

KIC 012356914

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 012356914-01 | OBS | 7526.01 | 27.308296 | 143.494530 | 387044.7 | 3.000 | 6237.3 | -1.0 | 0.74 | 5541 | 40.32 | 17.78 |
| 012356914-02 | OBS | No | 27.308618 | 132.160772 | 55313.9 | 10.750 | 1294.3 | 1065.7 | 0.74 | 5541 | 19.11 | 17.78 |
| 012356914-03 | OBS | No | 9.102656 | 134.623706 | 25998.4 | 15.000 | 509.2 | -1.0 | 0.74 | 5541 | 11.84 | 76.93 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 012356914-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 012356914-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 012356914-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—RESIDUAL_TCE—CENT_NOFITS |

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.

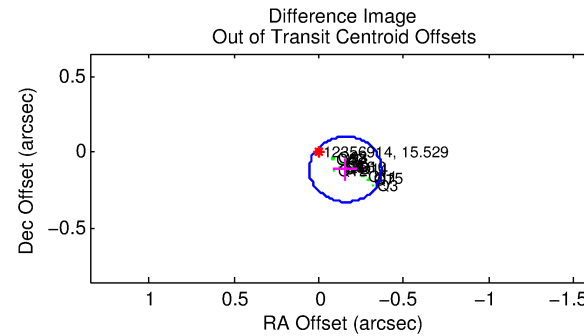
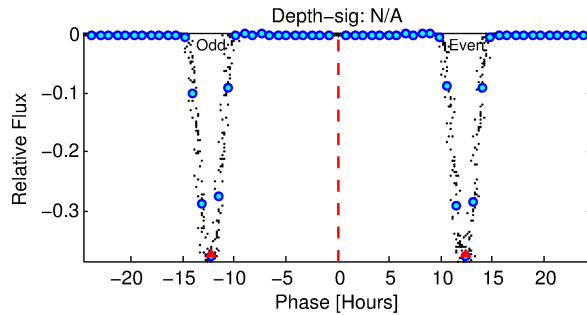
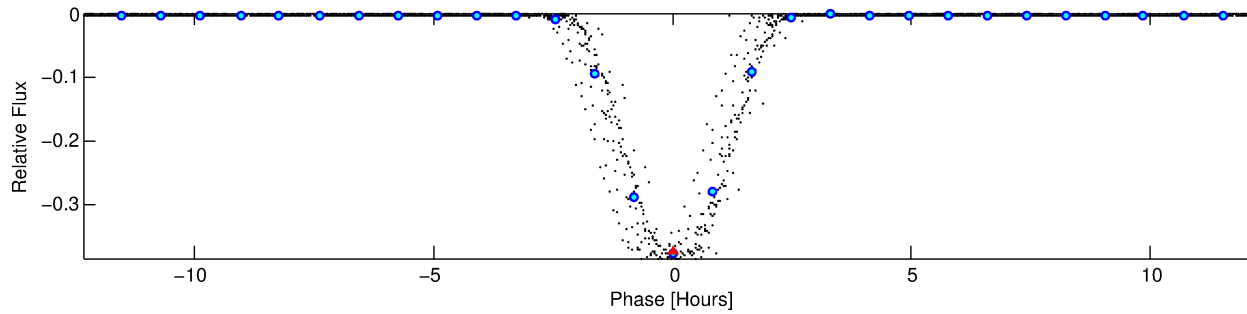
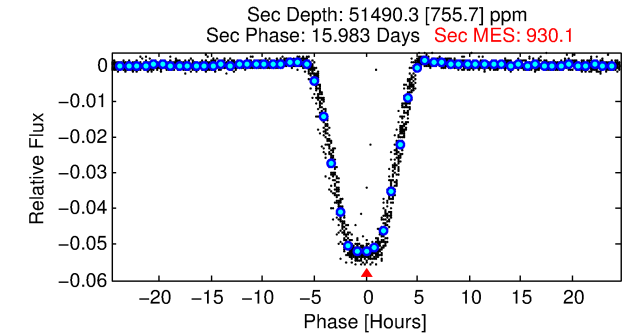
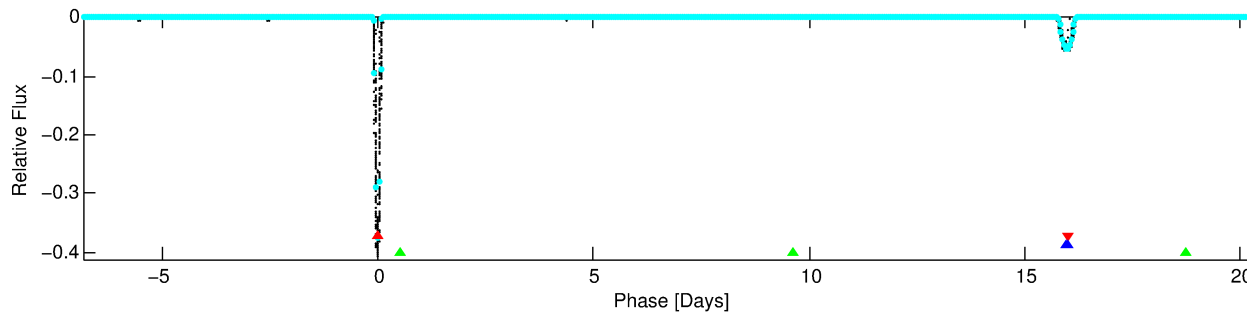
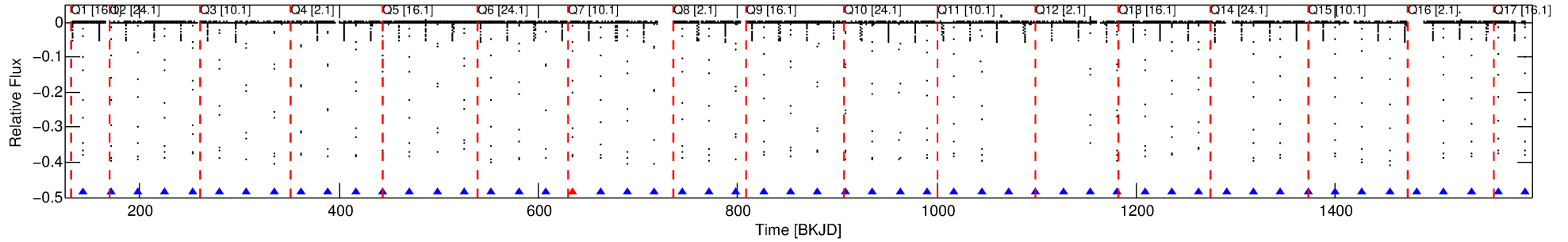
Ephemeris Match Information For 012356914-01

No Significant Match Found

DV One-Page Summary

KIC: 12356914 Candidate: 1 of 3 Period: 27.308 d
KOI: K07526.01 Corr: 0.812

Kp: 15.53 R*: 0.74 Rs Teff: 5541.0 K Logg: 4.57 Fe/H: -0.600



TPS TCE Results:

Period = 27.30830 d
Epoch = 143.4945 BKJD

DV fit results are unavailable

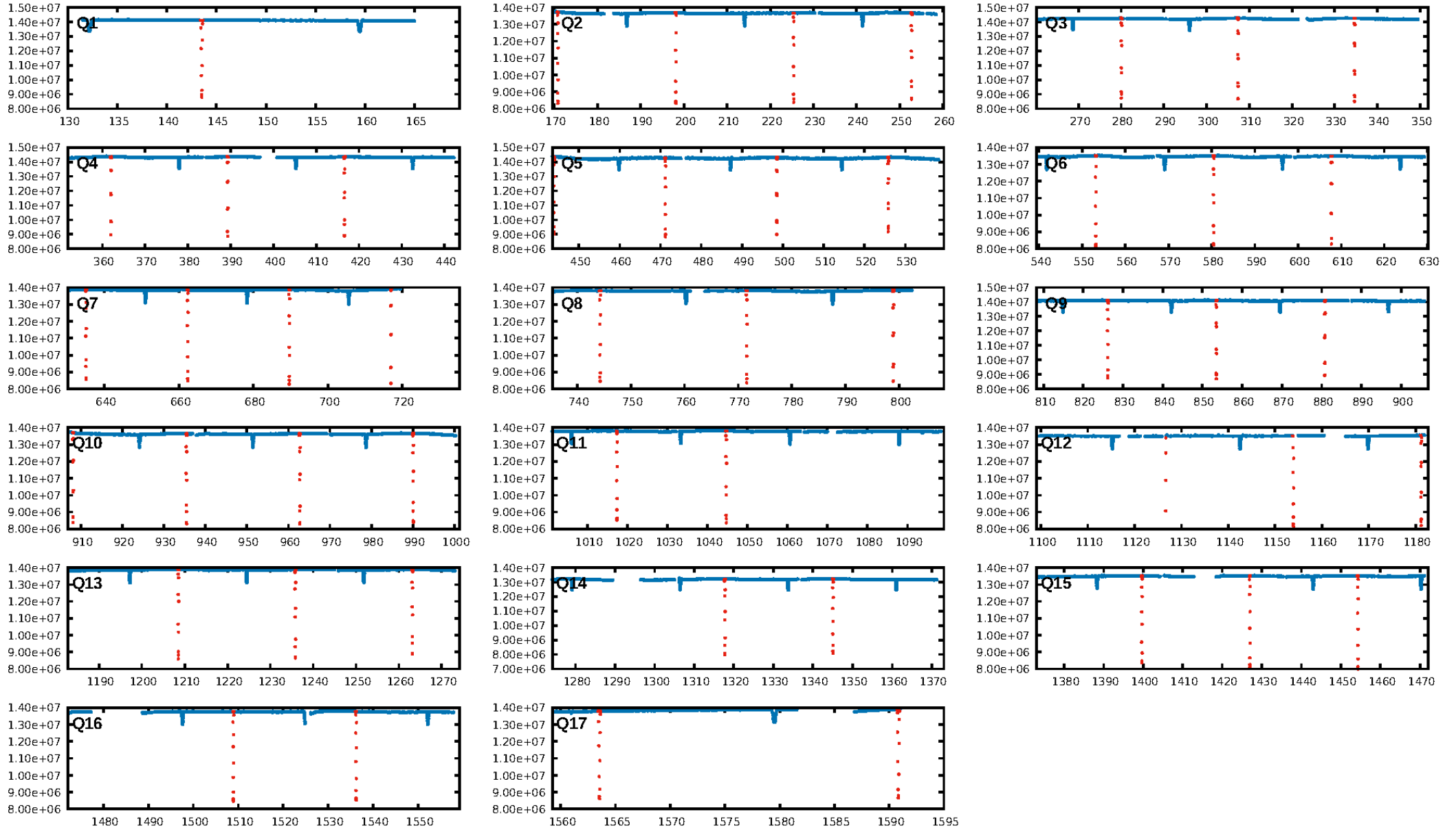
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.56 σ]
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [45/46]
GhostDiagnostic-chr: 3.139
Centroid-sig: 0.0%
Centroid-so: 0.381 arcsec [223.51 σ]
OotOffset-rm: 0.192 arcsec [2.69 σ]
KicOffset-rm: 0.079 arcsec [1.14 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

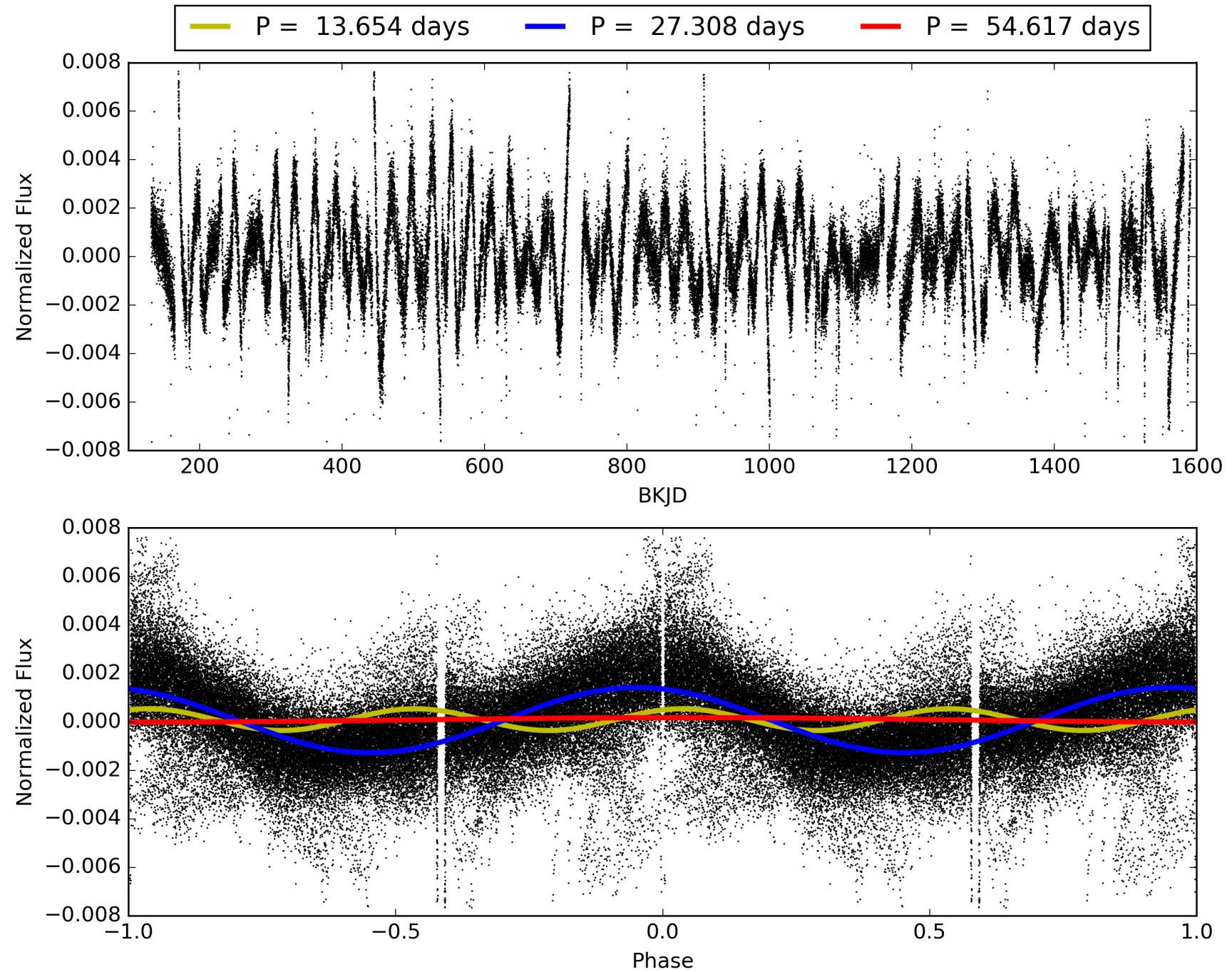
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:25:16 Z

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

TCE 012356914-01, PDC Light Curves

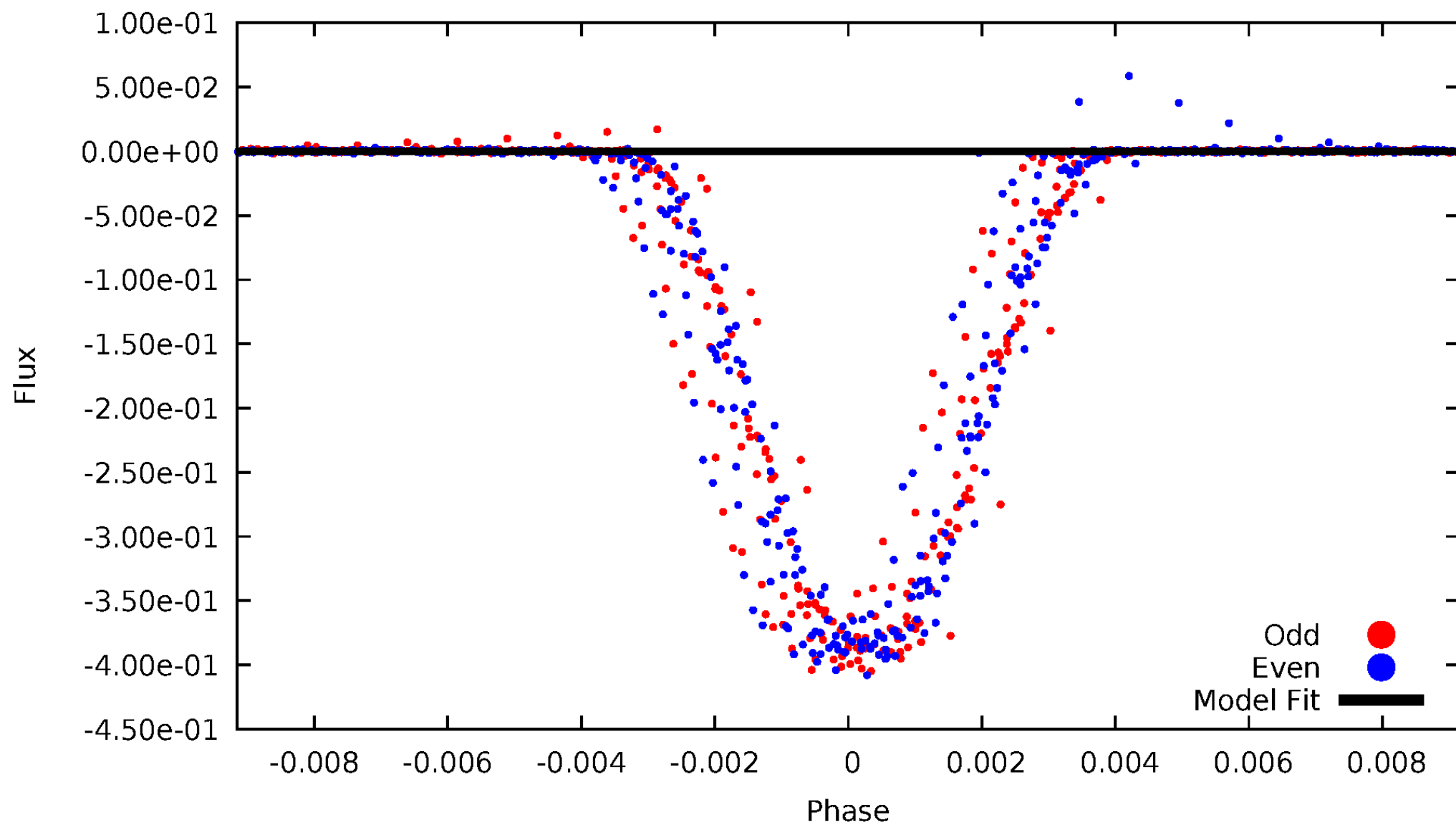


TCE 012356914-01



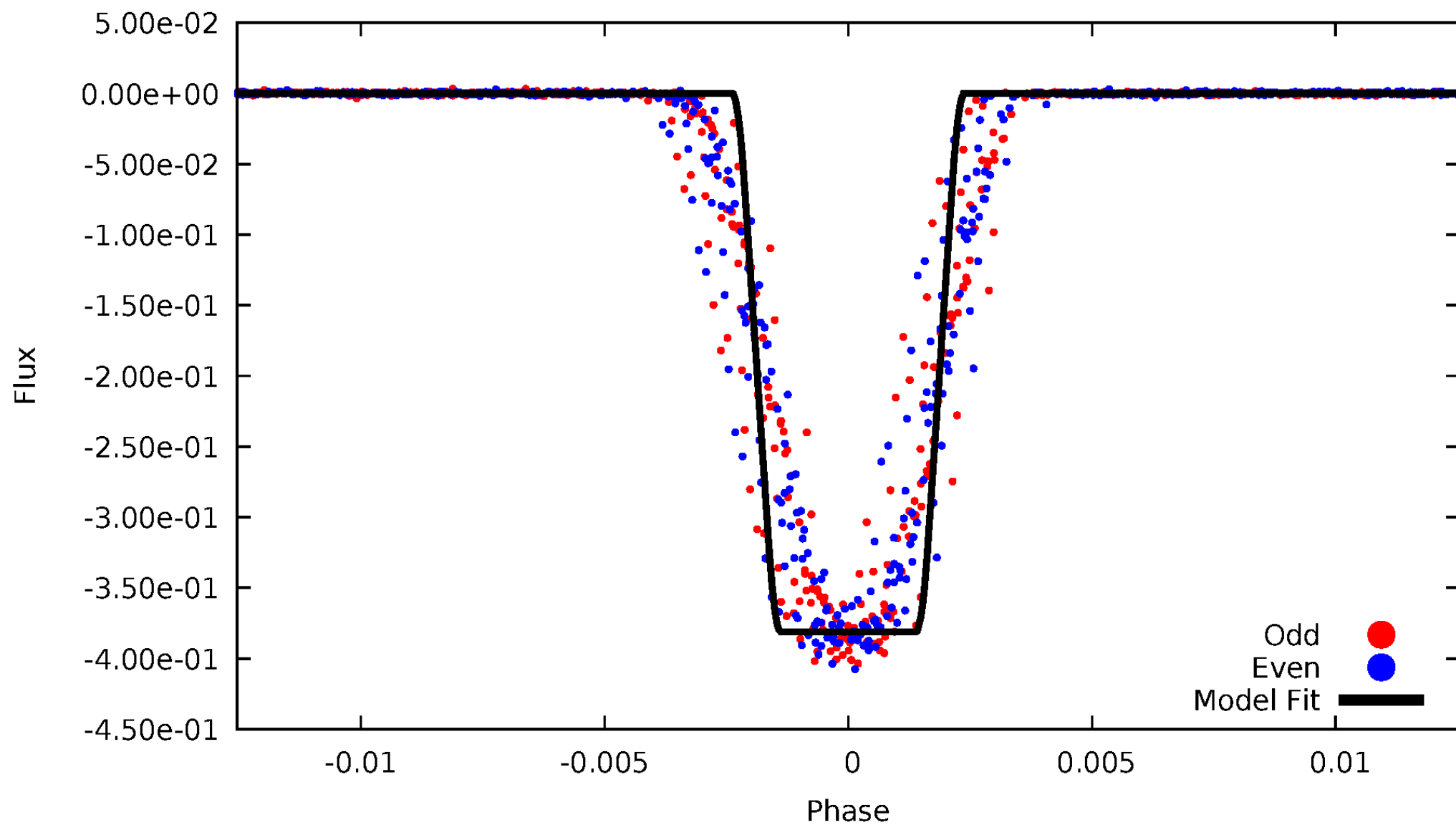
DV Odd/Even

TCE 012356914-01



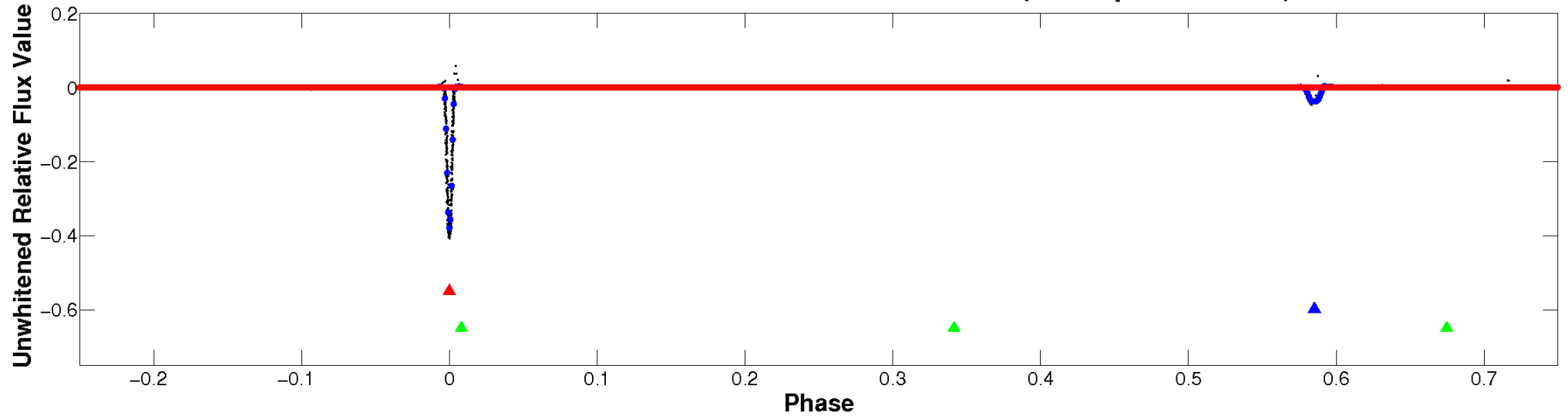
ALT Odd/Even

TCE 012356914-01



Non-Whitened Vs. Whitened Light Curve

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

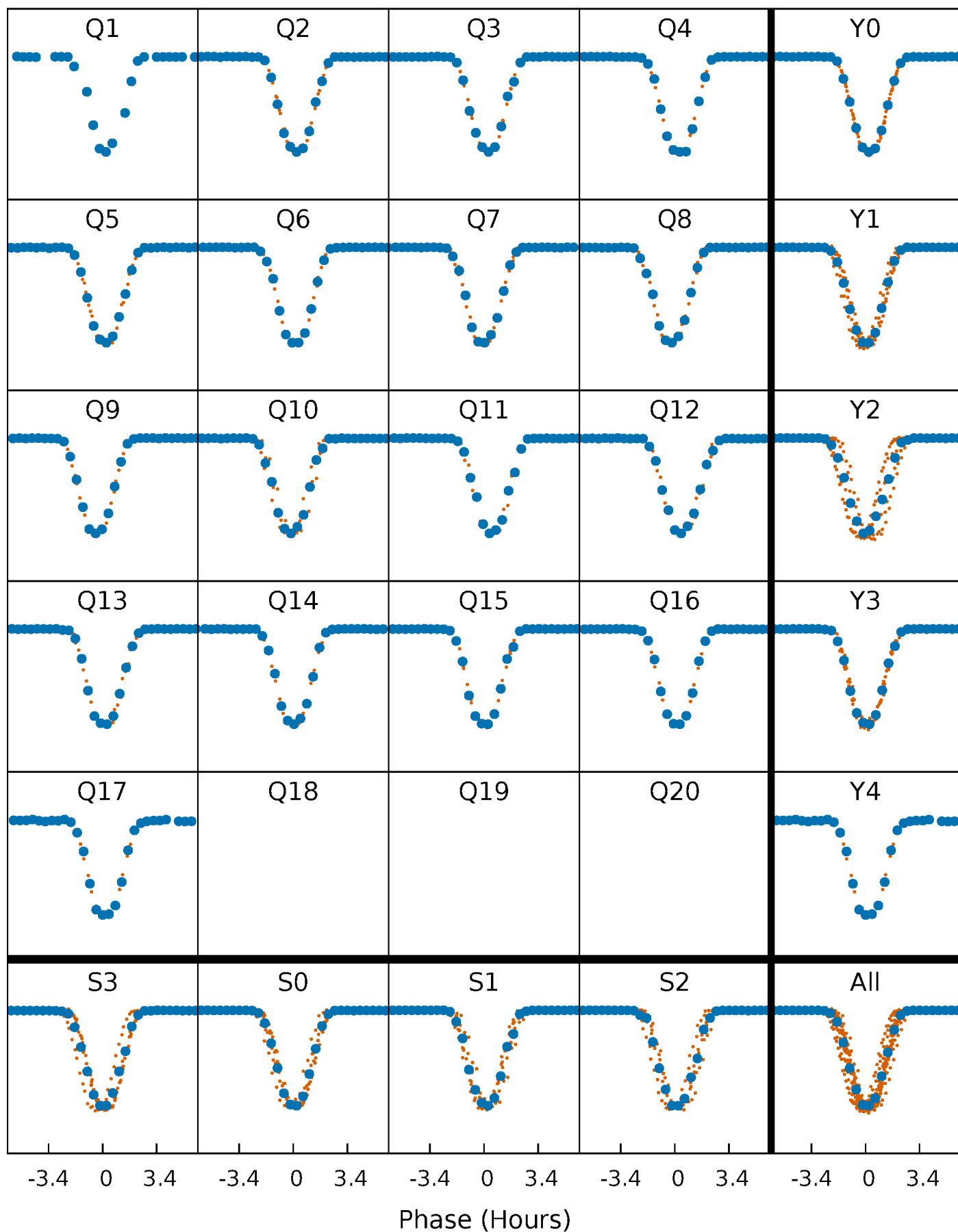


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



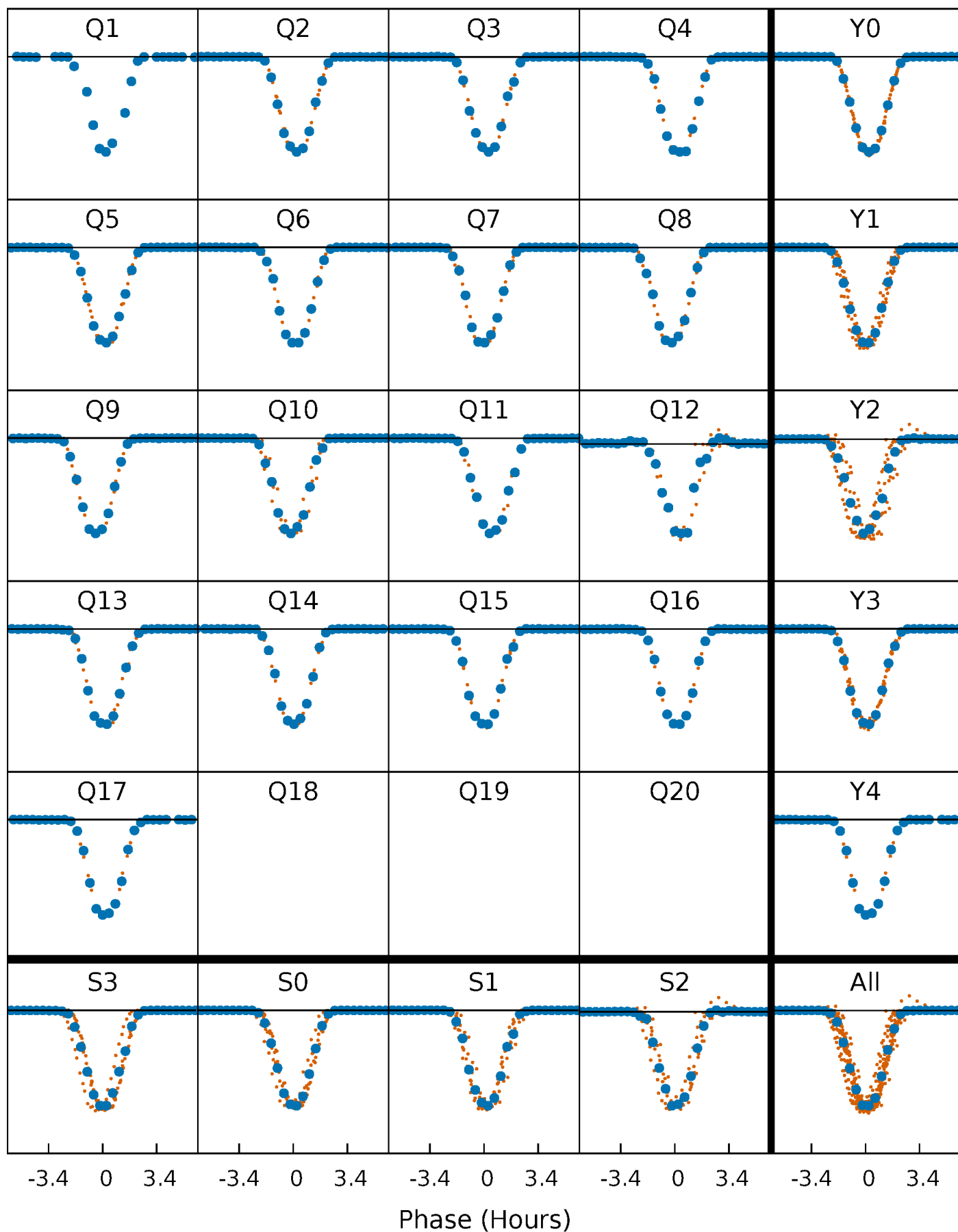
PDC Quarter-Phased Transit Curves

TCE 012356914-01 P= 27.308296 Days $T_0=143.494530$ (BKJD)



