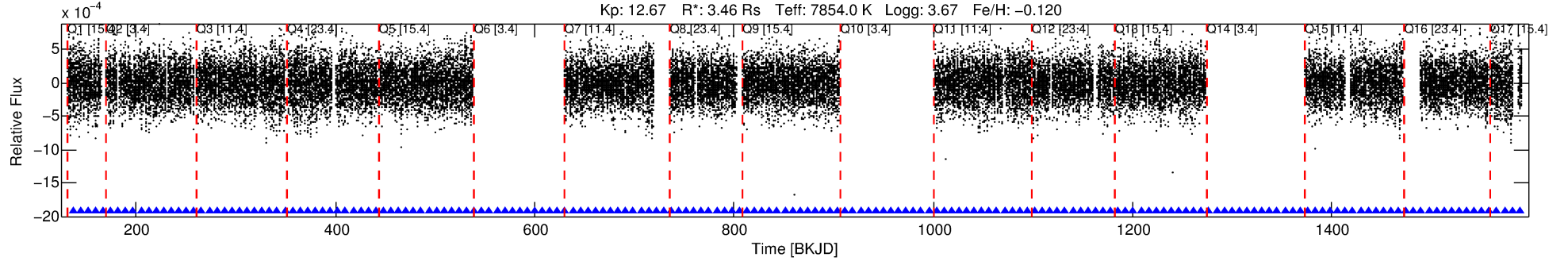
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003965201-02

No Significant Match Found

DV One-Page Summary

KIC: 3965201 Candidate: 2 of 3 Period: 7.601 d
KOI: K07546 Corr: No Ephemeris Match



DV Fit Results:

Period = 7.60135 [0.00010] d
Epoch = 136.6163 [0.0094] BKJD
Rp/R* = 0.0087 [0.0011]
a/R* = 2.50 [1.28]
b = 0.90 [0.13]
Seff = 4435.63 [3571.88]
Teq = 2081 [419] K
Rp = 3.28 [1.64] Re
a = 0.0960 [0.0464] AU
Ag = 15.78 [13.61] [1.09σ]
Teffp = 6413 [621] K [5.78σ]

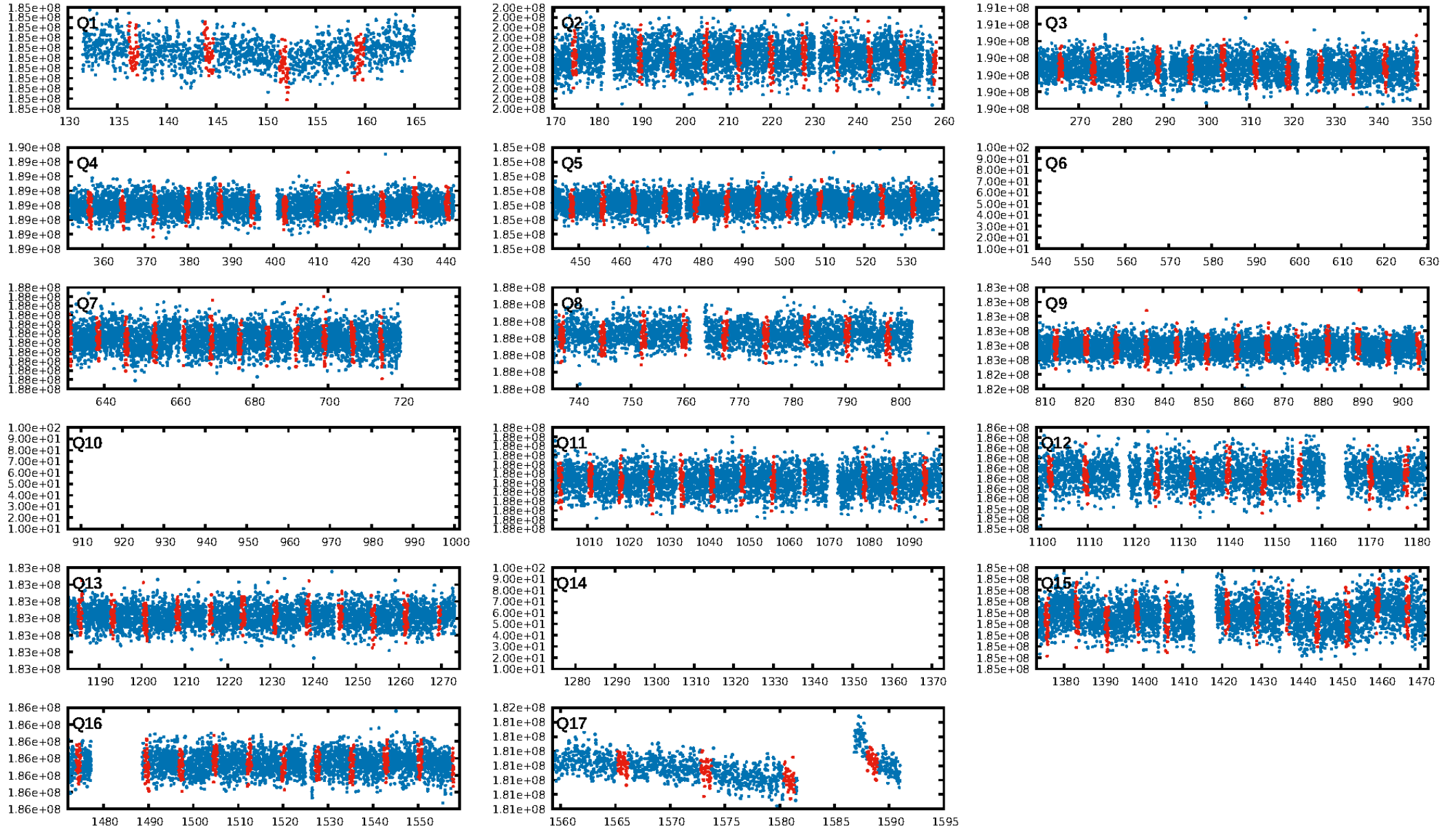
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.74σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [129/129]
GhostDiagnostic-chr: 0.7911
Centroid-sig: 12.0%
Centroid-so: 0.596 arcsec [1.11σ]
OotOffset-rm: 1.276 arcsec [1.30σ]
KicOffset-rm: 1.184 arcsec [1.16σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.00 [0/14]

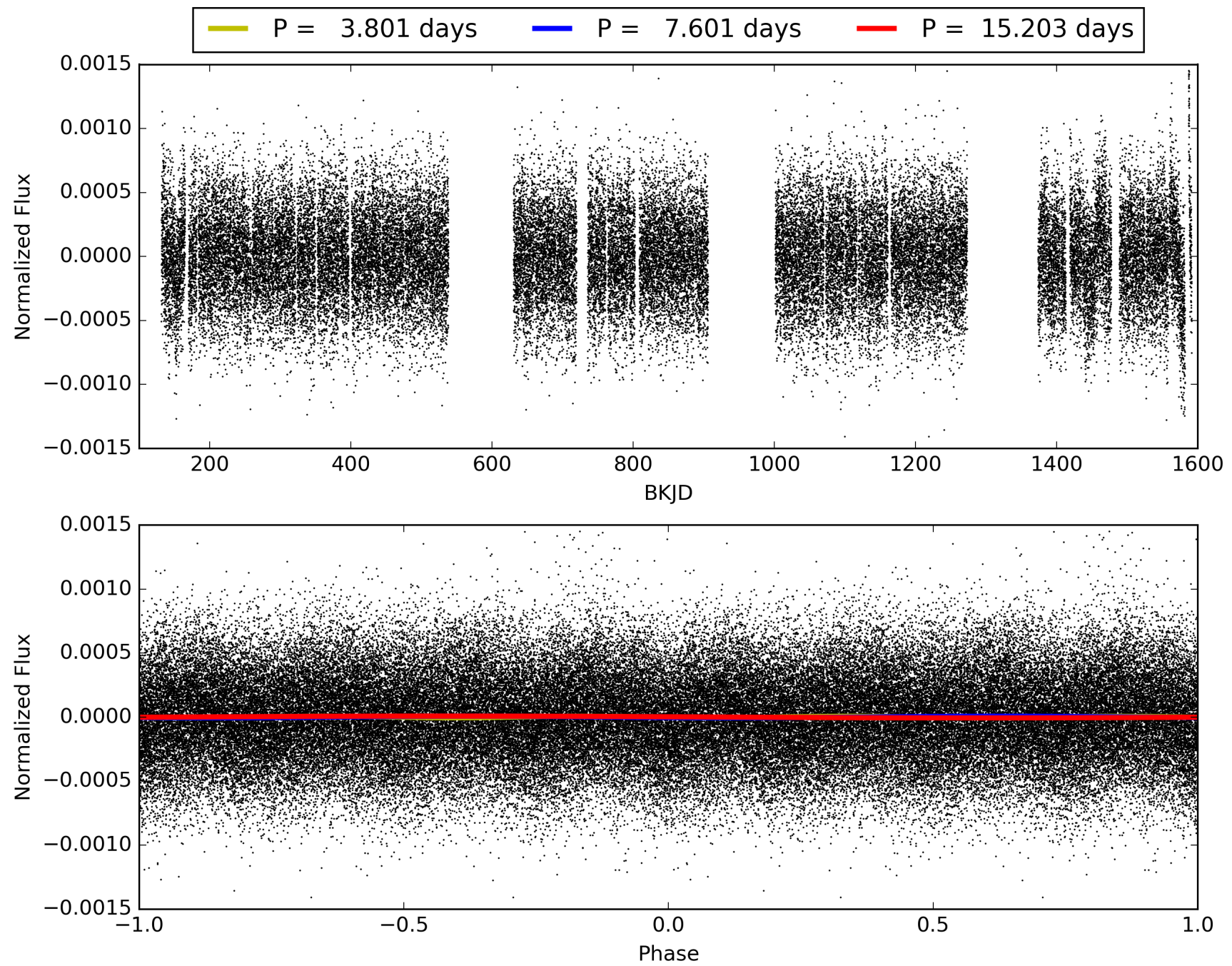
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:41:40 Z

