

KIC 009611512

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009611512-01 | OBS | No | 1.264837 | 131.591667 | 11.1 | 6.731 | 8.5 | 10.2 | 3.00 | 8521 | 1.05 | 50964.58 |
| 009611512-02 | OBS | No | 128.534354 | 237.588508 | 94.2 | 3.248 | 10.2 | 4.7 | 3.00 | 8521 | 3.37 | 107.47 |
| 009611512-03 | OBS | No | 70.896712 | 138.801117 | 51.6 | 16.620 | 8.4 | 4.3 | 3.00 | 8521 | 2.43 | 237.58 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009611512-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 009611512-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS |
| 009611512-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST |

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

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

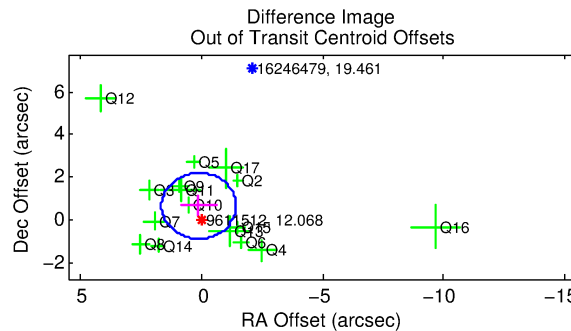
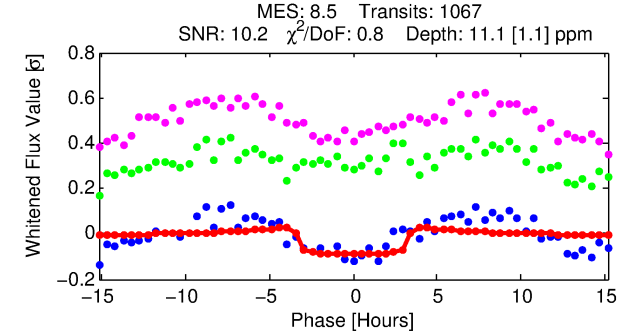
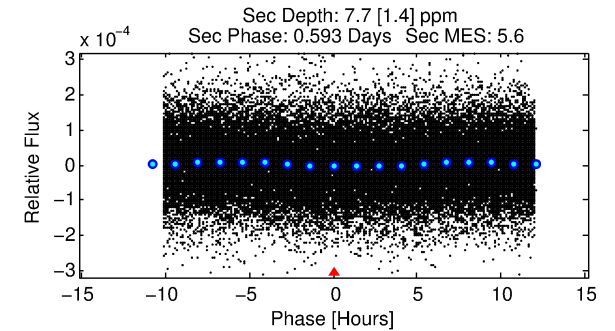
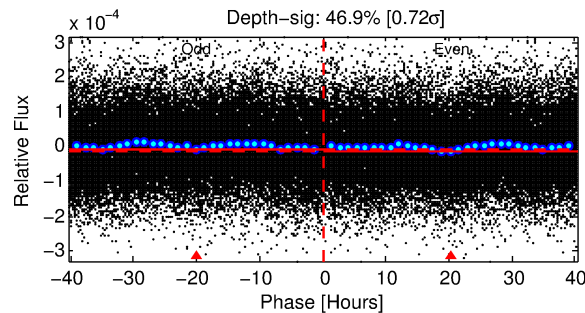
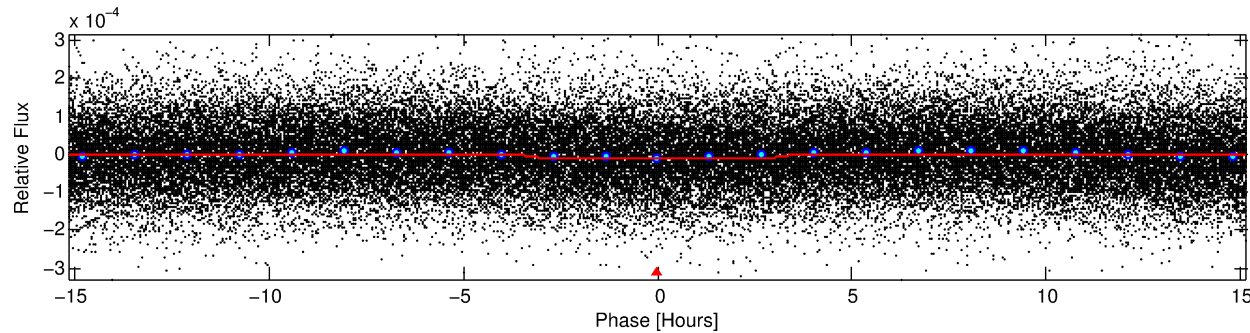
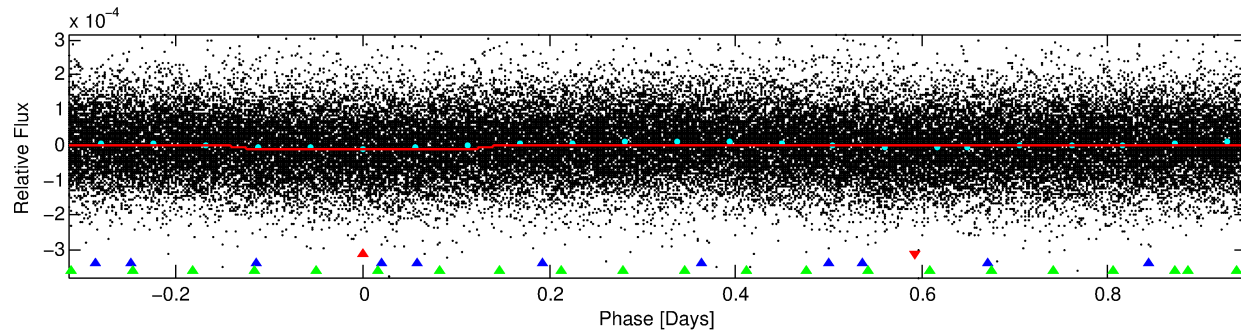
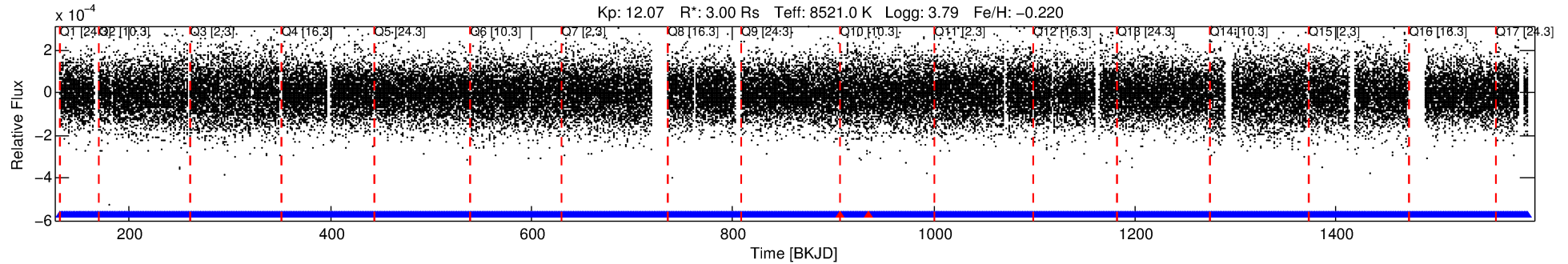
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009611512-01

No Significant Match Found

DV One-Page Summary

KIC: 9611512 Candidate: 1 of 3 Period: 1.265 d



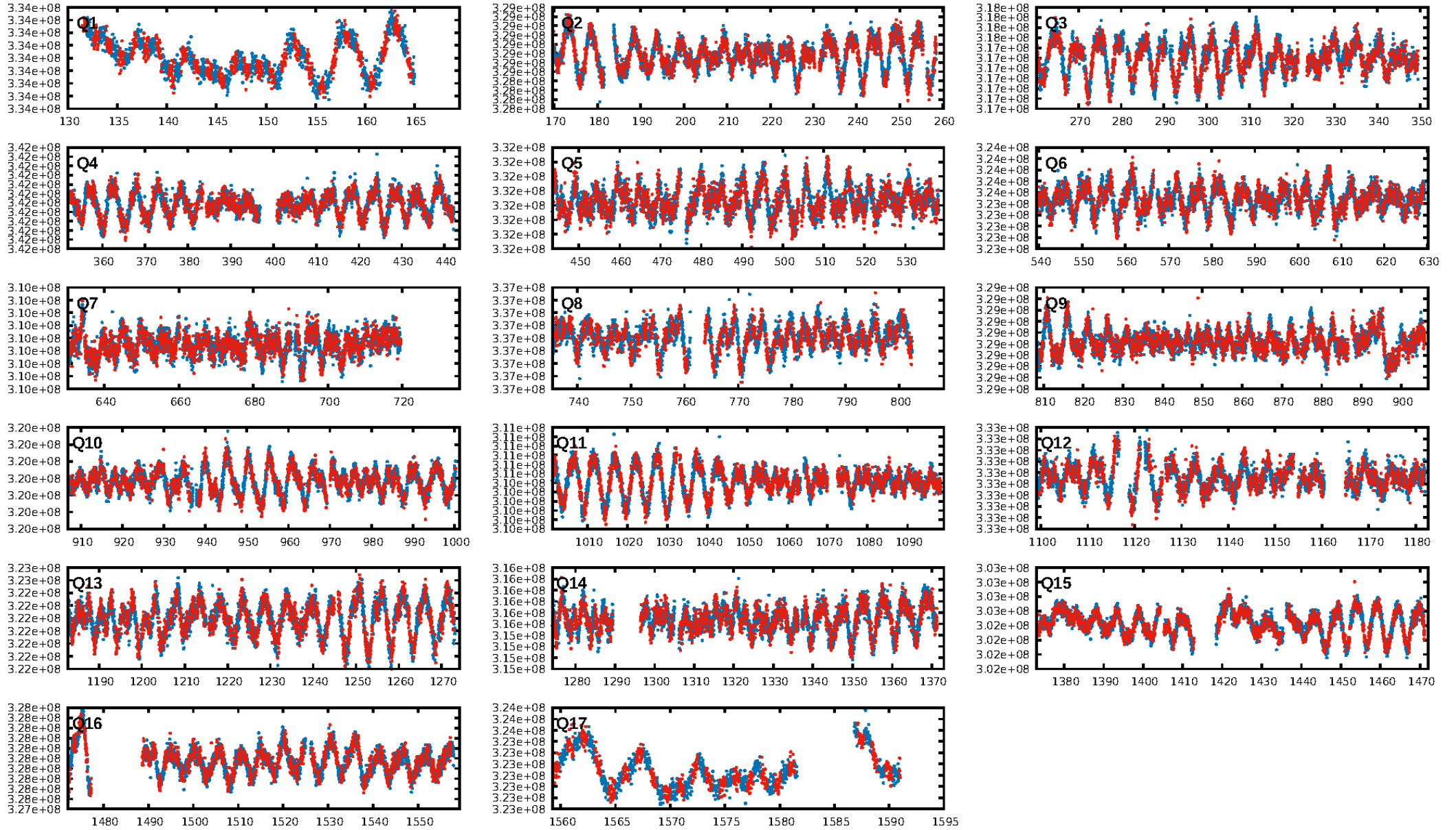
DV Fit Results:

Period = 1.26484 [0.00001] d
Epoch = 131.5917 [0.0049] BKJD
Rp/R* = 0.0032 [0.0006]
a/R* = 1.40 [0.74]
b = 0.59 [1.21]
Seff = 50964.58 [37094.39]
Teq = 3831 [697] K
Rp = 1.05 [0.51] Re
a = 0.0289 [0.0126] AU
Ag = 3.18 [2.59] [0.84σ]
Teffp = 7909 [887] K [3.61σ]

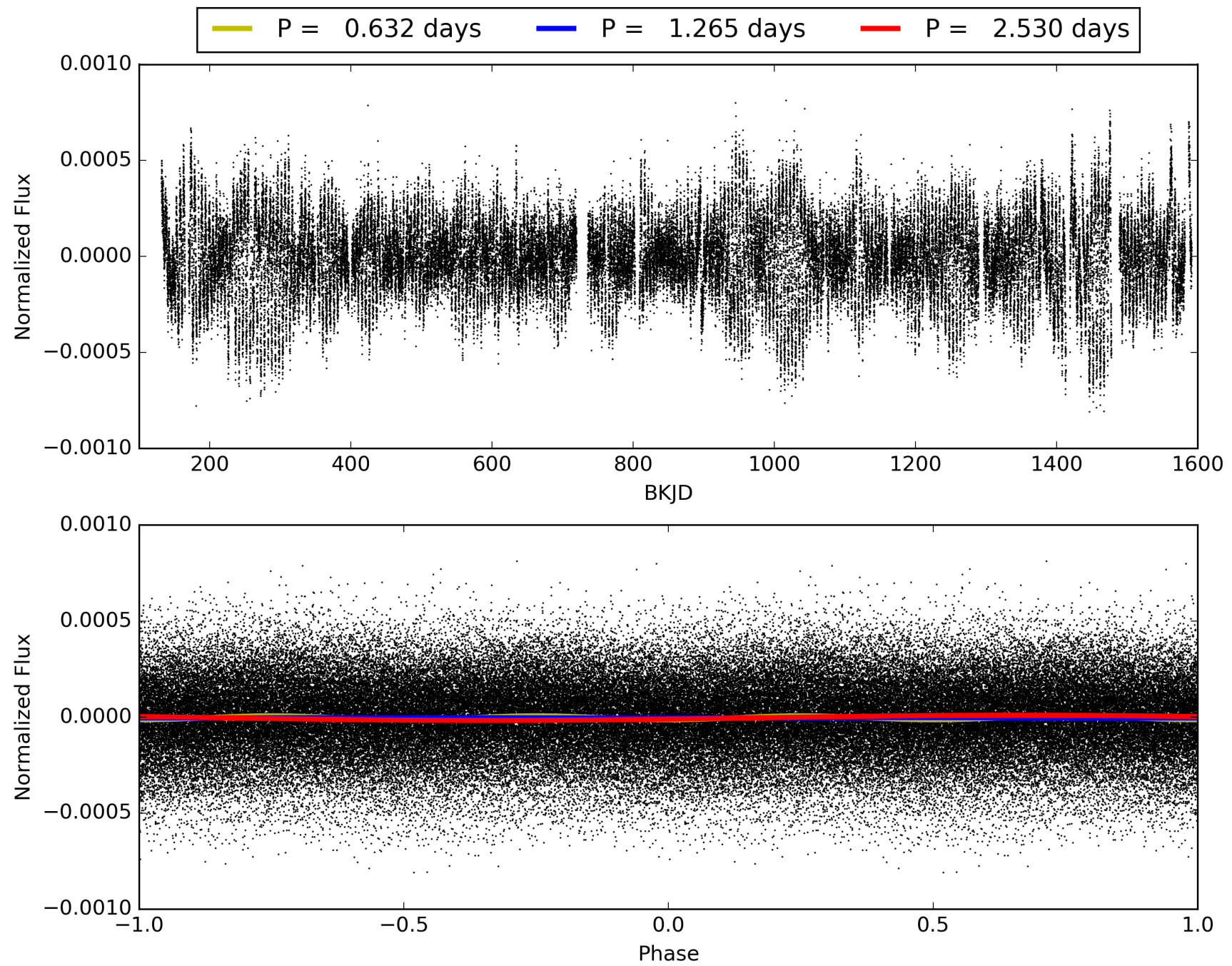
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [93.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.89e-11
RollingBand-fgt: 1.00 [1017/1019]
GhostDiagnostic-chr: 2.384
Centroid-sig: 64.5%
Centroid-so: 0.709 arcsec [0.55σ]
OotOffset-rm: 0.676 arcsec [1.32σ]
KicOffset-rm: 0.674 arcsec [1.51σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009611512-01, PDC Light Curves

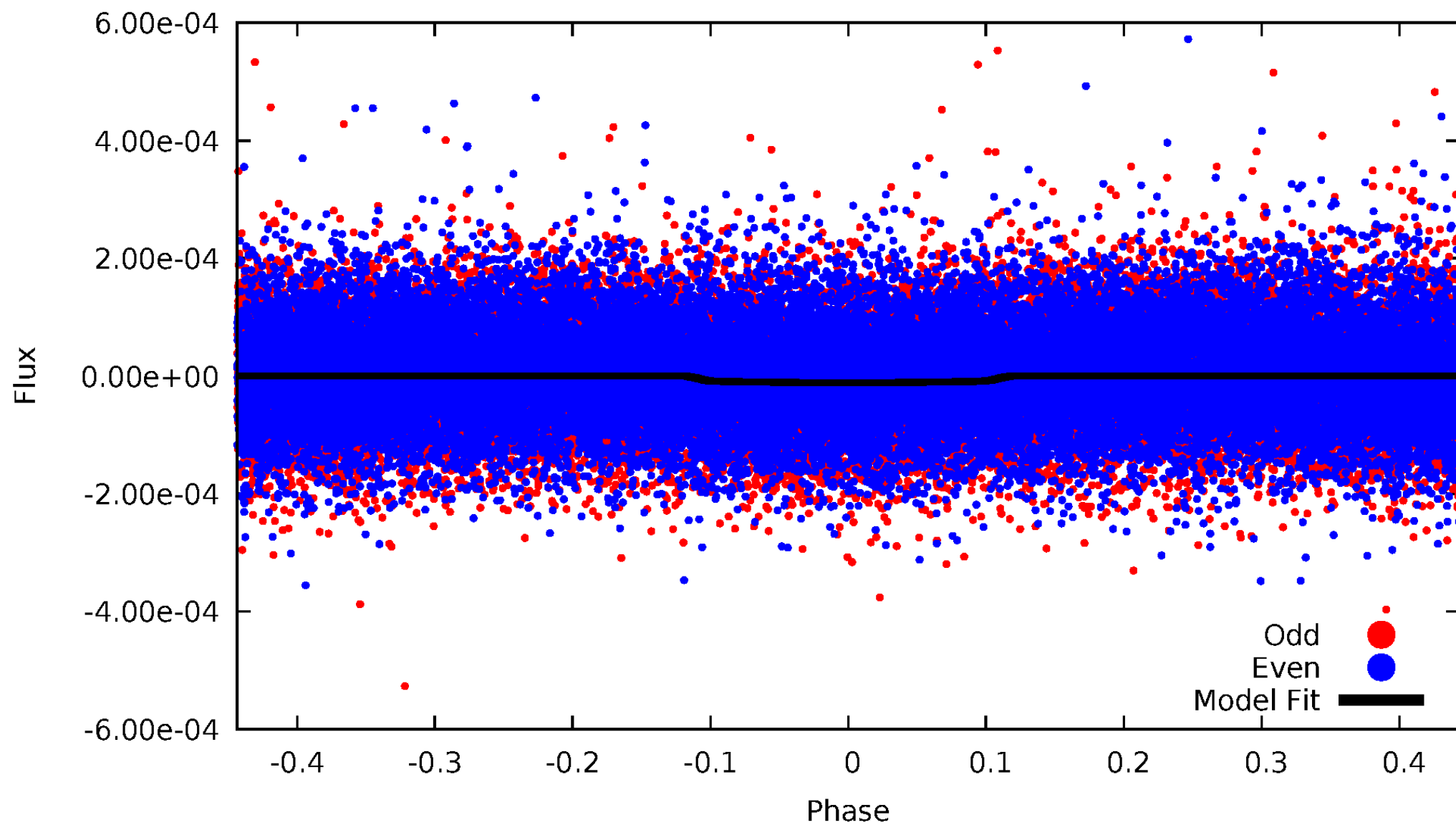


TCE 009611512-01



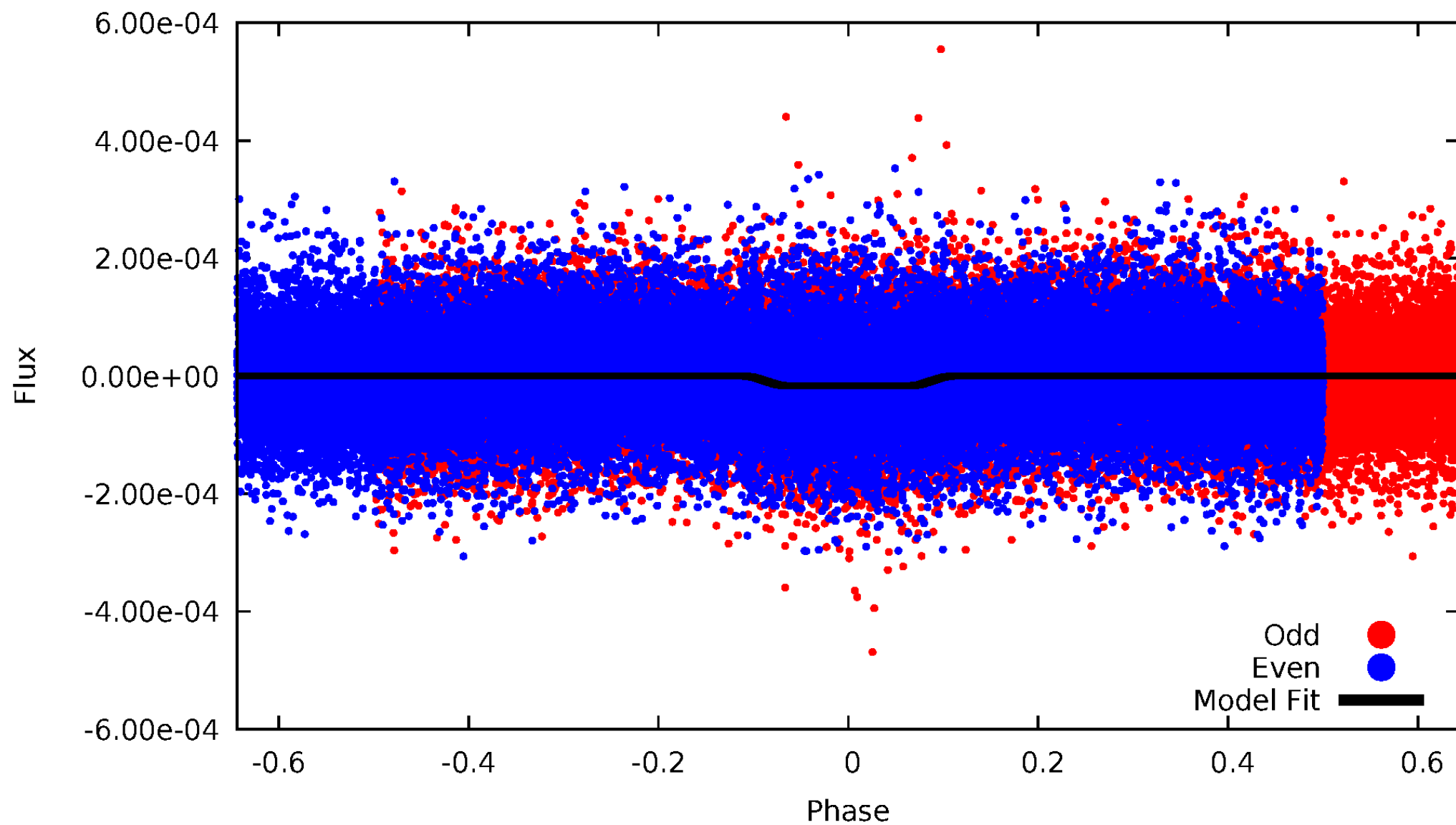
DV Odd/Even

TCE 009611512-01



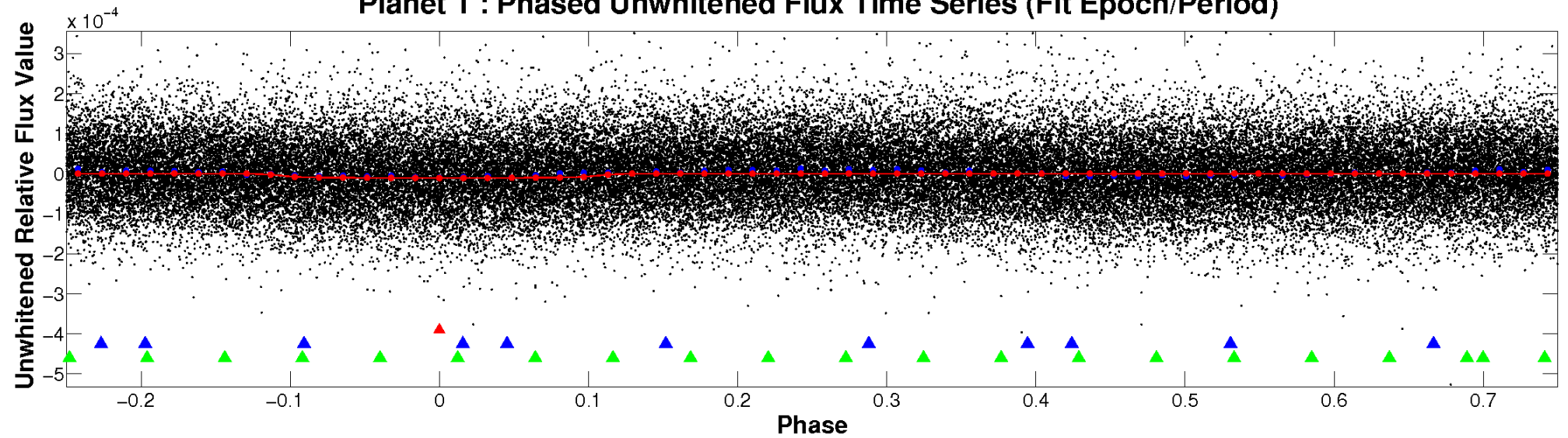
ALT Odd/Even

TCE 009611512-01

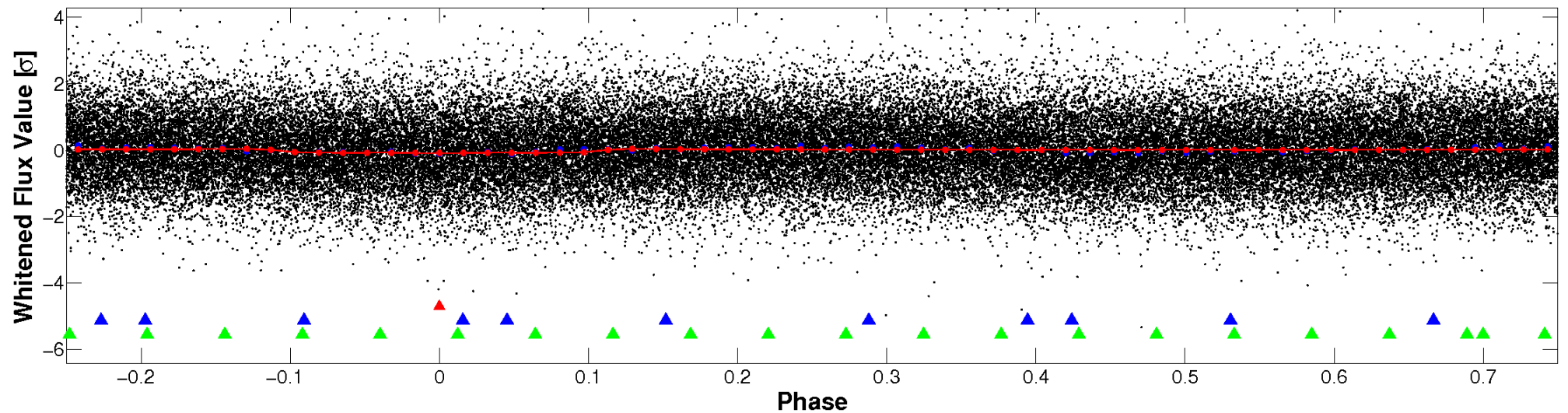


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

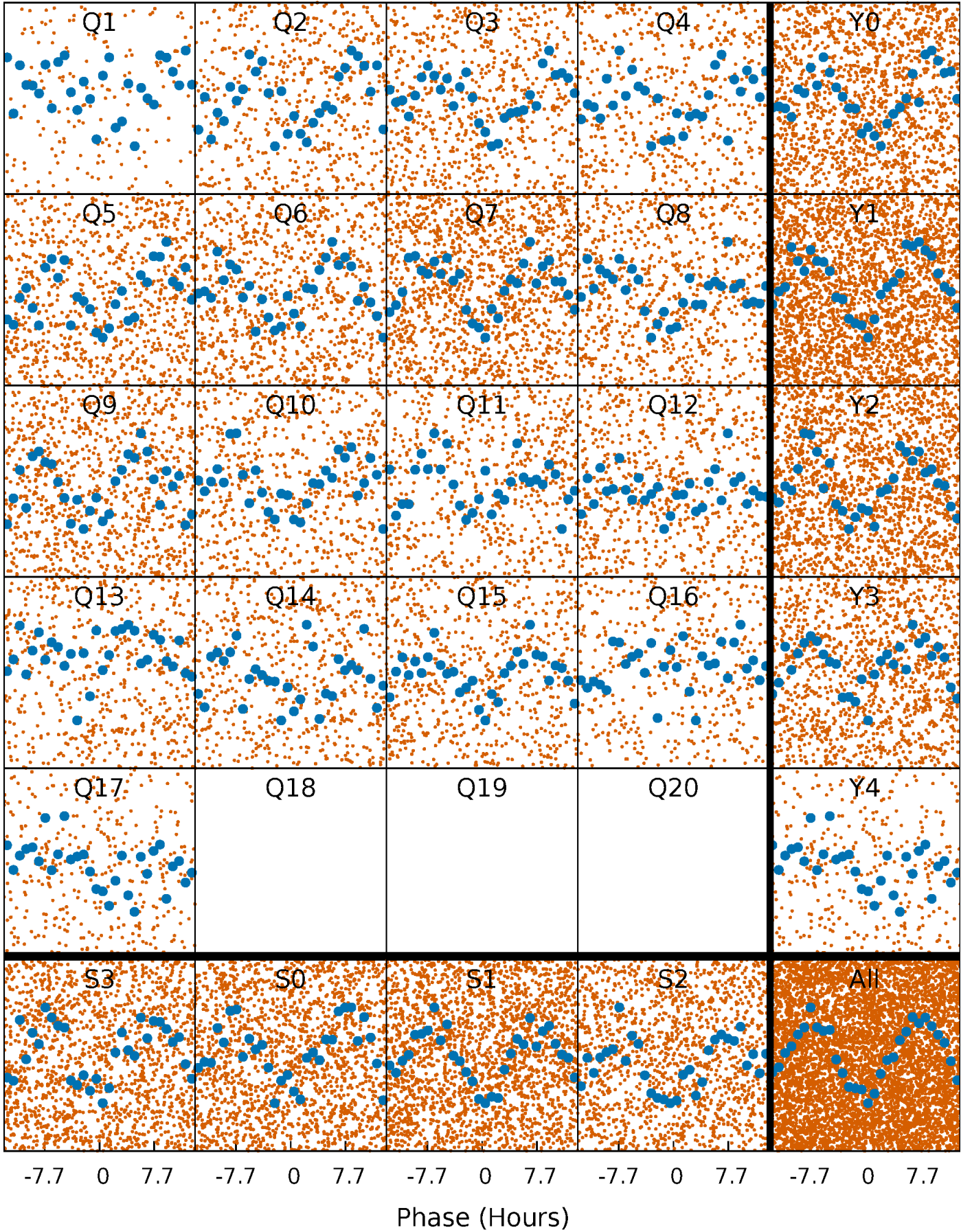


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



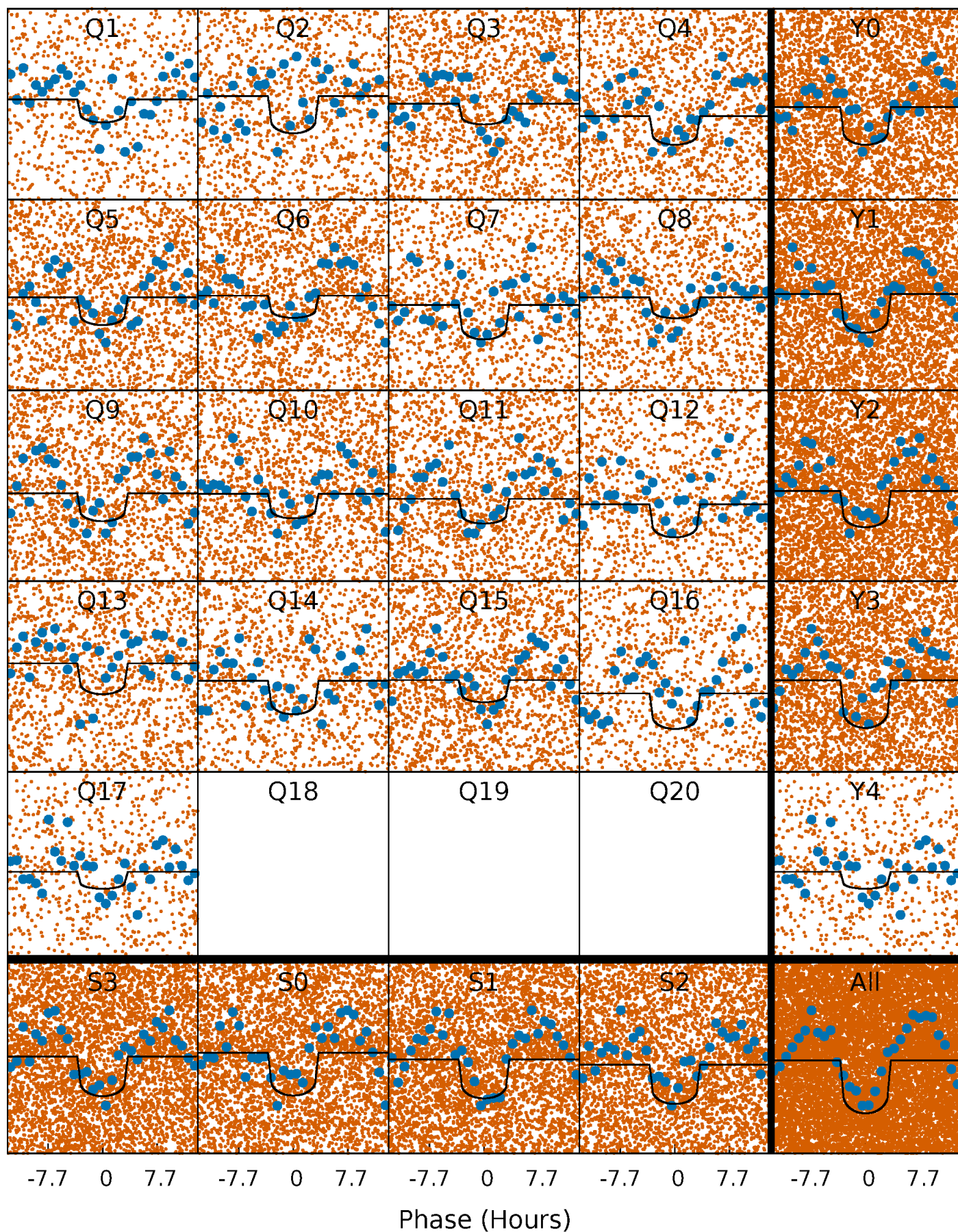
PDC Quarter-Phased Transit Curves

TCE 009611512-01 P= 1.264837 Days $T_0=131.591667$ (BKJD)