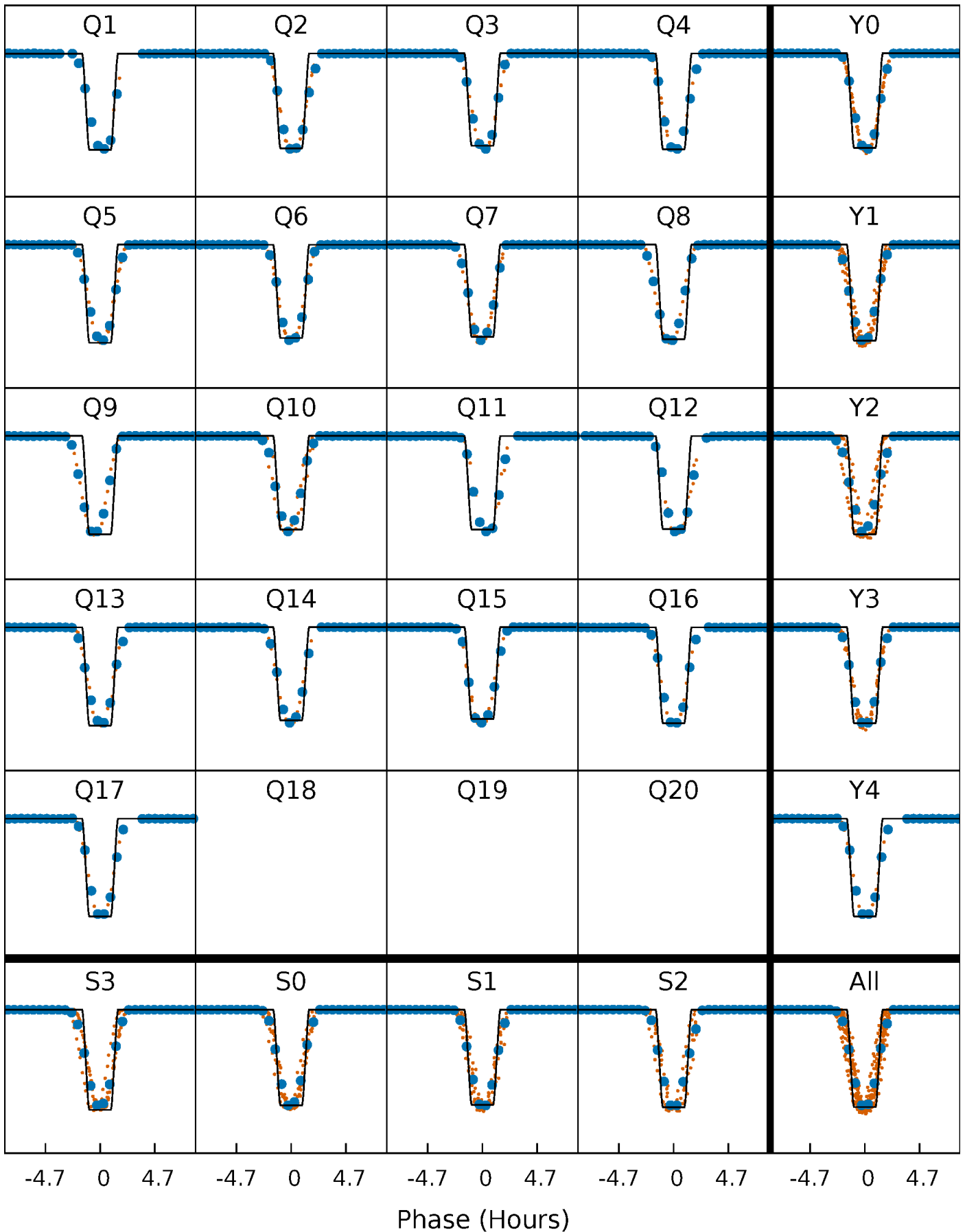
DV Quarter-Phased Transit Curves

TCE 012356914-01 P= 27.308296 Days $T_0=143.494530$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

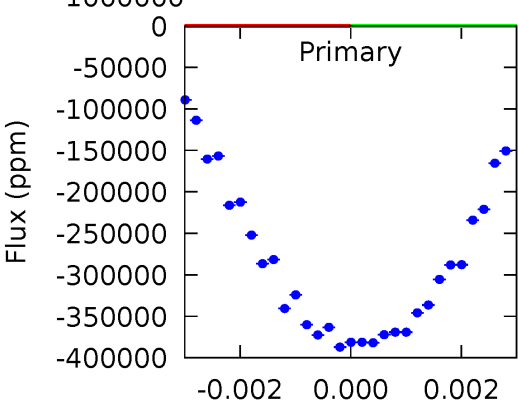
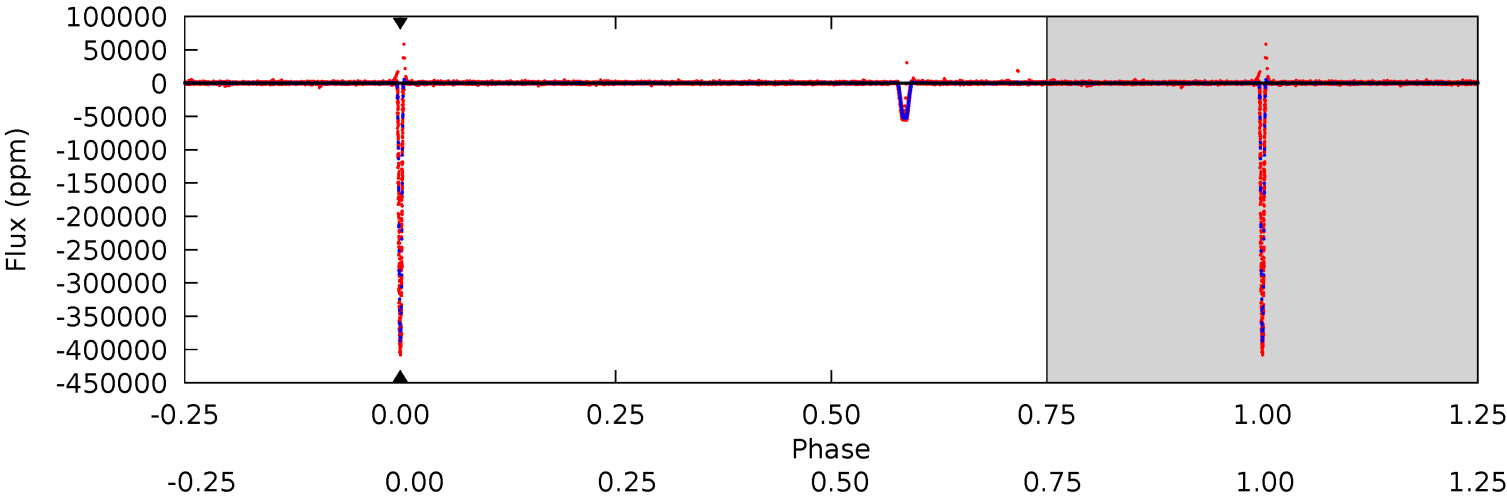
TCE 012356914-01 P= 27.308296 Days $T_0=143.498398$ (BKJD)



DV Model-Shift Uniqueness Test

012356914-01, P = 27.308296 Days, E = 116.186234 Days

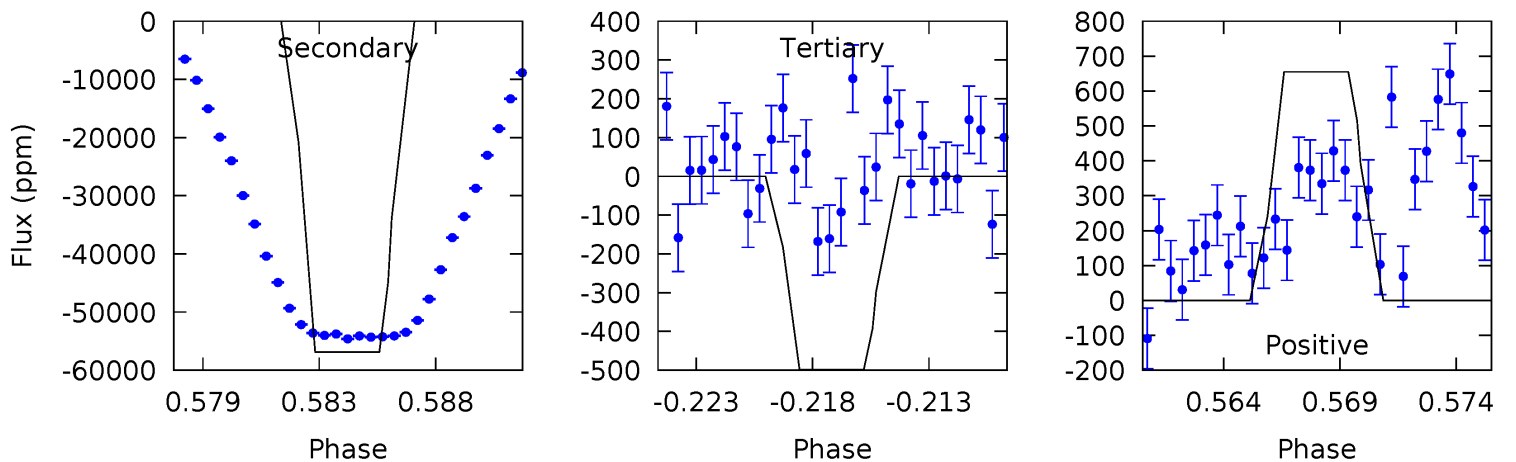
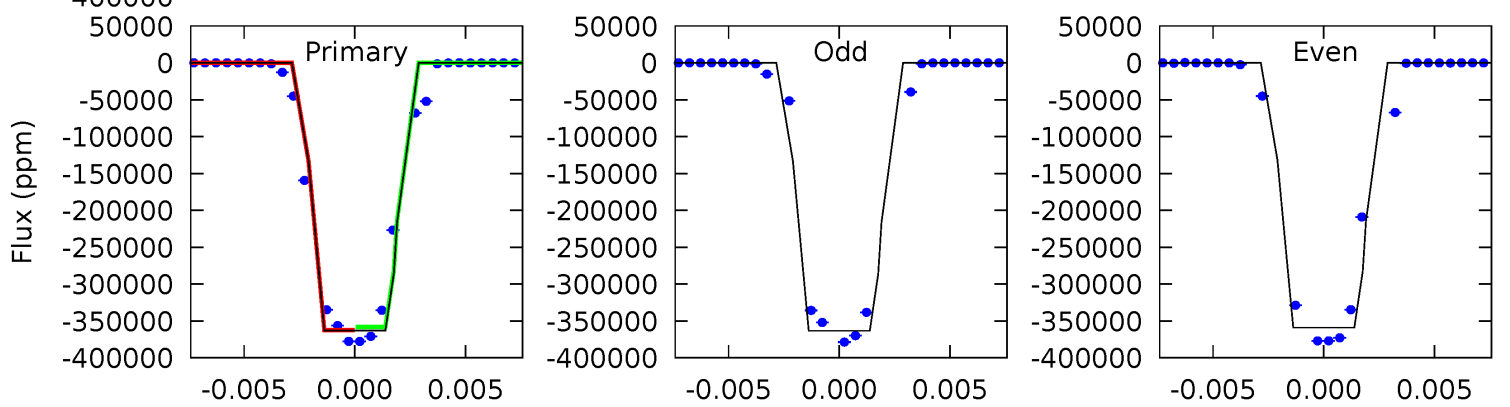
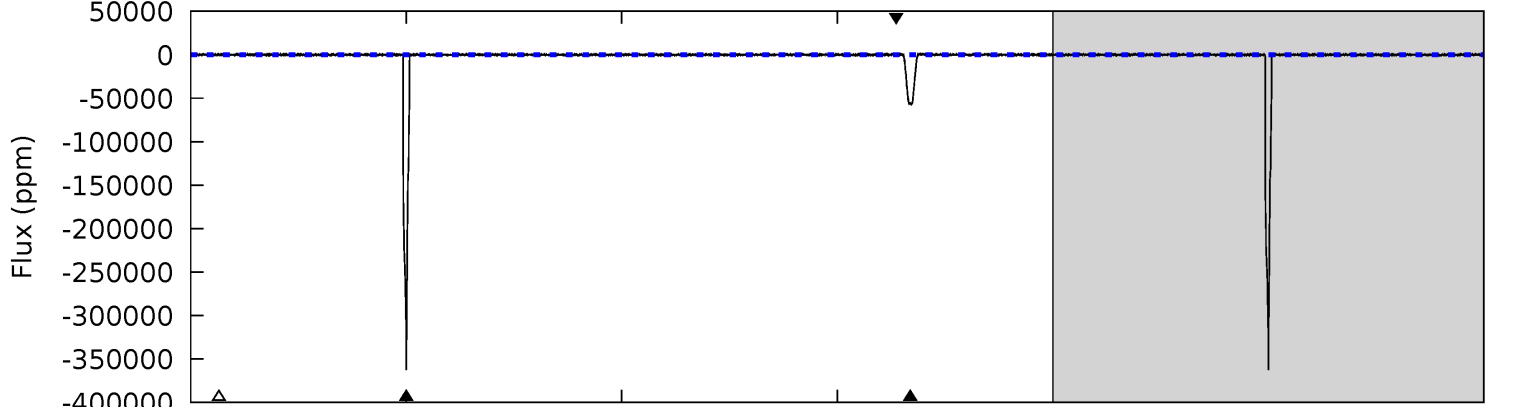
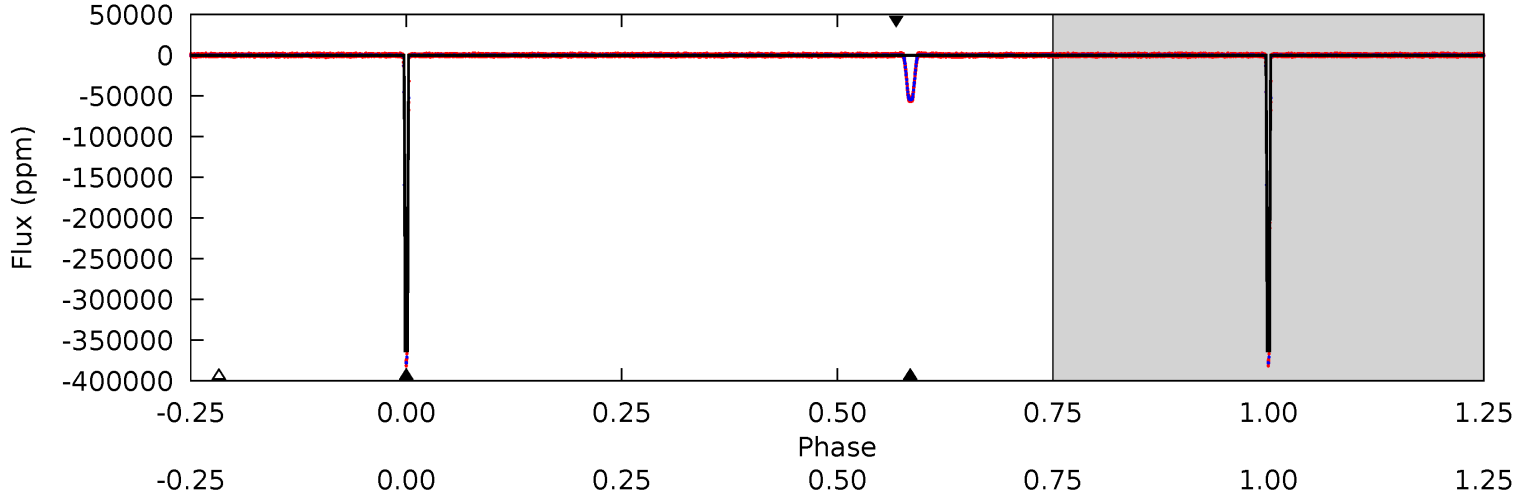
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

012356914-01, P = 27.308296 Days, E = 116.190102 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1691 | 265.0 | 2.32 | 3.05 | 5.17 | 2.82 | 4.01 | 1688 | 1687 | 262.7 | 262.0 | 9.15 | 1.00 | 0.00 | 2.04 |



Stellar Parameters For KIC 012356914

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5541^{+180}_{-163} | $4.574^{+0.064}_{-0.096}$ | $-0.600^{+0.300}_{-0.300}$ | $0.739^{+0.127}_{-0.068}$ | $0.747^{+0.088}_{-0.052}$ | $2.604^{+0.697}_{-0.778}$ |
| | +3%/-3% | +1%/-2% | +50%/-50% | +17%/-9% | +12%/-7% | +27%/-30% |
| Source | PHO1 | 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 012356914-01 / KOI 7526.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|------------------|-------------------------|-------------------|-------------------------|---------------------------------|
| DV | 0 ± 1000000 | $40.88^{+9.34}_{-8.43}$ | 737^{+34}_{-33} | -2209^{+6917}_{-2404} | $-6.015^{+1037.828}_{-871.154}$ |
| Alt. | -56871 ± 215 | $50.06^{+9.05}_{-8.04}$ | 734^{+35}_{-28} | 3845^{+248}_{-197} | 344^{+142}_{-92} |

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 $A_{obs} \gg 1.0$

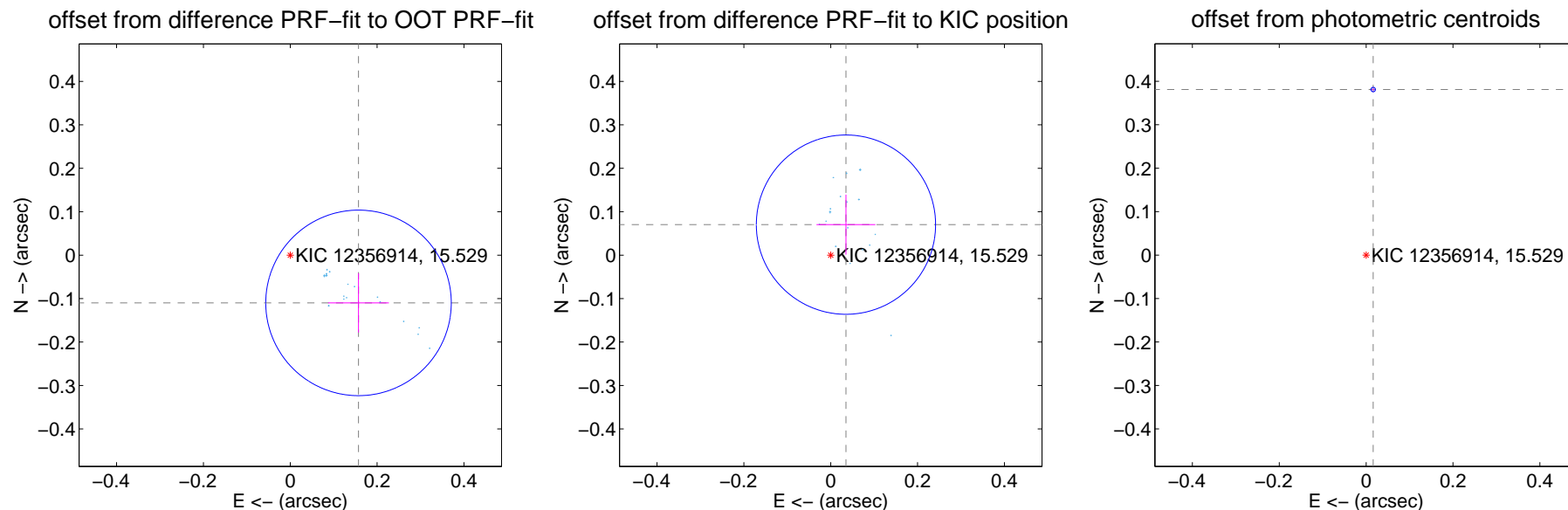
DV Centroid Data

Supplemental centroid analysis for 012356914-01. Kepler magnitude: 15.53. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

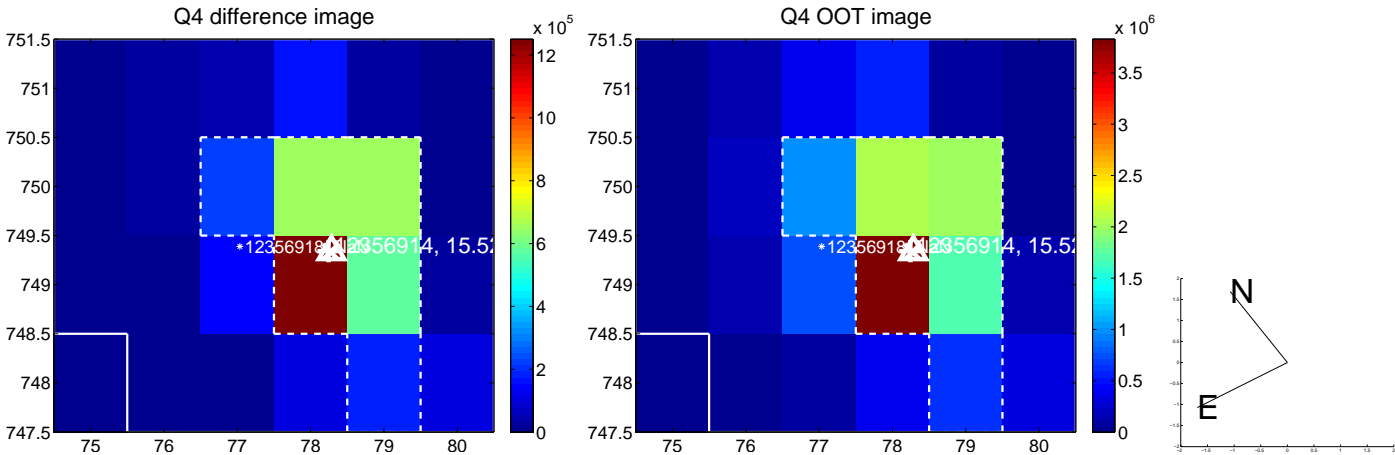
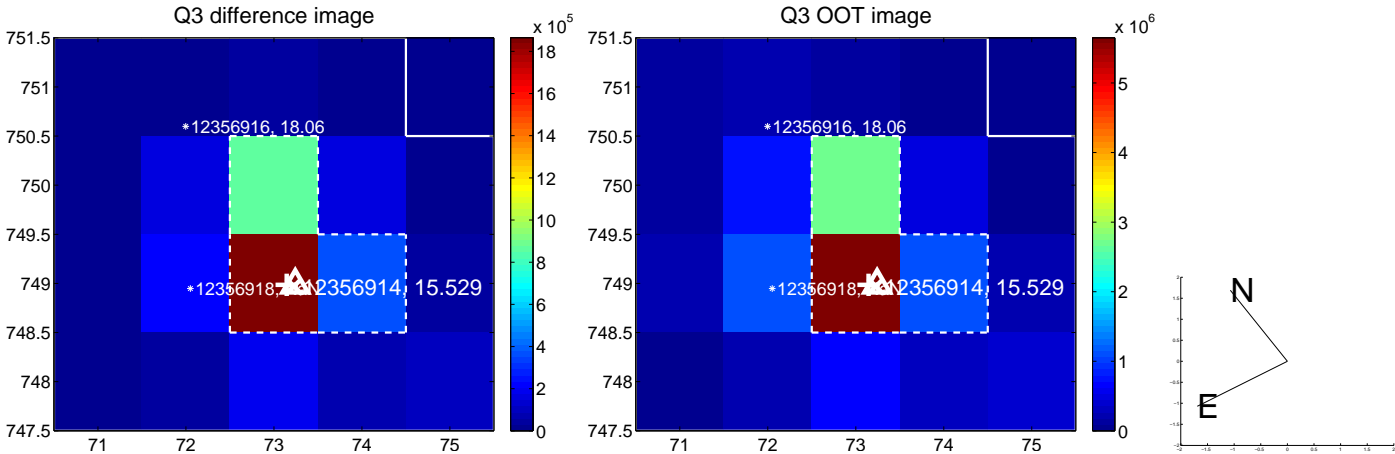
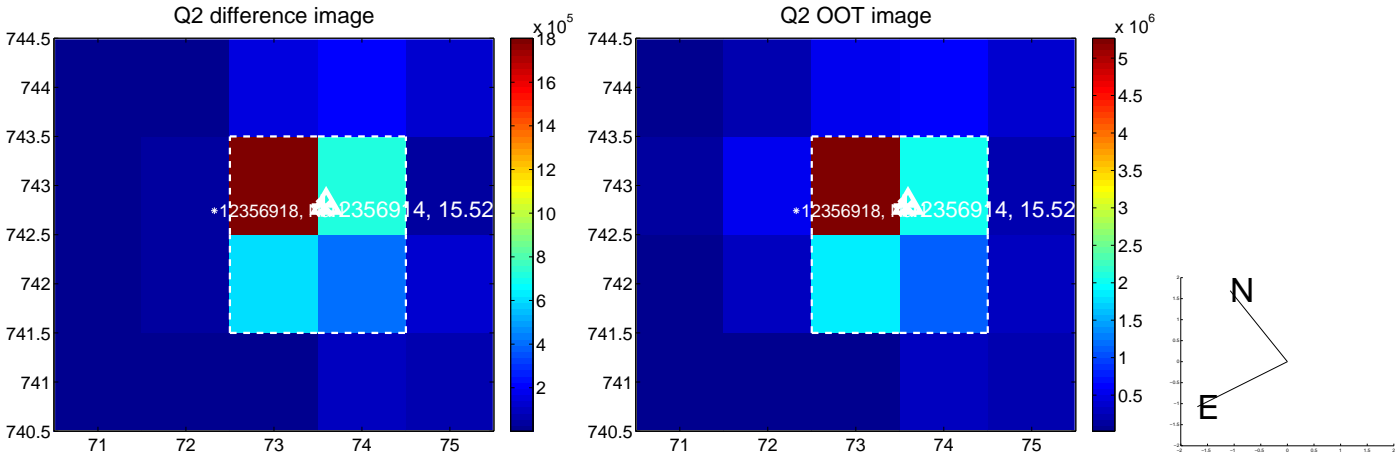
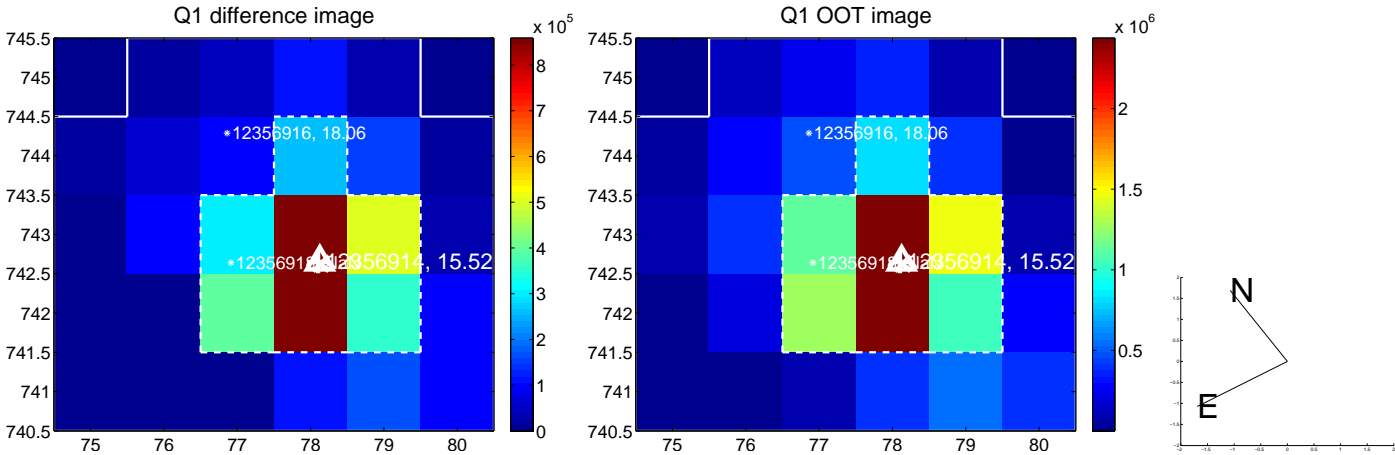
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.192 ± 0.071 | 2.69 | -0.157 ± 0.070 | -0.110 ± 0.068 |
| PRF-fit source offset from KIC position | 0.079 ± 0.069 | 1.14 | -0.035 ± 0.068 | 0.070 ± 0.069 |
| photometric centroid source offset | 0.38 ± 0.00 | 223.51 | -0.02 ± 0.00 | 0.38 ± 0.00 |

