

KIC 008285254

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 008285254-01 | OBS | 7008.01 | 7.535894 | 137.781180 | 171181.1 | 8.307 | 5985.6 | 4743.7 | 0.54 | 4969 | 24.09 | 40.34 |
| 008285254-02 | OBS | No | 7.535906 | 134.013735 | 41452.5 | 8.010 | 1519.9 | 1239.0 | 0.54 | 4969 | 18.89 | 40.34 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008285254-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE |
| 008285254-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |

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.

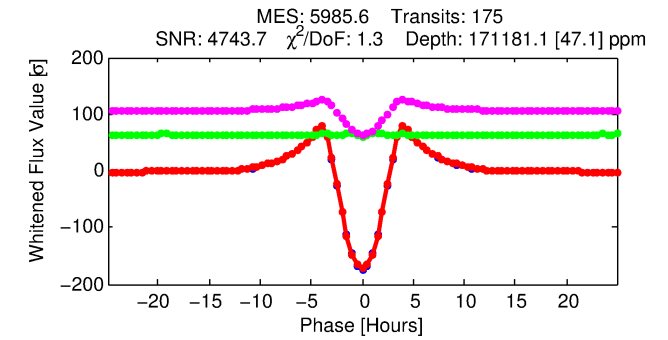
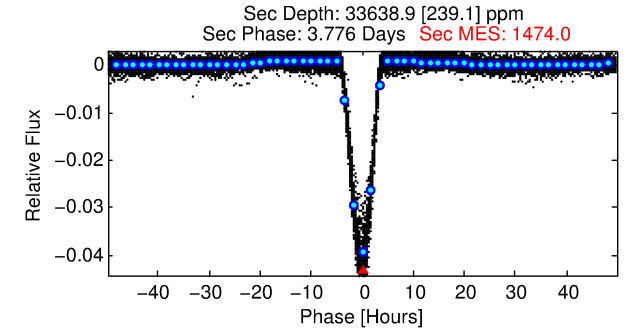
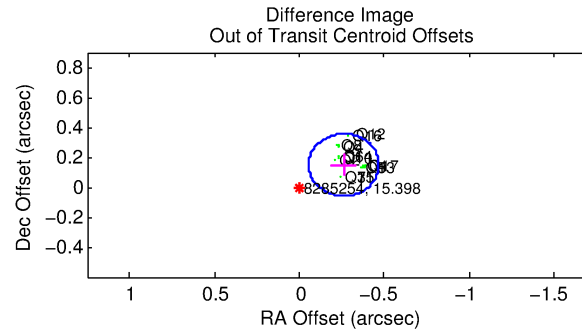
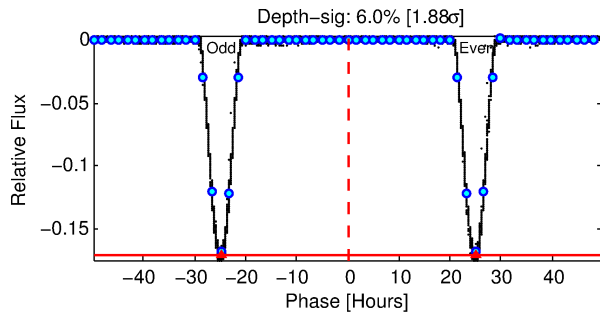
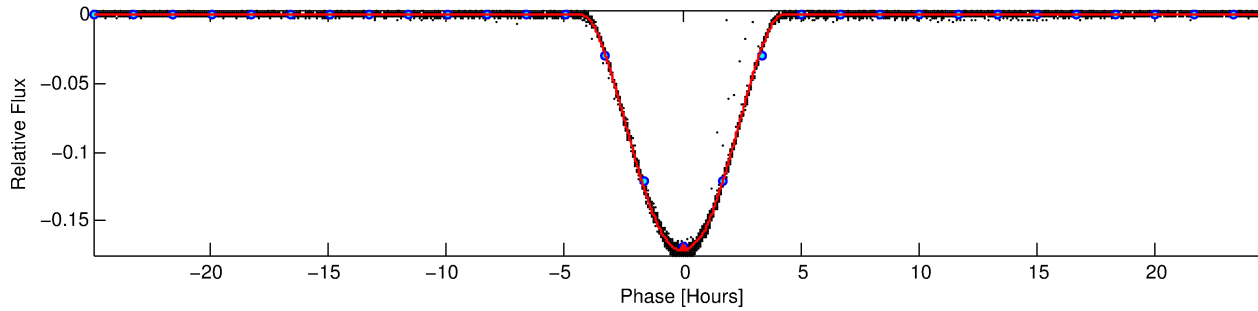
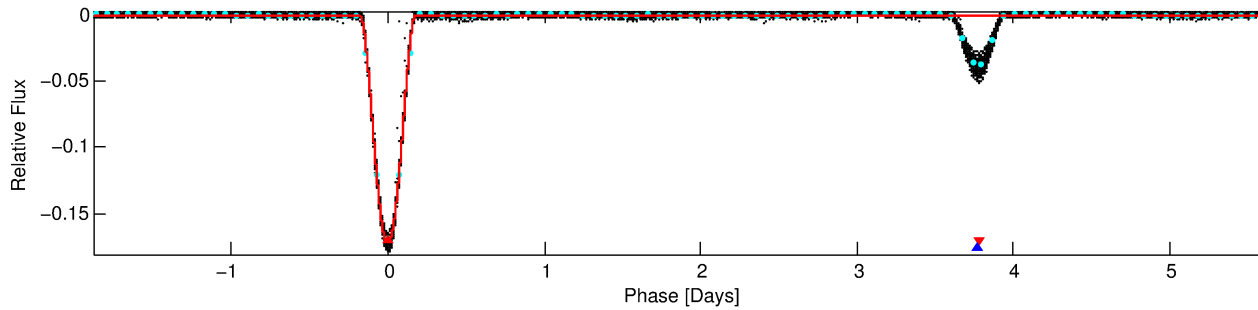
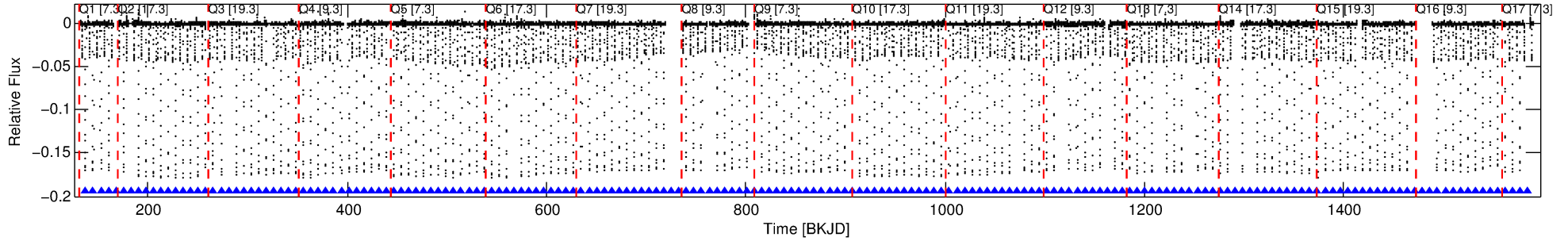
Ephemeris Match Information For 008285254-01

No Significant Match Found

DV One-Page Summary

KIC: 8285254 Candidate: 1 of 2 Period: 7.536 d
KOI: K07008.01 Corr: 0.998

Kp: 15.40 R*: 0.54 Rs Teff: 4969.0 K Logg: 4.74 Fe/H: -1.520



DV Fit Results:

Period = 7.53589 [0.00000] d
Epoch = 137.7812 [0.0000] BKJD
Rp/R* = 0.4111 [0.0002]
a/R* = 8.84 [0.00]
b = 0.62 [0.00]
Seff = 40.34 [5.43]
Teq = 643 [22] K
Rp = 24.09 [1.35] Re
a = 0.0625 [0.0028] AU
Ag = 124.52 [7.88] [15.67σ]
Teffp = 3319 [99] K [26.40σ]

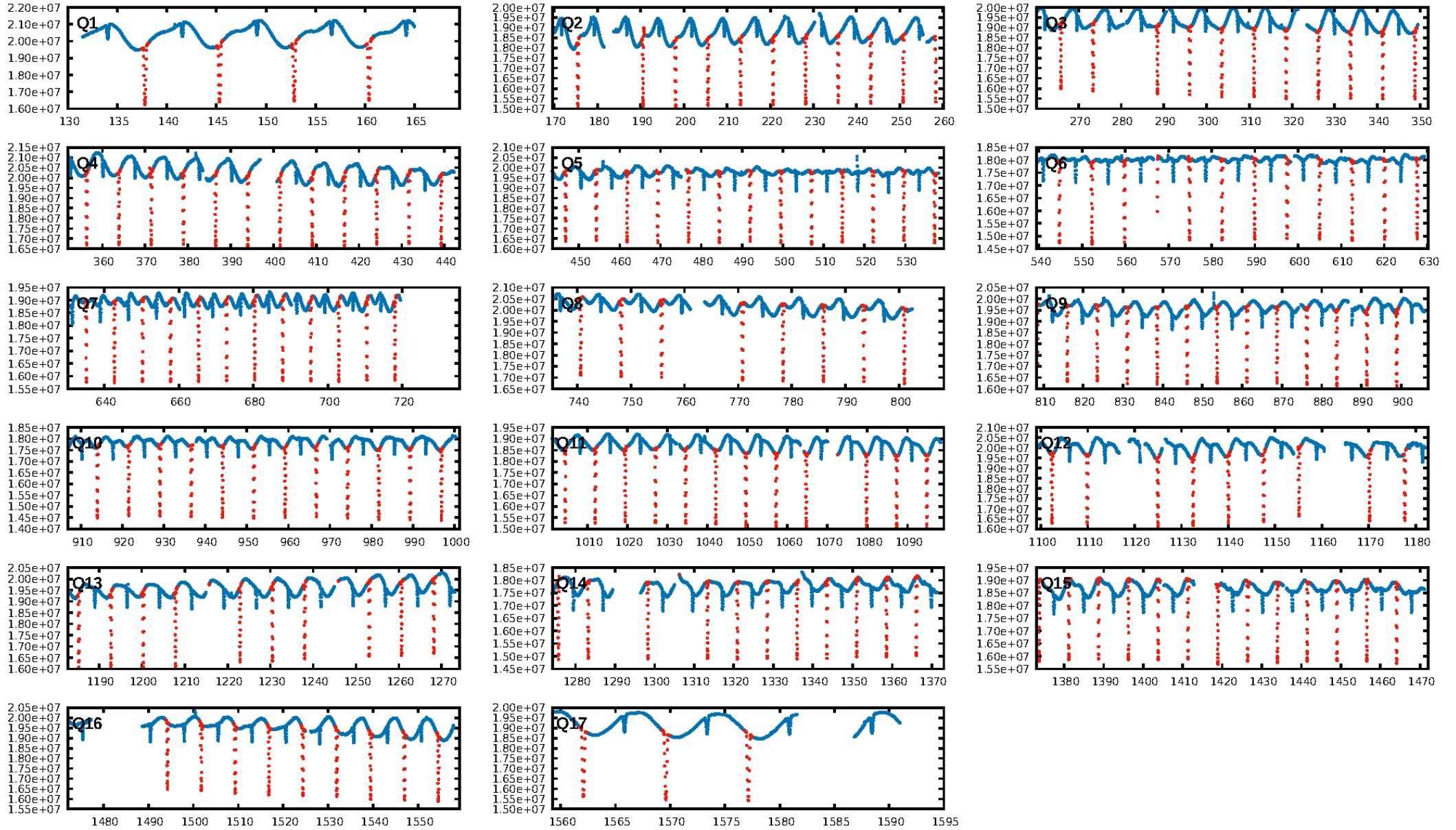
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [168/168]
GhostDiagnostic-chr: 2.396
Centroid-sig: 0.0%
Centroid-so: 0.161 arcsec [99.53σ]
OotOffset-rm: 0.301 arcsec [4.35σ]
KicOffset-rm: 0.106 arcsec [1.59σ]
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]

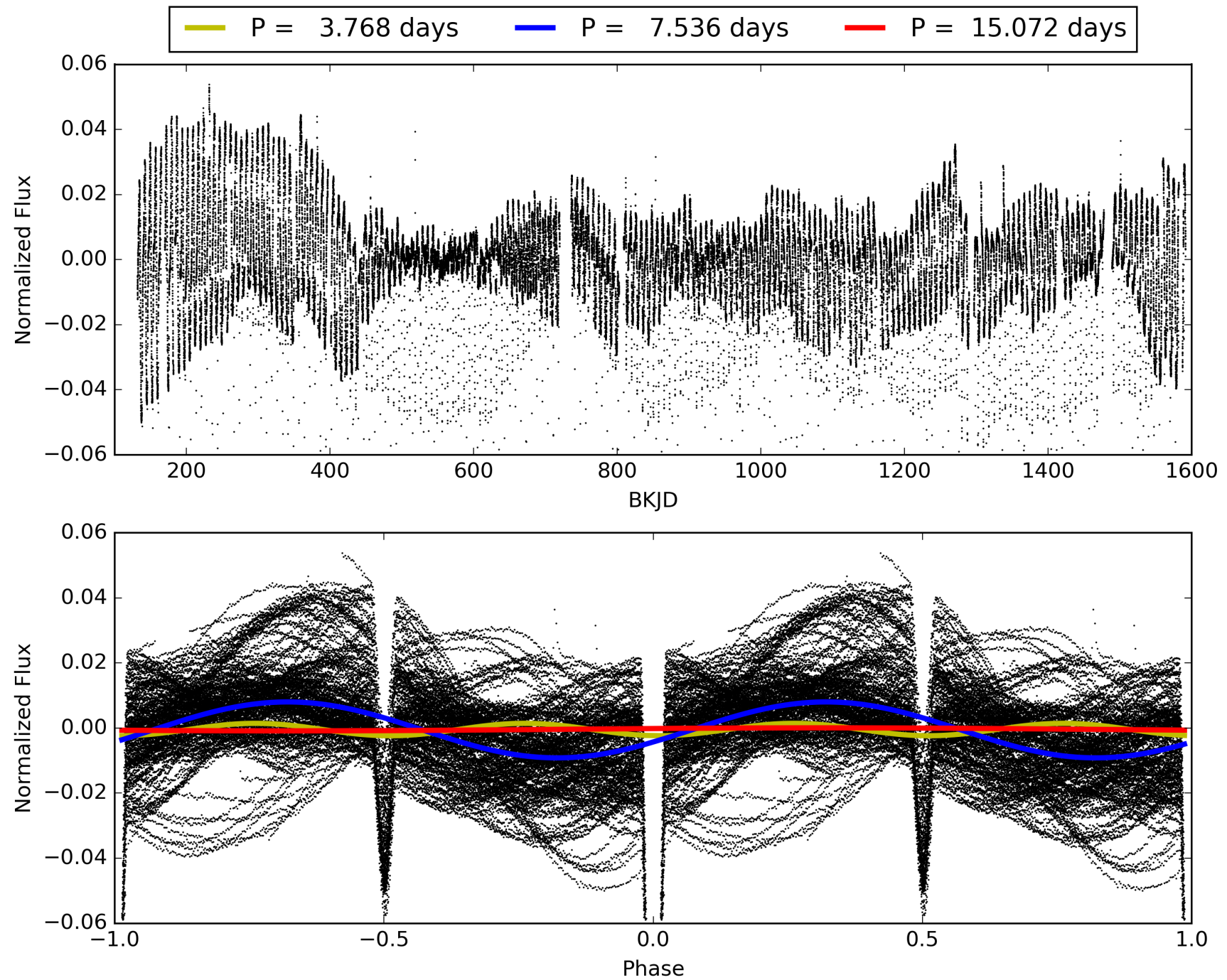
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:28:47 Z