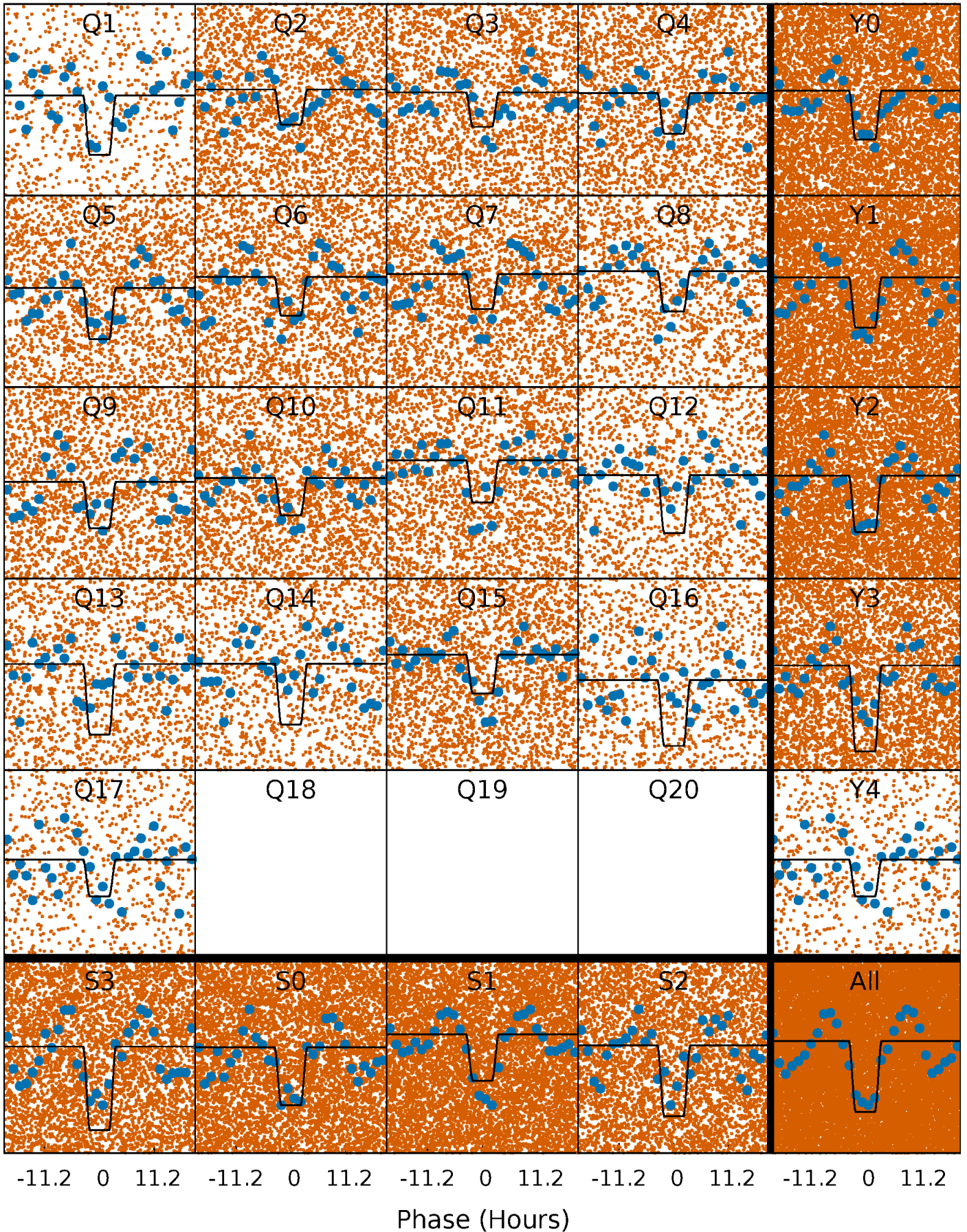
DV Quarter-Phased Transit Curves

TCE 009611512-01 P= 1.264837 Days $T_0=131.591667$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

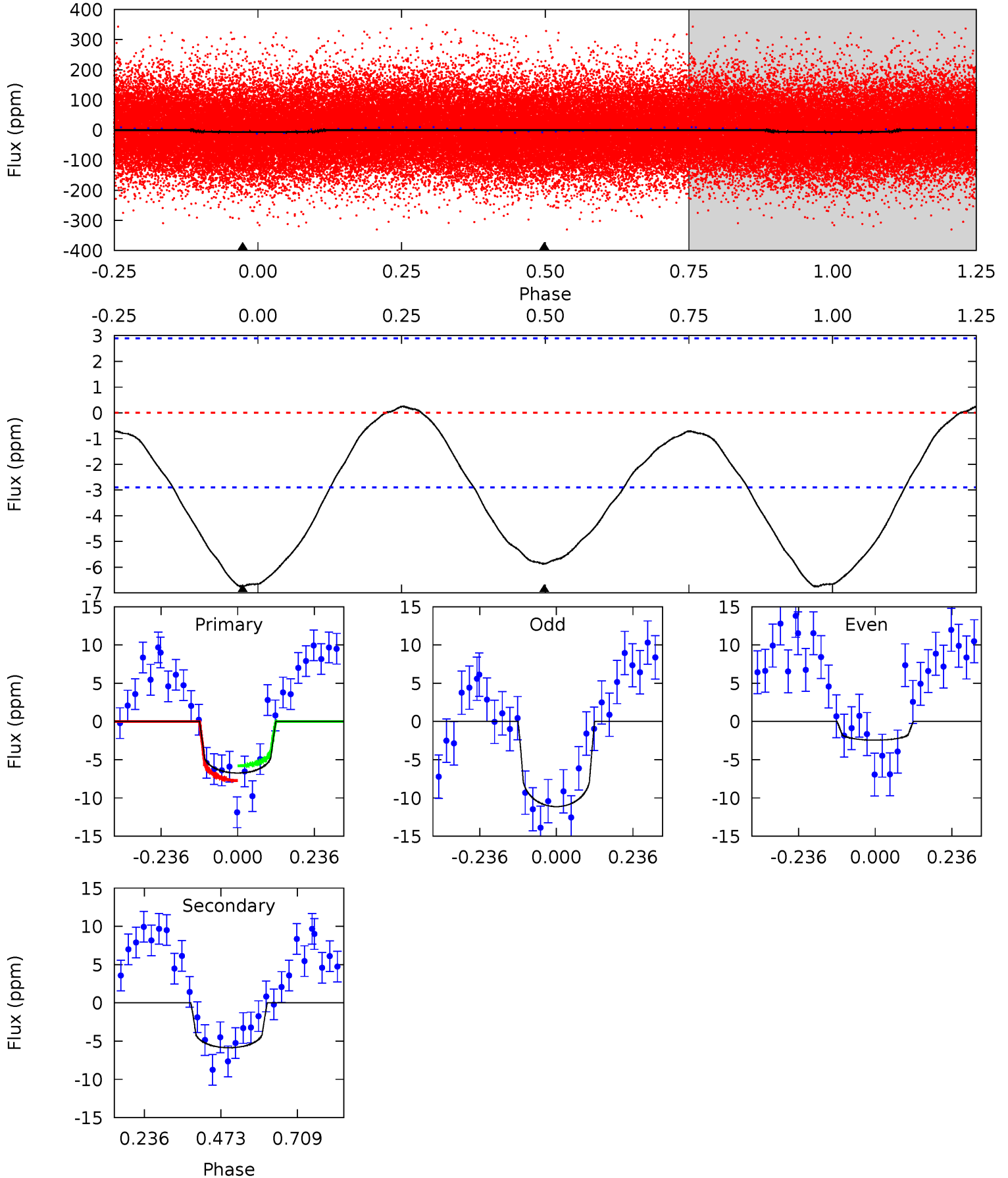
TCE 009611512-01 P= 1.264825 Days $T_0=131.594052$ (BKJD)



DV Model-Shift Uniqueness Test

009611512-01, P = 1.264837 Days, E = 130.326830 Days

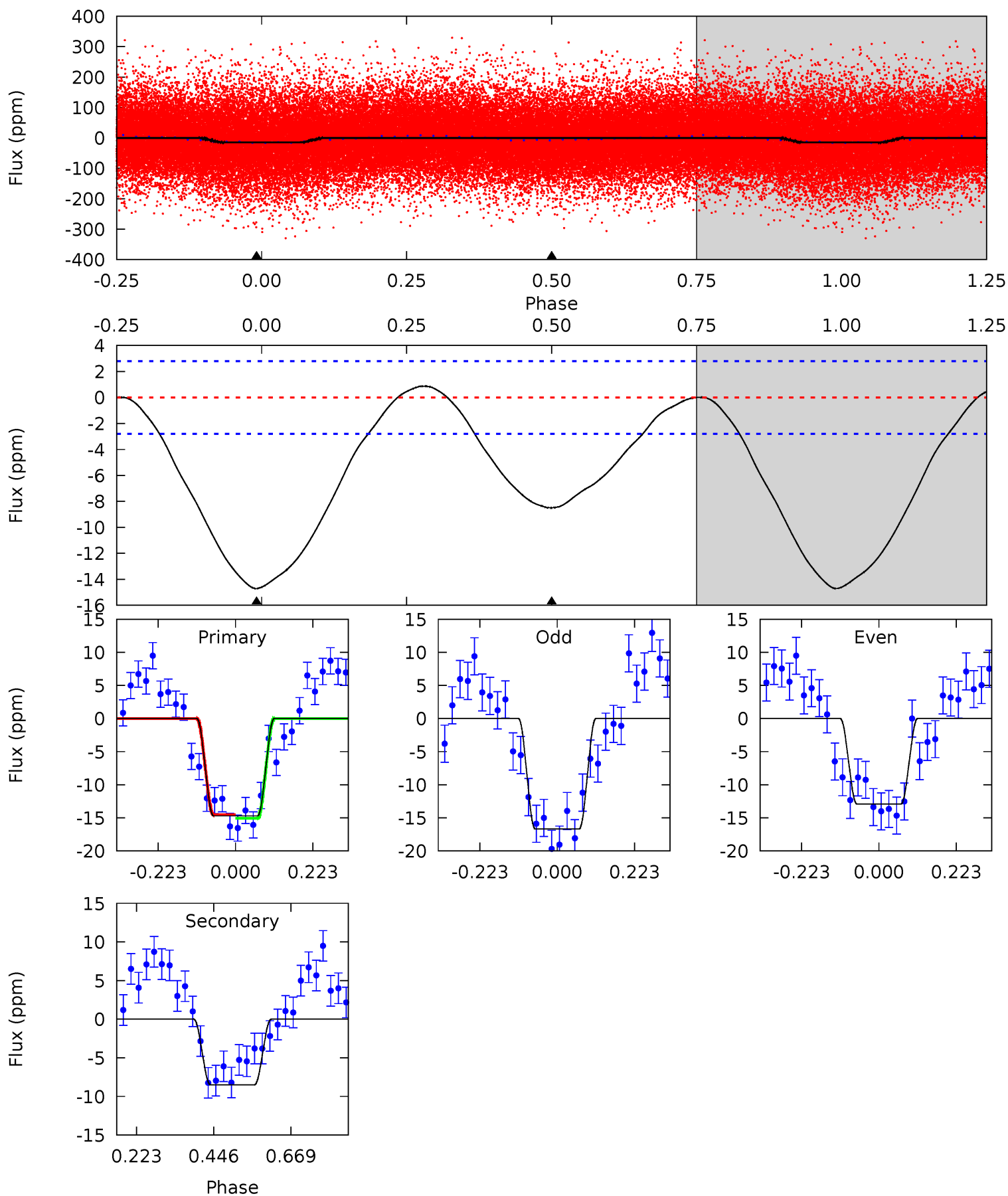
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.2 | 8.88 | 0 | 0 | 4.38 | 1.18 | 0.64 | 10.2 | 10.2 | 8.88 | 8.88 | 6.58 | 0.82 | 0.04 | 1.46 |



Alt Model-Shift Uniqueness Test

009611512-01, P = 1.264825 Days, E = 130.329227 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.1 | 13.3 | 0 | 0 | 4.39 | 1.22 | 0.69 | 23.1 | 23.1 | 13.3 | 13.3 | 2.92 | 0.97 | 0.06 | 0.43 |



Stellar Parameters For KIC 009611512

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8521^{+236}_{-383} | $3.786^{+0.416}_{-0.104}$ | $-0.220^{+0.300}_{-0.350}$ | $2.997^{+0.621}_{-1.346}$ | $2.002^{+0.329}_{-0.494}$ | $0.105^{+0.384}_{-0.036}$ |
| | +3%/-4% | +11%/-3% | +136%/-159% | +21%/-45% | +16%/-25% | +366%/-35% |
| 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 009611512-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -6 ± 1 | $0.97^{+0.28}_{-0.25}$ | 5154^{+414}_{-593} | 6886^{+1100}_{-743} | $2.981^{+2.317}_{-1.226}$ |
| Alt. | -8 ± 1 | $1.25^{+0.32}_{-0.30}$ | 5157^{+396}_{-590} | 6682^{+677}_{-594} | $2.491^{+1.849}_{-0.800}$ |

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 $A_{obs} \gg 1.0$

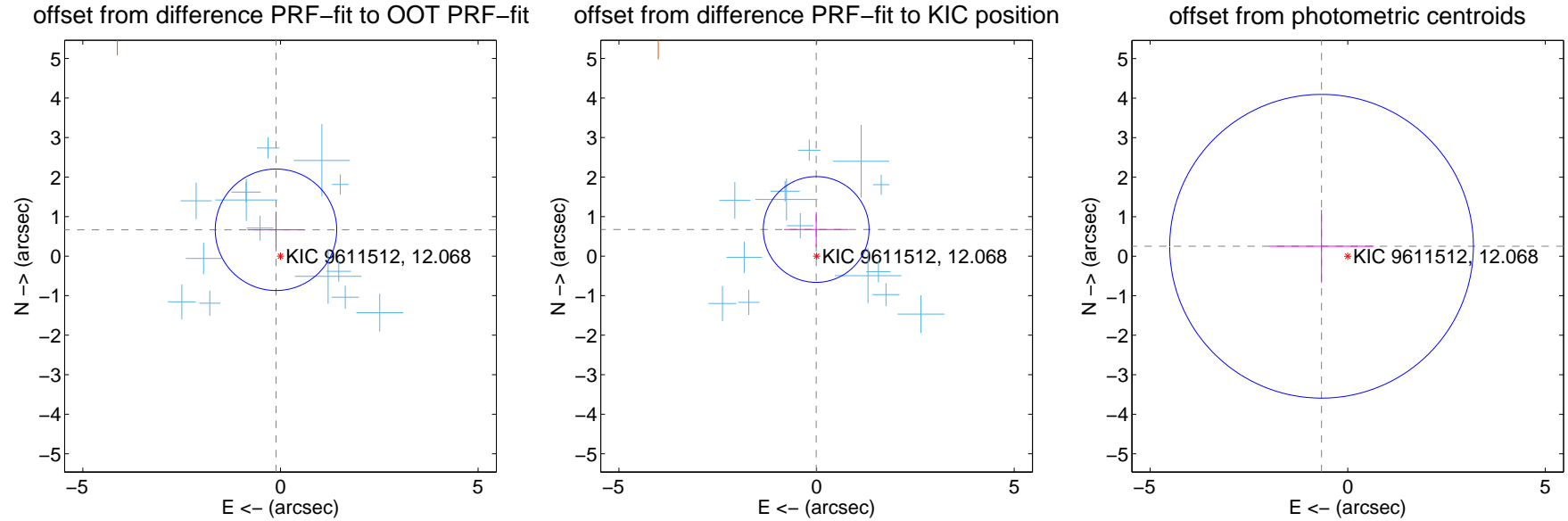
DV Centroid Data

Supplemental centroid analysis for 009611512-01. Kepler magnitude: 12.07. Transit SNR 10.21

There are 14 quarters with good PRF difference image offsets

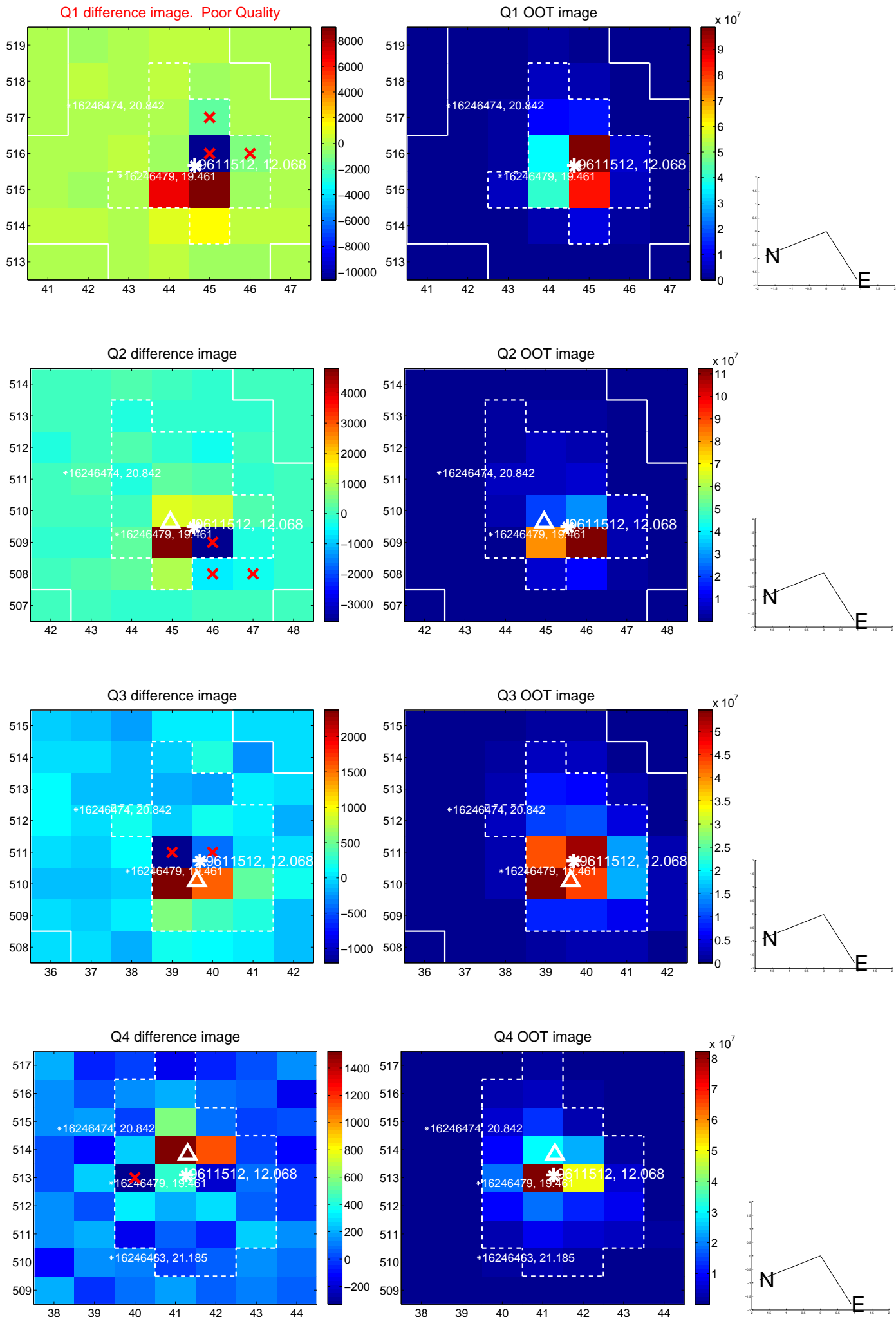
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.676 ± 0.512 | 1.32 | 0.113 ± 0.722 | 0.666 ± 0.462 |
| PRF-fit source offset from KIC position | 0.674 ± 0.446 | 1.51 | 0.010 ± 0.814 | 0.674 ± 0.442 |
| photometric centroid source offset | 0.71 ± 1.28 | 0.55 | 0.66 ± 1.32 | 0.25 ± 0.92 |

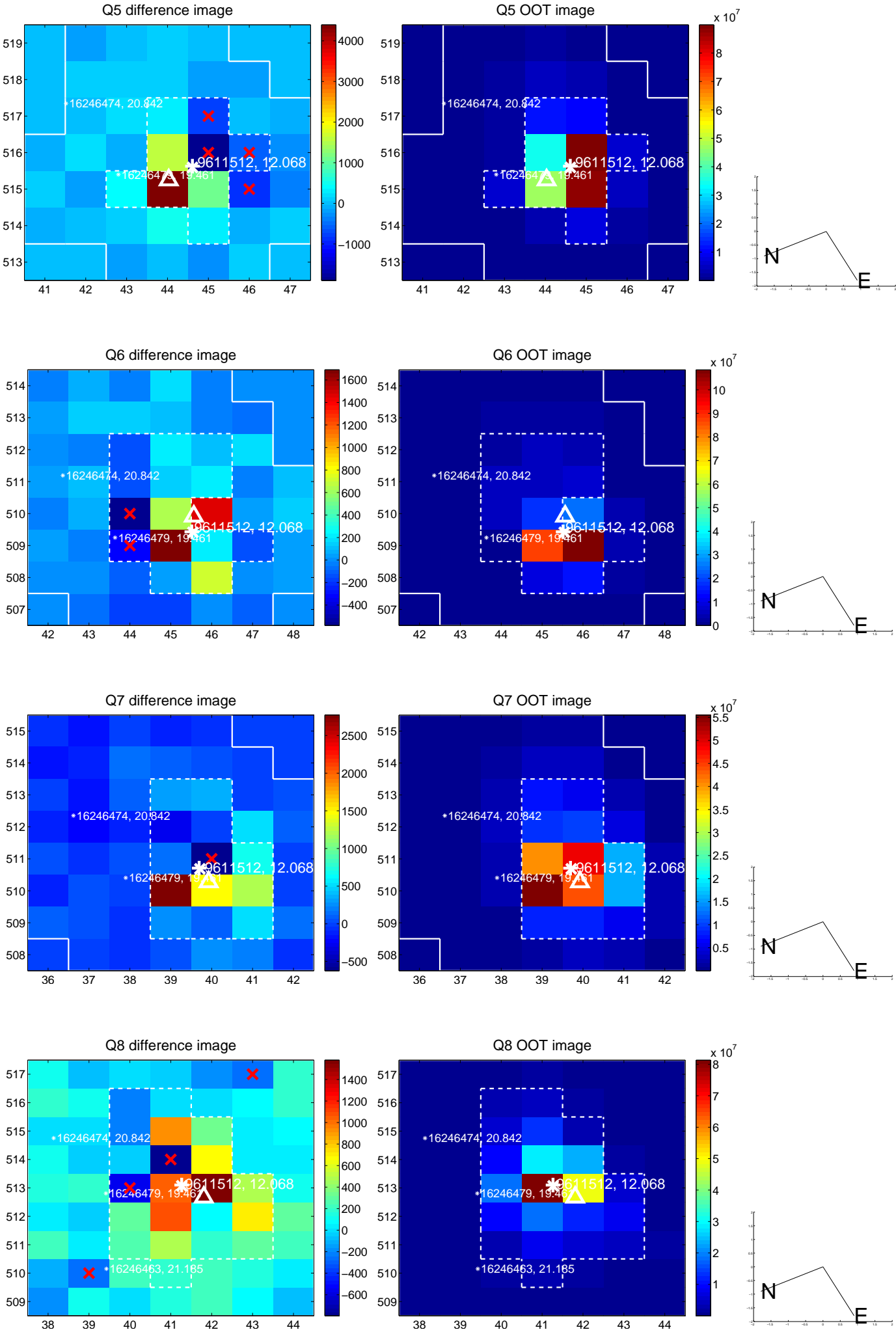


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

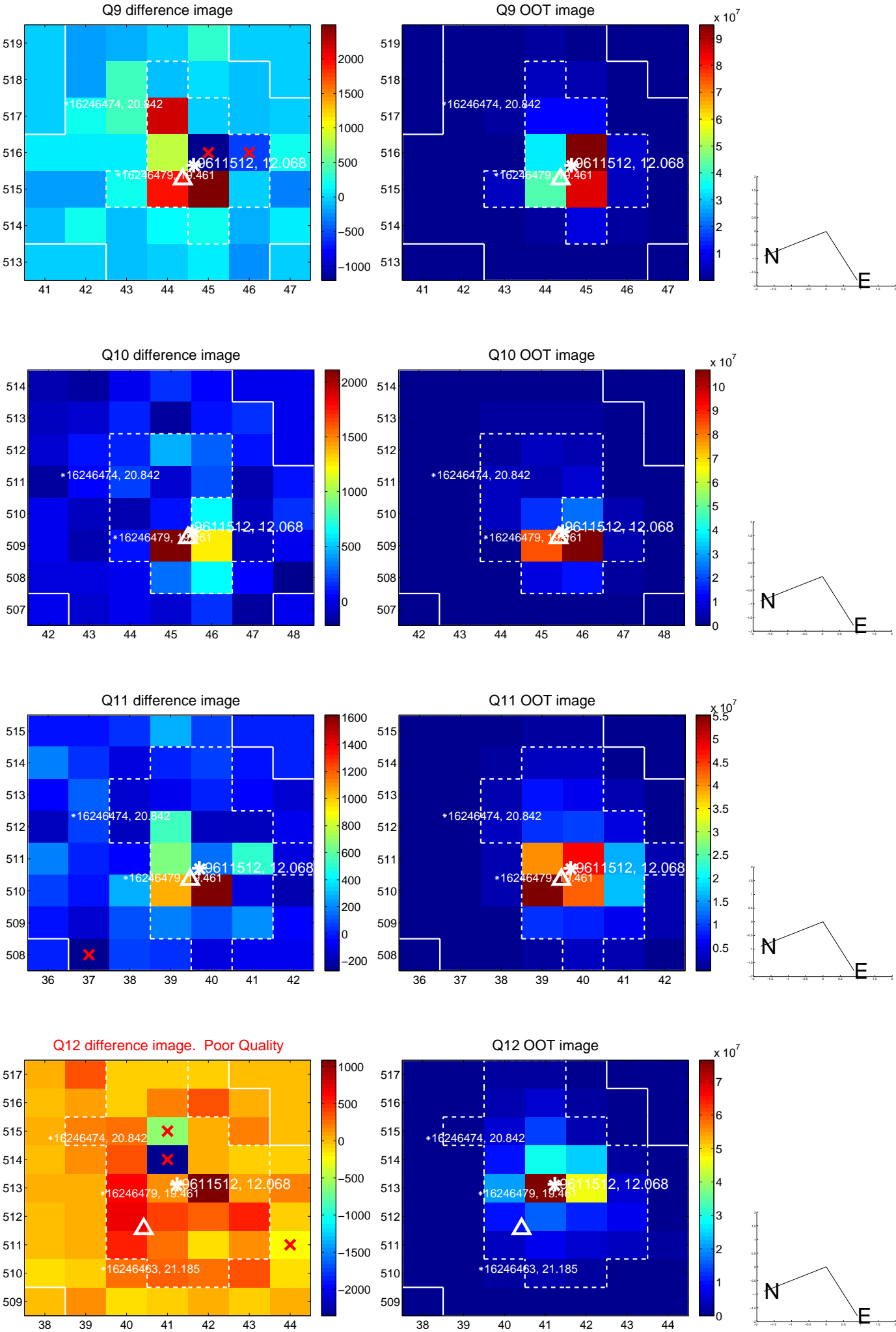
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