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

TCE 003965201-02, PDC Light Curves

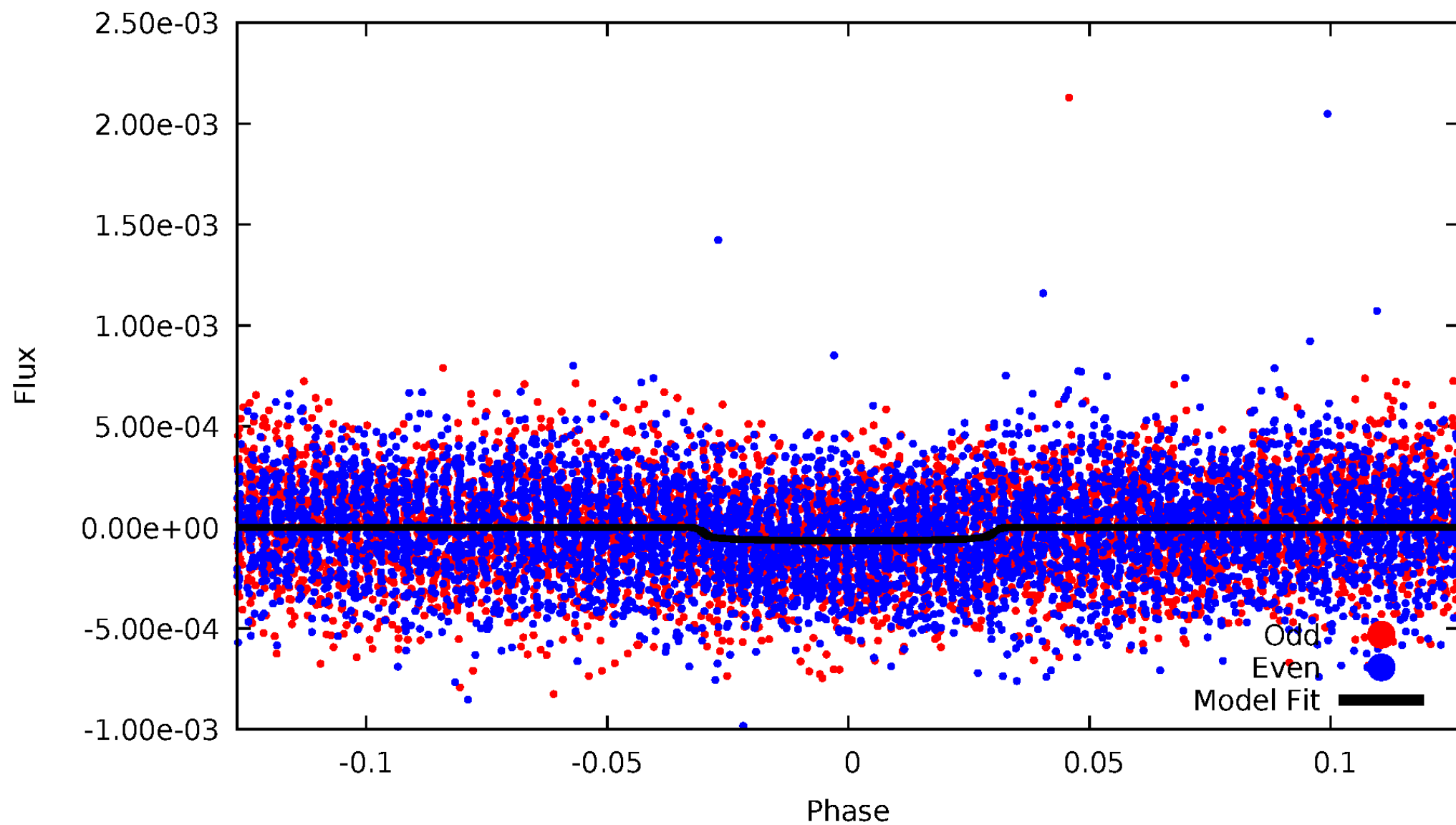


TCE 003965201-02



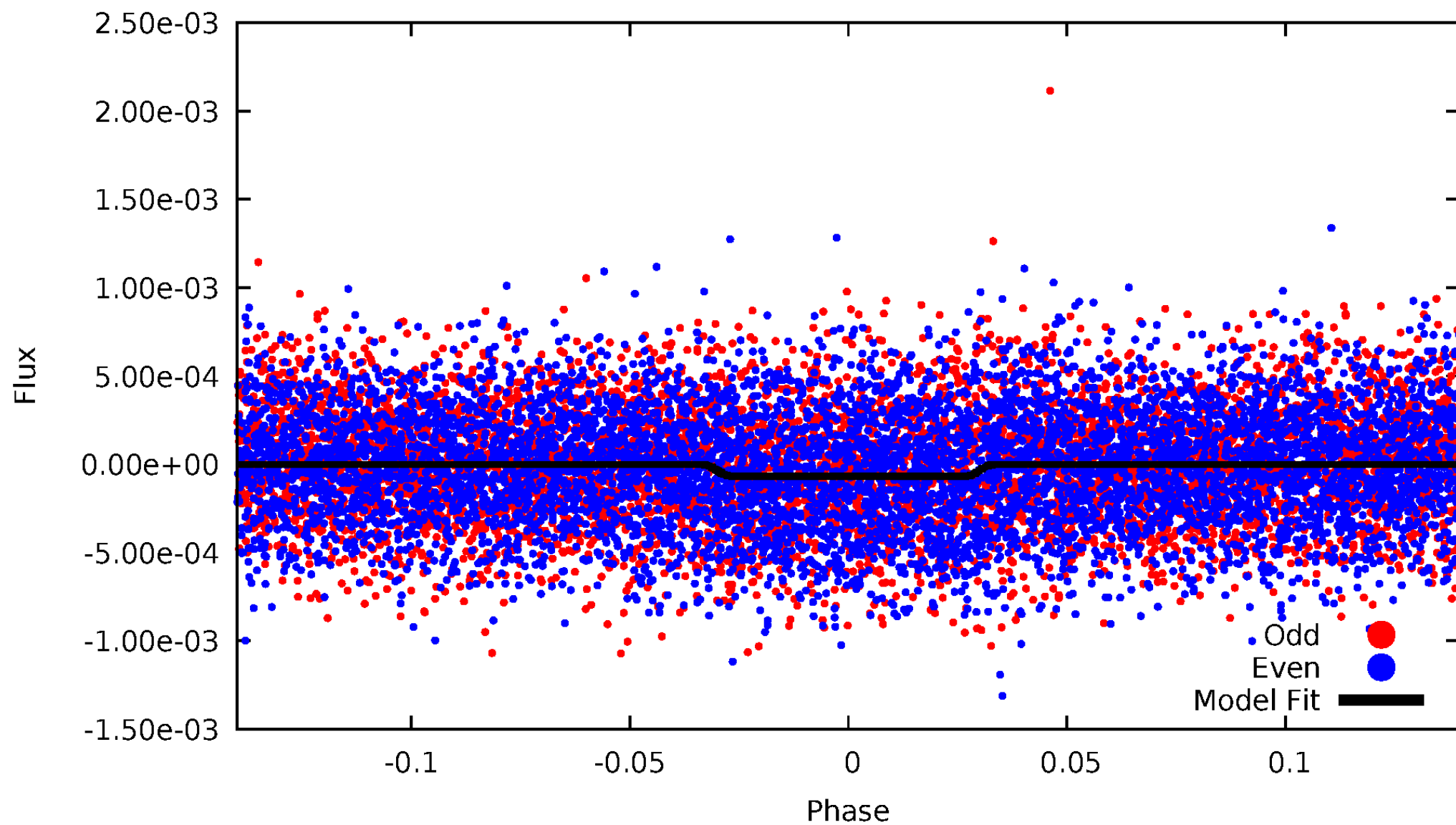
DV Odd/Even

TCE 003965201-02



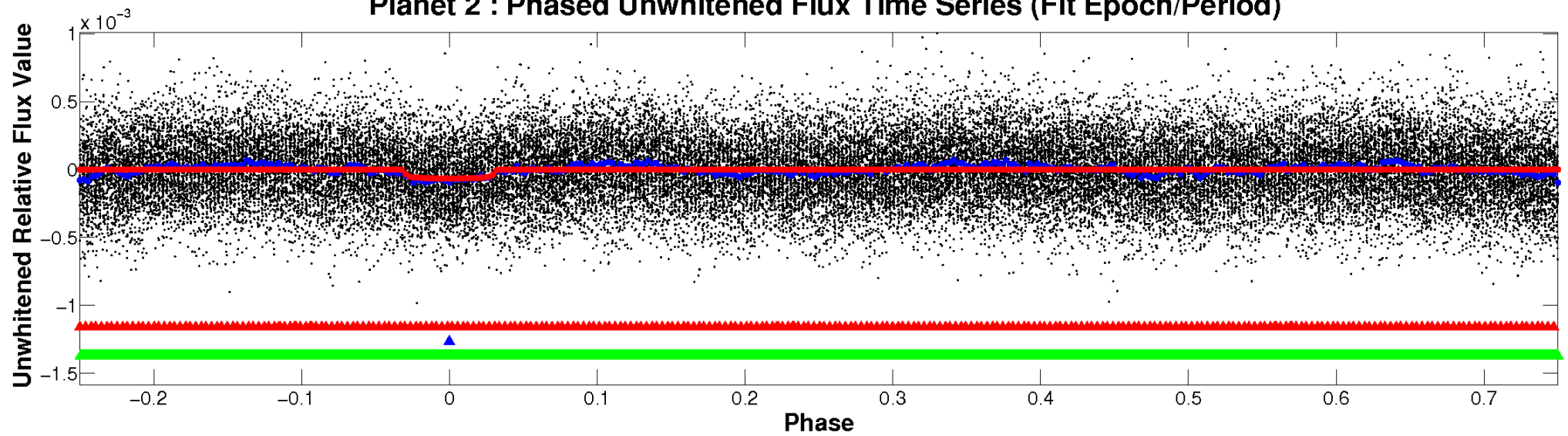
ALT Odd/Even

TCE 003965201-02

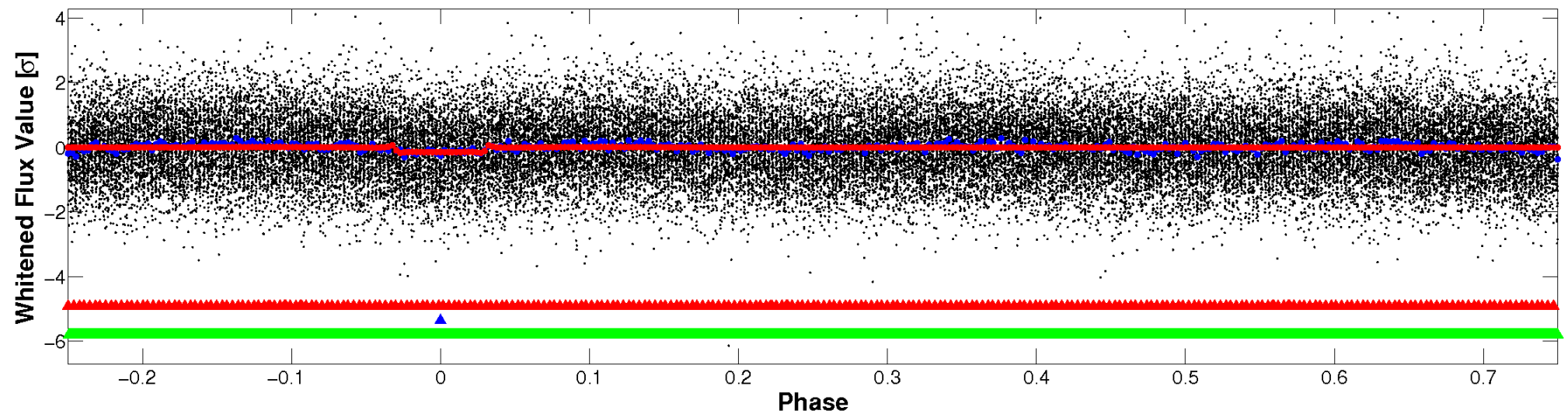


Non-Whitened Vs. Whitened Light Curve

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

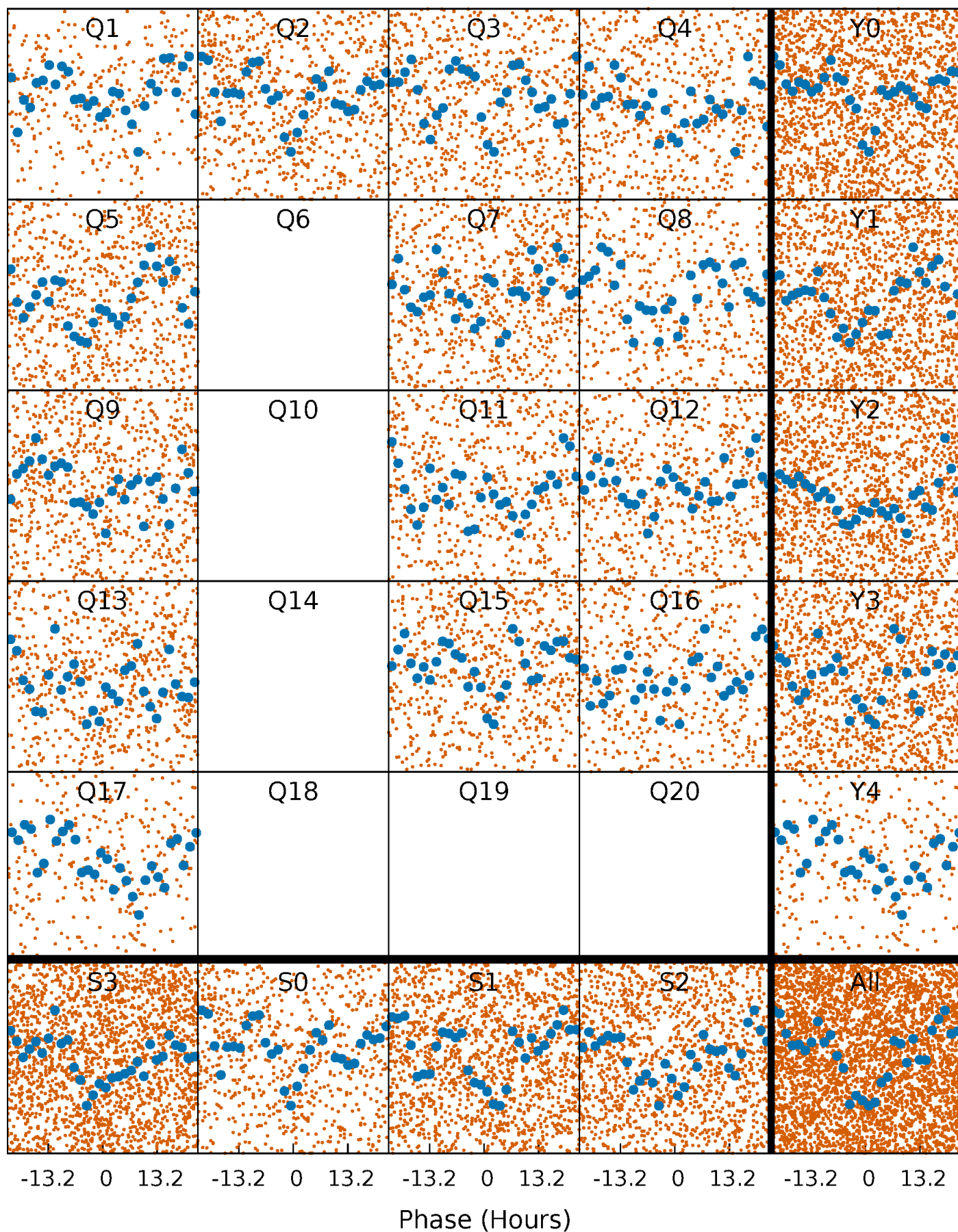


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



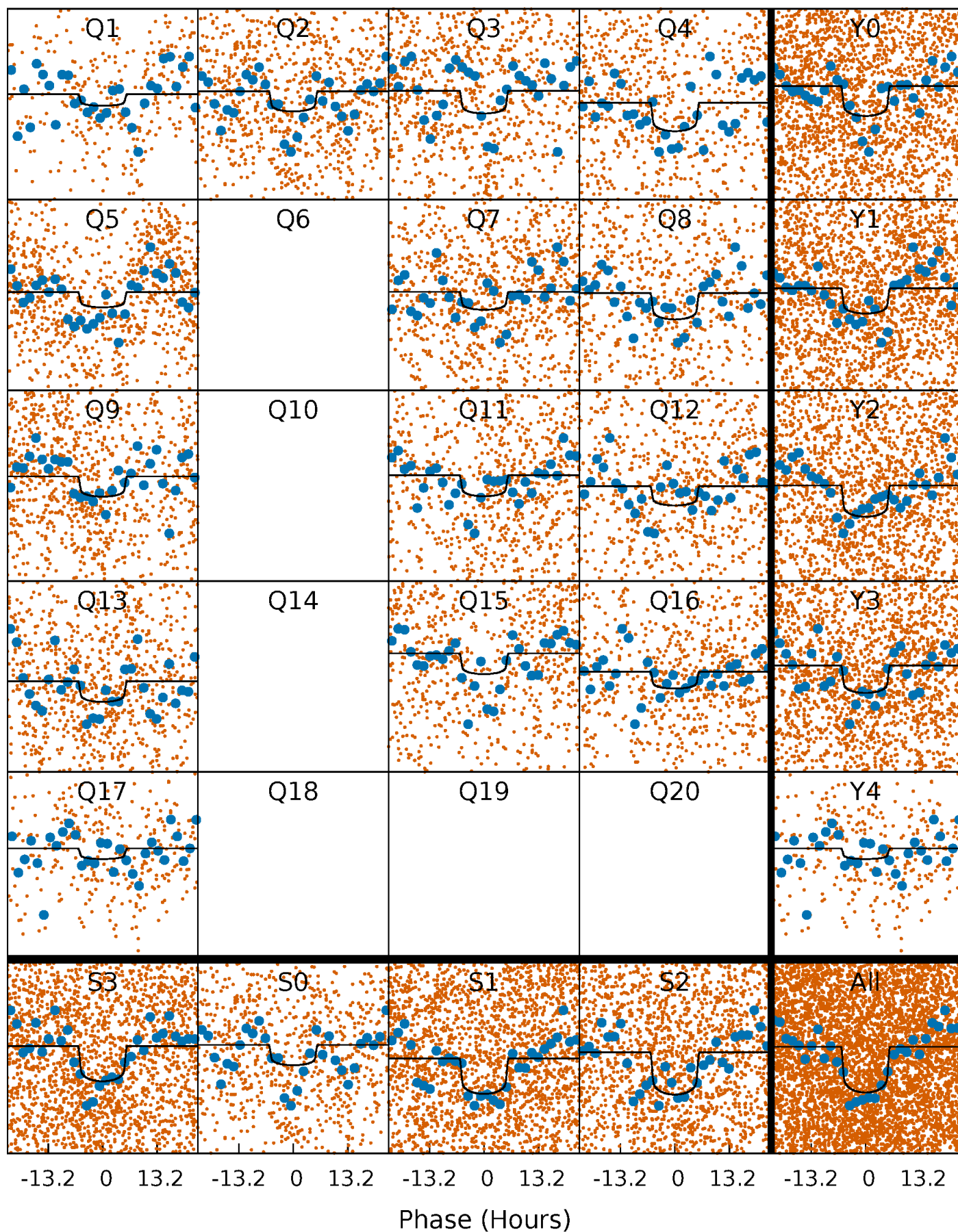
PDC Quarter-Phased Transit Curves

TCE 003965201-02 P= 7.601349 Days $T_0=136.616323$ (BKJD)



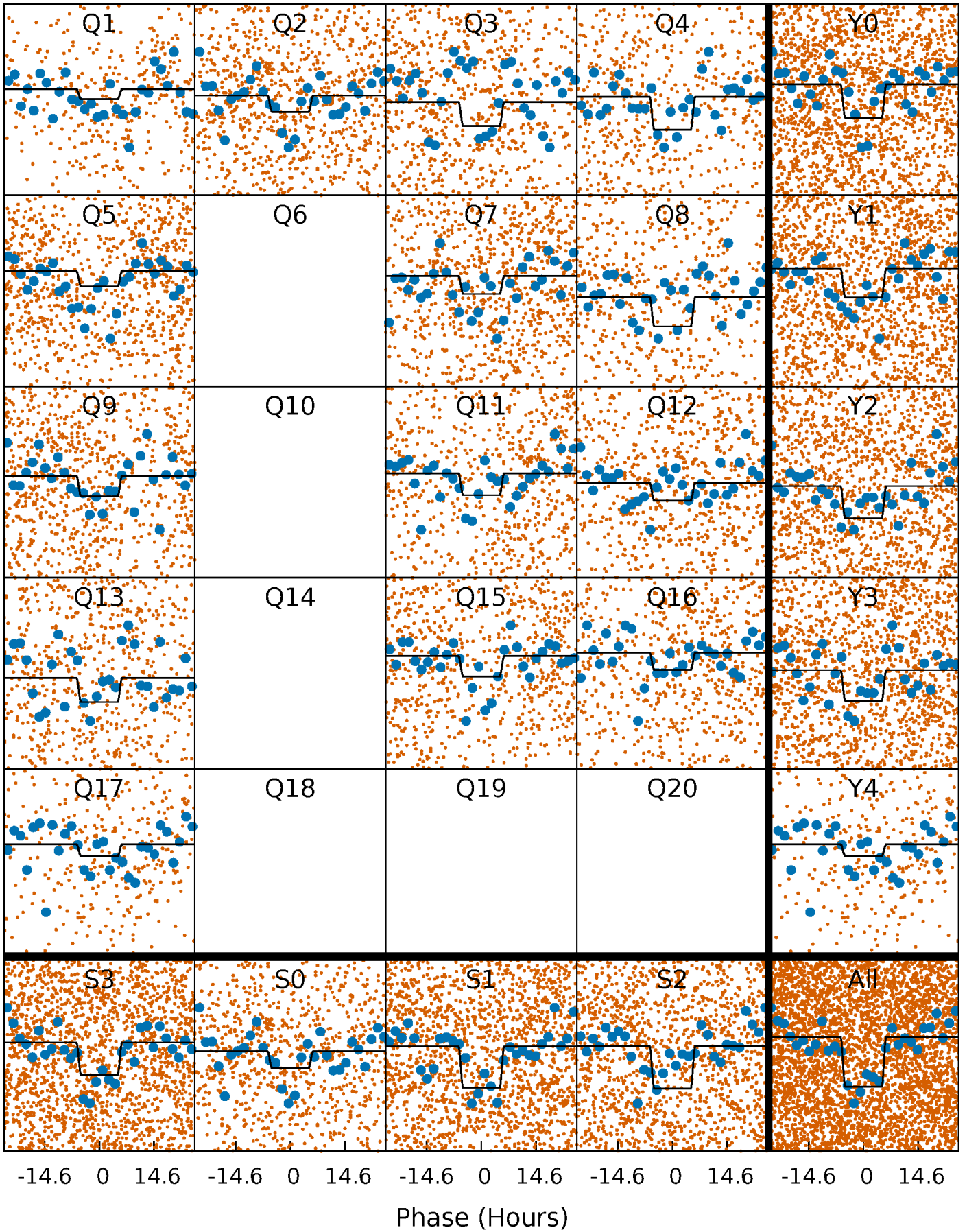
DV Quarter-Phased Transit Curves

TCE 003965201-02 P= 7.601349 Days $T_0=136.616323$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

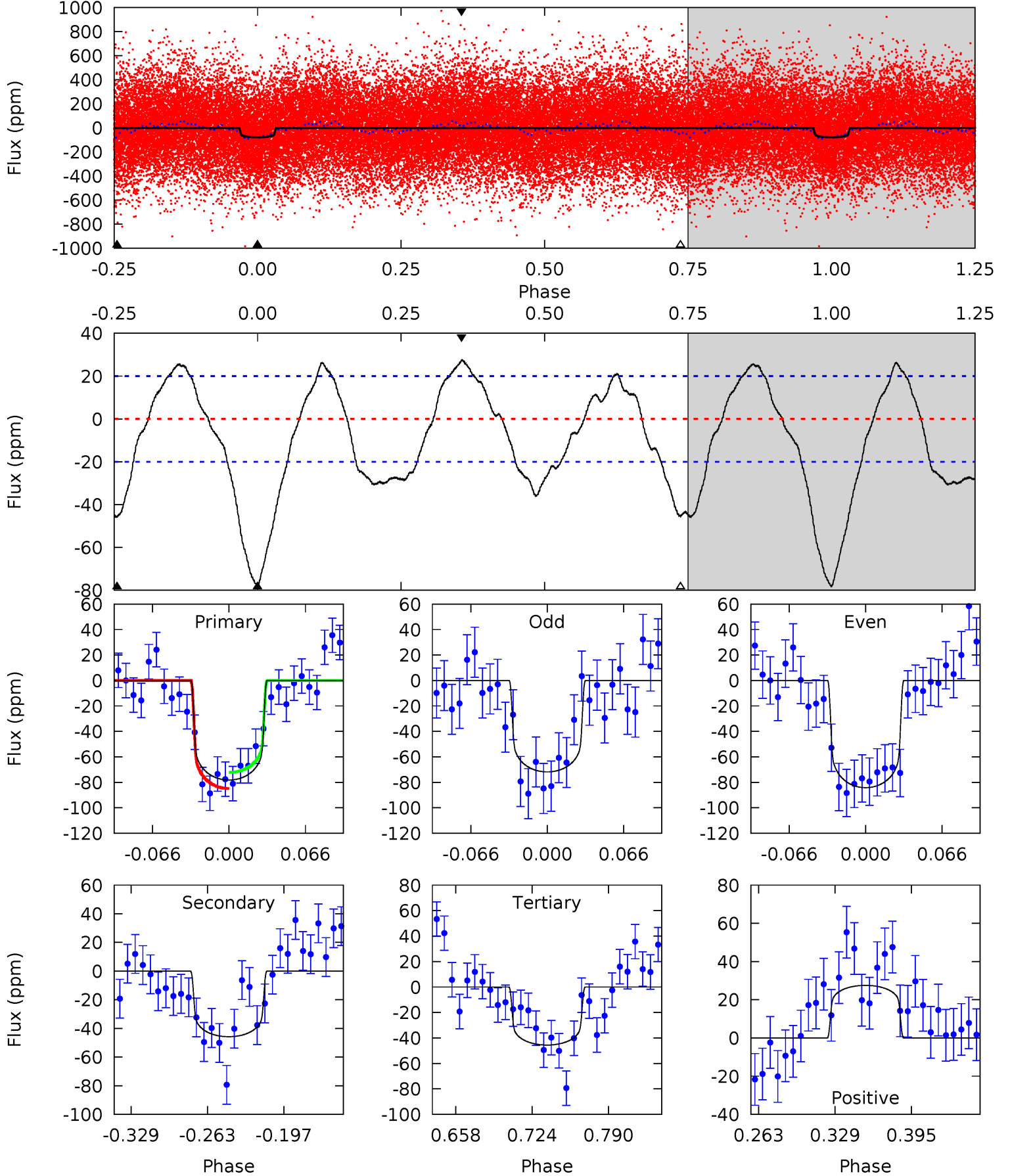
TCE 003965201-02 P= 7.601202 Days $T_0=136.627746$ (BKJD)



DV Model-Shift Uniqueness Test

003965201-02, P = 7.601349 Days, E = 129.014974 Days

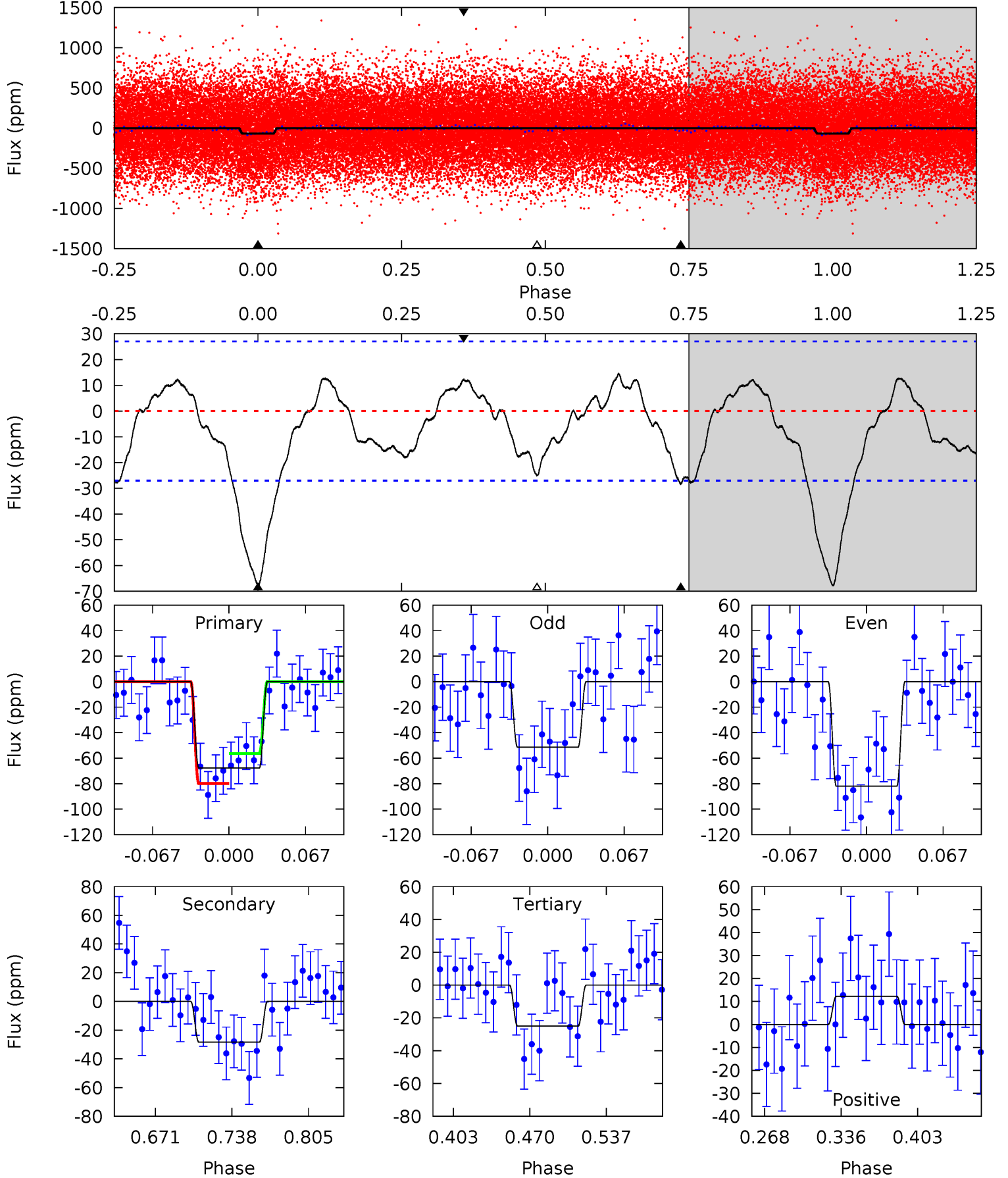
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.1 | 10.6 | 10.6 | 6.39 | 4.65 | 1.84 | 4.68 | 7.57 | 11.8 | 0.05 | 4.24 | 1.44 | 1.01 | 0.26 | 1.48 |



Alt Model-Shift Uniqueness Test

003965201-02, P = 7.601202 Days, E = 129.026544 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.6 | 4.88 | 4.31 | 2.10 | 4.65 | 1.83 | 1.71 | 7.33 | 9.53 | 0.57 | 2.77 | 2.62 | 1.05 | 0.18 | 2.02 |



Stellar Parameters For KIC 003965201

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7854^{+217}_{-326} | $3.669^{+0.468}_{-0.110}$ | $-0.120^{+0.200}_{-0.350}$ | $3.462^{+0.720}_{-1.681}$ | $2.039^{+0.343}_{-0.514}$ | $0.069^{+0.321}_{-0.025}$ |
| | +3%/-4% | +13%/-3% | +167%/-292% | +21%/-49% | +17%/-25% | +464%/-36% |
| 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 003965201-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|------------------|
| DV | -46 ± 4 | $3.06^{+0.68}_{-0.74}$ | 2819^{+214}_{-328} | 6795^{+555}_{-499} | 25^{+17}_{-8} |
| Alt. | -28 ± 6 | $2.99^{+0.63}_{-0.79}$ | 2831^{+198}_{-304} | 6087^{+552}_{-525} | 16^{+13}_{-6} |

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

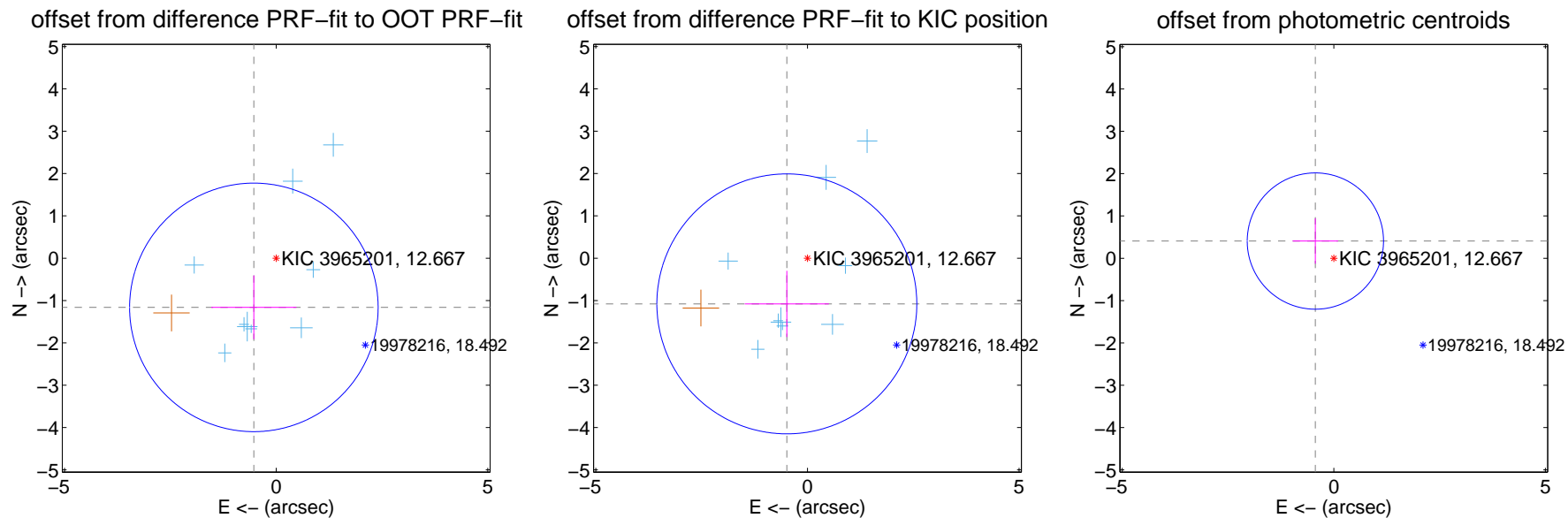
DV Centroid Data

Supplemental centroid analysis for 003965201-02. Kepler magnitude: 12.67. Transit SNR 7.50