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

TCE 008285254-01, PDC Light Curves

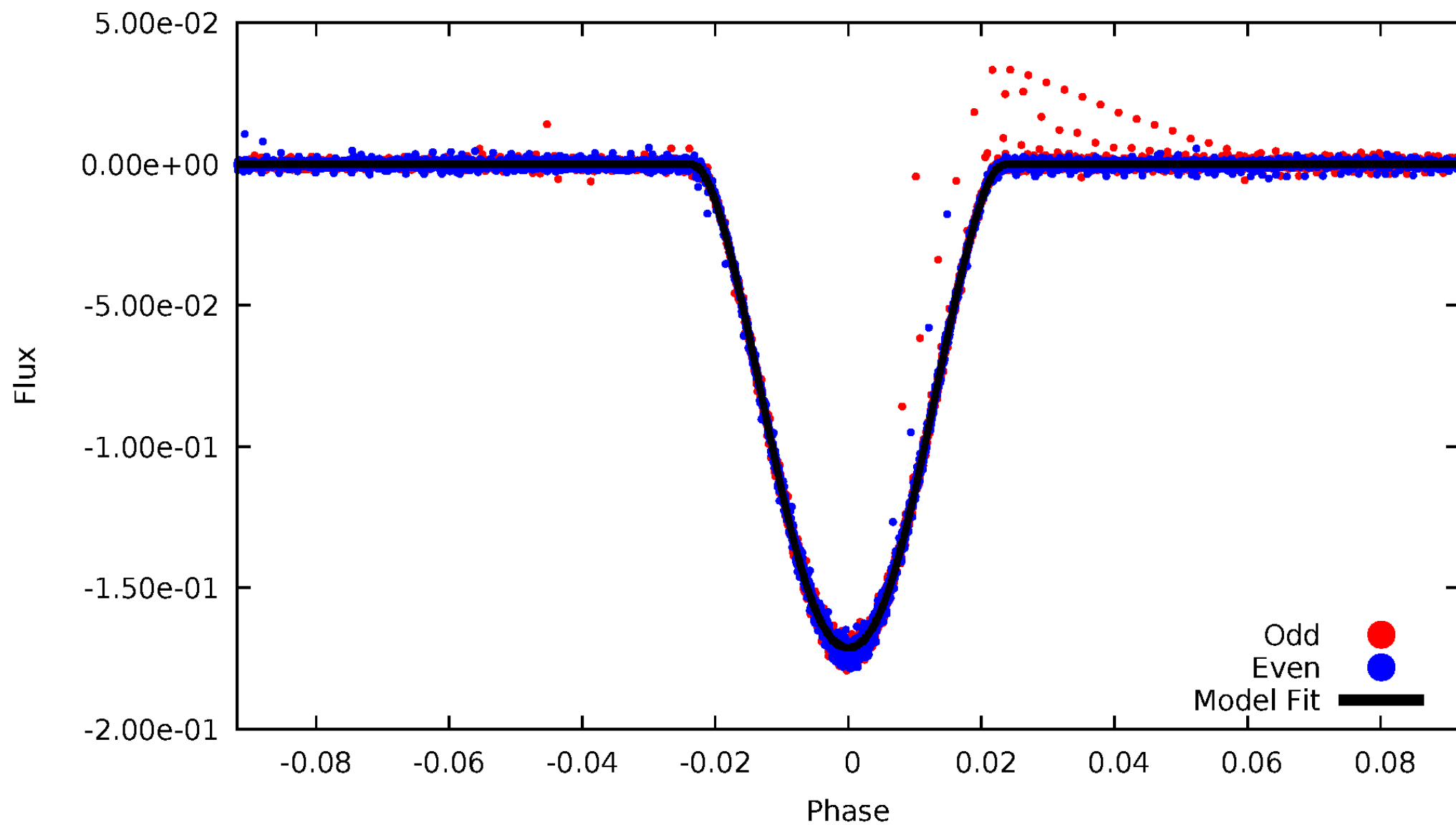


TCE 008285254-01



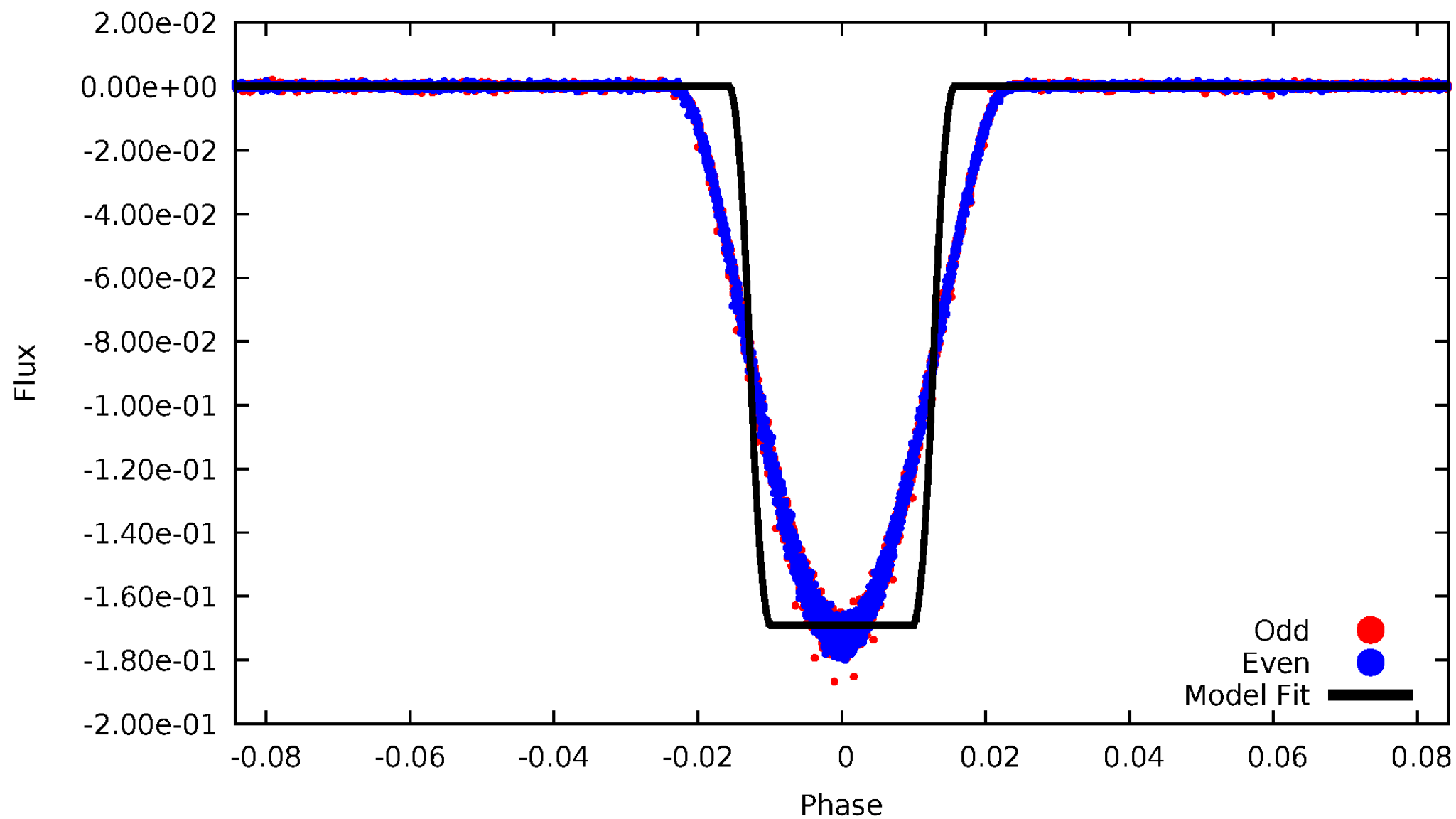
DV Odd/Even

TCE 008285254-01



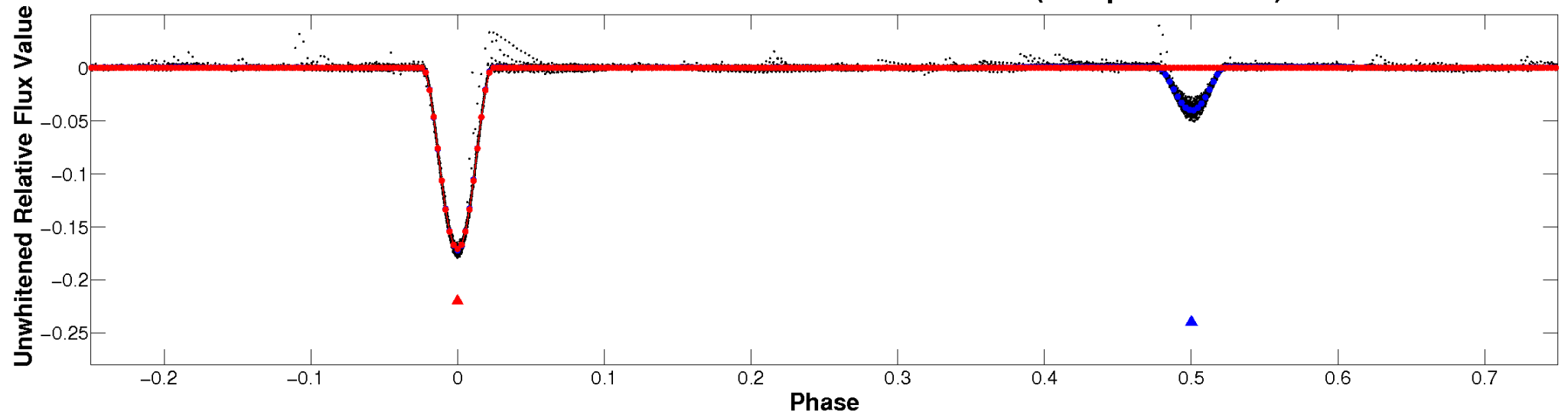
ALT Odd/Even

TCE 008285254-01

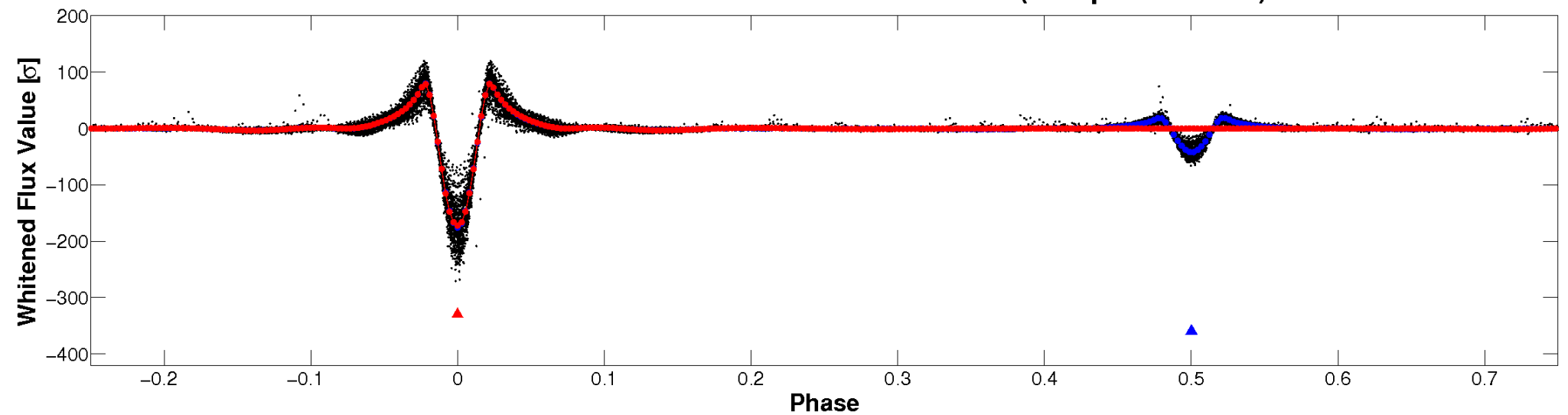


Non-Whitened Vs. Whitened Light Curve

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

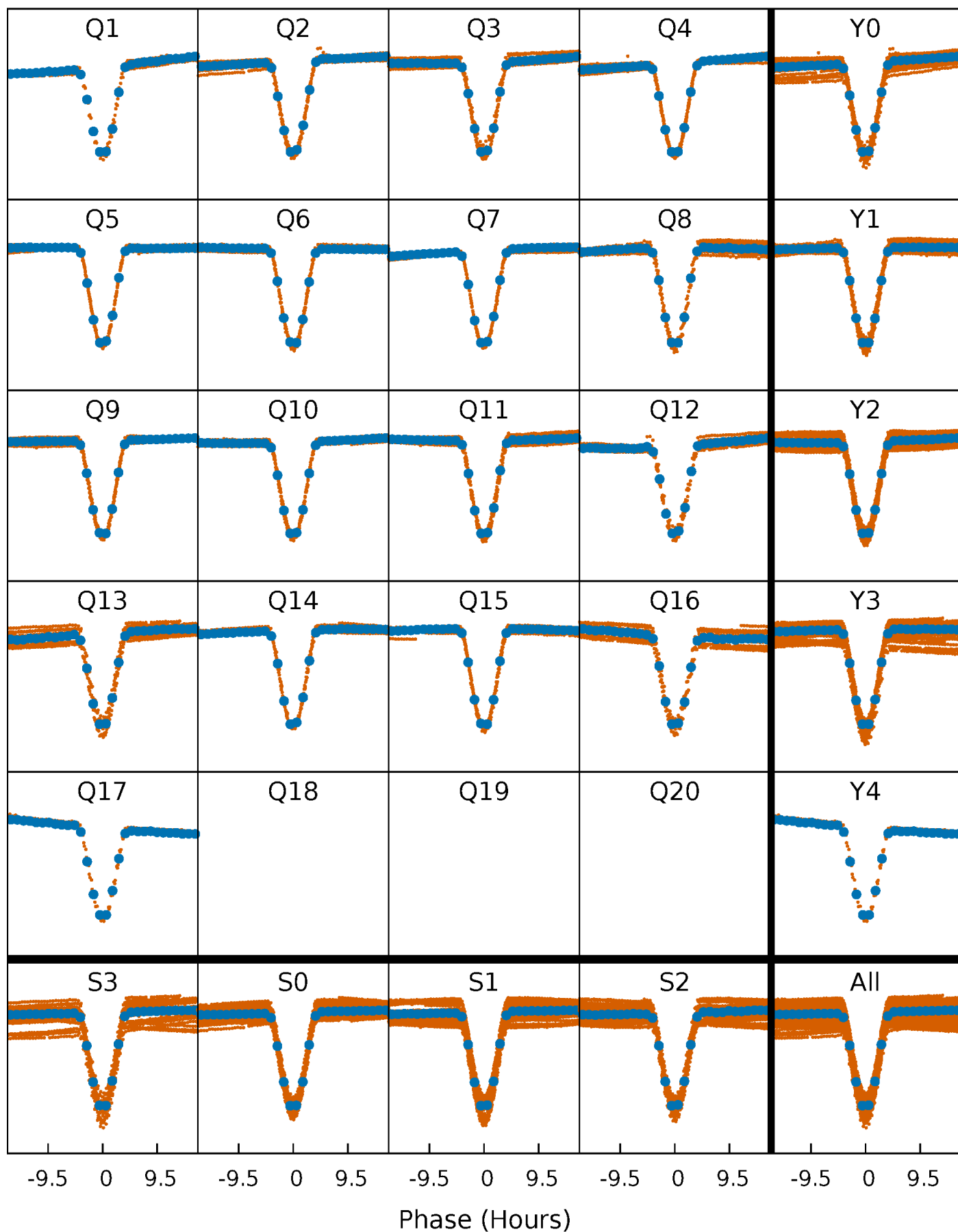


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



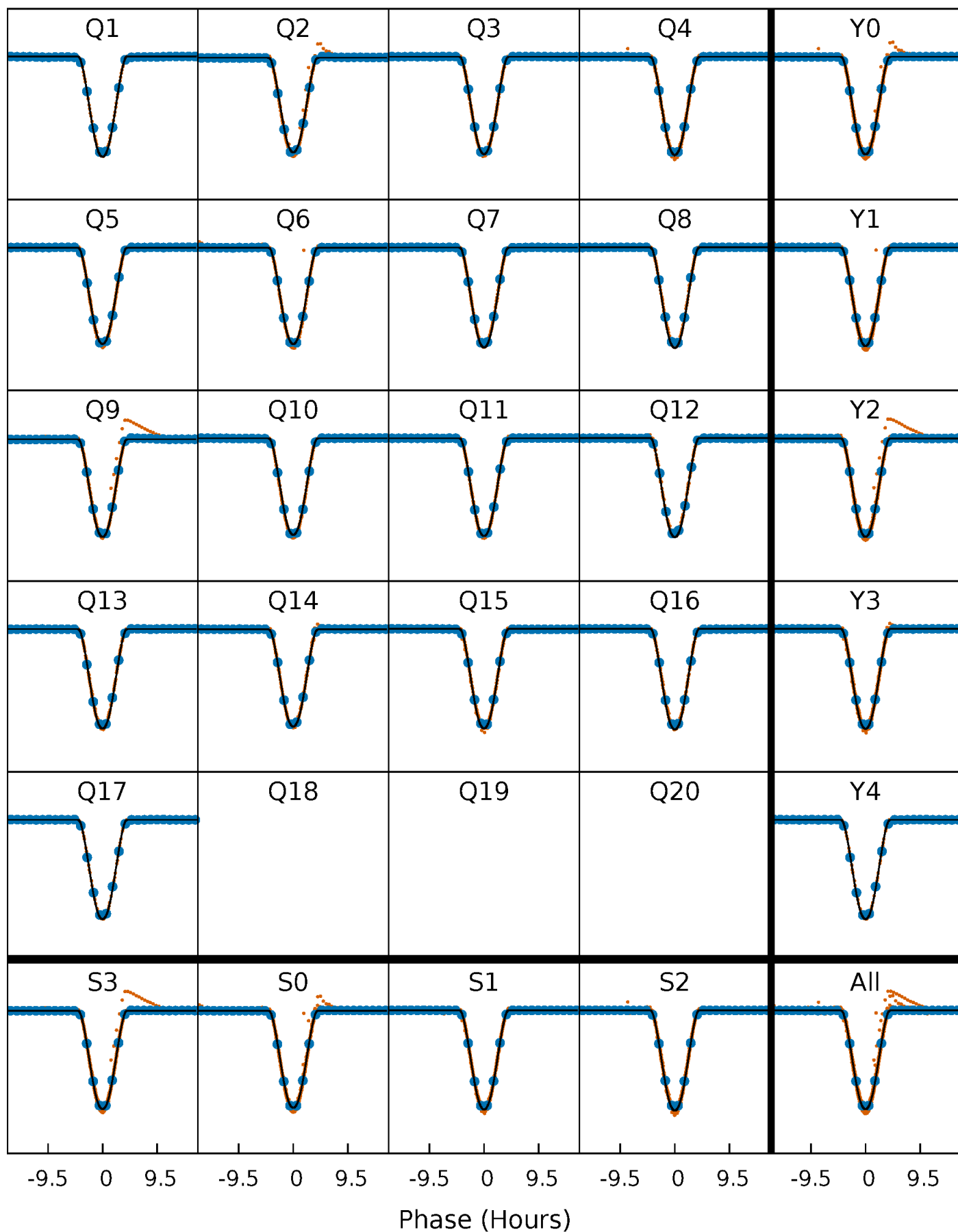
PDC Quarter-Phased Transit Curves

TCE 008285254-01 P= 7.535894 Days $T_0=137.781180$ (BKJD)



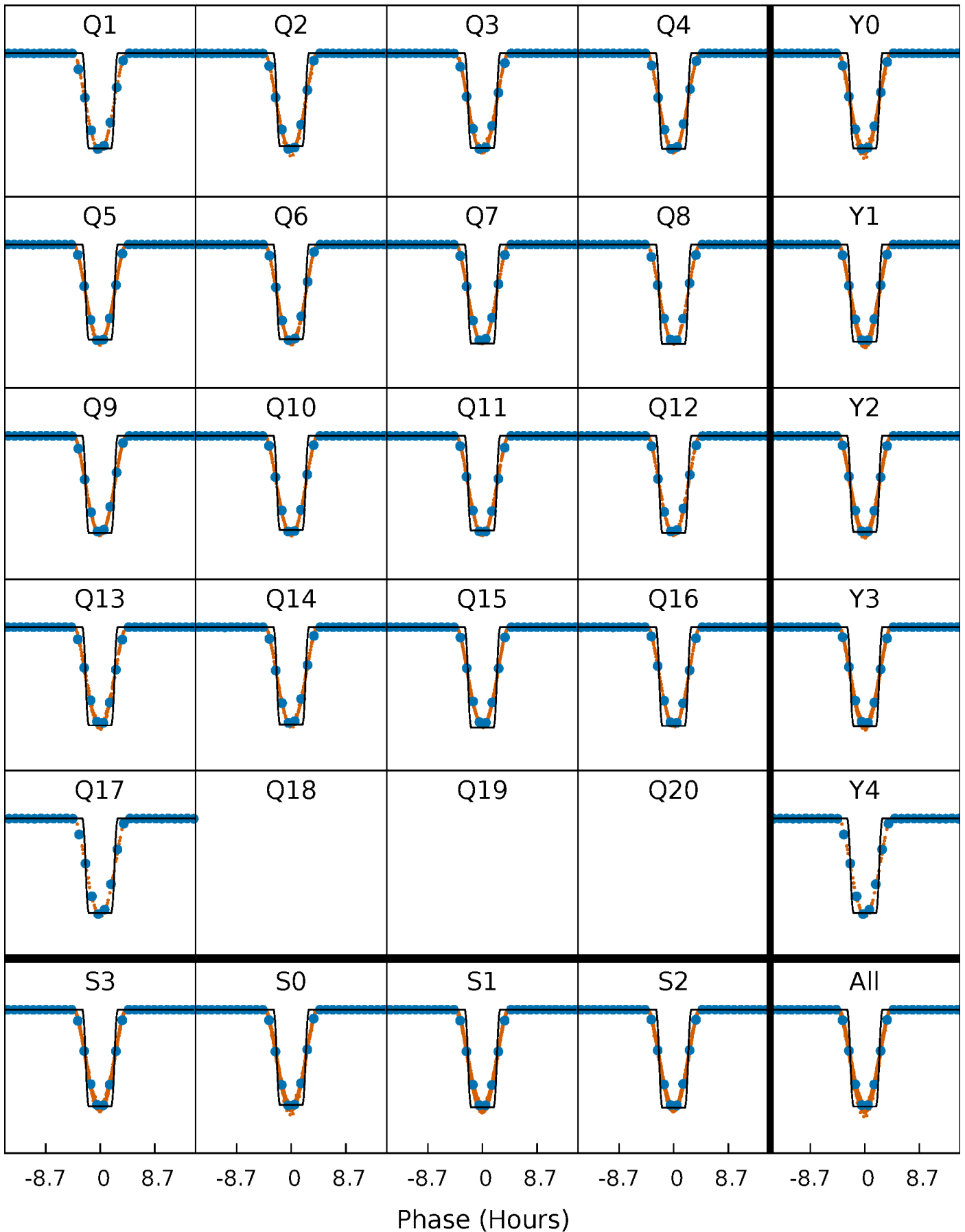
DV Quarter-Phased Transit Curves

TCE 008285254-01 P= 7.535894 Days $T_0=137.781180$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

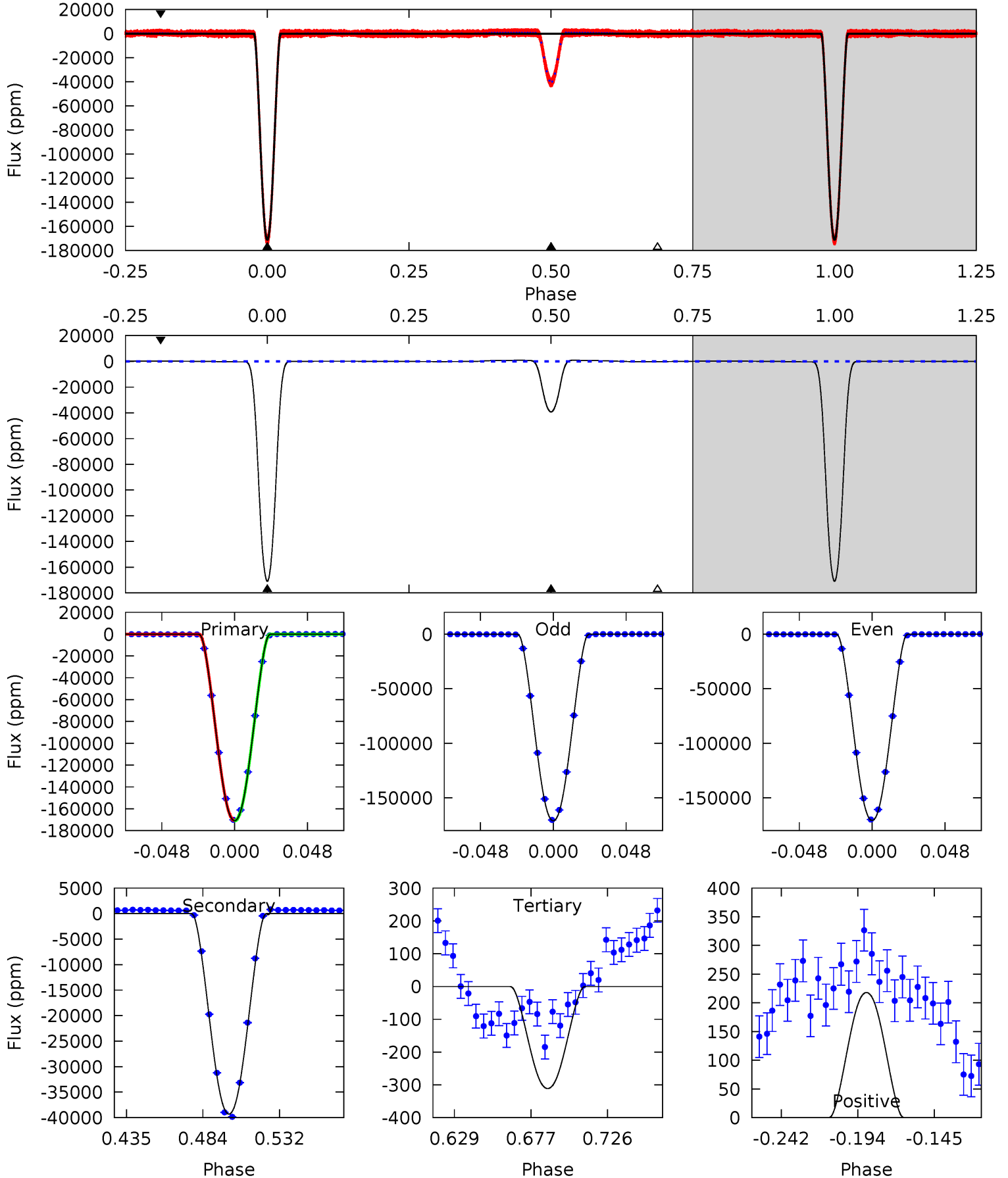
TCE 008285254-01 P= 7.535876 Days $T_0=137.782919$ (BKJD)