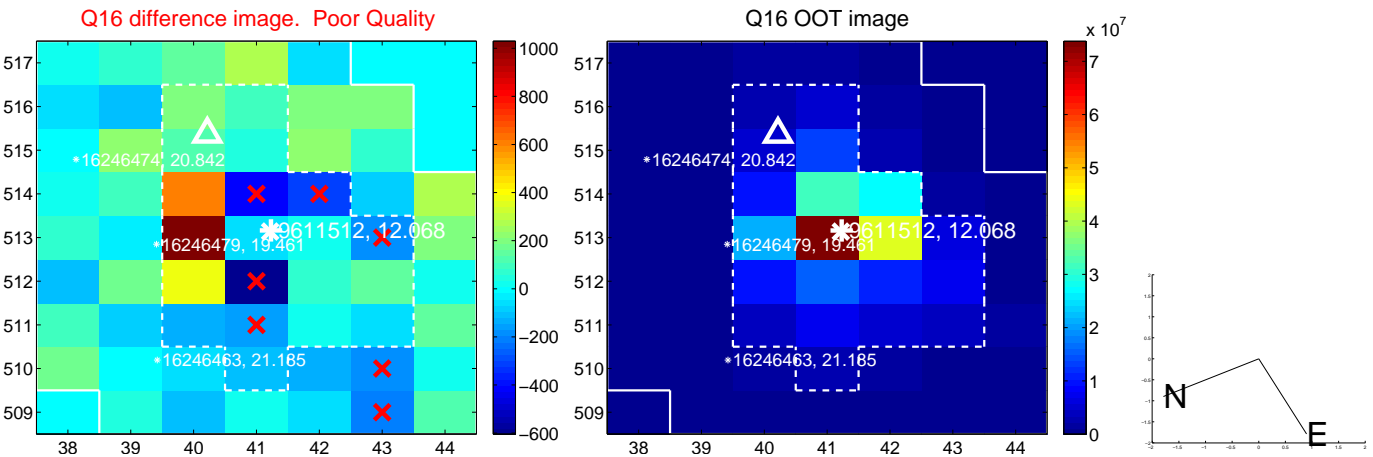
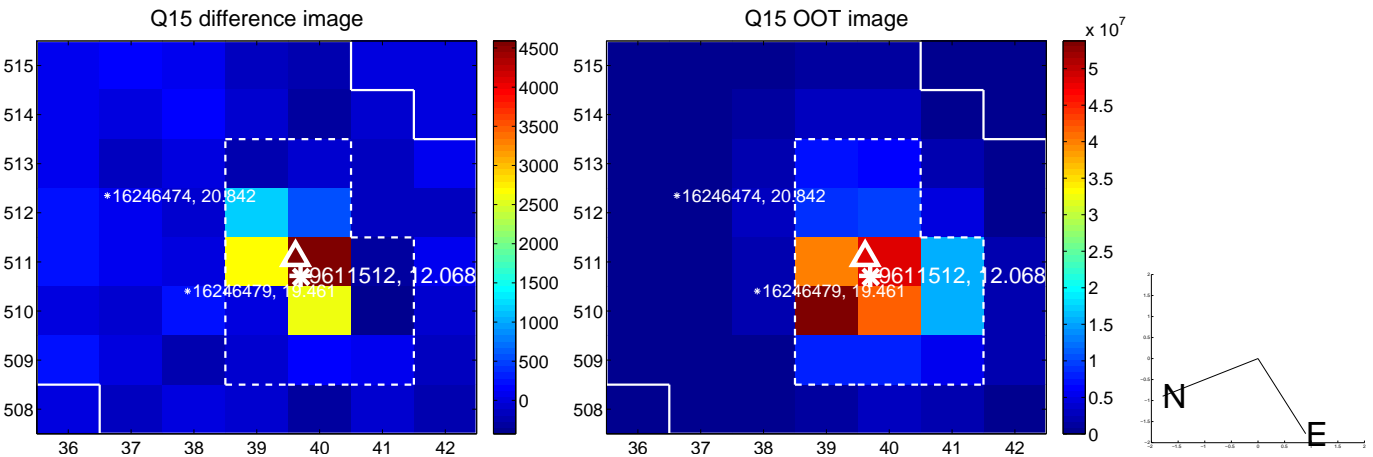
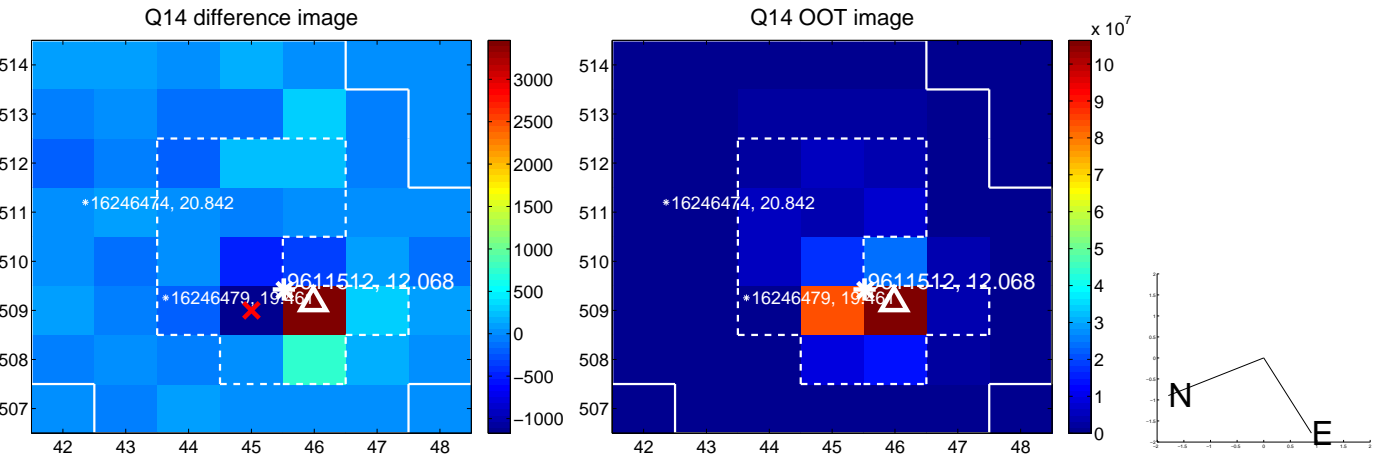
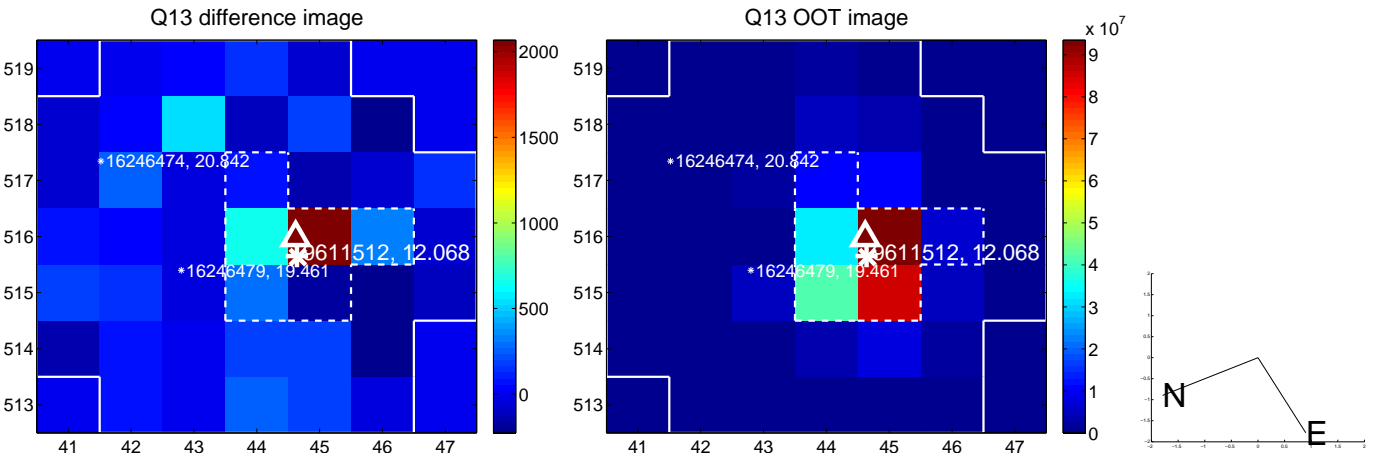
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



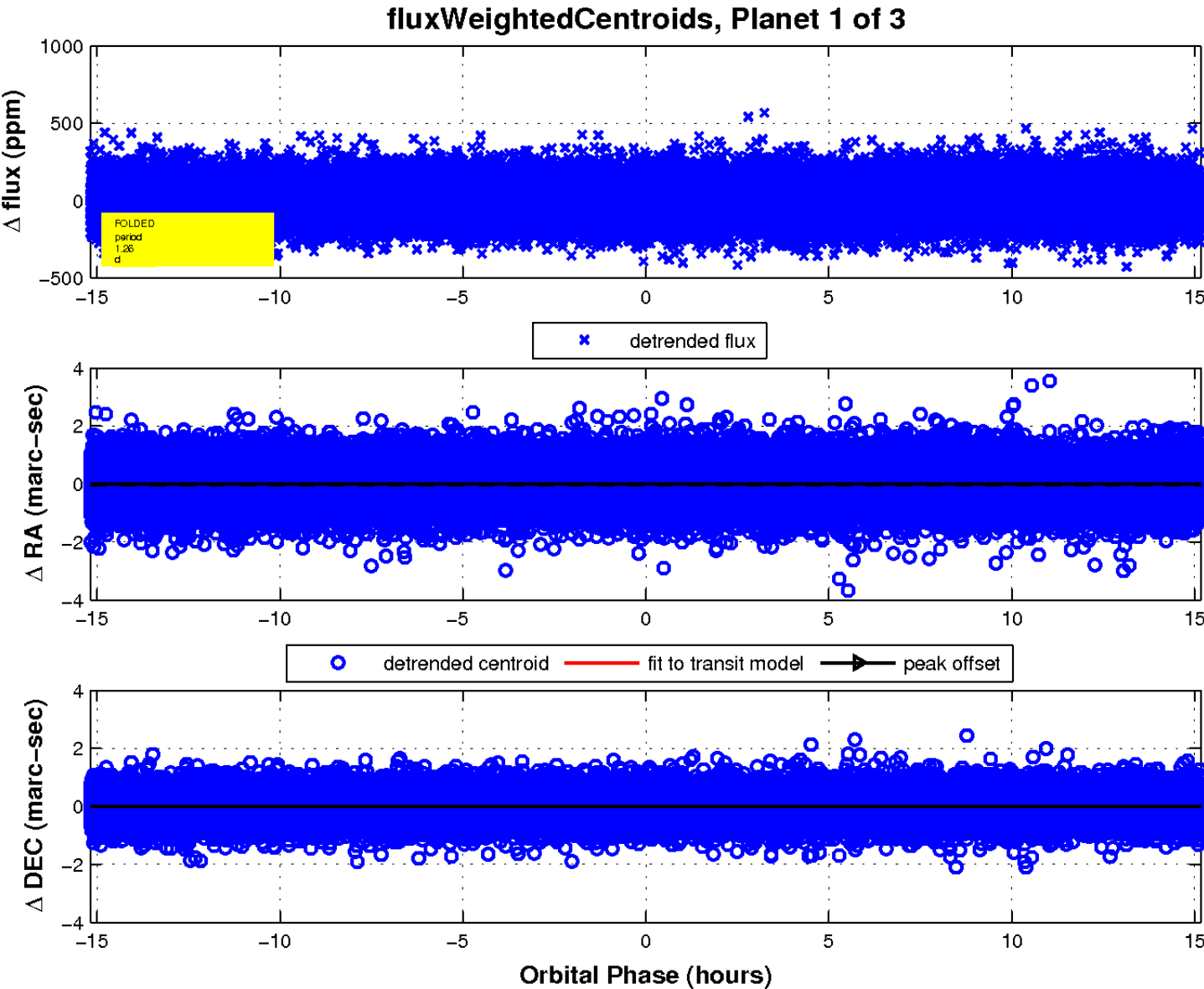
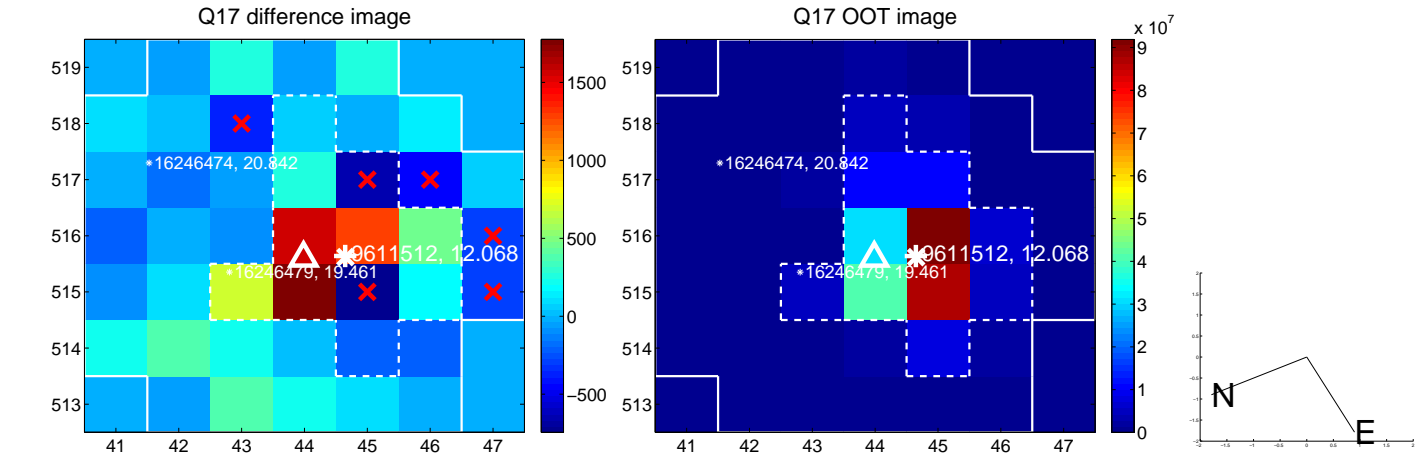
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

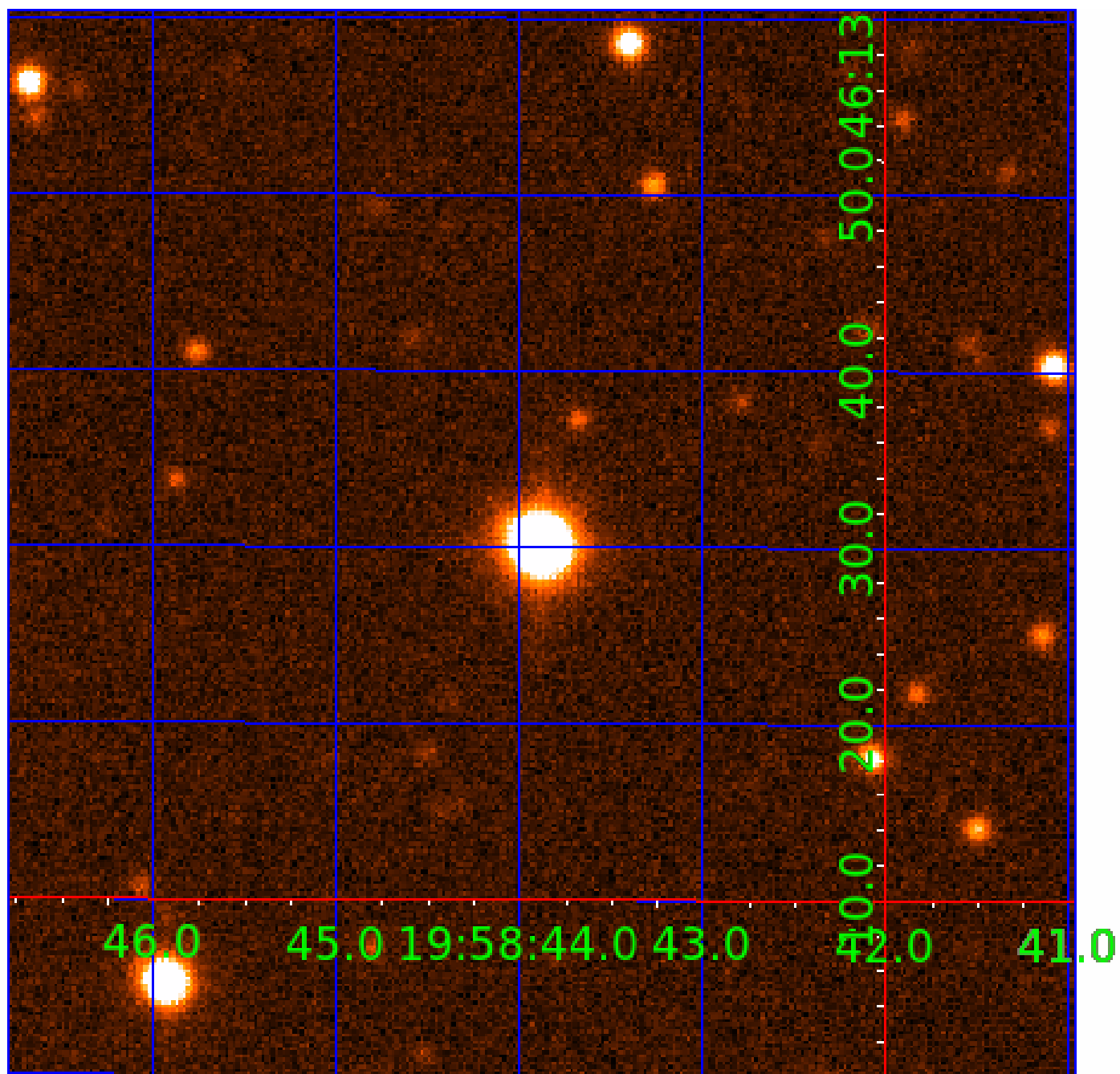


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009611512

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009611512-01 | OBS | No | 1.264837 | 131.591667 | 11.1 | 6.731 | 8.5 | 10.2 | 3.00 | 8521 | 1.05 | 50964.58 |
| 009611512-02 | OBS | No | 128.534354 | 237.588508 | 94.2 | 3.248 | 10.2 | 4.7 | 3.00 | 8521 | 3.37 | 107.47 |
| 009611512-03 | OBS | No | 70.896712 | 138.801117 | 51.6 | 16.620 | 8.4 | 4.3 | 3.00 | 8521 | 2.43 | 237.58 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009611512-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 009611512-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS |
| 009611512-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST |

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

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

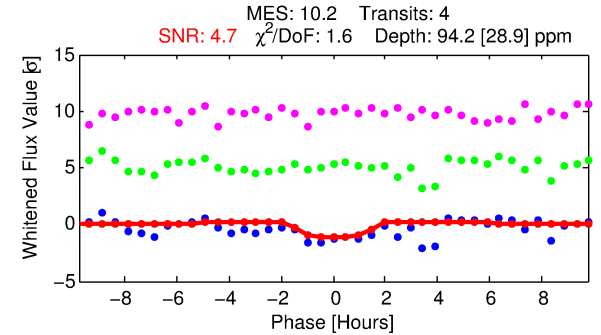
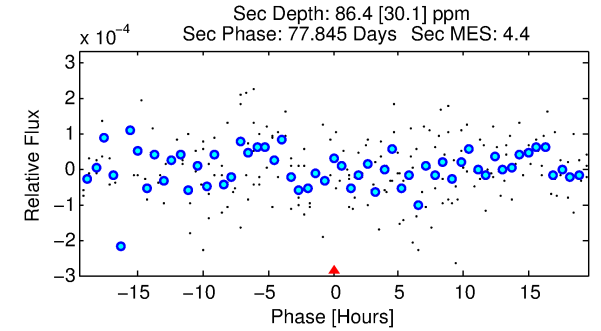
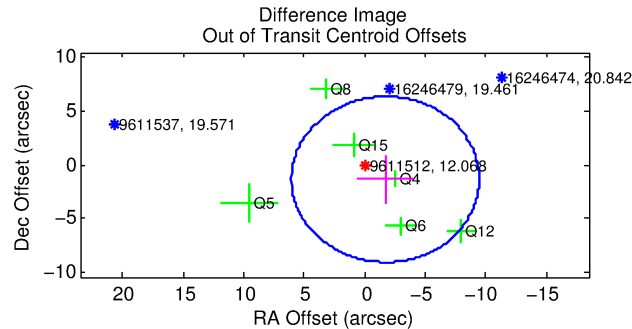
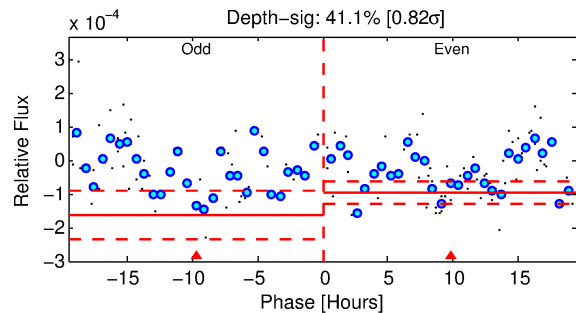
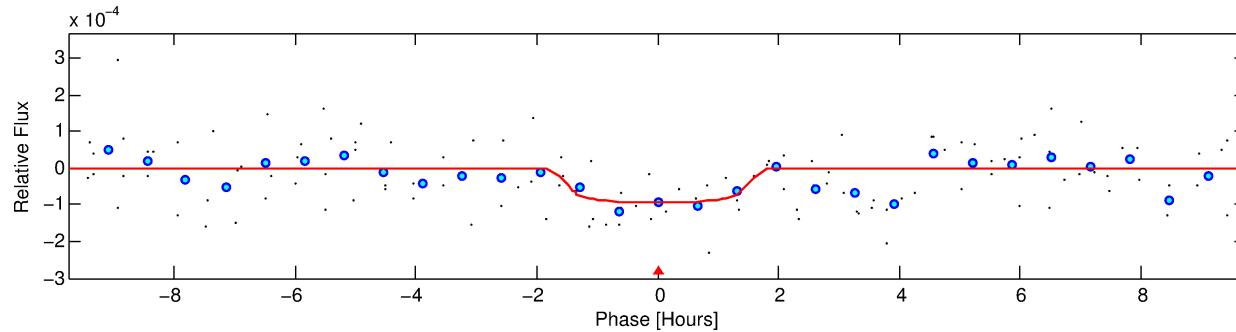
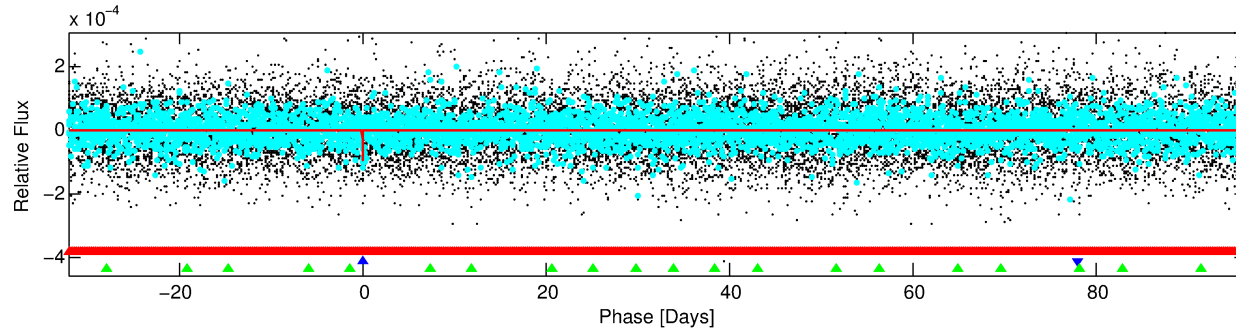
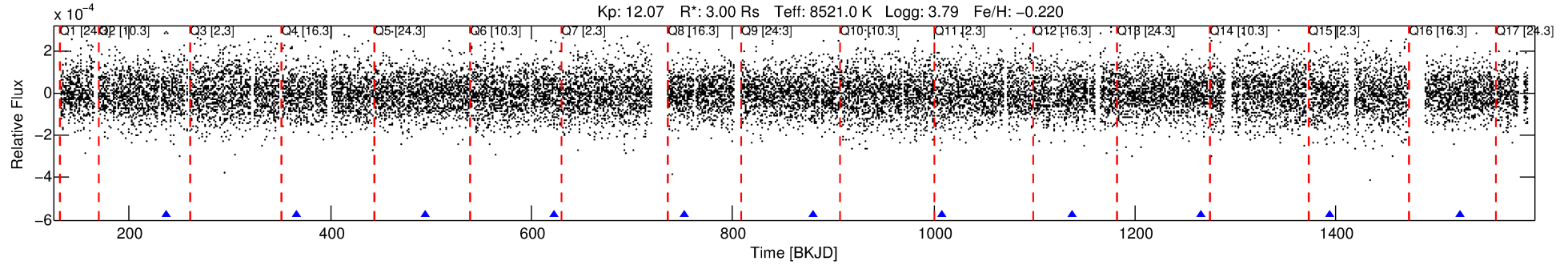
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009611512-02

No Significant Match Found

DV One-Page Summary

KIC: 9611512 Candidate: 2 of 3 Period: 128.534 d



DV Fit Results:

Period = 128.53435 [0.00336] d
Epoch = 237.5885 [0.0183] BKJD
Rp/R* = 0.0103 [0.0121]
a/R* = 139.31 [1096.29]
b = 0.90 [1.69]
Seff = 107.47 [78.22]
Teq = 821 [149] K
Rp = 3.37 [4.25] Re
a = 0.6283 [0.2750] AU
Ag = 1651.51 [4100.44] [0.40 σ]
Teffp = 8092 [4830] K [1.50 σ]

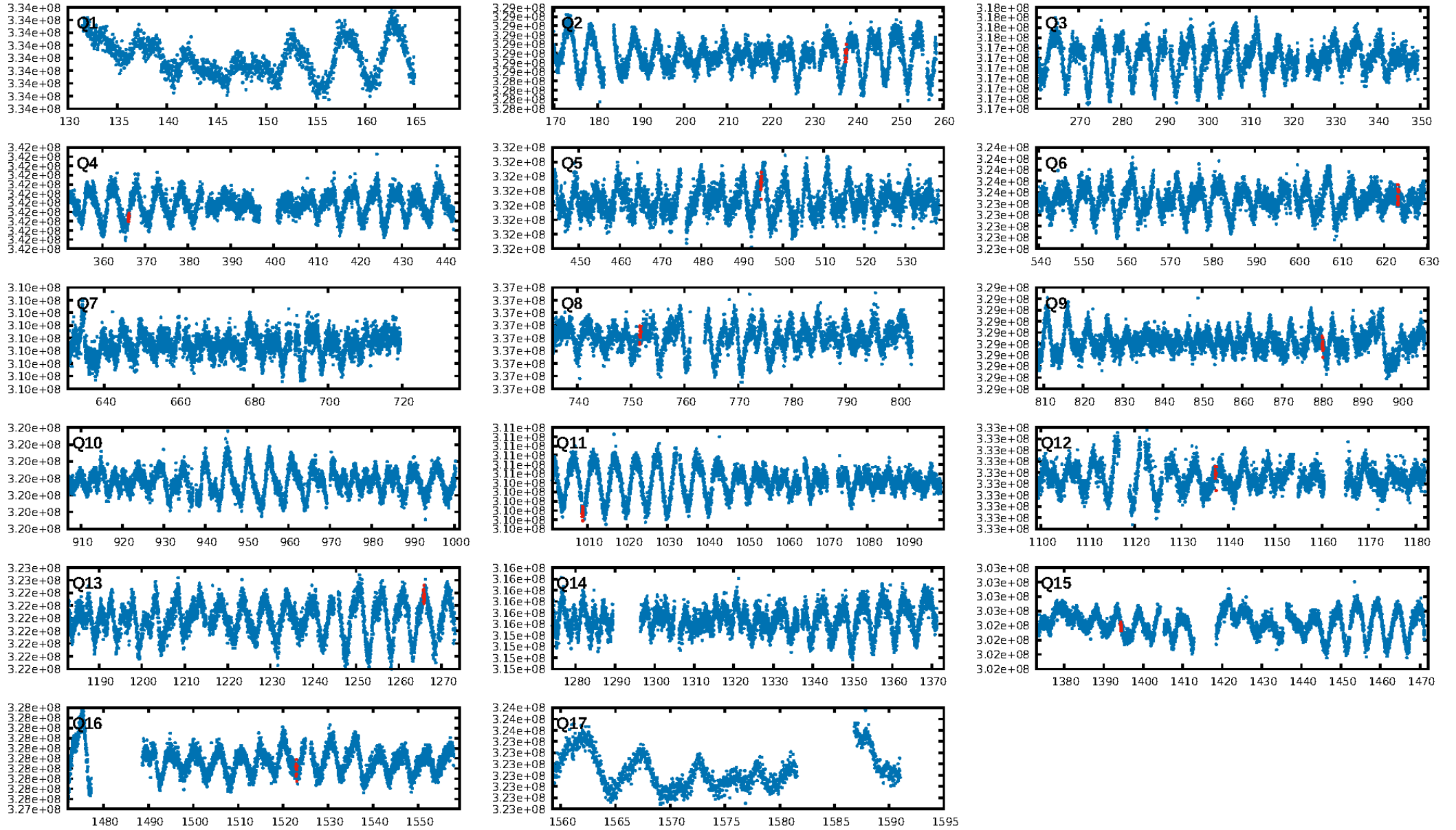
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.68 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 48.3%
ModelChiSquareGof-sig: 97.8%
Bootstrap-pfa: 8.17e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.8249
Centroid-sig: 74.7%
Centroid-so: 0.884 arcsec [0.46 σ]
OotOffset-rm: 2.183 arcsec [0.85 σ]
OotOffset-st: 1/1/3/1 [6]
KicOffset-rm: 2.266 arcsec [0.86 σ]
KicOffset-st: 1/1/3/1 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.27 [3/11]