There are 9 quarters with good PRF difference image offsets

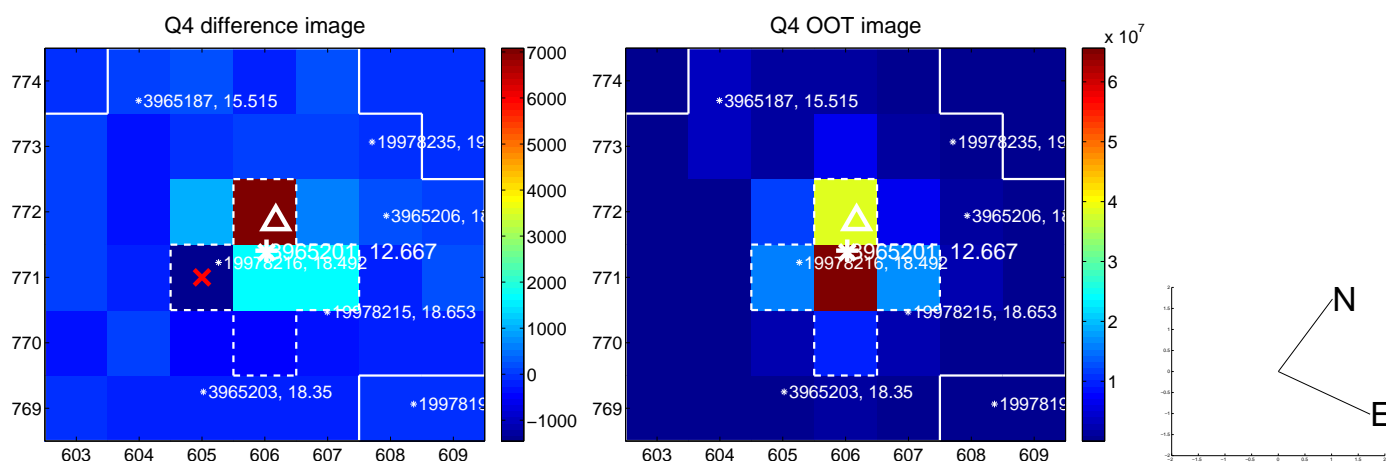
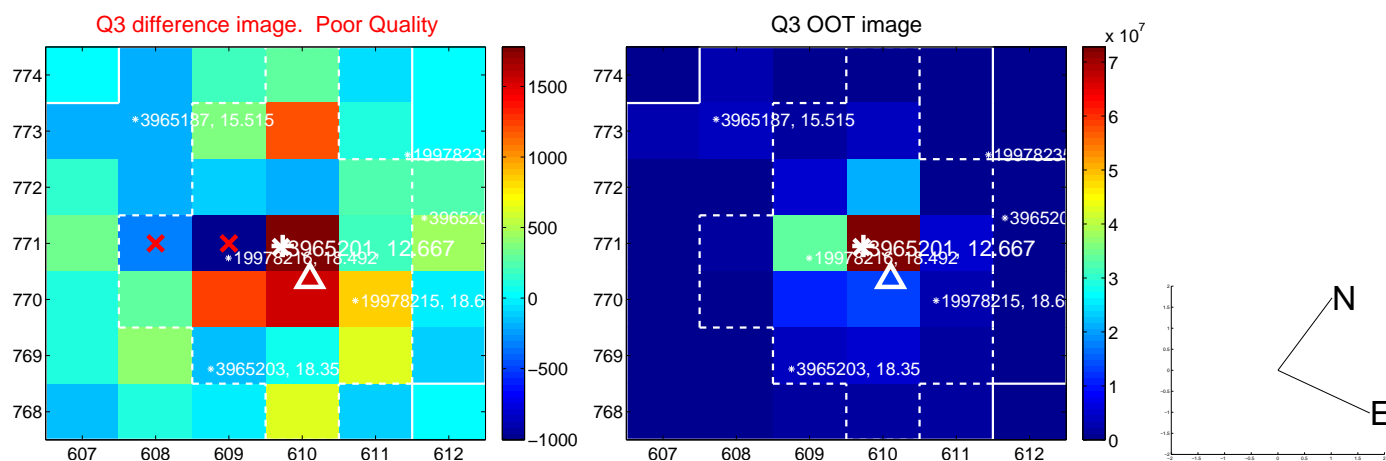
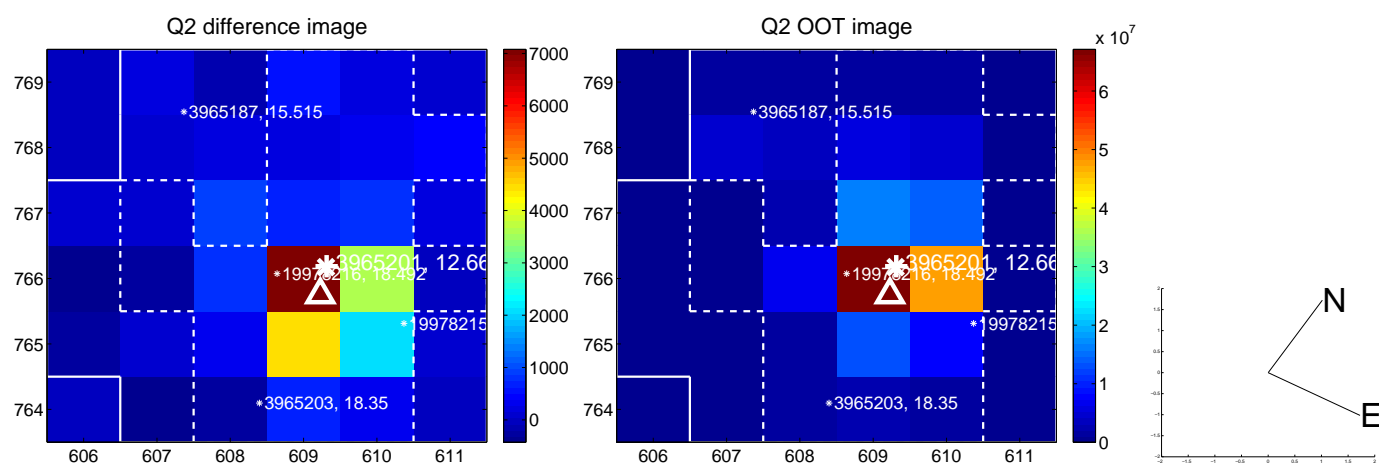
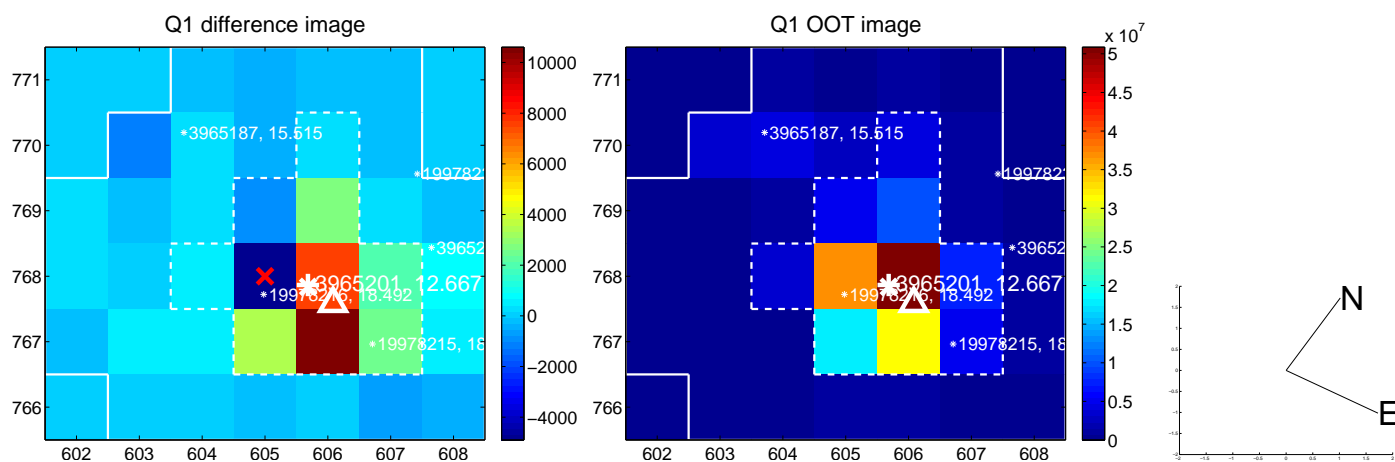
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.276 ± 0.979 | 1.30 | 0.527 ± 1.006 | -1.162 ± 0.753 |
| PRF-fit source offset from KIC position | 1.184 ± 1.024 | 1.16 | 0.487 ± 0.994 | -1.079 ± 0.782 |
| photometric centroid source offset | 0.60 ± 0.54 | 1.11 | 0.44 ± 0.54 | 0.41 ± 0.54 |

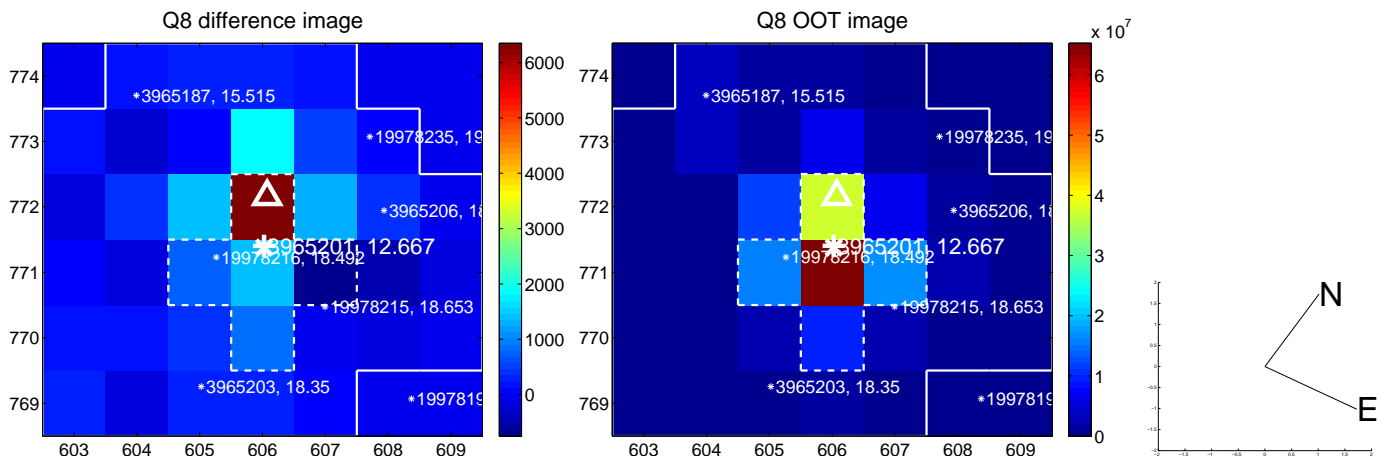
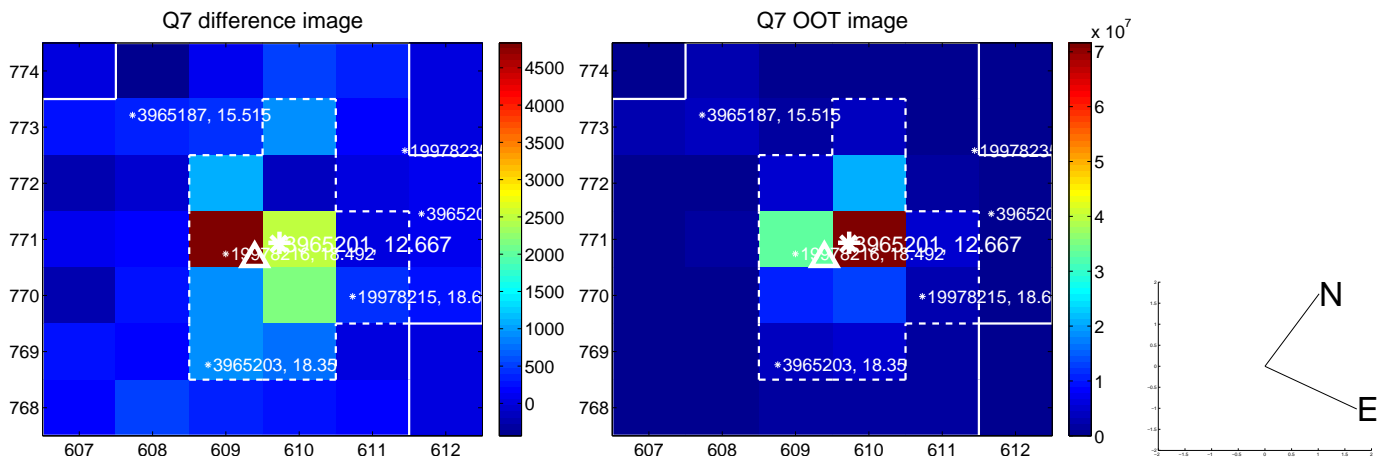
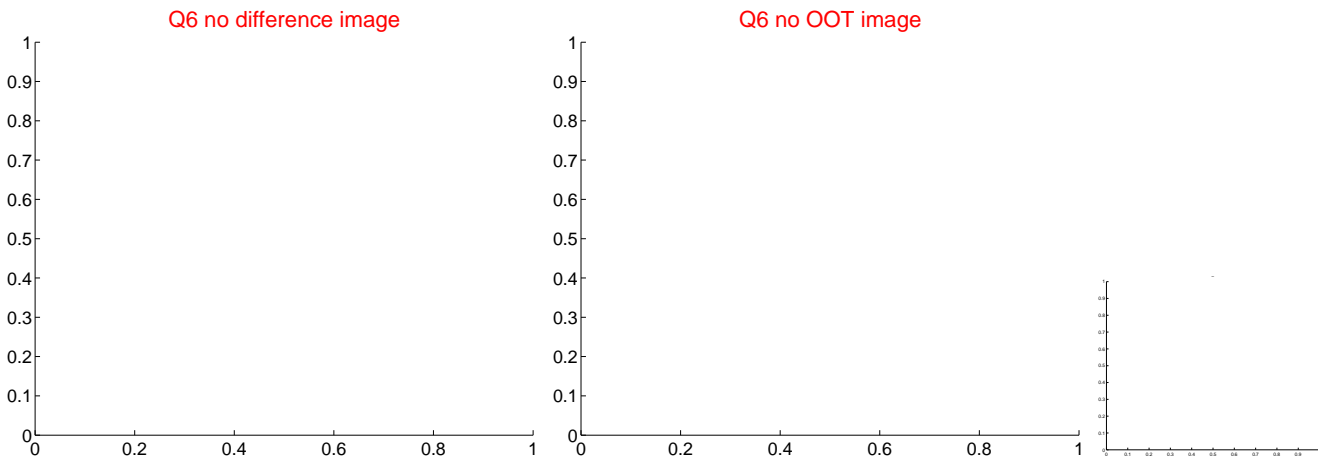
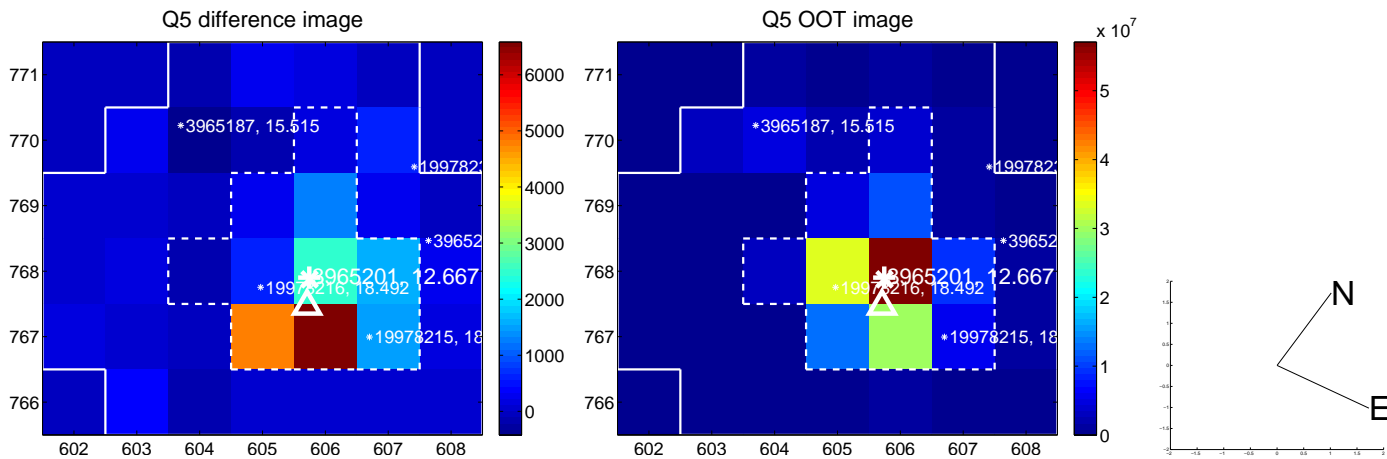


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

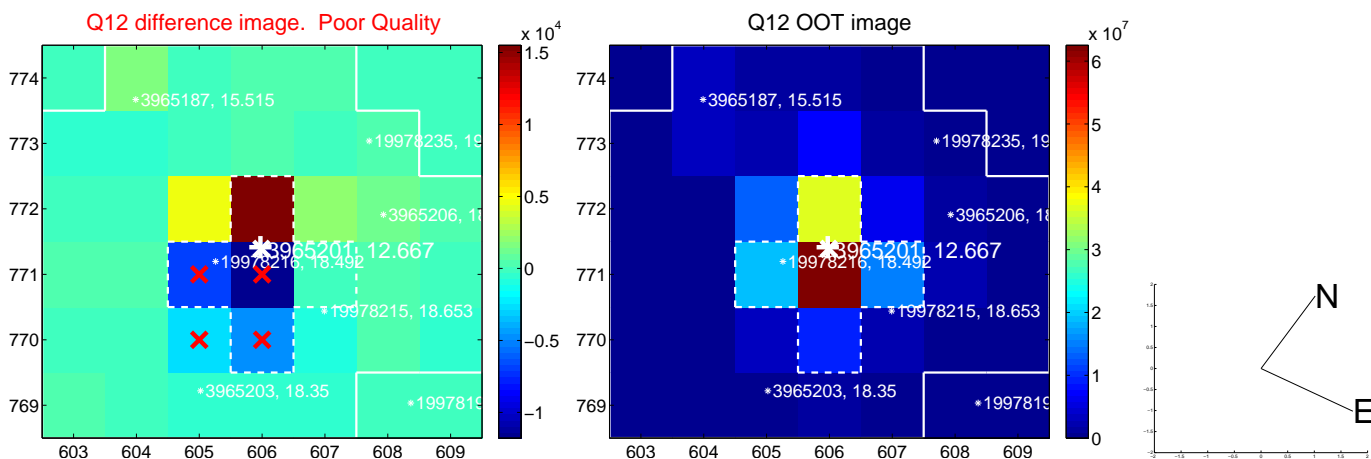
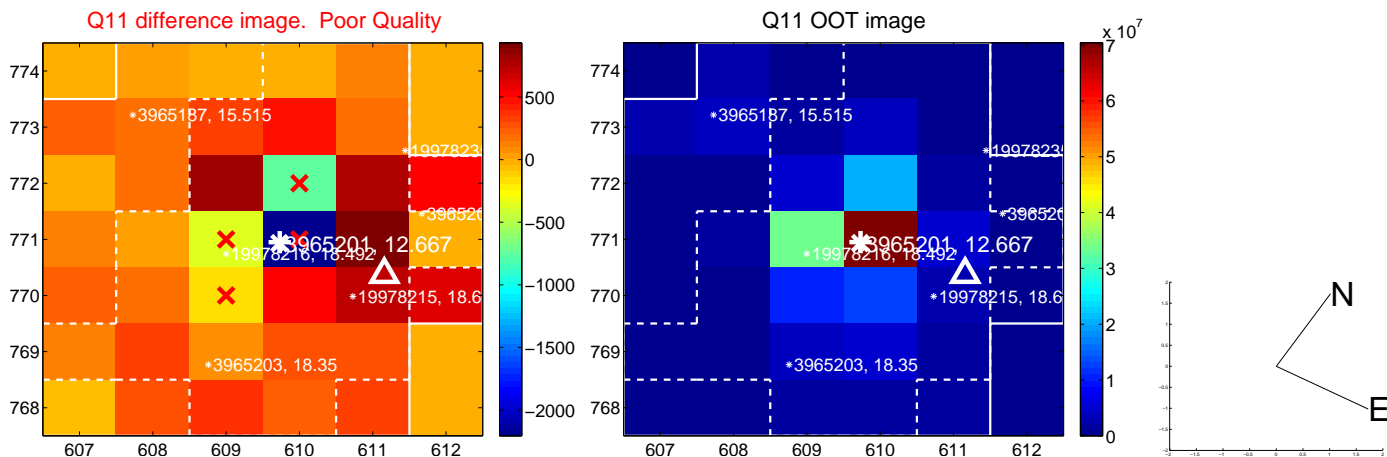
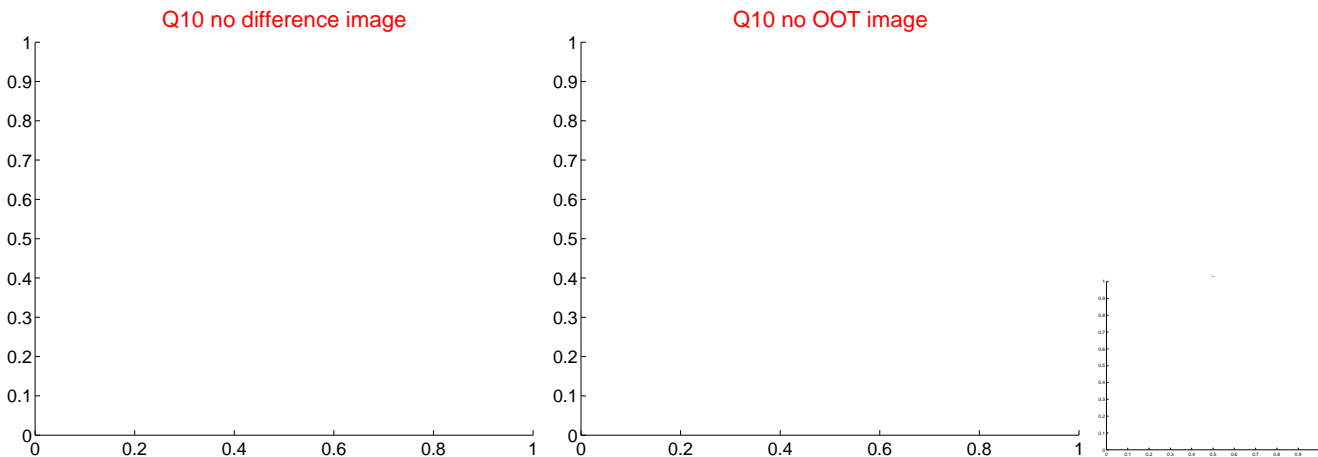
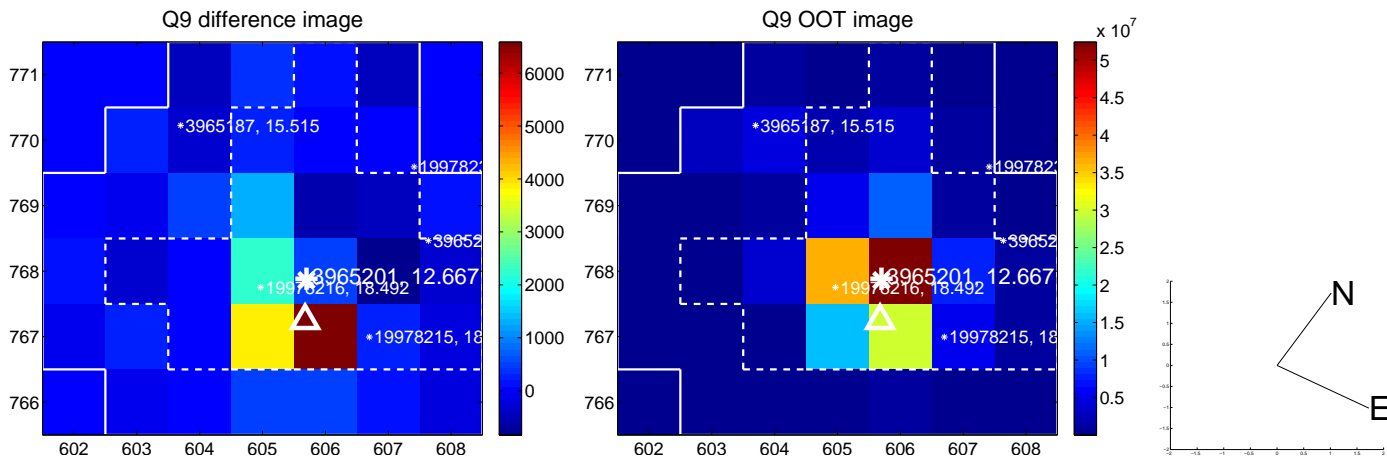
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