DV Model-Shift Uniqueness Test

008285254-01, P = 7.535894 Days, E = 130.245286 Days

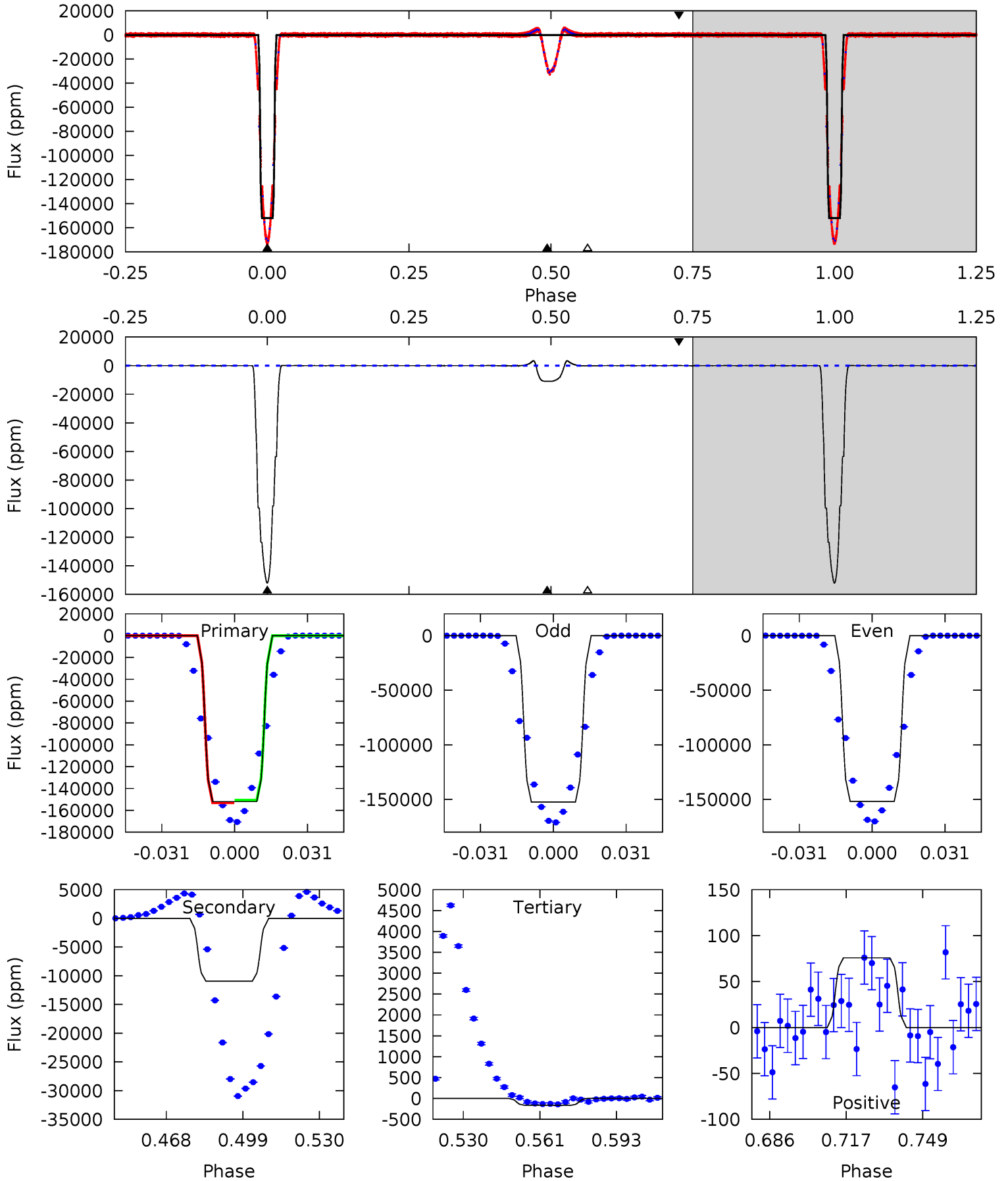
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10755 | 2473 | 19.6 | 13.7 | 4.71 | 1.97 | 18.4 | 10735 | 10741 | 2453 | 2459 | 10.1 | 1.00 | 0.00 | 10.1 |



Alt Model-Shift Uniqueness Test

008285254-01, P = 7.535876 Days, E = 130.247043 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 6664 | 480.3 | 7.17 | 3.33 | 4.80 | 2.15 | 11.1 | 6657 | 6660 | 473.1 | 477.0 | 13.3 | 1.00 | 0.02 | 0 |



Stellar Parameters For KIC 008285254

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4969^{+148}_{-148} | $4.736^{+0.027}_{-0.033}$ | $-1.520^{+0.300}_{-0.250}$ | $0.537^{+0.030}_{-0.024}$ | $0.574^{+0.028}_{-0.023}$ | $5.211^{+0.567}_{-0.618}$ |
| | +3%/-3% | +1%/-1% | +20%/-16% | +6%/-4% | +5%/-4% | +11%/-12% |
| 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 008285254-01 / KOI 7008.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-----------------|-------------------------|----------------------|----------------------|------------------|
| DV | -39292 ± 16 | $24.13^{+0.79}_{-0.63}$ | 900^{+30}_{-29} | 3806^{+86}_{-92} | 151^{+7}_{-7} |
| Alt. | -10954 ± 23 | $24.16^{+0.79}_{-0.63}$ | 899^{+29}_{-29} | 3096^{+64}_{-61} | 41^{+2}_{-2} |

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

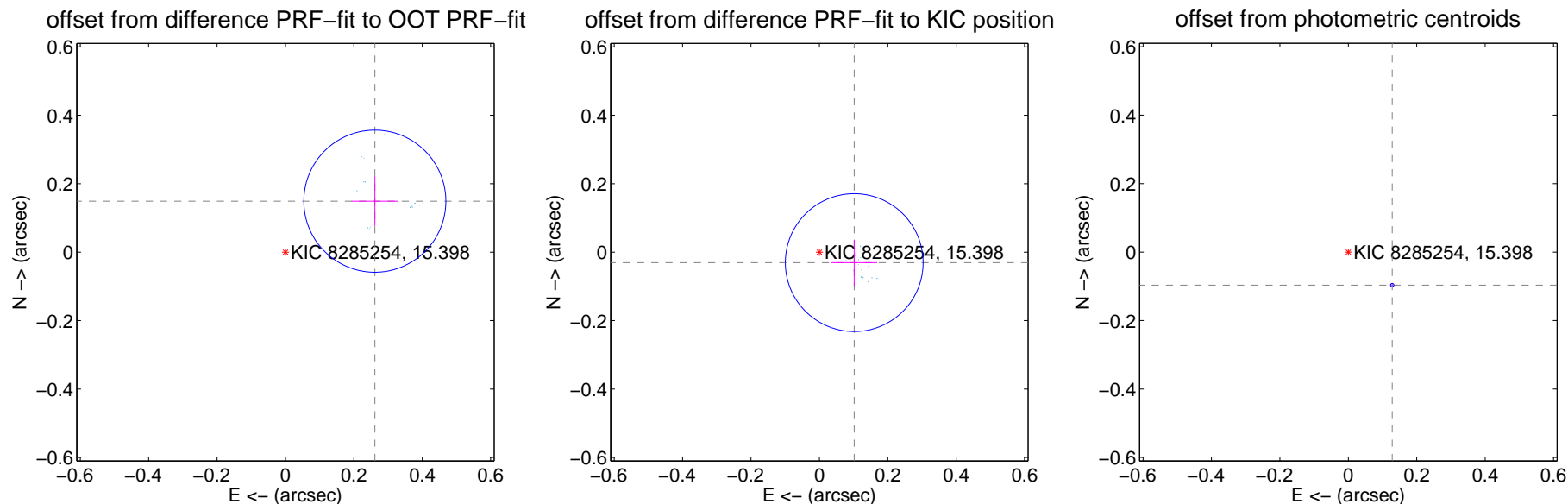
DV Centroid Data

Supplemental centroid analysis for 008285254-01. Kepler magnitude: 15.40. Transit SNR 4743.67

There are 17 quarters with good PRF difference image offsets

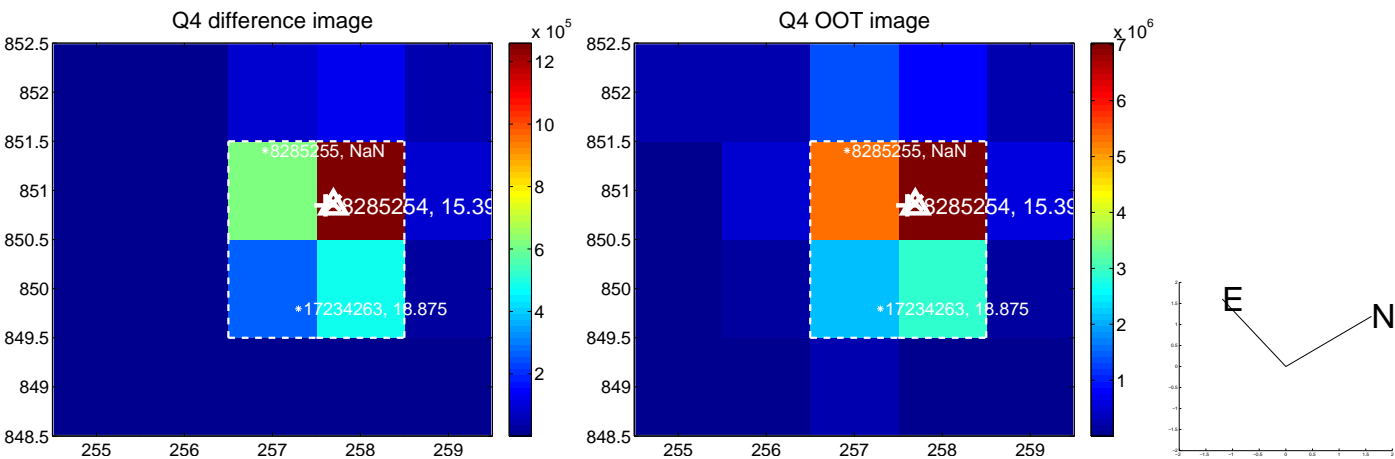
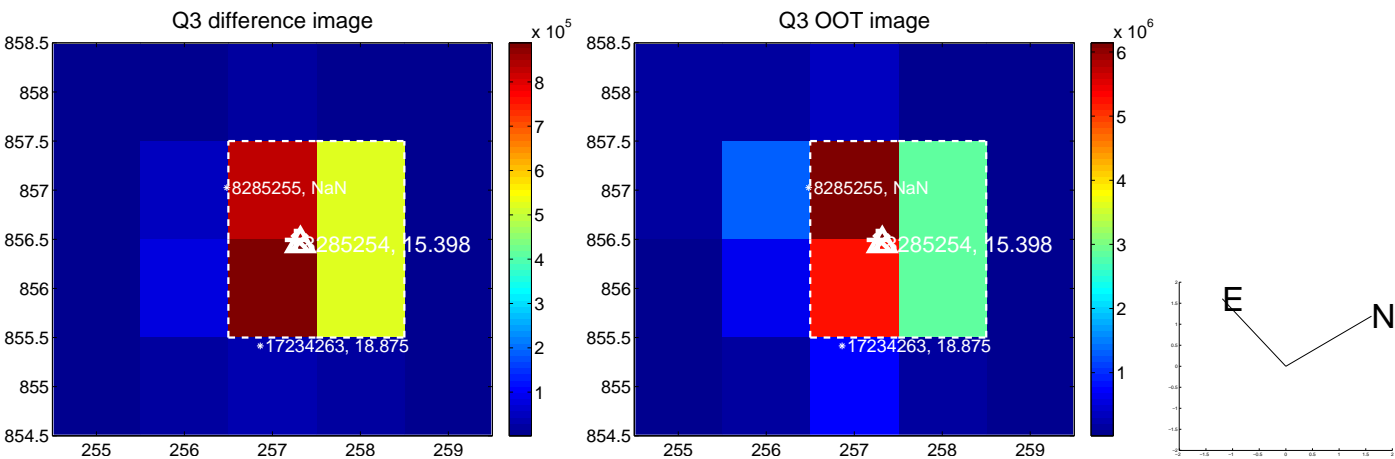
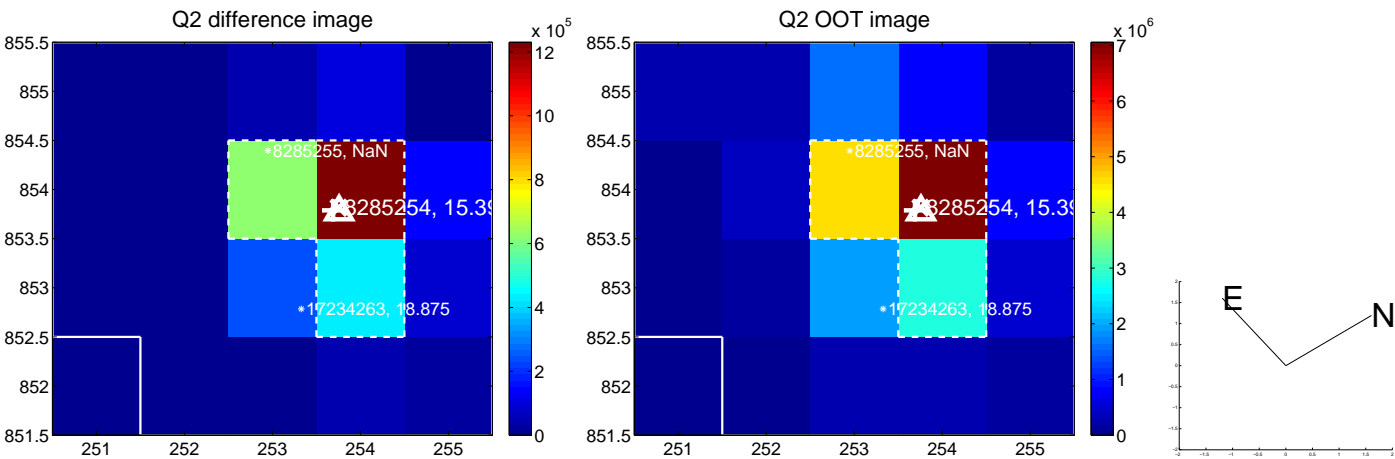
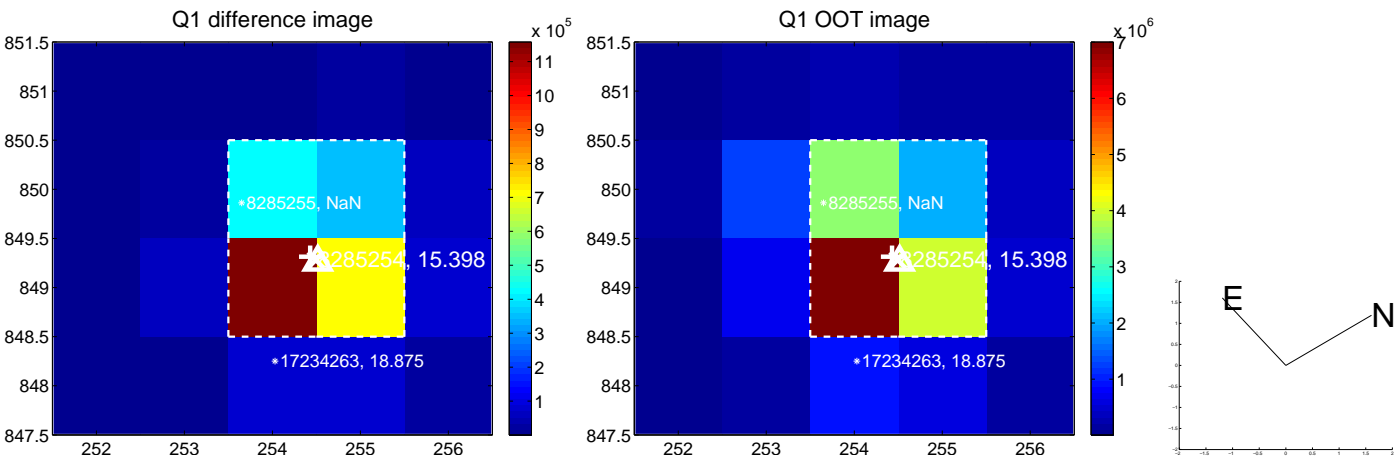
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.301 ± 0.069 | 4.35 | -0.261 ± 0.068 | 0.149 ± 0.073 |
| PRF-fit source offset from KIC position | 0.106 ± 0.067 | 1.59 | -0.102 ± 0.067 | -0.031 ± 0.067 |
| photometric centroid source offset | 0.16 ± 0.00 | 99.53 | -0.13 ± 0.00 | -0.10 ± 0.00 |

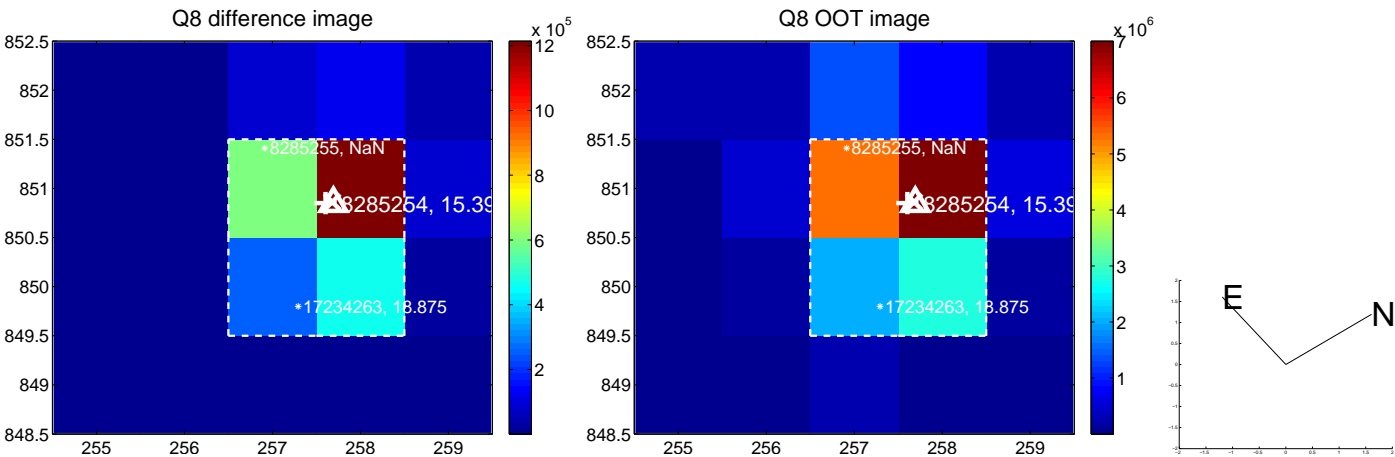
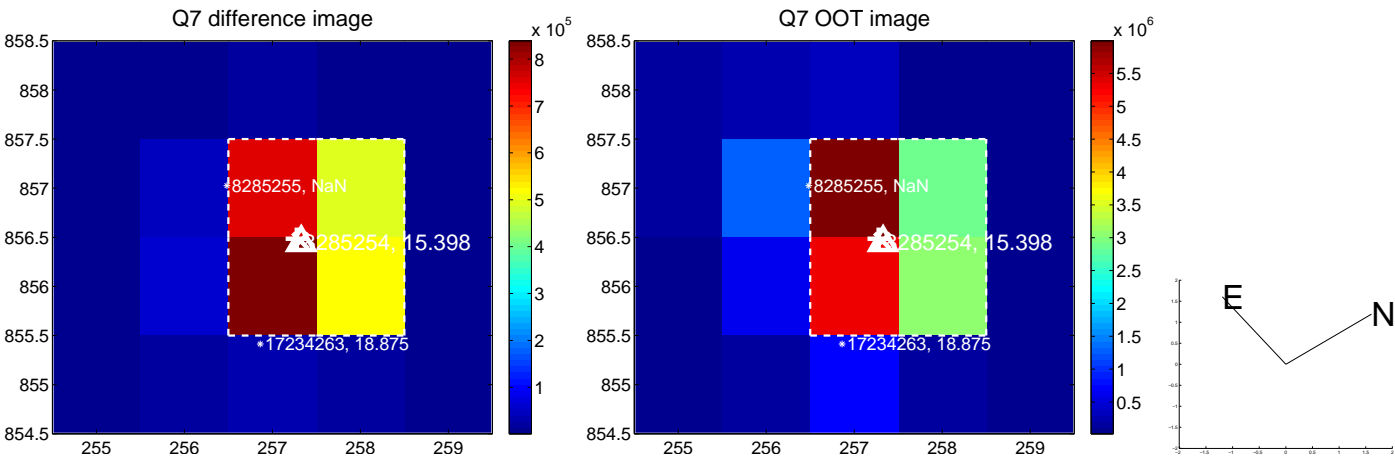
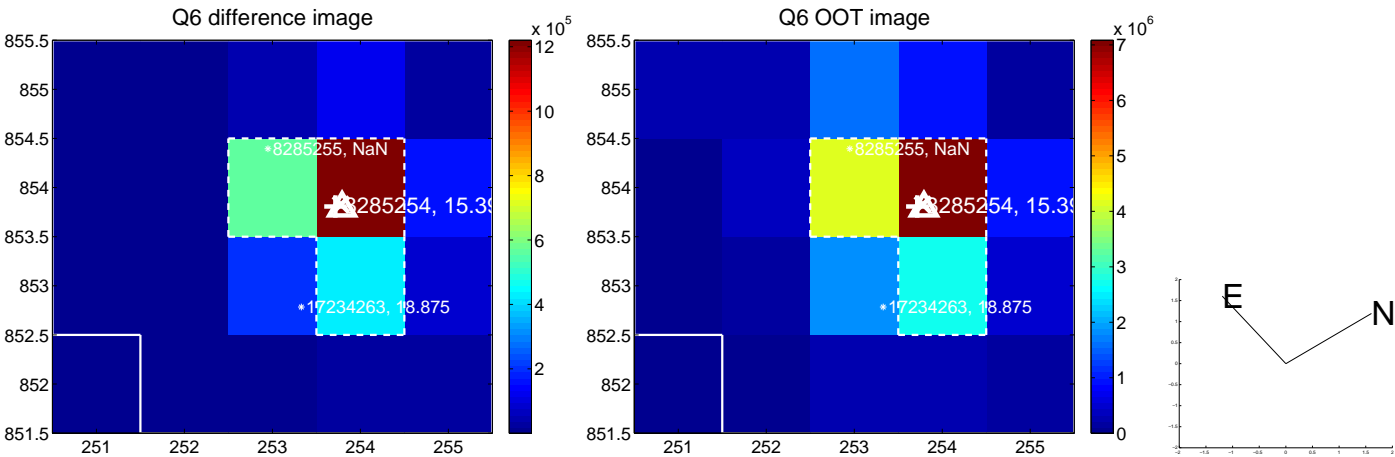
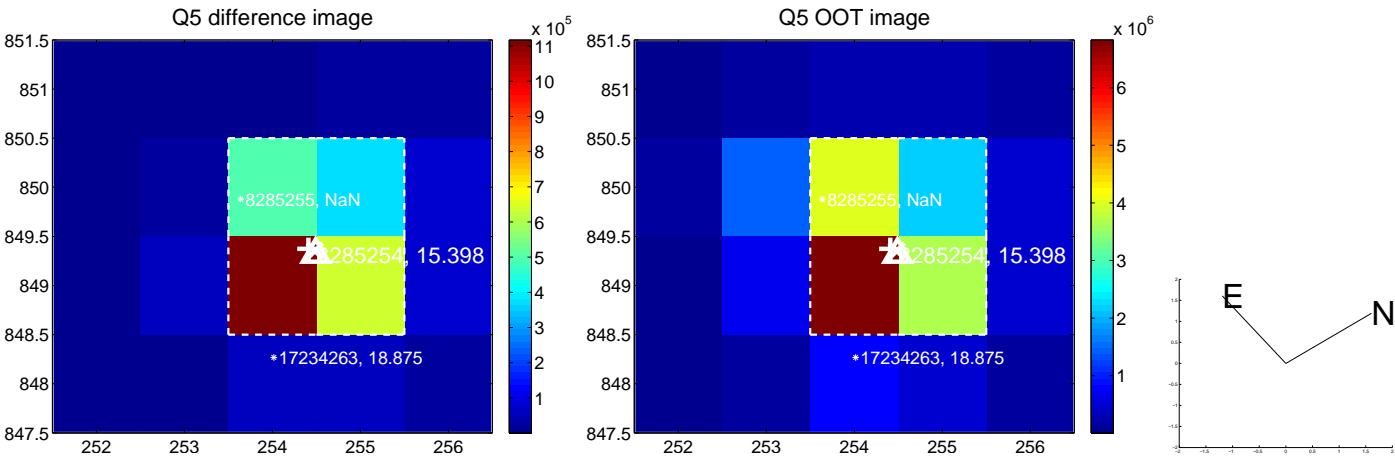