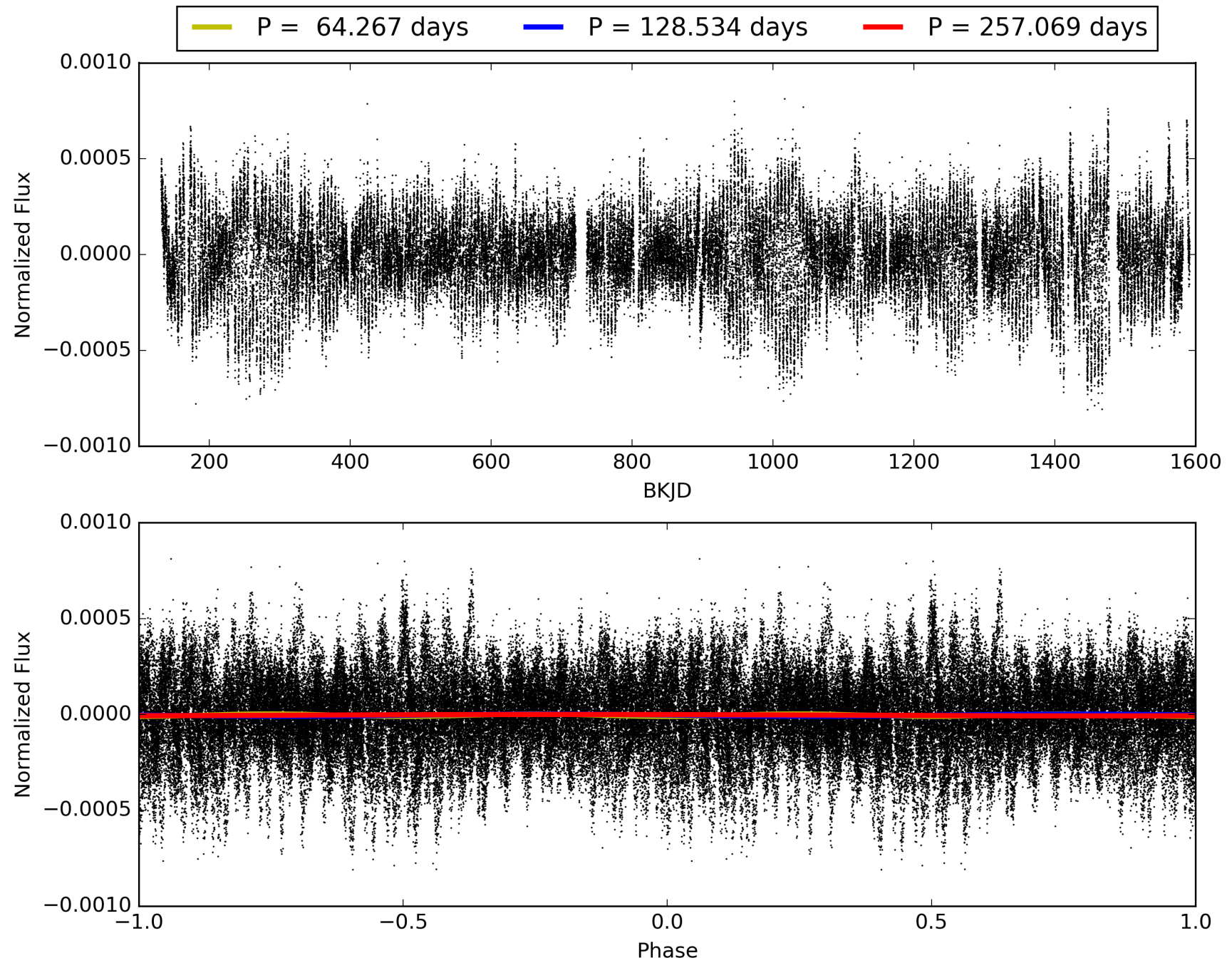
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:00:21 Z

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

TCE 009611512-02, PDC Light Curves

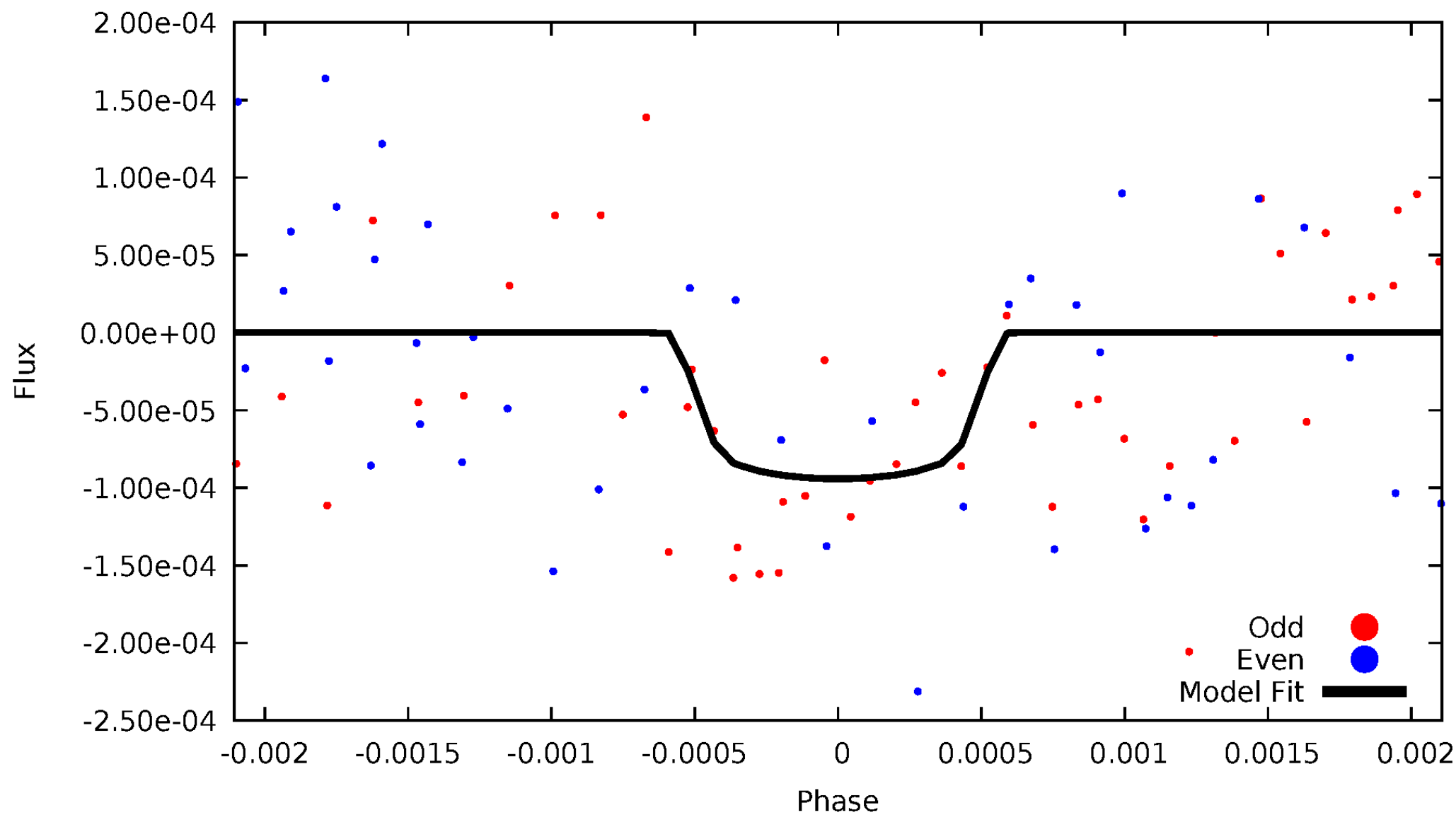


TCE 009611512-02



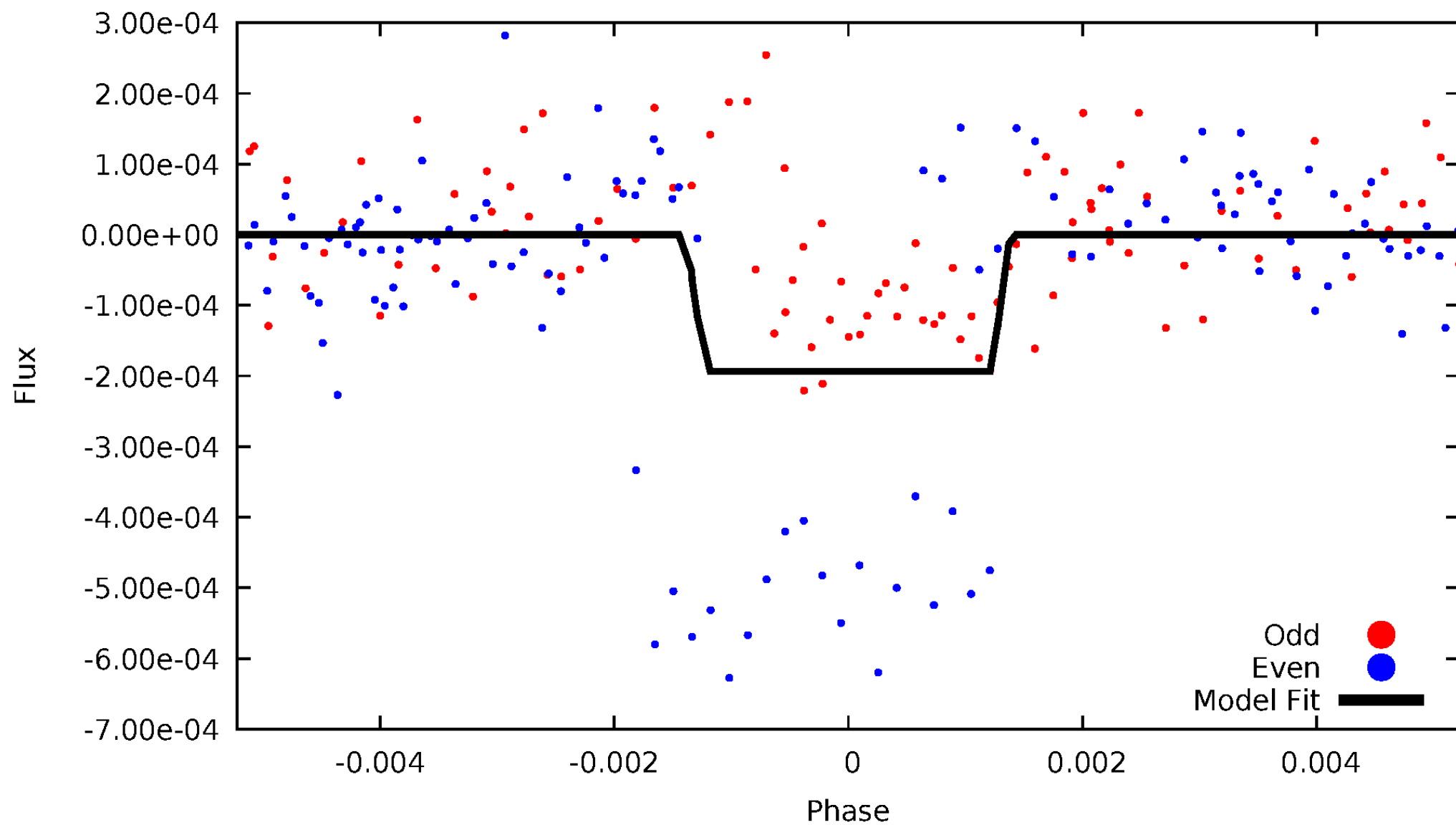
DV Odd/Even

TCE 009611512-02



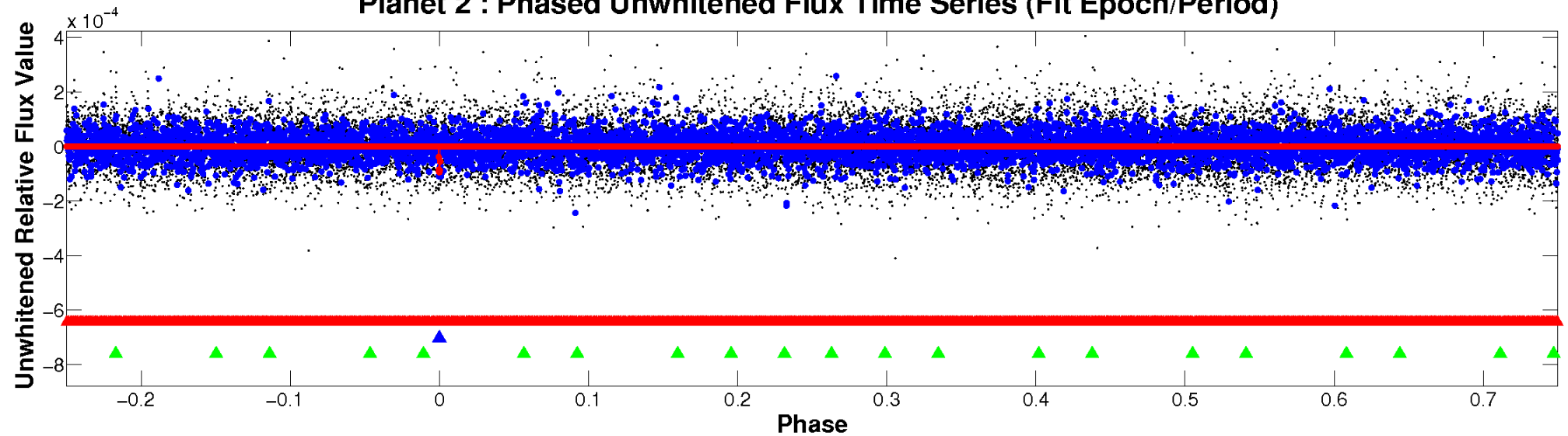
ALT Odd/Even

TCE 009611512-02

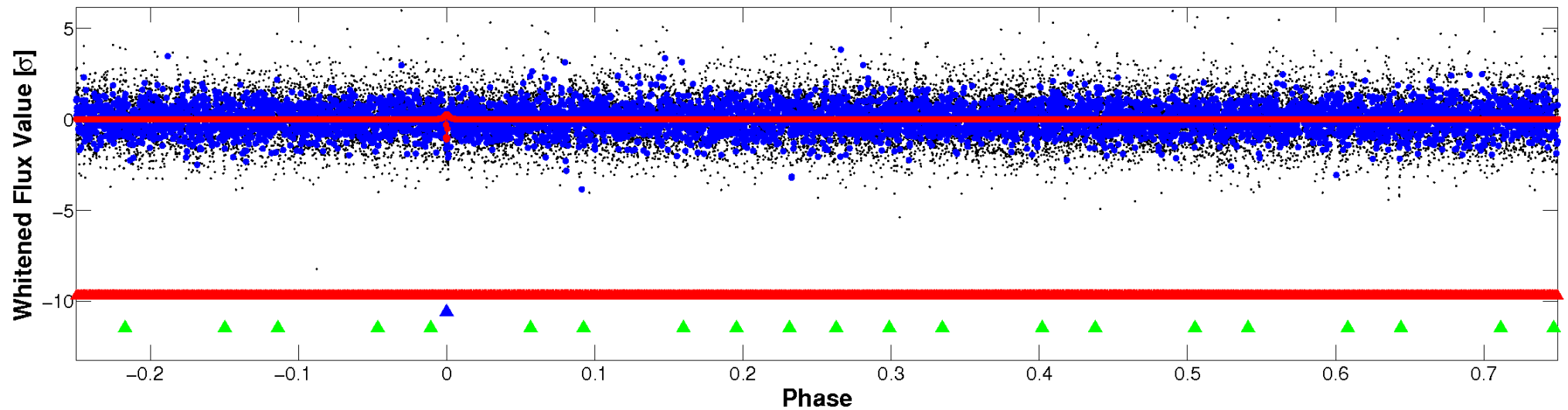


Non-Whitened Vs. Whitened Light Curve

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

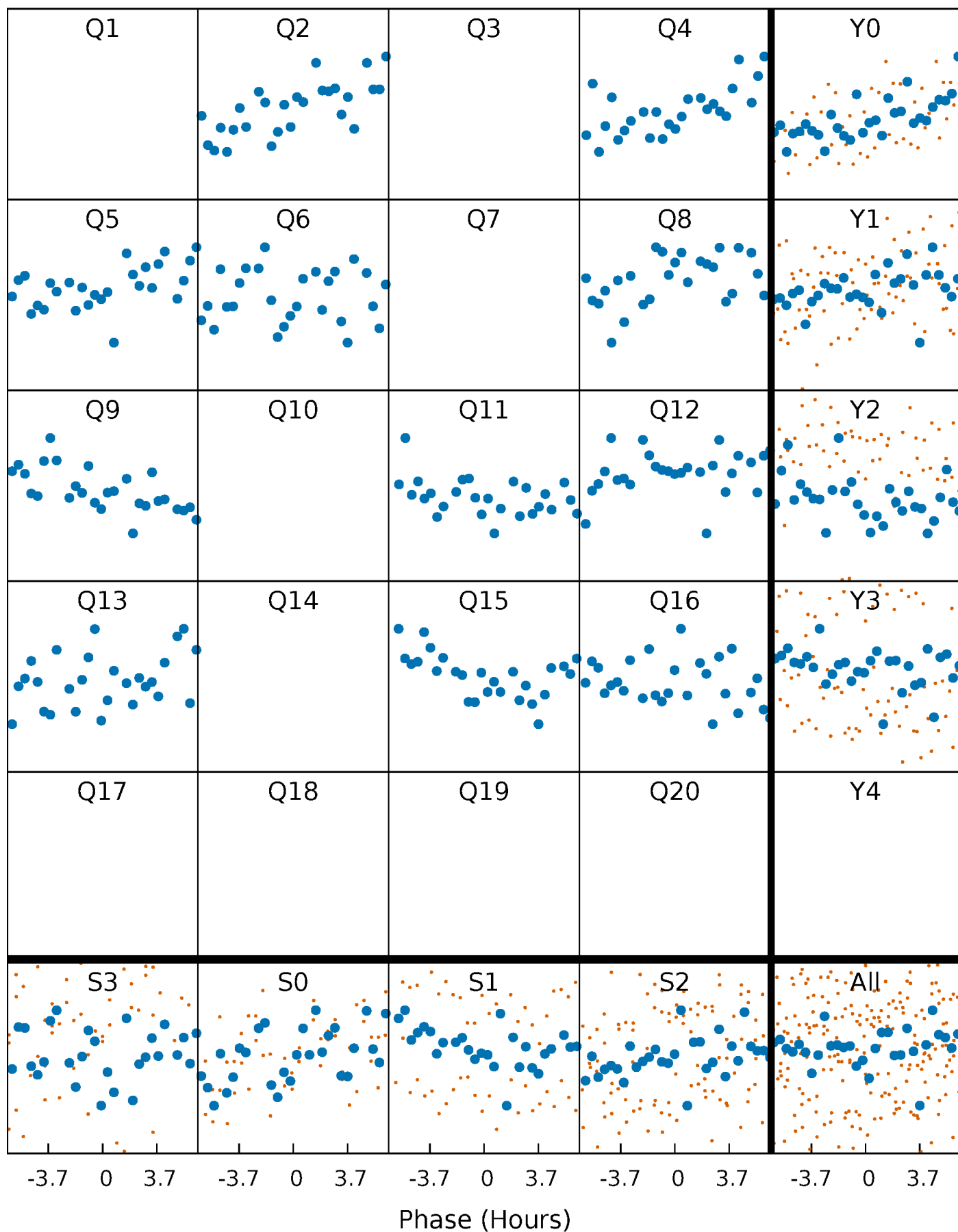


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



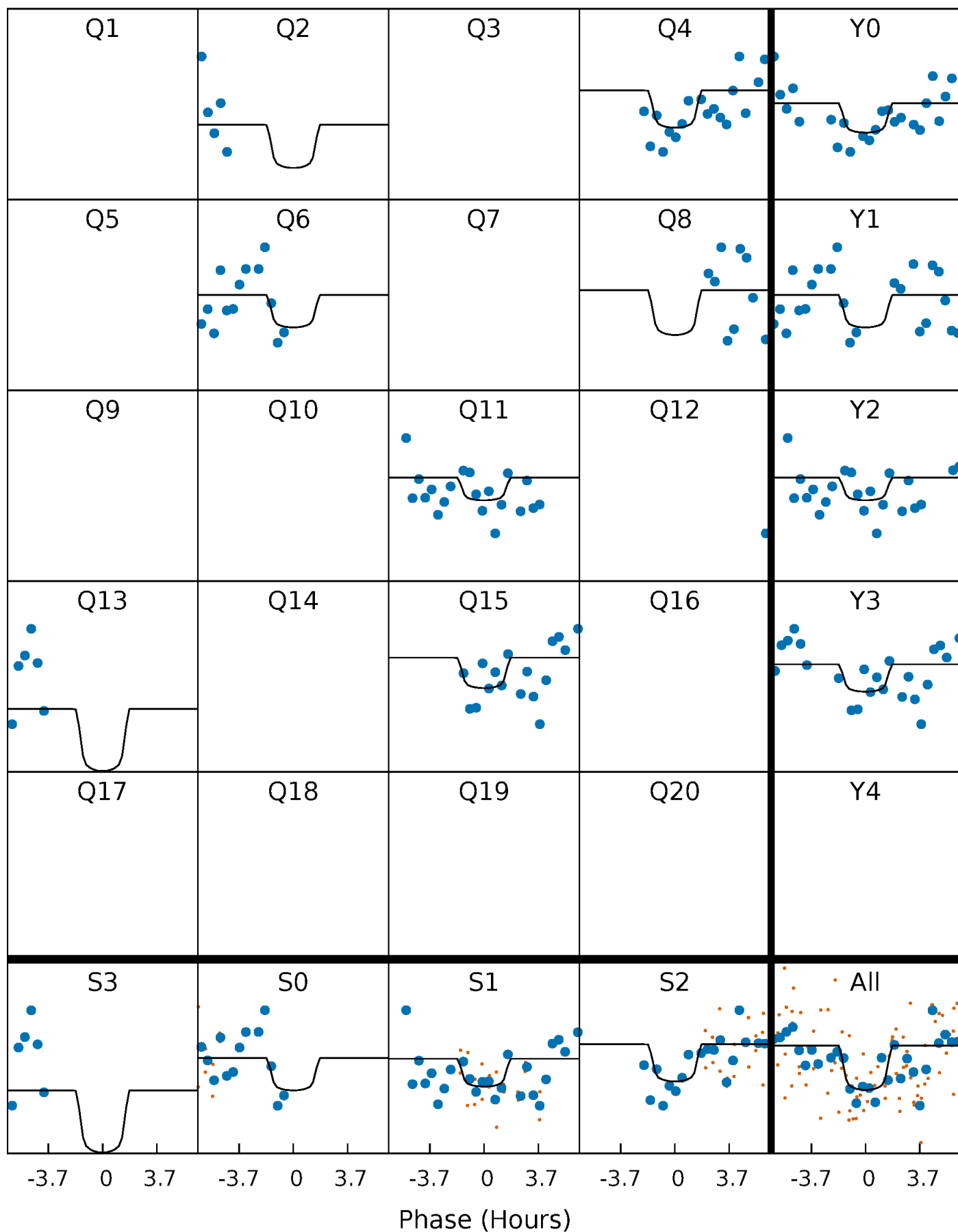
PDC Quarter-Phased Transit Curves

TCE 009611512-02 P=128.534354 Days $T_0=237.588508$ (BKJD)



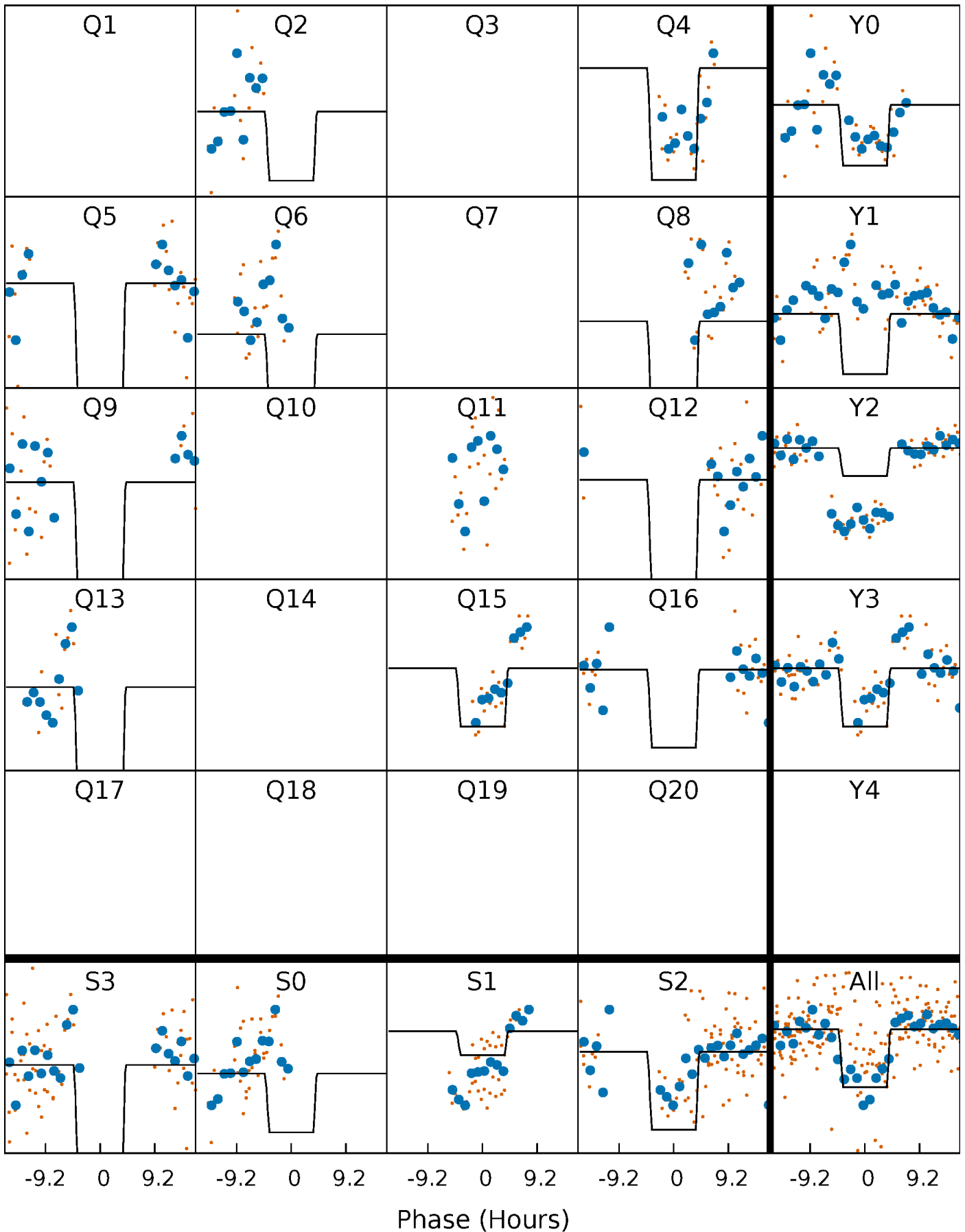
DV Quarter-Phased Transit Curves

TCE 009611512-02 P=128.534354 Days $T_0=237.588508$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

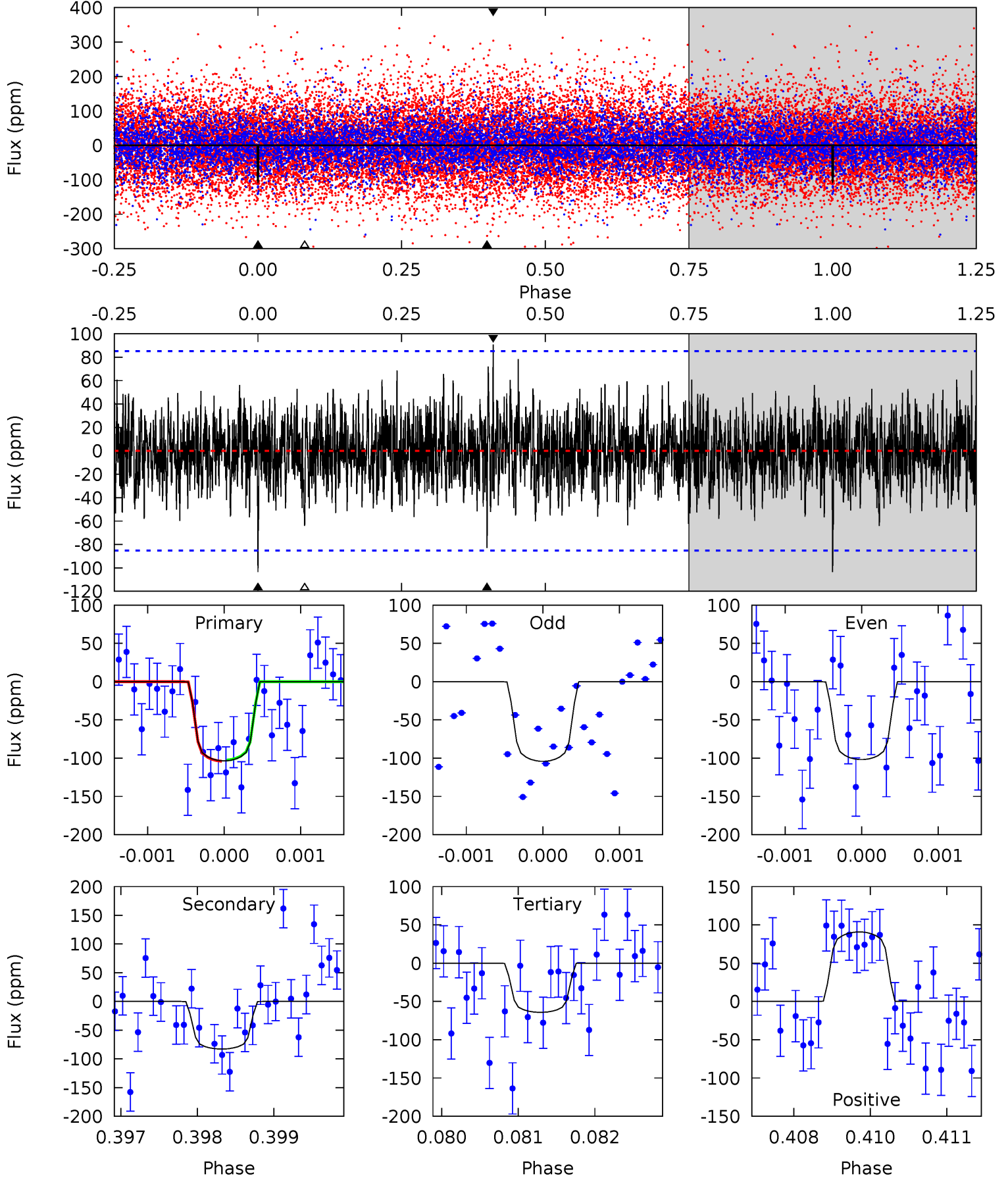
TCE 009611512-02 P=128.533904 Days $T_0=237.594271$ (BKJD)