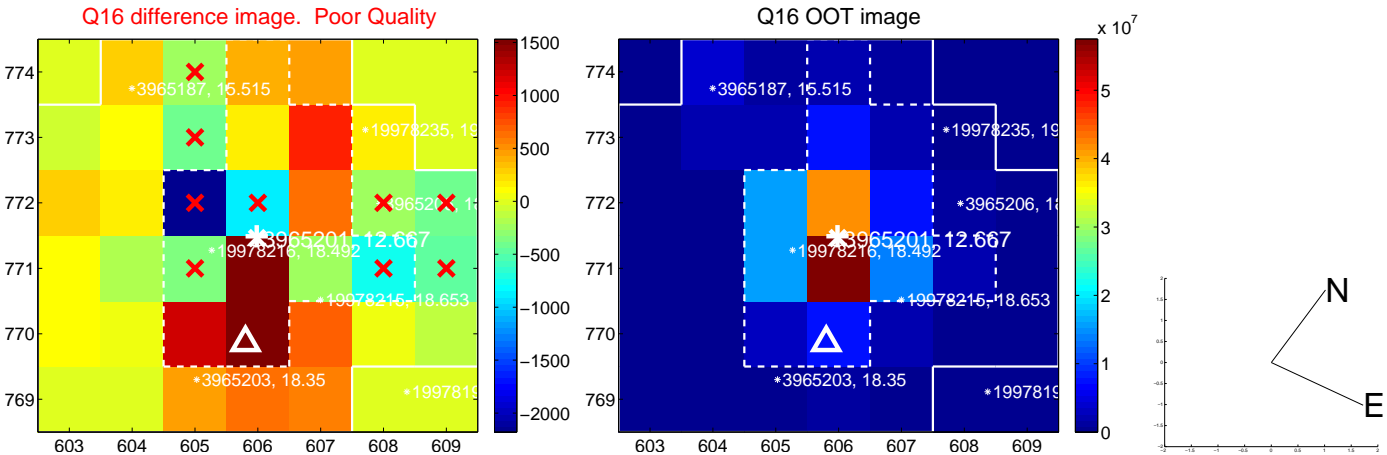
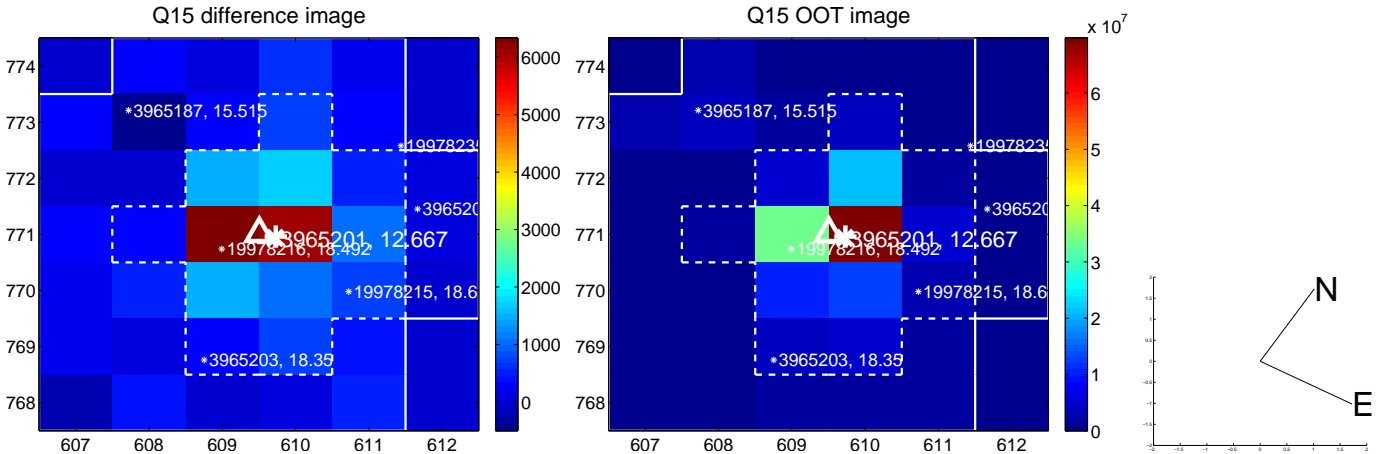
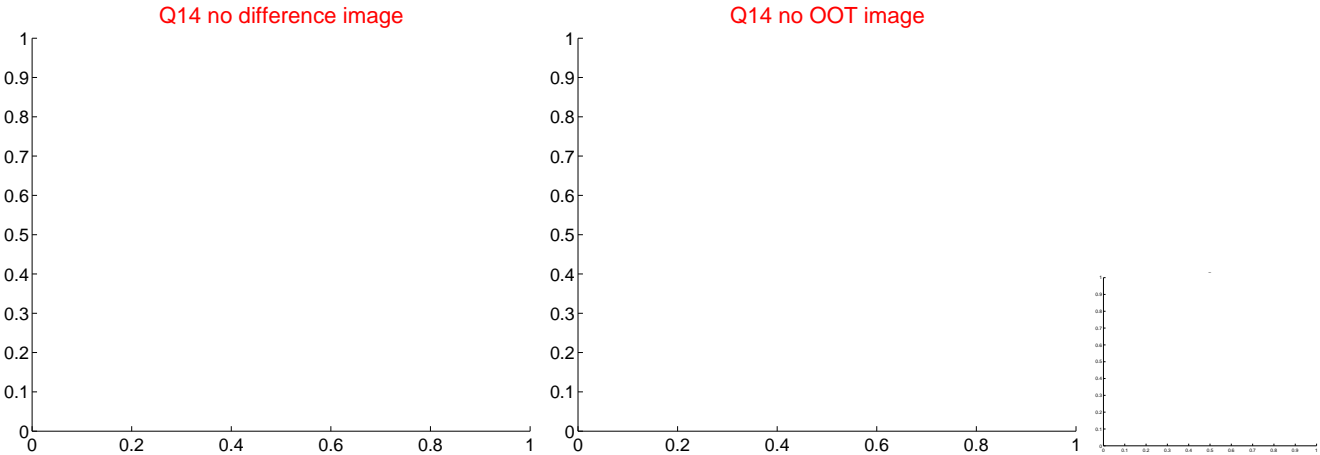
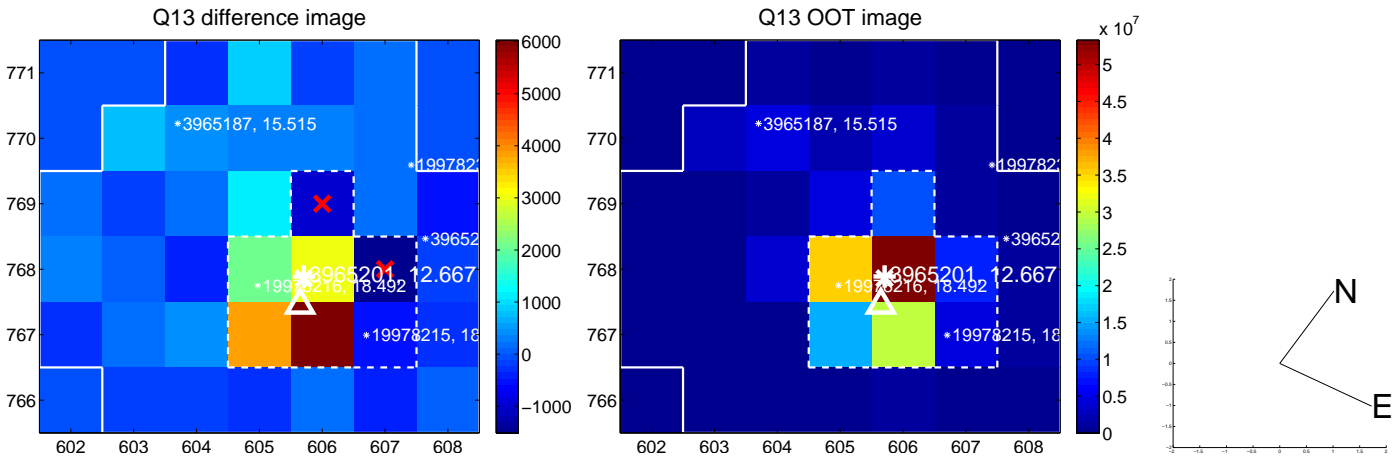
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



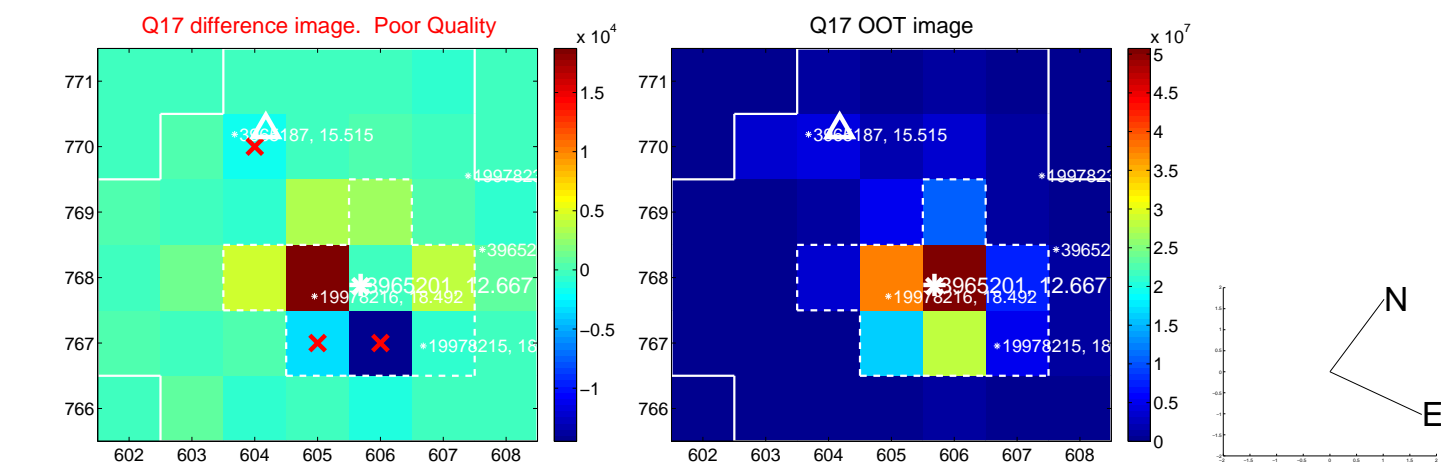
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



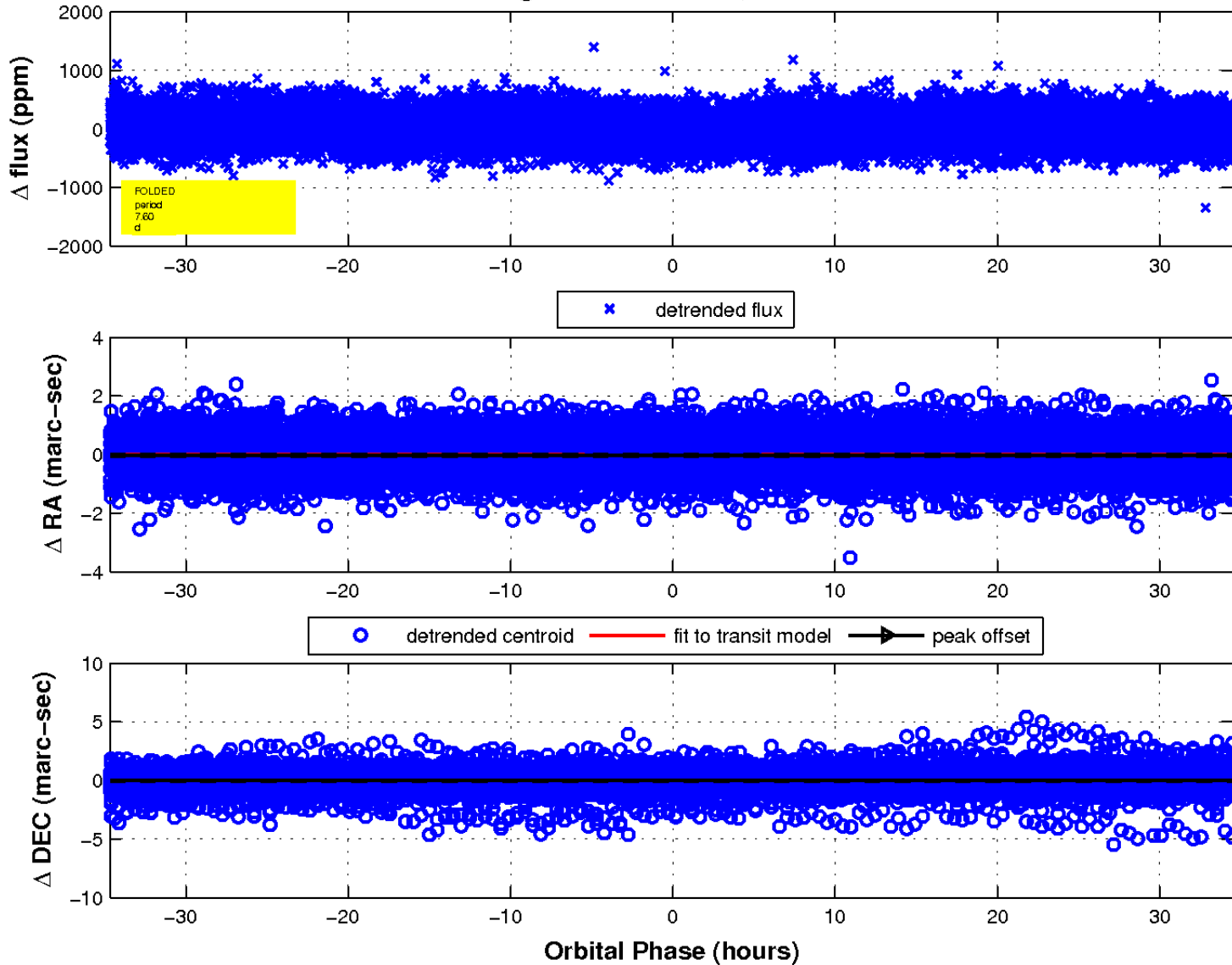
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



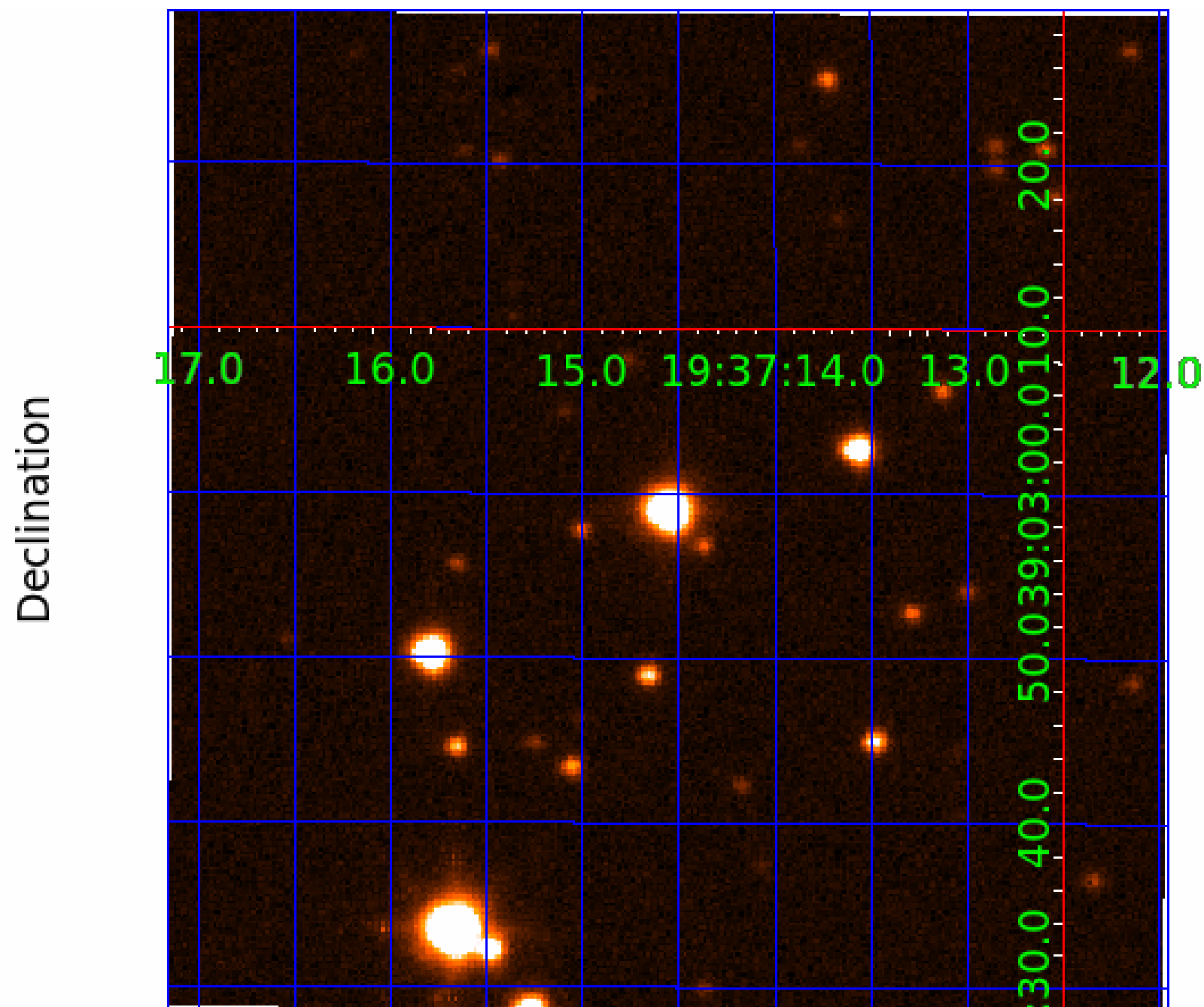
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 3



UKIRT Image



KIC 003965201

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 003965201-01 | OBS | No | 5.040586 | 135.908105 | 62.0 | 5.848 | 8.2 | 6.7 | 3.46 | 7854 | 3.19 | 7670.69 |
| 003965201-02 | OBS | No | 7.601349 | 136.616323 | 66.4 | 11.559 | 7.2 | 7.5 | 3.46 | 7854 | 3.28 | 4435.63 |
| 003965201-03 | OBS | No | 0.560035 | 131.962519 | 46.3 | 6.202 | 8.9 | 13.1 | 3.46 | 7854 | 2.39 | 143611.56 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 003965201-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 003965201-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT |
| 003965201-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—CENT_FEW_DIFFS |