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

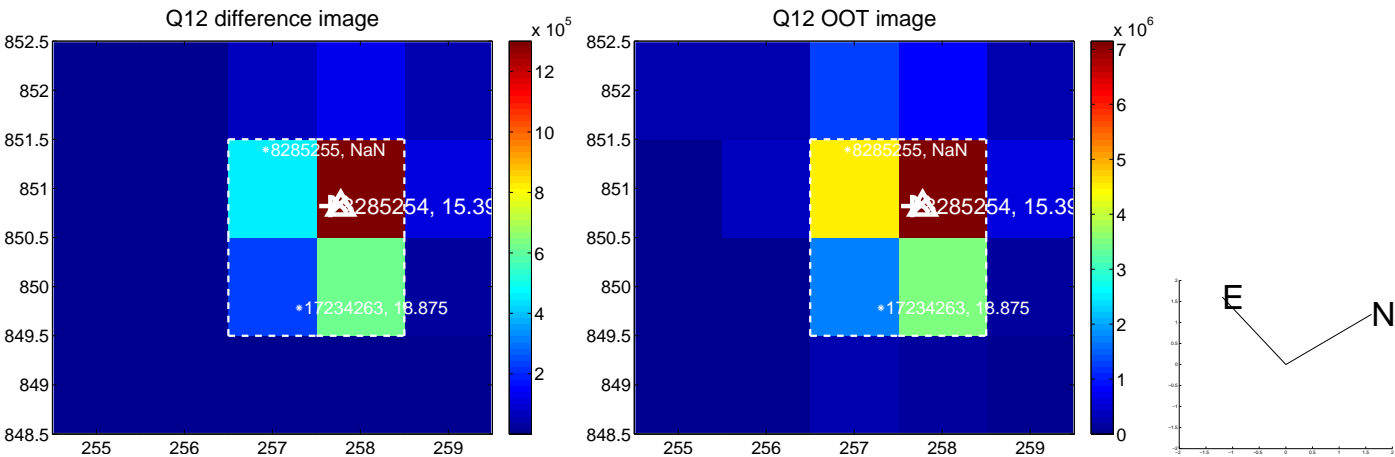
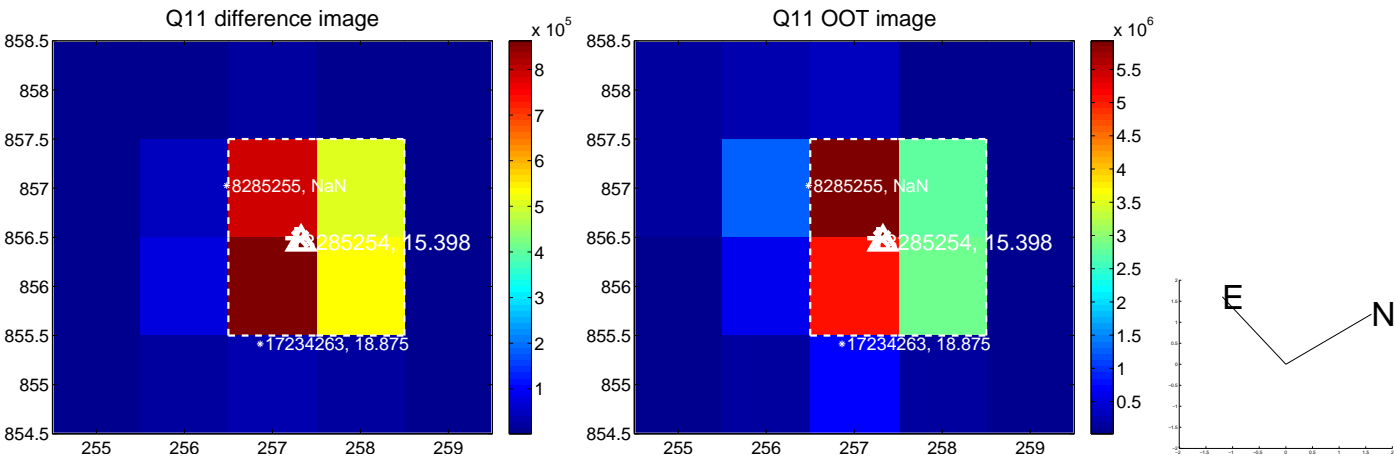
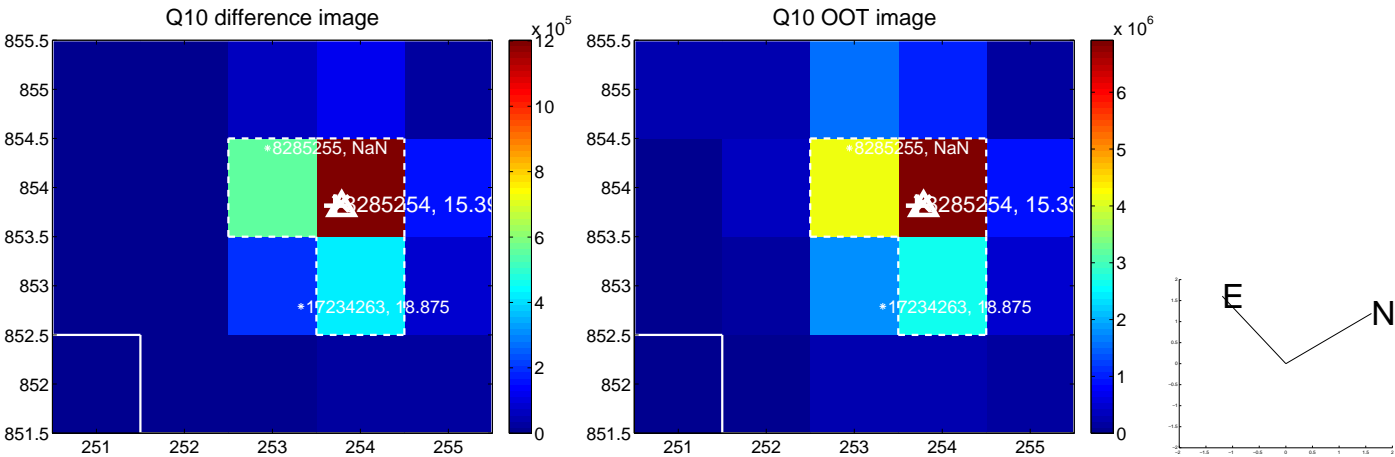
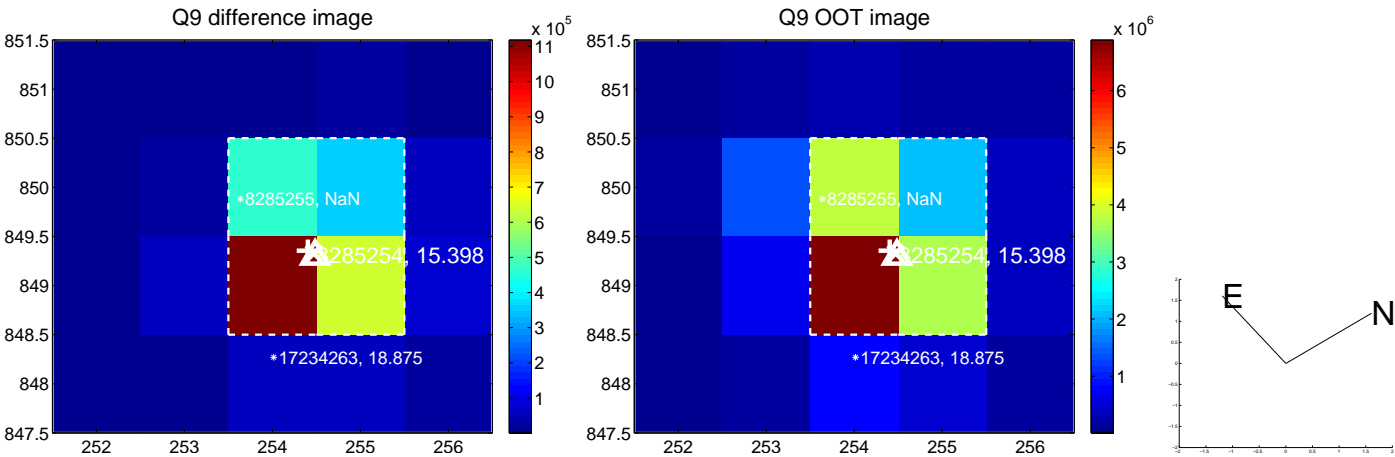
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



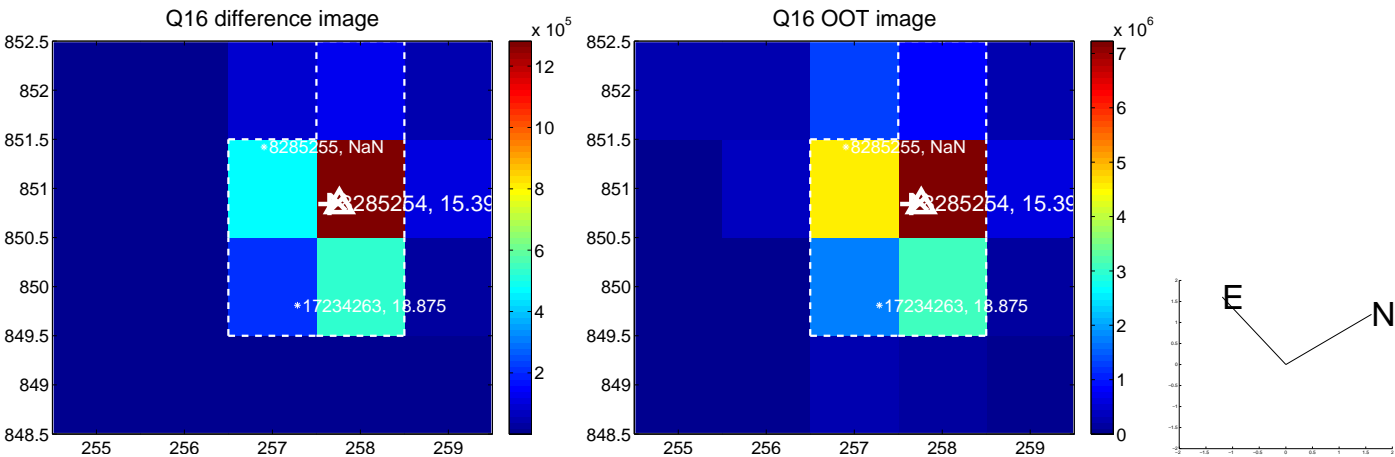
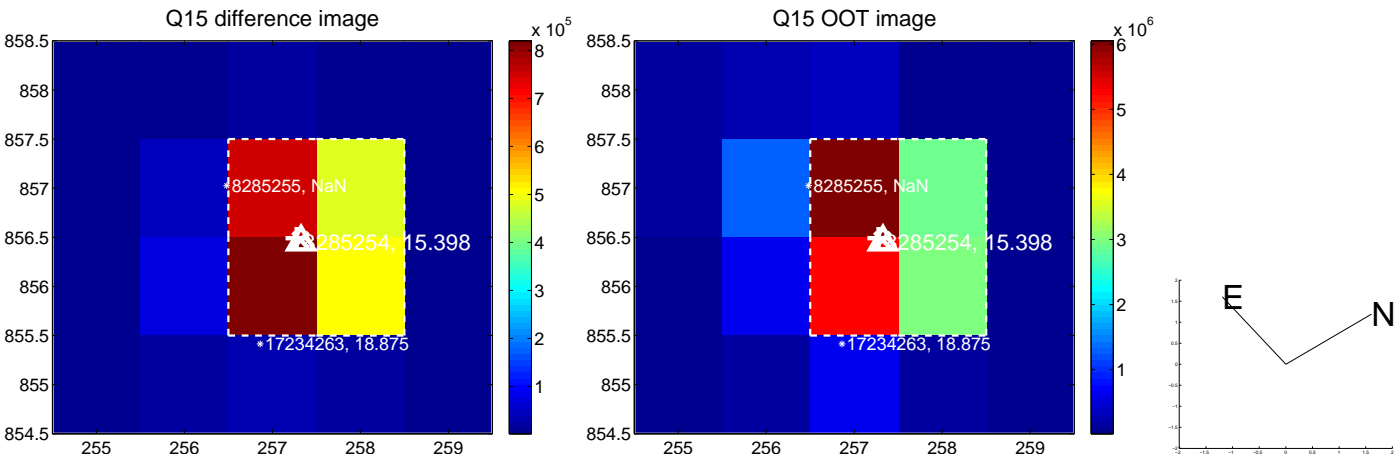
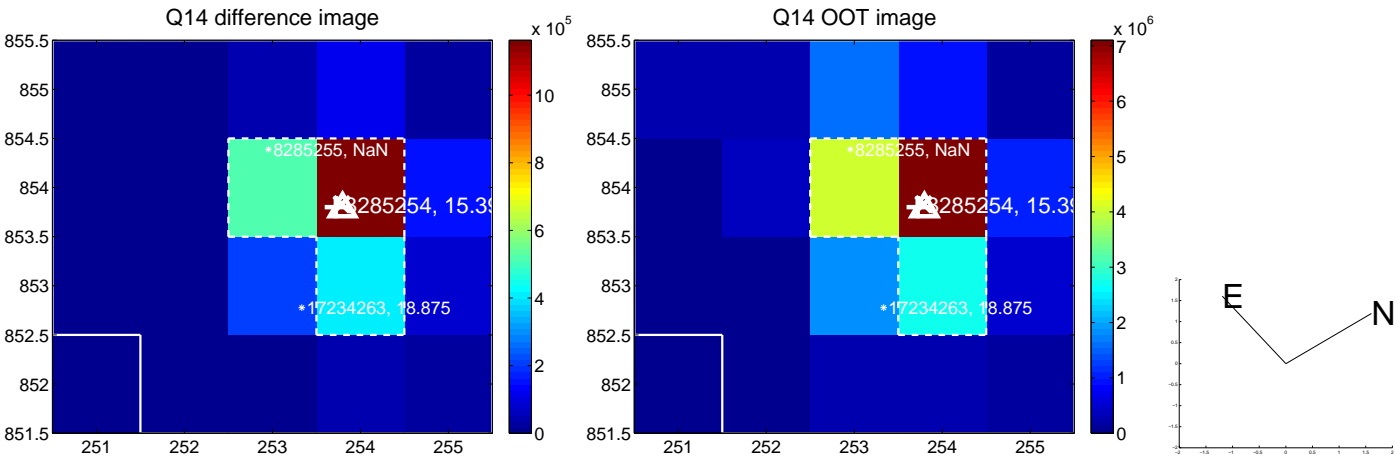
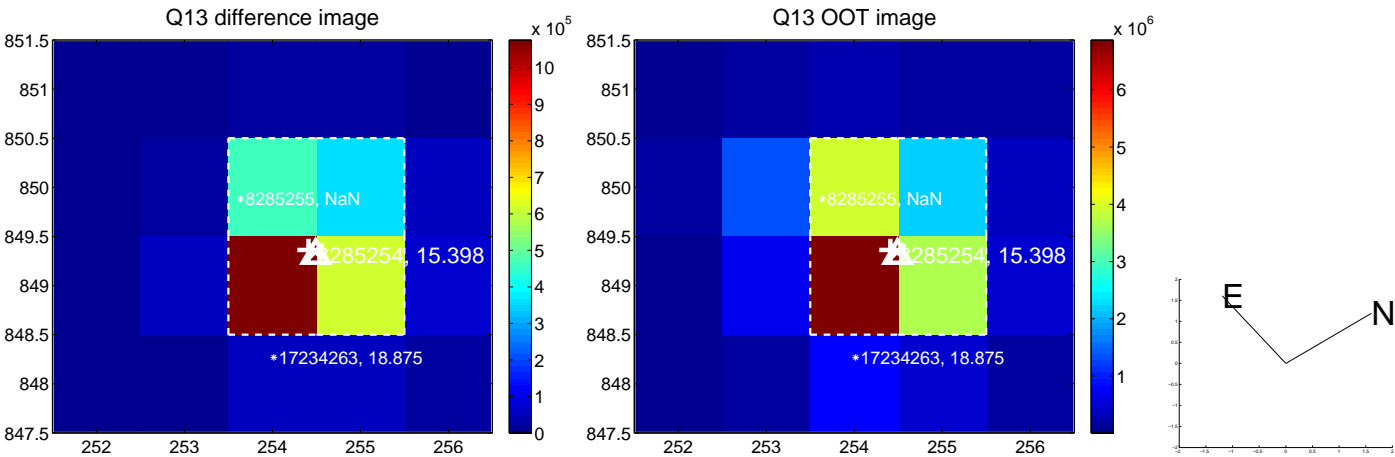
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