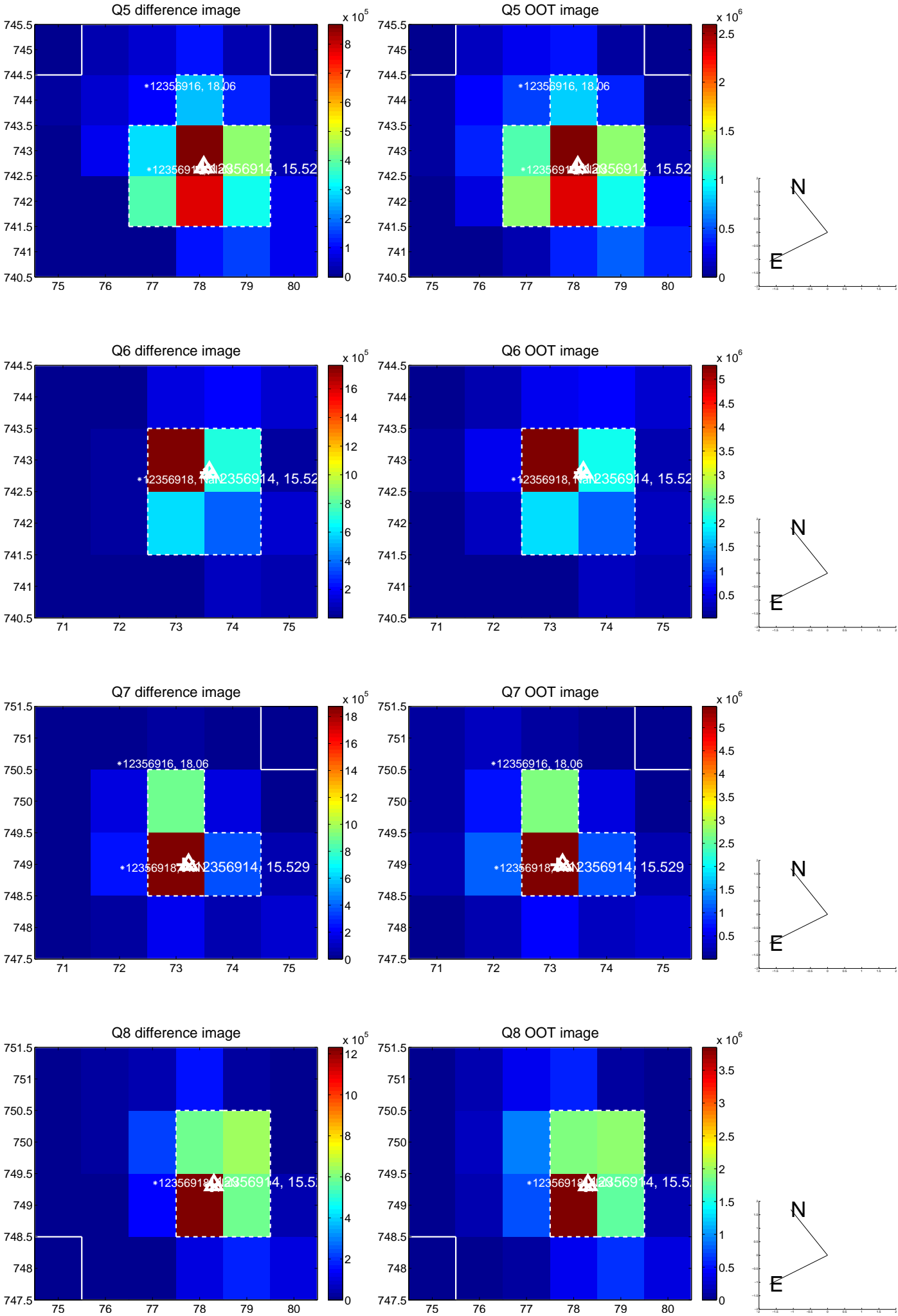


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

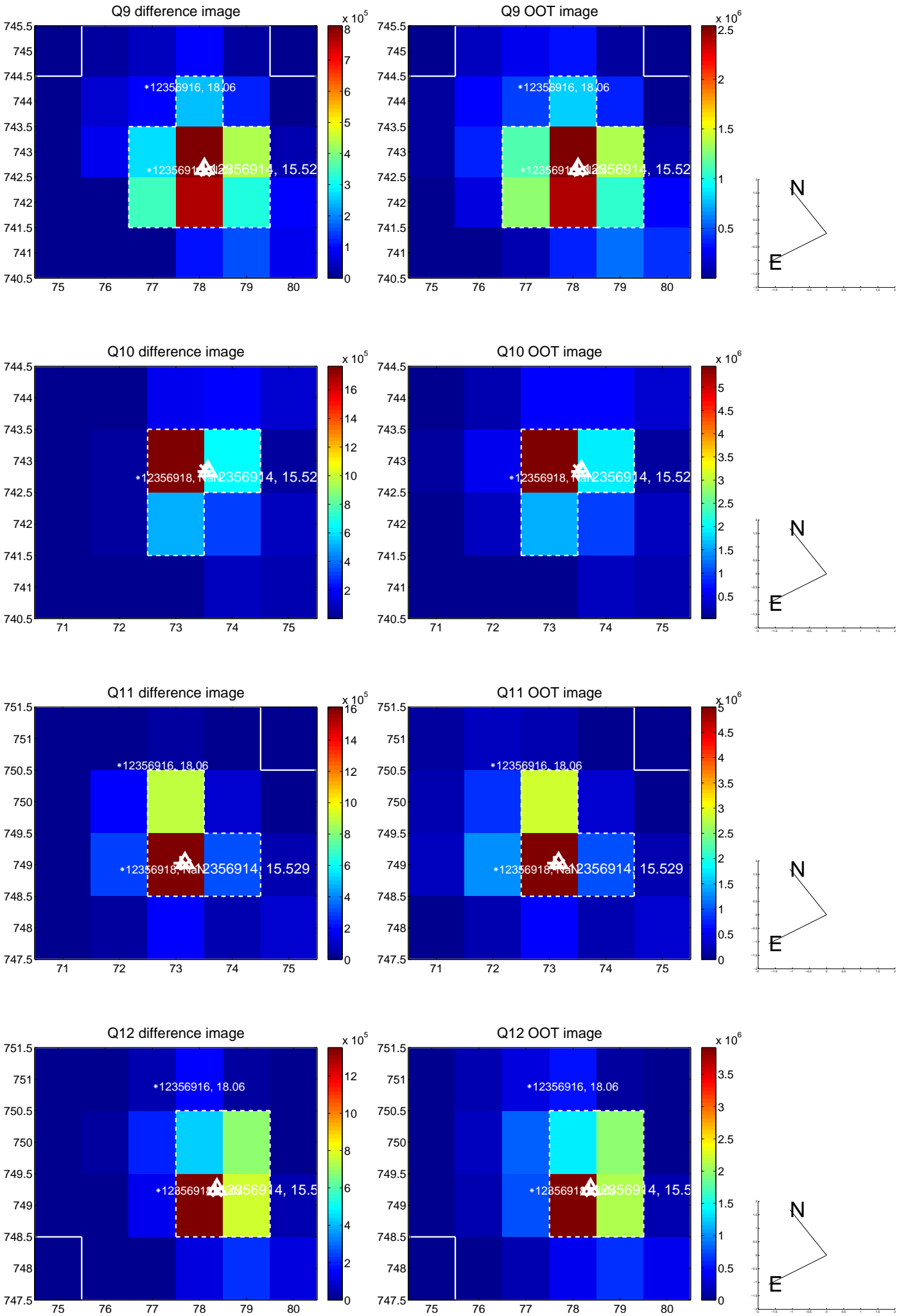
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



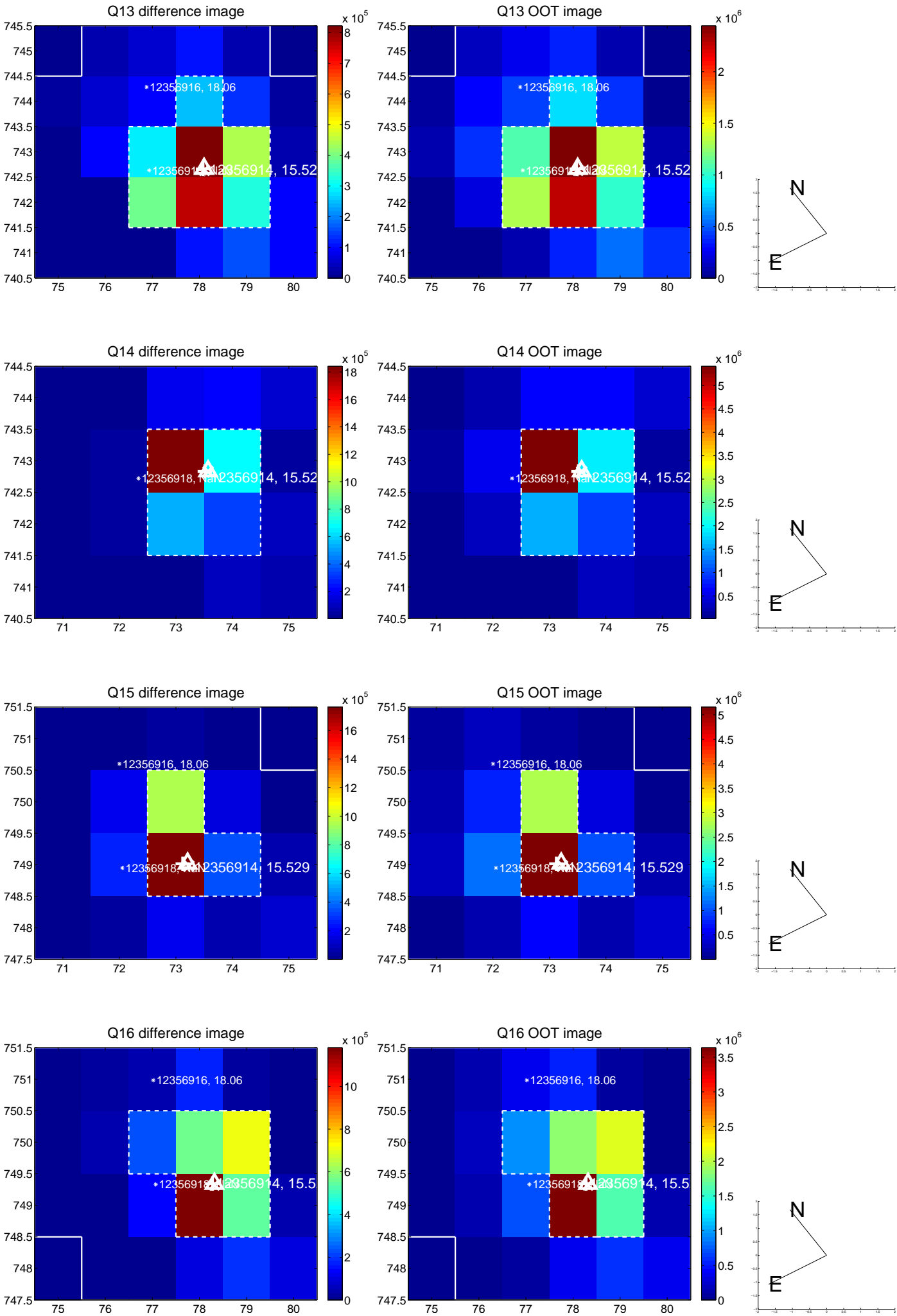
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



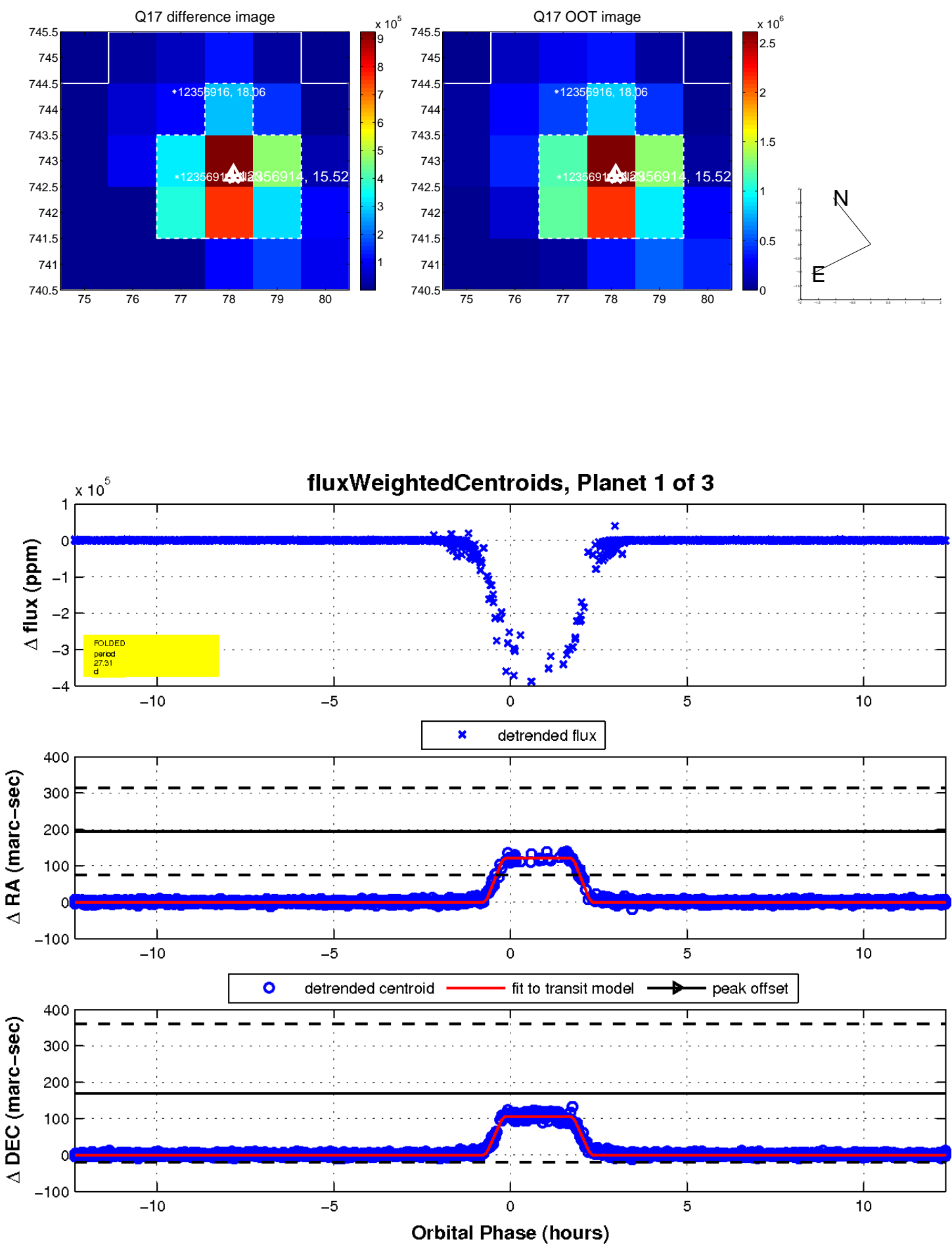
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

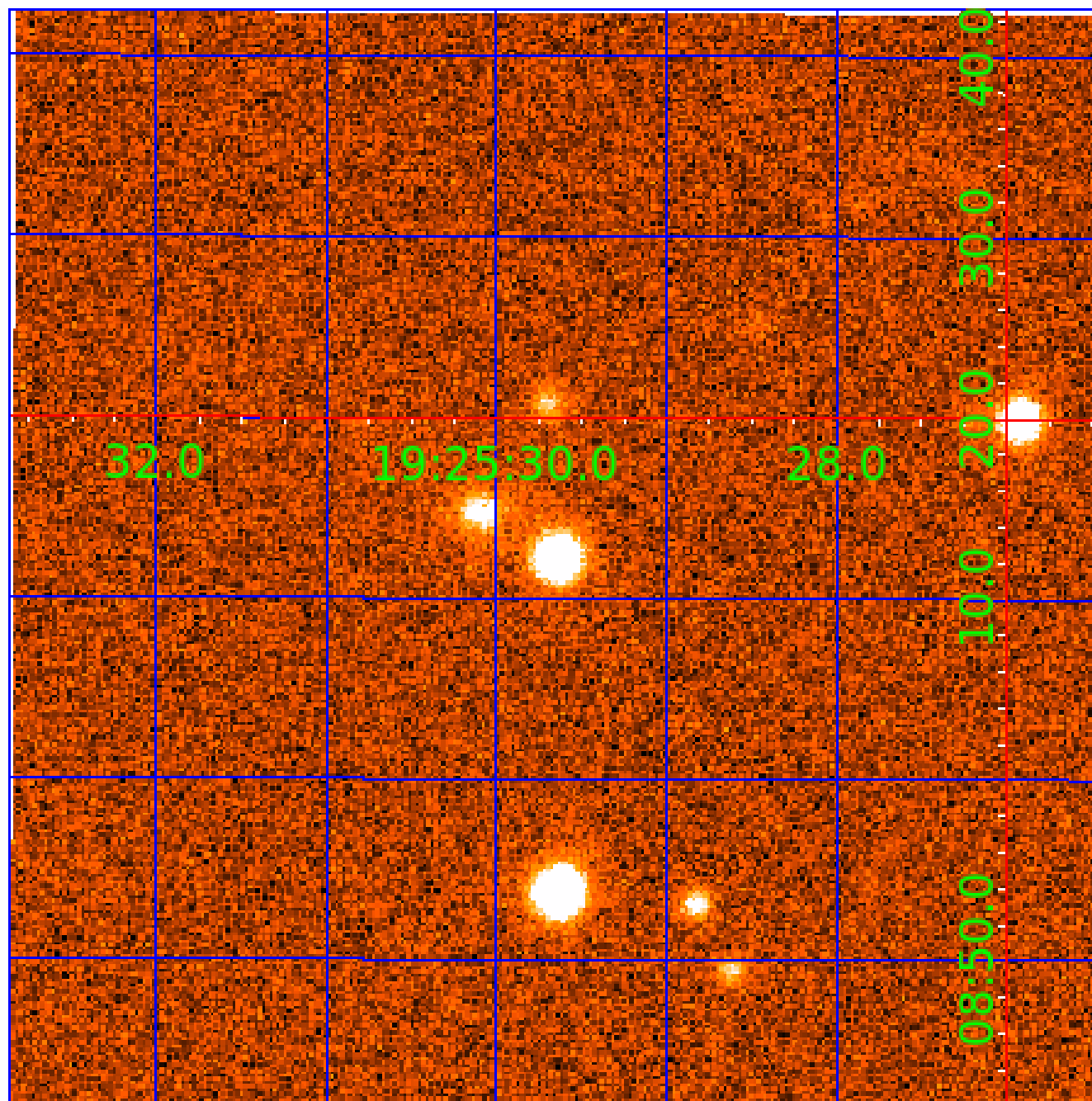


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012356914

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 012356914-01 | OBS | 7526.01 | 27.308296 | 143.494530 | 387044.7 | 3.000 | 6237.3 | -1.0 | 0.74 | 5541 | 40.32 | 17.78 |
| 012356914-02 | OBS | No | 27.308618 | 132.160772 | 55313.9 | 10.750 | 1294.3 | 1065.7 | 0.74 | 5541 | 19.11 | 17.78 |
| 012356914-03 | OBS | No | 9.102656 | 134.623706 | 25998.4 | 15.000 | 509.2 | -1.0 | 0.74 | 5541 | 11.84 | 76.93 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 012356914-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 012356914-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 012356914-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—RESIDUAL_TCE—CENT_NOFITS |

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 012356914-02

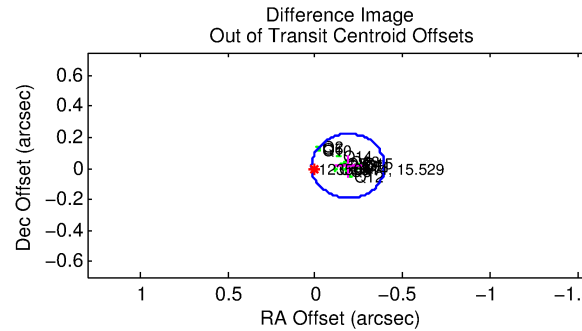
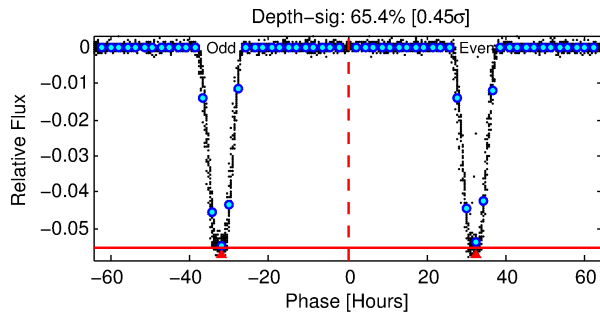
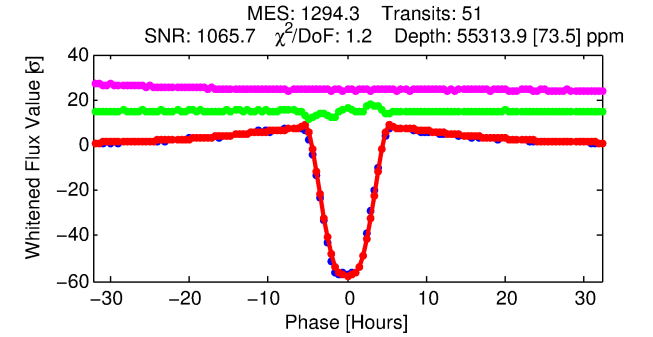
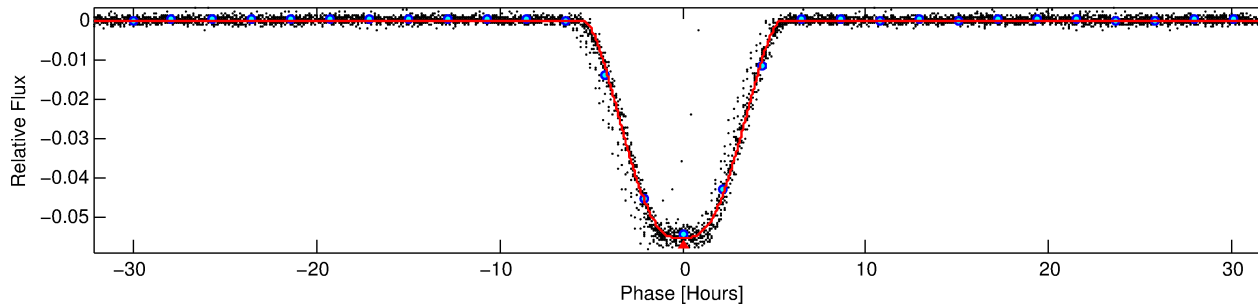
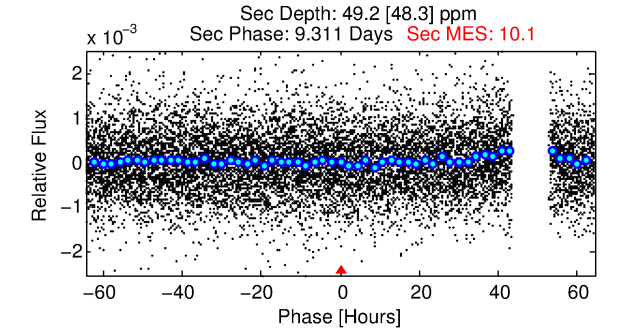
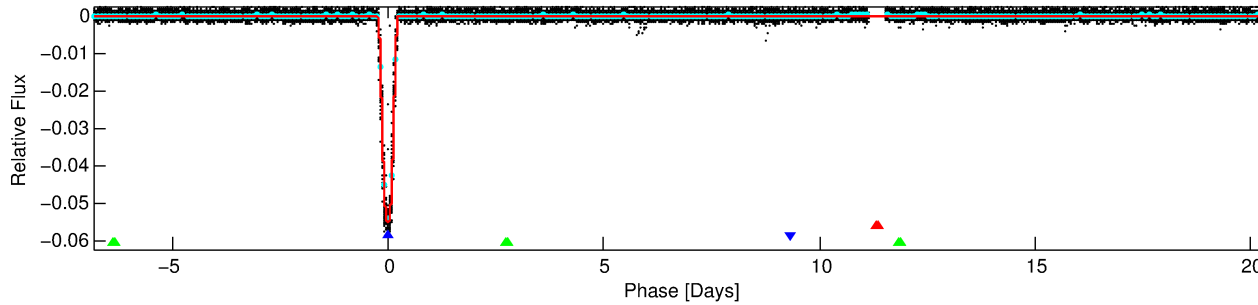
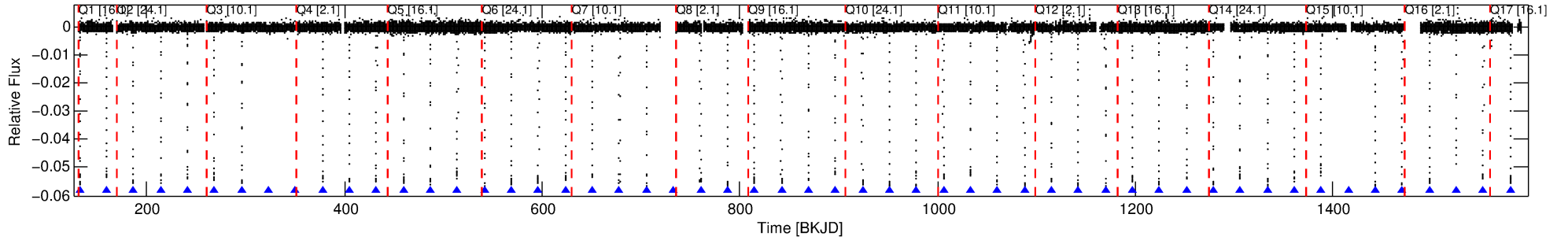
No Significant Match Found

DV One-Page Summary

KIC: 12356914 Candidate: 2 of 3 Period: 27.309 d

KOI: K07526 Corr: No Ephemeris Match

Kp: 15.53 R*: 0.74 Rs Teff: 5541.0 K Logg: 4.57 Fe/H: -0.600



DV Fit Results:

Period = 27.30862 [0.00001] d
Epoch = 132.1608 [0.0002] BKJD
Rp/R* = 0.2370 [0.0003]
a/R* = 19.23 [0.03]
b = 0.74 [0.00]
Seff = 17.78 [4.04]
Teq = 524 [30] K
Rp = 19.11 [3.28] Re
a = 0.1611 [0.0219] AU
Ag = 1.92 [1.92] [0.48σ]
Teffp = 953 [236] K [1.81σ]

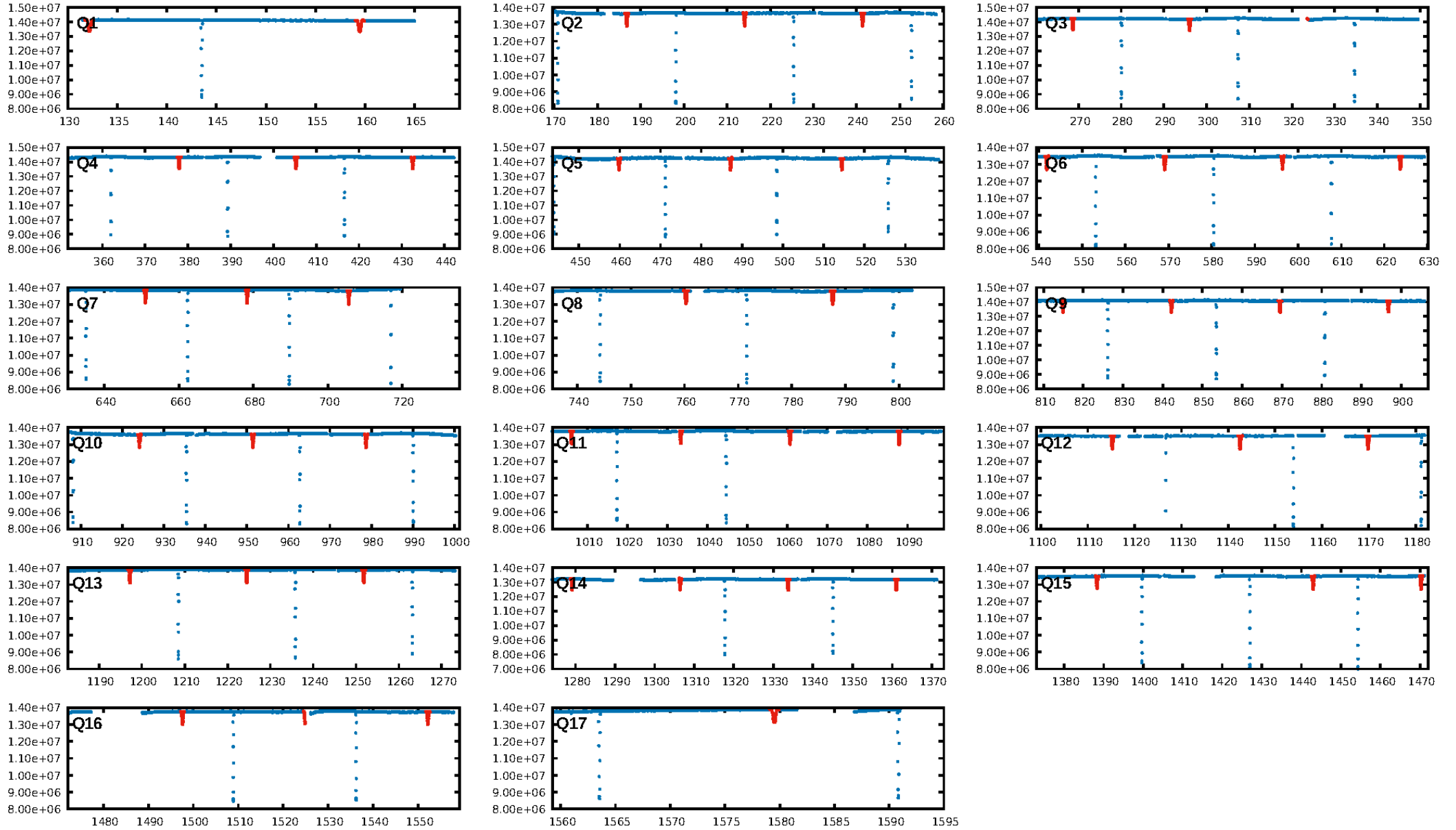
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 11.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [48/48]
GhostDiagnostic-chr: 2.838
Centroid-sig: 0.0%
Centroid-so: 0.534 arcsec [68.27σ]
OotOffset-rm: 0.188 arcsec [2.71σ]
KicOffset-rm: 0.210 arcsec [3.00σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