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

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

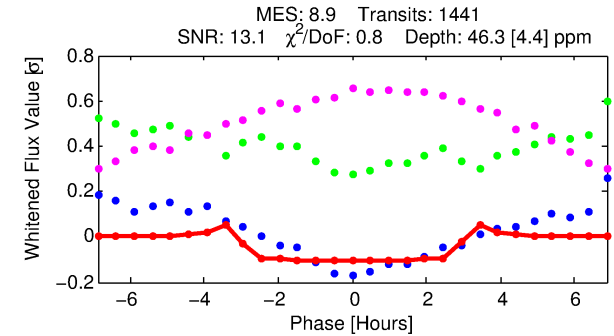
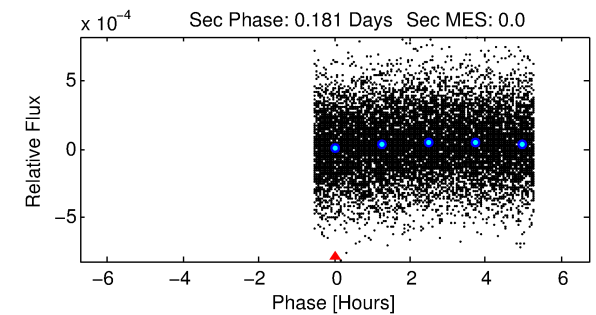
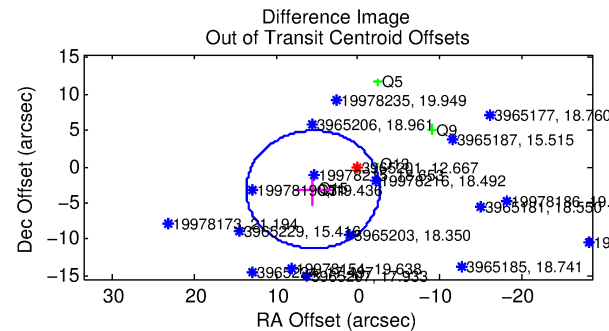
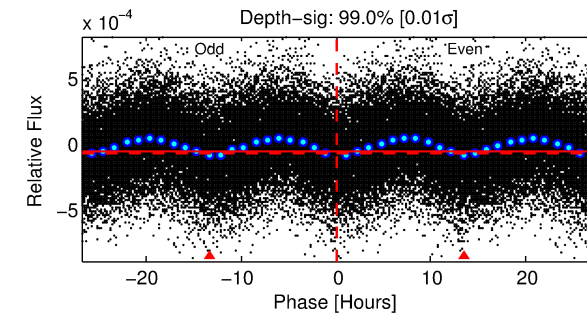
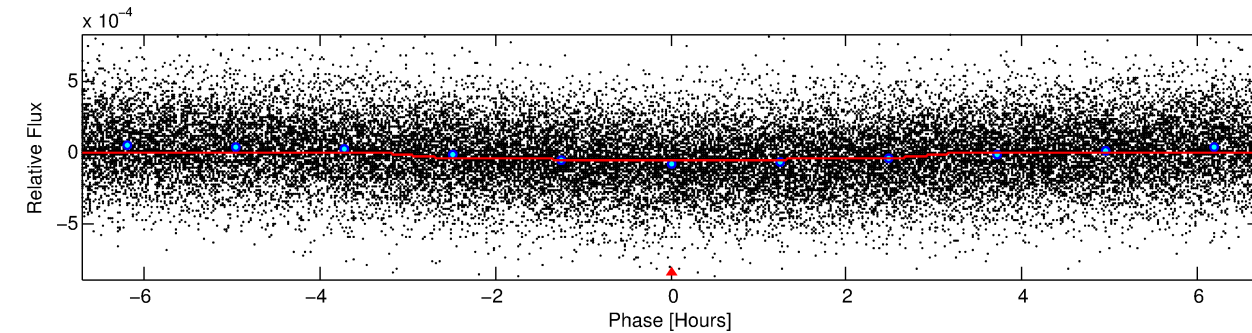
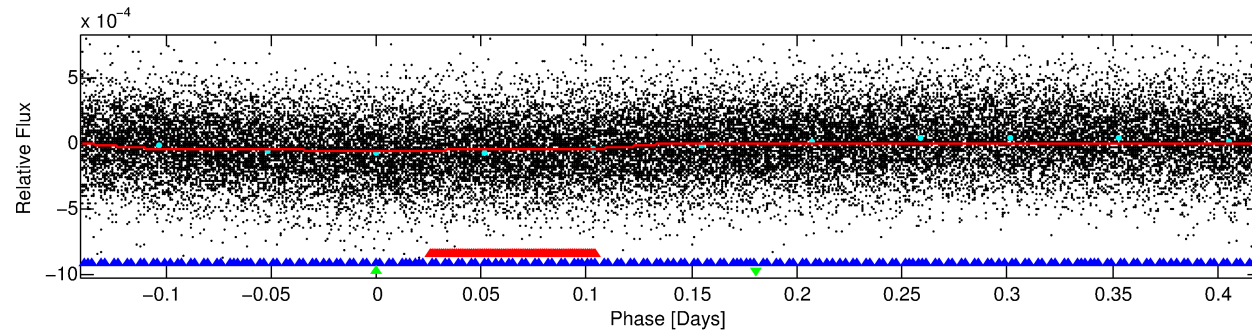
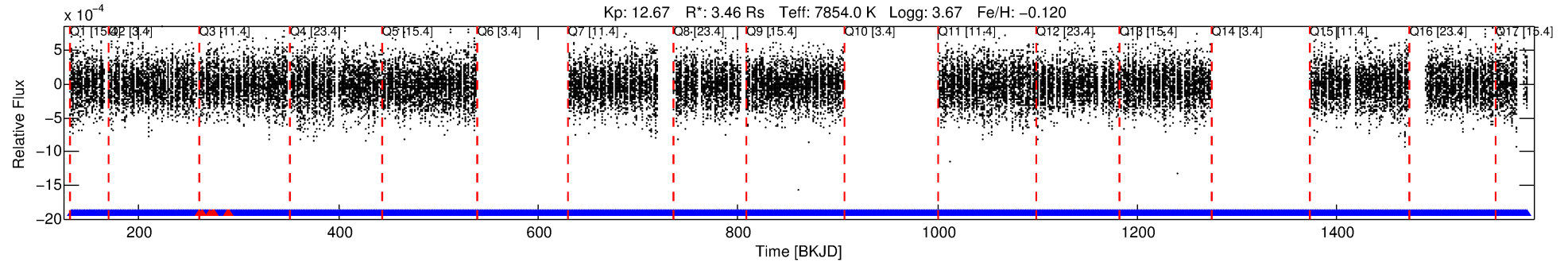
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003965201-03

No Significant Match Found

DV One-Page Summary

KIC: 3965201 Candidate: 3 of 3 Period: 0.560 d
KOI: K07546 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.56003 [0.00001] d
Epoch = 131.9625 [0.0025] BKJD
Rp/R* = 0.0063 [0.0024]
a/R* = 1.01 [0.05]
b = 0.26 [7.58]
Seff = 143611.56 [115646.00]
Teq = 4964 [999] K
Re = 2.39 [1.47] Re
a = 0.0169 [0.0082] AU
Ag = N/A
Teffp = N/A

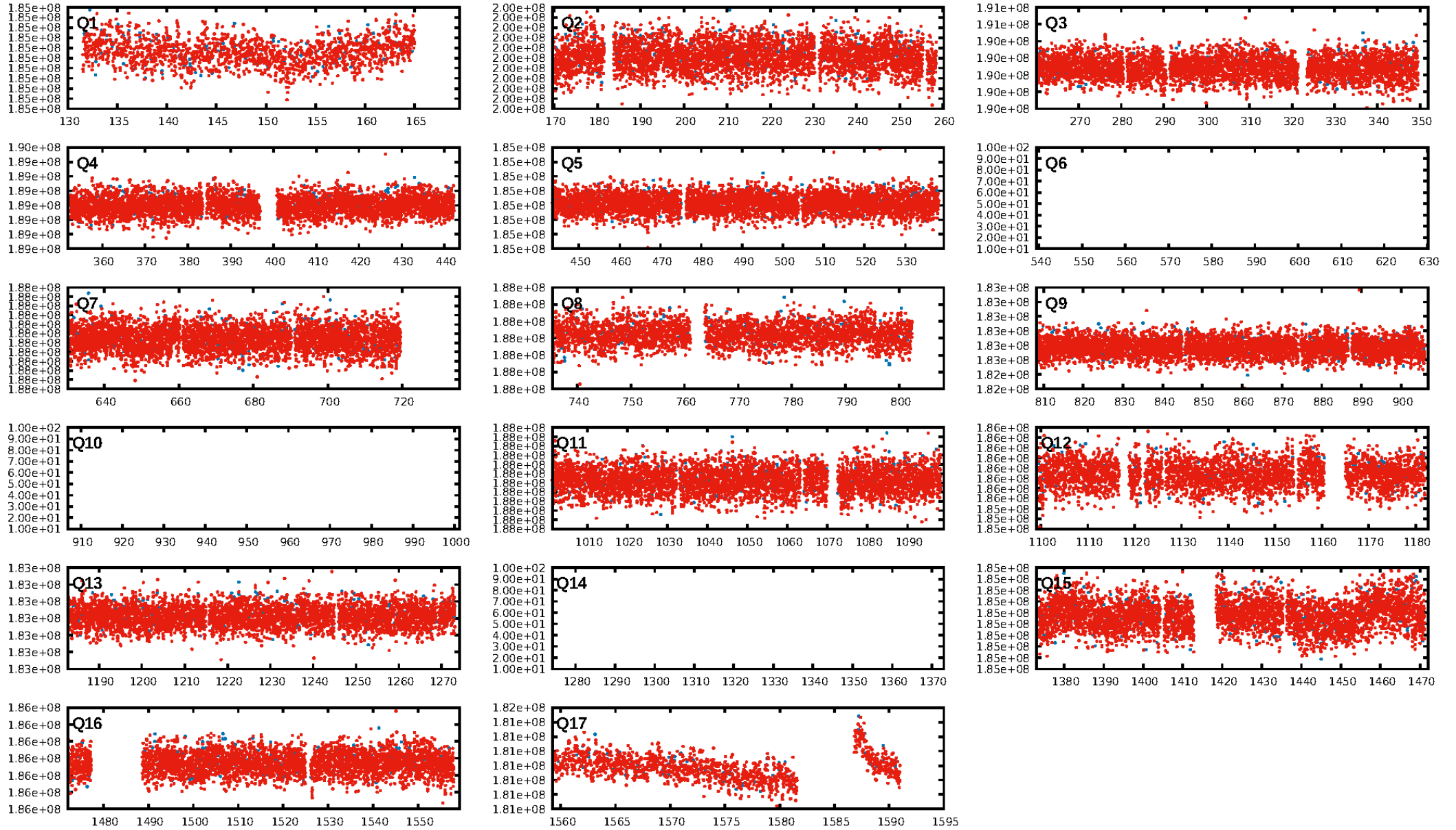
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.61 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1354/1361]
GhostDiagnostic-chr: 1.841
Centroid-sig: 84.5%
Centroid-so: 0.087 arcsec [0.32 σ]
OotOffset-rm: 6.343 arcsec [2.34 σ]
KicOffset-rm: 6.301 arcsec [2.40 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 1.00 [14/14]

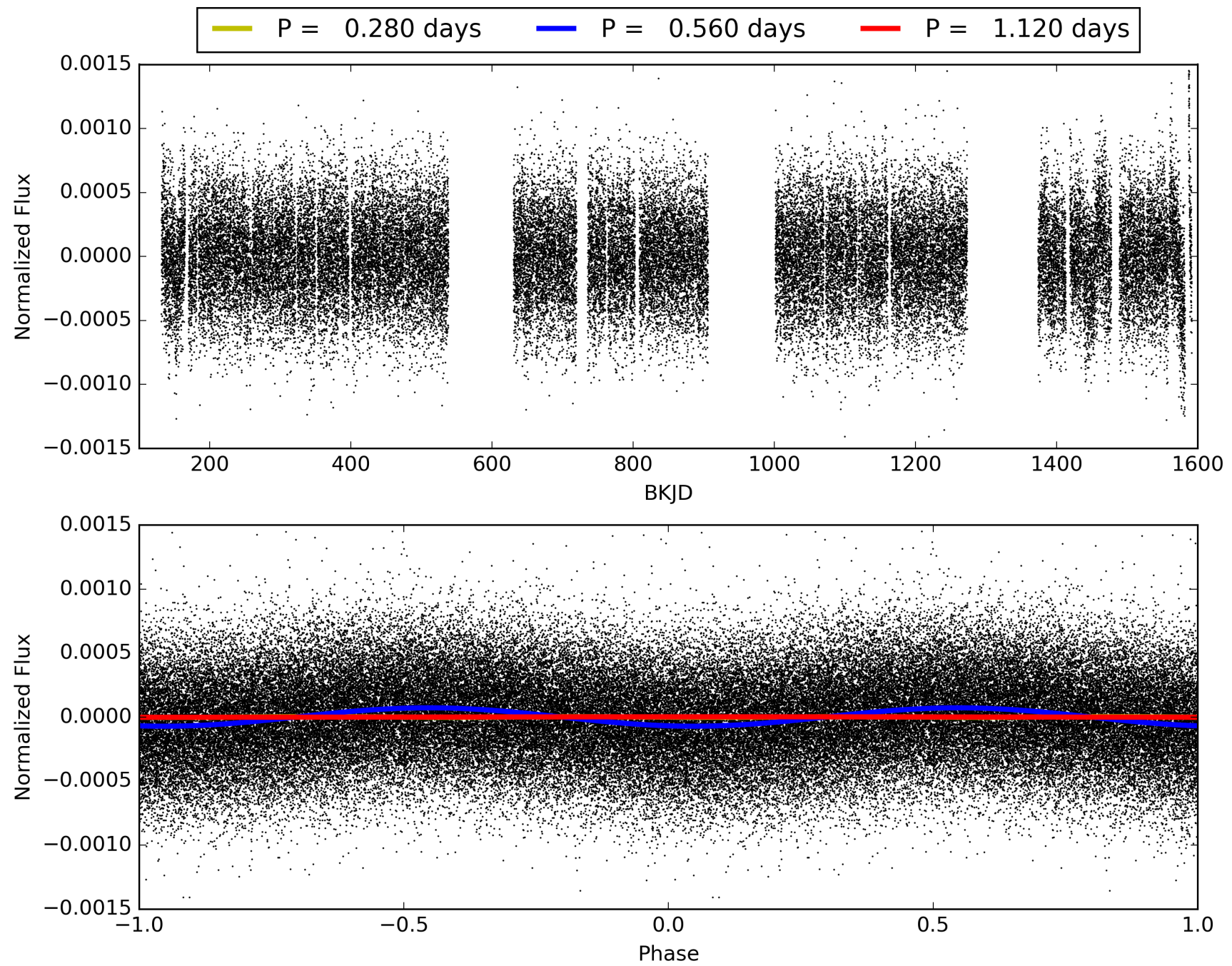
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:41:54 Z