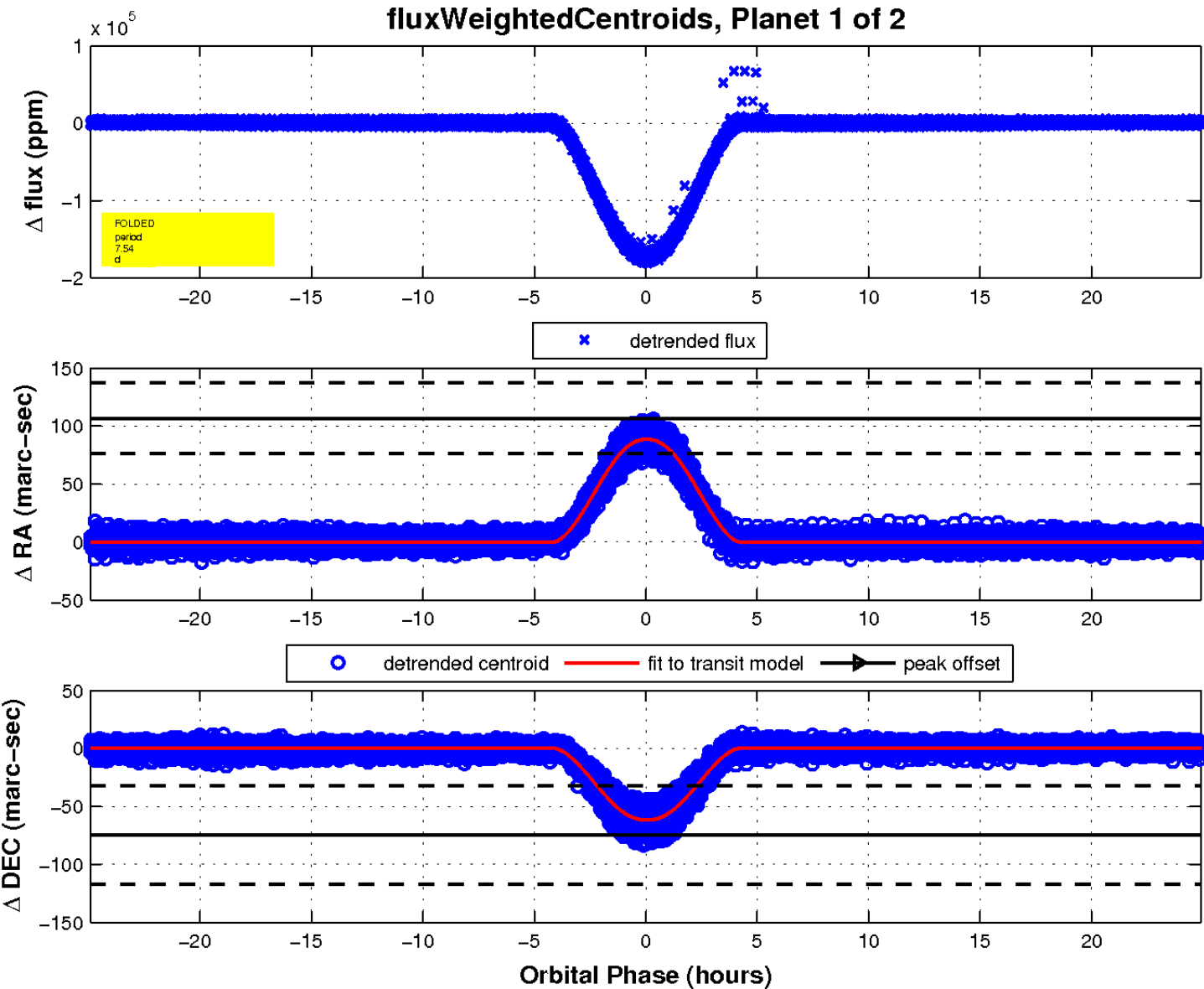
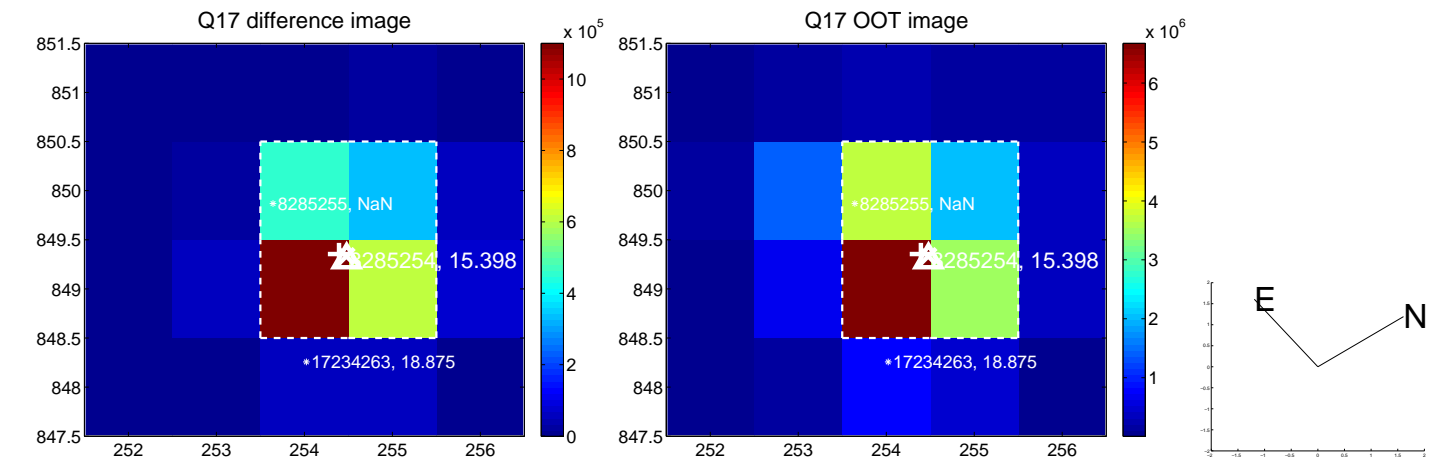
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

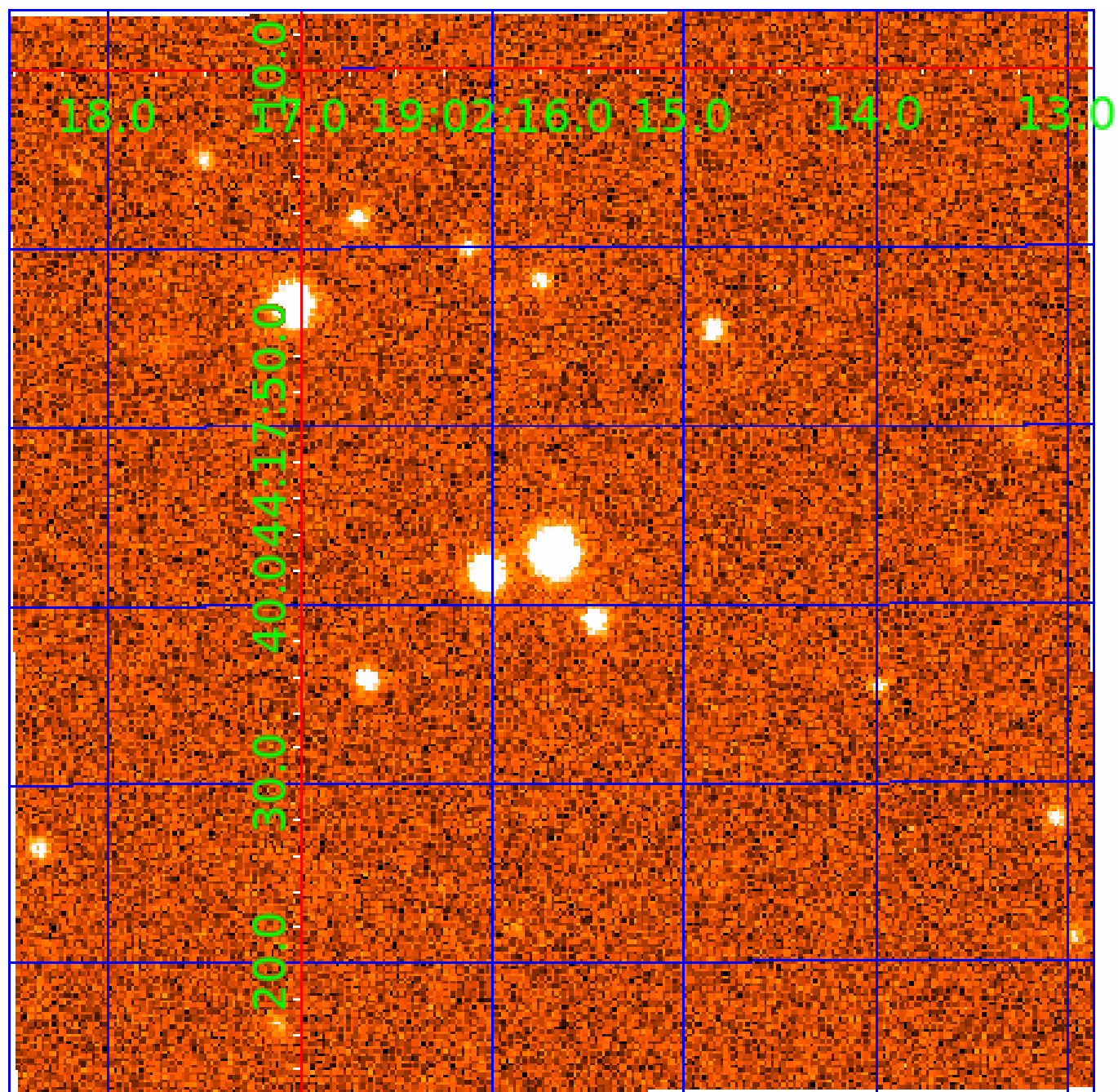


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008285254

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|--------|--------|-----------------------------|-----------------|------------------------|------------------------|
| 008285254-01 | OBS | 7008.01 | 7.535894 | 137.781180 | 171181.1 | 8.307 | 5985.6 | 4743.7 | 0.54 | 4969 | 24.09 | 40.34 |
| 008285254-02 | OBS | No | 7.535906 | 134.013735 | 41452.5 | 8.010 | 1519.9 | 1239.0 | 0.54 | 4969 | 18.89 | 40.34 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008285254-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE |
| 008285254-02 | OBS | FP | 0.00 | 1 | 1 | 0 | 0 | IS_SEC_TCE |

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.

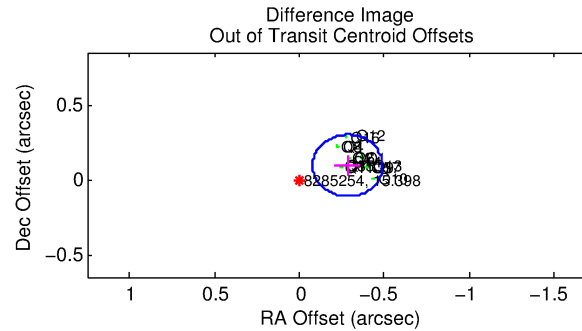
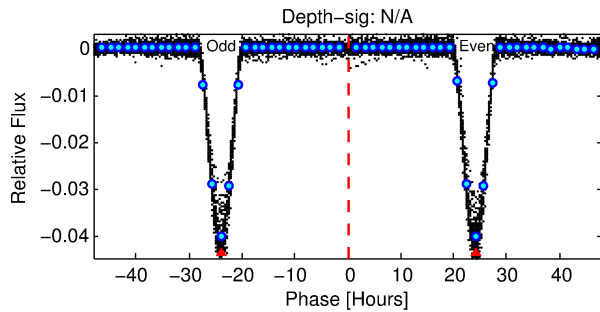
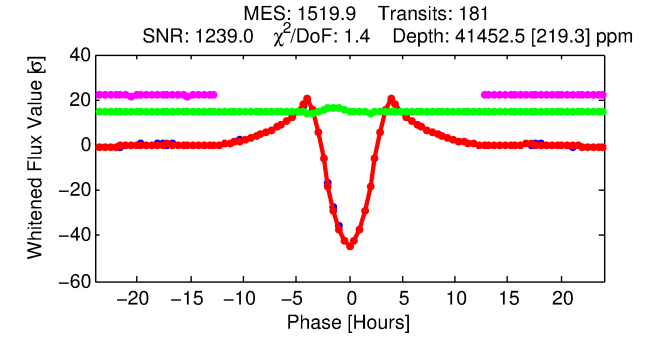
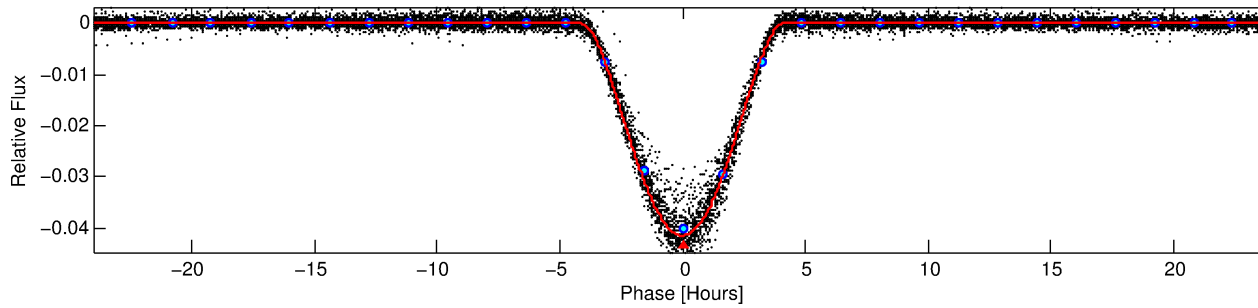
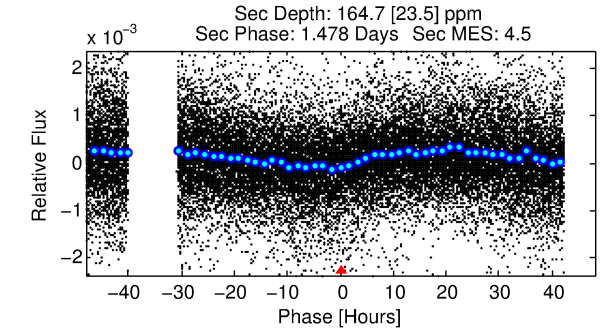
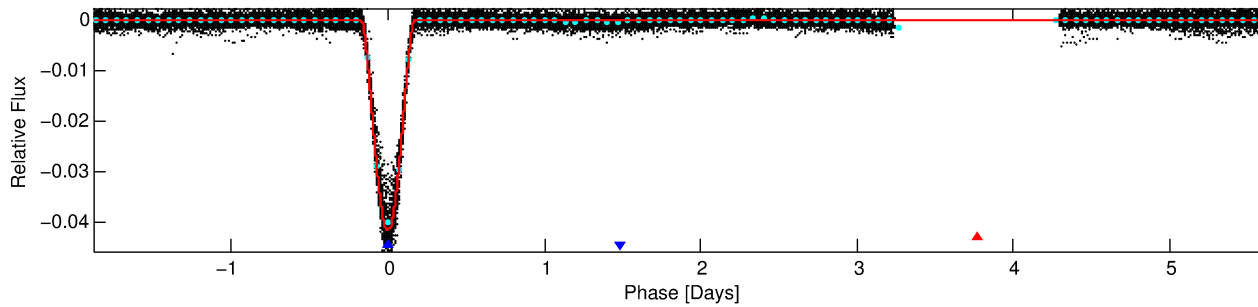
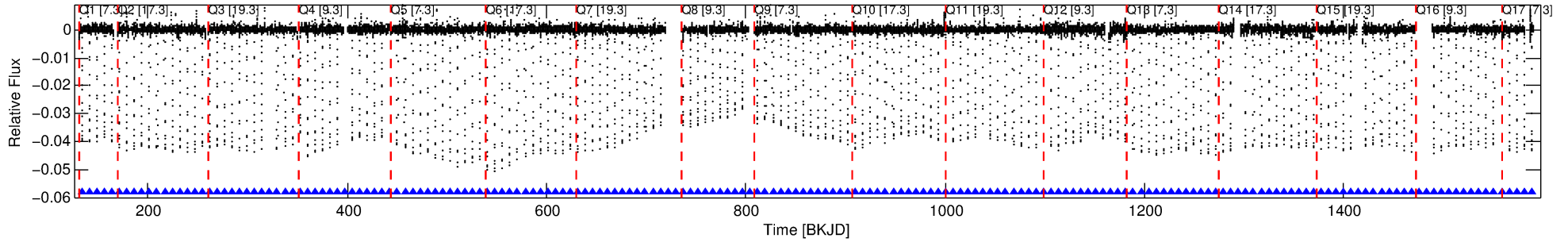
Ephemeris Match Information For 008285254-02

No Significant Match Found

DV One-Page Summary

KIC: 8285254 Candidate: 2 of 2 Period: 7.536 d
KOI: K07008 Corr: No Ephemeris Match

Kp: 15.40 R*: 0.54 Rs Teff: 4969.0 K Logg: 4.74 Fe/H: -1.520



DV Fit Results:

Period = 7.53591 [0.00000] d
Epoch = 134.0137 [0.0001] BKJD
Rp/R* = 0.3223 [0.0142]
a/R* = 6.32 [0.01]
b = 1.00 [0.02]
Seff = 40.34 [5.43]
Teff = 643 [22] K
Rp = 18.89 [1.35] Re
a = 0.0625 [0.0028] AU
Ag = 0.99 [0.18] [-0.05σ]
Teffp = 992 [51] K [6.30σ]

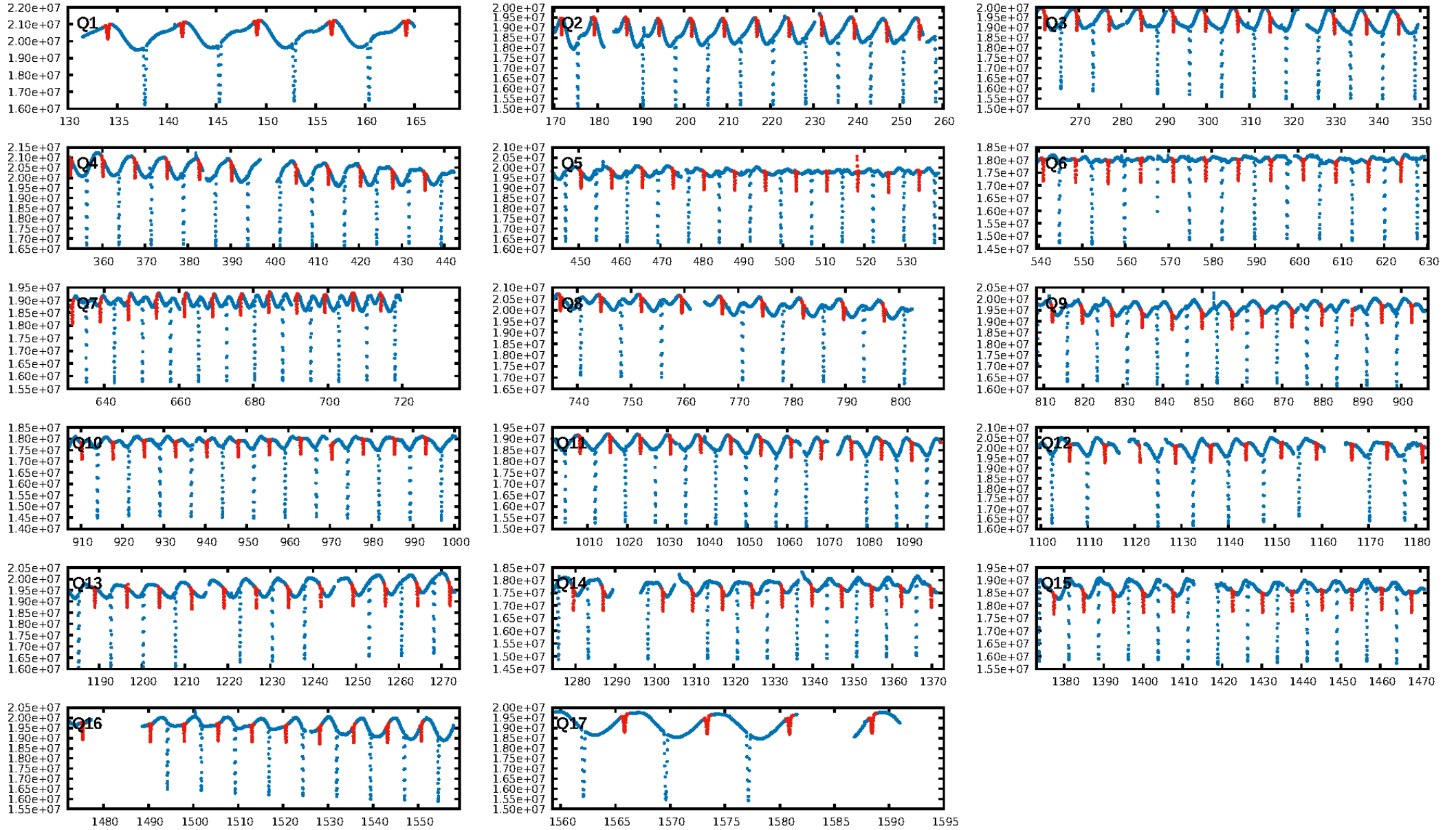
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [172/172]
GhostDiagnostic-chr: 1.784
Centroid-sig: 0.0%
Centroid-so: 0.177 arcsec [30.23σ]
OotOffset-rm: 0.300 arcsec [4.37σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.137 arcsec [1.99σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