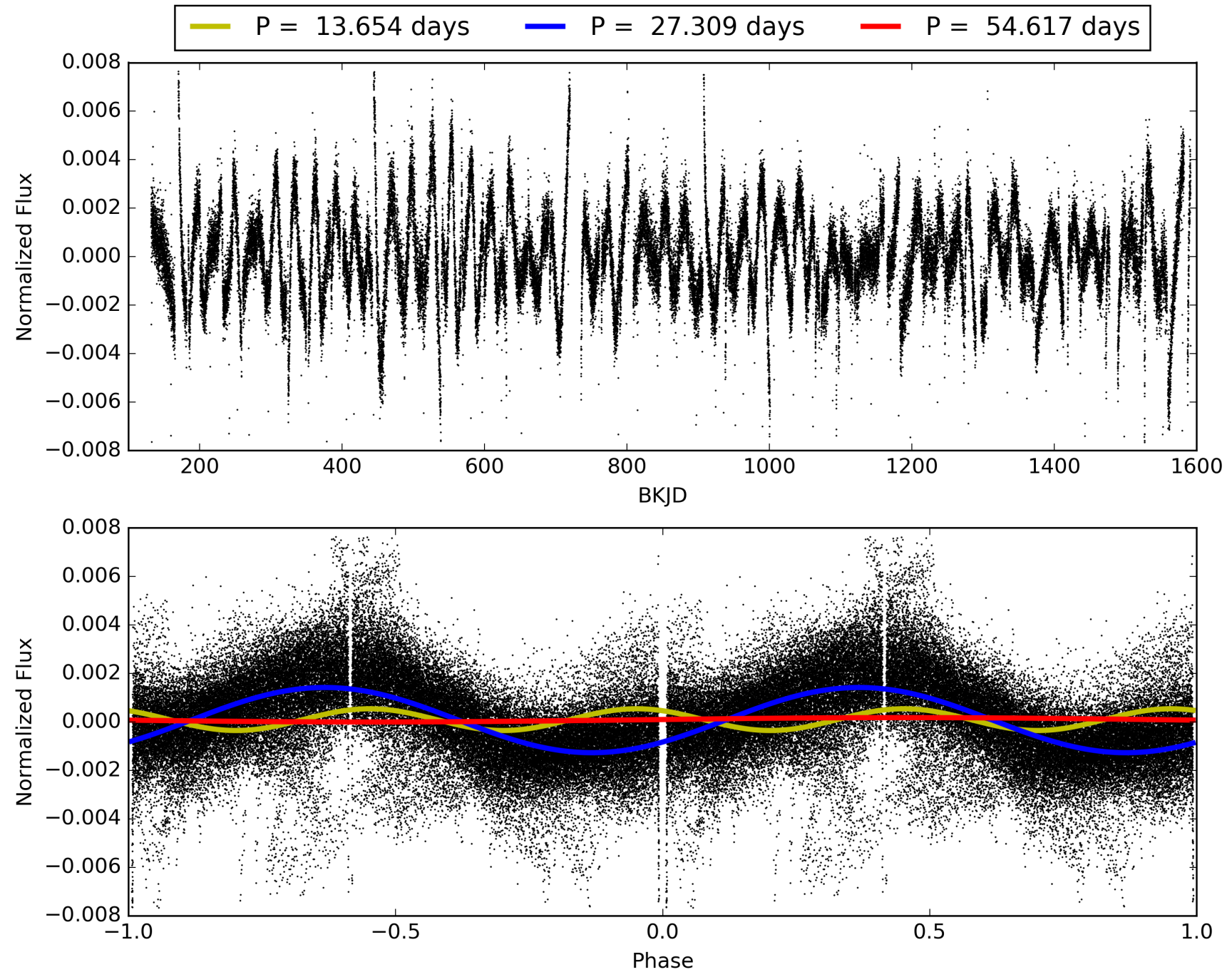
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:25:20 Z

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

TCE 012356914-02, PDC Light Curves

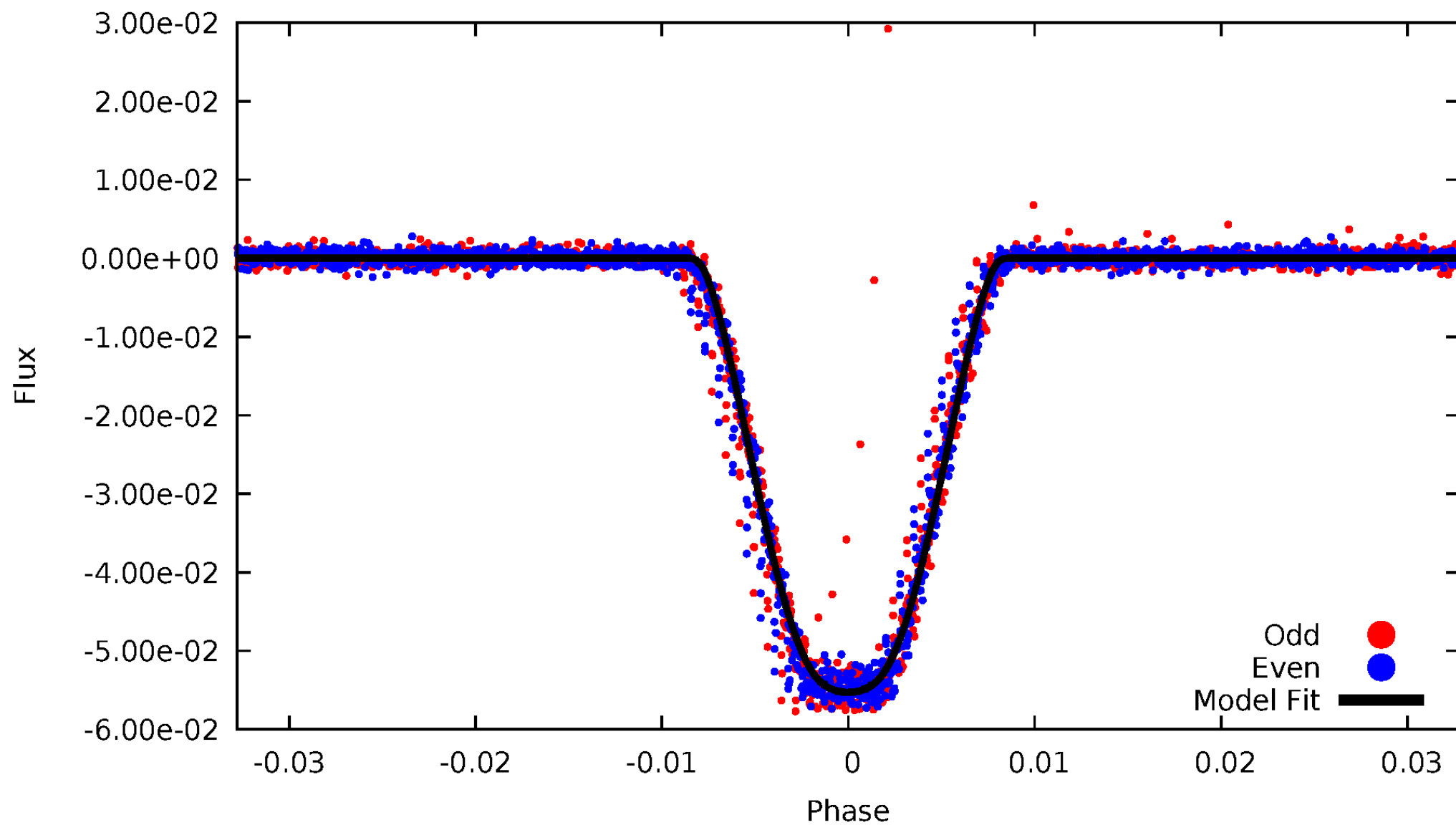


TCE 012356914-02



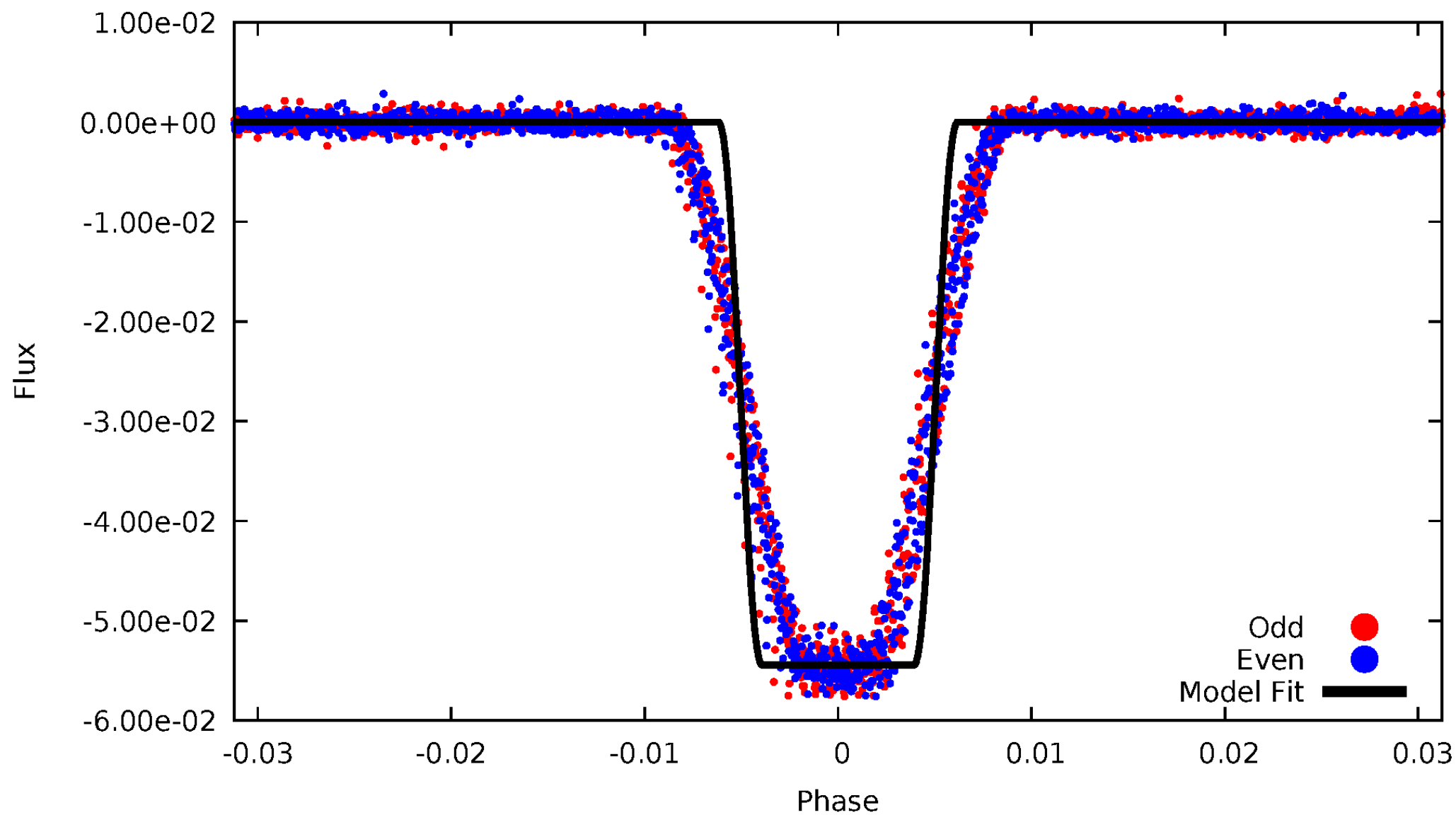
DV Odd/Even

TCE 012356914-02



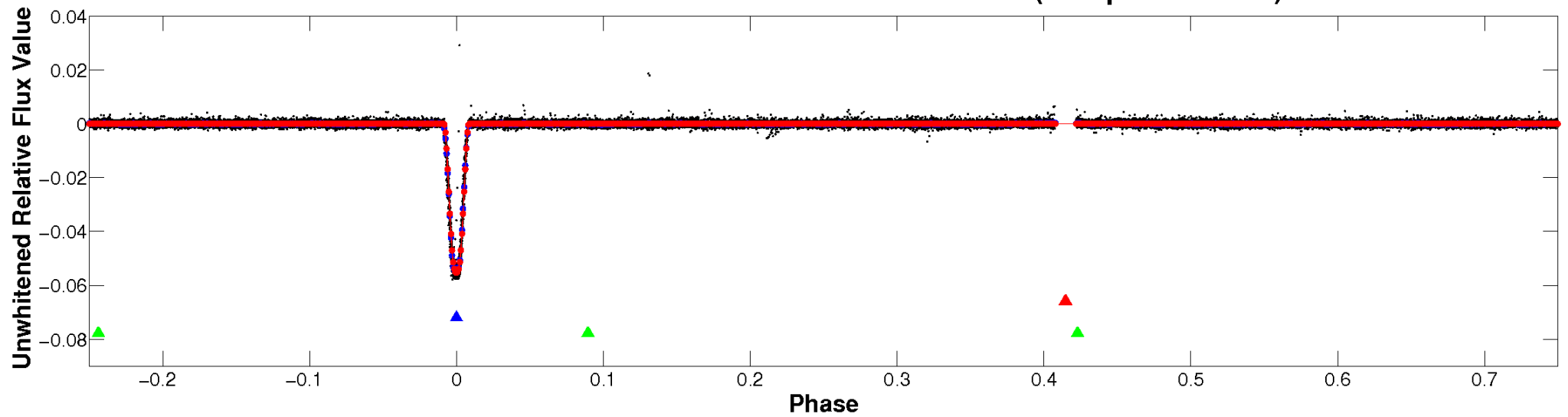
ALT Odd/Even

TCE 012356914-02

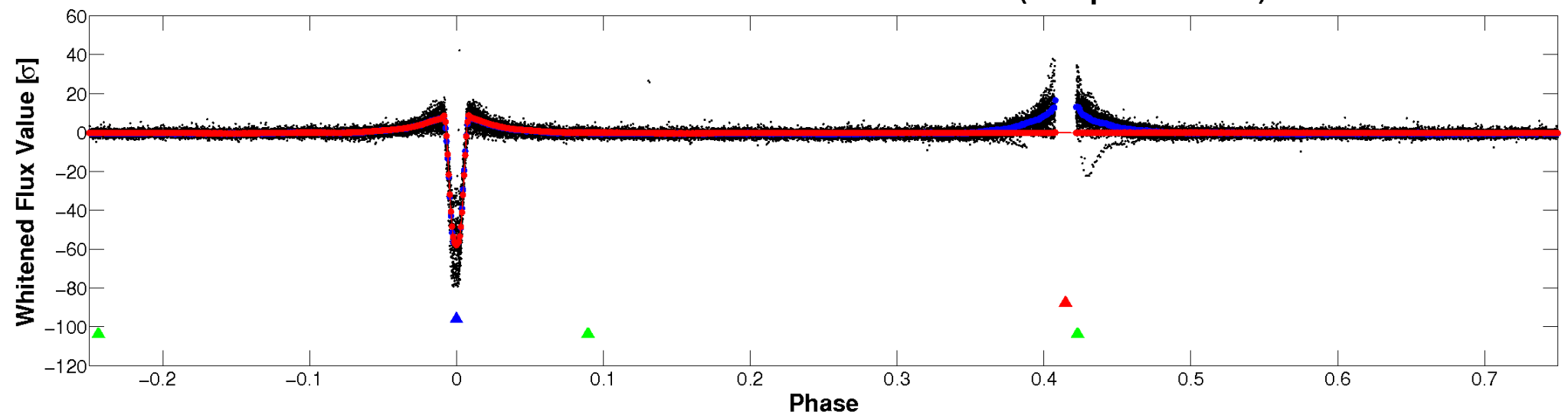


Non-Whitened Vs. Whitened Light Curve

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

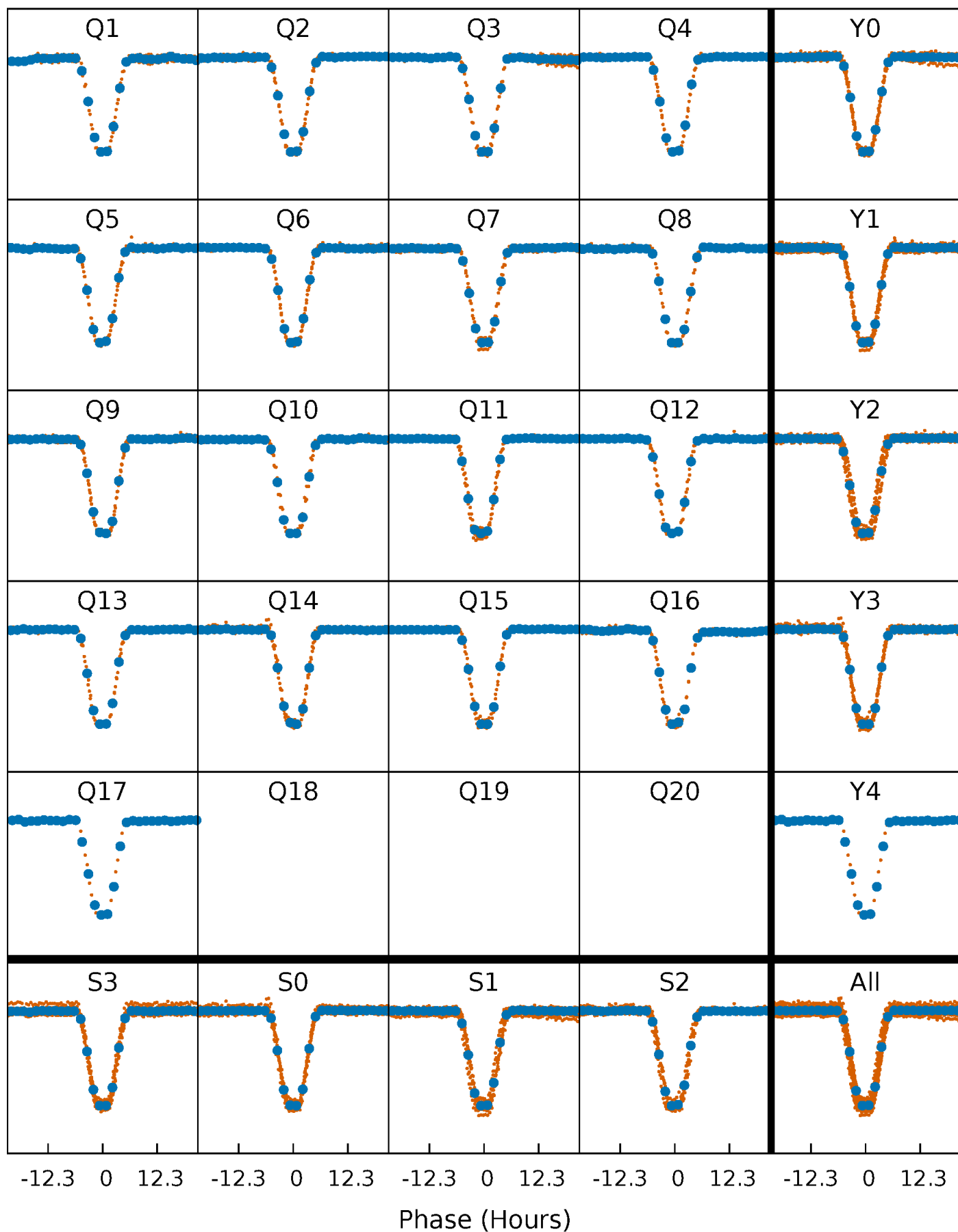


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



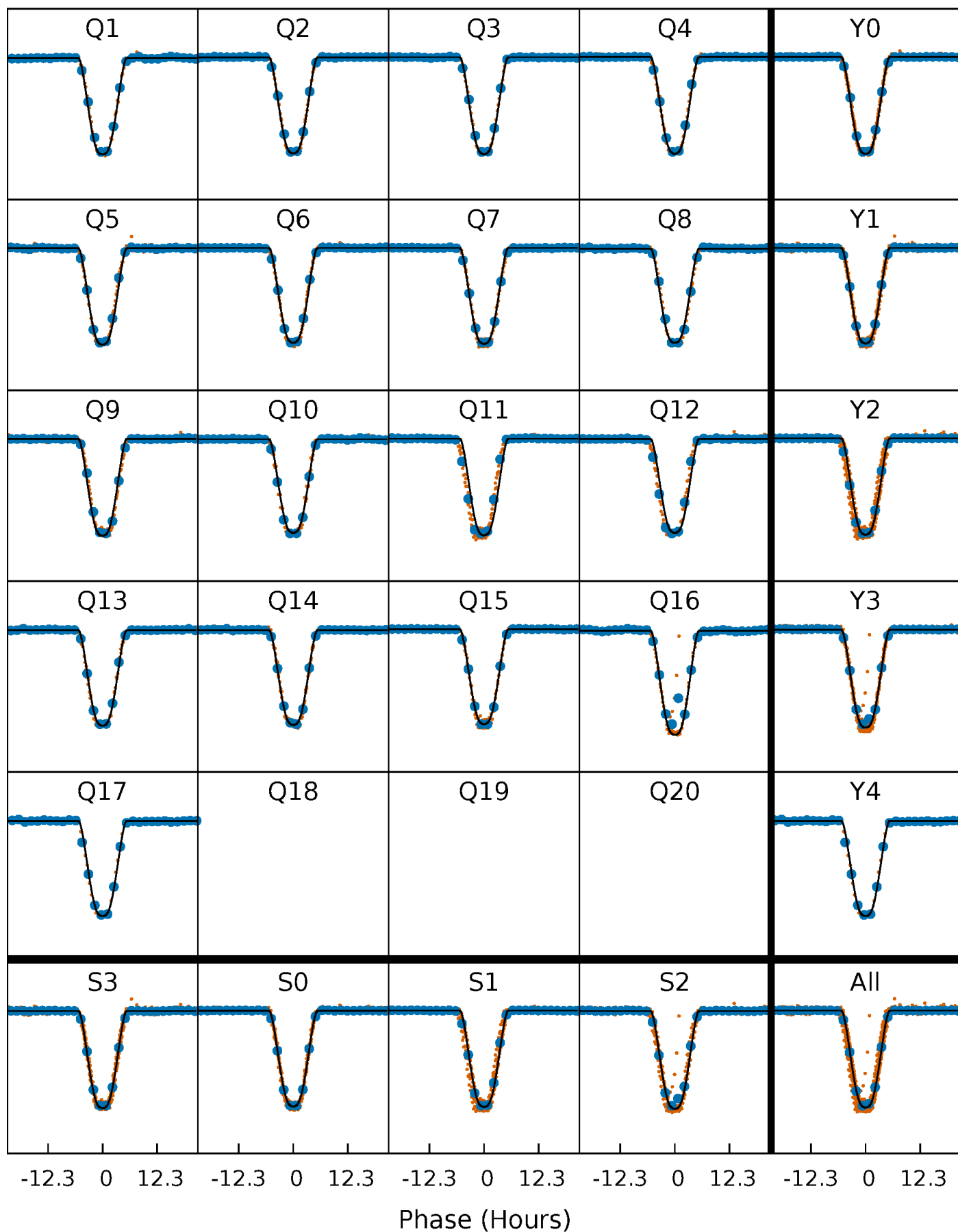
PDC Quarter-Phased Transit Curves

TCE 012356914-02 P= 27.308618 Days $T_0=132.160772$ (BKJD)



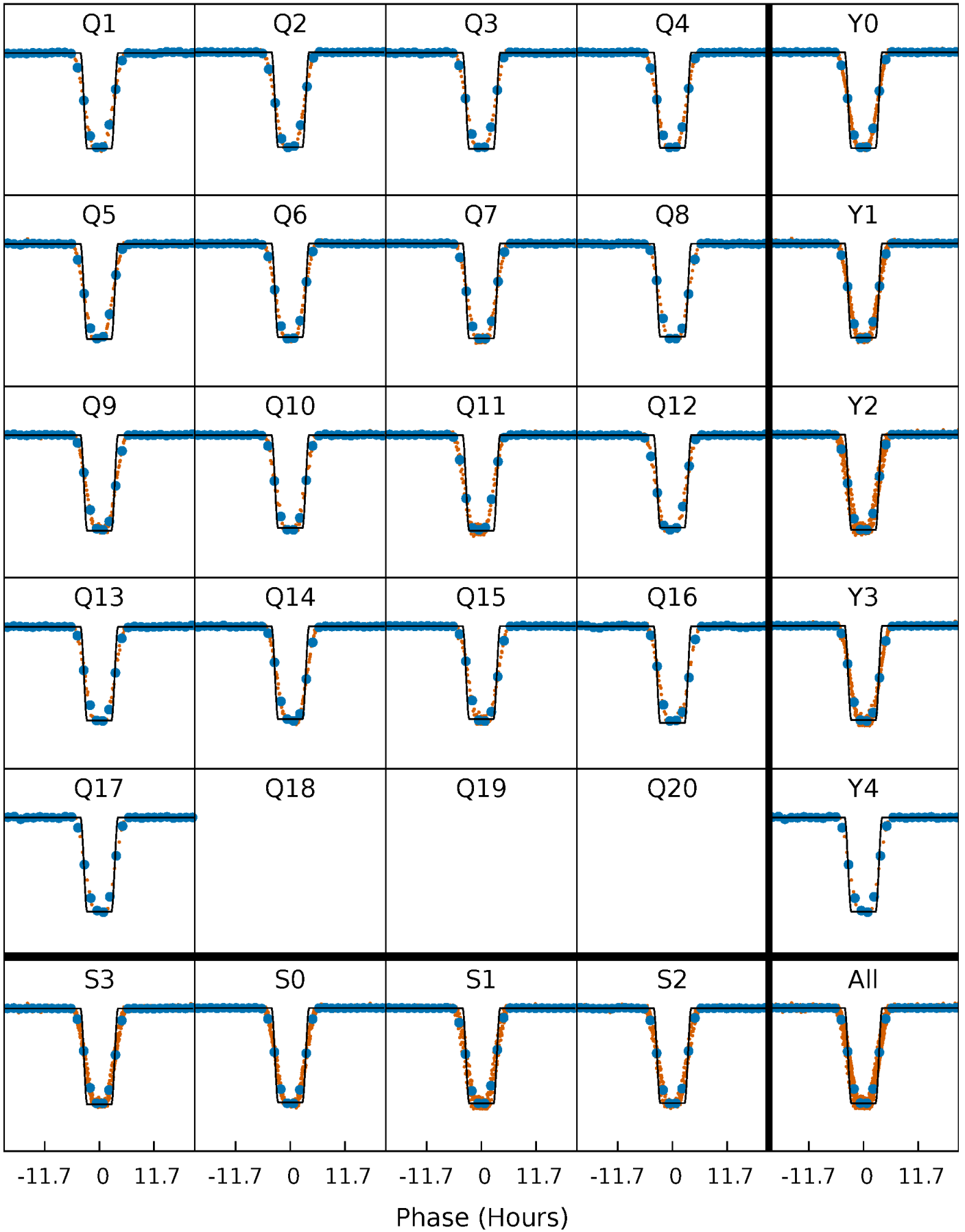
DV Quarter-Phased Transit Curves

TCE 012356914-02 P= 27.308618 Days $T_0=132.160772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

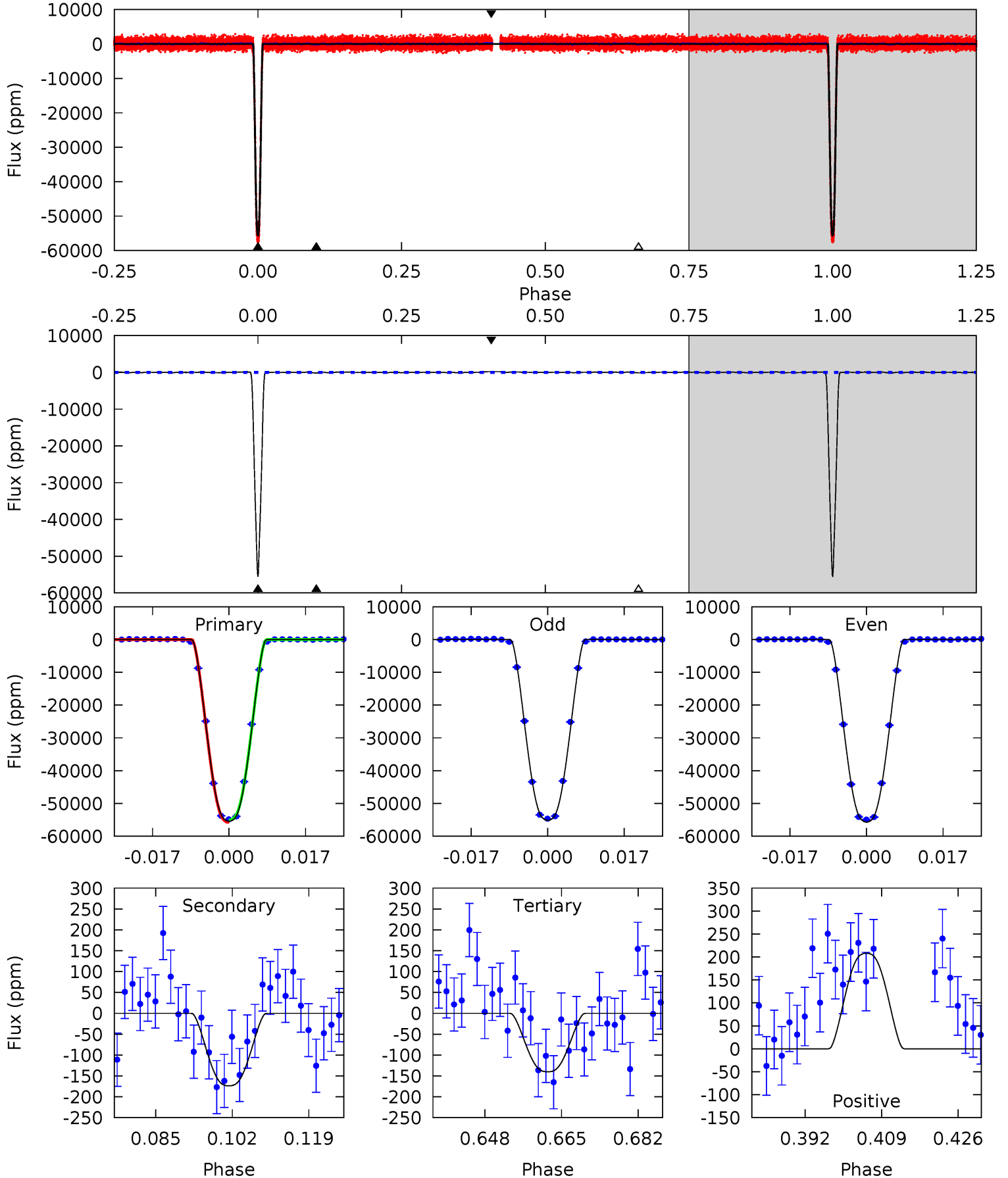
TCE 012356914-02 P= 27.308203 Days $T_0=132.168080$ (BKJD)