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

TCE 003965201-03, PDC Light Curves

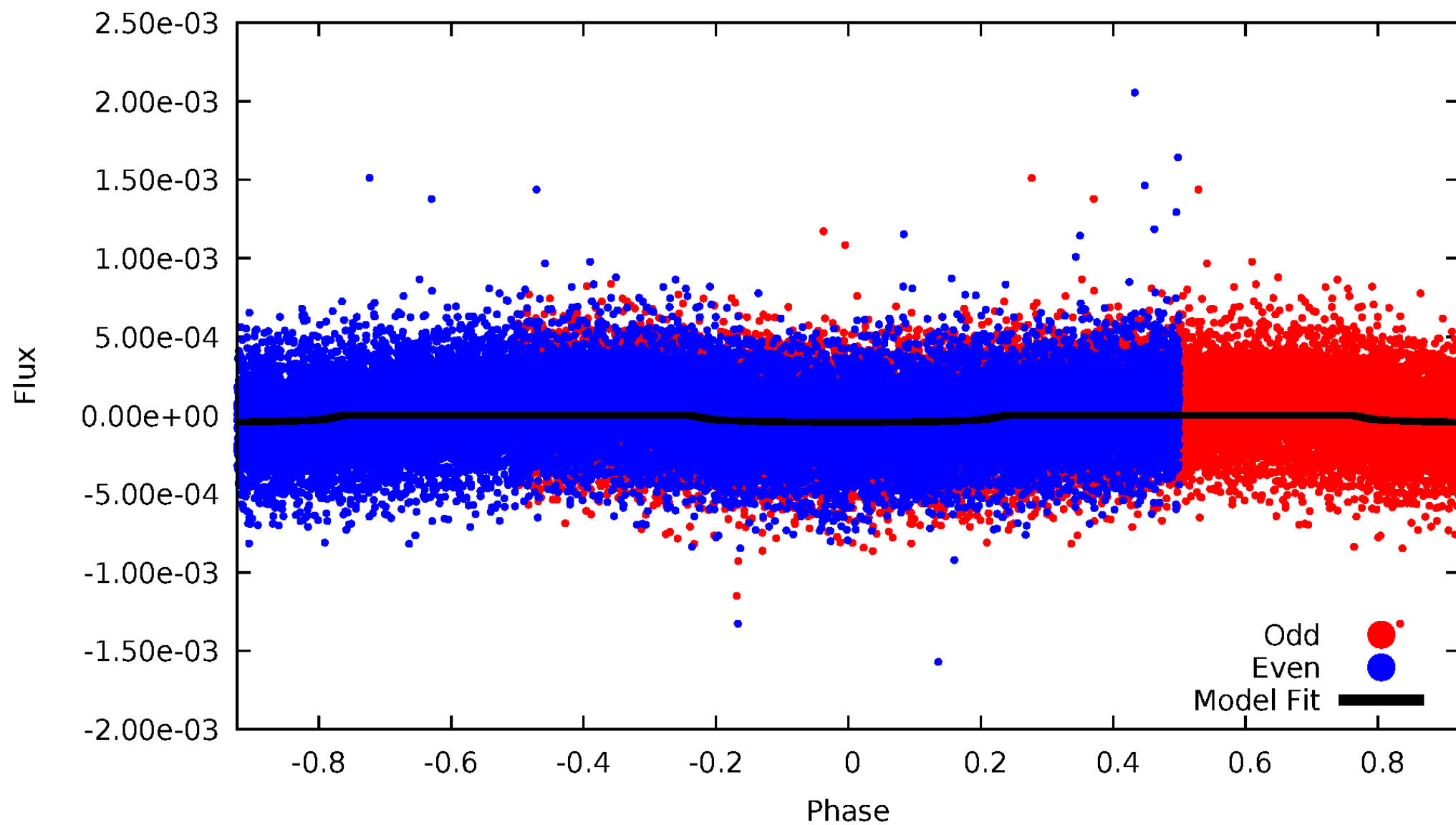


TCE 003965201-03



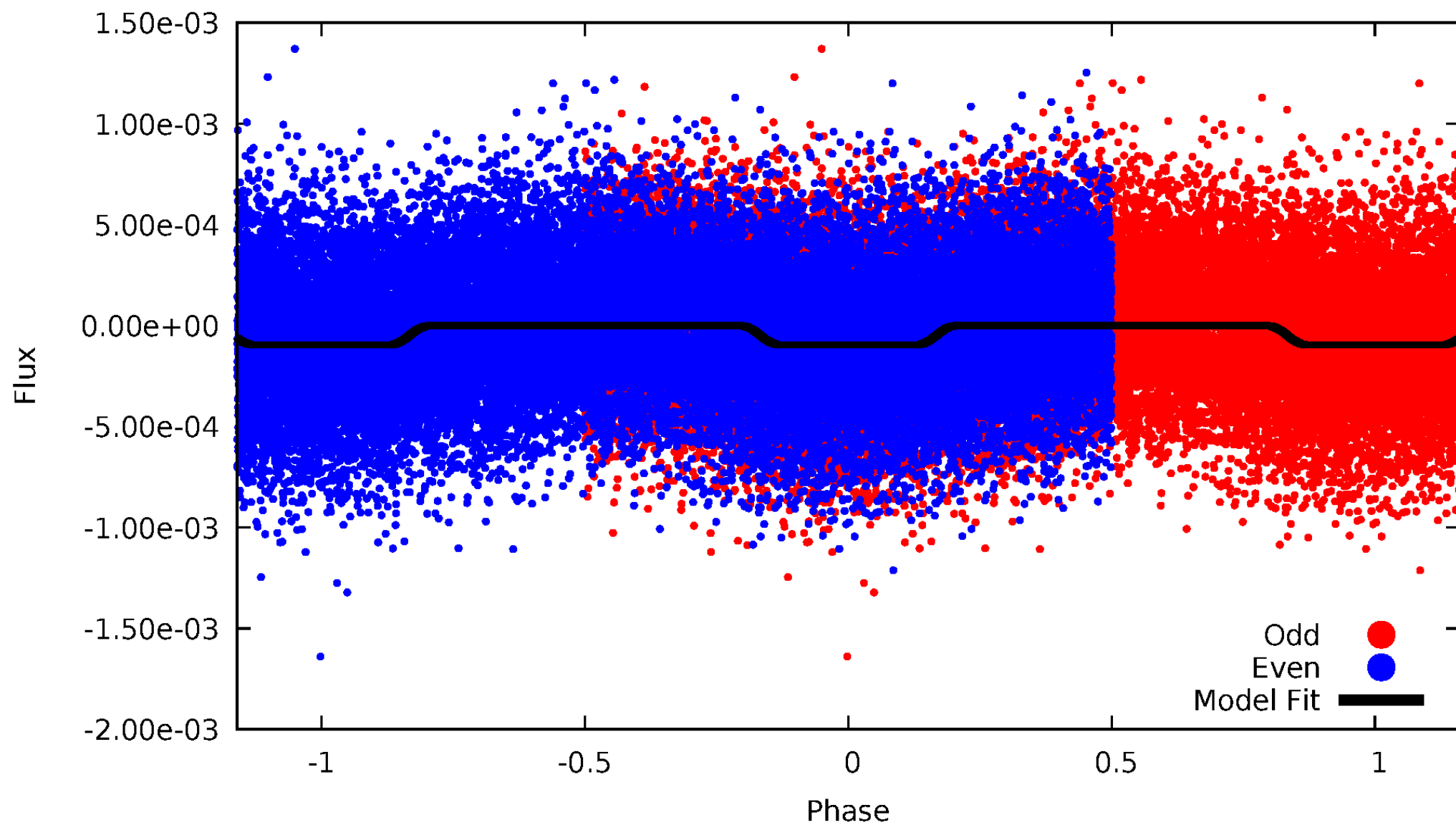
DV Odd/Even

TCE 003965201-03

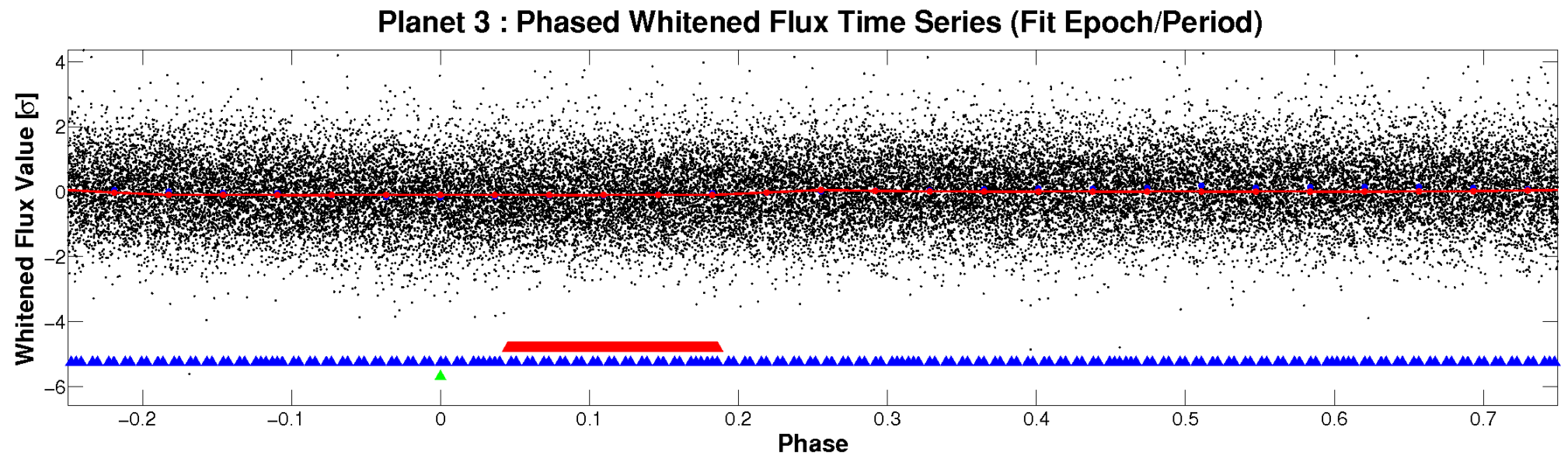
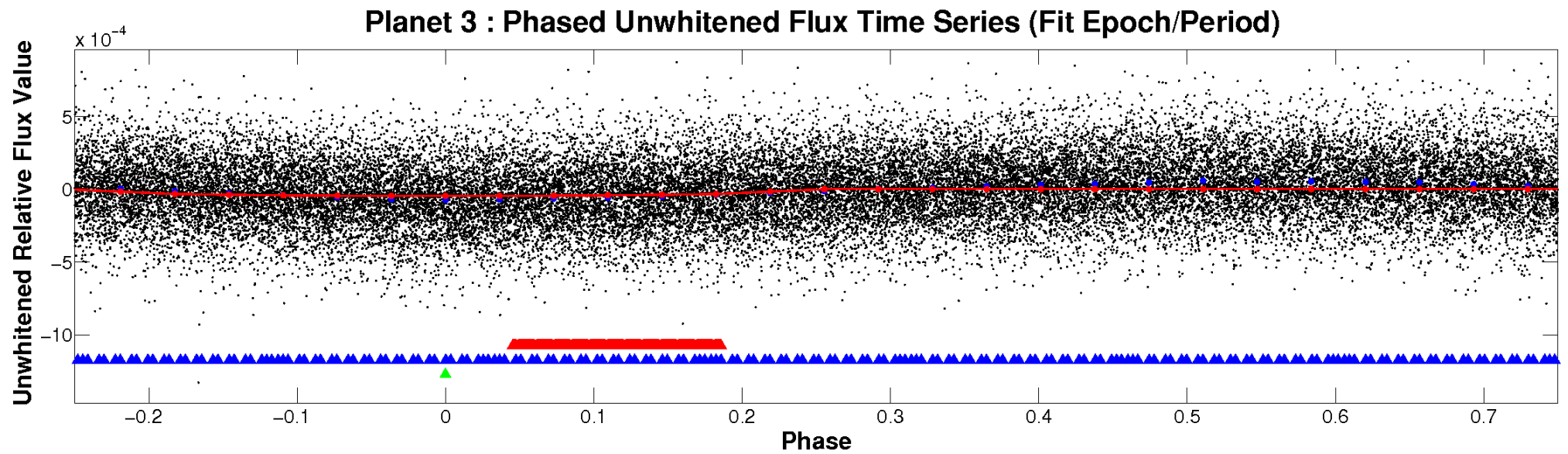


ALT Odd/Even

TCE 003965201-03

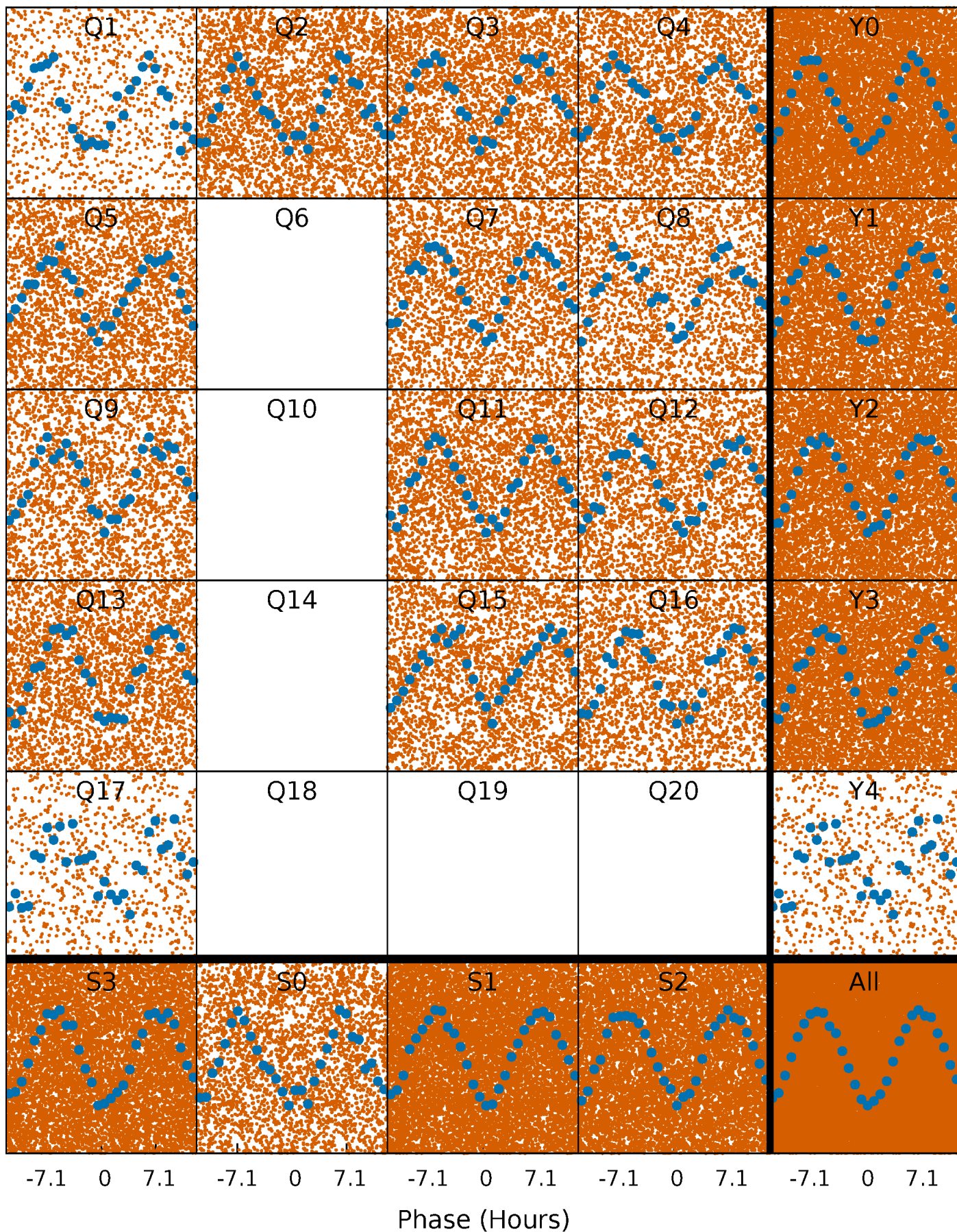


Non-Whitened Vs. Whitened Light Curve



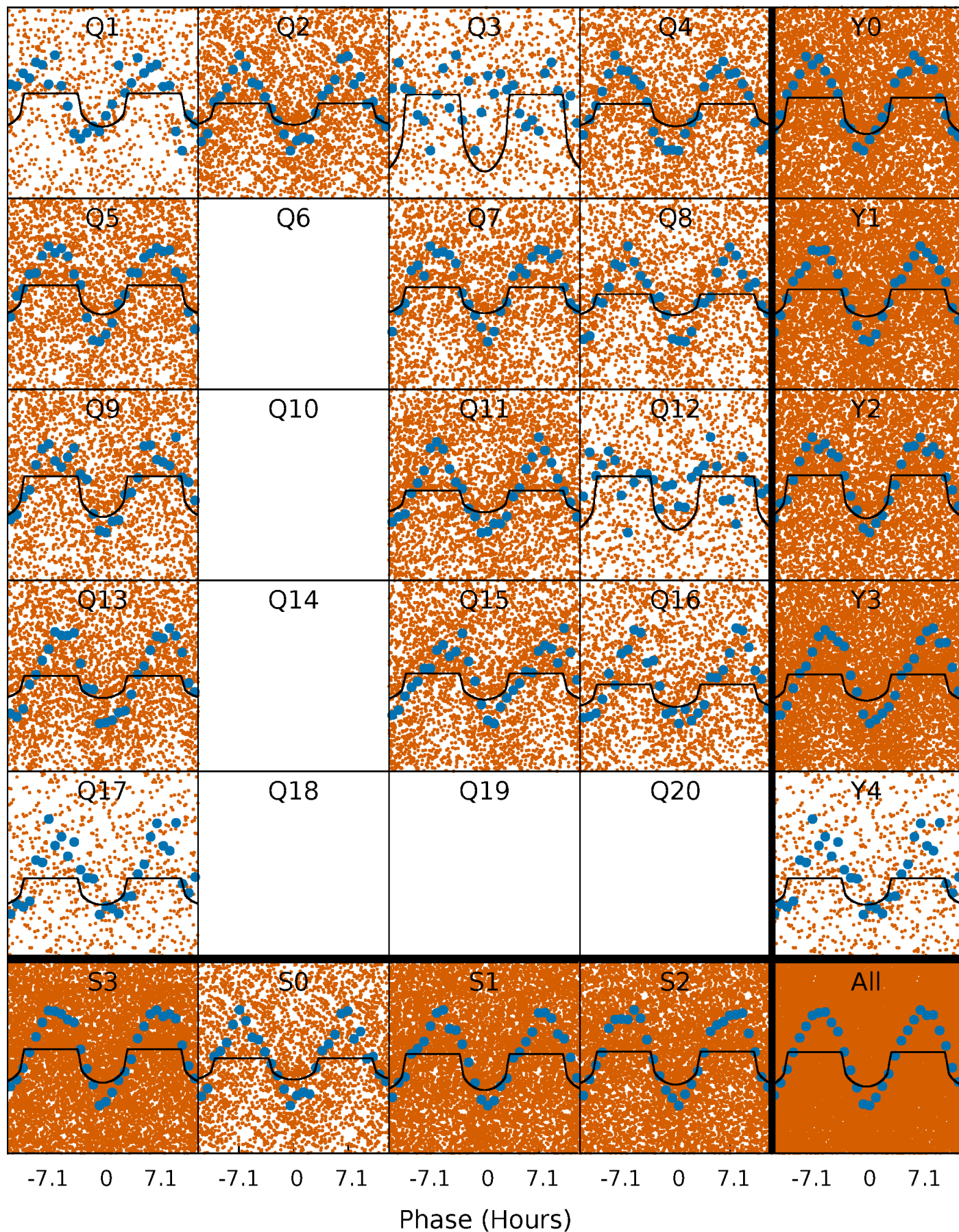
PDC Quarter-Phased Transit Curves

TCE 003965201-03 P= 0.560035 Days $T_0=131.962519$ (BKJD)



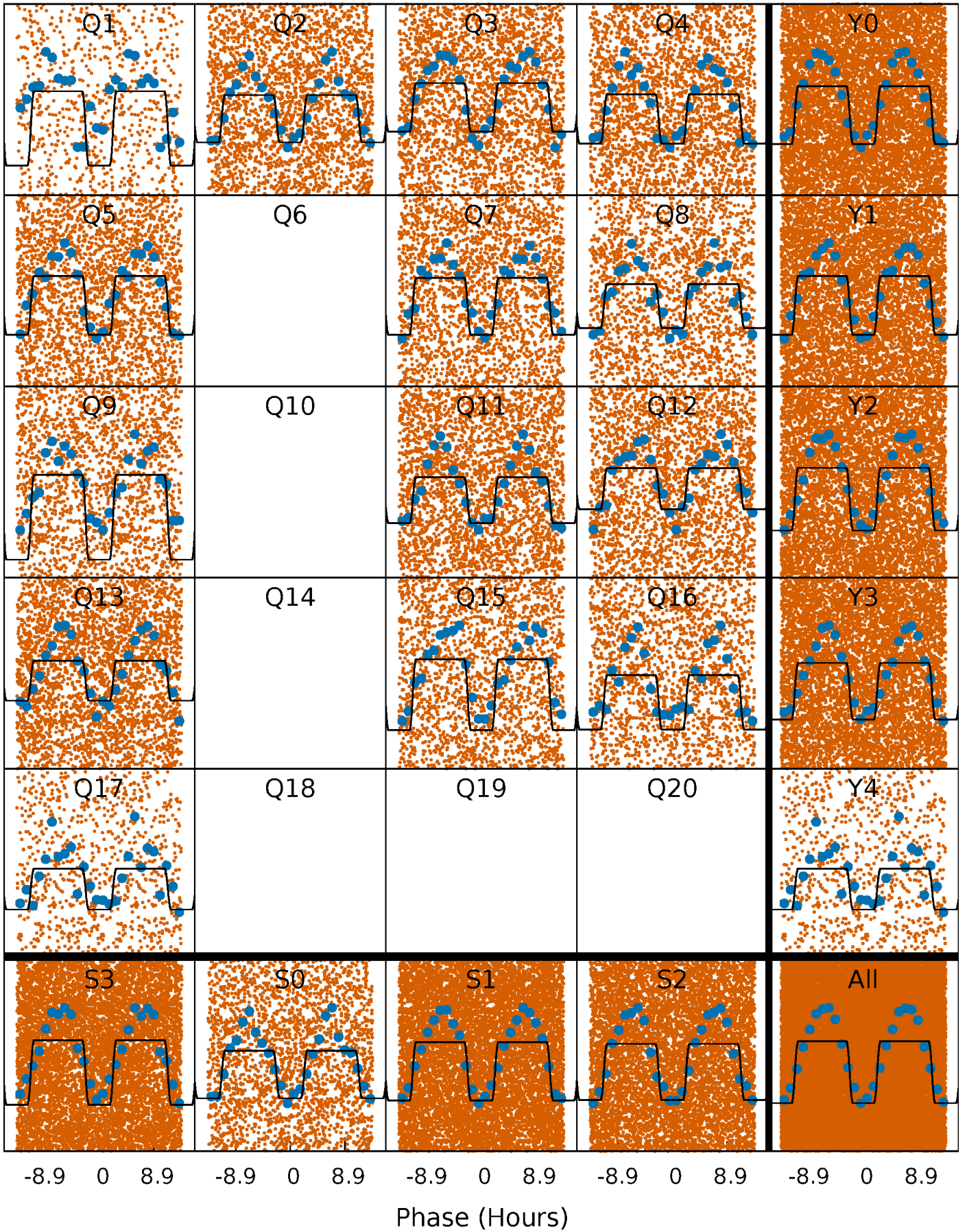
DV Quarter-Phased Transit Curves

TCE 003965201-03 P= 0.560035 Days $T_0=131.962519$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

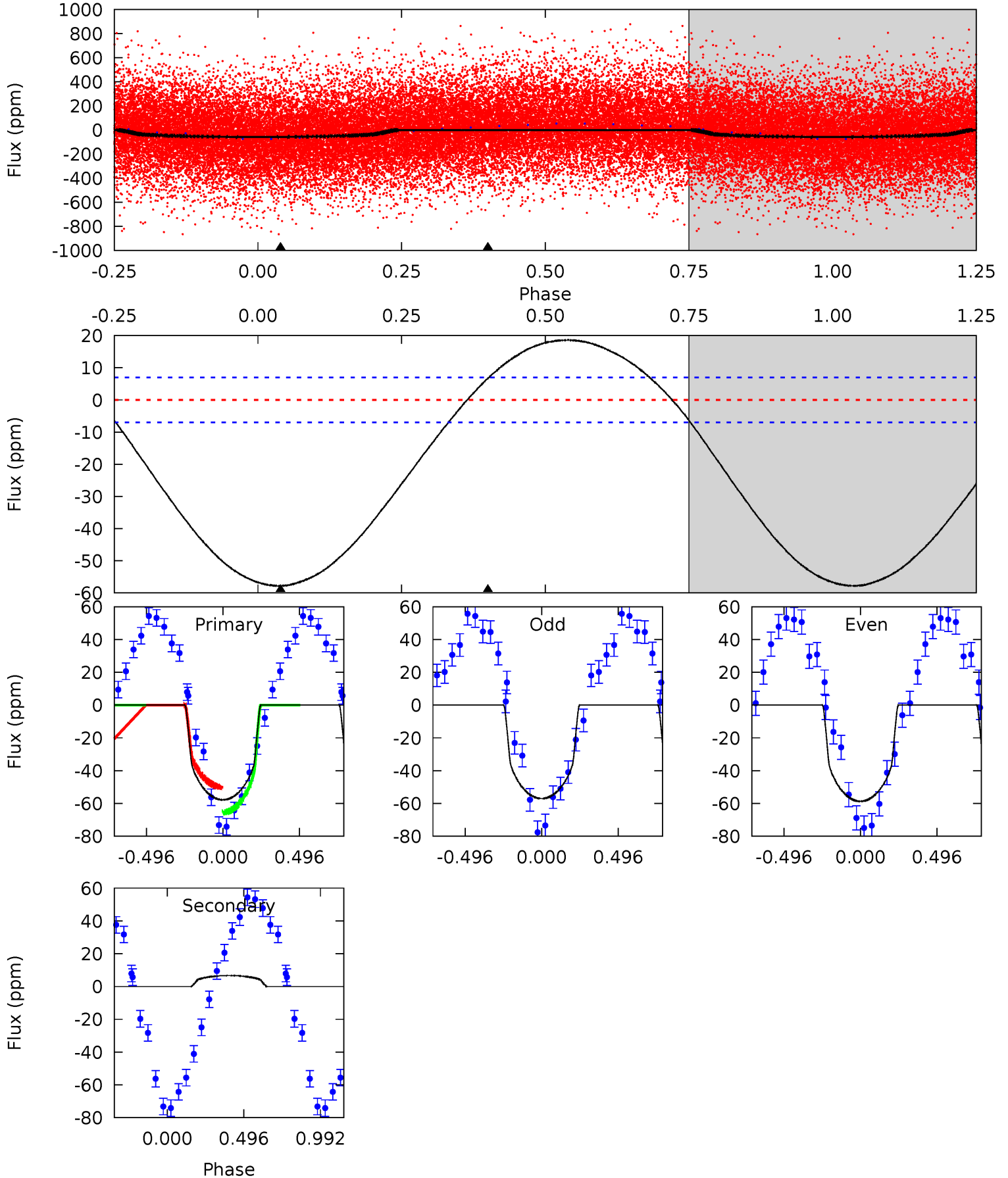
TCE 003965201-03 P= 0.560053 Days $T_0=131.956087$ (BKJD)



DV Model-Shift Uniqueness Test

003965201-03, P = 0.560035 Days, E = 131.402484 Days

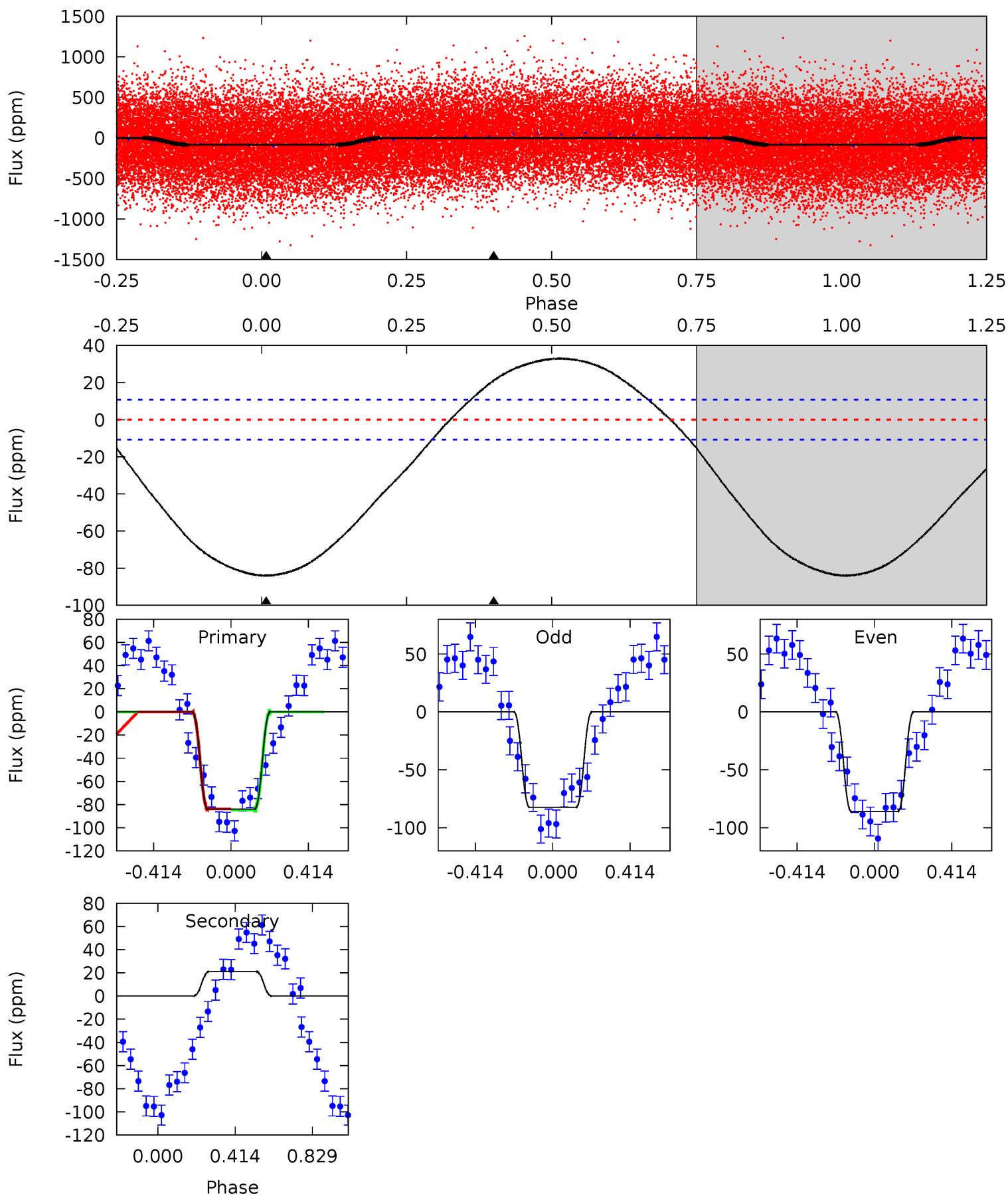
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 34.9 | -4.02 | 0 | 0 | 4.22 | 0.68 | 3.79 | 34.9 | 34.9 | -4.02 | -4.02 | 0.51 | 1.04 | 0.24 | 4.66 |