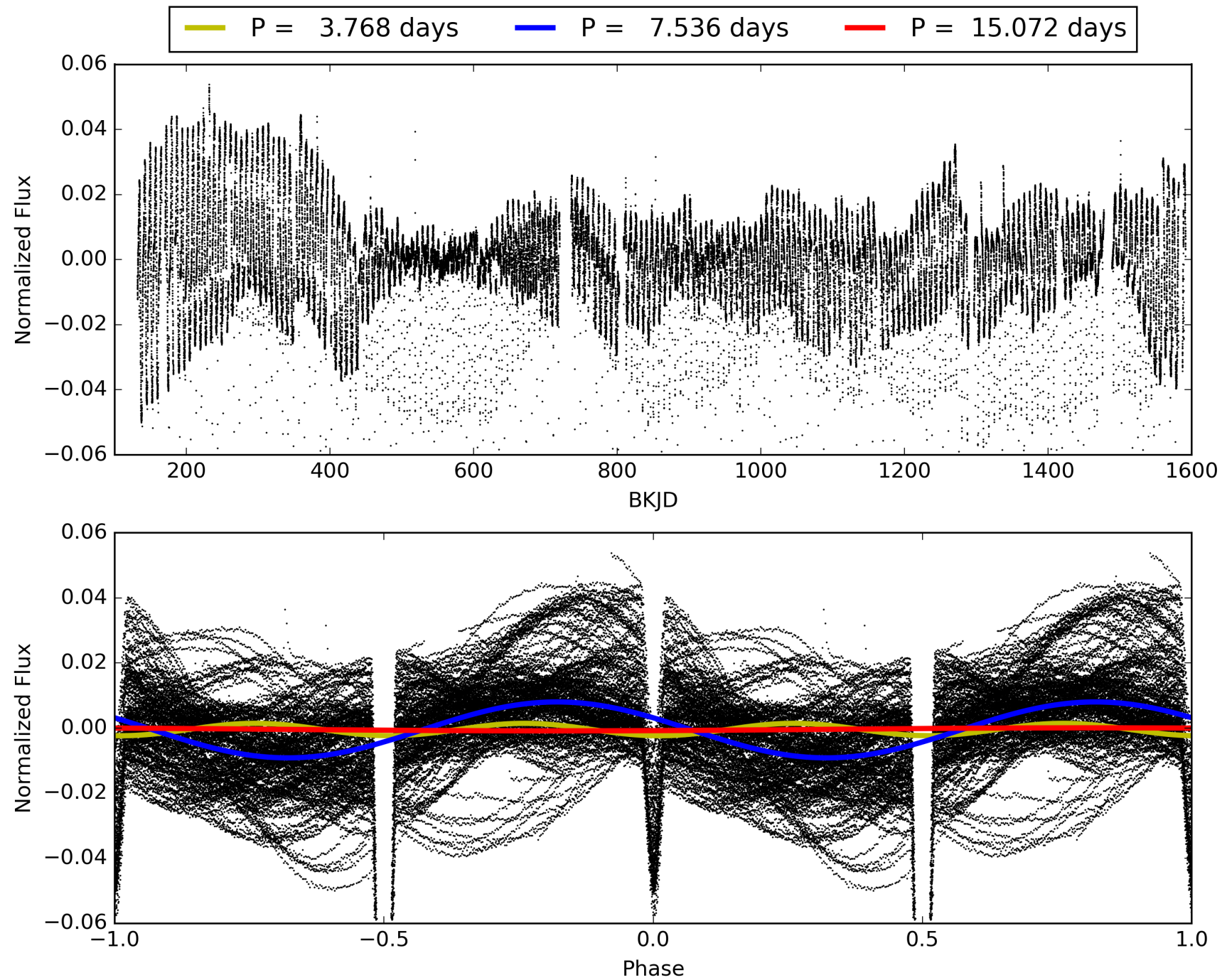
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:28:52 Z

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

TCE 008285254-02, PDC Light Curves

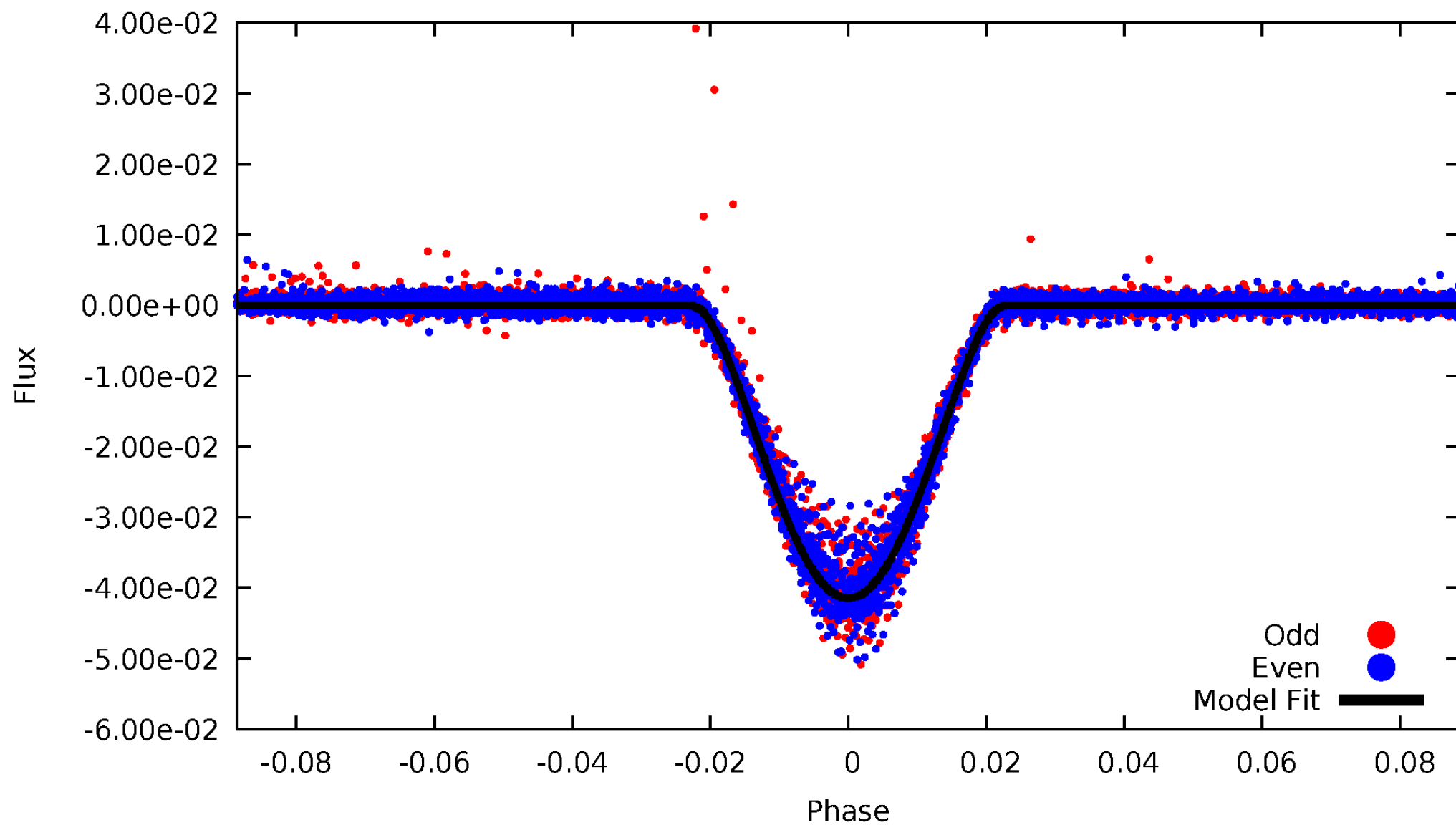


TCE 008285254-02



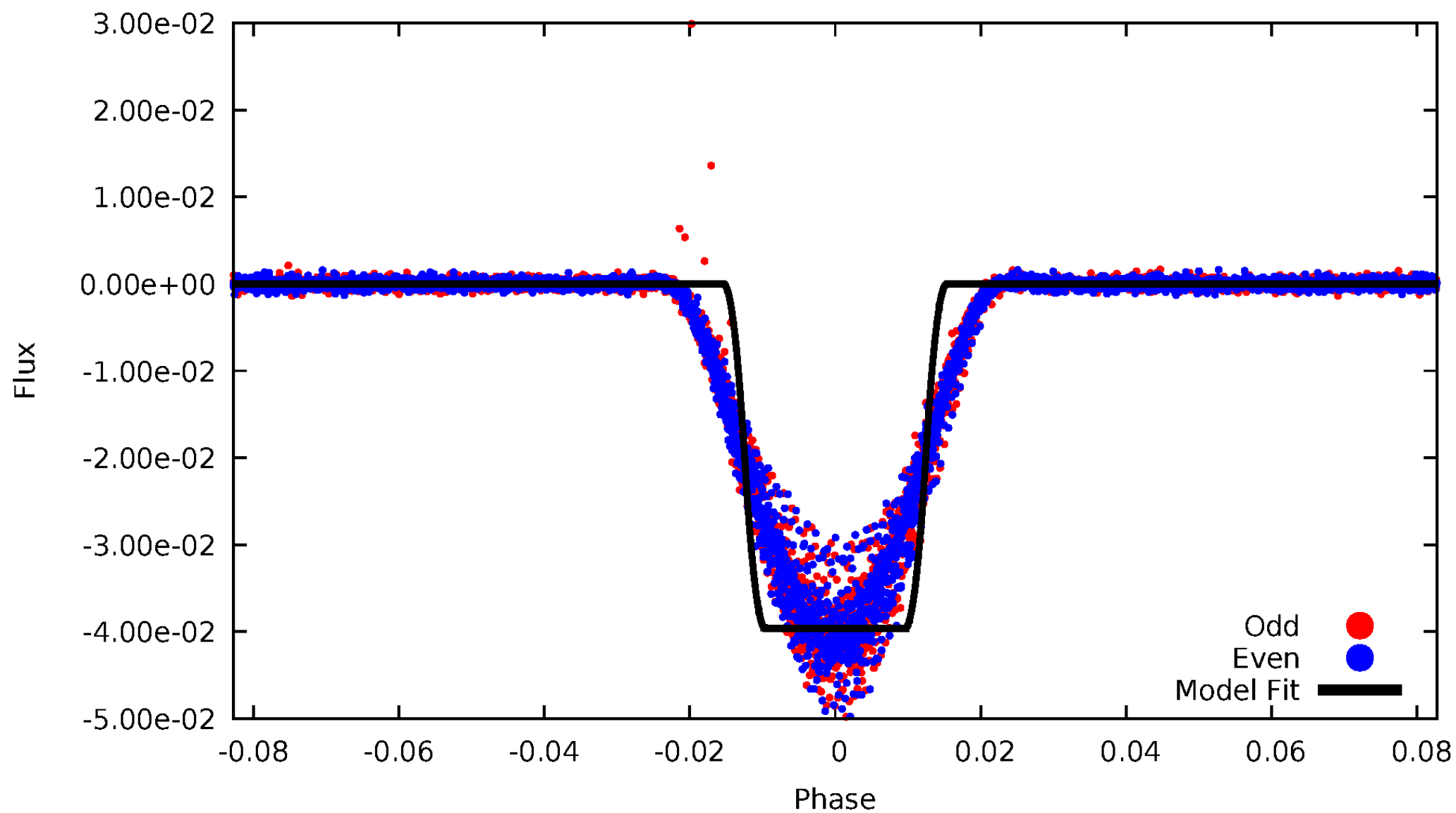
DV Odd/Even

TCE 008285254-02



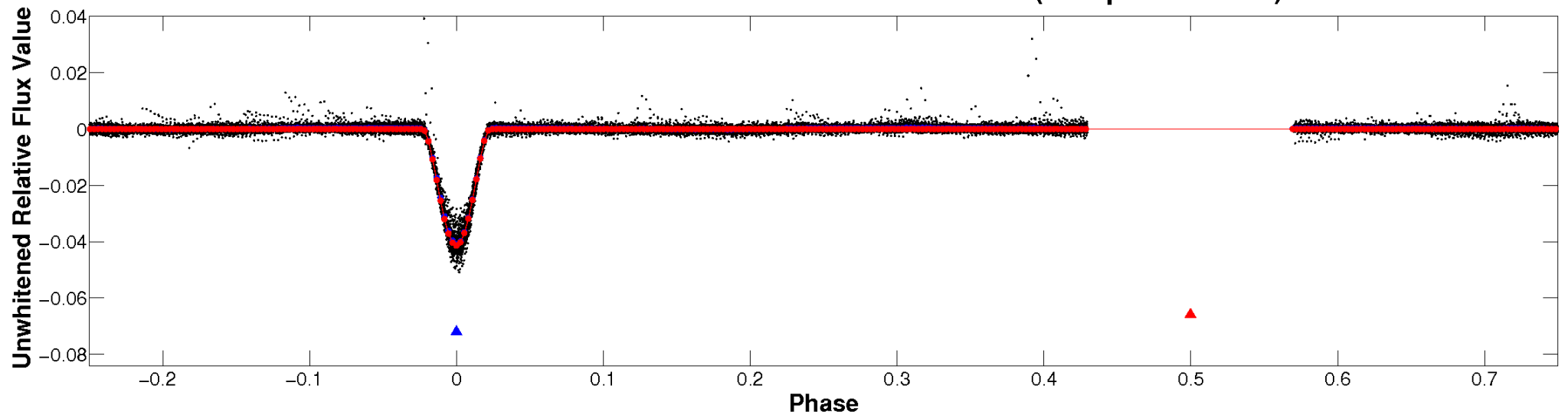
ALT Odd/Even

TCE 008285254-02

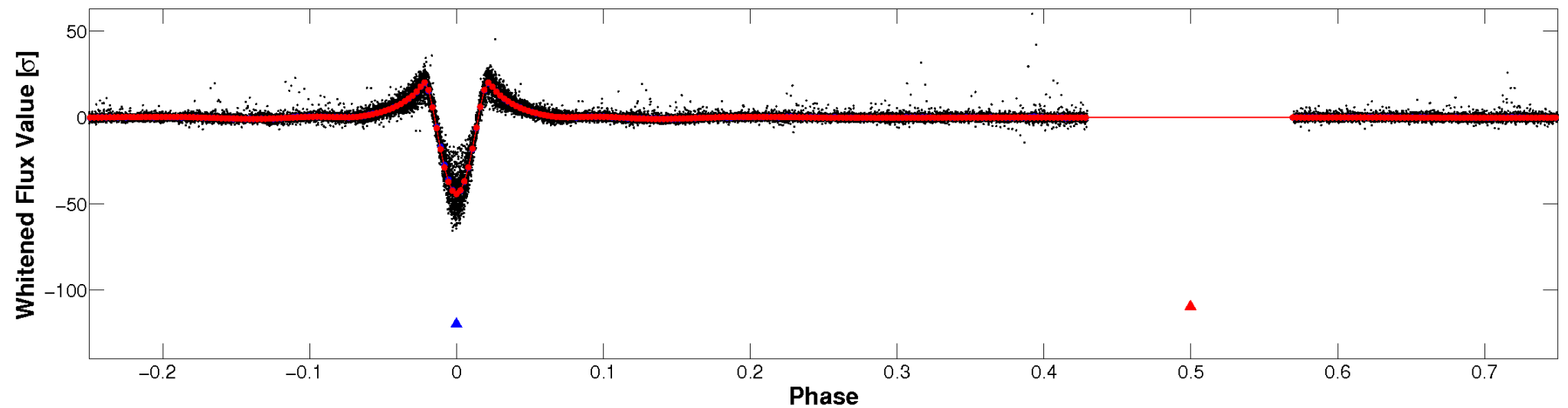


Non-Whitened Vs. Whitened Light Curve

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

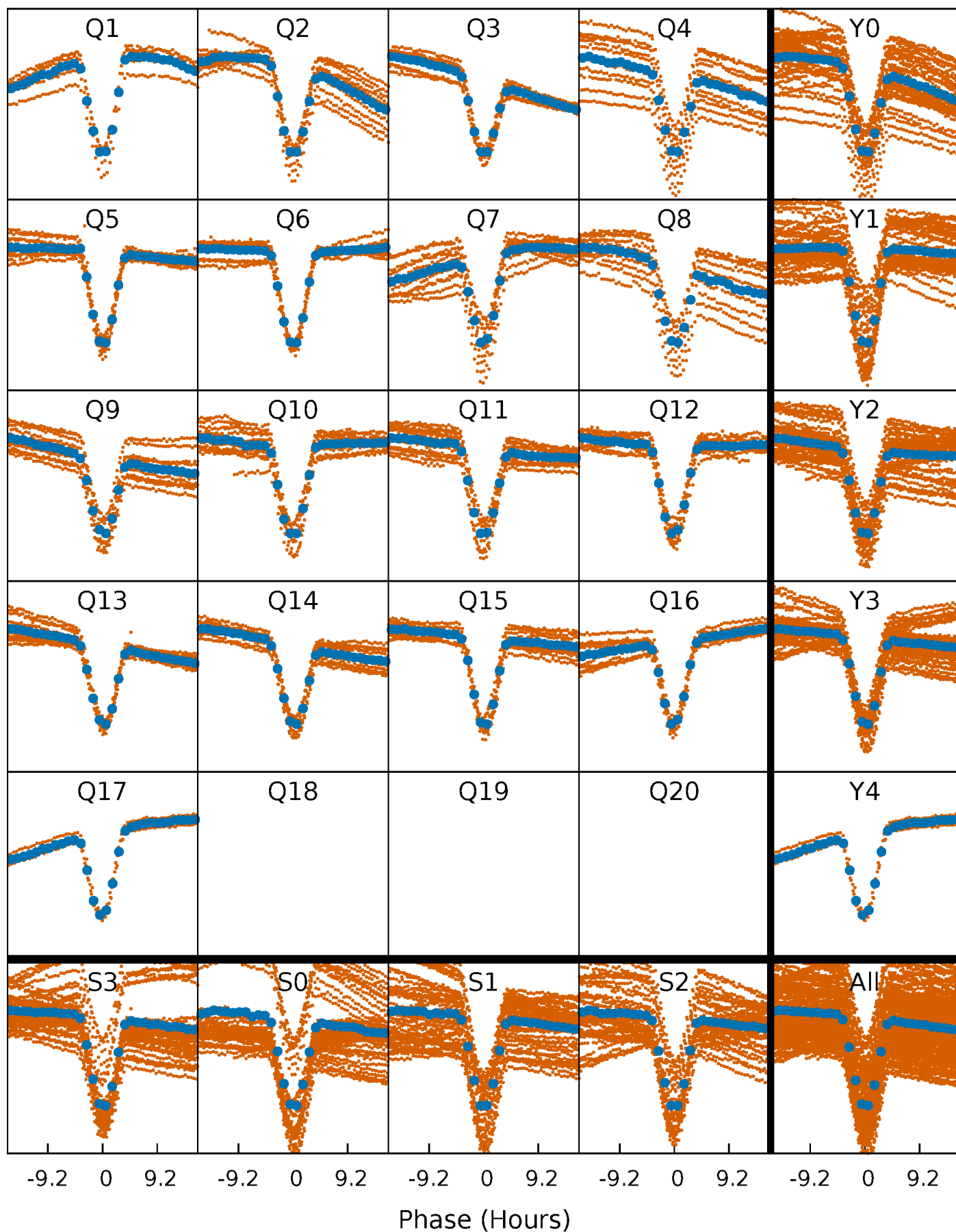


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



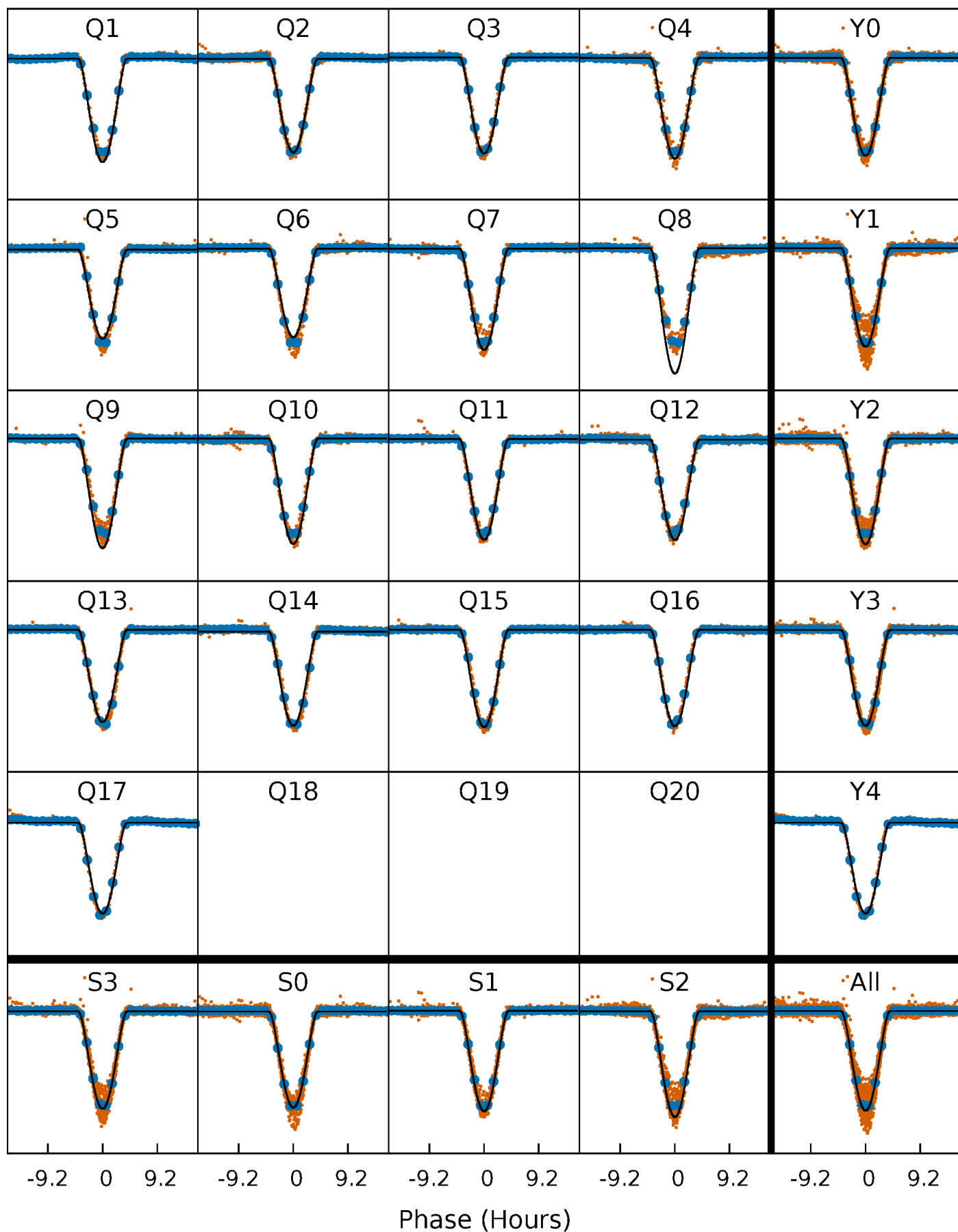
PDC Quarter-Phased Transit Curves

TCE 008285254-02 P= 7.535906 Days $T_0=134.013735$ (BKJD)