DV Model-Shift Uniqueness Test

012356914-02, P = 27.308618 Days, E = 104.852154 Days

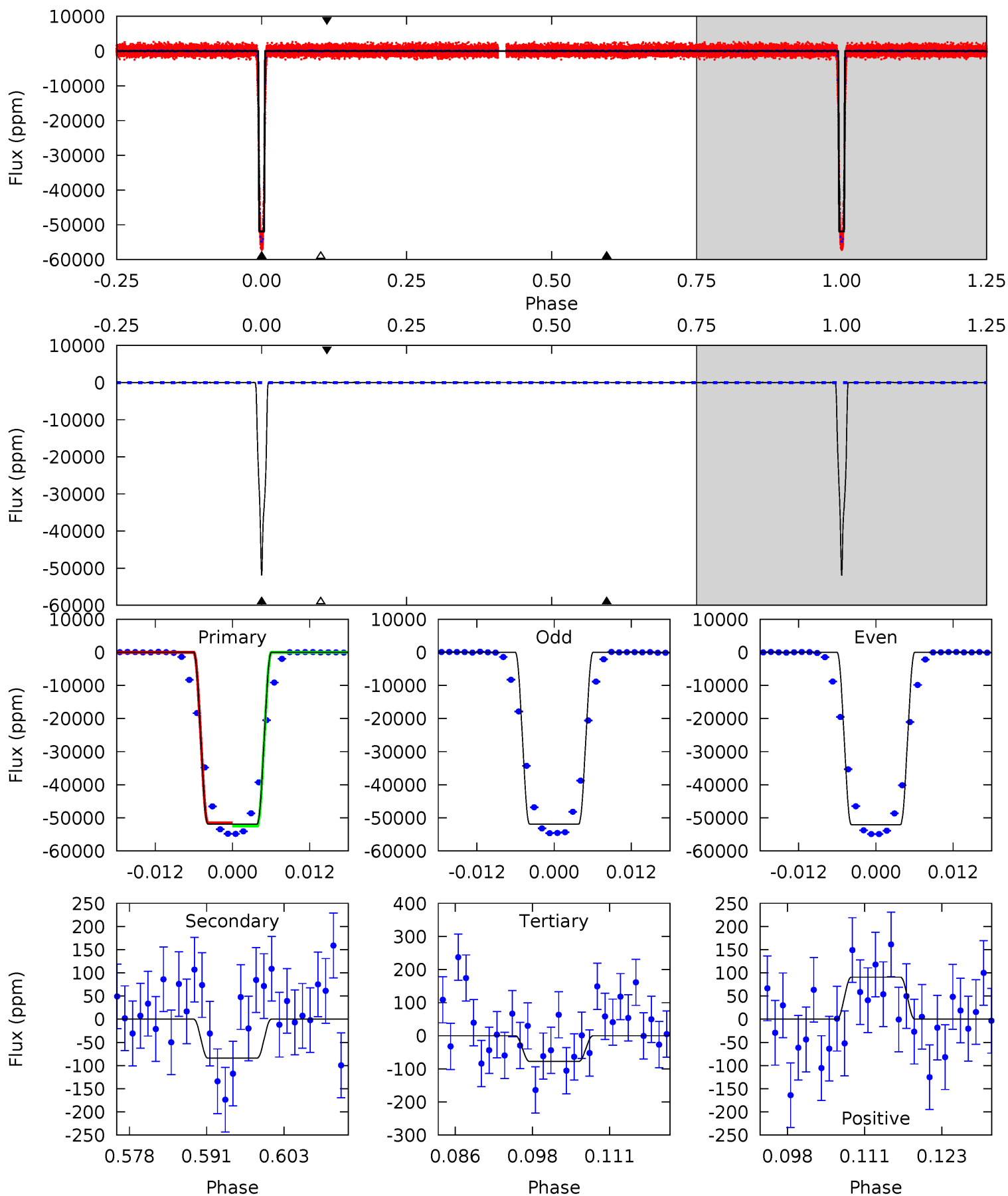
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2401 | 7.53 | 6.07 | 9.01 | 4.92 | 2.39 | 2.18 | 2394 | 2392 | 1.46 | -1.48 | 11.5 | 0.99 | 0.00 | 14.6 |



Alt Model-Shift Uniqueness Test

012356914-02, P = 27.308203 Days, E = 104.859877 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1824 | 2.95 | 2.73 | 3.19 | 4.99 | 2.50 | 1.00 | 1822 | 1821 | 0.22 | -0.23 | 3.10 | 1.00 | 0.00 | 18.3 |



Stellar Parameters For KIC 012356914

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (g \cdot \text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--------------------------------------|
| | 5541^{+180}_{-163} | $4.574^{+0.064}_{-0.096}$ | $-0.600^{+0.300}_{-0.300}$ | $0.739^{+0.127}_{-0.068}$ | $0.747^{+0.088}_{-0.052}$ | $2.604^{+0.697}_{-0.778}$ |
| | +3%/-3% | +1%/-2% | +50%/-50% | +17%/-9% | +12%/-7% | +27%/-30% |
| Source | PHO1 | 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 012356914-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|-------------------------|-------------------|---------------------|---------------------------|
| DV | -174 ± 23 | $19.20^{+1.82}_{-0.94}$ | 737^{+35}_{-30} | 2232^{+49}_{-50} | $6.675^{+1.274}_{-1.239}$ |
| Alt. | -84 ± 28 | $18.87^{+1.69}_{-0.90}$ | 736^{+36}_{-31} | 2057^{+75}_{-101} | $3.342^{+1.130}_{-1.212}$ |

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 $A_{obs} \gg 1.0$

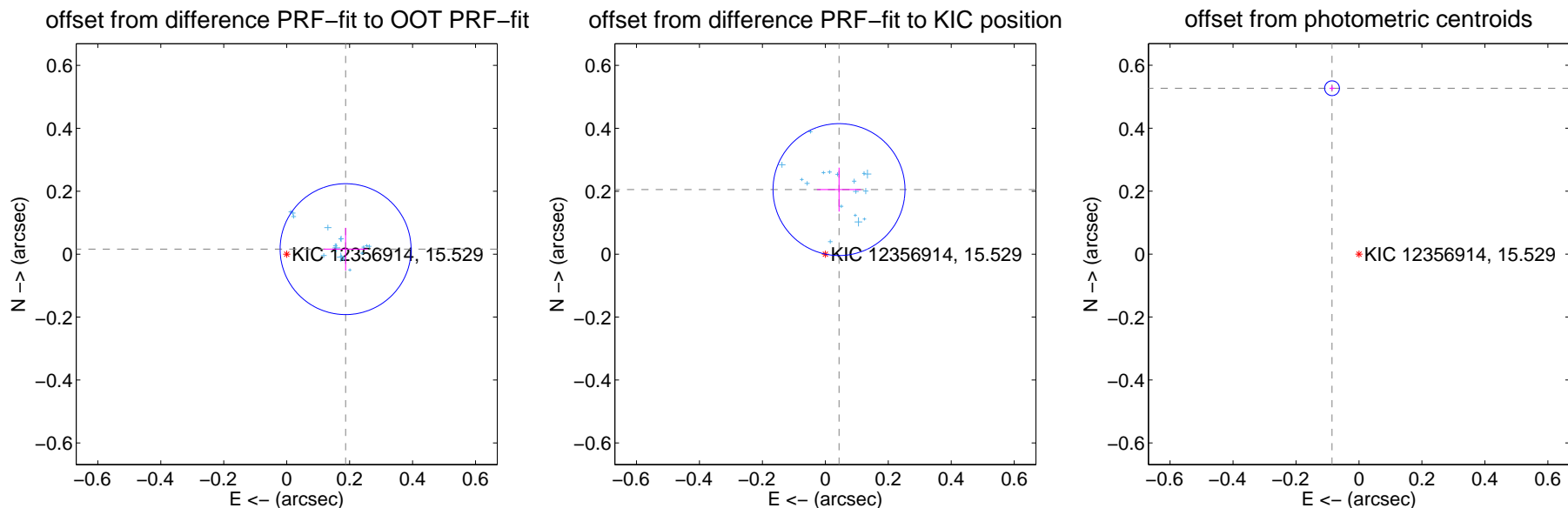
DV Centroid Data

Supplemental centroid analysis for 012356914-02. Kepler magnitude: 15.53. Transit SNR 1065.72

There are 17 quarters with good PRF difference image offsets

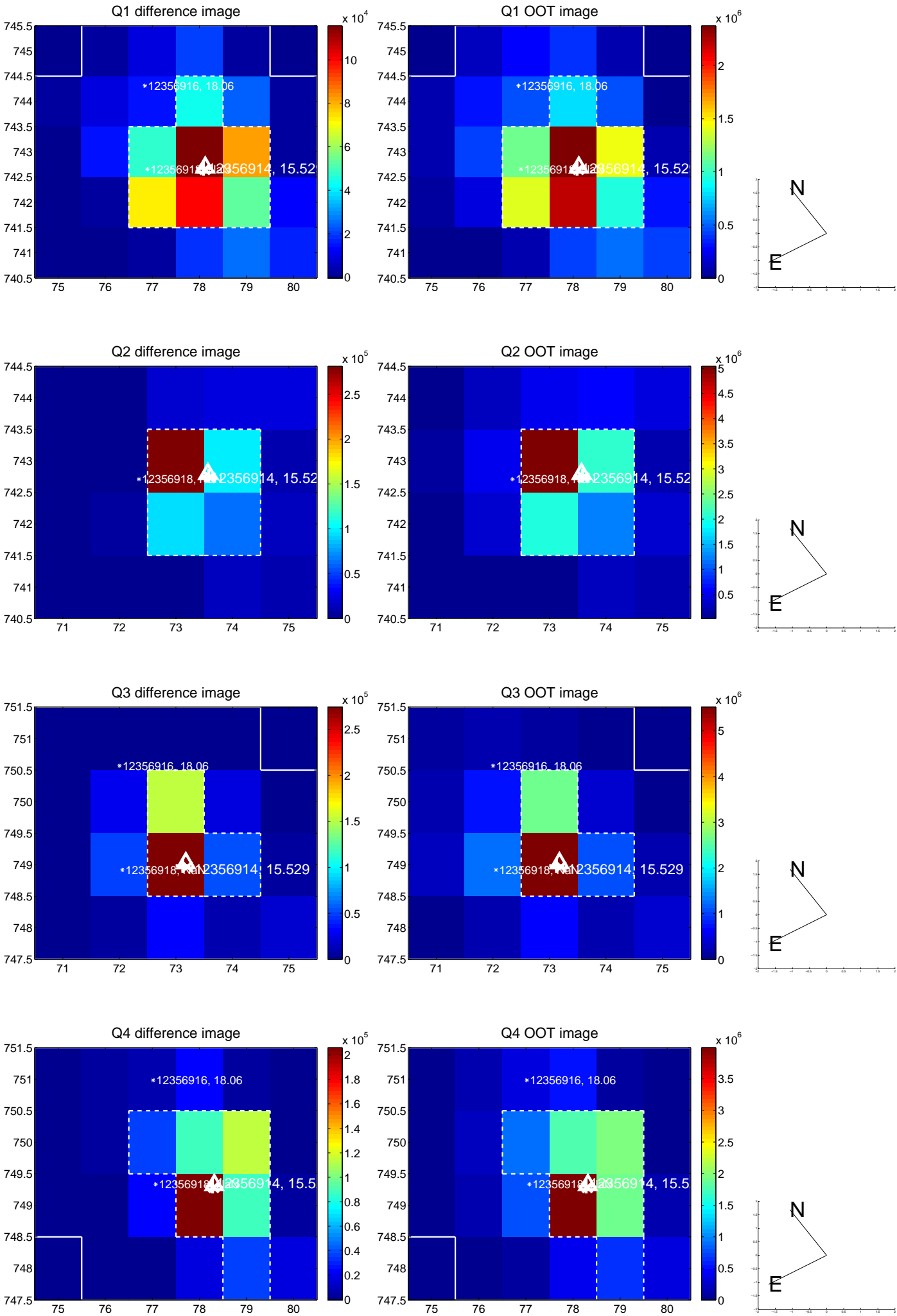
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.188 ± 0.069 | 2.71 | -0.187 ± 0.070 | 0.016 ± 0.068 |
| PRF-fit source offset from KIC position | 0.210 ± 0.070 | 3.00 | -0.043 ± 0.070 | 0.205 ± 0.070 |
| photometric centroid source offset | 0.53 ± 0.01 | 68.27 | 0.09 ± 0.01 | 0.53 ± 0.01 |

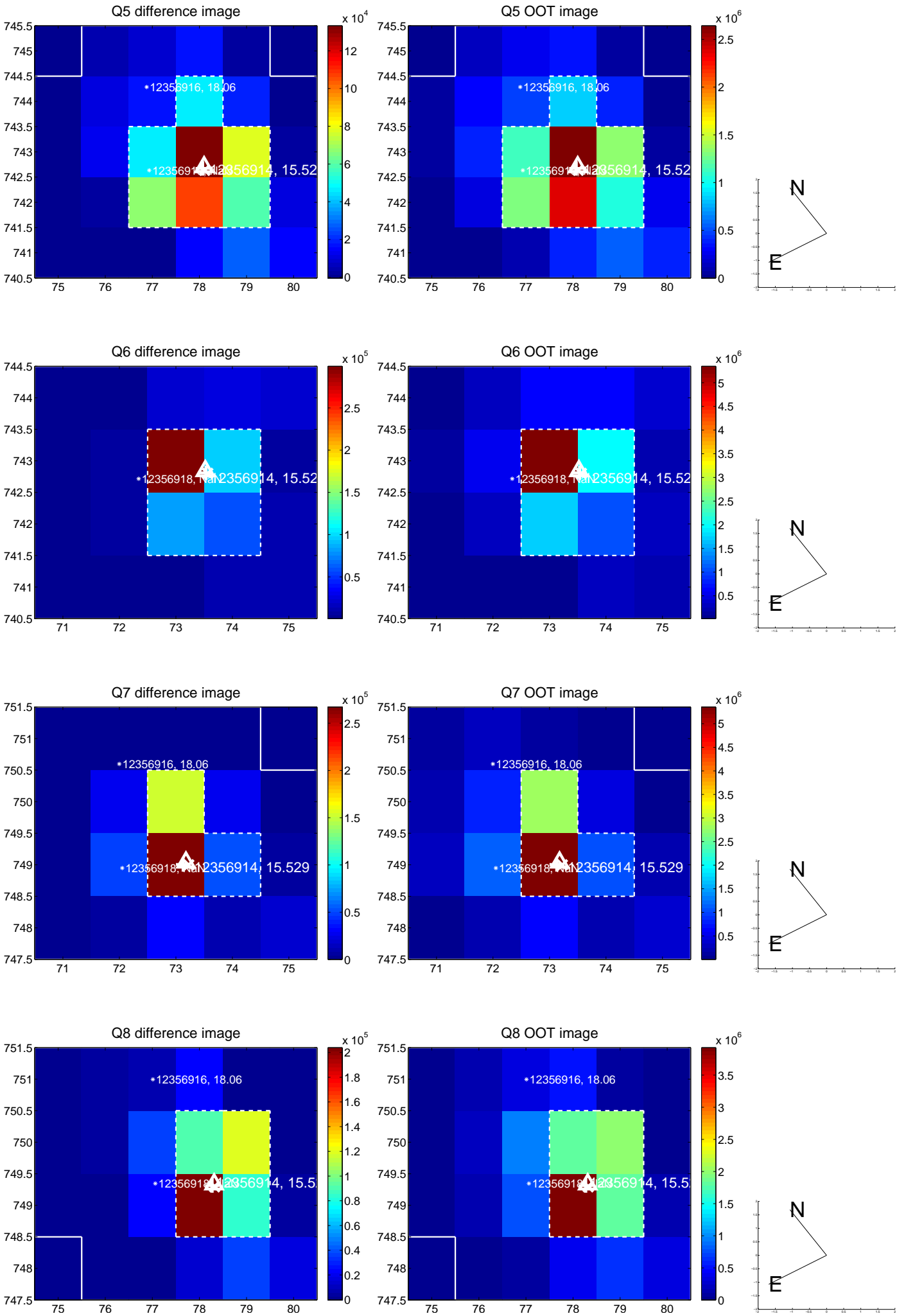


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

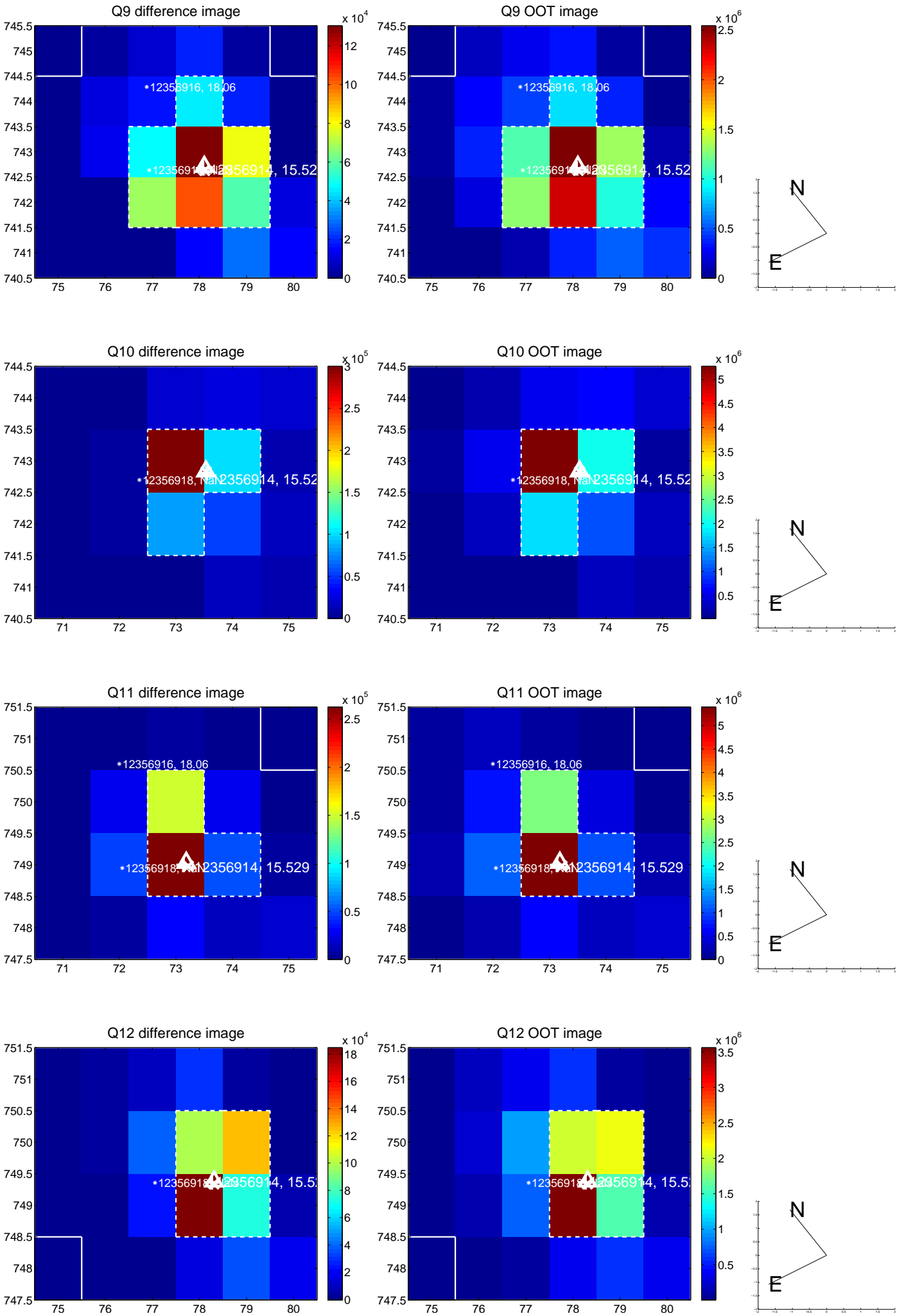
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



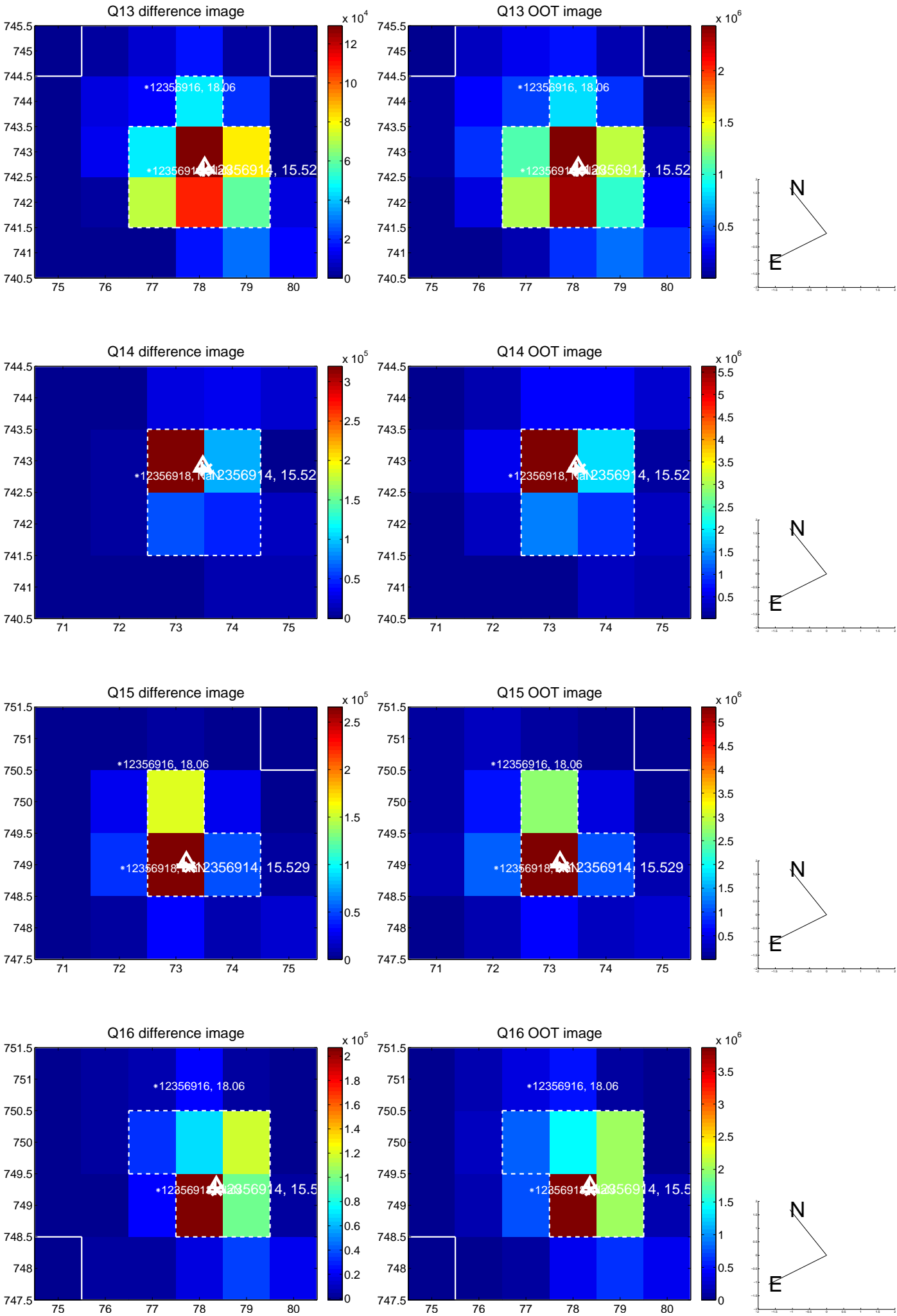
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



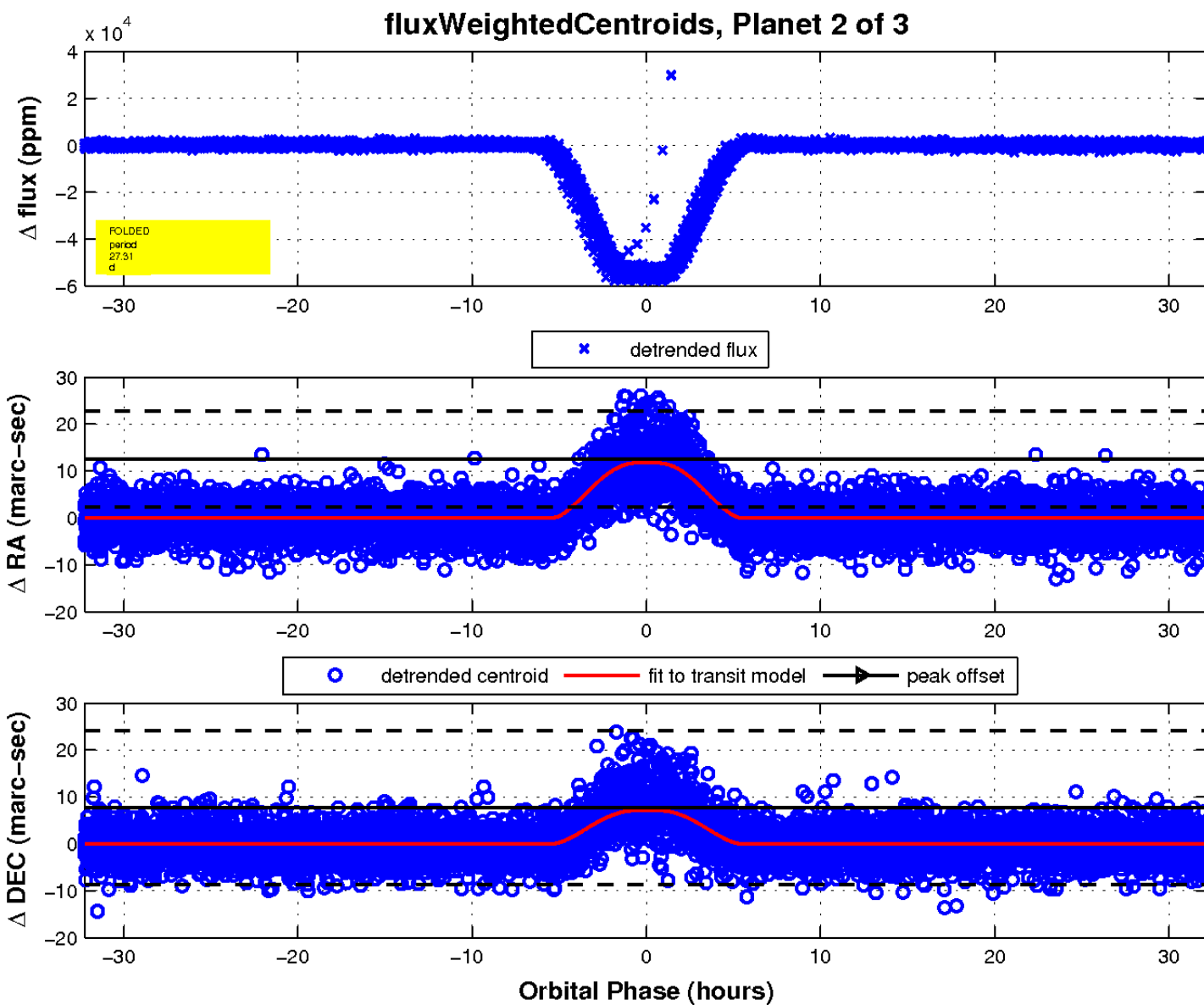
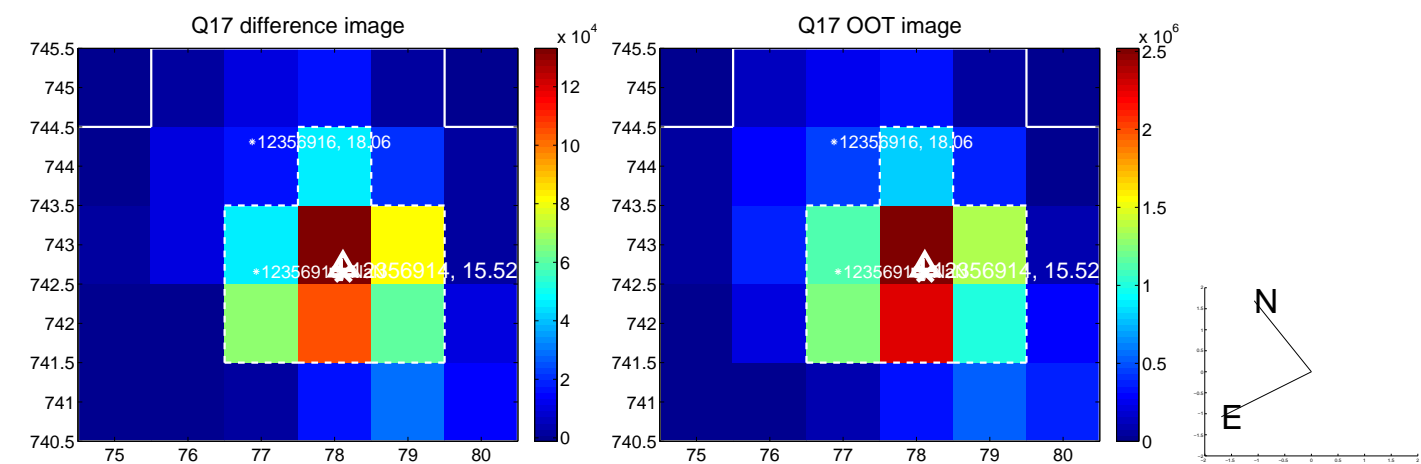
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

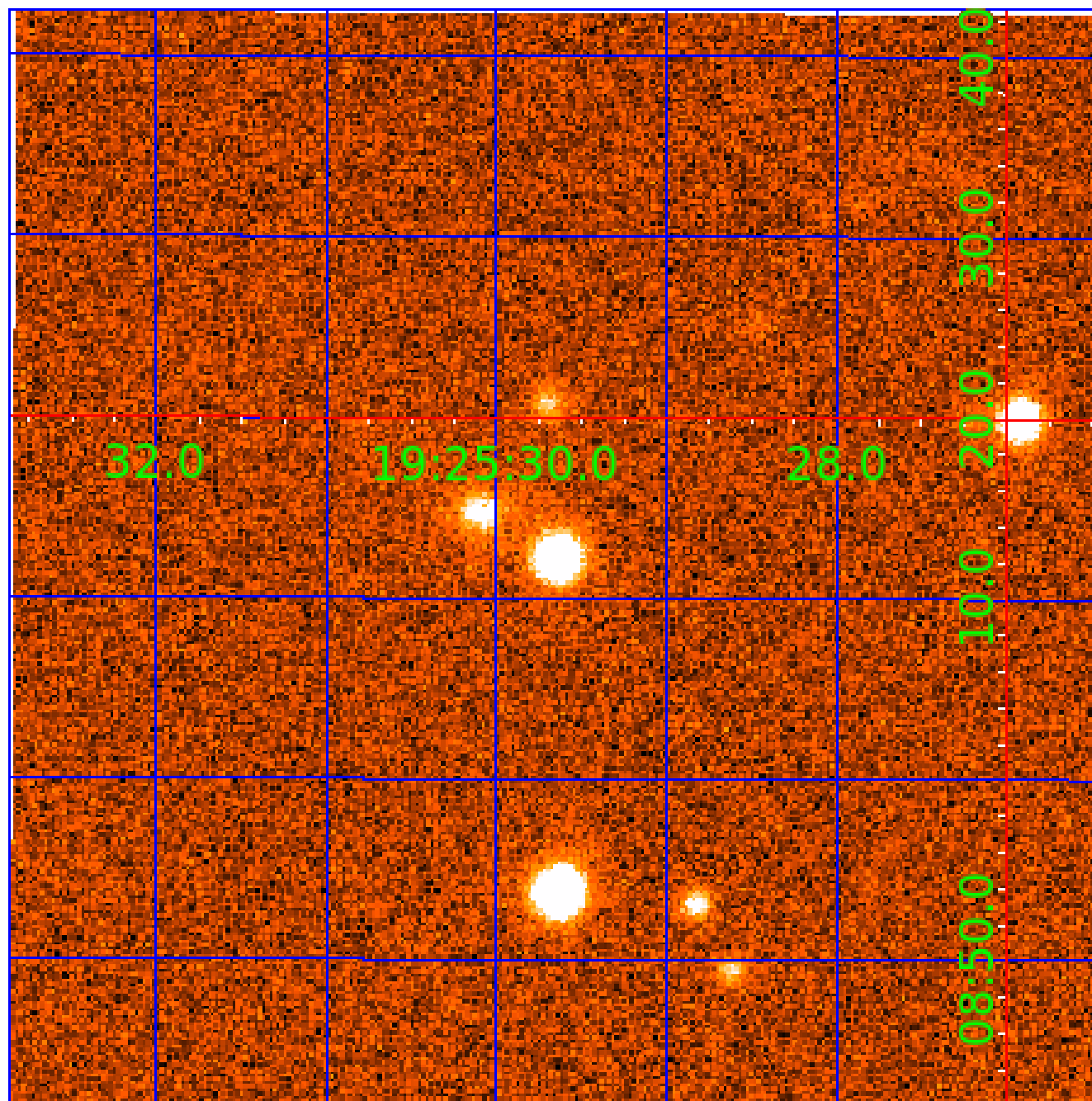


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012356914

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 012356914-01 | OBS | 7526.01 | 27.308296 | 143.494530 | 387044.7 | 3.000 | 6237.3 | -1.0 | 0.74 | 5541 | 40.32 | 17.78 |
| 012356914-02 | OBS | No | 27.308618 | 132.160772 | 55313.9 | 10.750 | 1294.3 | 1065.7 | 0.74 | 5541 | 19.11 | 17.78 |
| 012356914-03 | OBS | No | 9.102656 | 134.623706 | 25998.4 | 15.000 | 509.2 | -1.0 | 0.74 | 5541 | 11.84 | 76.93 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 012356914-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS |
| 012356914-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |
| 012356914-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—RESIDUAL_TCE—CENT_NOFITS |

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.