DV Model-Shift Uniqueness Test

009611512-02, P = 128.534354 Days, E = 109.054154 Days

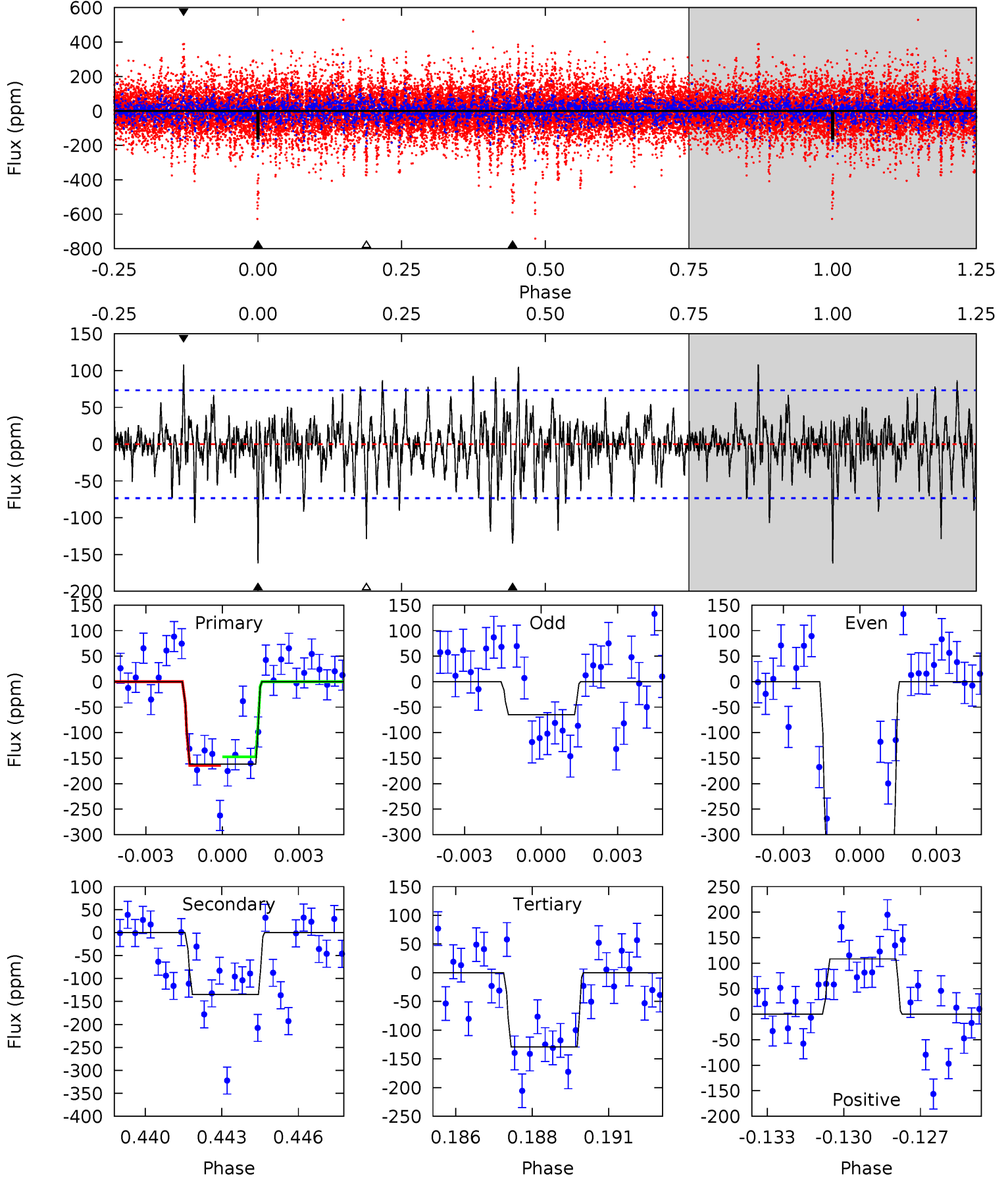
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.57 | 5.26 | 4.08 | 5.77 | 5.41 | 3.22 | 1.36 | 2.49 | 0.80 | 1.19 | -0.50 | 0.07 | 1.06 | 0.47 | 0.05 |



Alt Model-Shift Uniqueness Test

009611512-02, P = 128.533904 Days, E = 109.060367 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 | 9.69 | 9.26 | 7.78 | 5.27 | 2.99 | 2.03 | 2.37 | 3.85 | 0.43 | 1.92 | 11.1 | 0.96 | 0.40 | 0.60 |



Stellar Parameters For KIC 009611512

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8521^{+236}_{-383} | $3.786^{+0.416}_{-0.104}$ | $-0.220^{+0.300}_{-0.350}$ | $2.997^{+0.621}_{-1.346}$ | $2.002^{+0.329}_{-0.494}$ | $0.105^{+0.384}_{-0.036}$ |
| | +3%/-4% | +11%/-3% | +136%/-159% | +21%/-45% | +16%/-25% | +366%/-35% |
| 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 009611512-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|-----------------------|
| DV | -83 ± 16 | $4.00^{+3.62}_{-2.51}$ | 1106^{+84}_{-129} | 6704^{+6186}_{-1709} | 1226^{+6711}_{-924} |
| Alt. | -135 ± 14 | $4.67^{+3.72}_{-2.90}$ | 1103^{+89}_{-130} | 6915^{+6389}_{-1546} | 1294^{+7200}_{-876} |

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

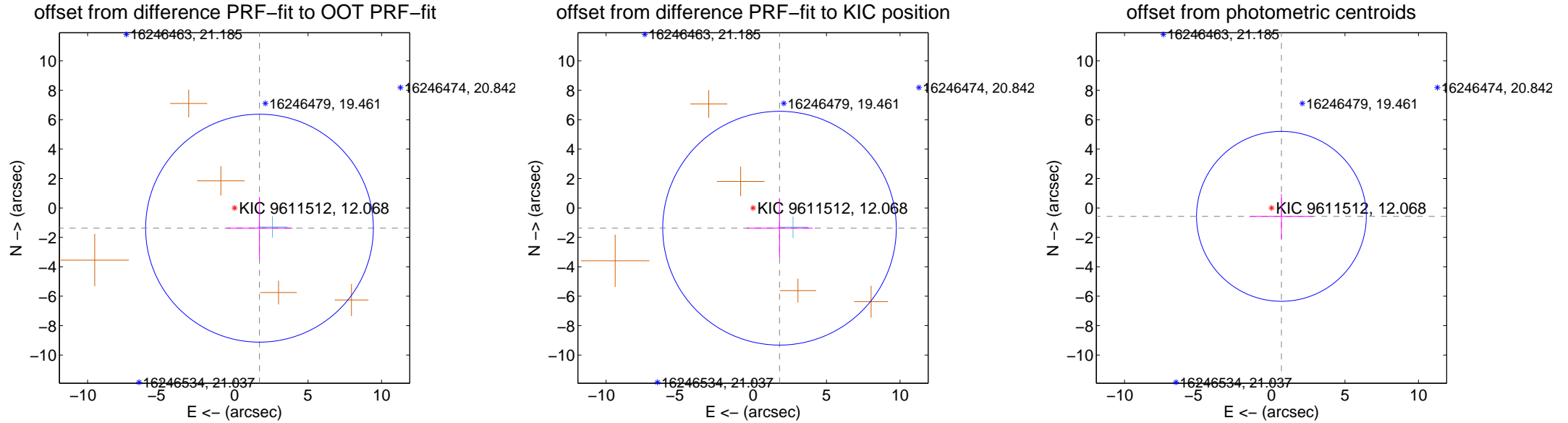
DV Centroid Data

Supplemental centroid analysis for 009611512-02. Kepler magnitude: 12.07. Transit SNR 4.69

There are 1 quarters with good PRF difference image offsets

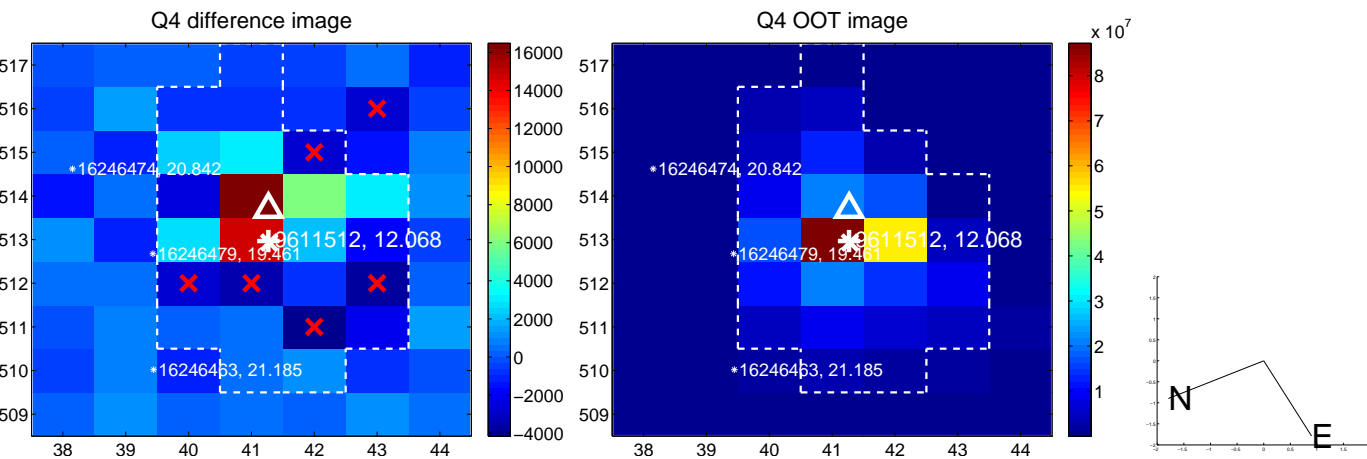
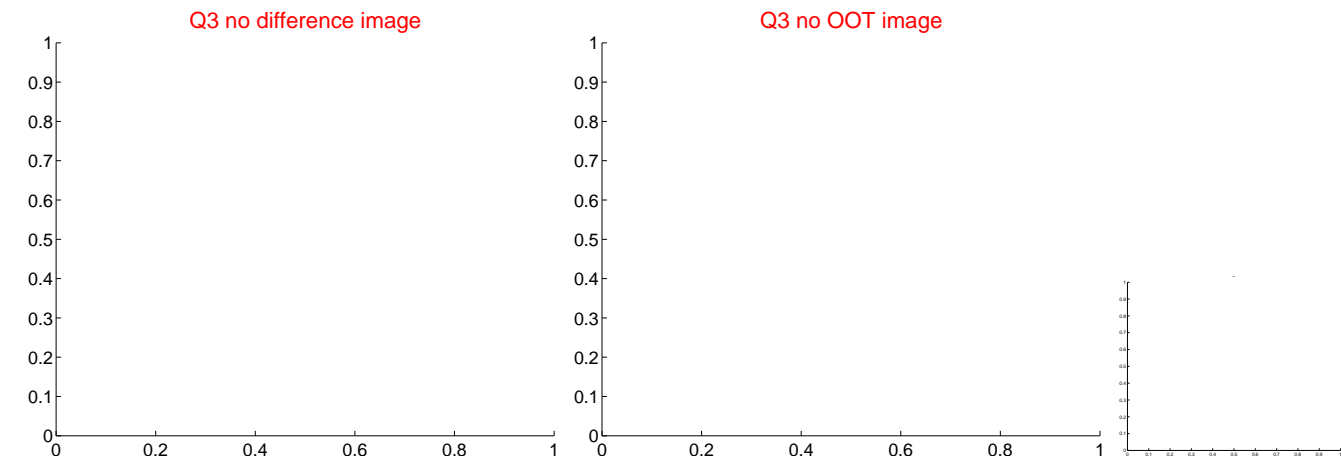
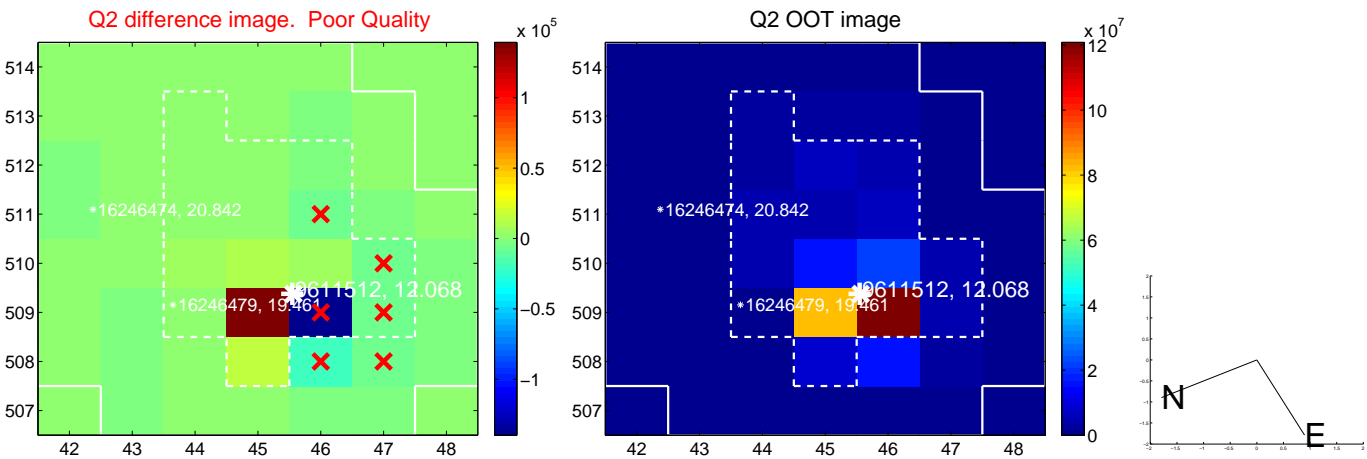
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 2.183 ± 2.583 | 0.85 | -1.695 ± 2.237 | -1.375 ± 2.129 |
| PRF-fit source offset from KIC position | 2.266 ± 2.649 | 0.86 | -1.801 ± 2.249 | -1.376 ± 2.022 |
| photometric centroid source offset | 0.88 ± 1.93 | 0.46 | -0.68 ± 2.17 | -0.57 ± 1.52 |

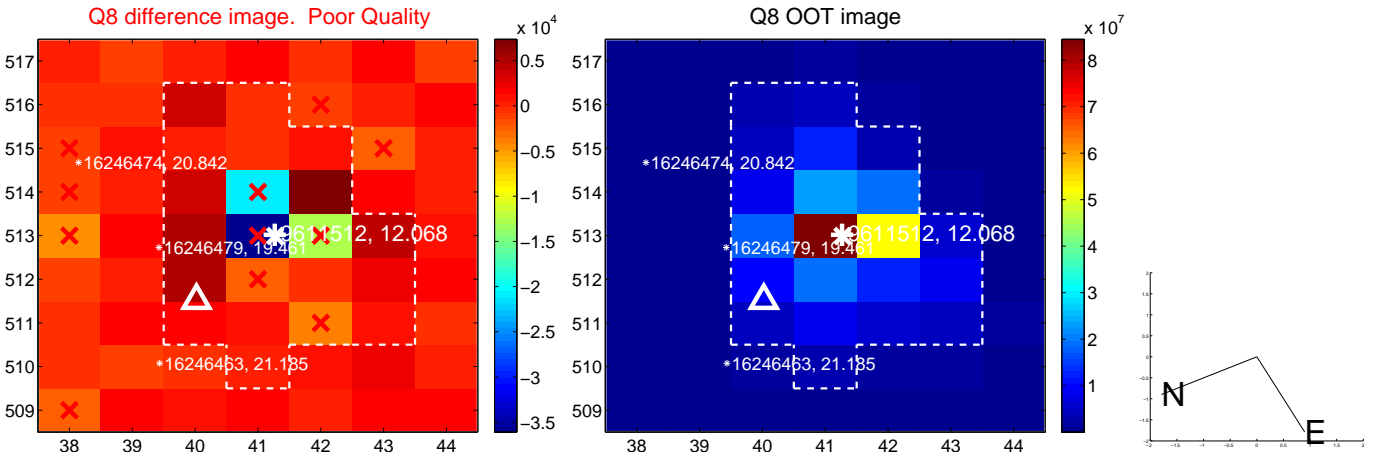
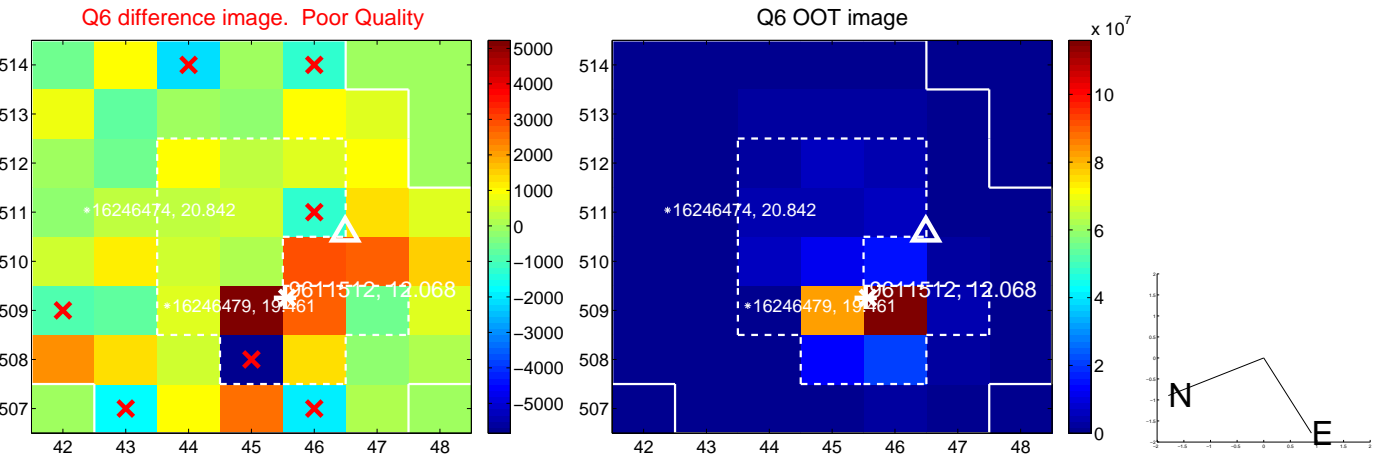
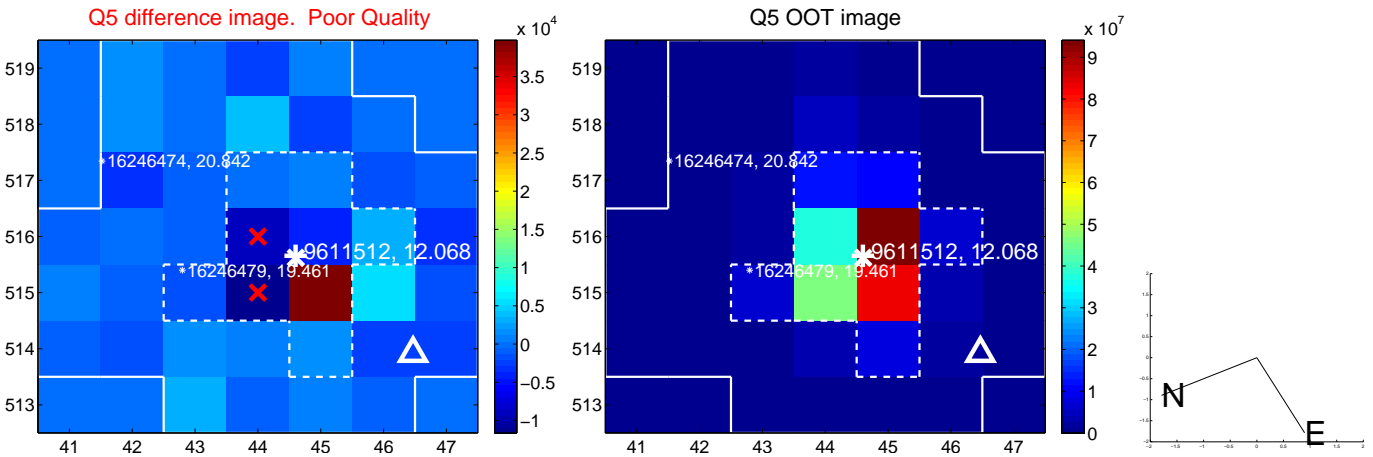


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

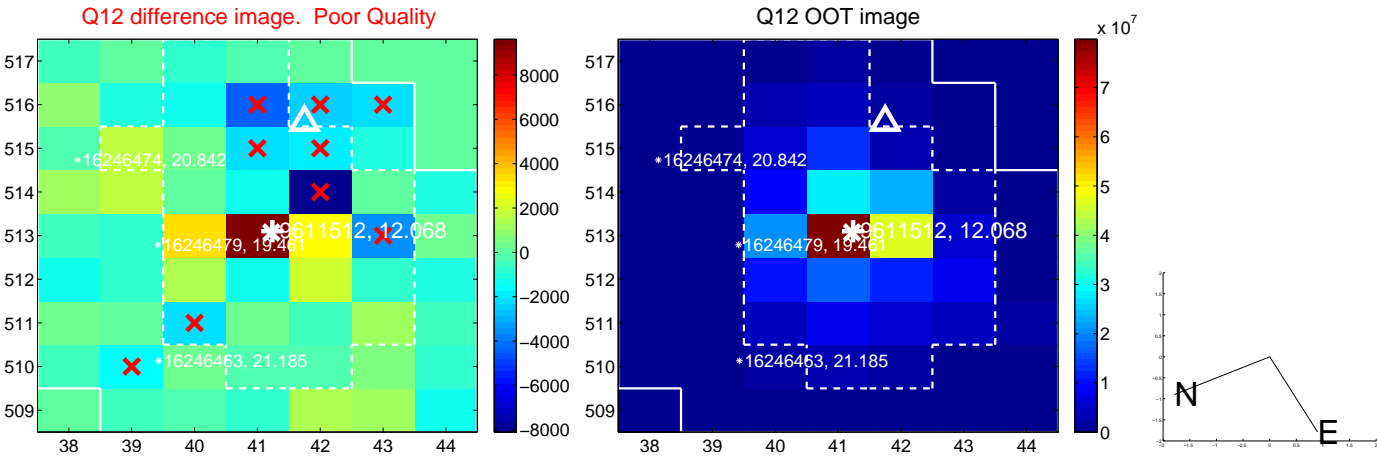
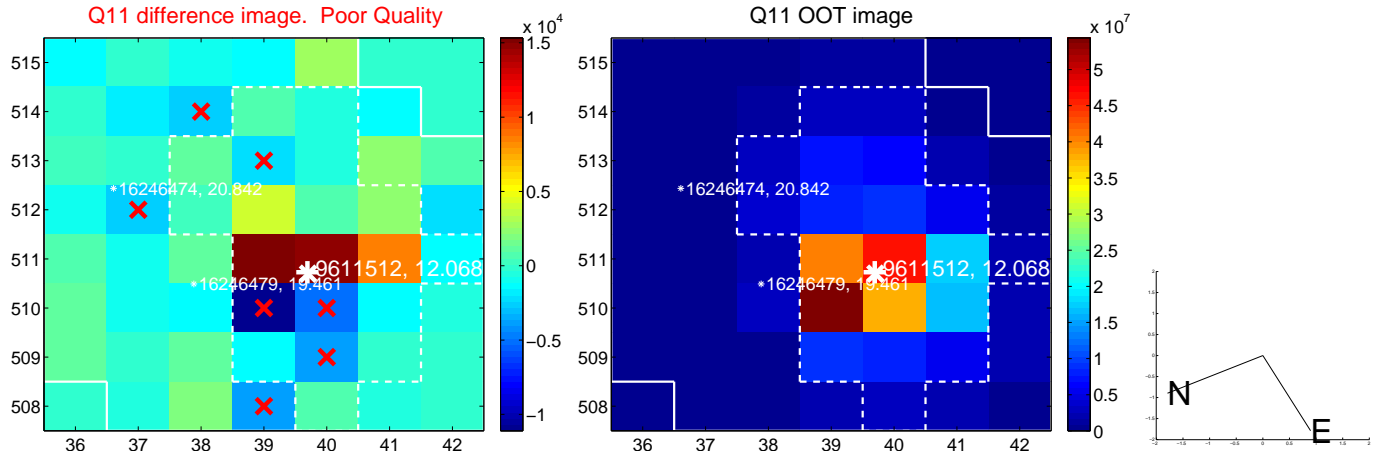
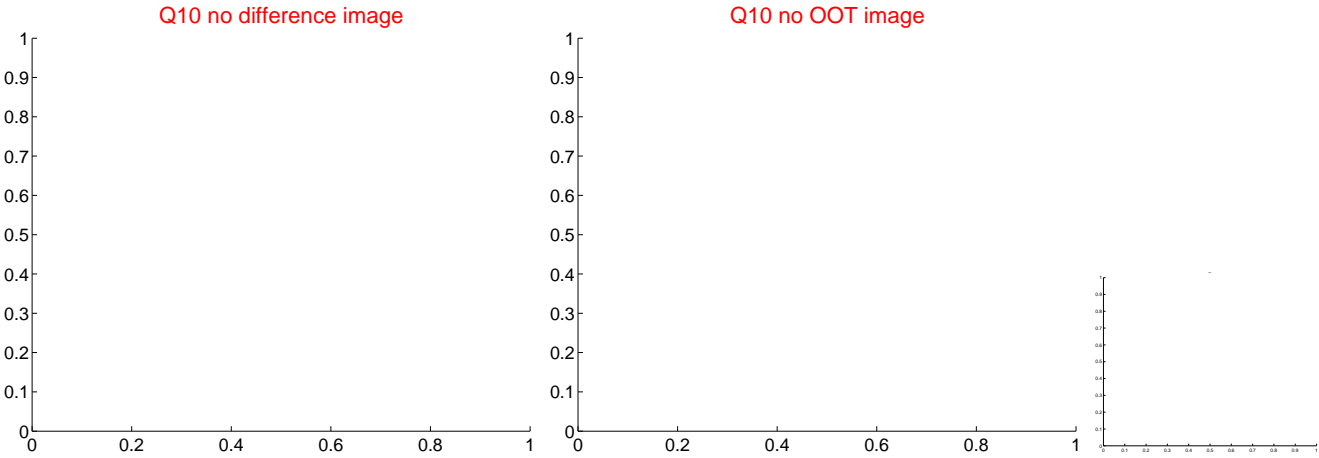
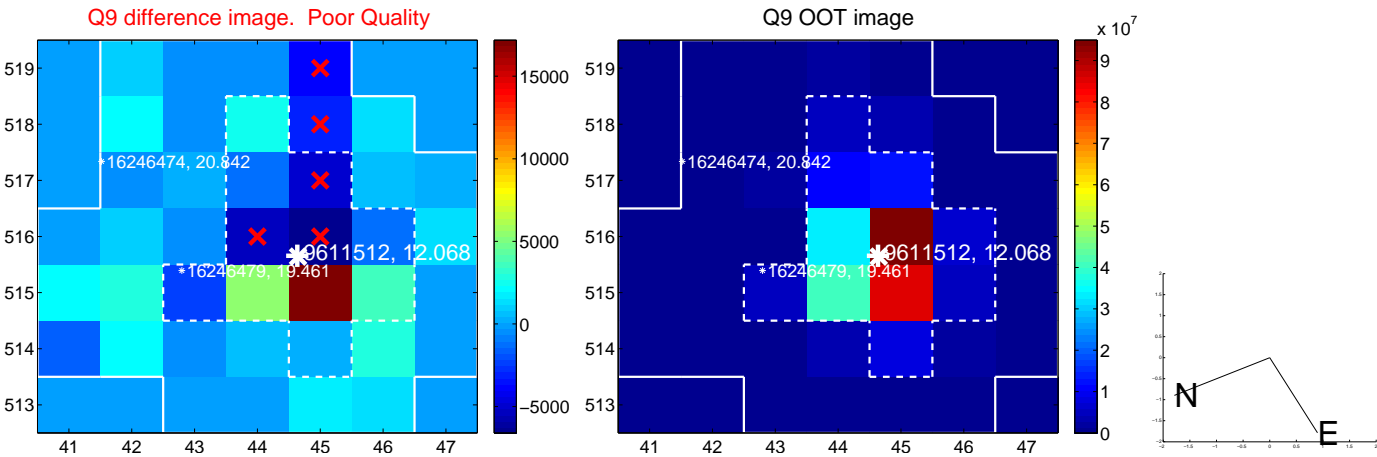
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



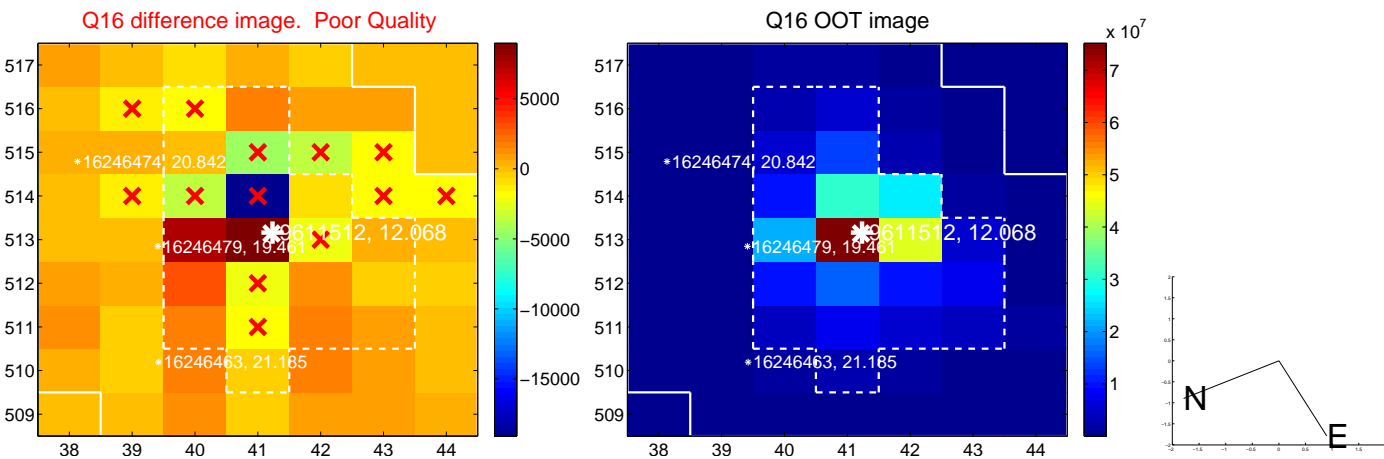
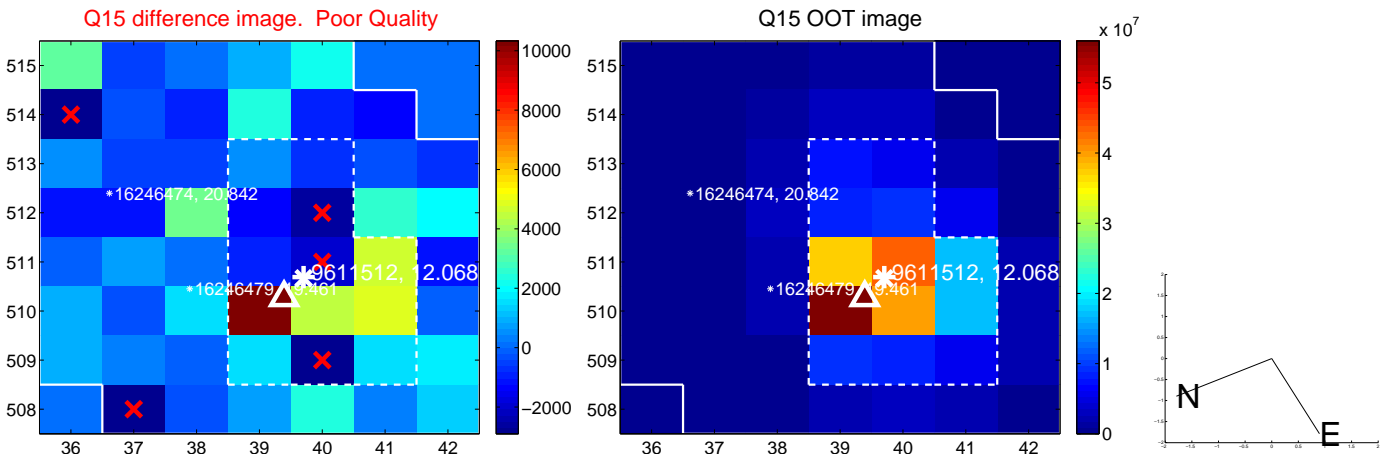
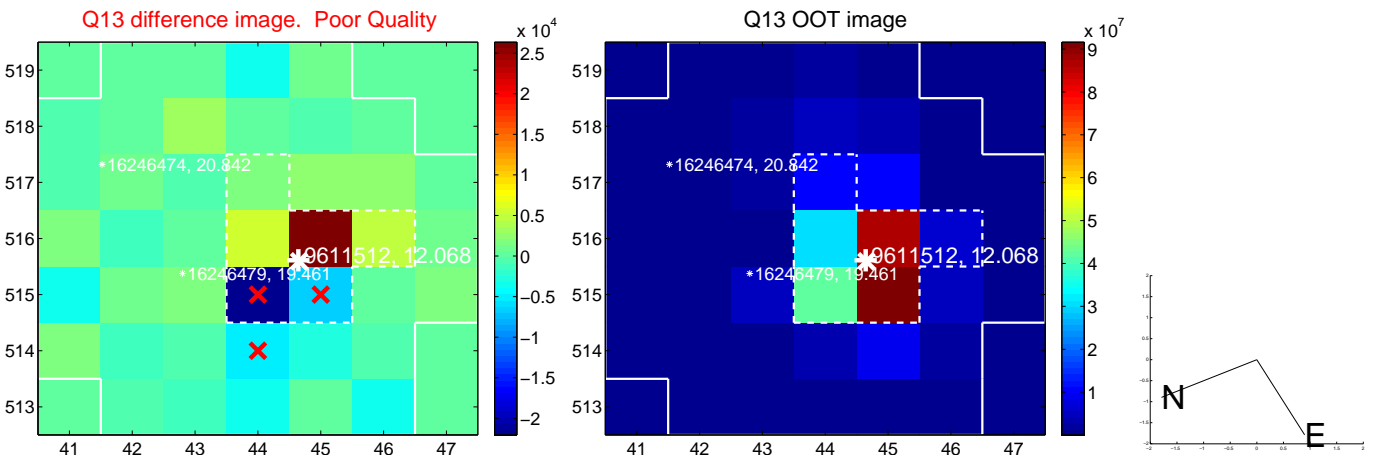
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