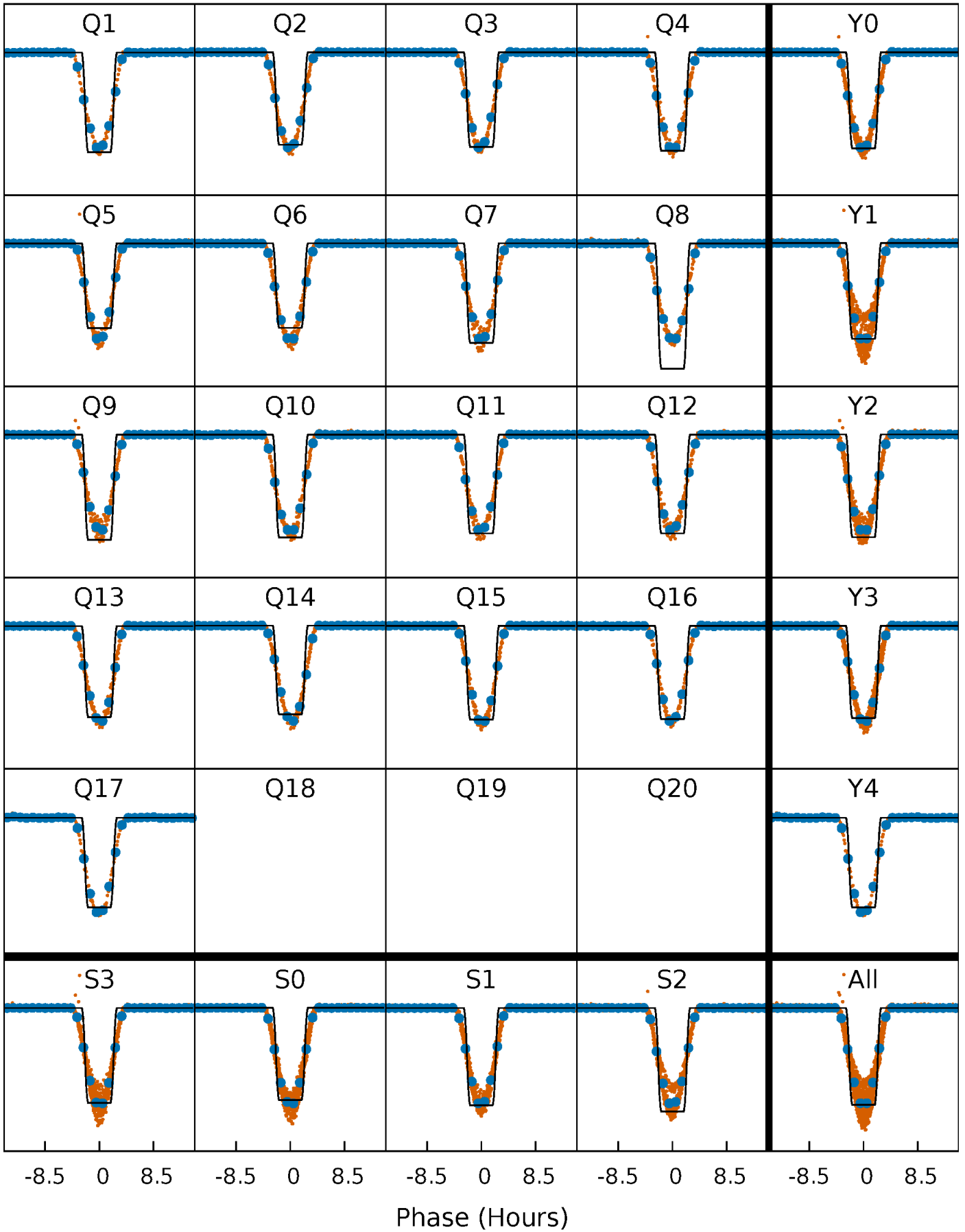
DV Quarter-Phased Transit Curves

TCE 008285254-02 P= 7.535906 Days $T_0=134.013735$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

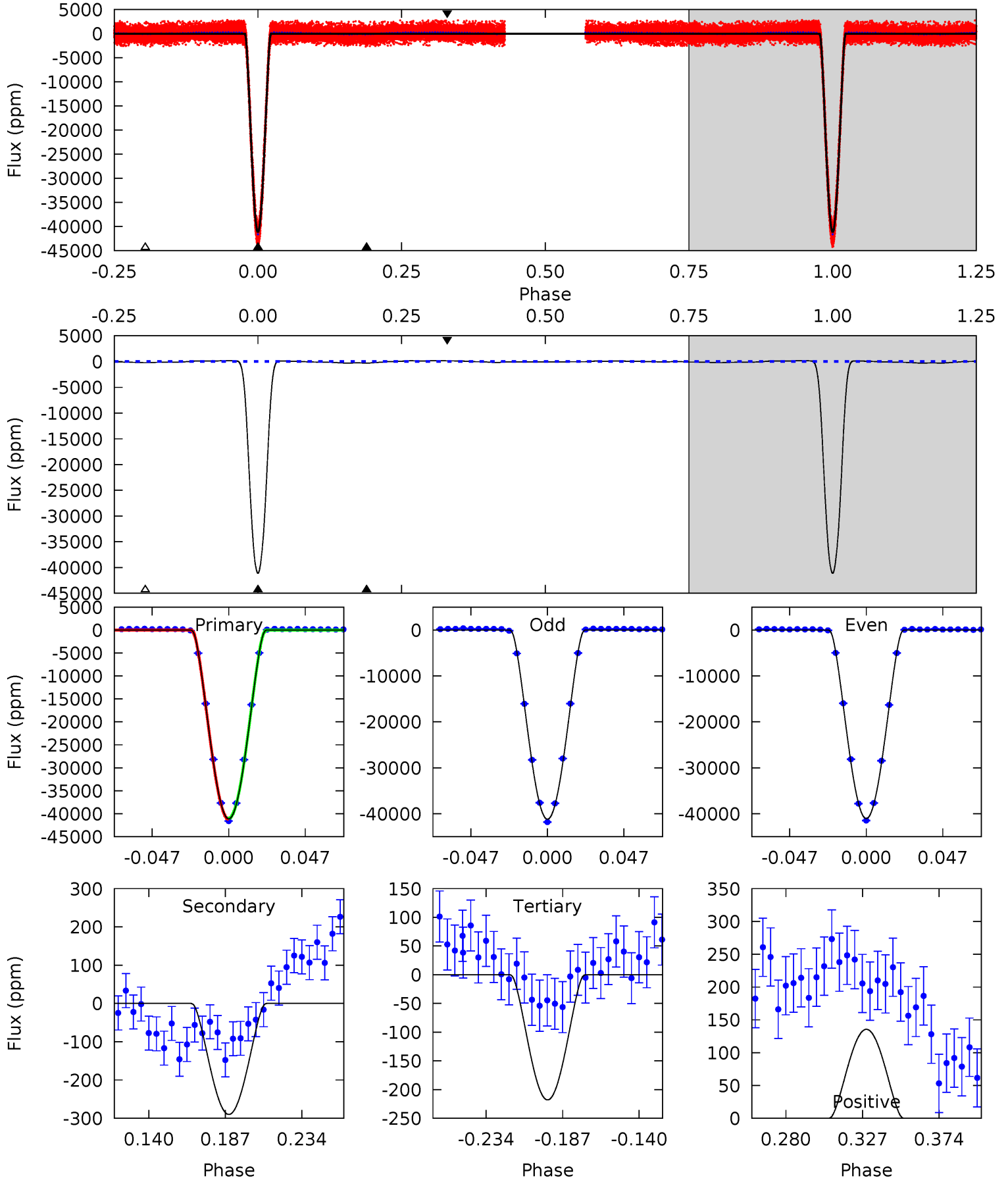
TCE 008285254-02 P= 7.535876 Days $T_0=134.017873$ (BKJD)



DV Model-Shift Uniqueness Test

008285254-02, P = 7.535906 Days, E = 126.477829 Days

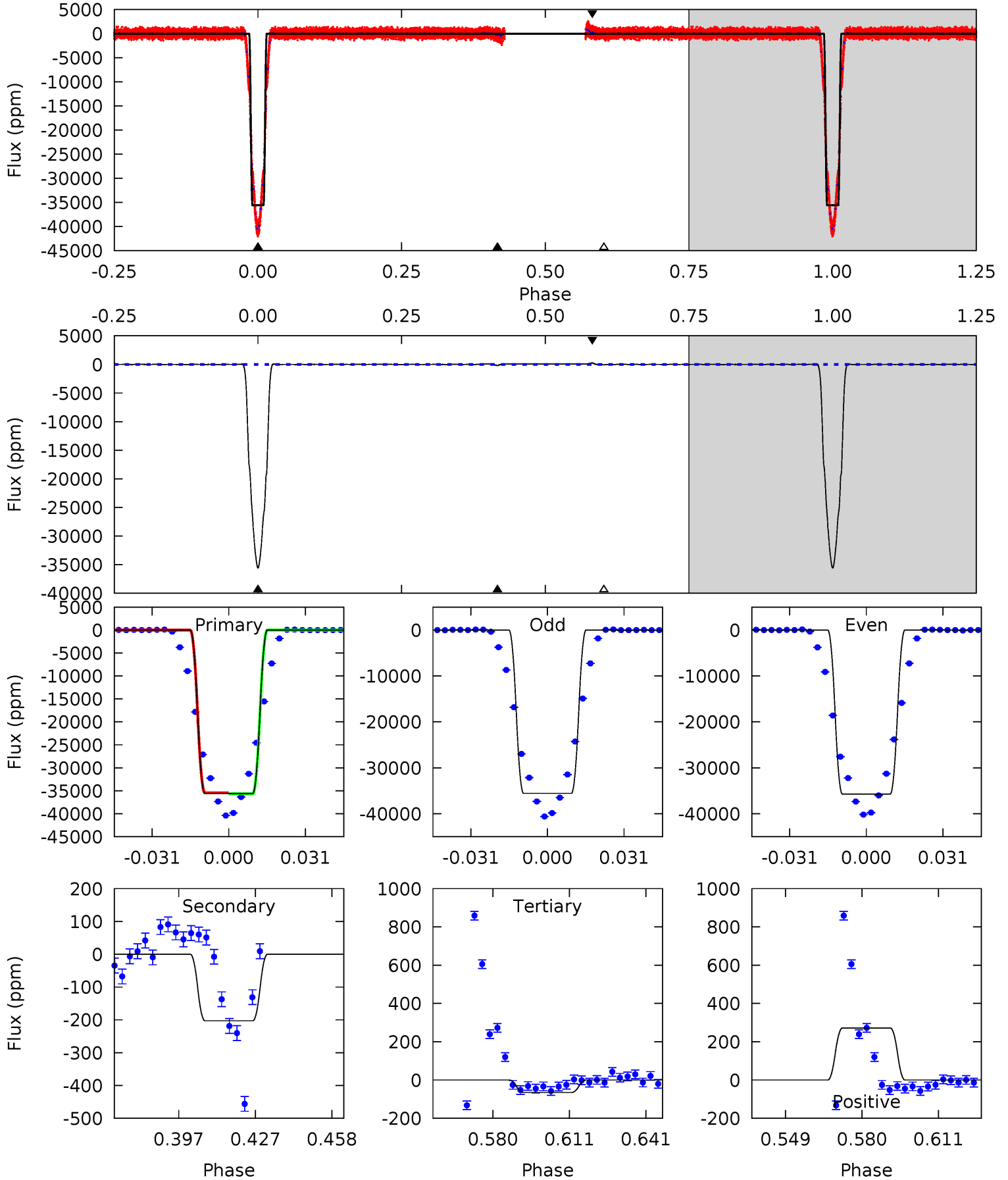
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 2936 | 20.7 | 15.6 | 9.68 | 4.72 | 1.99 | 7.98 | 2921 | 2926 | 5.14 | 11.0 | 5.55 | 0.99 | 0.00 | 0 |



Alt Model-Shift Uniqueness Test

008285254-02, P = 7.535876 Days, E = 126.481997 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 2653 | 15.1 | 4.86 | 20.3 | 4.81 | 2.16 | 1.87 | 2648 | 2633 | 10.2 | -5.16 | 4.97 | 1.00 | 0.01 | 0 |



Stellar Parameters For KIC 008285254

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4969^{+148}_{-148} | $4.736^{+0.027}_{-0.033}$ | $-1.520^{+0.300}_{-0.250}$ | $0.537^{+0.030}_{-0.024}$ | $0.574^{+0.028}_{-0.023}$ | $5.211^{+0.567}_{-0.618}$ |
| | +3%/-3% | +1%/-1% | +20%/-16% | +6%/-4% | +5%/-4% | +11%/-12% |
| 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 008285254-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|-------------------------|----------------------|----------------------|---------------------------|
| DV | -290 ± 14 | $18.92^{+1.04}_{-0.91}$ | 899^{+27}_{-29} | 2059^{+38}_{-39} | $1.742^{+0.187}_{-0.180}$ |
| Alt. | -203 ± 13 | $11.74^{+0.95}_{-0.90}$ | 901^{+26}_{-30} | 2216^{+59}_{-54} | $3.145^{+0.593}_{-0.462}$ |

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

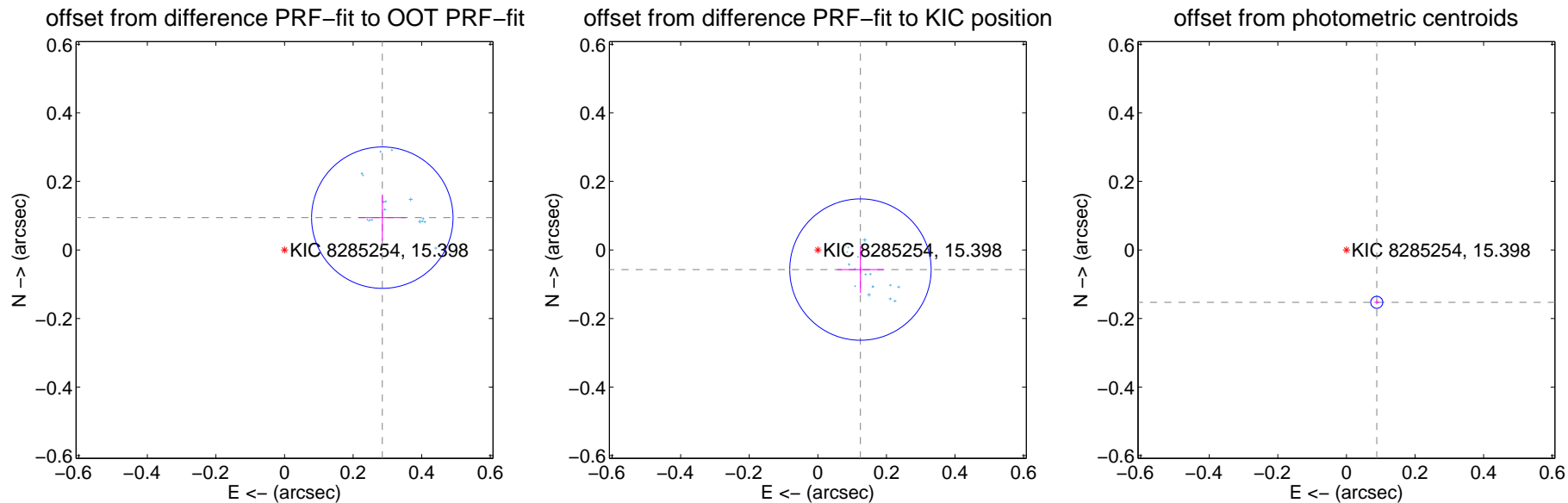
DV Centroid Data

Supplemental centroid analysis for 008285254-02. Kepler magnitude: 15.40. Transit SNR 1238.98