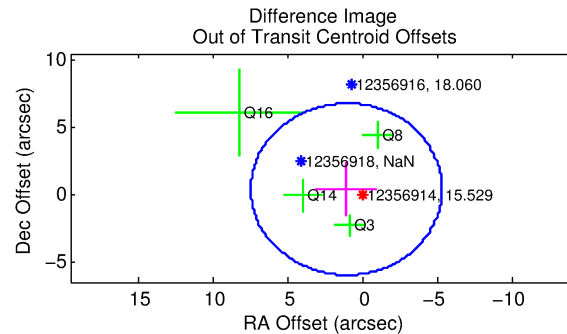
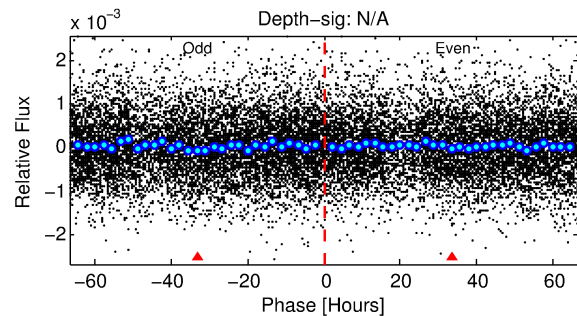
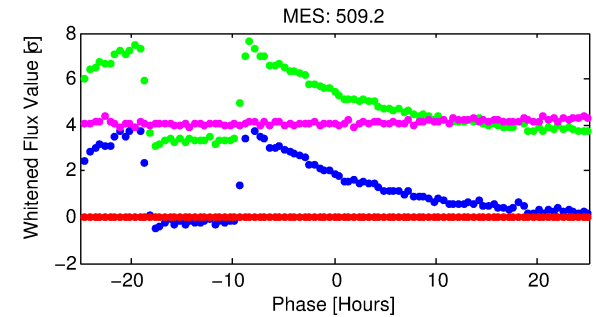
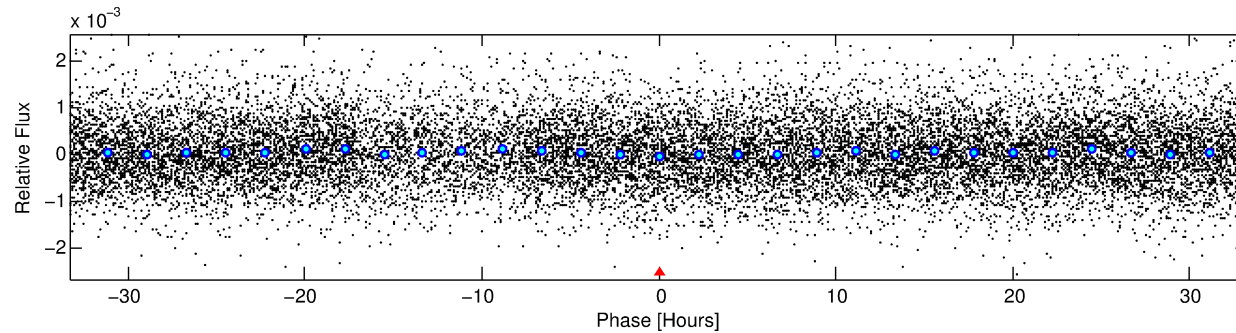
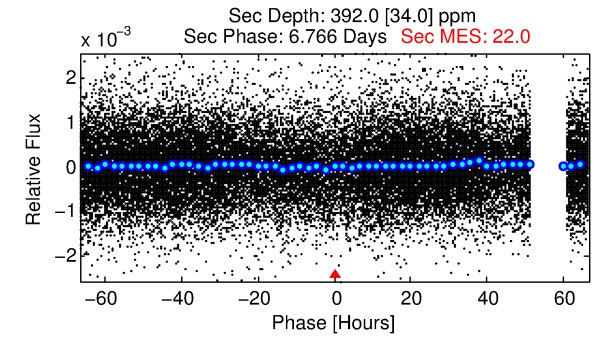
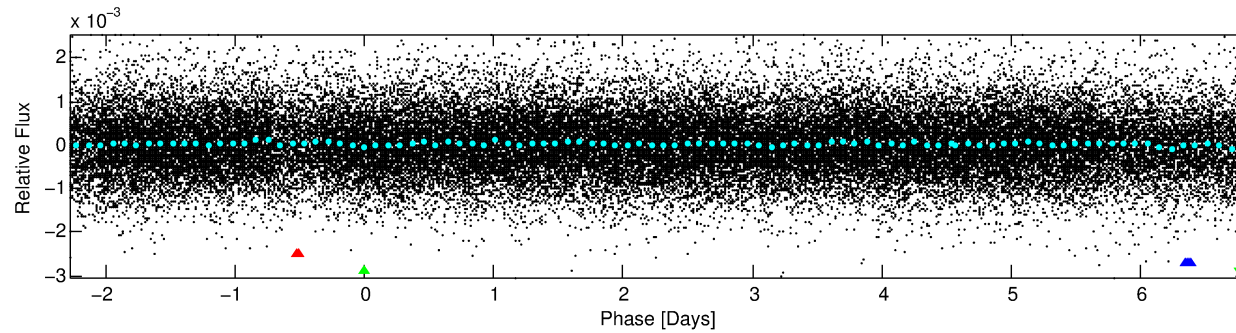
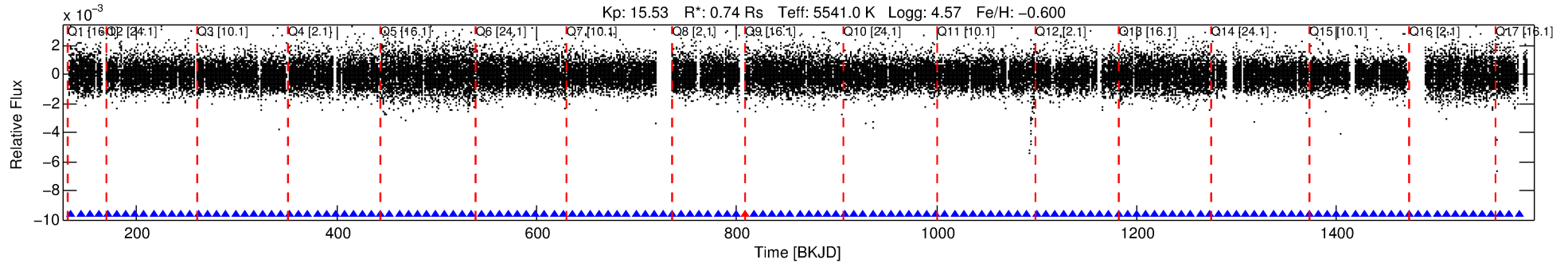
Ephemeris Match Information For 012356914-03

No Significant Match Found

DV One-Page Summary

KIC: 12356914 Candidate: 3 of 3 Period: 9.103 d

KOI: K07526 Corr: No Ephemeris Match



TPS TCE Results:

Period = 9.10266 d

Epoch = 134.6237 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: N/A

LongPeriod-sig: 100.0% [28.56σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: 0.00e+00

RollingBand-fgt: 0.99 [141/142]

GhostDiagnostic-chr: -3.254

Centroid-sig: 37.7%

Centroid-so: 3.328 arcsec [1.24σ]

OotOffset-rm: 1.117 arcsec [0.52σ]

KicOffset-rm: 1.369 arcsec [0.55σ]

OotOffset-st: 1/1/2/0 [4]

KicOffset-st: 1/1/2/0 [4]

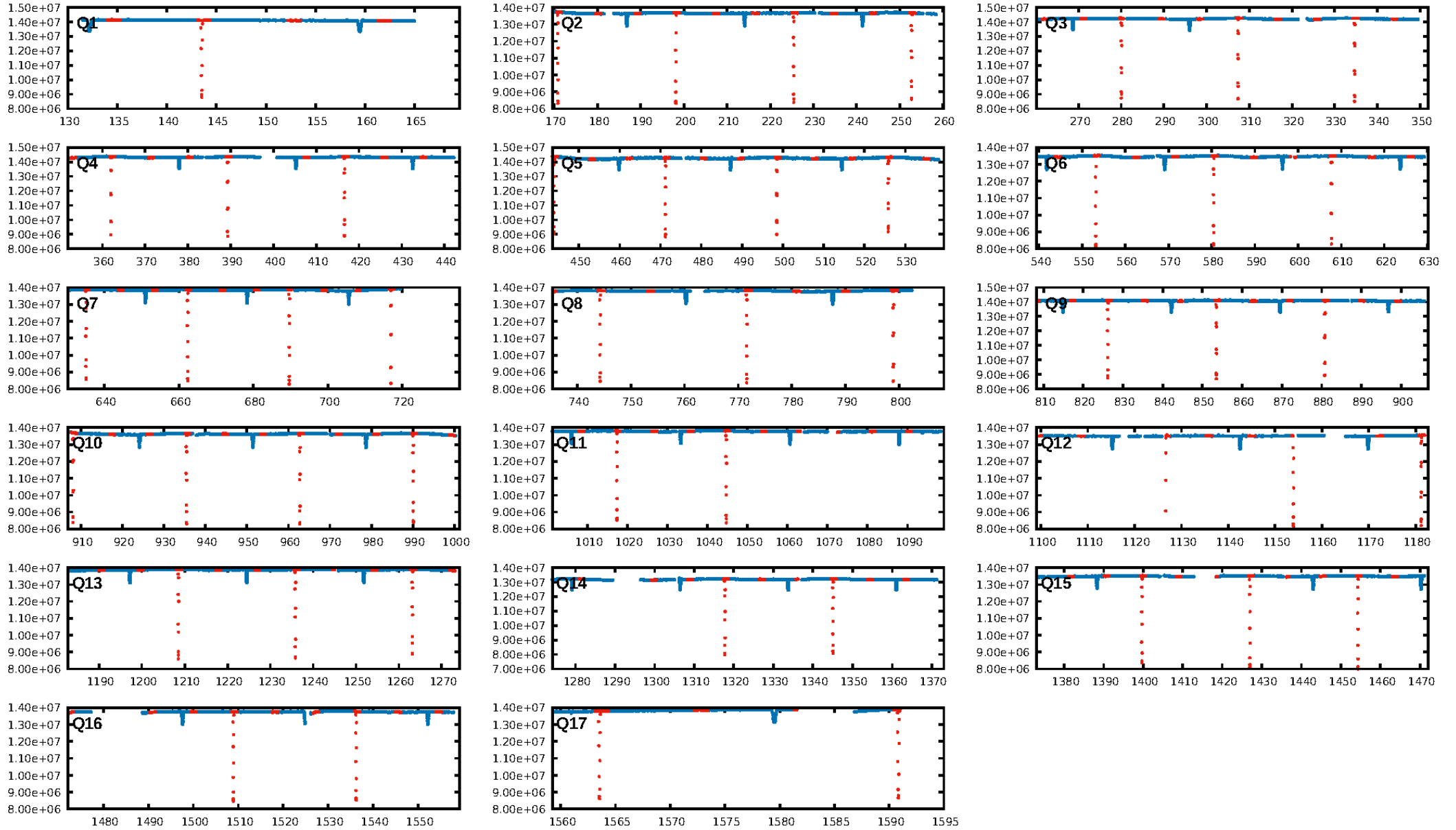
DiffImageQuality-fgm: 0.00 [0/4]

DiffImageOverlap-fno: 1.00 [17/17]

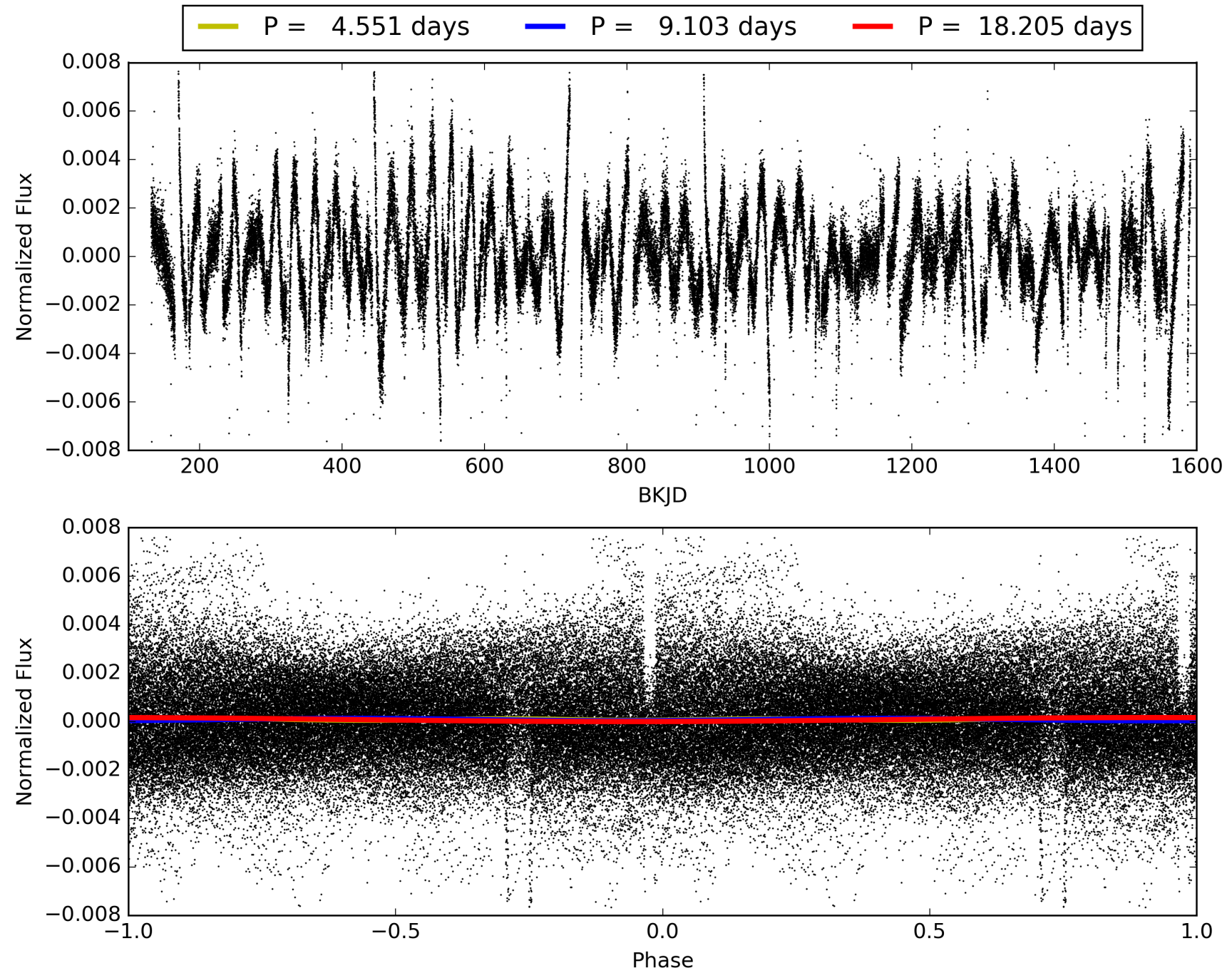
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:25:26 Z