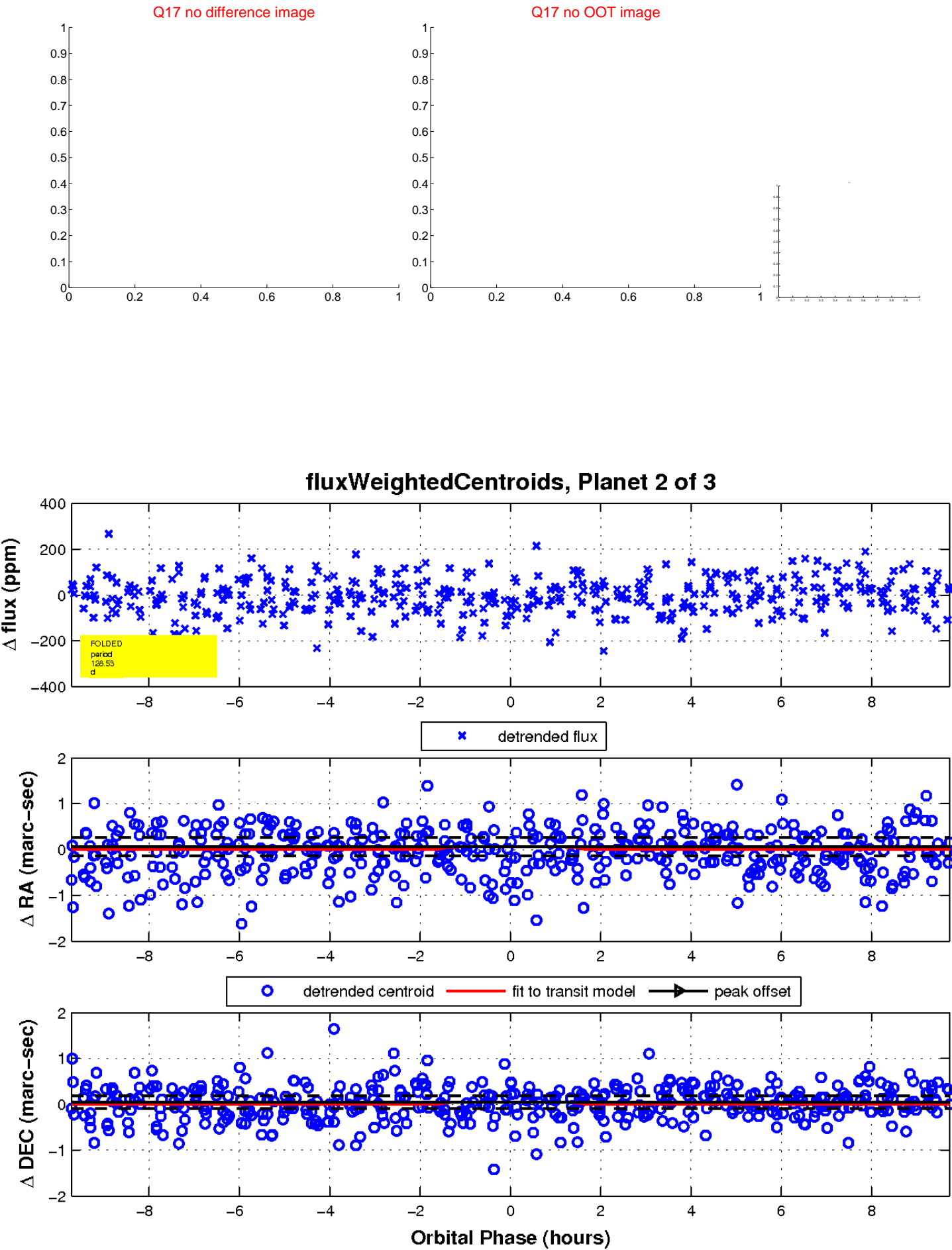
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

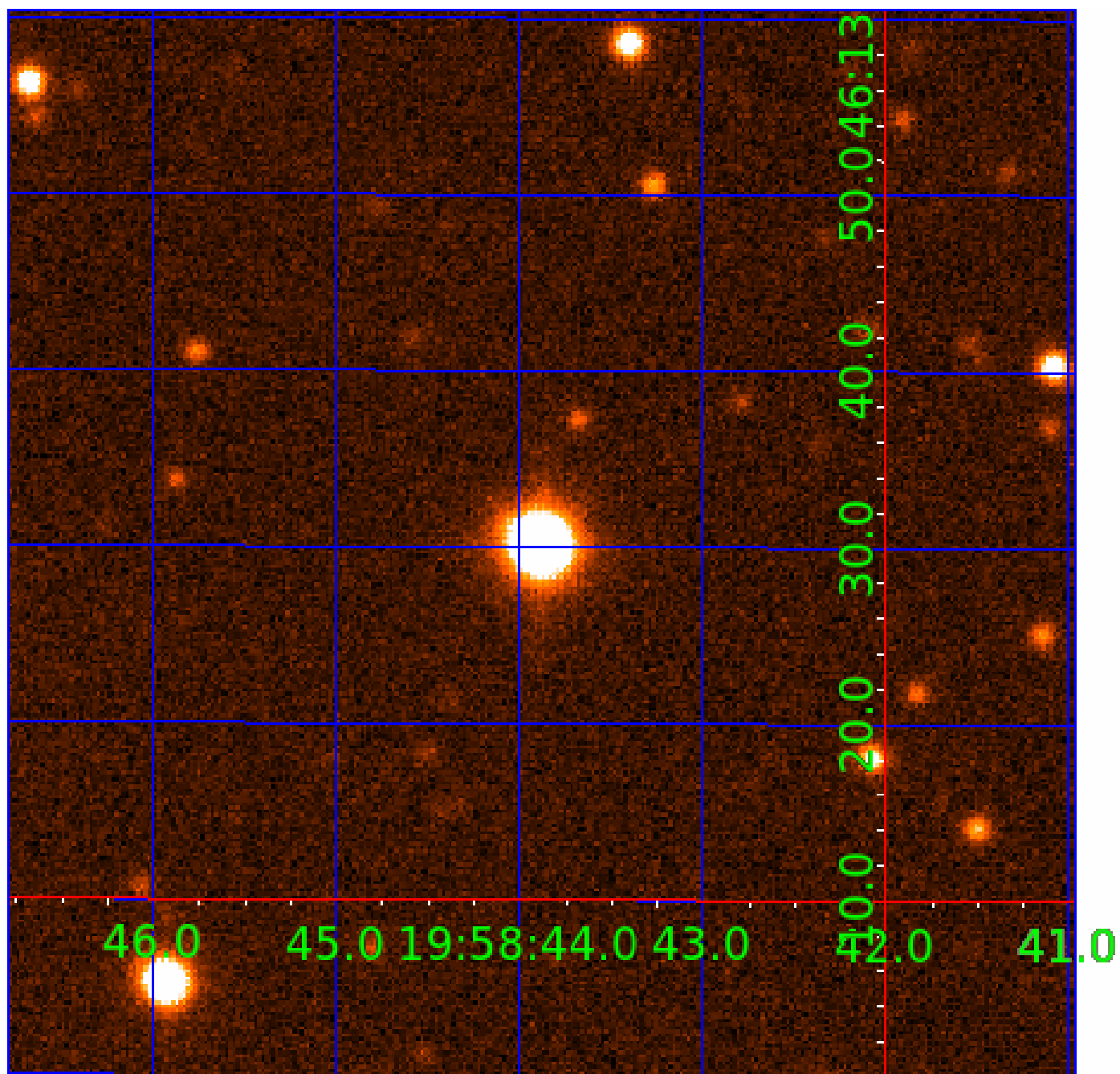


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009611512

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009611512-01 | OBS | No | 1.264837 | 131.591667 | 11.1 | 6.731 | 8.5 | 10.2 | 3.00 | 8521 | 1.05 | 50964.58 |
| 009611512-02 | OBS | No | 128.534354 | 237.588508 | 94.2 | 3.248 | 10.2 | 4.7 | 3.00 | 8521 | 3.37 | 107.47 |
| 009611512-03 | OBS | No | 70.896712 | 138.801117 | 51.6 | 16.620 | 8.4 | 4.3 | 3.00 | 8521 | 2.43 | 237.58 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009611512-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 009611512-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS |
| 009611512-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_DIFFS—HALO_GHOST |

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

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

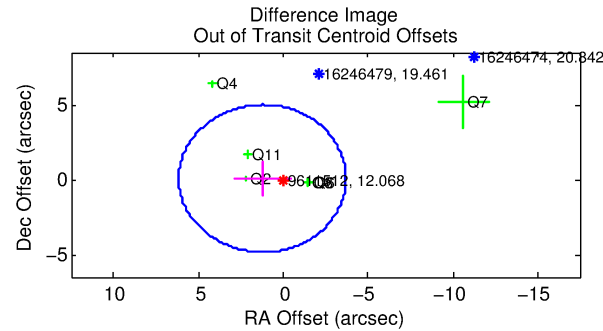
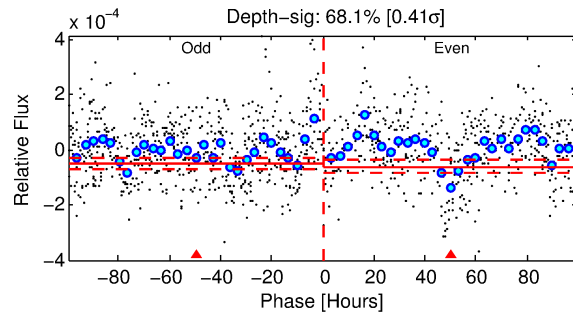
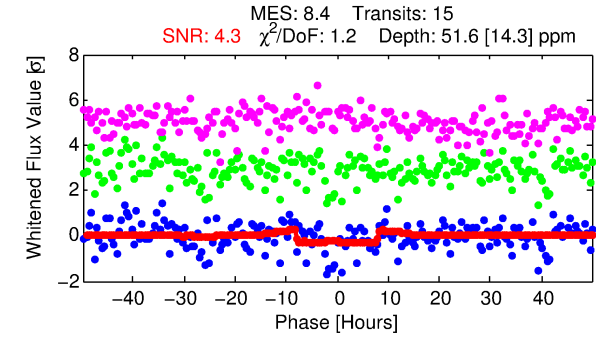
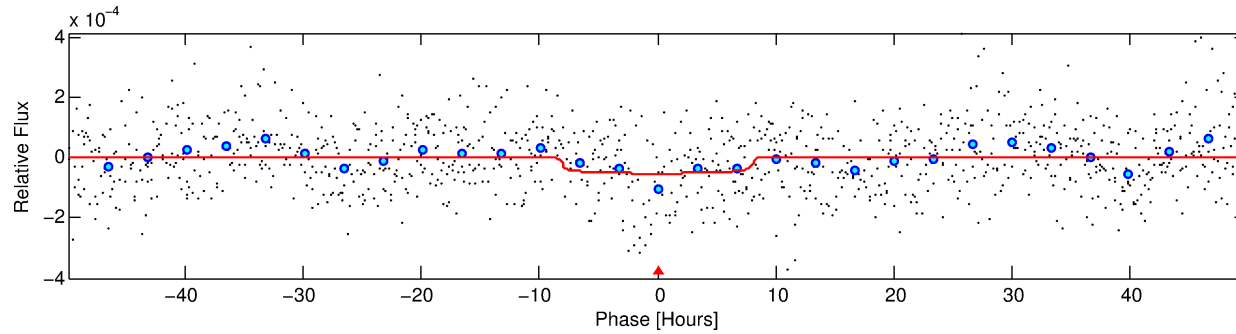
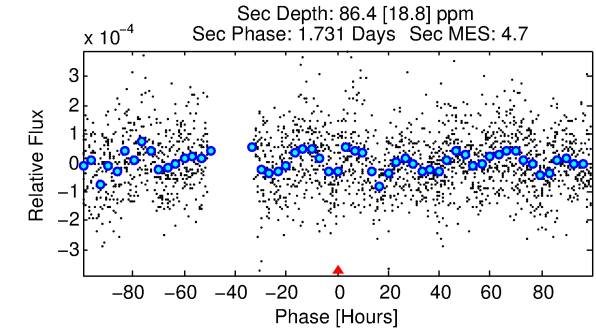
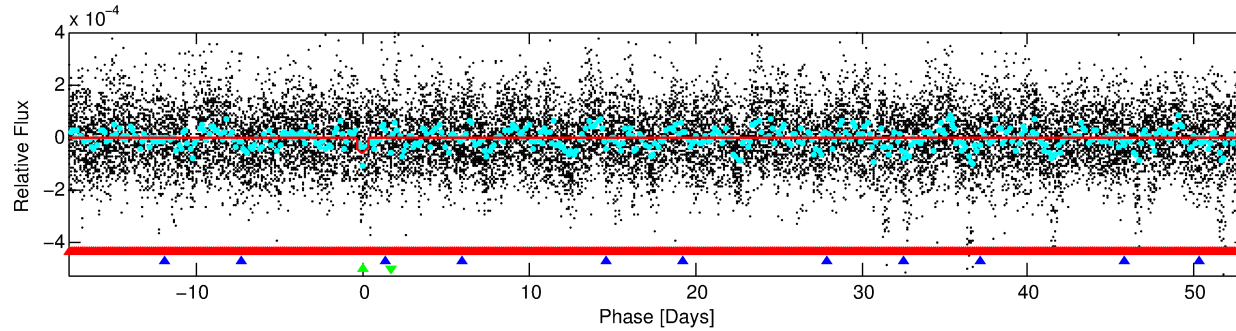
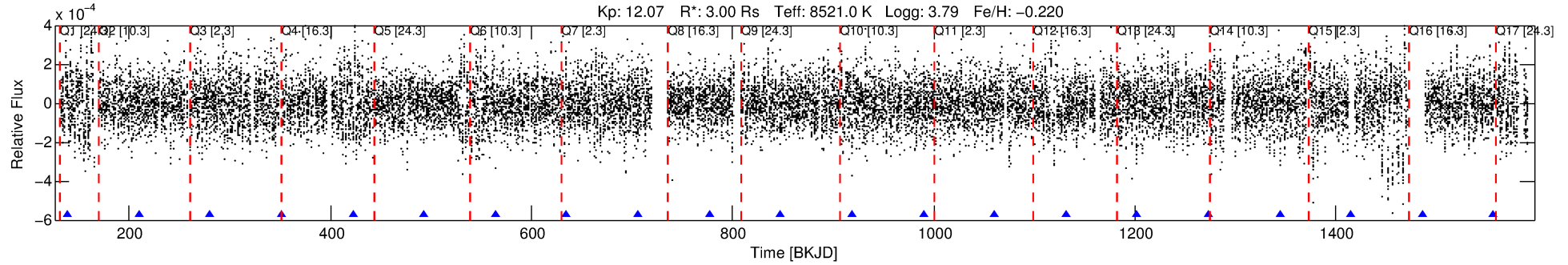
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009611512-03

No Significant Match Found

DV One-Page Summary

KIC: 9611512 Candidate: 3 of 3 Period: 70.897 d



DV Fit Results:

Period = 70.89671 [0.00316] d
Epoch = 138.8011 [0.0302] BKJD
Rp/R* = 0.0074 [0.0021]
a/R* = 17.42 [27.09]
b = 0.85 [0.49]
Seff = 237.58 [172.92]
Teq = 1001 [182] K
Rp = 2.43 [1.29] Re
a = 0.4226 [0.1850] AU
Ag = 1439.63 [1346.66] [1.07σ]
Teffp = 9534 [1526] K [5.55σ]

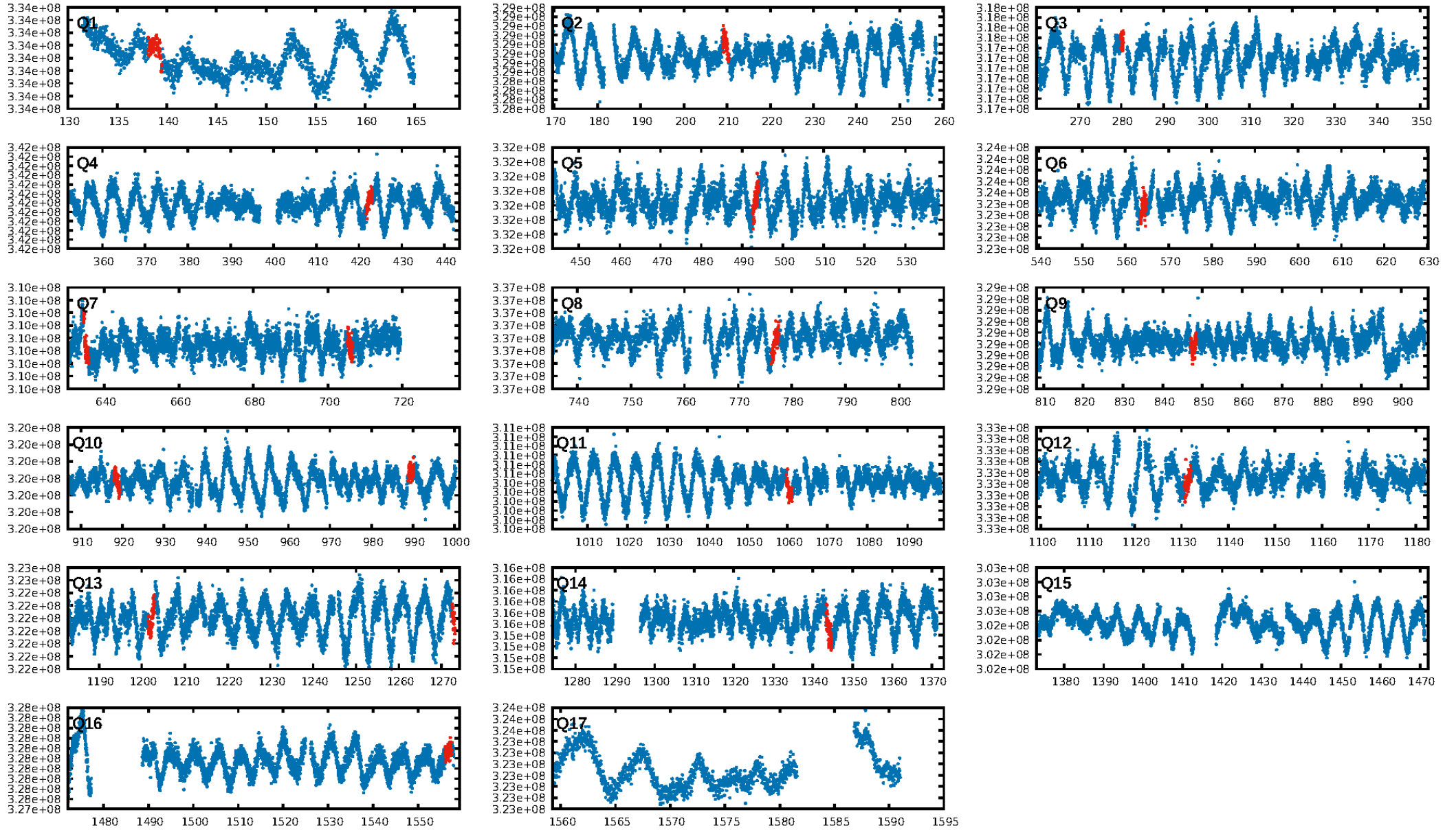
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [93.20σ]
LongPeriod-sig: 100.0% [81.68σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.09e-12
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 0.1558
Centroid-sig: 6.9%
Centroid-so: 1.942 arcsec [1.19σ]
OotOffset-rm: 1.225 arcsec [0.75σ]
KicOffset-rm: 1.128 arcsec [0.63σ]
OotOffset-st: 2/2/2/0 [6]
KicOffset-st: 2/2/2/0 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/14]

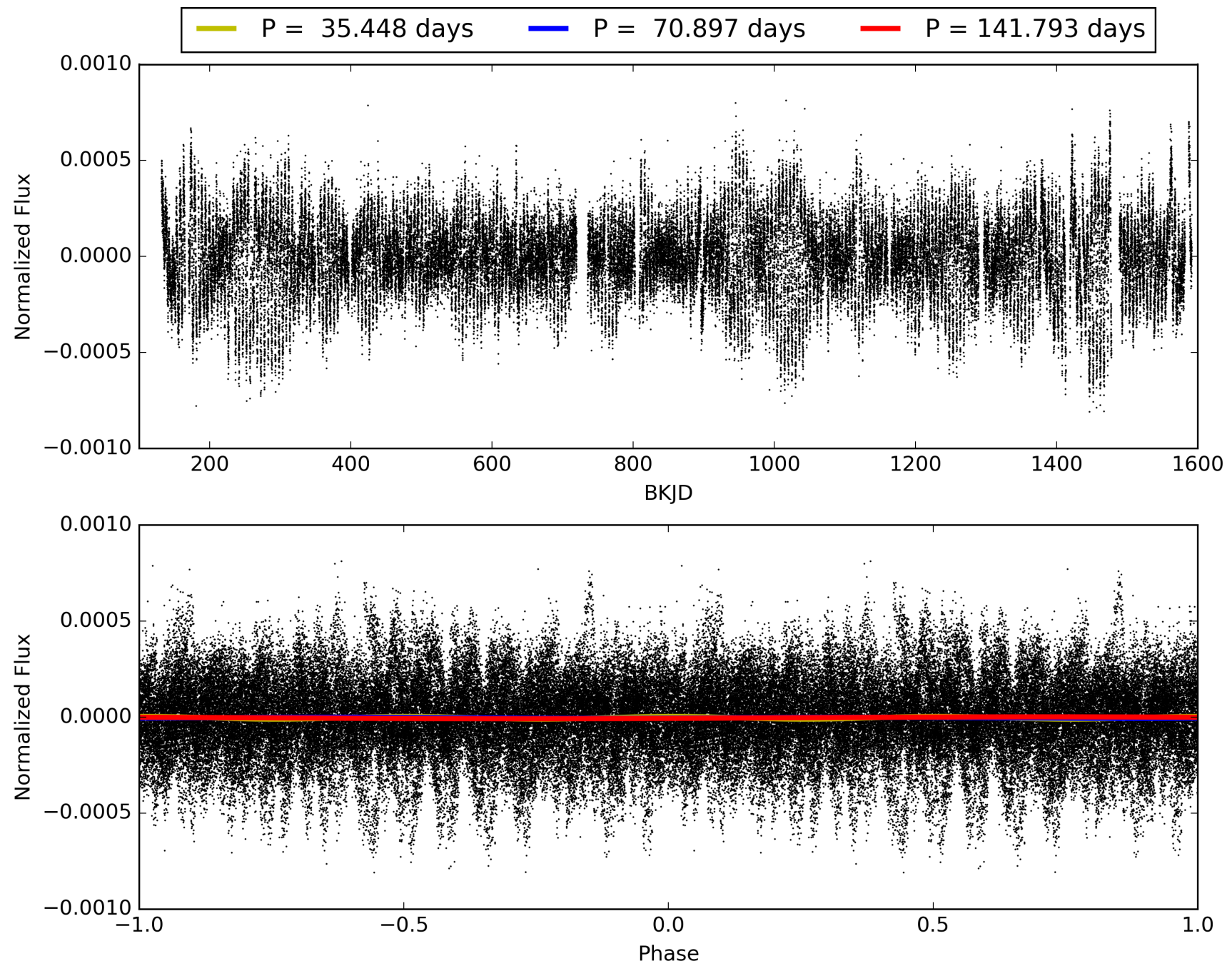
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:00:26 Z