There are 17 quarters with good PRF difference image offsets

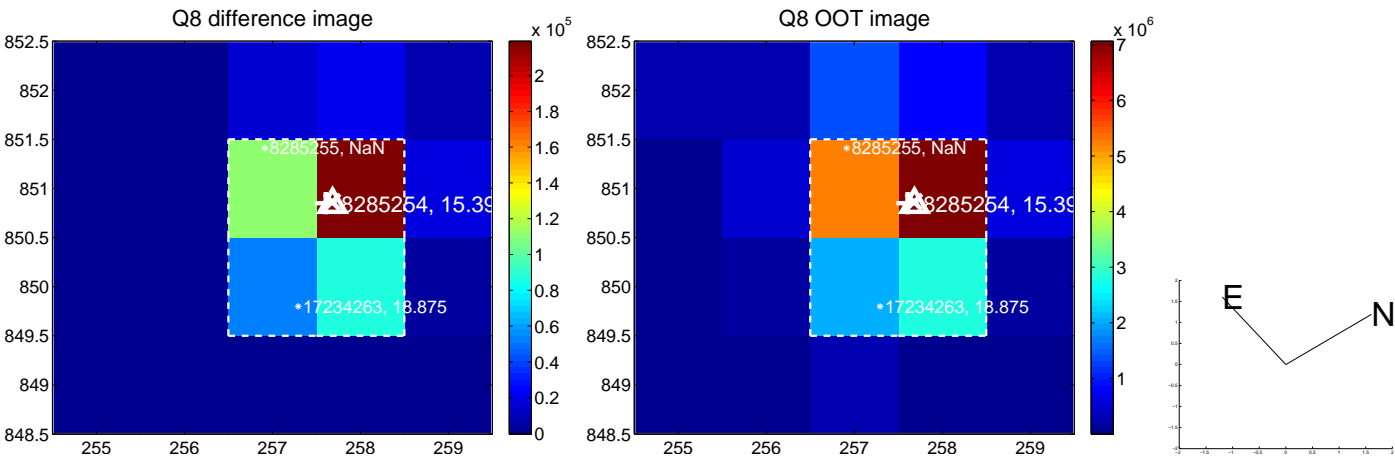
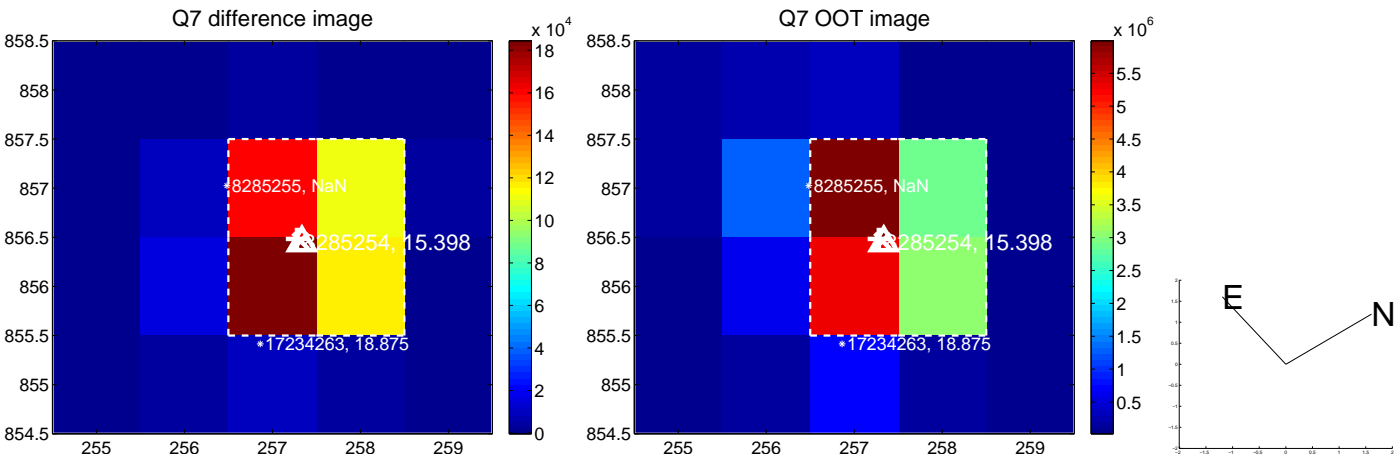
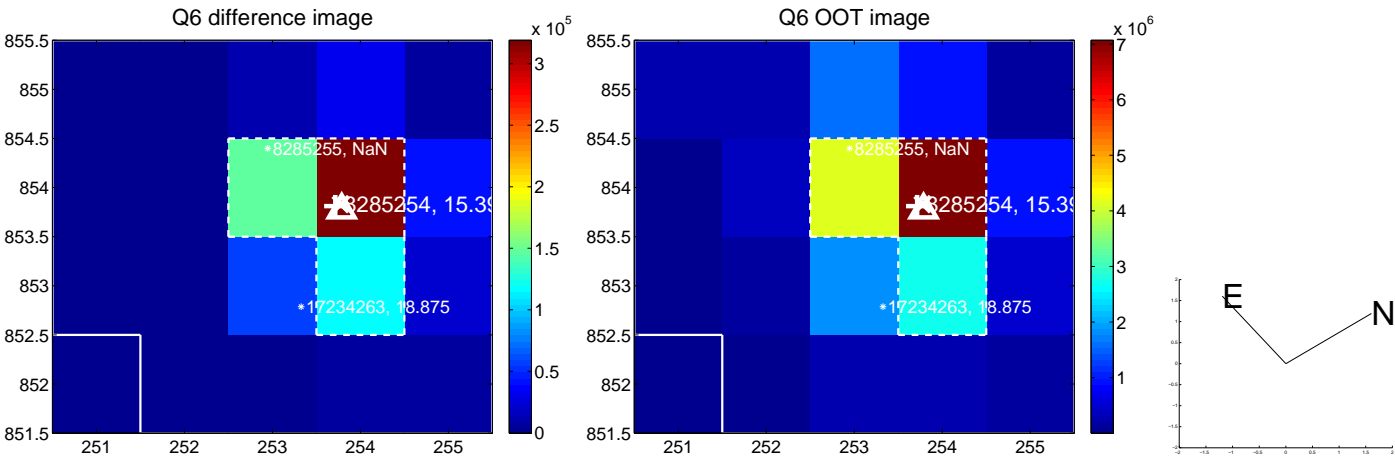
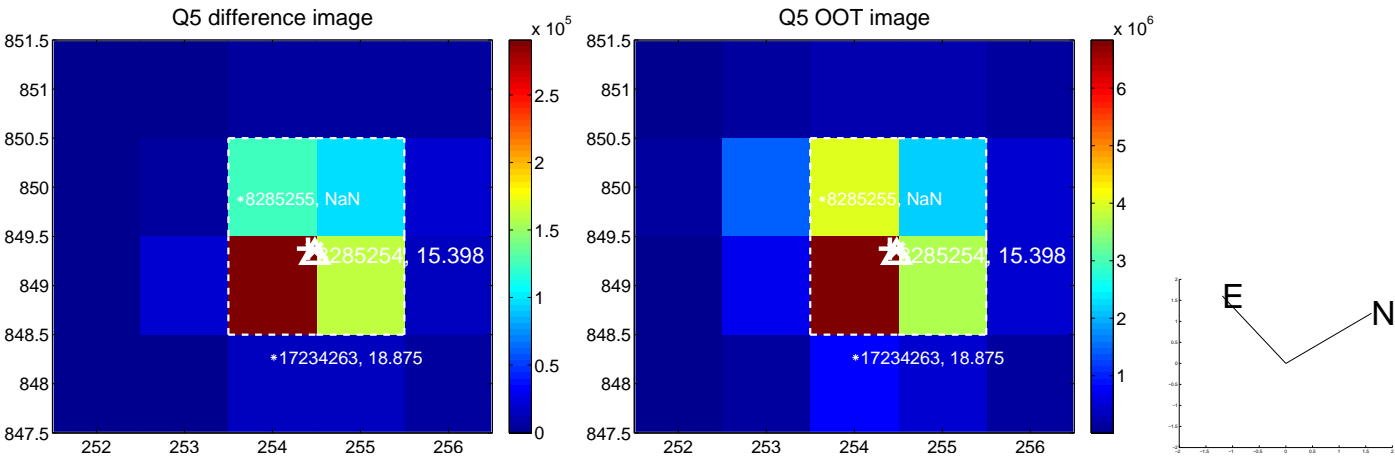
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.300 ± 0.069 | 4.37 | -0.285 ± 0.069 | 0.094 ± 0.067 |
| PRF-fit source offset from KIC position | 0.137 ± 0.069 | 1.99 | -0.124 ± 0.068 | -0.057 ± 0.068 |
| photometric centroid source offset | 0.18 ± 0.01 | 30.23 | -0.09 ± 0.01 | -0.15 ± 0.01 |

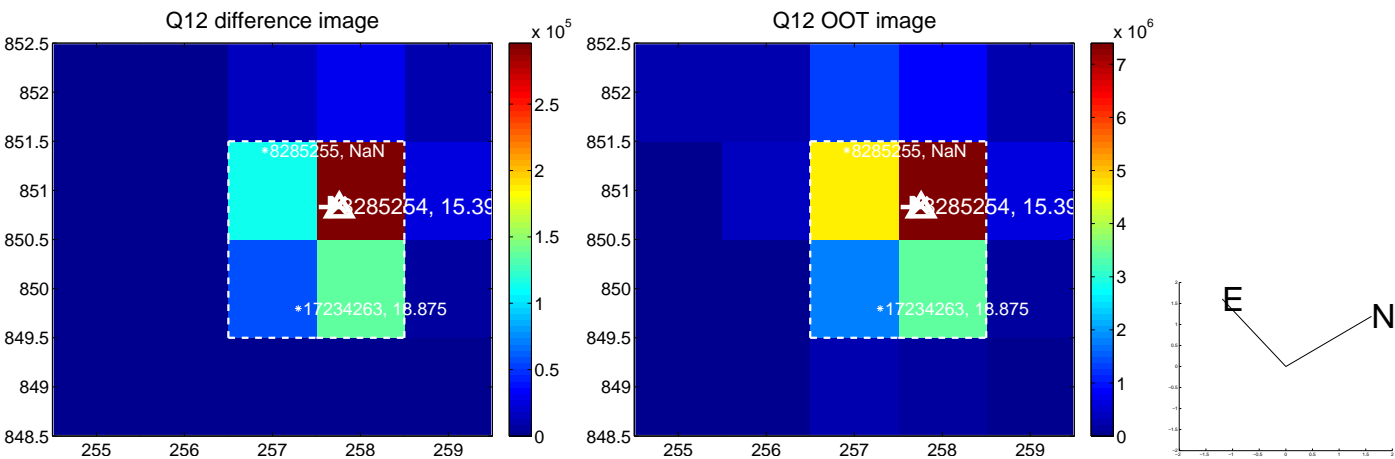
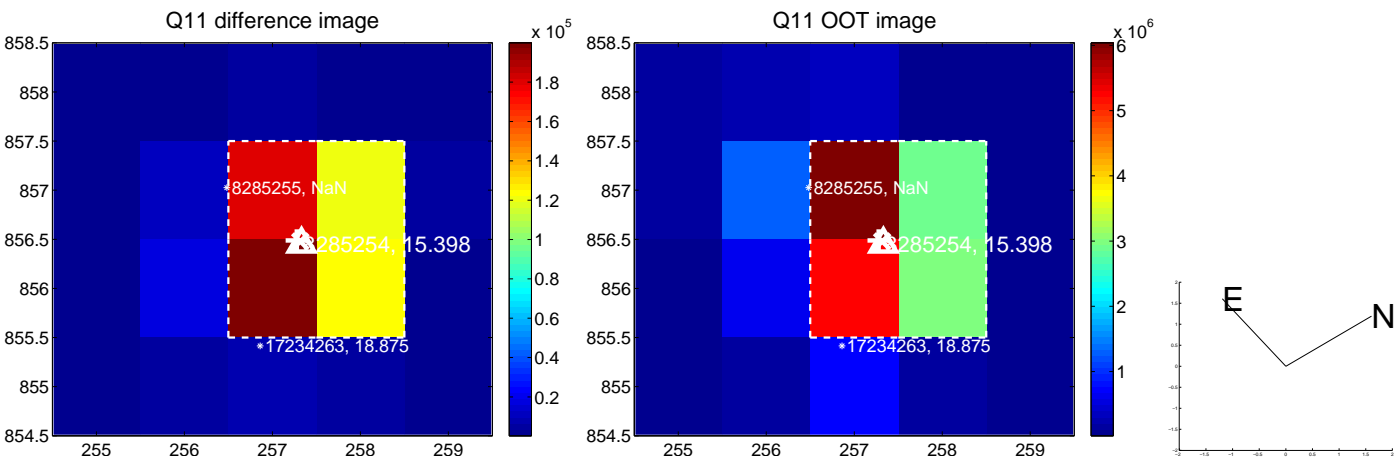
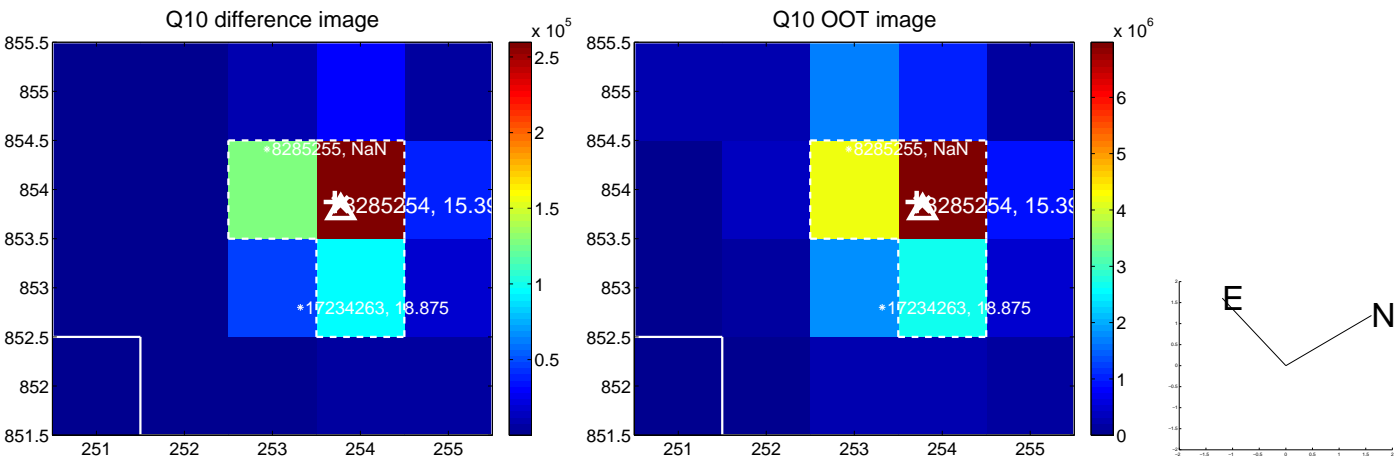
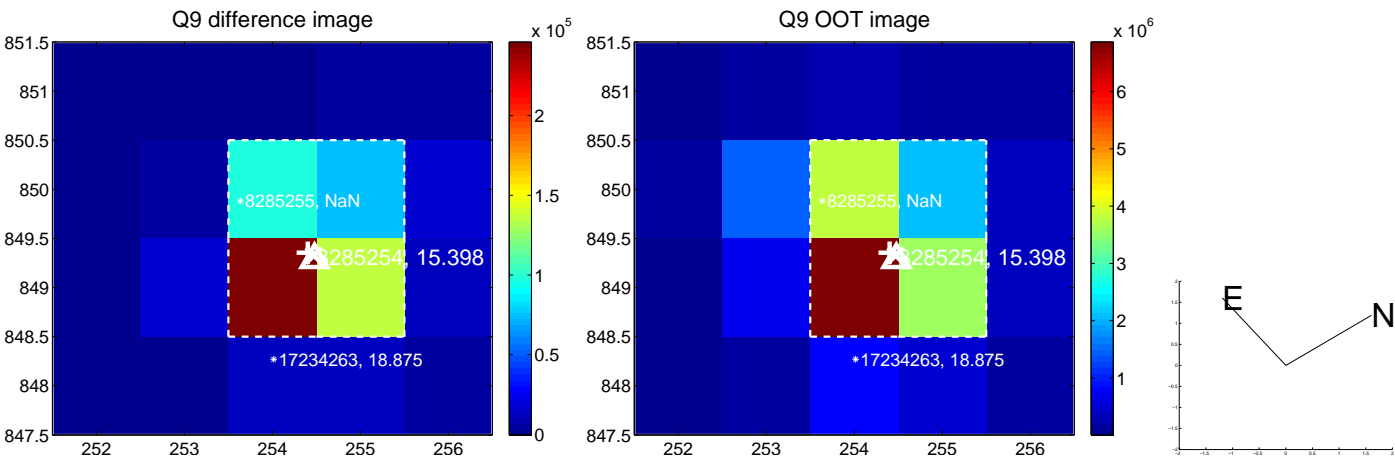


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

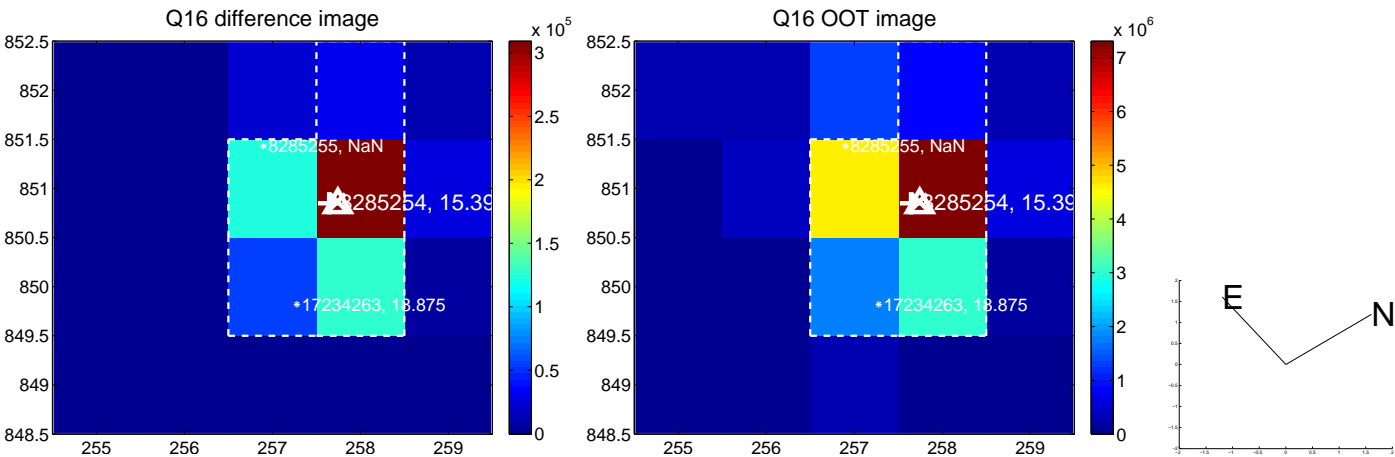
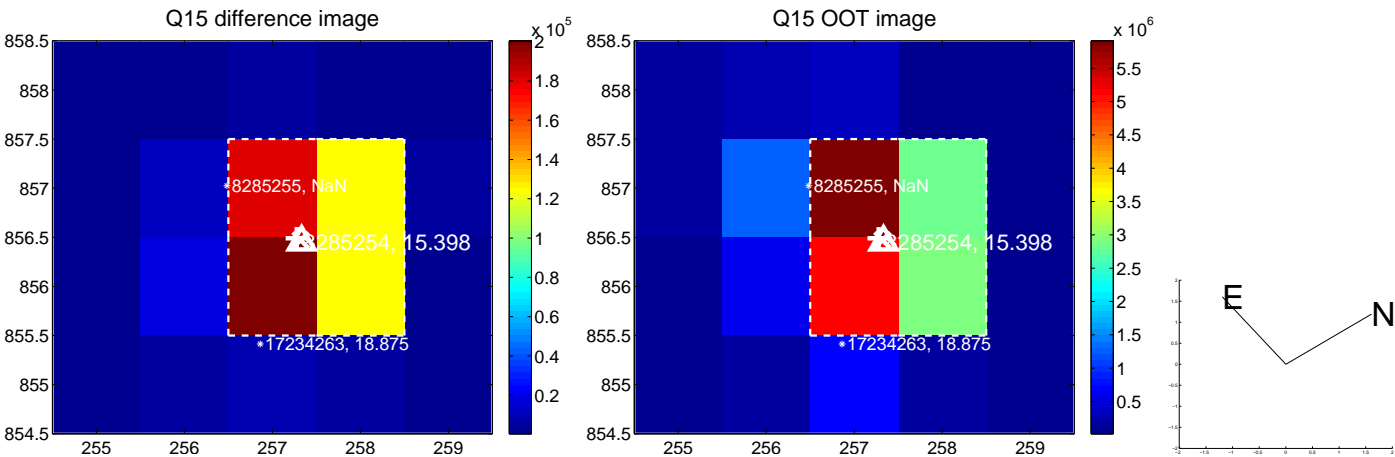
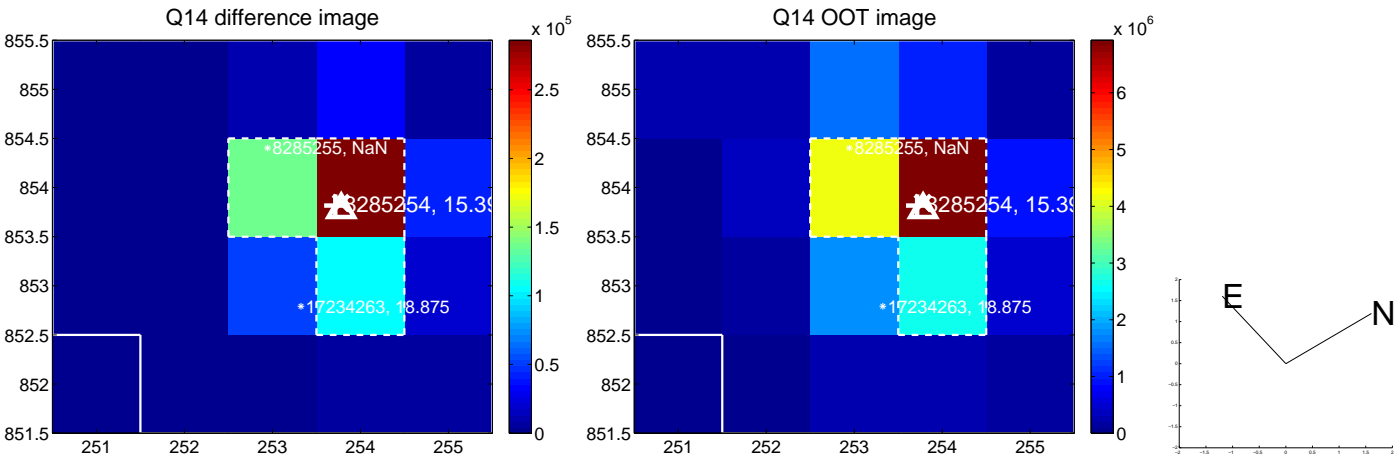
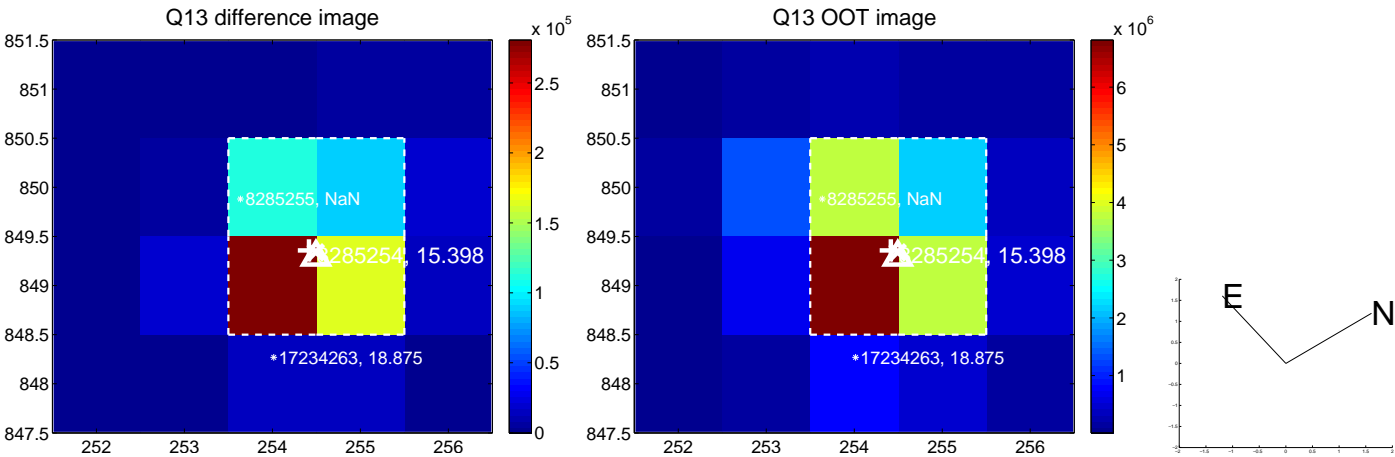
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