Alt Model-Shift Uniqueness Test

003965201-03, P = 0.560053 Days, E = 131.396034 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 33.2 | -8.35 | 0 | 0 | 4.26 | 0.82 | 3.94 | 33.2 | 33.2 | -8.35 | -8.35 | 0.71 | 0.97 | 0.28 | 0.15 |



Stellar Parameters For KIC 003965201

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7854^{+217}_{-326} | $3.669^{+0.468}_{-0.110}$ | $-0.120^{+0.200}_{-0.350}$ | $3.462^{+0.720}_{-1.681}$ | $2.039^{+0.343}_{-0.514}$ | $0.069^{+0.321}_{-0.025}$ |
| | +3%/-4% | +13%/-3% | +167%/-292% | +21%/-49% | +17%/-25% | +464%/-36% |
| 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 003965201-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | 7 ± 2 | $2.12^{+1.18}_{-0.90}$ | 6714^{+557}_{-900} | -6193^{+582}_{-898} | $-0.234^{+0.142}_{-0.467}$ |
| Alt. | 21 ± 3 | $3.37^{+1.17}_{-1.08}$ | 6685^{+515}_{-786} | -6316^{+504}_{-627} | $-0.289^{+0.126}_{-0.328}$ |

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

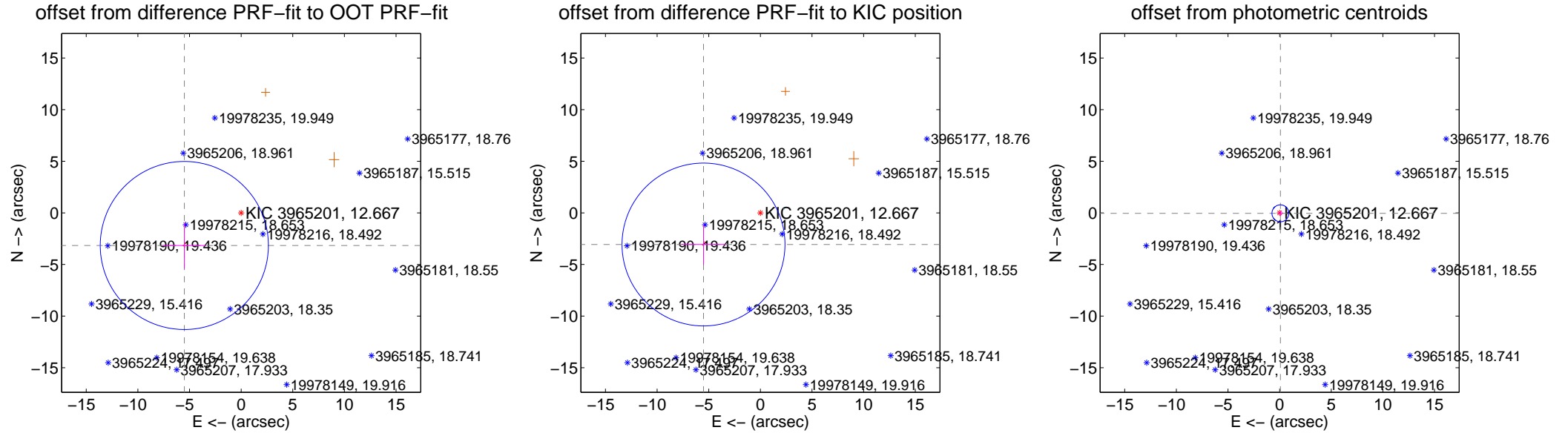
DV Centroid Data

Supplemental centroid analysis for 003965201-03. Kepler magnitude: 12.67. Transit SNR 13.13

There are 1 quarters with good PRF difference image offsets

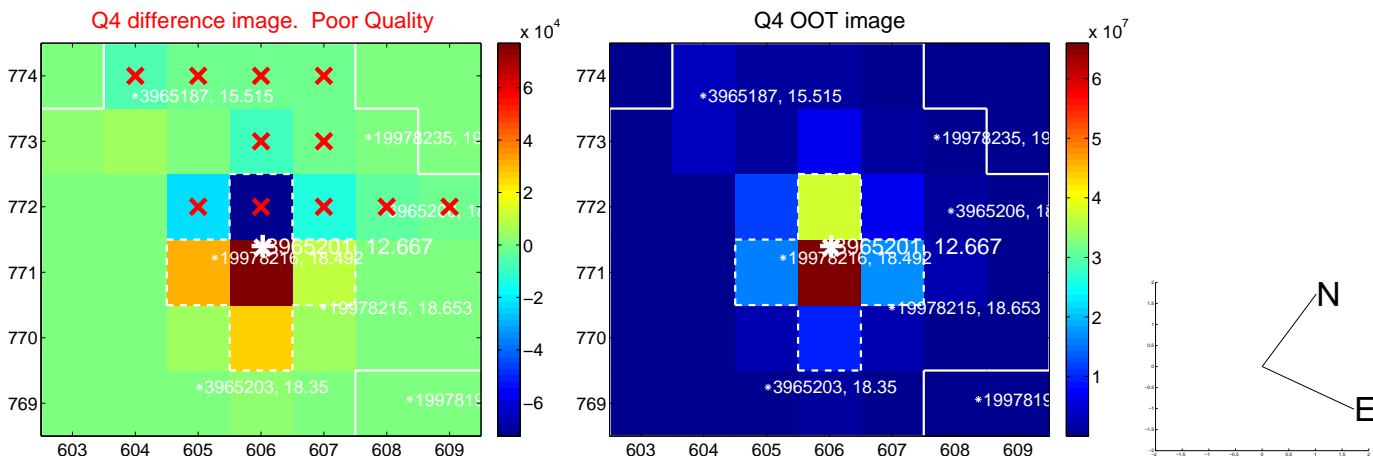
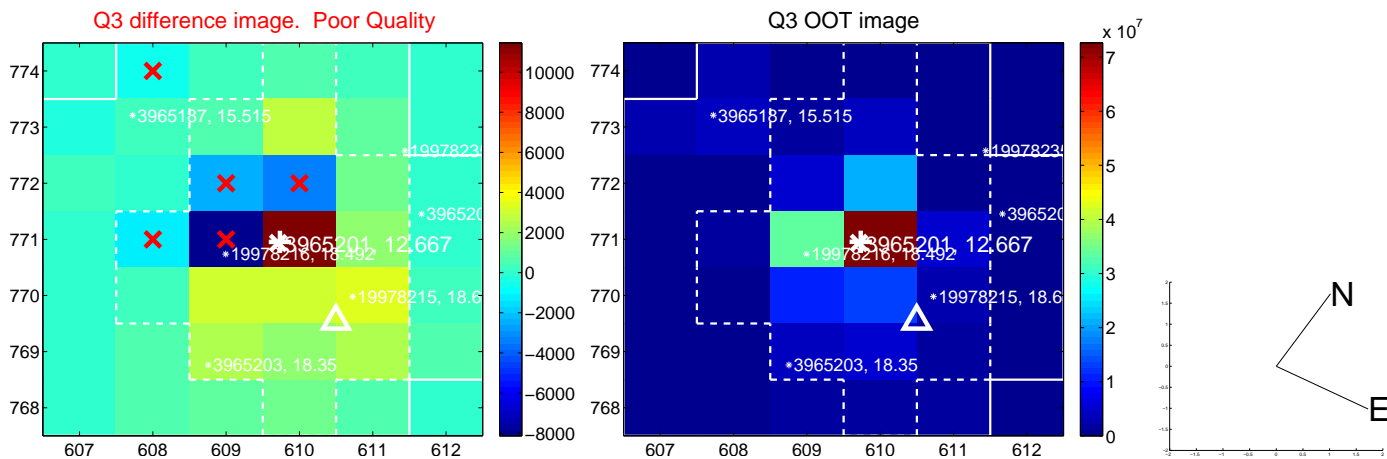
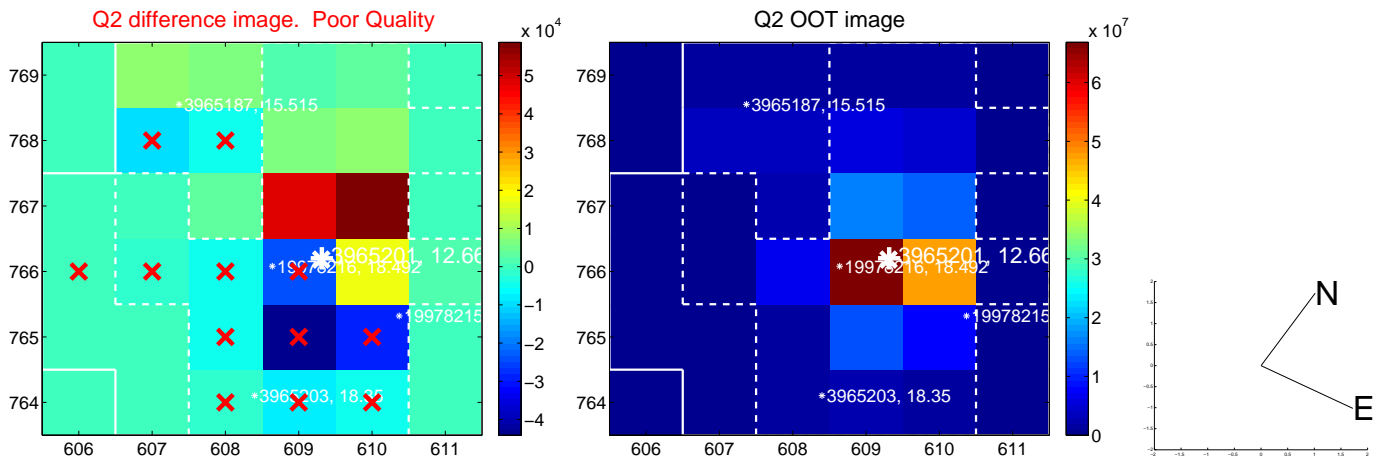
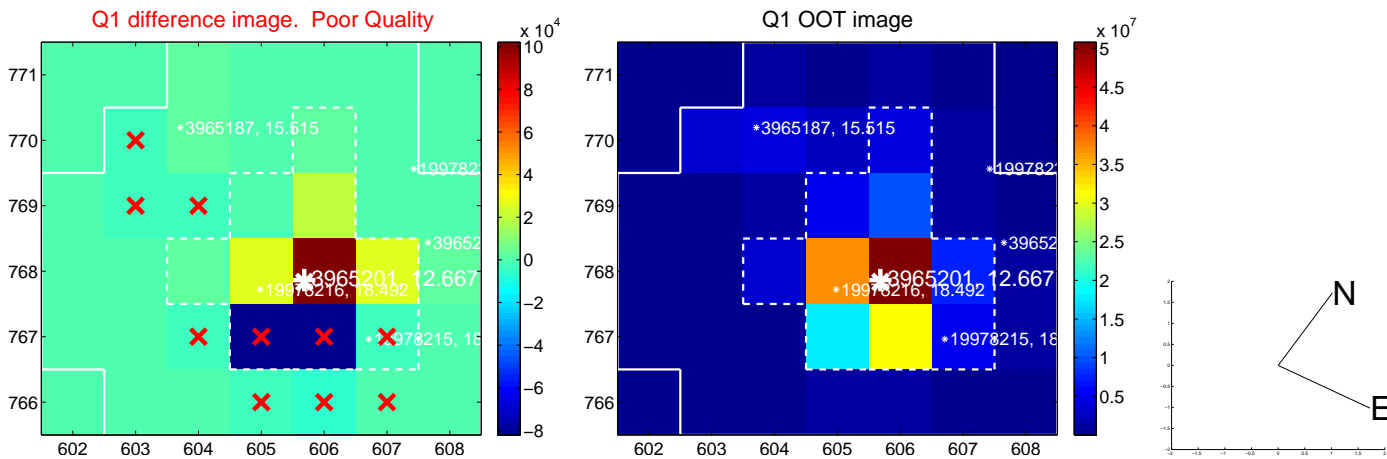
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 6.343 ± 2.713 | 2.34 | 5.500 ± 2.109 | -3.159 ± 2.240 |
| PRF-fit source offset from KIC position | 6.301 ± 2.629 | 2.40 | 5.506 ± 2.129 | -3.064 ± 1.953 |
| photometric centroid source offset | 0.09 ± 0.27 | 0.32 | -0.08 ± 0.28 | -0.04 ± 0.26 |

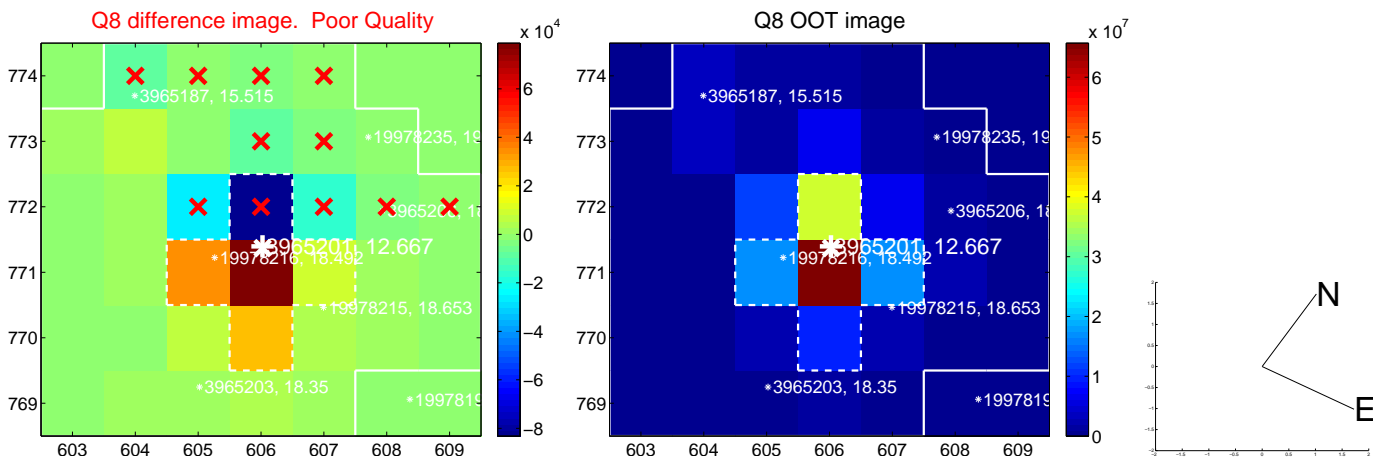
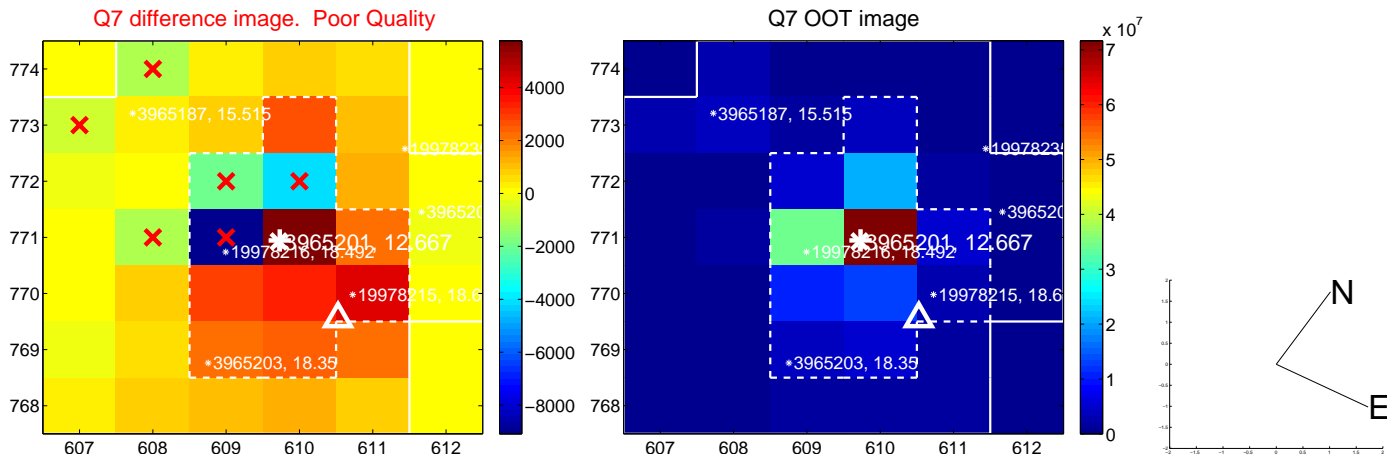
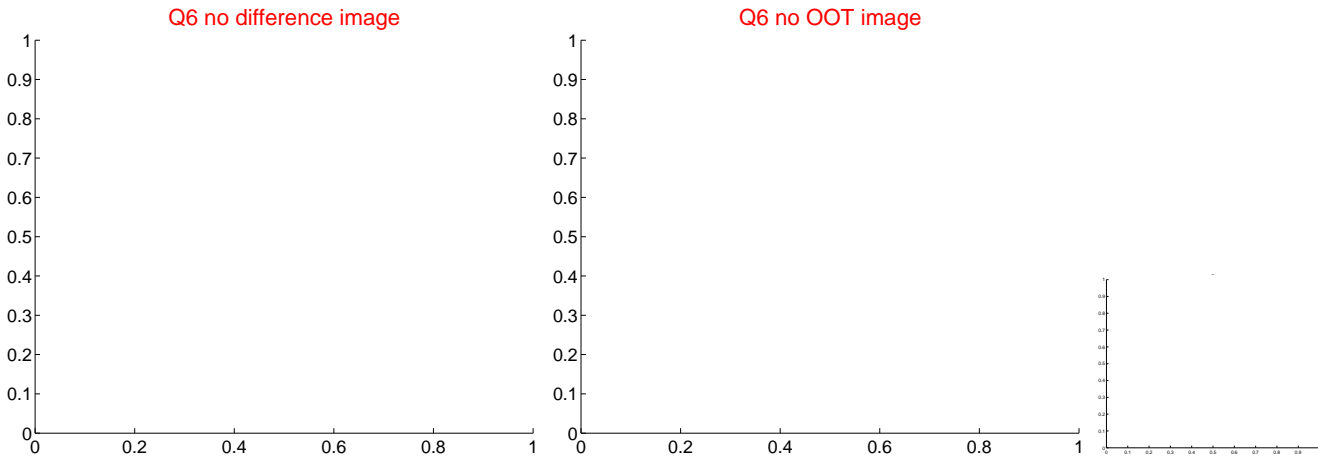
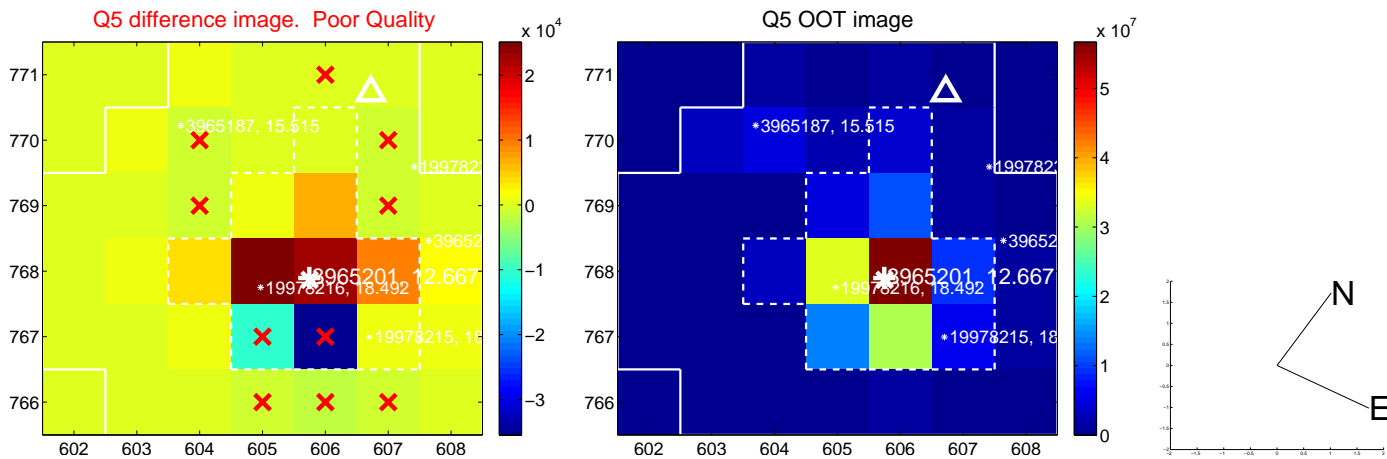