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

TCE 009611512-03, PDC Light Curves

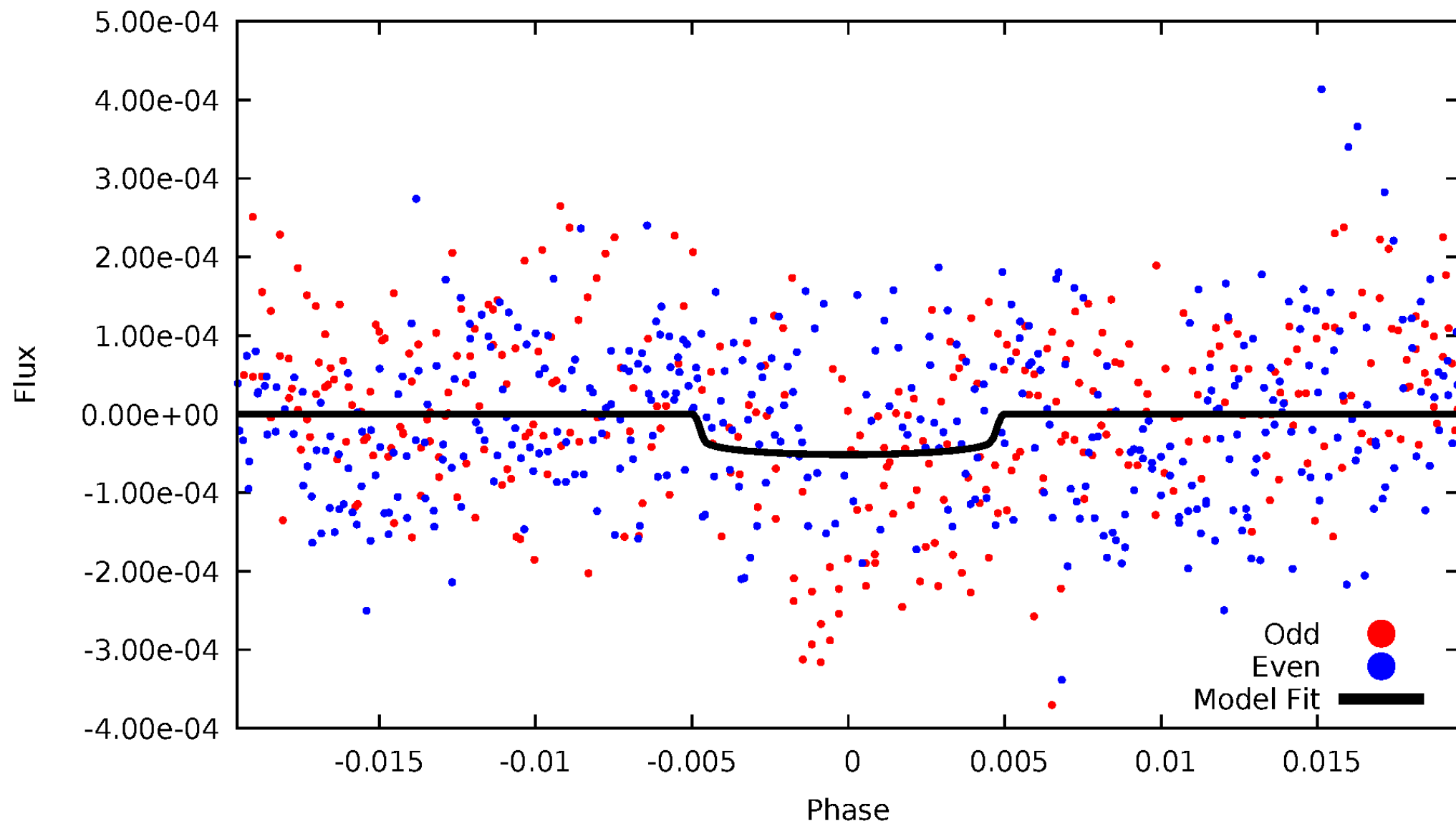


TCE 009611512-03



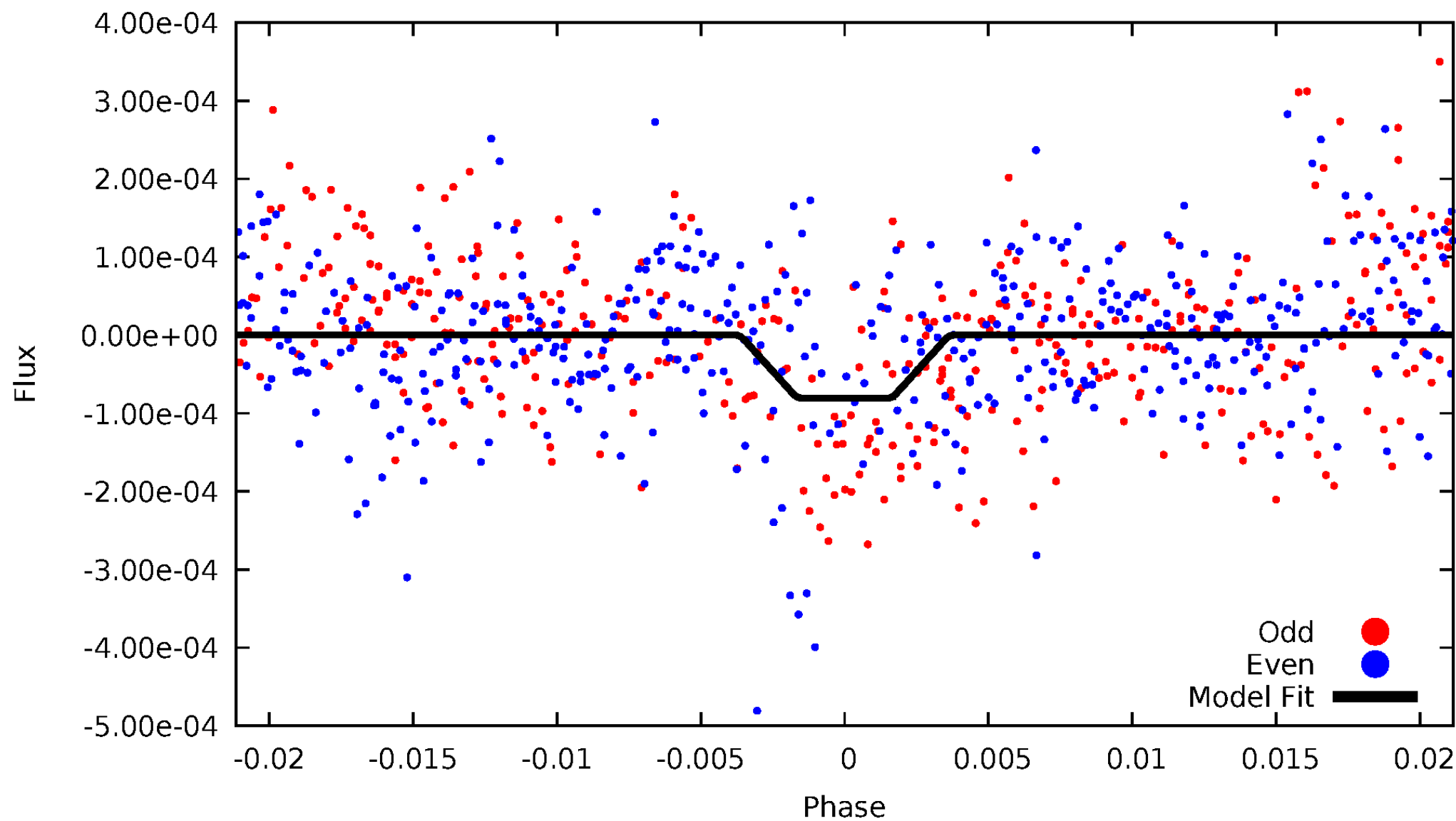
DV Odd/Even

TCE 009611512-03



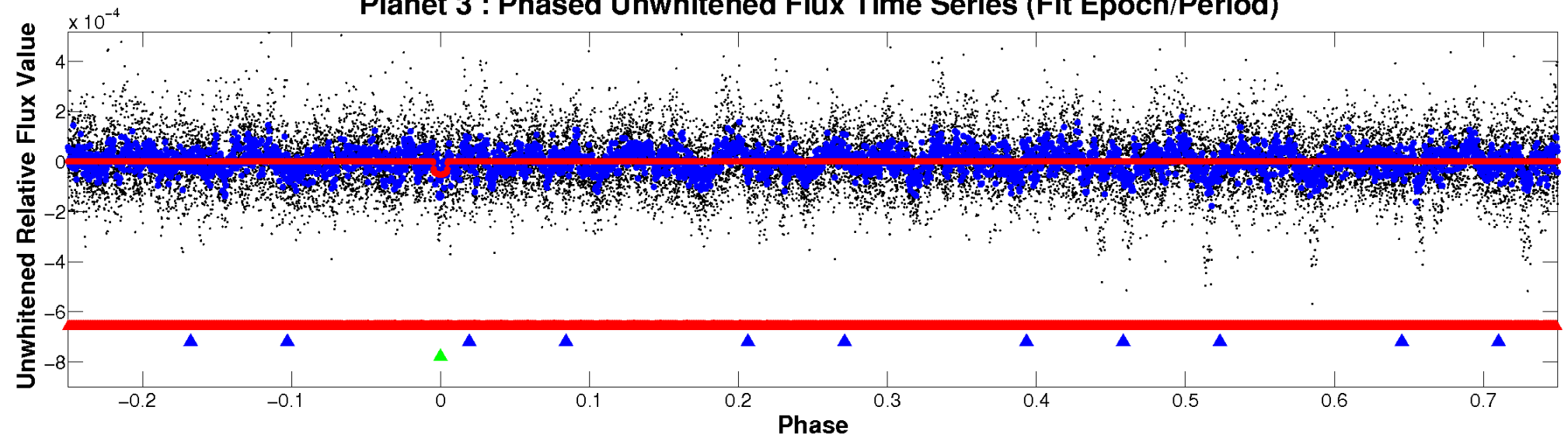
ALT Odd/Even

TCE 009611512-03

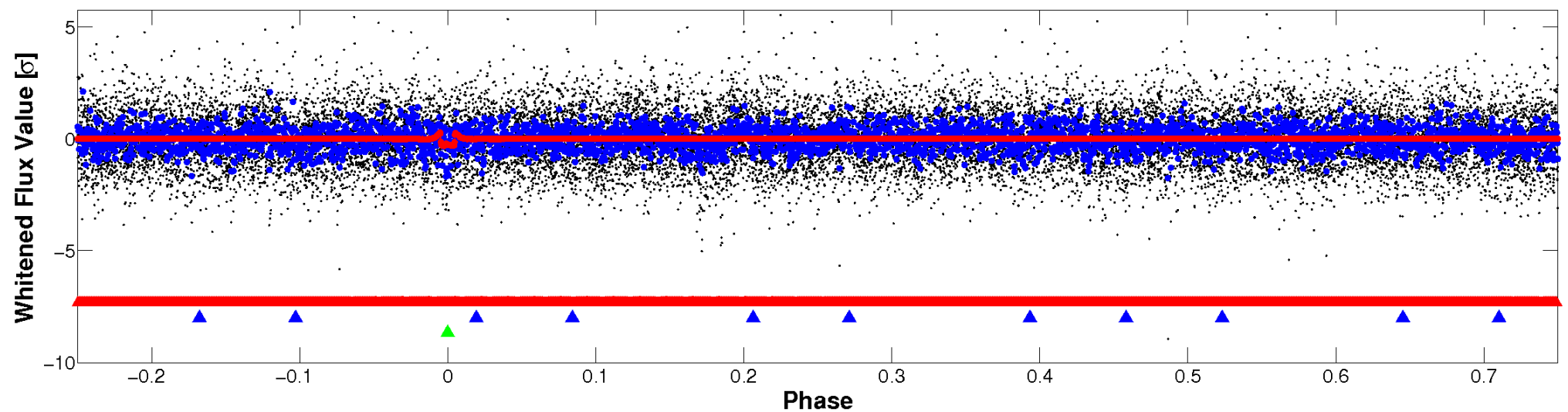


Non-Whitened Vs. Whitened Light Curve

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

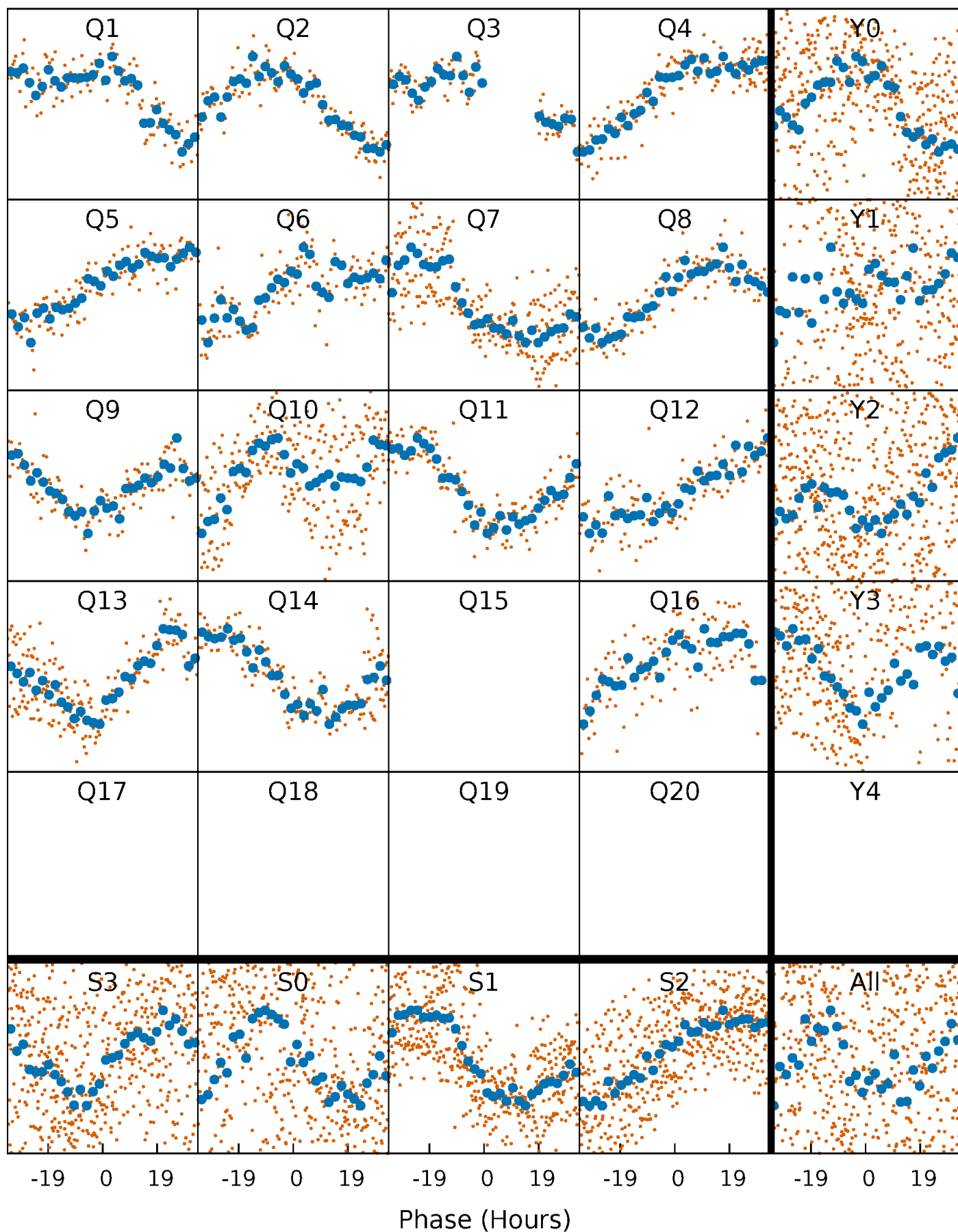


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



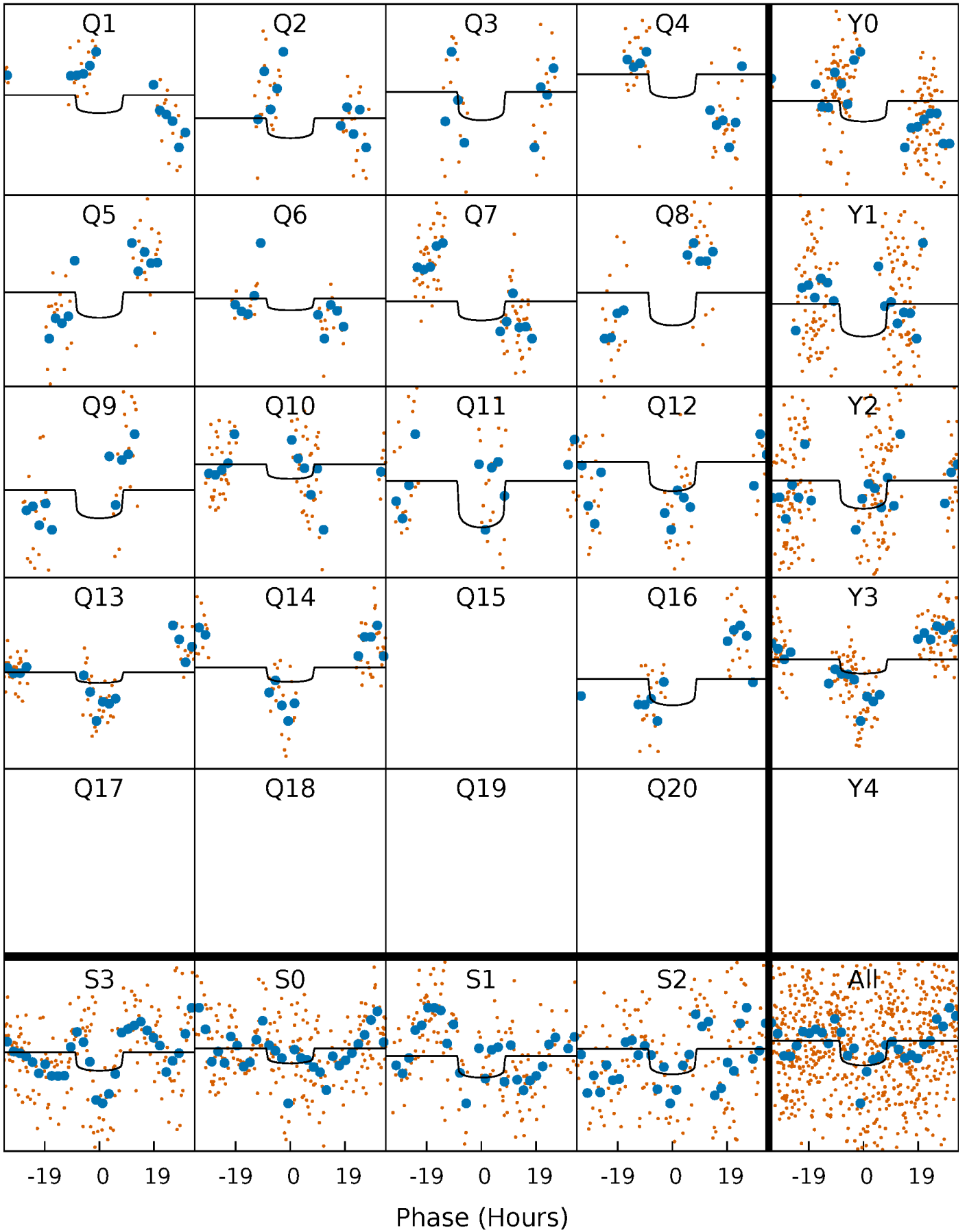
PDC Quarter-Phased Transit Curves

TCE 009611512-03 P= 70.896712 Days $T_0=138.801117$ (BKJD)



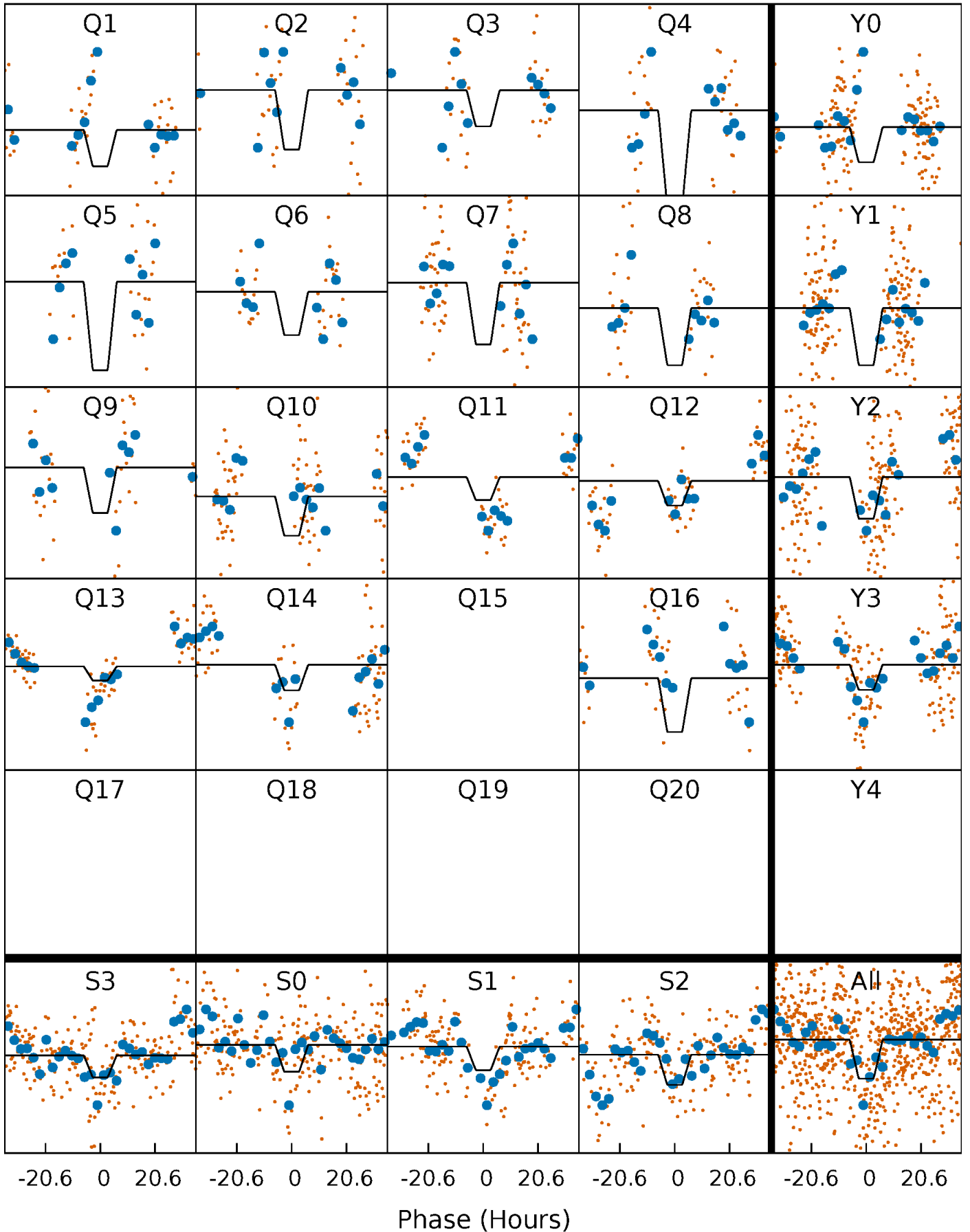
DV Quarter-Phased Transit Curves

TCE 009611512-03 P= 70.896712 Days $T_0=138.801117$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

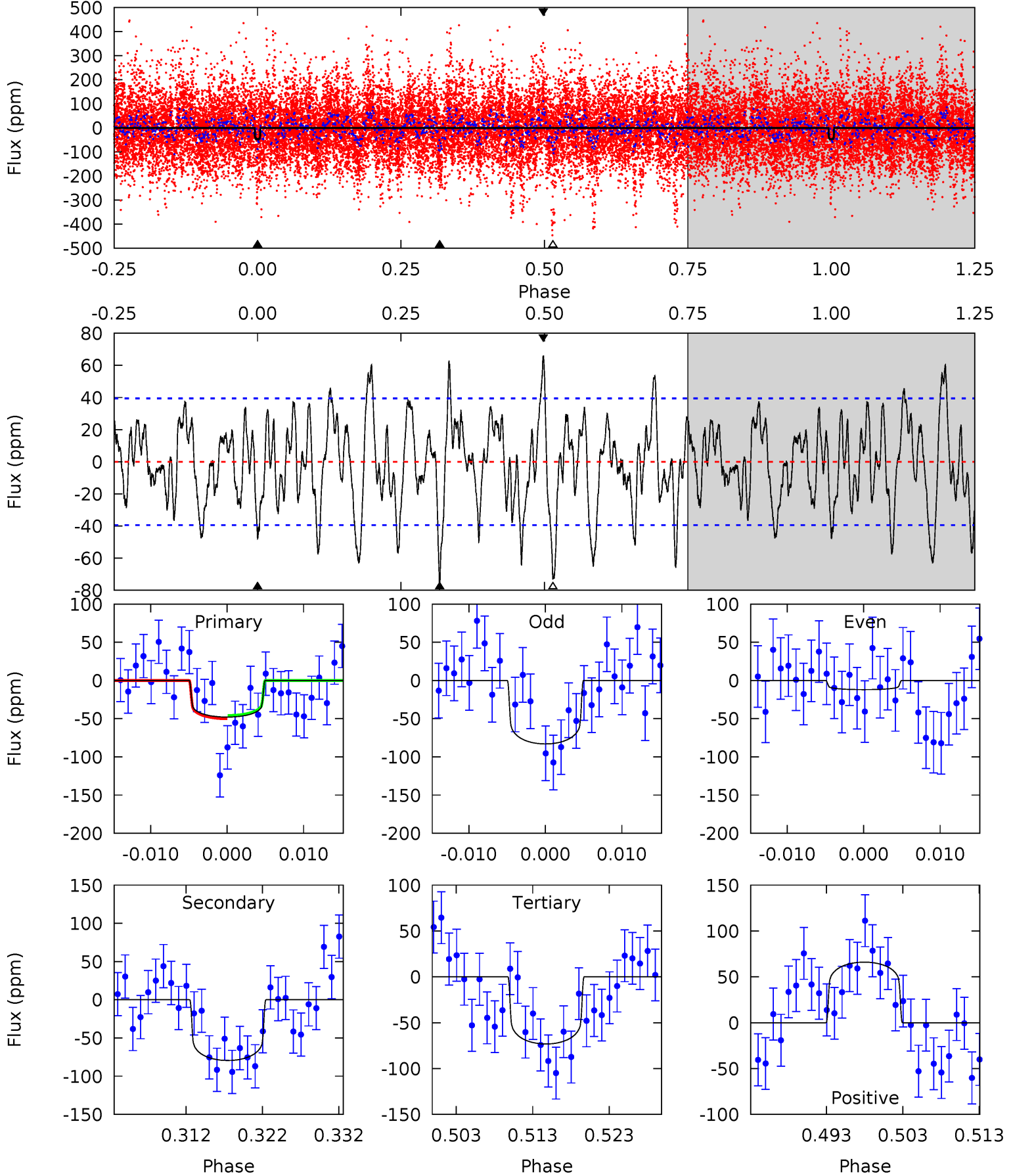
TCE 009611512-03 P= 70.893682 Days $T_0=138.830036$ (BKJD)



DV Model-Shift Uniqueness Test

009611512-03, P = 70.896712 Days, E = 67.904405 Days

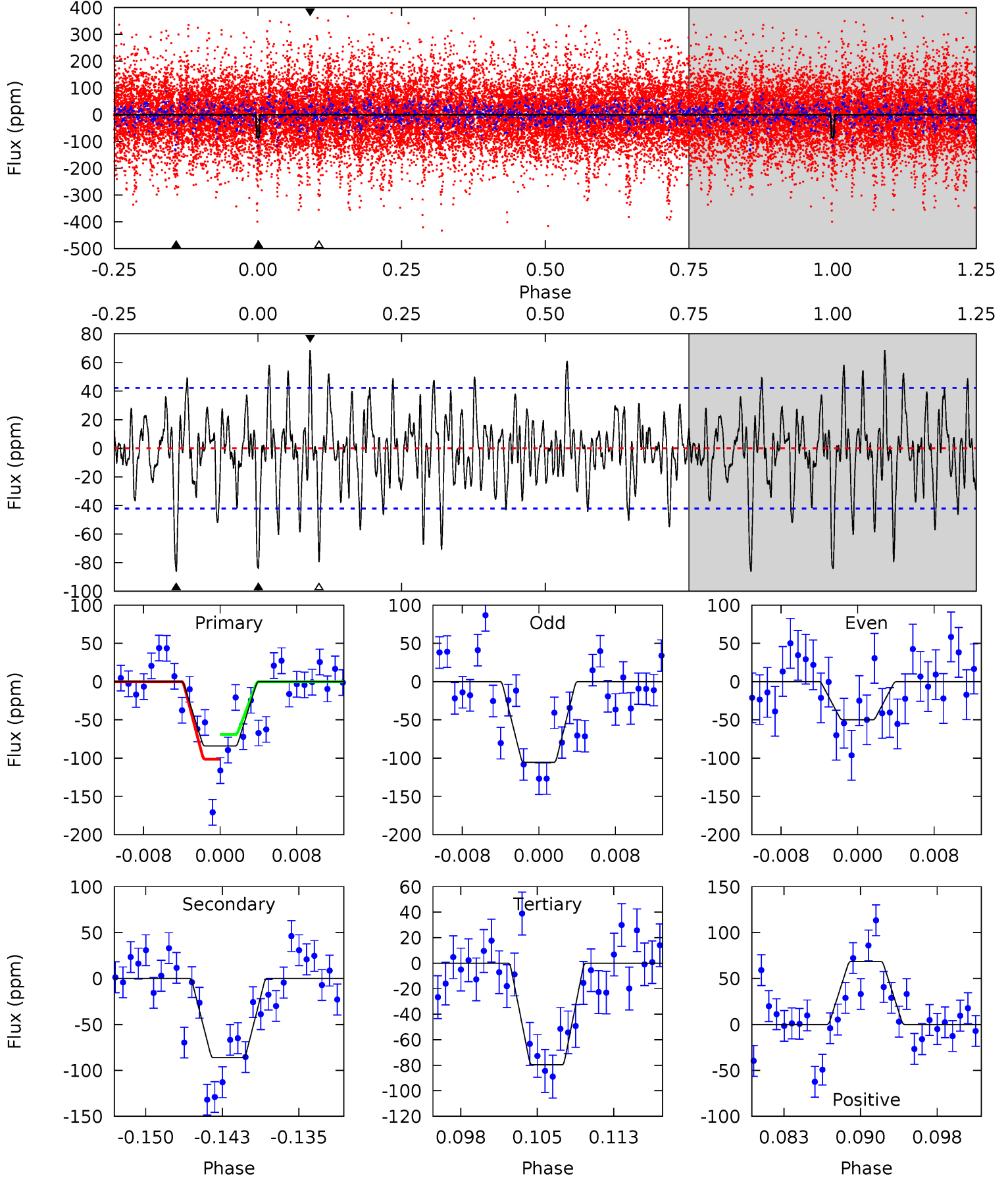
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.11 | 10.1 | 9.33 | 8.41 | 5.03 | 2.57 | 3.21 | -3.23 | -2.31 | 0.79 | 1.71 | 4.56 | 1.03 | 0.45 | 0.27 |



Alt Model-Shift Uniqueness Test

009611512-03, P = 70.893682 Days, E = 67.936354 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.1 | 10.4 | 9.58 | 8.24 | 5.08 | 2.67 | 2.56 | 0.56 | 1.90 | 0.79 | 2.14 | 3.33 | 1.04 | 0.44 | 1.95 |



Stellar Parameters For KIC 009611512

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 8521^{+236}_{-383} | $3.786^{+0.416}_{-0.104}$ | $-0.220^{+0.300}_{-0.350}$ | $2.997^{+0.621}_{-1.346}$ | $2.002^{+0.329}_{-0.494}$ | $0.105^{+0.384}_{-0.036}$ |
| | +3%/-4% | +11%/-3% | +136%/-159% | +21%/-45% | +16%/-25% | +366%/-35% |
| 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 009611512-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|-----------------------|
| DV | -79 ± 8 | $2.20^{+0.86}_{-0.73}$ | 1351^{+107}_{-153} | 9628^{+2878}_{-1649} | 1637^{+1823}_{-821} |
| Alt. | -86 ± 8 | $2.72^{+0.91}_{-0.83}$ | 1352^{+100}_{-150} | 8638^{+1576}_{-1166} | 1137^{+1143}_{-491} |

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

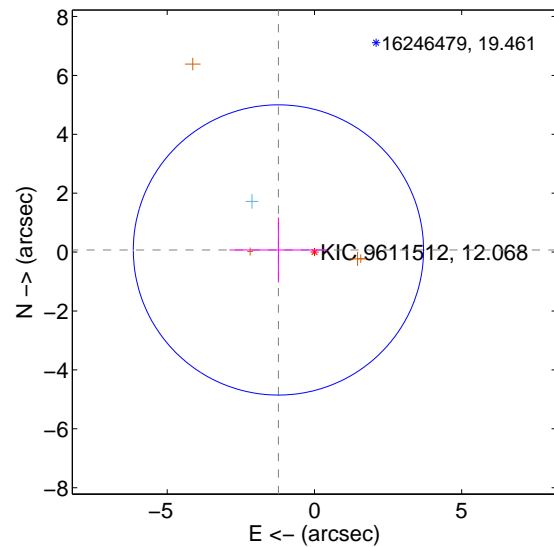
Supplemental centroid analysis for 009611512-03. Kepler magnitude: 12.07. Transit SNR 4.30

There are 1 quarters with good PRF difference image offsets

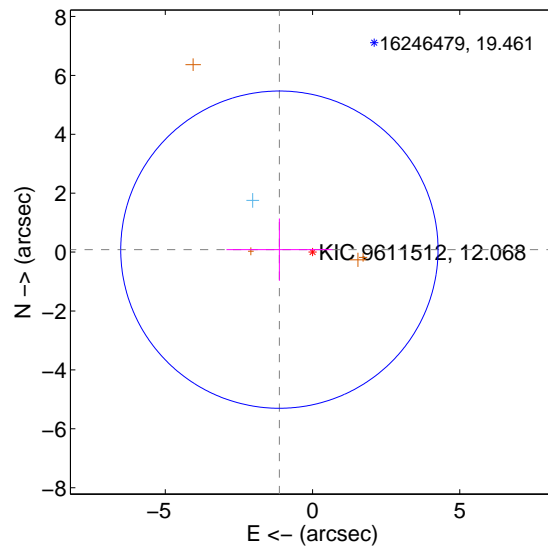
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.225 ± 1.642 | 0.75 | 1.223 ± 1.661 | 0.073 ± 1.105 |
| PRF-fit source offset from KIC position | 1.128 ± 1.796 | 0.63 | 1.125 ± 1.799 | 0.083 ± 1.059 |
| photometric centroid source offset | 1.94 ± 1.64 | 1.19 | 1.48 ± 1.88 | 1.26 ± 1.22 |

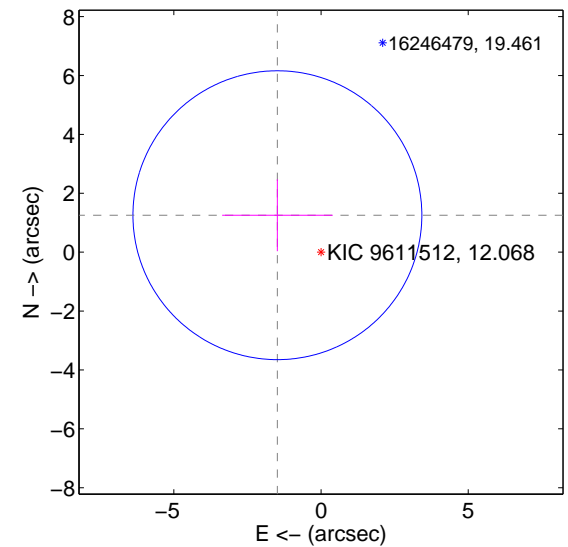
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