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

TCE 012356914-03, PDC Light Curves

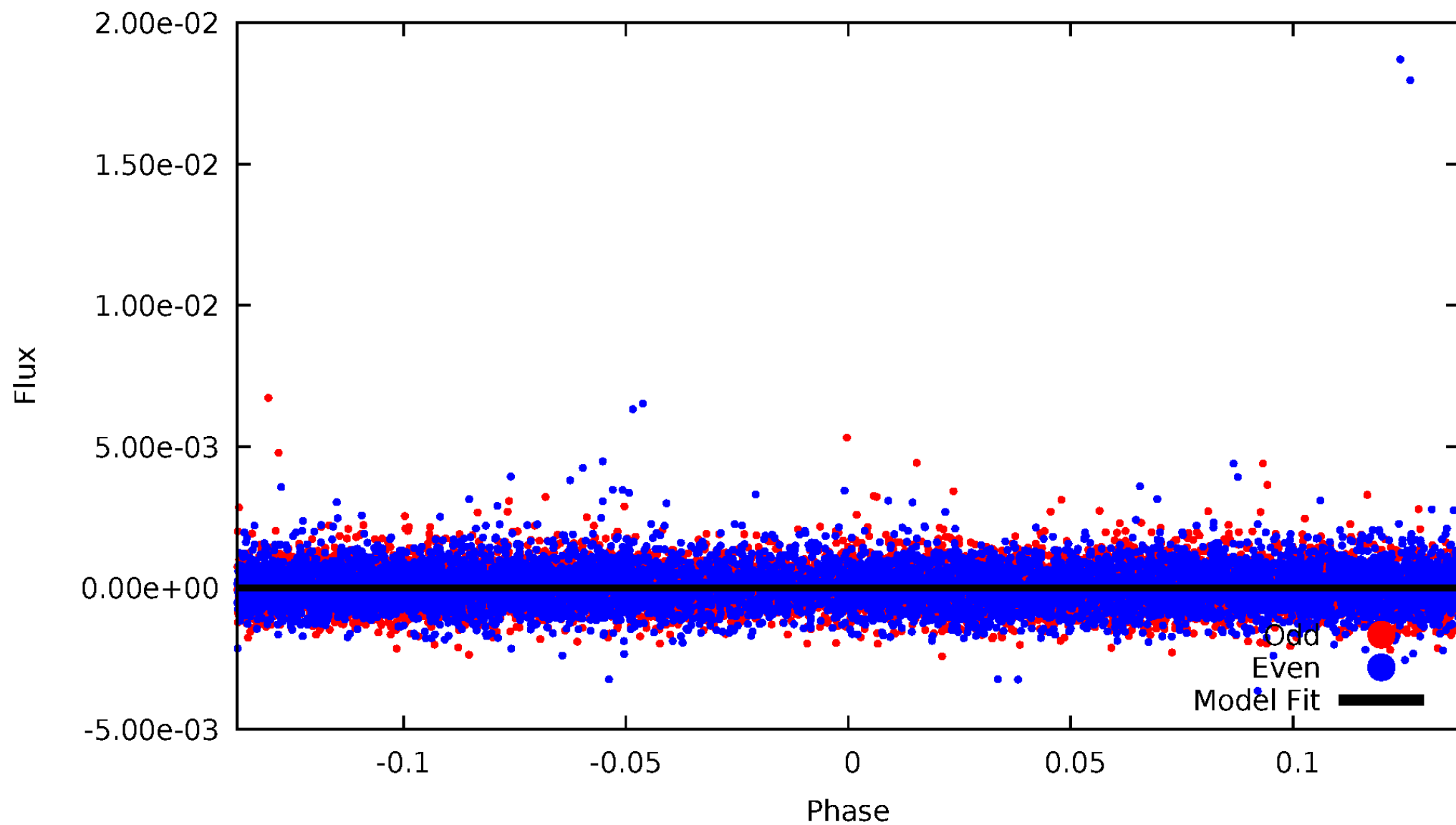


TCE 012356914-03



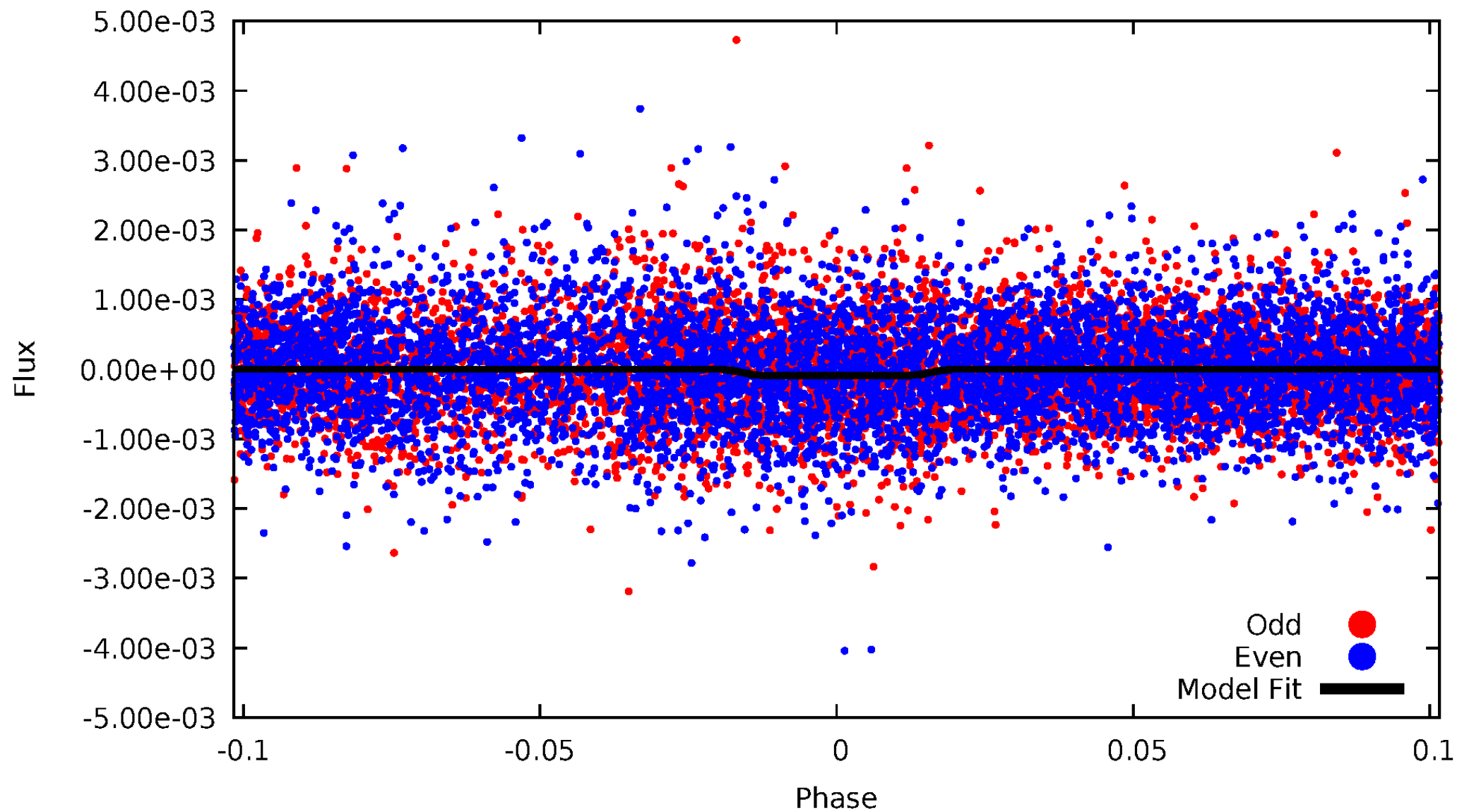
DV Odd/Even

TCE 012356914-03



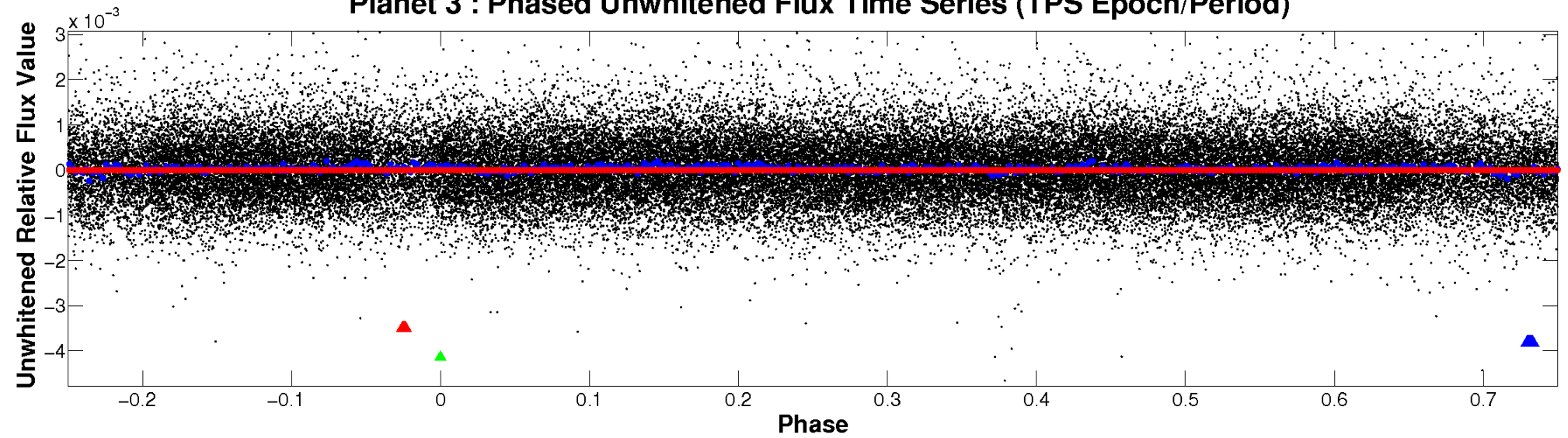
ALT Odd/Even

TCE 012356914-03

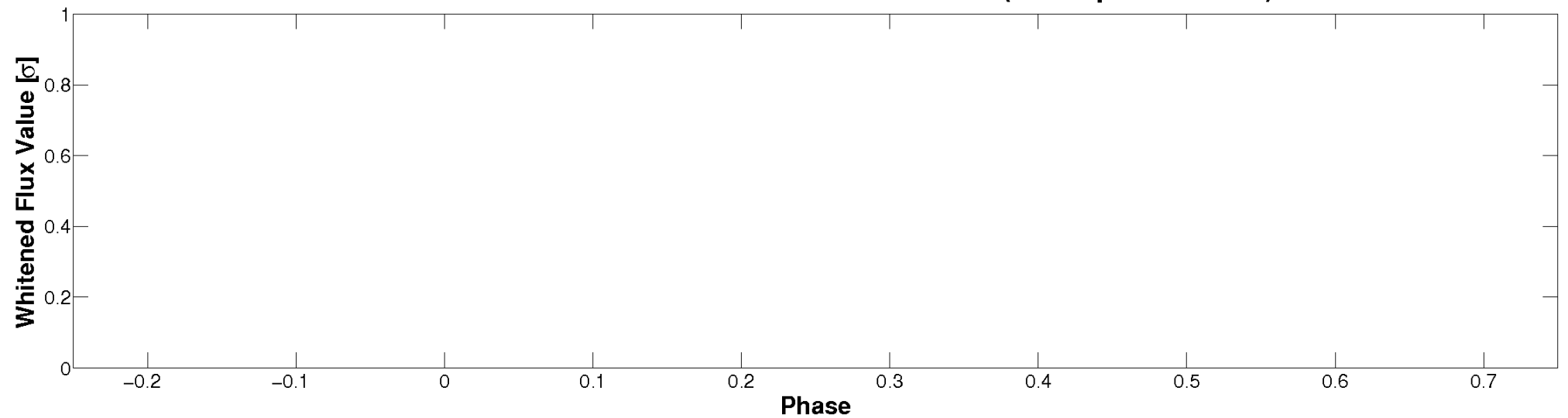


Non-Whitened Vs. Whitened Light Curve

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

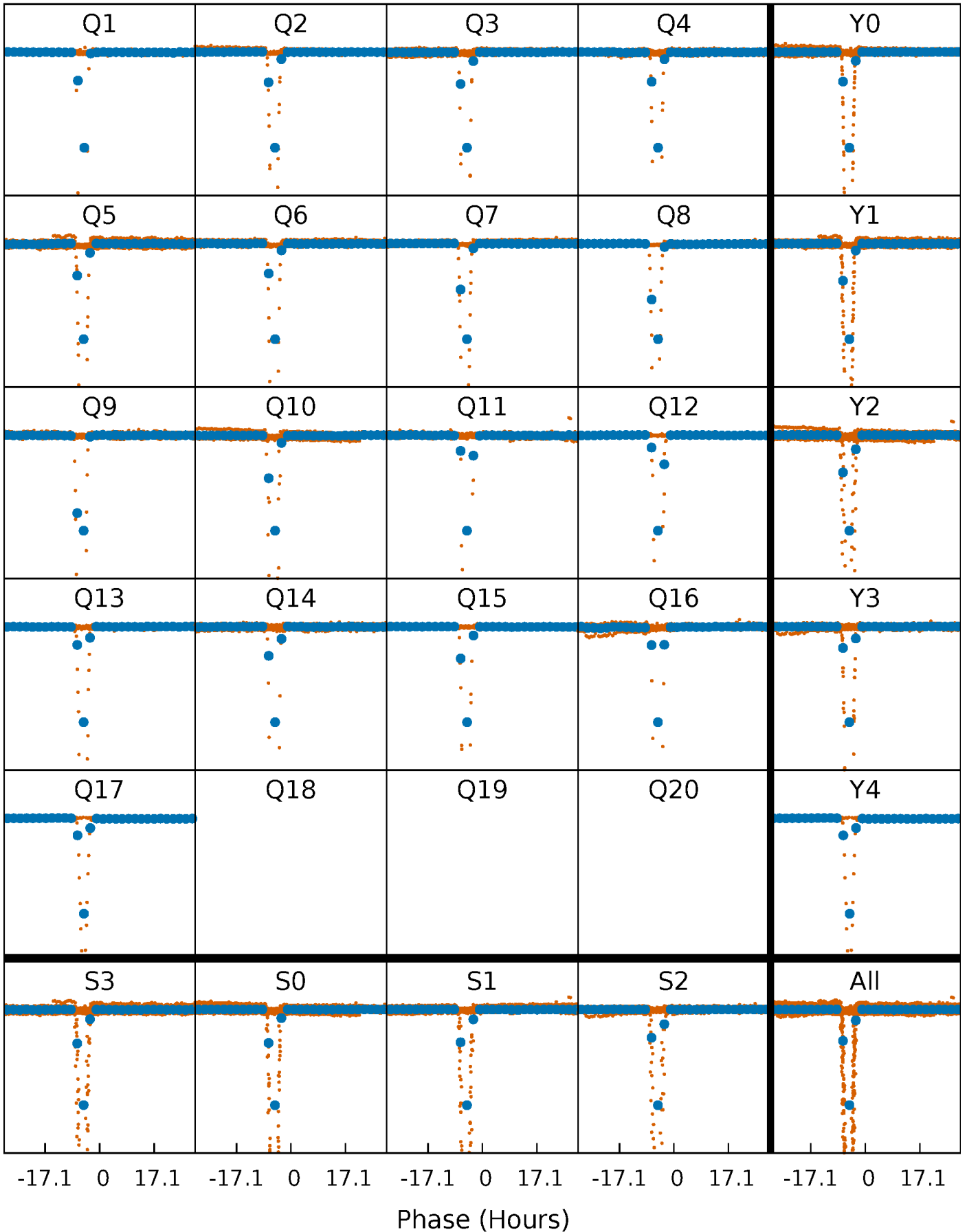


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



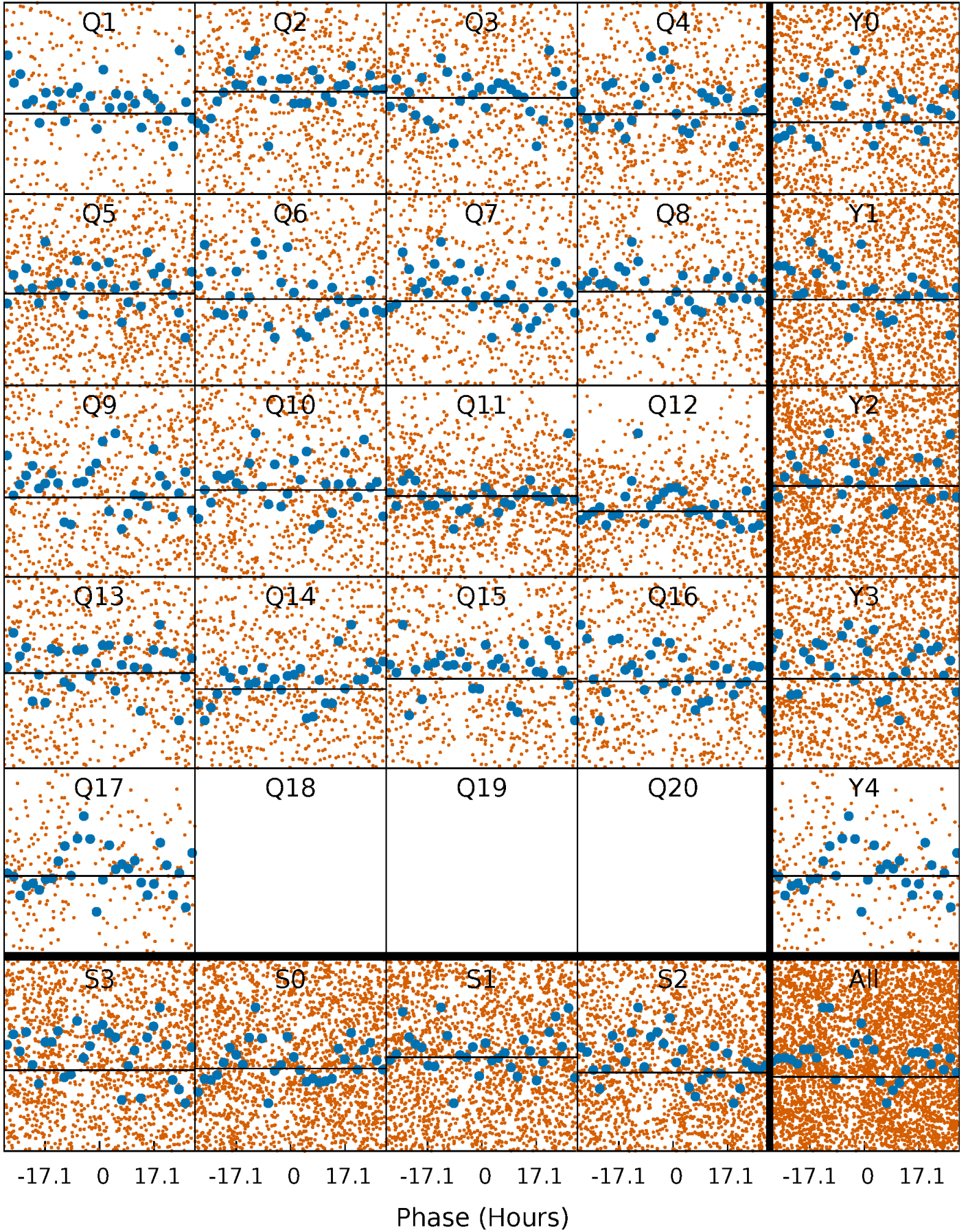
PDC Quarter-Phased Transit Curves

TCE 012356914-03 P= 9.102656 Days $T_0=134.623706$ (BKJD)



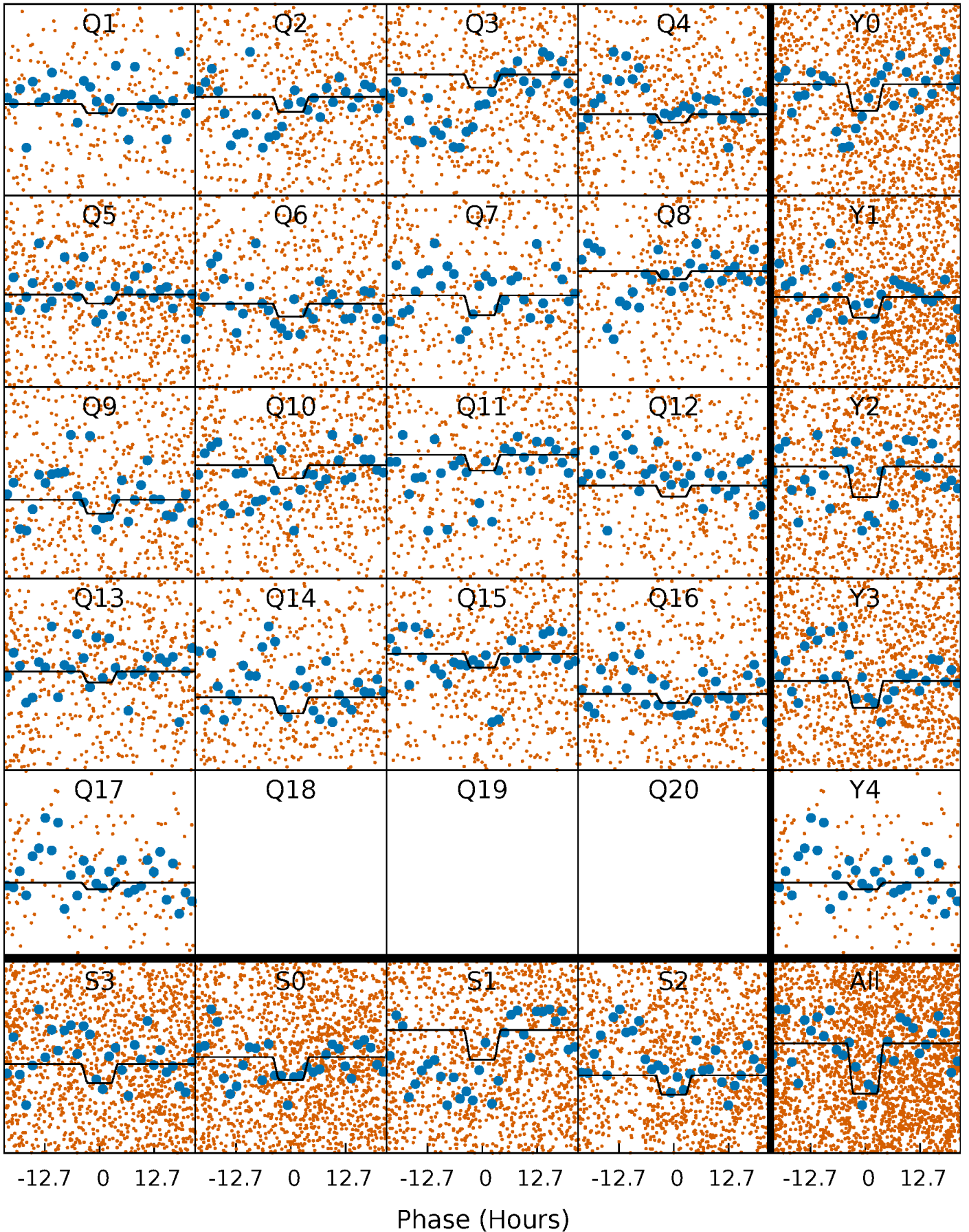
DV Quarter-Phased Transit Curves

TCE 012356914-03 P= 9.102656 Days $T_0=134.623706$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

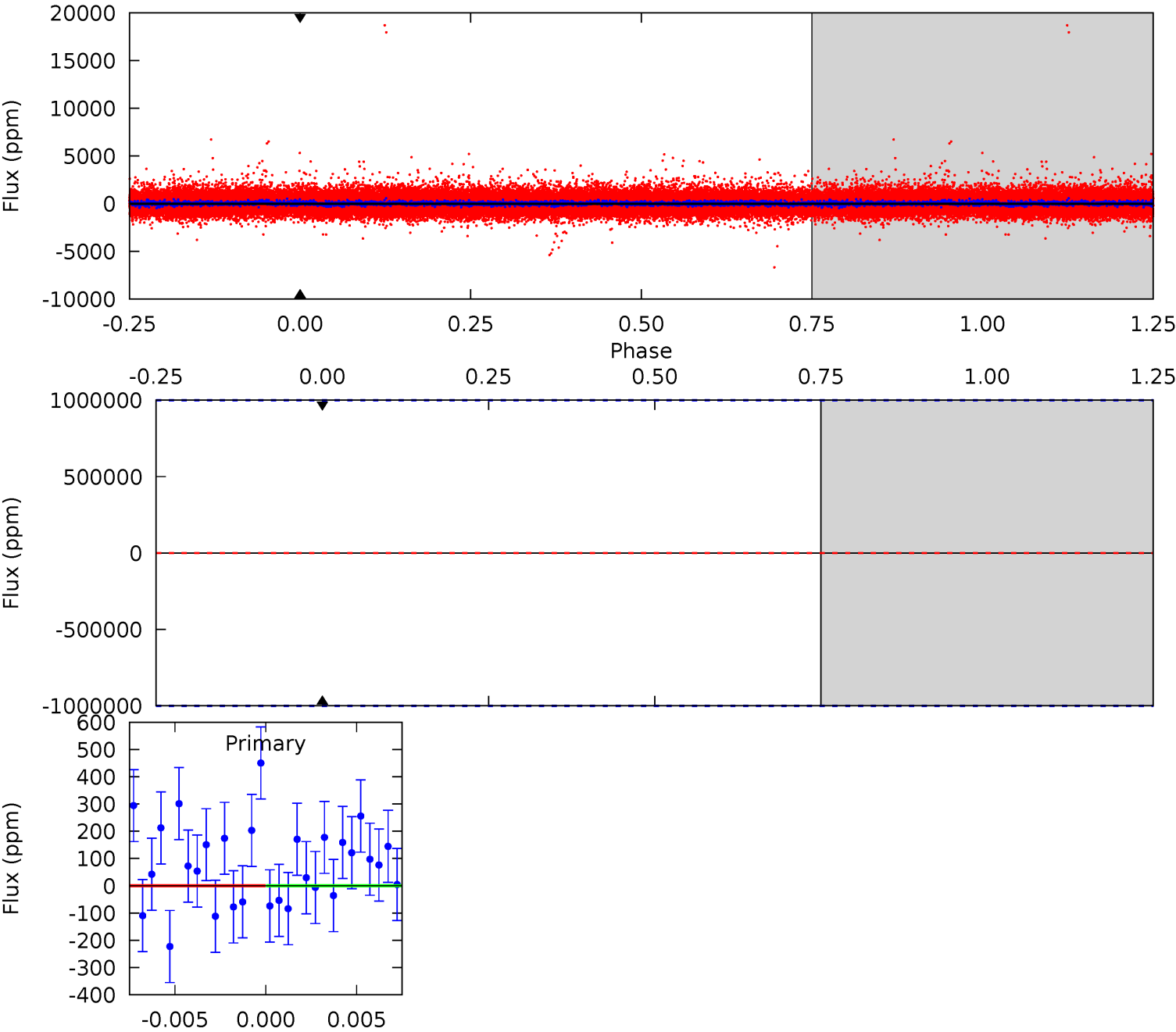
TCE 012356914-03 $P = 9.102656$ Days $T_0 = 134.917521$ (BKJD)



DV Model-Shift Uniqueness Test

012356914-03, P = 9.102656 Days, E = 125.521050 Days

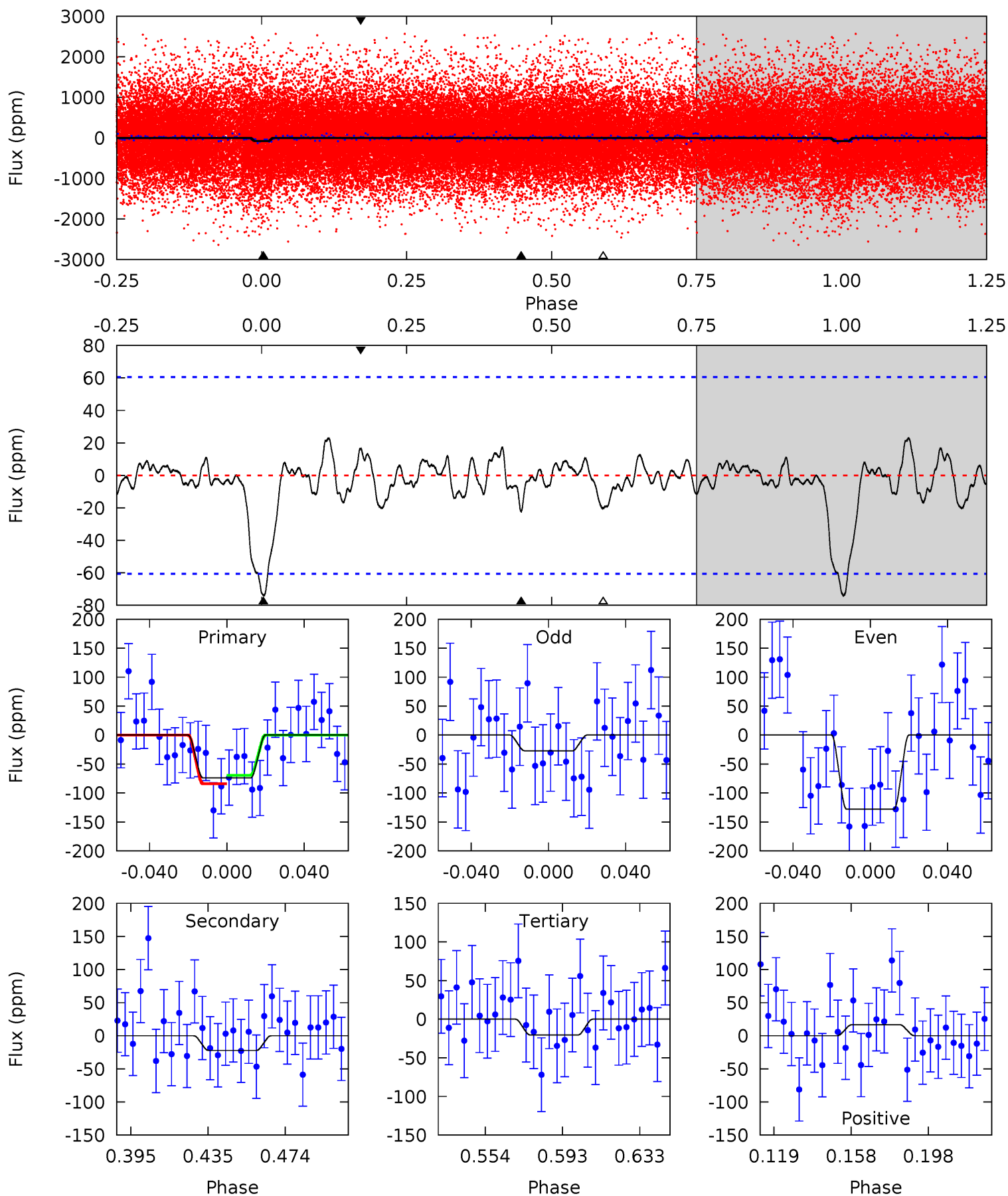
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

012356914-03, P = 9.102656 Days, E = 125.814865 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.81 | 1.75 | 1.61 | 1.31 | 4.76 | 2.06 | 0.65 | 4.20 | 4.50 | 0.14 | 0.43 | 3.96 | 2.85 | 0.24 | 0.58 |



Stellar Parameters For KIC 012356914

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5541^{+180}_{-163} | $4.574^{+0.064}_{-0.096}$ | $-0.600^{+0.300}_{-0.300}$ | $0.739^{+0.127}_{-0.068}$ | $0.747^{+0.088}_{-0.052}$ | $2.604^{+0.697}_{-0.778}$ |
| | +3%/-3% | +1%/-2% | +50%/-50% | +17%/-9% | +12%/-7% | +27%/-30% |
| Source | PHO1 | 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 012356914-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|-------------------------|----------------------|-------------------------|---------------------------------|
| DV | 0 ± 1000000 | $12.52^{+7.85}_{-6.67}$ | 1059^{+49}_{-46} | 2558^{+6719}_{-11688} | $4.613^{+3080.691}_{-2992.259}$ |
| Alt. | -22 ± 13 | $6.06^{+5.67}_{-4.26}$ | 1057^{+50}_{-44} | 2204^{+878}_{-576} | $1.663^{+17.527}_{-1.303}$ |

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

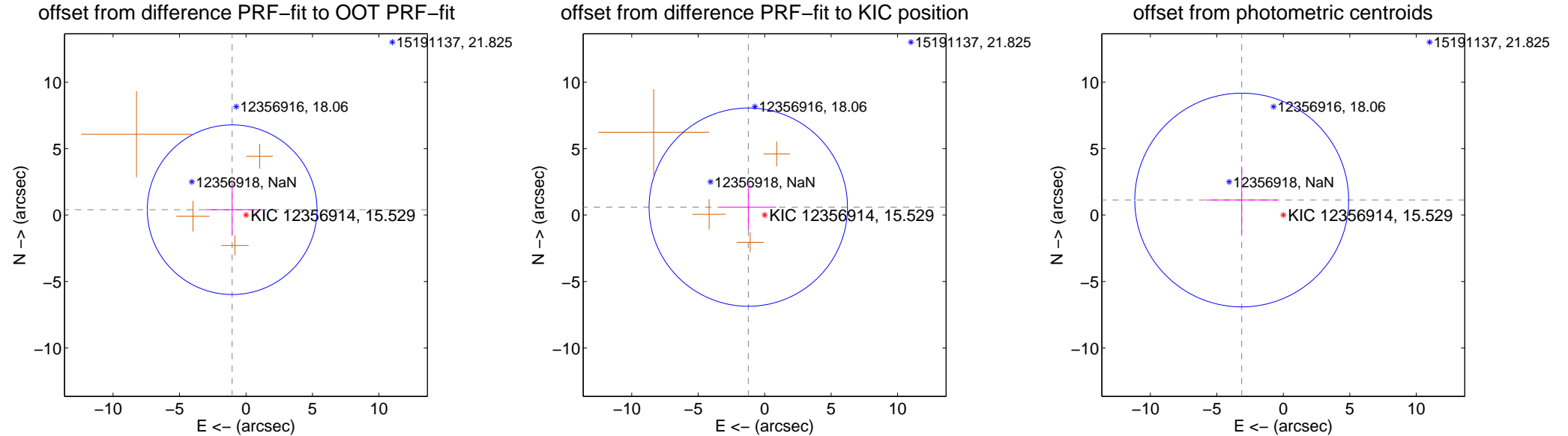
DV Centroid Data

Supplemental centroid analysis for 012356914-03. Kepler magnitude: 15.53. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

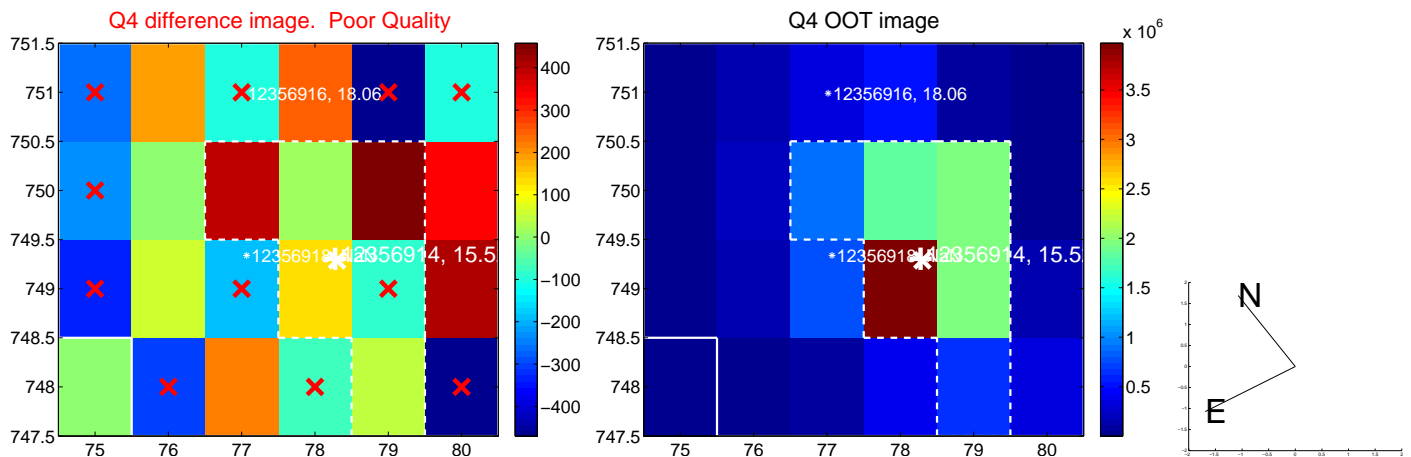
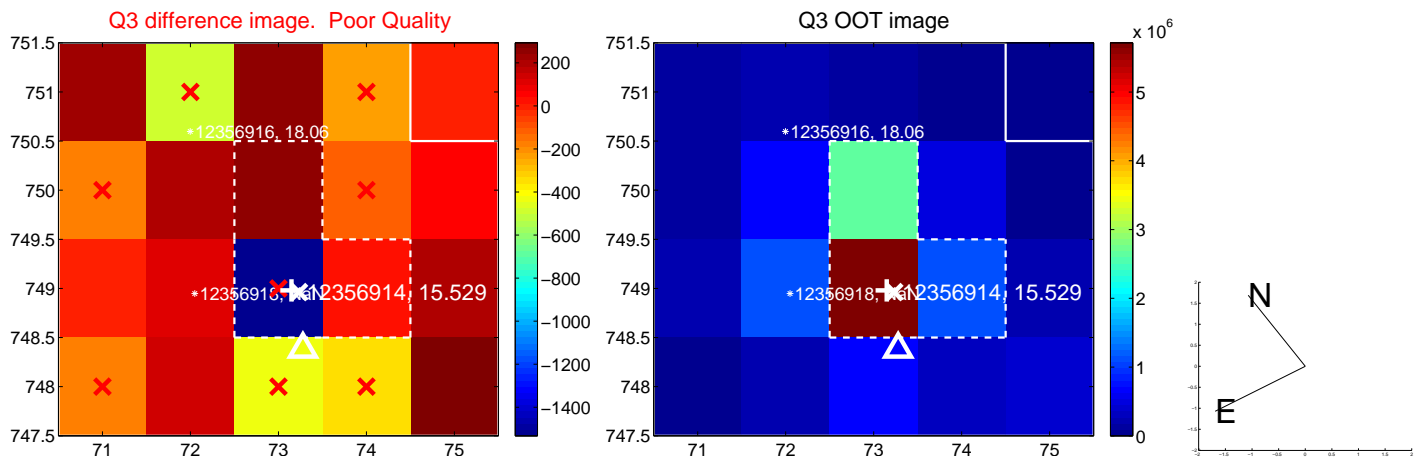
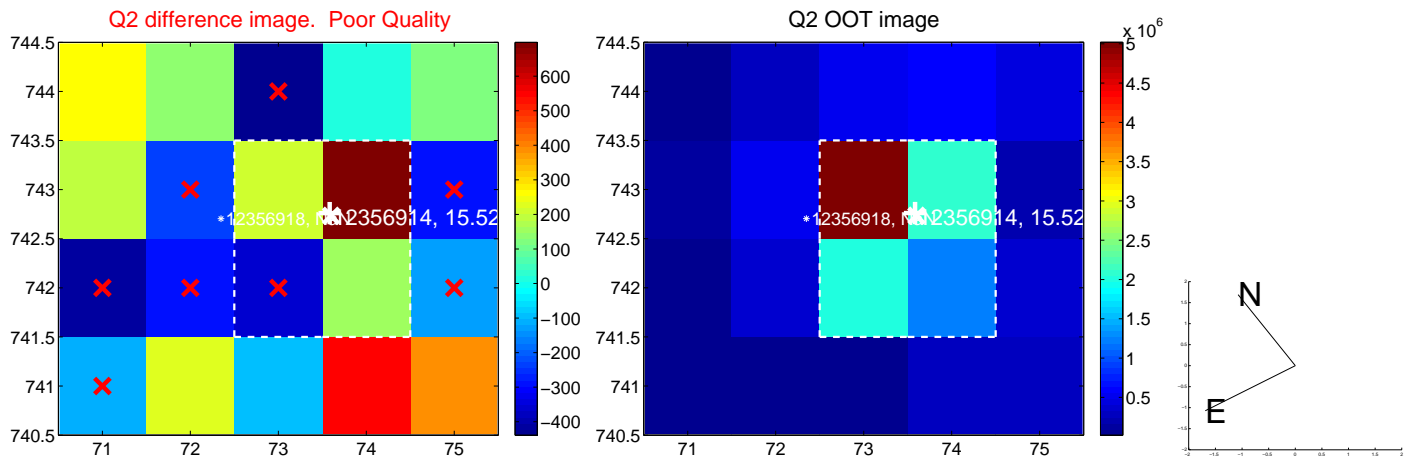
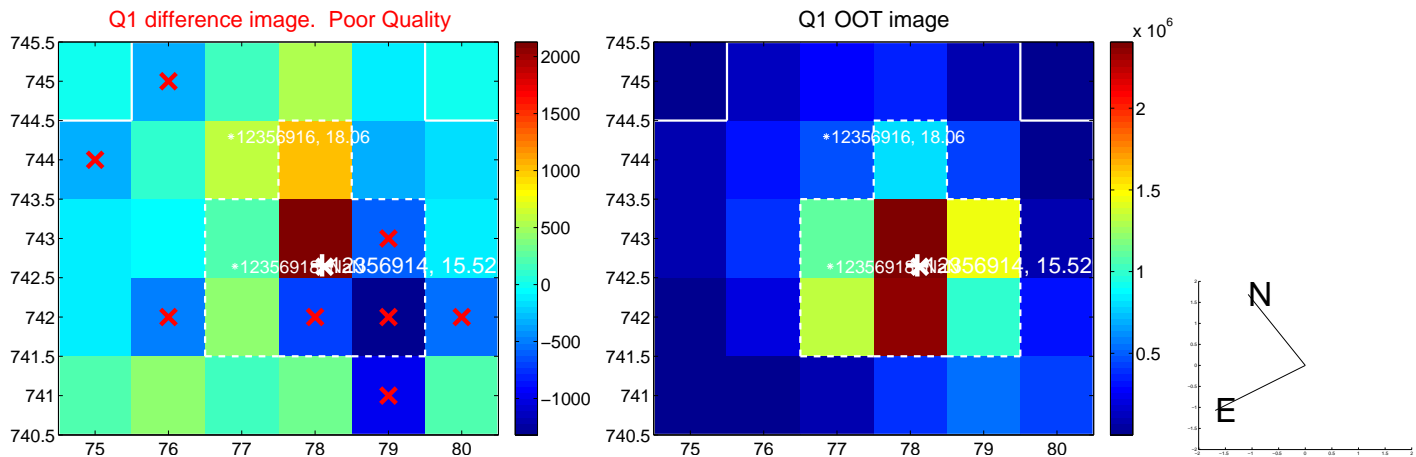
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.117 ± 2.129 | 0.52 | 1.041 ± 2.016 | 0.404 ± 1.922 |
| PRF-fit source offset from KIC position | 1.369 ± 2.488 | 0.55 | 1.232 ± 2.087 | 0.597 ± 1.708 |
| photometric centroid source offset | 3.33 ± 2.68 | 1.24 | 3.13 ± 2.70 | 1.13 ± 2.53 |