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

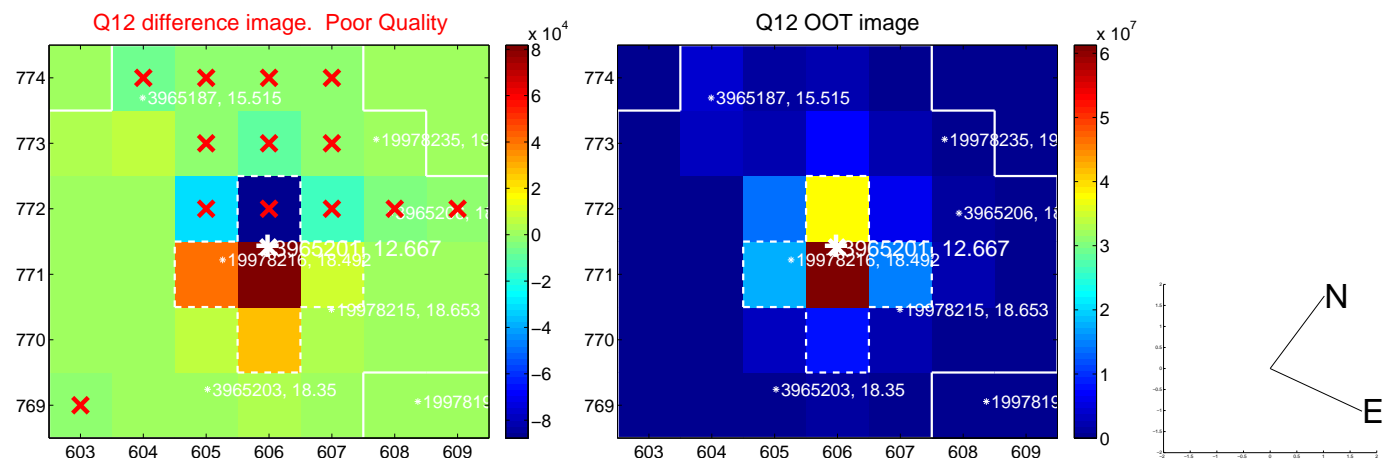
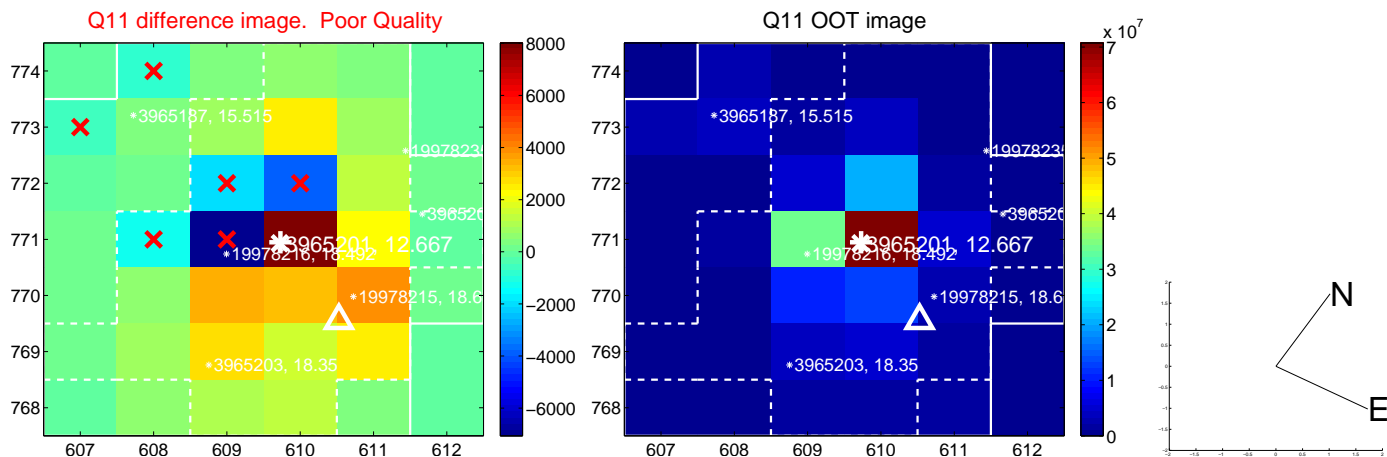
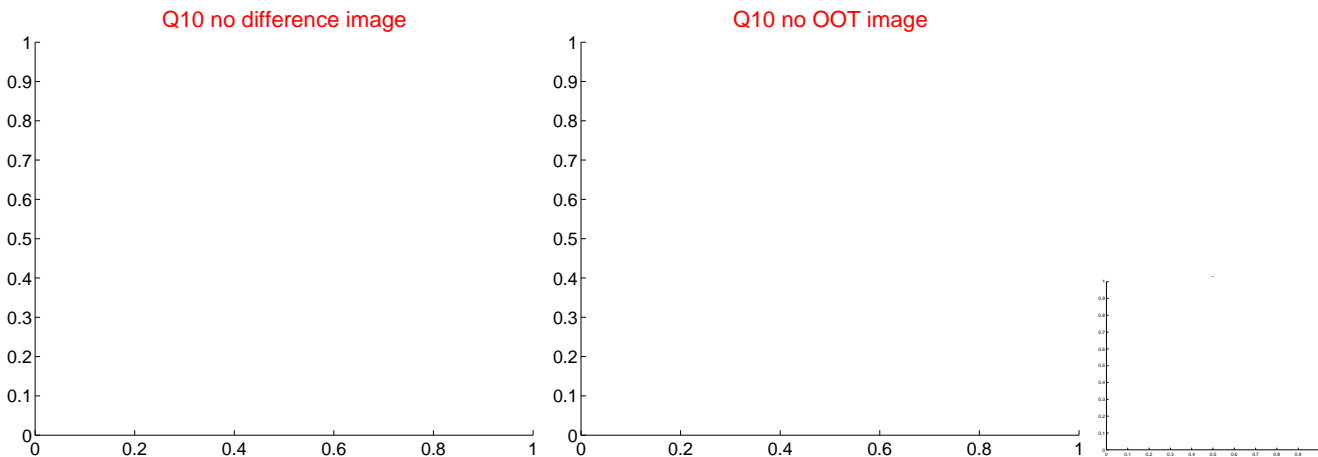
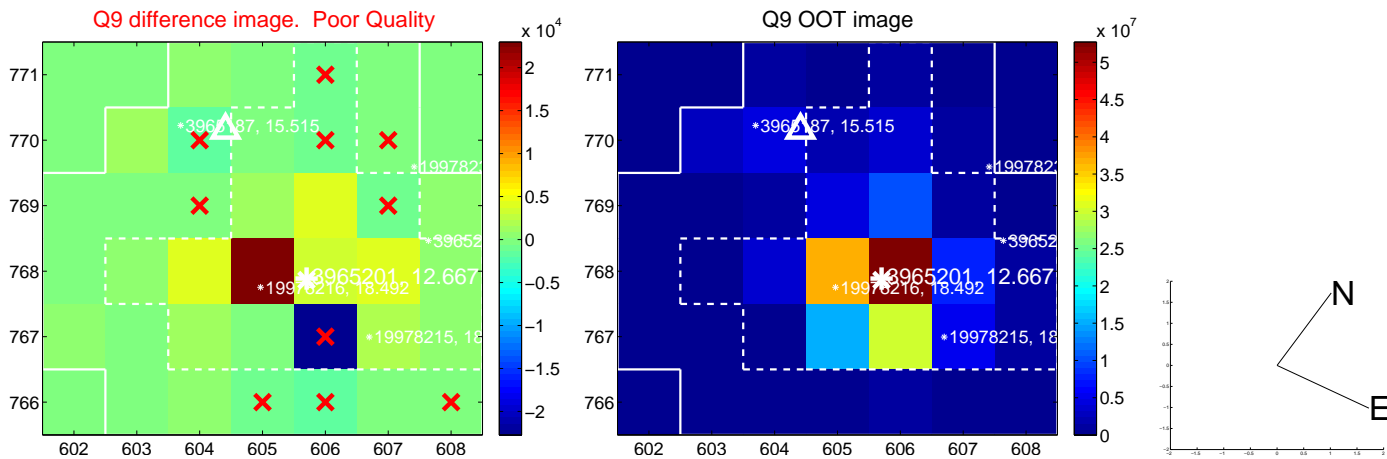
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



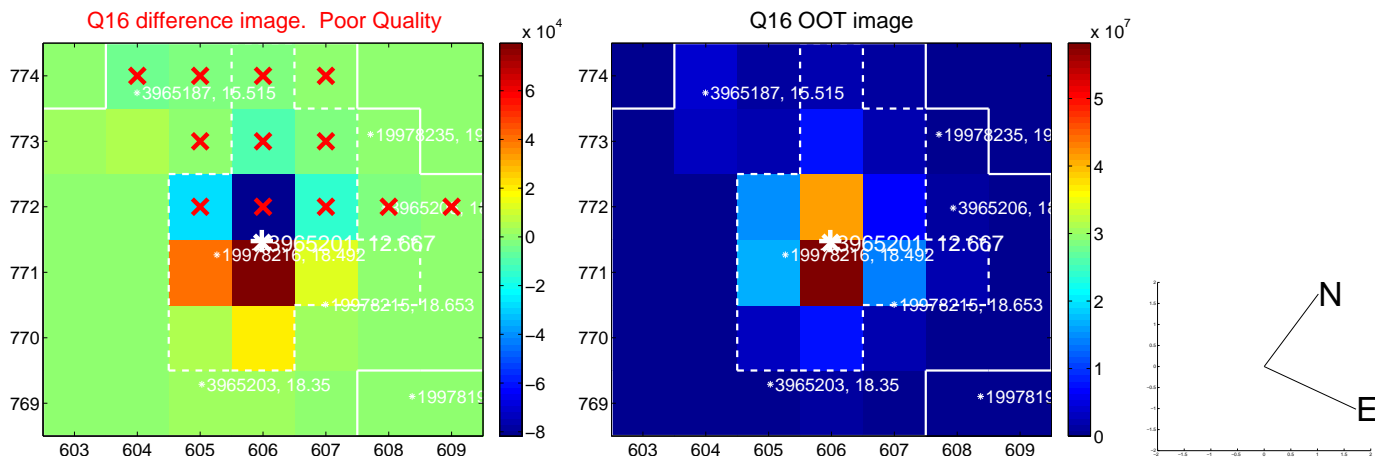
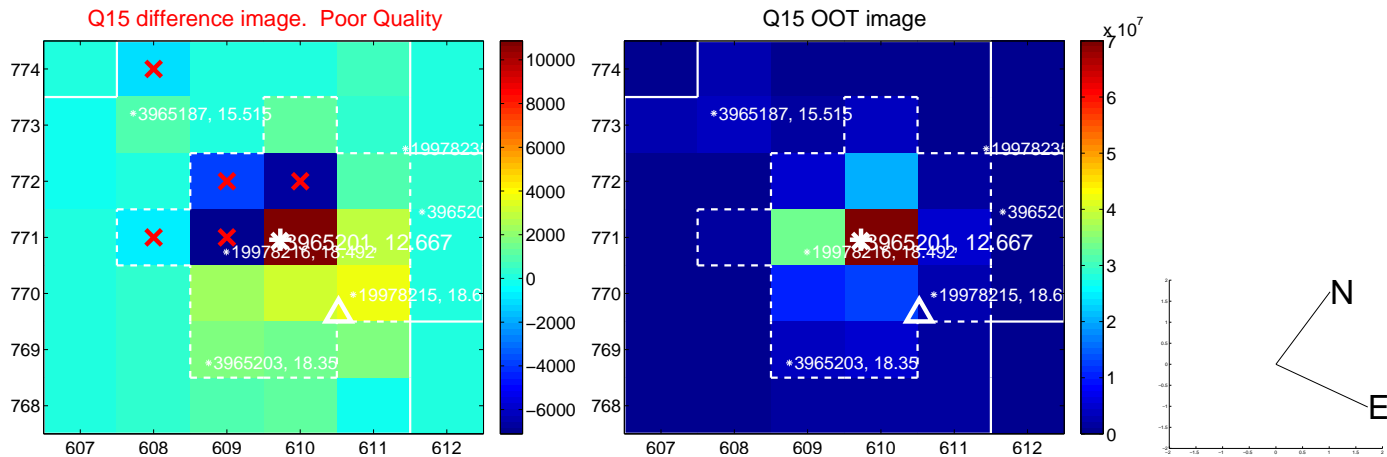
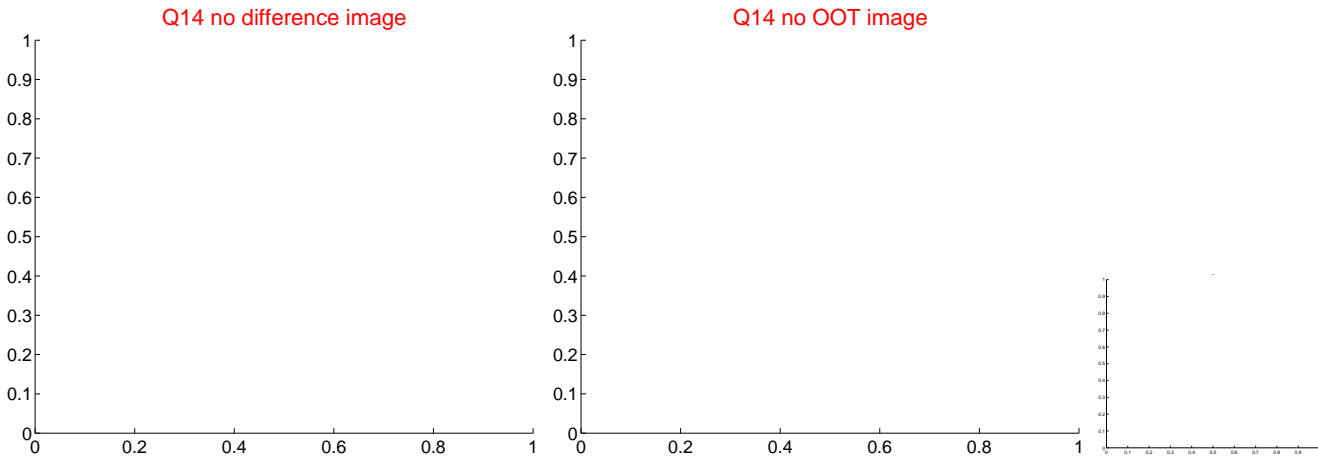
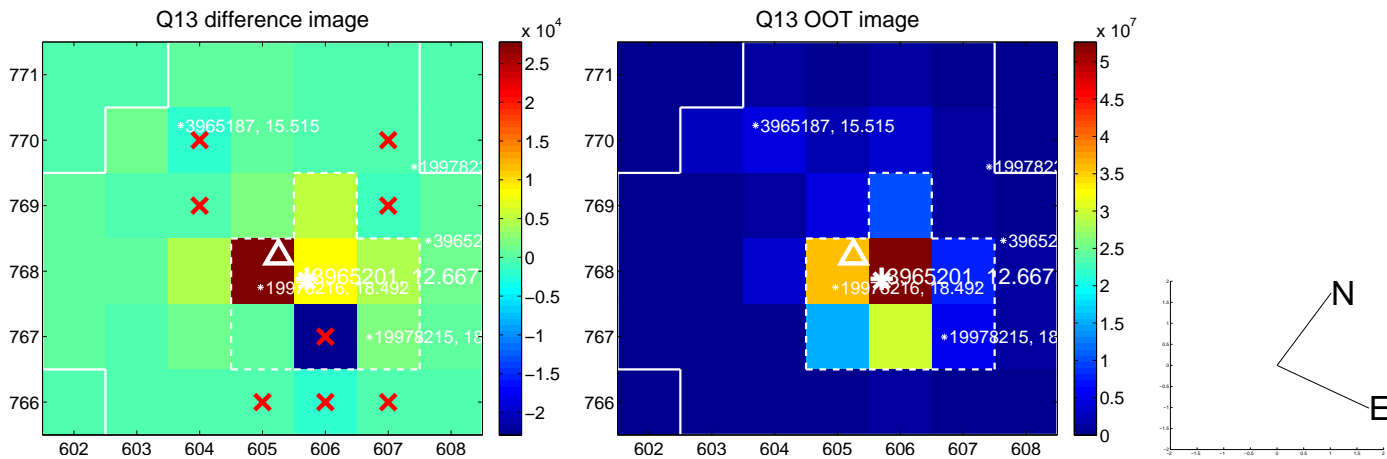
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



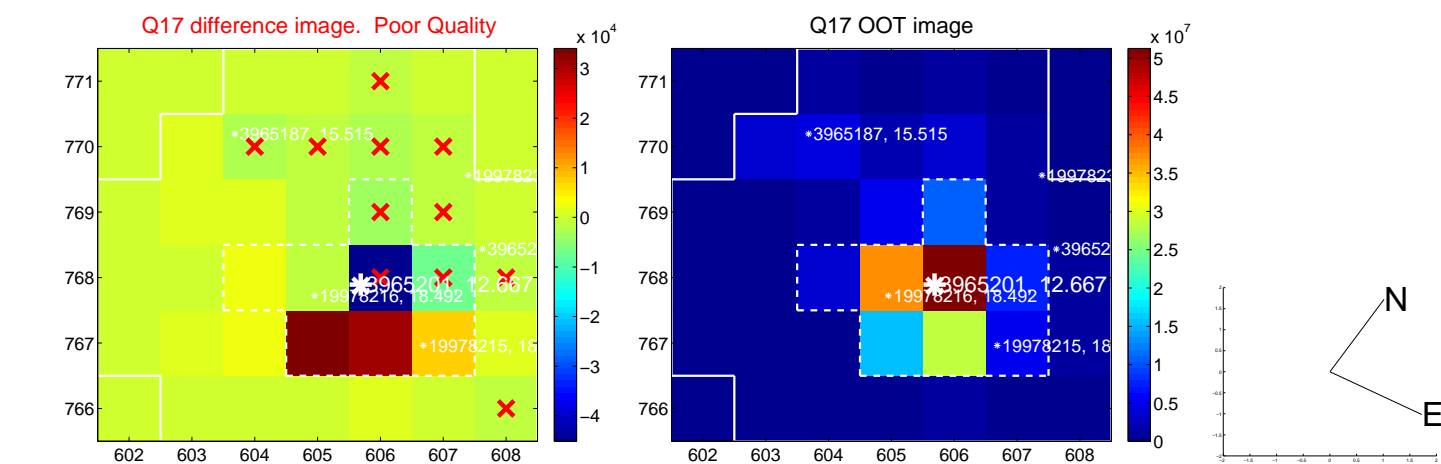
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



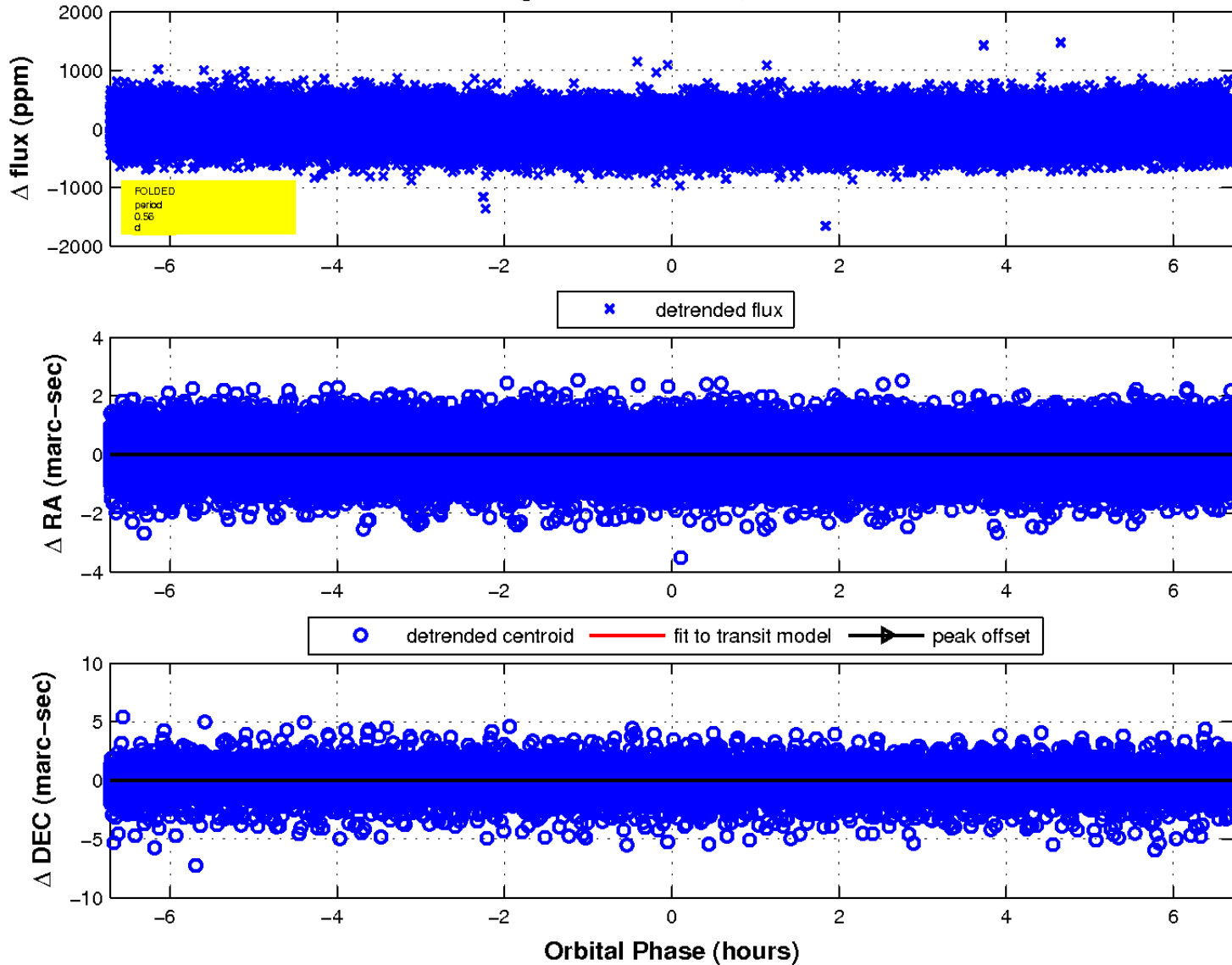
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