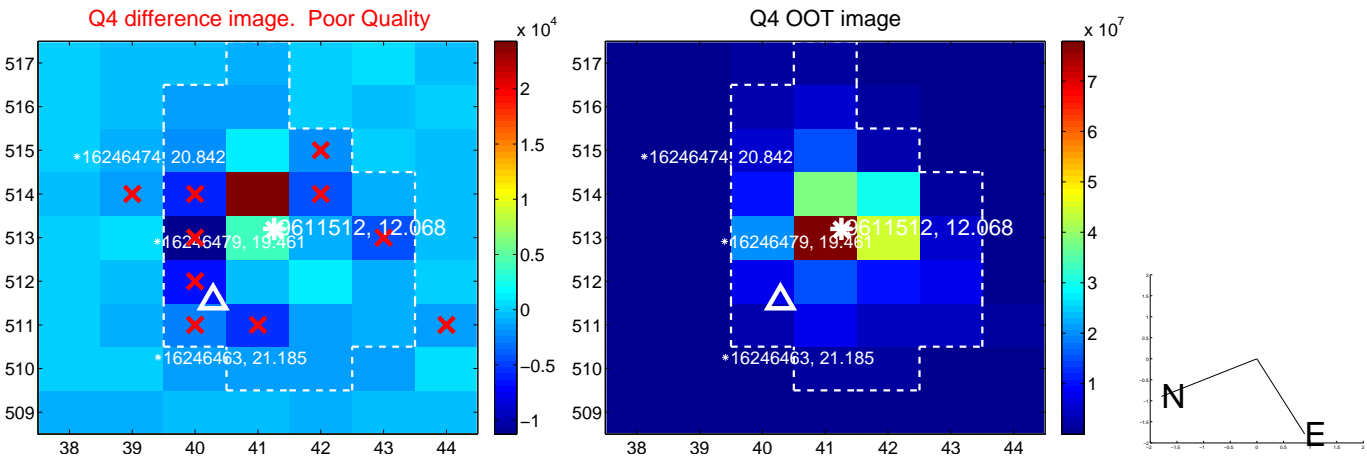
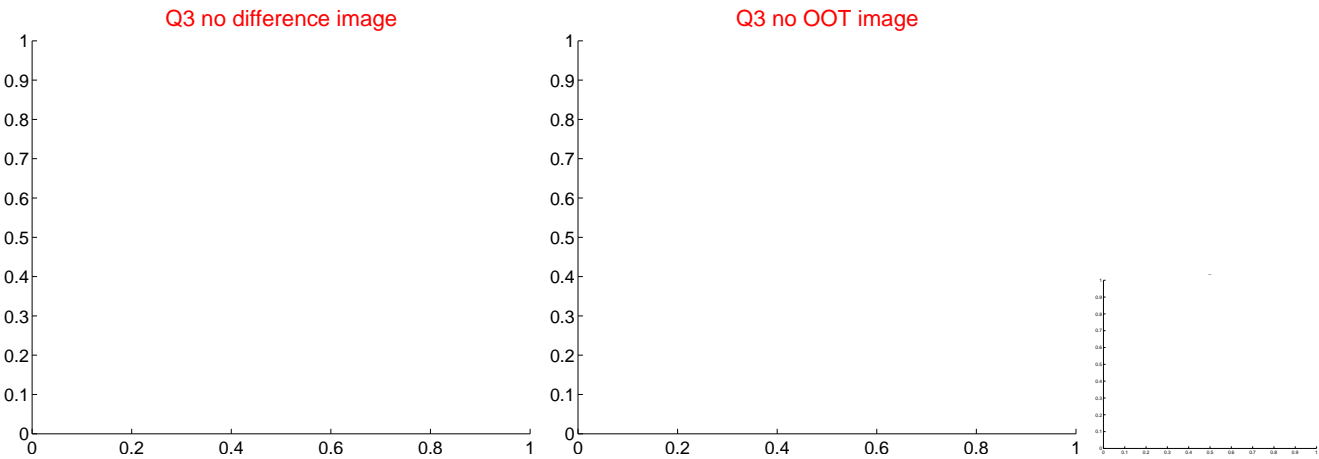
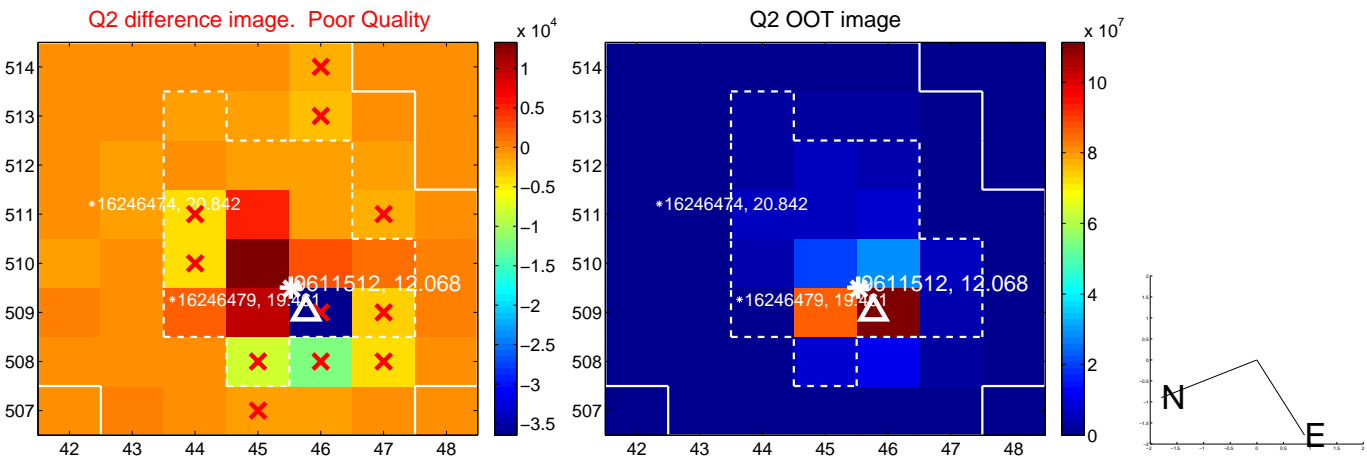
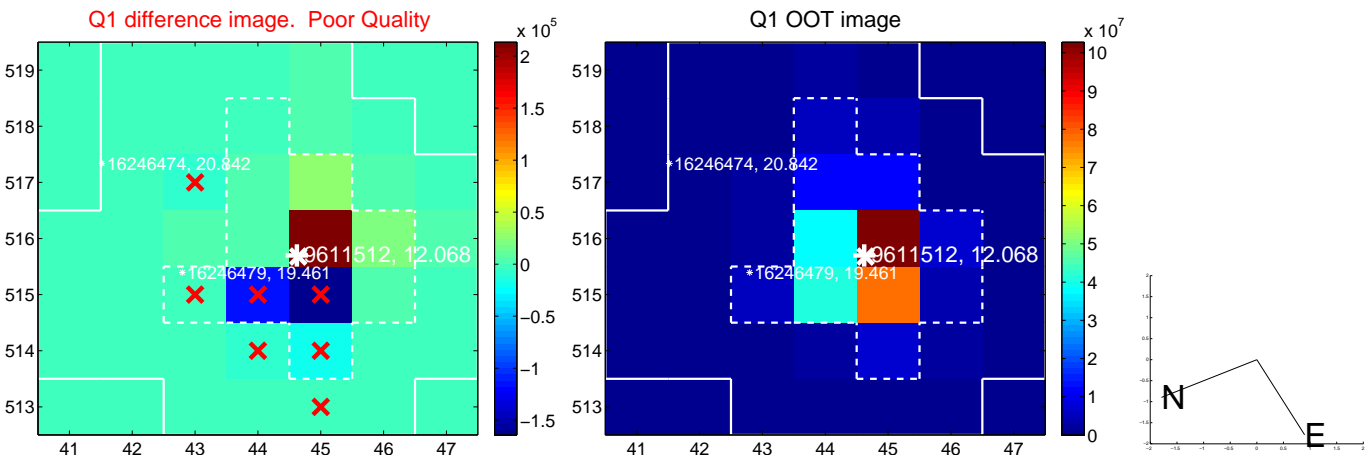


offset from photometric centroids

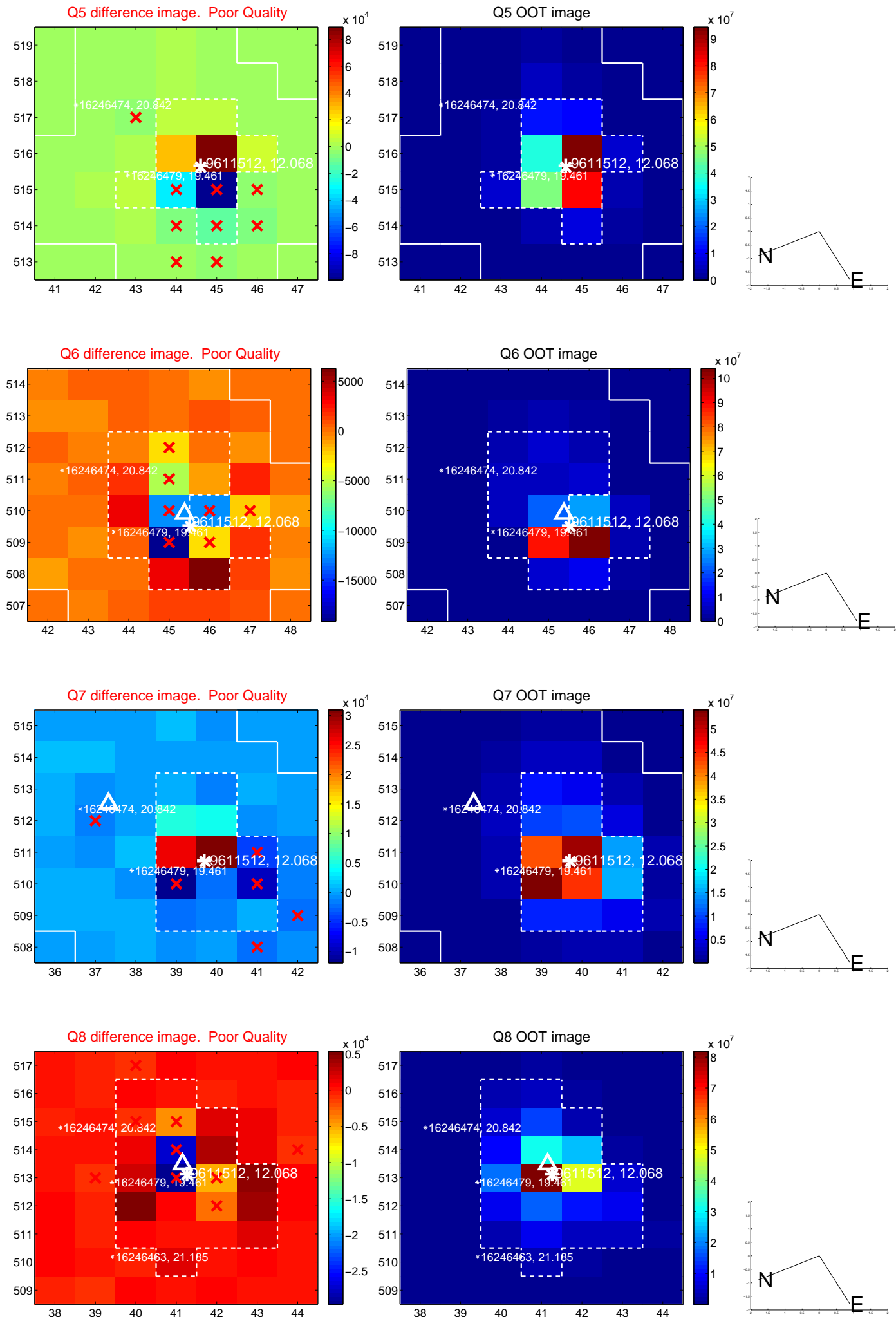


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

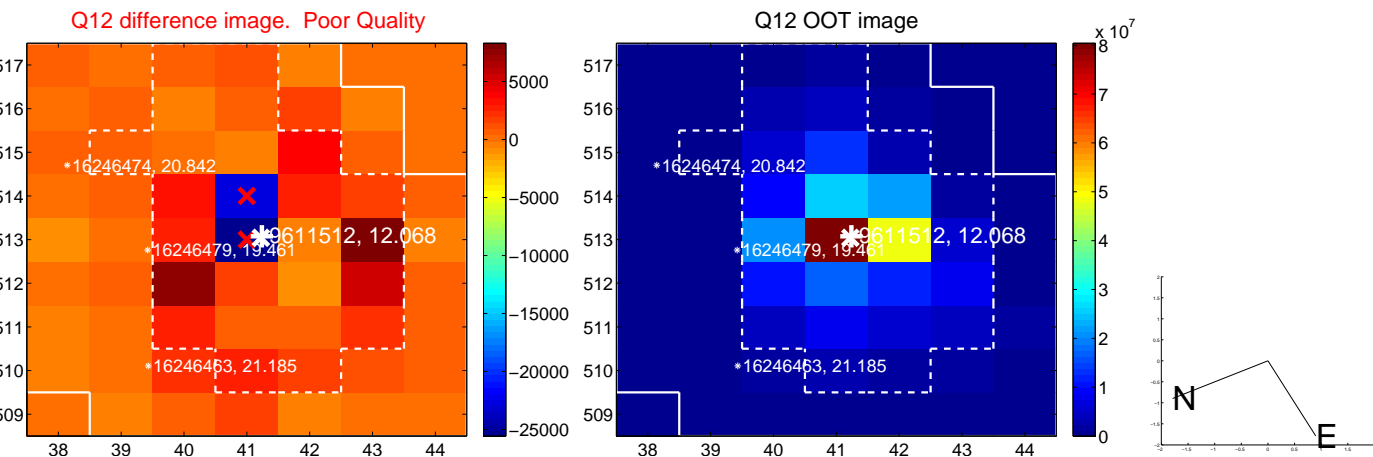
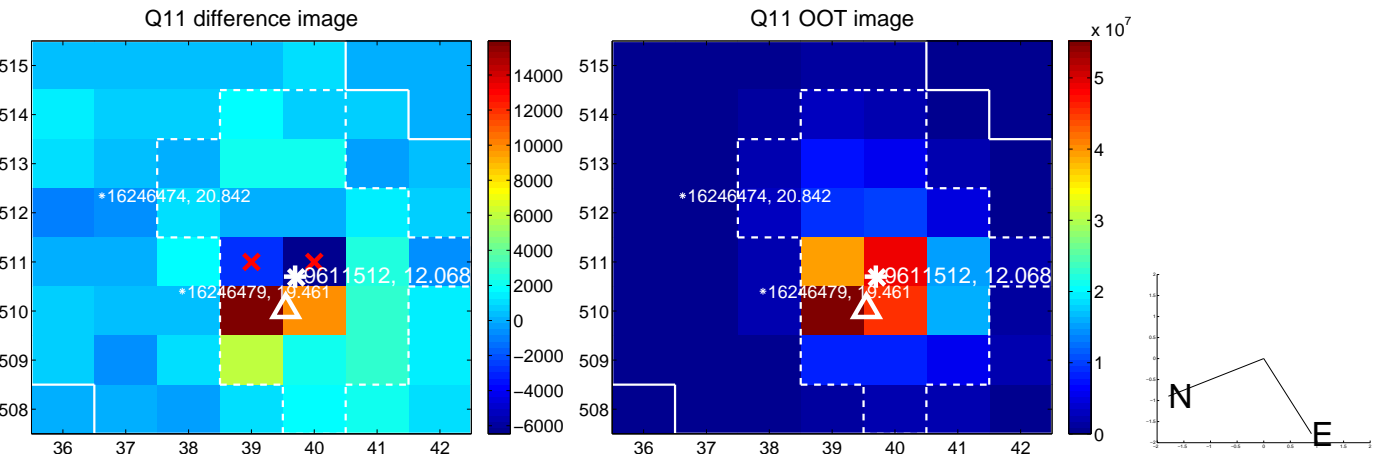
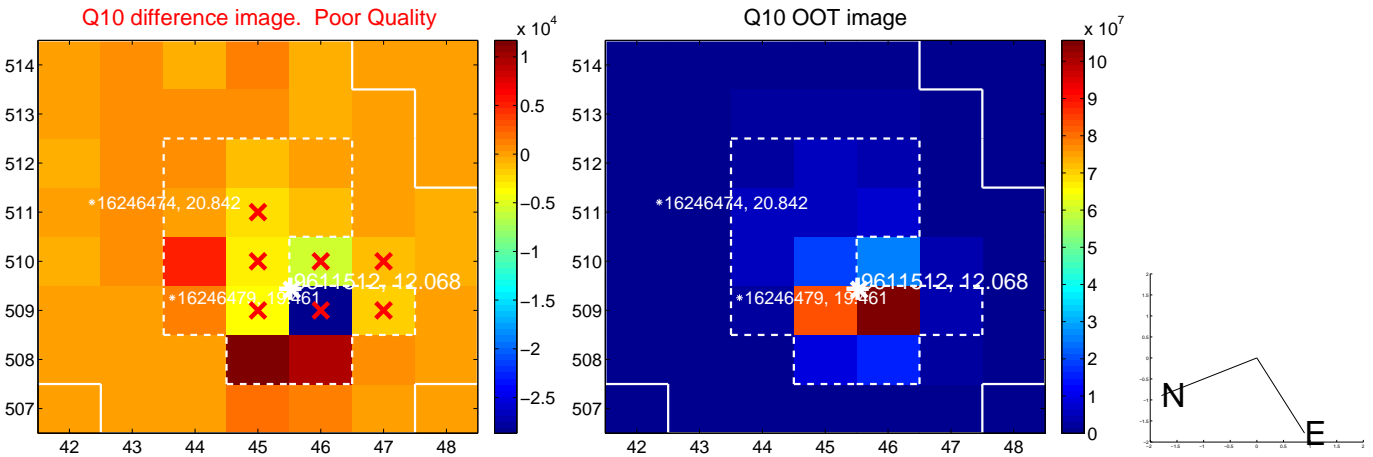
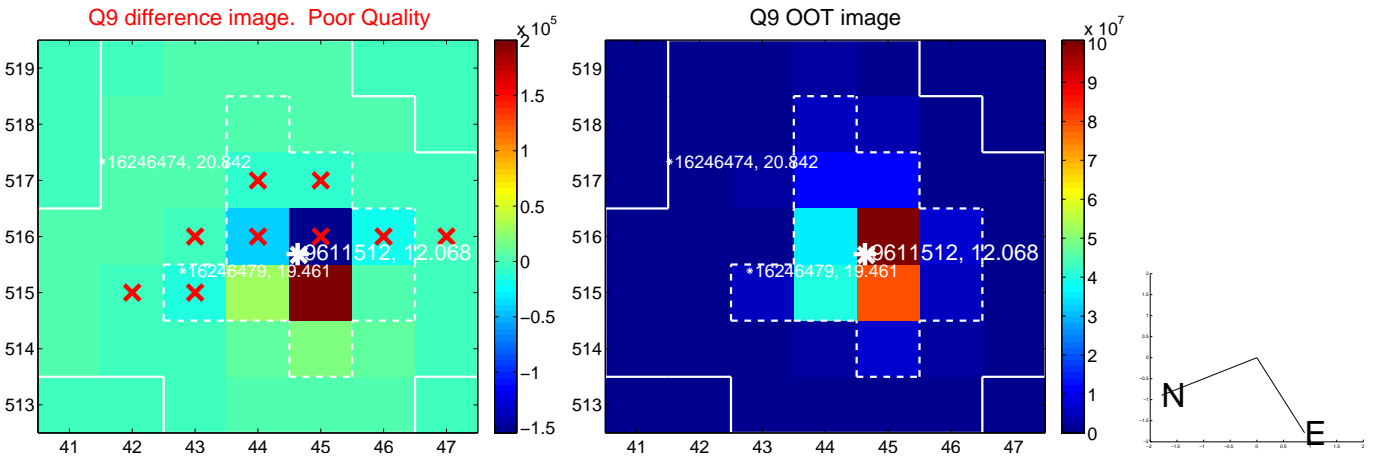
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



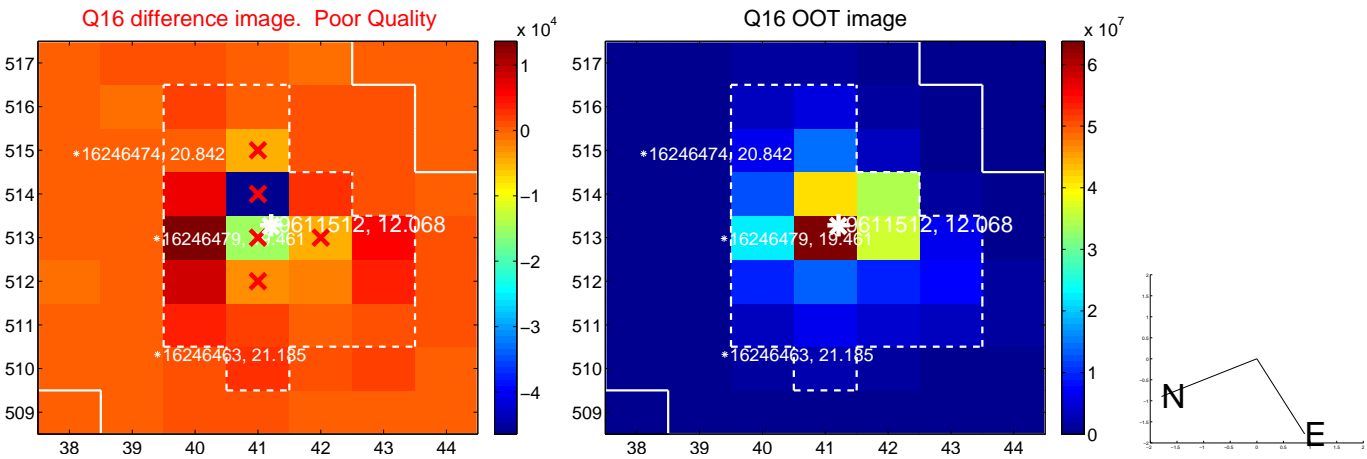
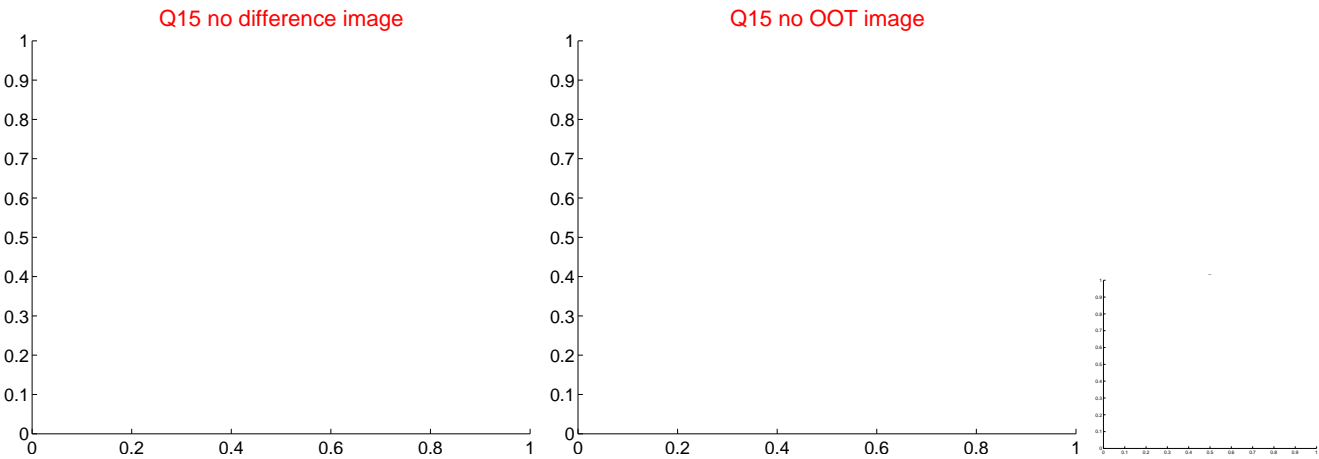
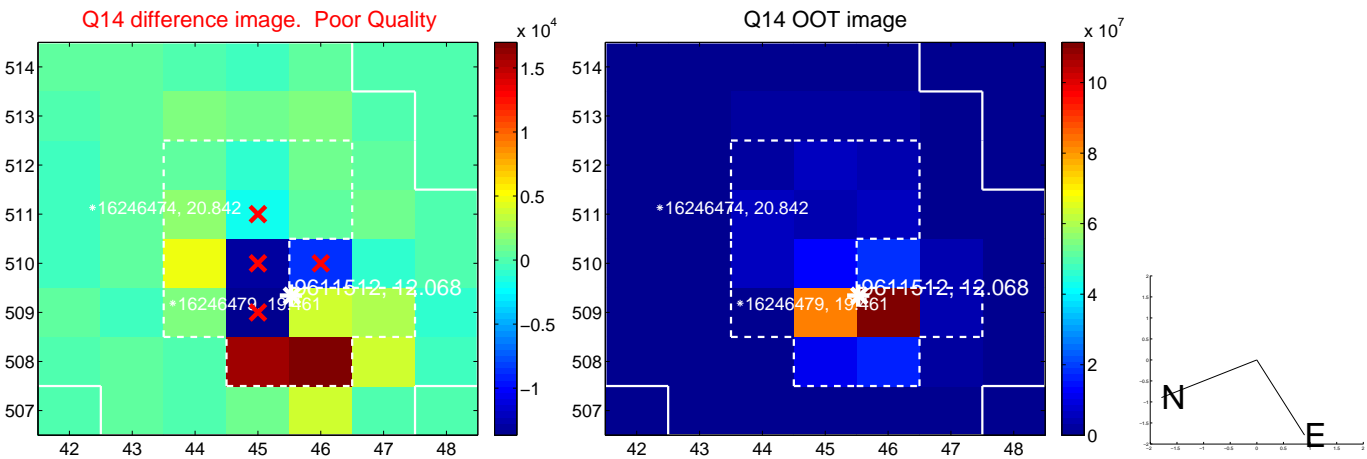
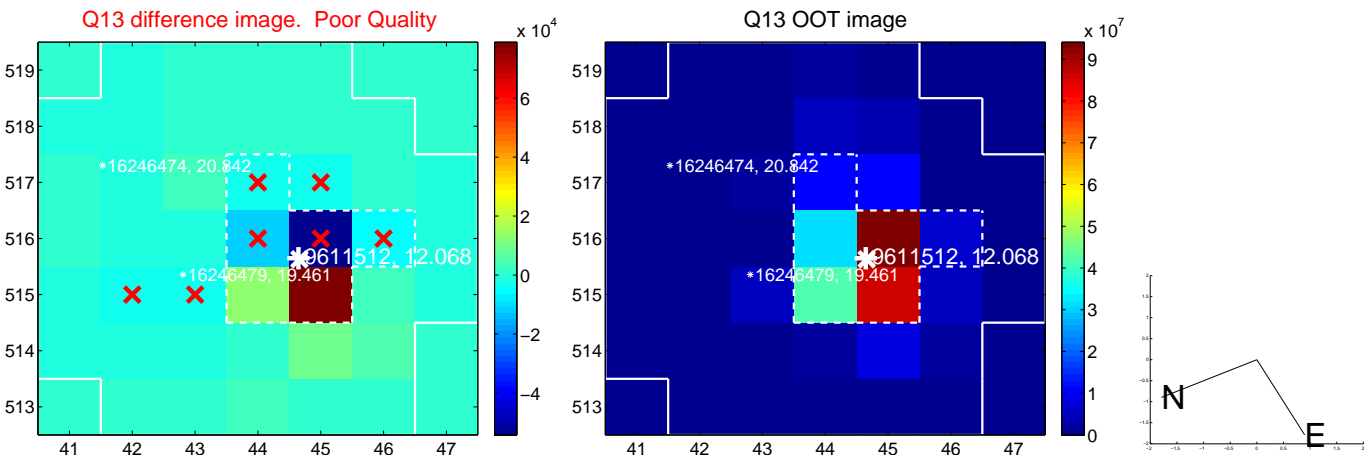
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



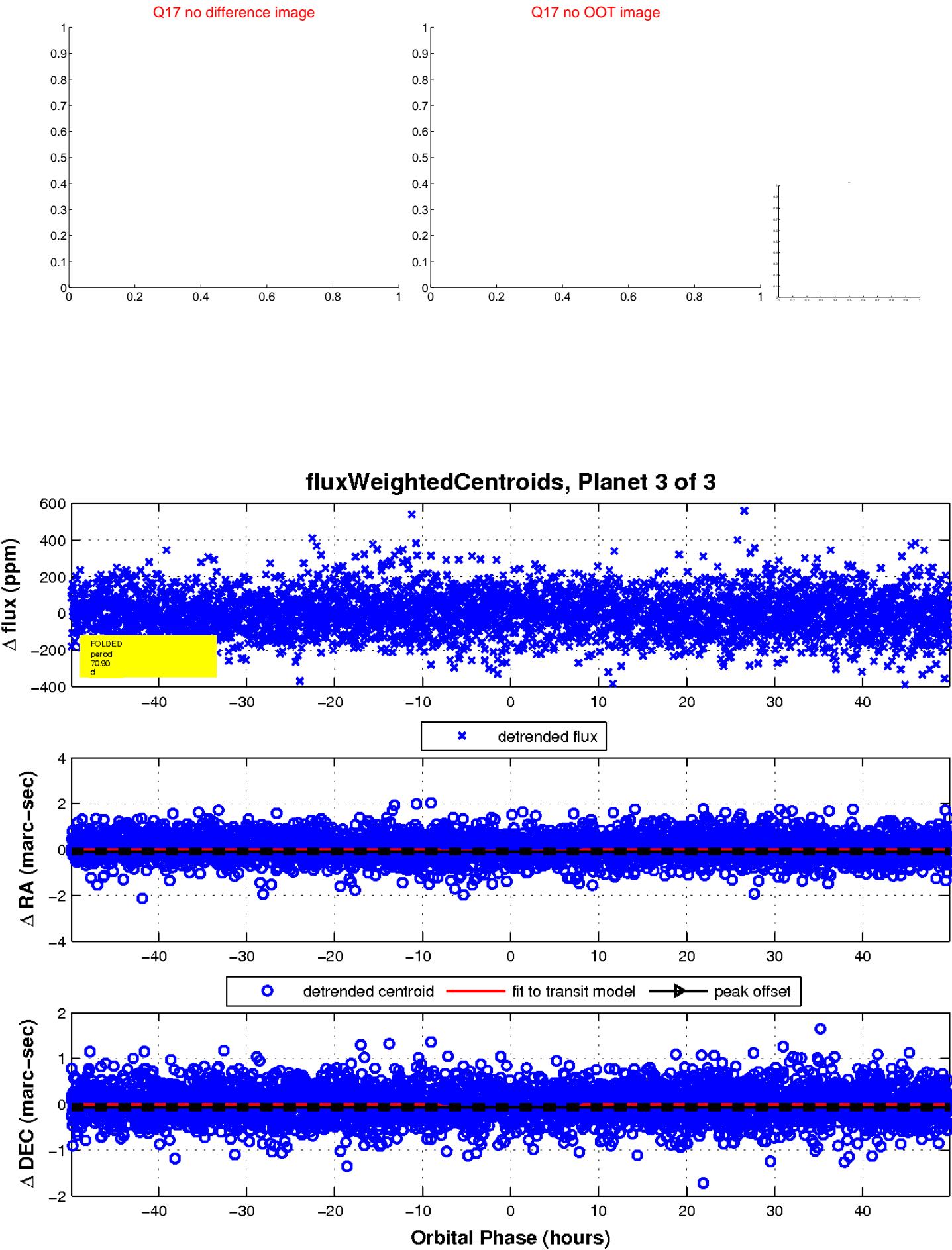
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