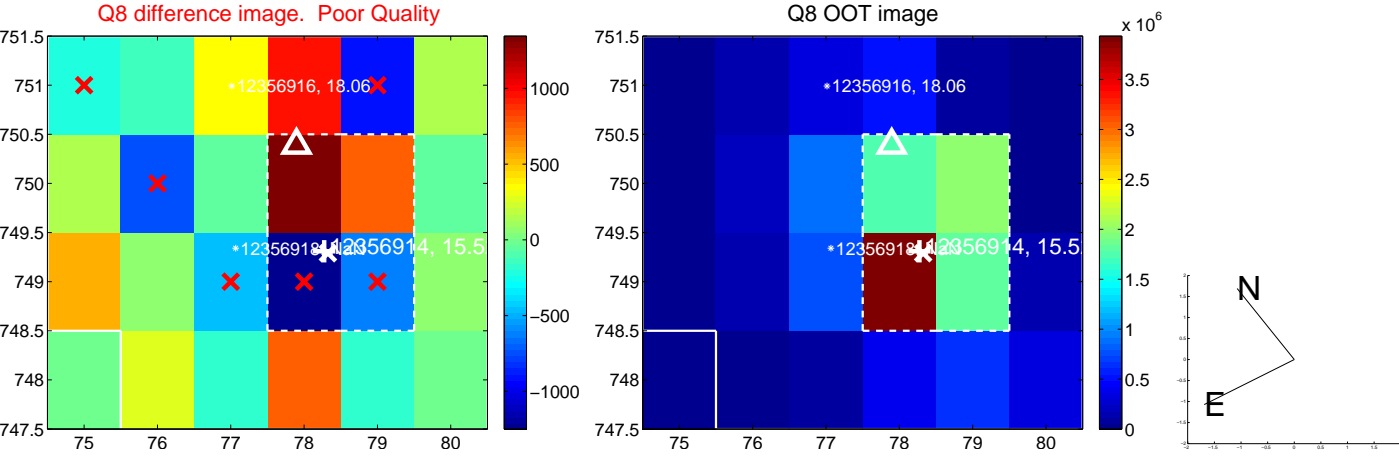
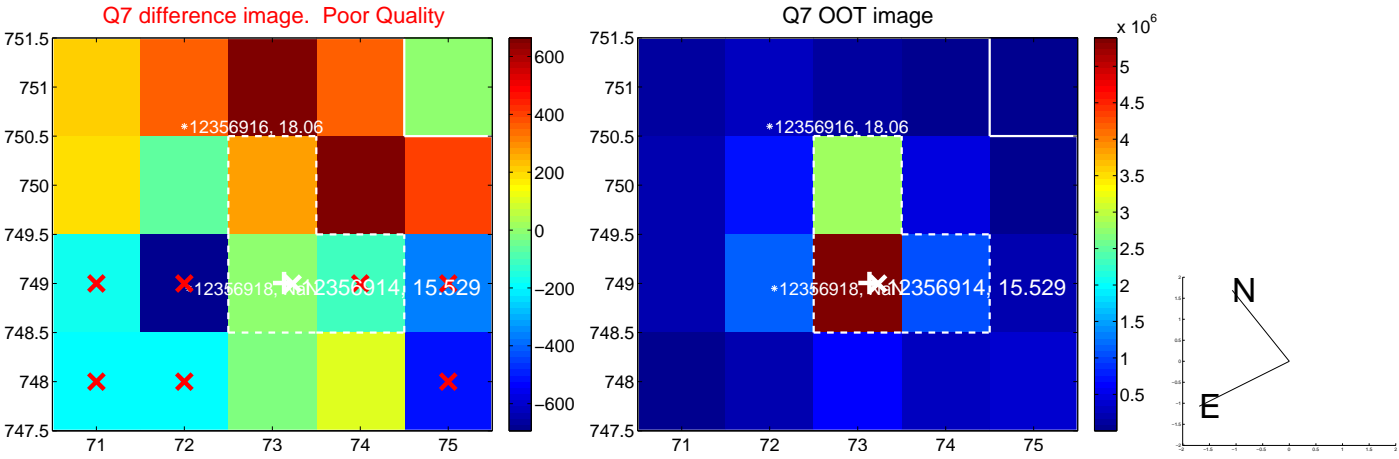
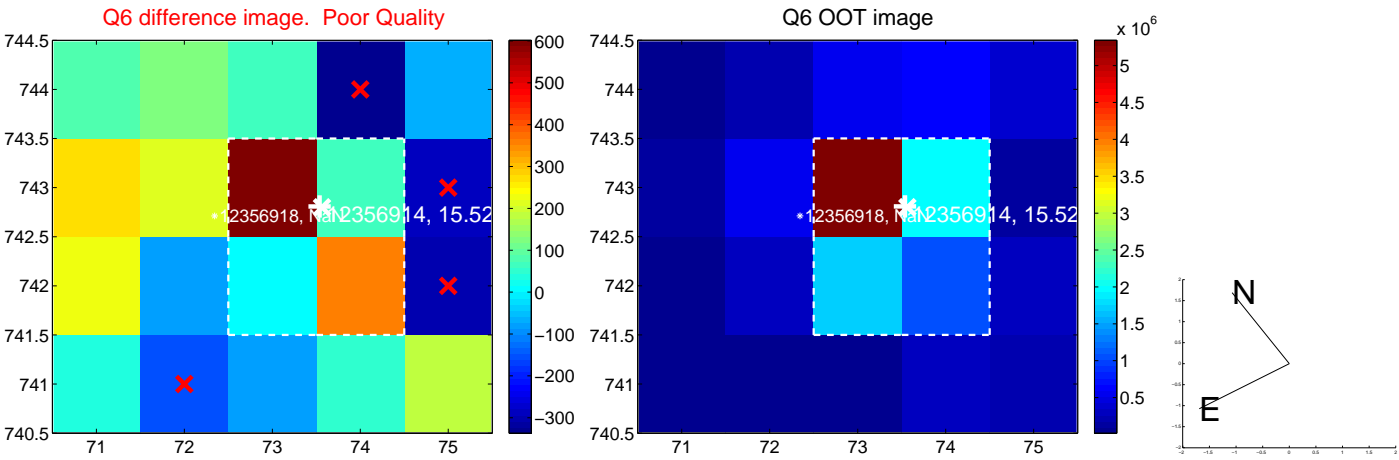
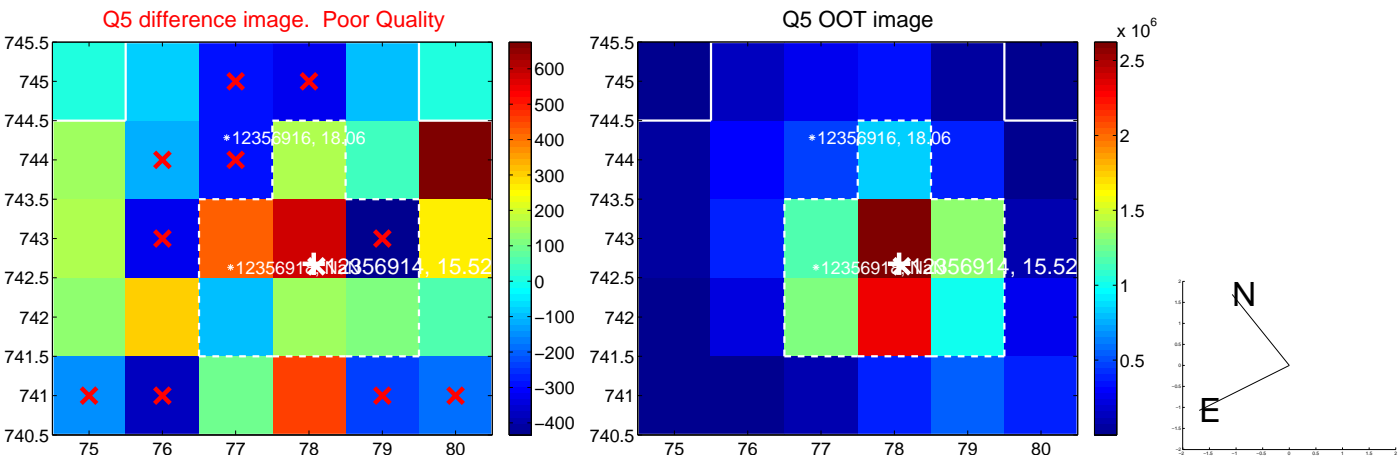


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

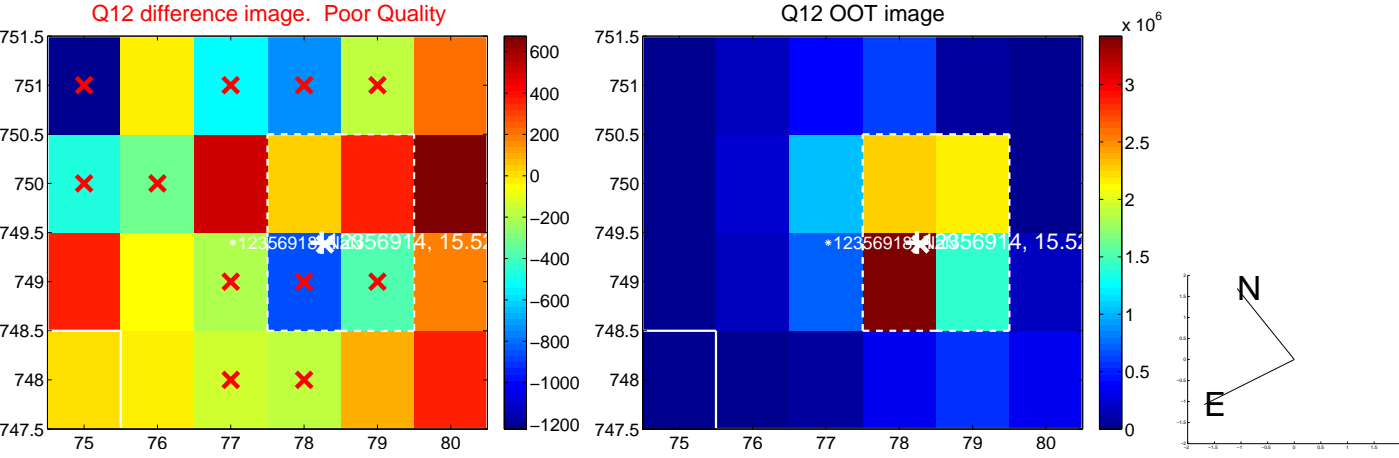
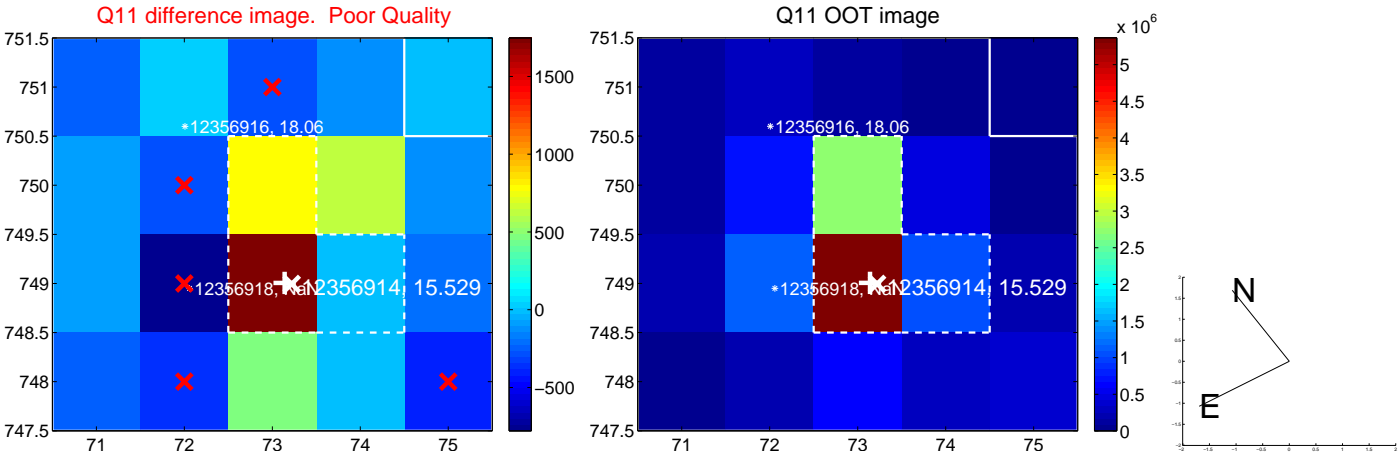
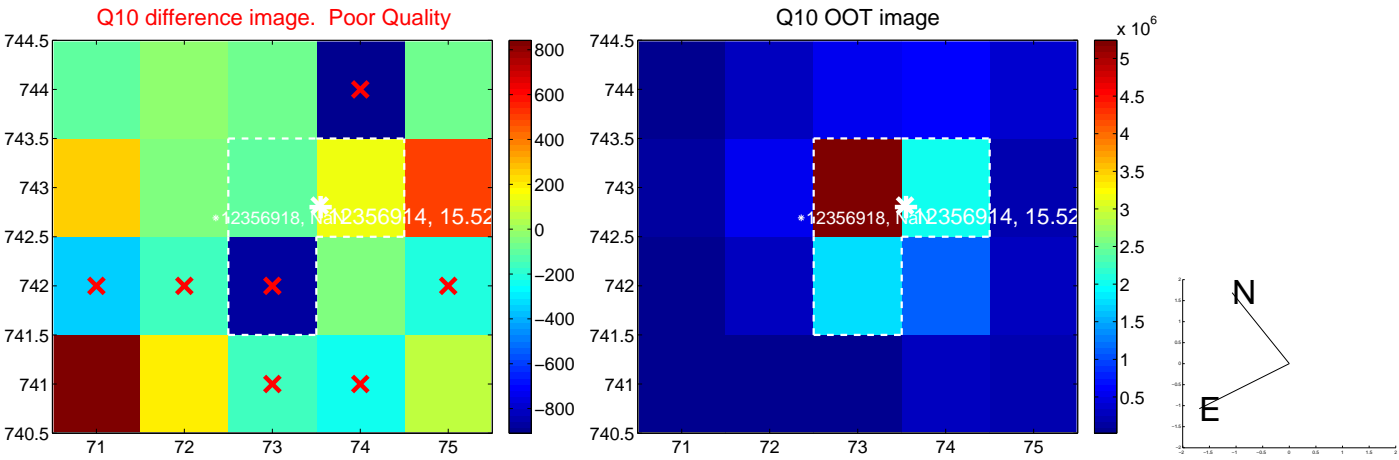
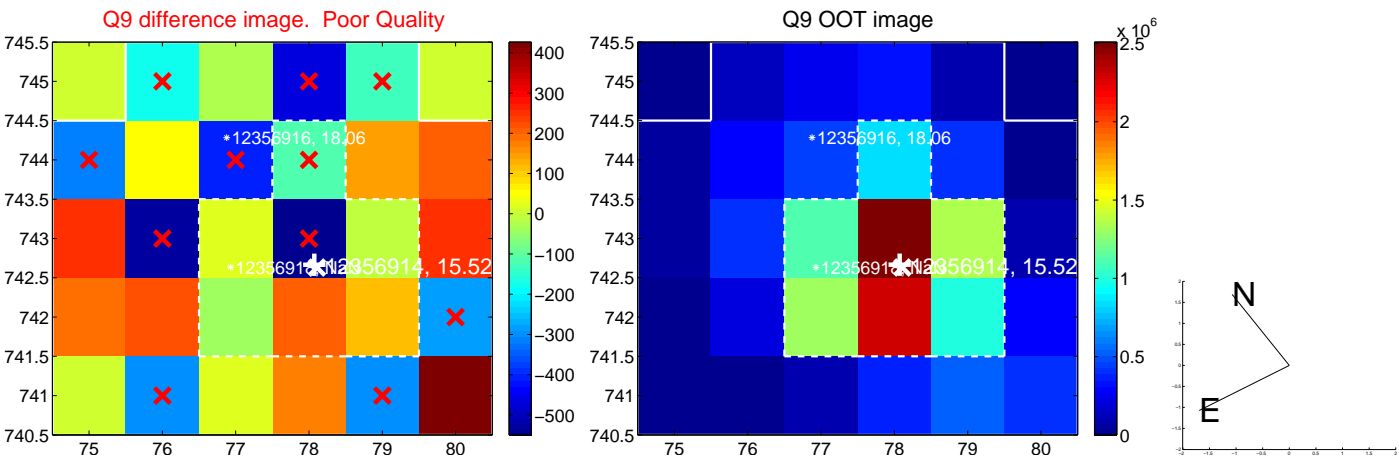
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



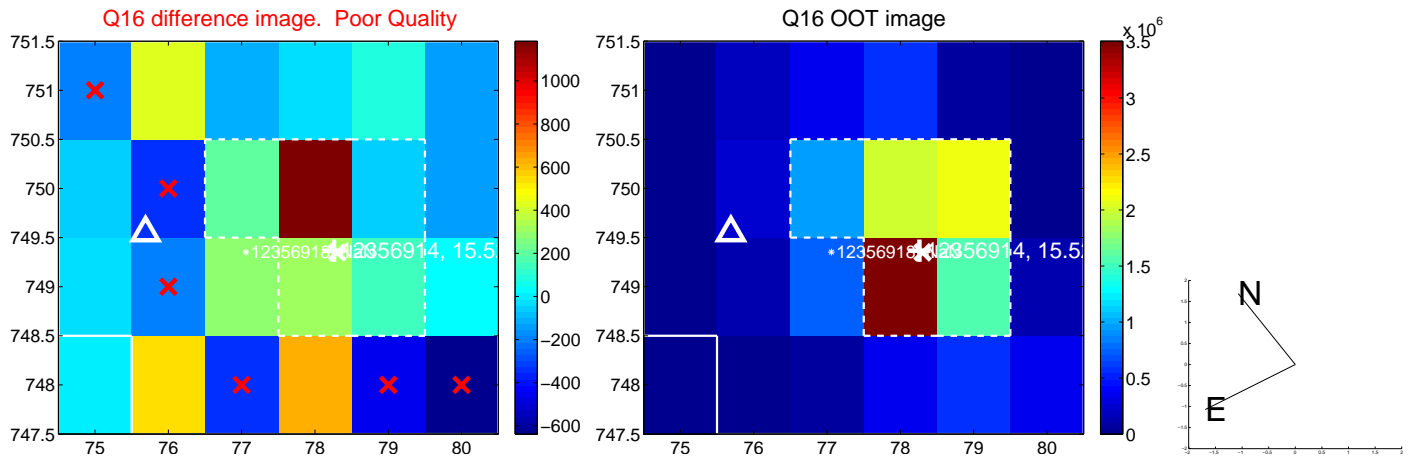
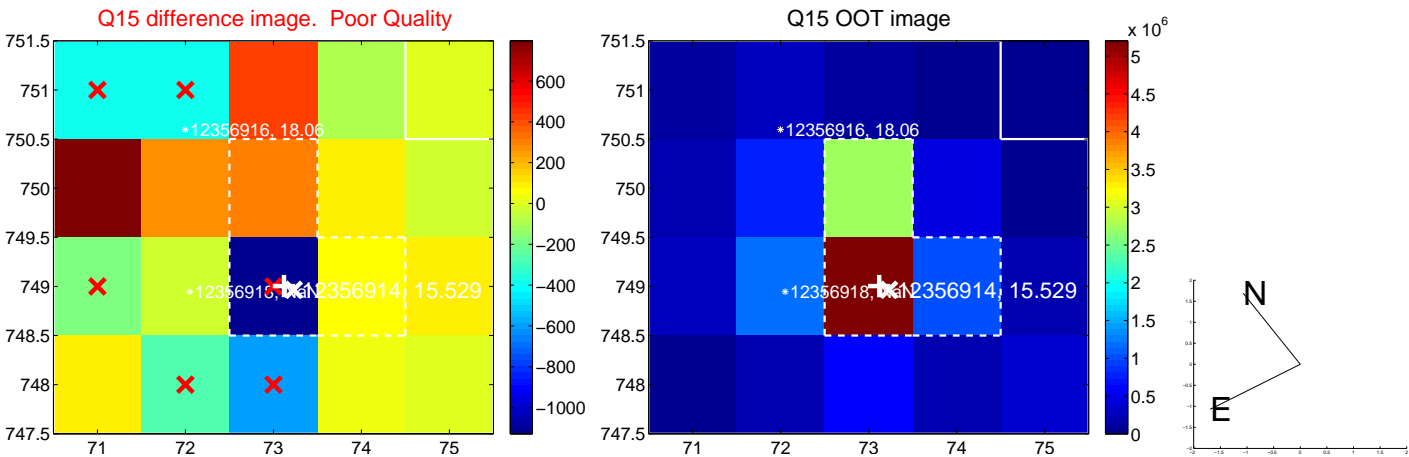
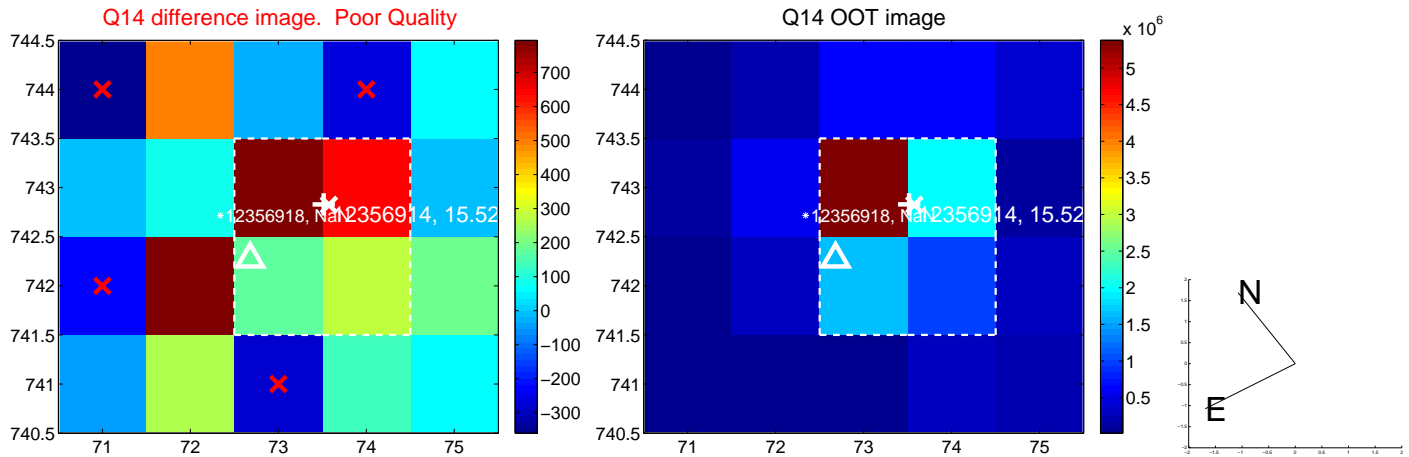
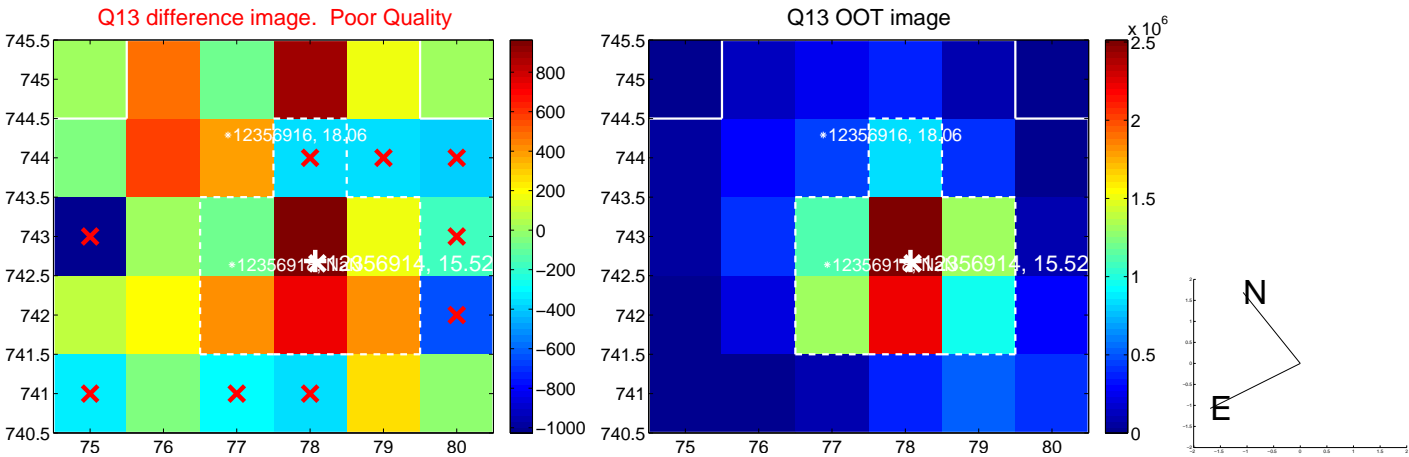
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



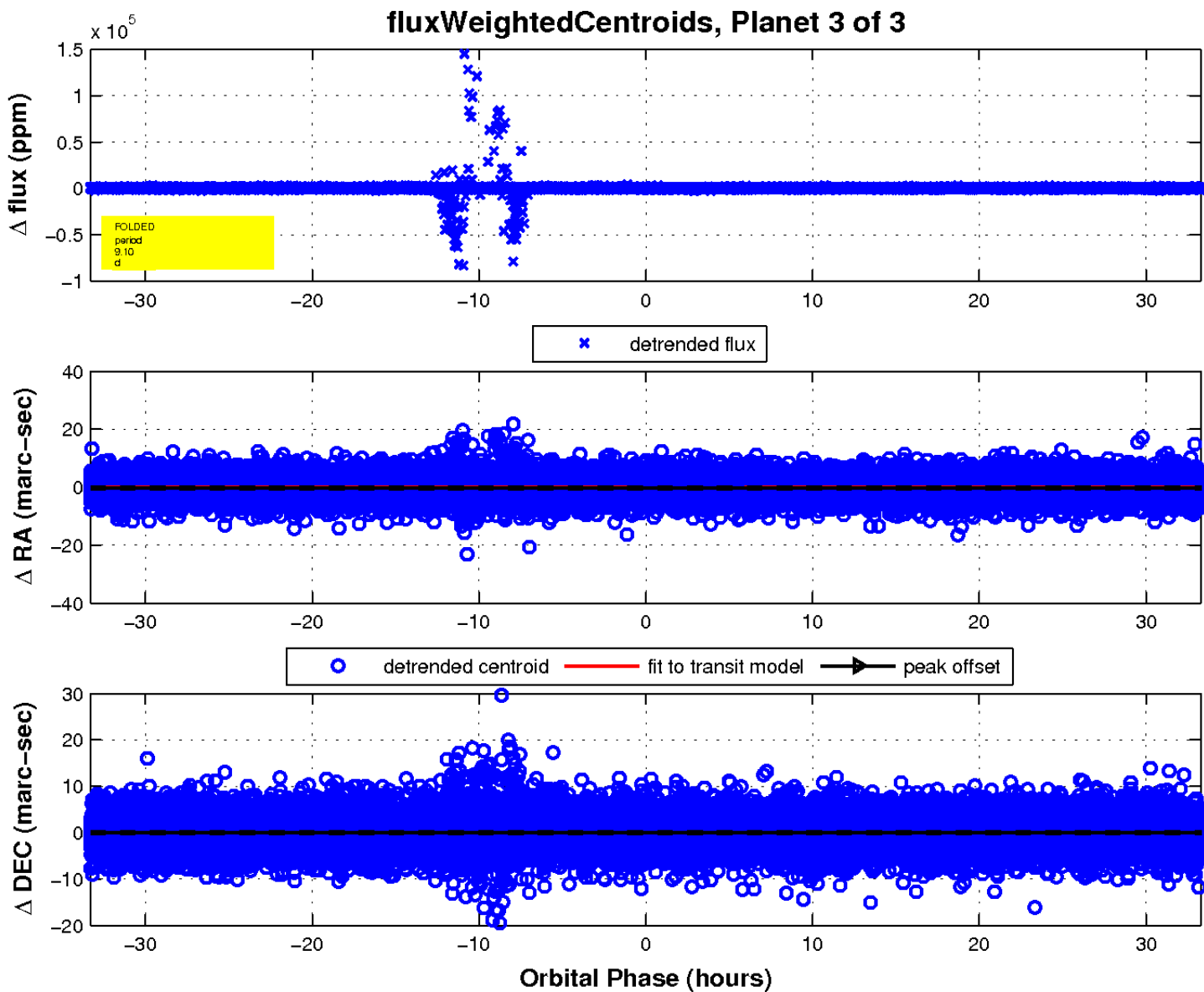
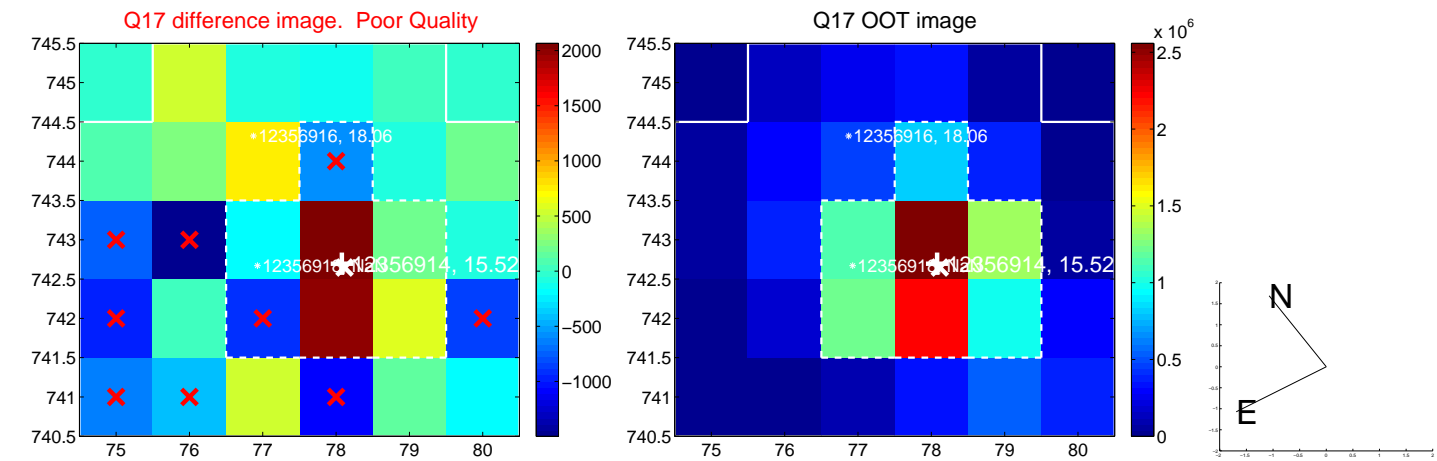
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

